



FirstSpirit™

Unlock Your Content

Release Notes+

FirstSpirit™ 2020-06

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1 Administration

1.1 PostgreSQL 8.4 is no longer supported for productive use in FirstSpirit 2019-08

Due to the advancing technology in the area of database systems, the use of **PostgreSQL 8.4** for productive use in FirstSpirit is no longer supported. This version of the database has therefore been removed from the list of database systems compatible with FirstSpirit (see https://docs.e-spirit.com/odfs/edocs/admi/technical-requi/compatible-comp/index.html#kompatible_datenbanken).

Currently the reference for using a PostgreSQL database is **PostgreSQL 9.4**. Support for **PostgreSQL 11** for productive use in FirstSpirit is currently being planned.

1.2 "Attach log files:" in schedules where e-mail is sent 5.2R21

As a result of a code change in Oracle Java 9 and higher, the FirstSpirit function "Attach log files" is no longer supported in the "Send e-mail" schedule, e.g.,

The screenshot shows a dialog box titled "Schedule entry planning: Send e-mail". It contains the following fields and options:

- Name:** A text input field containing "mail".
- To whom should the e-mail be sent?:** Two radio button options: "Schedule entry distribution list" (selected) and "To this recipient" (unselected). Below "To this recipient" is an empty text input field.
- Subject:** An empty text input field.
- E-mail text:** A text area with a list of line numbers (1, 2, 3, 4) on the left and a scroll bar on the right.
- Attach log files:** A checkbox that is checked and circled in red.
- Insert default text:** A button.
- OK** and **Cancel** buttons at the bottom.
- A help icon (?) at the bottom right.



("FirstSpirit ServerManager / Server properties / Schedule management / Add or edit / Actions / Add or edit / Send e-mail")

Error message:

```
java.util.concurrent.ExecutionException: java.lang.NoClassDefFoundError:  
  javax/activation/FileTypeMap
```

This incompatibility has been rectified in the most recent version of FirstSpirit.

For new installations with FirstSpirit version 5.2R21 and later that use Oracle Java 9 or higher, no modifications are necessary.

For existing FirstSpirit installations that use Oracle Java 9 or higher, the following parameters must be defined in the wrapper file containing the start parameters for Java 9 and higher (file `fs-wrapper-j2.include.conf` by default) in the `<FirstSpiritROOT>/conf` subdirectory:

```
wrapper.java.additional.26=--add-modules=java.activation
```

Installations that use Oracle Java 8 or 7 are not affected by this error.

Note: Oracle Java 10 has not yet been officially released for use with FirstSpirit; its current status is "EAP" (early access program).

1.3 64- and 32-bit support for FirstSpirit servers 2018-12

Since FirstSpirit 5.0, operation of a FirstSpirit server is only supported on 64-bit variants of operating systems. Use of a FirstSpirit server in a 32-bit environment or in 32-bit mode is not supported.

As of FirstSpirit 2018-12, the Java Service Wrapper files which enable operation of a FirstSpirit server in 32-bit mode will no longer be provided. Existing FirstSpirit installations will thus no longer receive updates for these files when the Java Service Wrapper is updated.

In order to avoid mixed operation of two Java Service Wrapper versions, it is urgently recommended to manually delete the 32-bit files from the file system under FirstSpirit 2018-12.

The files in question are listed below (~FS = installation directory of the FirstSpirit server):



- Directory `~FS/bin`
 - `wrapper-aix-ppc-32`
 - `wrapper-linux-x86-32`
 - `wrapper-macosx-universal-32`
 - `wrapper-solaris-sparc-32`
 - `wrapper-solaris-x86-32`
 - `wrapper-windows-x86-32.exe`
- Directory `~FS/server/lib` or `~FS/server/lib-isolated`
 - `libwrapper-aix-ppc-32.so`
 - `libwrapper-linux-x86-32.so`
 - `libwrapper-macosx-universal-32.jnilib`
 - `libwrapper-solaris-sparc-32.so`
 - `libwrapper-solaris-x86-32.so`
 - `wrapper-windows-x86-32.dll`

For FirstSpirit server installations which still use 32-bit, it is recommended to migrate to 64-bit in a timely manner.

1.4 Deprecation: Support for IBM AIX and Solaris will be discontinued in the future 2019-06

FirstSpirit is operated successfully by customers and partners with a wide range of different third-party components (operating systems, JDKs, servlet engines, application servers, databases). The high number of supported third-party components, short release cycles, as well as the many combination and configuration possibilities of third-party components lead to a very high test complexity.



In order to maintain our high software quality standards, we have to manage complexity and therefore focus on the third-party components that are used successfully by our customers and cover the majority of the market. As a result, the support for the operating systems still supported so far

- IBM AIX
- Solaris

will be **discontinued** in the future.

For a complete list of supported operating systems see [Technical requirements and recommendations \(Documentation for administrators\)](#).

In this context, the delivery of the file `fs-os-extension-5.2.xy.tar.gz`, which was required for the installation of FirstSpirit on IBM AIX and Solaris systems via the Tar-Gzip archive introduced with FirstSpirit 2018-11, will be discontinued as of the current FirstSpirit release.

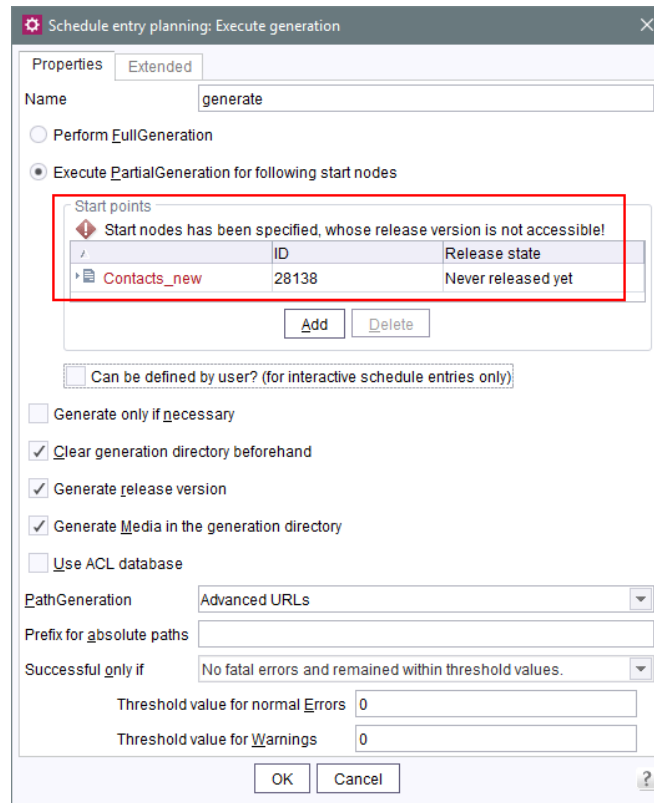
1.5 Action "Execute generation": Selection of start nodes for partial generation 2018-09

The action "Execute generation" ("FirstSpirit ServerManager / Project properties / Schedule management / Add/edit schedule entry / Actions / Execute generation") can be used to perform a full or partial generation of a project. The panel "Start points" is used to select start nodes which should be included in partial generation.

Until now, selection of start nodes only supported released nodes. Nodes which have never been released were not available for selection. As of the current version of FirstSpirit, selection considers the current state of the project, i.e. all nodes currently present in the project are available for selection, including nodes which have never been released.

Nodes that have never been released and can thus lead to problems in generation will now be specially visualized in the dialog ("Start nodes have been specified whose release versions are not accessible!"):





For further information, see *FirstSpirit Manual for Administrators*, chapter “FirstSpirit ServerManager / Schedule entry planning / Project-based actions / Execute generation”.

1.6 News concerning Java support 2019-05

In the FirstSpirit 2018-07 release notes we outlined our plan of becoming more independent from Oracle as a provider of Java versions.

FirstSpirit 2019-05 marks a big step towards achieving that goal: except for one version no Oracle Java will be used for the FirstSpirit Launcher anymore.

In order to facilitate the choice for customers, partners, and internal tests, we chose the OpenJDK distributor "AdoptOpenJDK", which offers several advantages over other offers:



- Binary packages for
 - macOS
 - Linux
 - Windows
- Releases shortly after the Oracle releases
- Java Runtime Environment (JRE) variants also available for versions greater Java 8
- Supported by notable companies: Azul Systems, GoDaddy, IBM, Microsoft Azure
- the complete infrastructure for package creation can be reviewed on GitHub
- (until now) moderate/few modifications only

Starting with FirstSpirit 2019-05 the reference for the FirstSpirit server as well as for the FirstSpirit desktop applications is OpenJDK 11, preferably as provided by AdoptOpenJDK. To be able to use Java 11 with the FirstSpirit desktop applications you need the FirstSpirit Launcher (see *FirstSpirit Manual for Administrators*, “FirstSpirit start page / Areas of the start page / FirstSpirit Launcher”). The Launcher has to be installed for the users, manually or automated. Additionally use of the Launcher has to be activated for all users in the connection settings. This activation can be automated by utilizing an LDAP group and the parameter “externalLauncherGroup” in the server configuration file “fs-server.conf”.

Users, who already installed the FirstSpirit Launcher before FirstSpirit 2019-05 will automatically be using AdoptOpenJDK 11.0.3 for starting the **FirstSpirit desktop applications**. Normally the change from Oracle Java 8u181 to AdoptOpenJDK 11.0.3 should have no repercussions: The extended EAP period led to complete compatibility of Java 11 with FirstSpirit. Problems with the upgrade from Java 8 to 11 are therefore not to be expected in the core product. Should integration scenarios or other reasons still require the use of Oracle Java 8u181, this is also easily possible, by using the module “FirstSpirit Launcher JRE”. This has to be installed, and configured to use the desired Java version. Refer to the documentation “FirstSpirit Launcher JRE” unter *FirstSpirit Online Documentation*, “Documentation / For administrators”.



! On the **server side** a switch from Java 8 to OpenJDK 11 should be tested extensively on a test system, especiall when using third-party components and individual customer extensions! Background: Java 8 and Java 11 in parts differ significantly, possibly rendering existing libaried and implementations incompatible with Java 11. In such cases updating the respective libraries can help, if updates exist. When changing from Java 8 to OpenJDK 11 we recommend switching the server to Isolated Mode at same time, in order to avoid having to test modules and implementations twice. For this see *FirstSpirit Developer Manual for components (German only)*, "Isolated mode".

! When using Java 8 you should consider that e-Spirit will soon no longer support this Java version. Thus you should plan a timely shift to OpenJDK 11!

Our current plan is for e-Spirit to always support OpenJDK's current Java release, as well as the latest LTS version (Long Term Support). Currently this would be version 11 and 12. For Oracle Java only the latest LTS version (Java 11) is supported. Oracle Java support might be dropped completely in the near future. As an exception from this rule e-Spirit on an interim basis continues to support Oracle Java and OpenJDK version 8. This support will (as mentioned before) soon be dropped, though.

With the end of Java 8 support, as announced before, support for the Windows installer with also be terminated. We advise our customers to use the new installation method via the installer archive. See "FirstSpirit 2018-11 Release Notes".

You can find further information on these changes in the following chapters.

1.7 End of support for older versions of FirstSpirit Launcher, migration to the new Launcher version recommended 2018-11

As of FirstSpirit 2018-08, a new, optimized version of the FirstSpirit Launcher is provided. As opposed to older Launcher versions (FirstSpirit 2018-07 and lower), the new version supports macOS and is generally operational on Linux as well. This Launcher version was released with FirstSpirit 2018-10.

As of the current release, only the new Launcher version is supported. It can be downloaded and distributed via the start page of a FirstSpirit server running version 2018-08 or higher.



Migrating to the new Launcher version

If a version of the FirstSpirit Launcher before FirstSpirit 2018-08 is already installed on the local workstation, it must be installed anew because an automatic update will not take place. After successful installation of the new Launcher version, it will be used automatically. The old Launcher will no longer be used and can be uninstalled (Windows functionality). Directories and files which were created by the old Launcher on the associated FirstSpirit server as well as on the local workstations can be deleted manually:

- **FirstSpirit server**
 - within the directory [FirstSpiritROOT]\web\fs5root\clientjar, files
 - FSLauncherSetup.exe
 - FSLauncherSetup.msi
- **Workstations**
 - directory C:\Users\{username}\.firstspirit\launcher
 - directory C:\Users\{username}\AppData\Local\FirstSpirit Launcher

Compatibility and upgrade/downgrade capability

Until now, it was possible to use an “old” Launcher version (FirstSpirit 2018-07 or lower) with a FirstSpirit server running FirstSpirit 2018-08 or higher. Likewise, the “new” Launcher version (FirstSpirit 2018-08 and higher) could be used with a FirstSpirit server running FirstSpirit 2018-07 or lower. With the official end of support for the “old” Launcher, prolonged compatibility cannot be ensured; a timely migration to the new Launcher version is recommended.

For further information, see

- *FirstSpirit Release Notes* for FirstSpirit 2018-08
- *FirstSpirit Installation Instructions*, chapter “FirstSpirit Launcher”
- *FirstSpirit Manual for Administrators*, page “FirstSpirit start page / Areas of the start page / FirstSpirit Launcher”



1.8 Log in via the HTTP request header ("RequestHeaderLoginModule")

5.2R2

FirstSpirit uses the Java standard JAAS (“Java Authentication and Authorization Service”) to authenticate its users. Various JAAS modules are already integrated in FirstSpirit and provide various methods of user authentication. In FirstSpirit version 5.2R2, the “RequestHeaderLoginModule” has been added to the FirstSpirit standard (module name: `de.espirit.firstspirit.server.authentication.RequestHeaderLoginModule`). This module is used in conjunction with a web access management system, i.e., a reverse proxy with a simultaneous authentication function. The reverse proxy automatically authenticates the user who calls up the FirstSpirit start page using a web browser. In each HTTP request following successful authentication, the reverse proxy transfers the user name of the authenticated user between the reverse proxy and the FirstSpirit WebApp server. It does so by means of an entry in the HTTP request header. To ensure the authenticity of the transferred user name in the HTTP request header, the “RequestHeaderLoginModule” checks either the sending proxy's IP address or its HTTP client certificate. FirstSpirit then accepts the transferred user name as a FirstSpirit user name. This means there is no need for the user to perform additional authentication on FirstSpirit.

For more information, see *FirstSpirit Manual for Administrators*, chapter “Logging in via the HTTP request header”.

1.9 Anonymization of personal data of deleted users 2018-07

The General Data Protection Regulation (GDPR) is an EU regulation that protects the fundamental right of European citizens to privacy and regulates the handling of personal data. Some functions in FirstSpirit that enable collaborative work, versioning, automatic notifications, etc. require personal system data. These are usually contact details of editors such as name, e-mail address, IP address, etc.

With the current release, personal data of deleted users (e.g. via FirstSpirit ServerManager / User / Delete) can be made anonymous in FirstSpirit.

This anonymization can be activated for the relevant FirstSpirit server in the configuration file `fs-server.conf` using the option

```
privacy.anonymizeDeletedUsersData=true
```

(default value is *false*).



If the parameter `privacy.anonymizeDeletedUserData=true` is set in the file `fs-server.conf`, data from deleted users can no longer be obtained. In the revision history and in other locations where the user name would be displayed, the phrase `{DELETED USER}` and, if applicable, the ID of the deleted user is displayed instead.

For example

Revision	Date	Change on	Editor	Comment	Attributes	Child list	Content	Metadata
20712	Jul 16, 2018 1:54:29 PM	Mithras Homepage	(DELETED_USER)	Store in cache memory	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
20710	Jul 16, 2018 12:25:46 PM	Mithras Homepage	(DELETED_USER)	Store in cache memory	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
20709	Jul 16, 2018 12:24:57 PM	Mithras Homepage	Admin	Store in cache memory	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
20708	Jul 16, 2018 12:02:19 PM	Mithras Homepage	(DELETED_USER)	Store in cache memory	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
20707	Jul 16, 2018 12:01:30 PM	Mithras Homepage	Admin	Store in cache memory	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

For further information see

- *FirstSpirit Manual for Administrators*, page “Notes about GDPR”
- *FirstSpirit Manual for Administrators*, page “FirstSpirit ServerManager / Menu bar items / User”
- Blogpost [The Ultimate Resource for GDPR Readiness](#)

1.10 Modification in the Java environment (wrapper configuration) 2019-03

The FirstSpirit Server `conf` subdirectory contains files which in turn contain important configuration settings for server startup and the FirstSpirit Server's Java system: `fs-wrapper.conf` or `fs-wrapper*.conf` (or “wrapper” for short).

The `com.sun.awt` package contains Java 11, which is the most recent Java version. Therefore, the wrapper configuration has been modified accordingly. The associated option

```
--add-exports=java.desktop/com.sun.awt=ALL-UNNAMED
```

has been restricted accordingly:



```
wrapper.java.additional.61=--add-exports=java.desktop/com.sun.awt=ALL-UNNAMED  
wrapper.java.additional.61.java_version.min=9  
wrapper.java.additional.61.java_version.max=11
```

New installations as of FirstSpirit 2019-03 already feature these modifications.

We recommend making the modification manually on installations with the current Java service wrapper (indicated by the “.min” and “.max” fields).

For more information about configuration and changes in the context of wrapper files, see also CORE-9323 (release notes for FirstSpirit 2018-11).

1.11 Modifications in the Java environment (wrapper configuration)

2018-09

FirstSpirit is now released for use with Oracle Java 10. However, according to the latest product release information from Oracle, manufacturer support for Oracle Java 10 will be discontinued in September 2018. Oracle Java 11 (18.9 LTS) will then be officially released by Oracle.

A number of functions will no longer be supported in Java 11 (e.g., the “java.activation” module); their discontinuation (“deprecation”) has already been announced. To prepare for these changes, the

```
--add-modules=java.activation
```

option has been removed from the `fs-wrapper-j2.include.conf` file.

Furthermore, erroneous behavior could arise while sending e-mails with attachments when using this option.

For new installations using FirstSpirit 2018-09 and later, no modifications are required, for existing FirstSpirit installations, the entry `--add-modules=java.activation` must be removed manually from the `fs-wrapper-j2.include.conf` file in the `<FirstSpiritROOT>/conf` subdirectory.

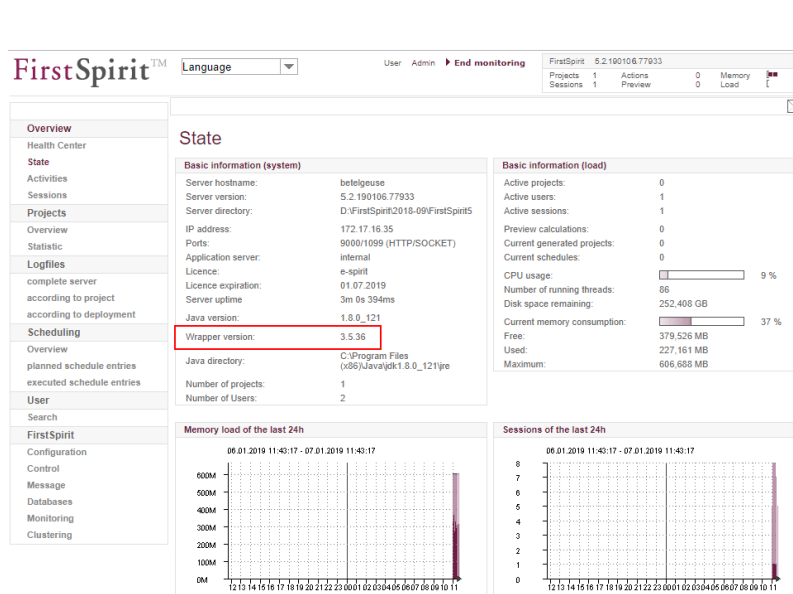
1.12 Displaying the wrapper version in ServerMonitoring and log 2019-01

The “Java Service Wrapper” is used to control the server in FirstSpirit and is therefore an essential component of a FirstSpirit Server.



The relevant files are updated at irregular intervals by e-Spirit. There can be several reasons for updating: Correcting errors in the wrapper, security updates, supporting new Java versions, supporting operating system changes, etc. That is why it is a good idea to update the “Java Service Wrapper” promptly in existing FirstSpirit installations.

With the current release, the version of the wrapper used can be determined under “Overview / State” in FirstSpirit ServerMonitoring:



If the wrapper version used does not correspond to the version recommended by the FirstSpirit Server, this is indicated by the red font and the term “outdated”:



State

Basic information (system)	
Server hostname:	betelgeuse
Server version:	5.2.190106.77933
Server directory:	D:\FirstSpirit2018-09\FirstSpirit5
IP address:	172.17.16.35
Ports:	9000/1099 (HTTP/SOCKET)
Application server:	internal
Licence:	e-spirit
Licence expiration:	01.07.2019
Server uptime	3m 0s 394ms
Java version:	1.8.0_121
Wrapper version:	3.5.35 (Java Service Wrapper outdated)
Java directory:	C:\Program Files (x86)\Java\jdk1.8.0_121\jre
Number of projects:	1
Number of Users:	2

This is recorded in the `fs-wrapper.log` file as follows:

```
INFO | jvm 1 | 2019/01/04 09:29:28 | WARN Fri Jan 04 09:29:28 CET 2019 (de.espirit.firstspirit.server.ServerManagerImpl) An outdated Java Service Wrapper is being used (3.5.26)! Please update to version 3.5.36
```

In this case, the wrapper must be updated according to *FirstSpirit Installation Instructions*, chapters

- Updating via a tar archive (for Unix)
- Updating via the installation program (for Microsoft Windows).

Alternatively, it can be updated using the tar gzip update archive (`fs-update-5.2.*.tar.gz` file). However, since this update function is still in the EAP phase, we do not yet recommend using it in live environments (see also the release notes for FirstSpirit 2018-11).

Updating a FirstSpirit Server by exchanging the `fs-server.jar` file does **not** update the wrapper used.



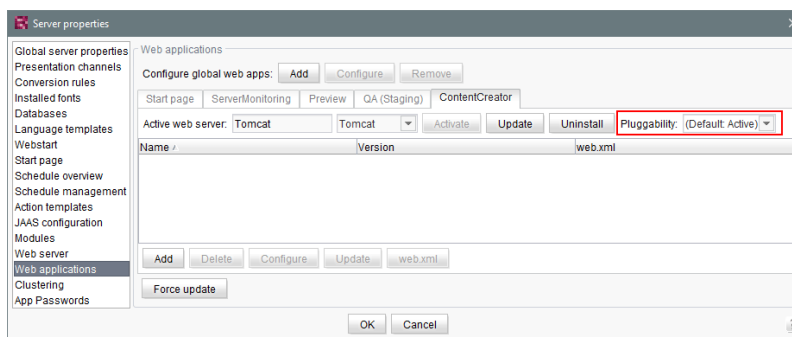
1.13 Apache Tomcat / Java Servlet Specification 3.0: Disabling Pluggability features 5.2R7

“Pluggability” features were introduced with version 3.0 of the Java Servlet Specification. These enable the `web.xml` modularization or the configuration of components via Java annotations. However, the latter function requires that all classes must be scanned for annotations when the web application is deployed (and implicitly each time the application server is started). As this process can take a long time, FirstSpirit can disable pluggability features globally or for individual web applications starting with the current FirstSpirit version.

Global configuration is carried out in the server configuration via the `WEBAPP_ENABLE_PLUGGABILITY_FEATURES_DEFAULT` parameter within the file `fs-server.conf`. Possible values are:

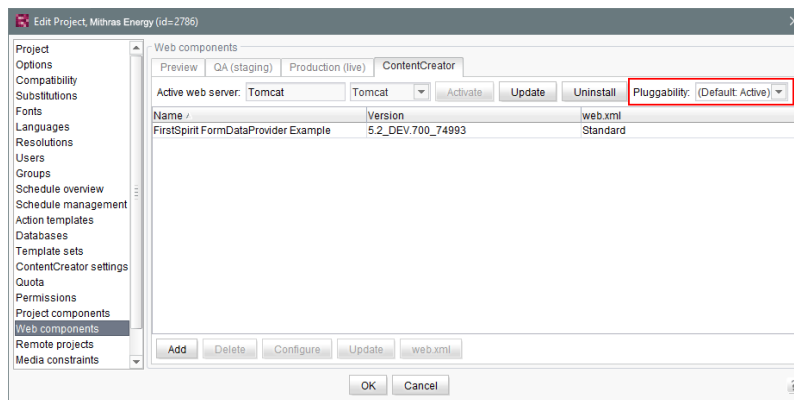
- `true`: Pluggability features are activated, Java classes are scanned for annotations during deployment. This is the default value.
- `false`: Pluggability features are deactivated, Java classes are not scanned.

Configuration for individual web applications is carried out via the “Pluggability” selection field, either for the global web applications (FirstSpirit ServerManager, “Server properties / Web applications”)



or for the web components of a project (FirstSpirit ServerManager, “Project properties / Web components”)





For more information please see *FirstSpirit Manual for Administrators*,

- Chapter “Area: Web Applications”
- Chapter “Configuring web applications”
- Chapter “Web components”

and the official page about the [Java Servlet 3.0 Specification](#).

! If the pluggability features are deactivated manually within the `web.xml`, for example by specifying an `<absolute-ordering>` element, and if the pluggability features have been **deactivated** by means of the new functionality which is described here, this can lead to conflicts. In this case, please remove the manual configuration (from the `web.xml`) or change the pluggability setting of the respective web application/s to “active” using the above described possibilities.

1.14 Workflows: Variables for language-dependent URLs in e-mails

2018-10

In e-mails that are sent by workflows, special variables may be included that will be replaced by the system automatically and in a context-sensitive fashion. This allows, for example, inclusion of links in the e-mail that point at the preview of the page on which the workflow is active.

In multi-language projects, links that are inserted in the e-mail in lieu of the following variables will point at the preview in the master language:



```
%FIRSTspiritURL%  
%FIRSTspiritSOCKETURL%  
%WEBeditURL%  
%PAGESTORE_PREVIEW_URL%  
%SITESTORE_PREVIEW_URL%
```

As of the current release, adding an underscore (_) and the abbreviation of the desired language will cause creation of language-dependent links. E.g. for the language “DE”:

```
%FIRSTspiritURL_DE%  
%FIRSTspiritSOCKETURL_DE%  
%WEBeditURL_DE%  
%PAGESTORE_PREVIEW_URL_DE%  
%SITESTORE_PREVIEW_URL_DE%
```

For further information, see *FirstSpirit Online Documentation*, page “Templates (basics) / Composition of templates / Workflows / State diagram tab / Properties of an activity”.

1.15 Archiving: Tagged revisions are now partly taken into account 5.2R13

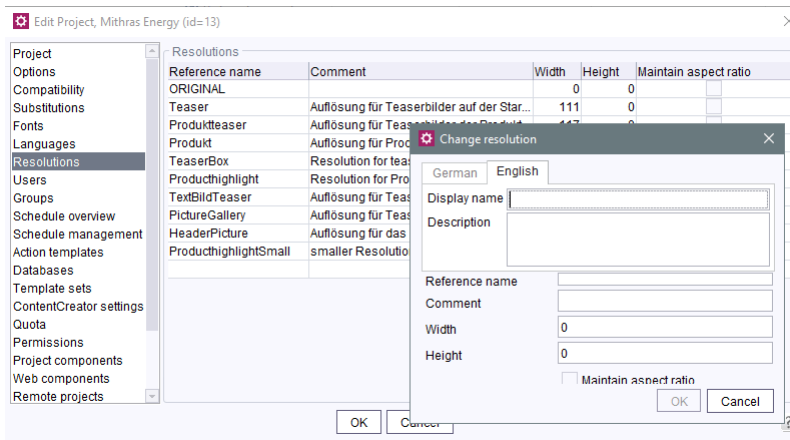
Some FirstSpirit actions automatically generate tags for revisions (e.g., generation, content transport). Such tags can also be generated via API (`createTag` method in the `Project` interface, `de.espirit.firstspirit.access.project` package, FirstSpirit Access API).

Revisions with these tags have previously not been taken into account during archiving. In the current FirstSpirit version, revisions and tags whose tag name ends with the suffix “Task” are now archived, e.g., revisions and tags created automatically during generation or other Scheduler entries. This archived data can be deleted at a later date, in order to free up memory space and therefore increase the performance of the FirstSpirit Server.

1.16 Resolutions: Maximum width and height have been increased (18,918 pixels) 2018-07

Images can be stored in FirstSpirit in various “resolutions”. These resolutions can be defined under “Resolutions” in the FirstSpirit ServerManager:





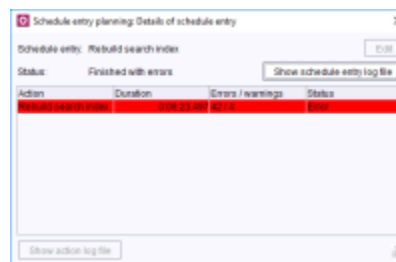
The intended width and height of the image in pixels in the corresponding resolution can be specified for each resolution. FirstSpirit can scale the original image (“original resolution”) automatically to these resolutions. This provides an easy way of standardizing the sizes of images that are available in a variety of original sizes.

Previously, the maximum width and height that could be defined for resolutions was 5,000 pixels for each. The latest FirstSpirit release has increased this value to 18,918 pixels.

! The higher the specified values for the width and/or height of a resolution, the more processing time will be required for the calculation/scaling of the images.

1.17 “Rebuild search index” schedule: Logging errors 2019-03

Errors that occur when indexing a project are now included in the schedule log when using the “Rebuild search index” schedule.



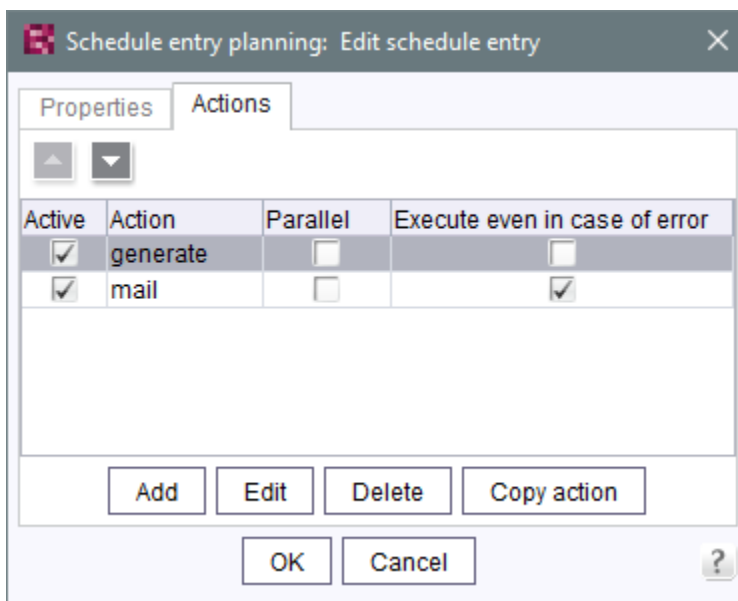
Note: It is not usually necessary to execute this schedule entry. The FirstSpirit Server is placed under significant load during the runtime of this schedule entry.

If you need to execute this schedule entry regularly, please contact our Technical Support so that a solution can be found to avoid executing this schedule entry.

For more information, see *FirstSpirit Manual for Administrators*, “FirstSpirit ServerManager / Schedule entry planning / Project-based actions / Rebuild search index”.

1.18 Schedule Tasks: Option "Execute even in case of error" is turned off by default 5.2R19

In FirstSpirit, schedule tasks are used to automate actions pertaining to the administration of projects (e.g. generation or publication) so that they are executed at defined, planned times. Each schedule task can consist of several actions which are executed in a specified order, e.g.:



For each action, the option “Execute even in case of error” specifies if this action should be executed if its preceding execution was erroneous. For actions that are newly added to a schedule task, this option is now turned off by default; if a newly added action should be executed after the preceding execution resulted in an error, the checkbox of this option must be checked. Until now, the checkbox was checked by default for newly added actions.



For further information, see *FirstSpirit Manual for Administrators*, chapter “FirstSpirit ServerManager / Schedule entry planning”, specifically the page “Add schedule entry (Actions tab)”.

1.19 Schedule management, action "Execute generation": New setting - Generate release version or current state 5.2R15

In a project which uses release functionality (FirstSpirit ServerManager - project properties - page “Options” - option “Use Release function”), FirstSpirit differentiates between the released state and the current state of the project. If a project uses this option, changes in the project must be released by a user with appropriate privileges (e.g. an editor-in-chief) in order to become visible in the generated output.

Previously: An unreleased project state, e.g. a page in the Page Content store, will not be output during the next generation. Instead, the most recent released state of the page will be used.

Now: The dialog “Schedule entry planning: Execute generation” contains a new option “Generate release version” as a checkbox:



- If this option is *activated* (checkbox marked), the release version of the project will be generated (default setting).
- If this option is *deactivated* (checkbox unmarked), the current state of the project will be output during generation (even if this state contains changes which have not been released at the time of generation).

1.20 Configuring the delivery of content via a redirect (fs-server.conf)

2019-12

In the latest version of FirstSpirit, the delivery of content via a redirect can be configured. This new configuration option should be utilized if the application server used by FirstSpirit does not have access to the web server via which the content is delivered.

The delivery of content is configured using the following parameters in the `fs-server.conf` configuration file:

- `preview.externalDelivery`
List of file extensions (e.g., PHP or ASP) that are to be delivered by an external web server and not by the servlet engine.
- `preview.externalDeliveryURL`
URL of the external web server.
- **NEW:** `preview.externalDeliveryRedirect`
Delivery of content via a redirect (`true`) or via include (default: `false`).

Previous behavior:

Previously (and still now, in the default setting `preview.externalDeliveryRedirect=false`), the content of an external web server was loaded, included, and delivered by the servlet engine (e.g., Apache Tomcat) configured in FirstSpirit.

Configuration (example):



```
# external preview
preview.externalDelivery=php
preview.externalDeliveryURL=http://fs5.yourdomain.net:80
```

New behavior:

In the latest version of FirstSpirit, the `preview.externalDeliveryRedirect=true` parameter (default value: `false`) can be used to configure FirstSpirit to perform a redirect (HTTP status 302) to the external URL, rather than delivering the content, so the browser on the client PC can load the page directly from there.

Configuration (example):

```
# external preview
preview.externalDelivery=php
preview.externalDeliveryURL=http://fs5.yourdomain.net:80
# Redirect browser to external delivery URL instead of requesting the external
# delivery URL and including the response.
preview.externalDeliveryRedirect=true
```

Additional documentation:

- For the [fs-server.conf configuration file](#)
- For the [description of the preview.externalDelivery* parameter](#)

1.21 Proxy authentication via Kerberos/SPNEGO or NTLM 5.2R2

In FirstSpirit version 5.2R2 and higher, authentication based on Kerberos/SPNEGO or NTLM is supported through HTTP. This means that whenever SiteArchitect or ServerManager is connected to the FirstSpirit Server, transparent authentication based on Kerberos/SPNEGO or NTLM is attempted automatically (proxy or host). This method of authentication is only supported on Windows operating systems and on operating systems which support the Java GSS API.

To perform automatic authentication on Windows when using a proxy, the desired Kerberos SPN (“Service Principal Name”) must be provided as follows:



```
-Dfs.http.kerberos.spn=HTTP/proxy.example.com
```

However, automatic Kerberos authentication against both proxy and host at the same time is not possible on Windows.

For more information, see *FirstSpirit Manual for Administrators*, chapter “Configuring connection settings”.

1.22 Automatic deletion of files from local user directories 5.2R15

For various functionality of FirstSpirit SiteArchitect and FirstSpirit ServerManager, files are stored in the user home directory of the user's computer, specifically in a directory with the prefix `.firstspirit_` (e.g. `C:\Users\<USERNAME>\.firstspirit_5.2R15\...`). With every FirstSpirit update, new files are potentially added.

As of the current FirstSpirit version, during every start of SiteArchitect or ServerManager, all `.firstspirit_*` directories in which no files were changed over the last 30 days will now be deleted in order to free storage space on the workstation.

For more information see *FirstSpirit Manual for Administrators*, Chapter “FirstSpirit Server configuration / Roll-out process for native applications”.

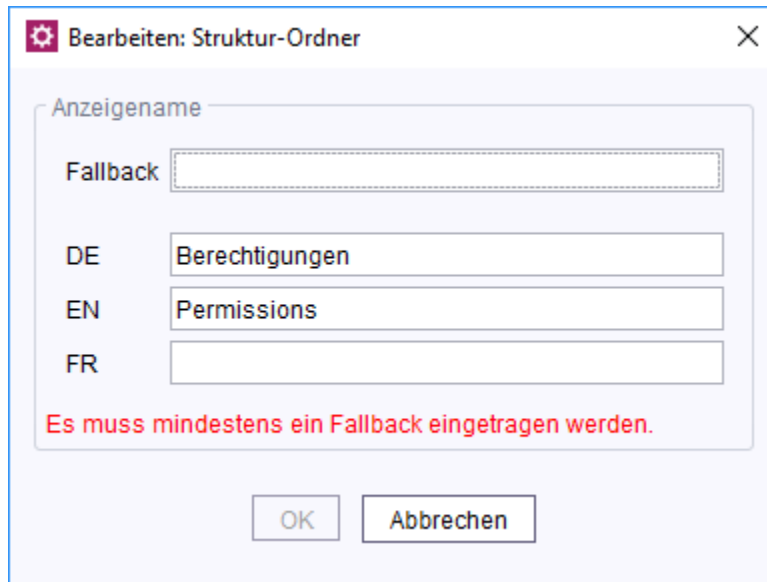
1.23 Handling of incomplete display names for metadata in ContentCreator 2019-03

The object types for which metadata can be entered is defined in the project properties under the “ContentCreator” menu item (see *FirstSpirit Manual for Administrators*, “FirstSpirit ServerManager / Project properties / ContentCreator”).

A display name must always be specified for all editorial languages when adding or editing an object type for metadata.

It is now also possible to specify a “fallback value” for an object type. The fallback value is used if a display name has not been specified for an editorial language.

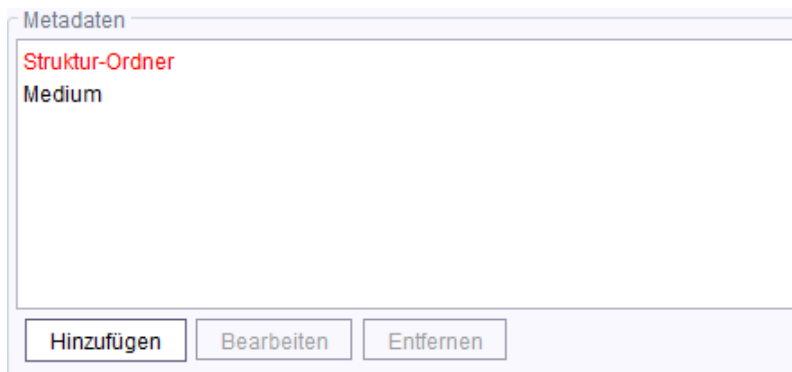




Error message if display name and fallback value are missing

An object type can only be saved if a display name has been specified for all languages. If a display name is missing and a fallback value has not been entered in the “Fallback” field, it will not be possible to save the object type and a corresponding message will be displayed in the edit window: “At least one fallback must be entered.”

If an editorial language is added subsequently, an object type for which a fallback value has not been specified is displayed in red in the list of metadata.



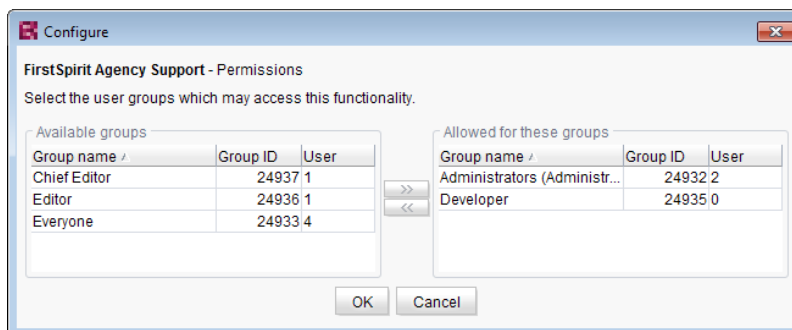
Invalid object type displayed in red



1.24 Permissions for FirstSpirit modules (Template Wizard, Template Debugger, Template Inspection) 5.2R2

The “FirstSpirit Template Wizard”, “FirstSpirit Template Debugger”, and “FirstSpirit Template Inspection” functions are designed to make life easier for template developers and can be implemented via FirstSpirit modules. FirstSpirit version 5.2R2 can be configured so that only certain user groups are able to access and execute this function in SiteArchitect.

The corresponding configuration settings are made with the project components included in the scope of delivery. These must be added to the required project in the FirstSpirit Server Manager (under “Project components”, “FS-AgencySupport-ProjectPermissions” for the Template Wizard, “FS-TemplateDebugger-ProjectPermissions” for the Template Debugger and Template Inspection). For the Template Debugger and Template Inspection, it is only possible to specify the same permissions; the functions are interdependent. Clicking on Configure or double-clicking on the relevant project component opens a dialog in which the required group(s) can be selected:



The groups that have access to the project are displayed on the left-hand side (“Available groups”). The groups that are permitted to use the corresponding function are displayed on the right-hand side (“Allowed for these groups”) along with their ID and the number of users they contain. To check which users belong to a group, select “Show users” from the context menu.

The corresponding icons are displayed on the horizontal tool bar in SiteArchitect or on the “Template Inspection” context menu entry in the integrated preview for members of the “allowed group(s)”. The corresponding icon is hidden for users who are not in one of the selected group. To move a group to the right-hand side or left-hand side, select it and



- click the icons



- double-click or
- select the corresponding command from the context menu (“Allow group(s)” or “Remove group(s) from allowed”).

The project components are **not** assigned by default, which means even the corresponding icons and context menu entry are not displayed in SiteArchitect. To enable the functions for a particular project, the corresponding project components must be added to the project by the ServerManager and the required group(s) must be selected using “Allowed for these groups”.

For more information, see

- *FirstSpirit Manual for Administrators*, chapter “Groups”,
- *FirstSpirit Manual for Administrators*, chapter “Project components”,
- *FirstSpirit Online Documentation*, chapter “Template development / Debugging / Where is the error? / FirstSpirit Debugger”,
- *FirstSpirit Online Documentation*, chapter “Template development / Debugging / Where is the error? / Template Inspector”,
- *FirstSpirit Online Documentation*, chapter “Template development / Template Wizard”

1.25 Berkeley: Default for new FirstSpirit installations is now version 7

2018-06

Oracle Berkeley DB is used as standard in FirstSpirit as a repository for saving content data – for reasons of compatibility in versions 3, 5, and 7. All three versions can be used in tandem on the same server within different projects. Upgrading to a later Berkeley version is straightforward and involves selecting it from a list.

Berkeley version 7 is now the default for new FirstSpirit installations (FirstSpirit server which are installed with FirstSpirit 2018-06 or higher).



For more information please see *FirstSpirit Manual for Administrators*, “FirstSpirit ServerManager / Project properties / Repository”.

1.26 Browser compatibilities 2020-05

FirstSpirit is an enterprise content management system that was designed for use in complex IT landscapes and which supports numerous operating systems, Java Runtime Environments, and databases. To guarantee high-quality software and ensure that FirstSpirit can run in all supported configurations, regular quality assurance tests are carried out. However, the large number of third-party components that are supported, the short release cycles, and the combination and configuration options for third-party components mean that testing is extremely complex.

As a result, FirstSpirit generally supports the latest version of a third-party component. These are regularly tested by e-Spirit AG and measures are taken to rectify any errors or incompatibilities. When looking at and selecting third-party components to be supported for operation with FirstSpirit, e-Spirit also gives special consideration to components that cover the largest possible market shares and that are used successfully by a large number of customers.

This includes the browsers that are used to access the FirstSpirit web apps: Because **Microsoft Internet Explorer** has been gradually replaced by Microsoft Edge, First Spirit will no longer support Microsoft Internet Explorer in future. Instead, Google Chrome and Microsoft Edge Chromium are recommended. The development of the new ContentCreator was already strongly focused on these two browsers: The new ContentCreator is therefore no longer compatible with Microsoft Internet Explorer for technical reasons.

Cessation of support for Microsoft Internet Explorer for all FirstSpirit web apps is planned for FirstSpirit 2020-07. We also plan to retire the “old” ContentCreator with this release.

The point of reference is always the latest version of the **Chrome** browser available on the operating system in question. Regular tests are performed on this browser and steps are taken to eliminate errors based on error messages.

Browsers that are similar to Chrome (such as Apple Safari) are also supported and tested, but functionality may be restricted (e.g., limited SVG support).

An overview of planned browser compatibilities from FirstSpirit 2020-07:

Recommended browsers/reference:



- Google Chrome
- Microsoft Edge

Compatible browsers:

- Mozilla Firefox
- Apple Safari (subject to restrictions)

Not compatible:

- Microsoft Internet Explorer
- Opera and others

The “FirstSpirit Technical Data Sheet” has been adapted accordingly (<https://docs.e-spirit.com/odfs/edocs/admi/technical-requi/index.html>).

1.27 Clustering: Optimized behavior during restart of the FirstSpirit master server 2018-12

In cluster operations, the behavior during restart of the FirstSpirit master server has been optimized: among others, the wait time before slave servers attempt to connect to the master server after a restart was increased from 60 to 90 seconds. If this time span is insufficient for the slave server to establish a connection to the master server, another duration (in seconds) can be configured via the parameter

```
cluster.slaveRestartDelay
```

in the file `fs-server.conf`, e.g.

```
cluster.slaveRestartDelay=120
```

The default value is 90.

Please note that the recommendations pertaining to configuration of slave servers (mount points) have been changed due to the optimizations done in this context. Please check if the configuration you use still conforms to the recommendations.



For further information about clustering, see *FirstSpirit Manual for Administrators*,

- “FirstSpirit ServerManager / Server properties / Clustering”
- “Updating the FirstSpirit Server / Updating in a cluster group”

1.28 The FirstSpirit session cookie now supports the attribute SameSite

2020-05

FirstSpirit uses several standard web applications (fs5root, fs5webedit, fs5webmon, fs5preview, fs5staging) as well as possibly additional, project-local web applications (fs5webedit_PROJECTID and fs5preview_PROJECTID). For authentication of the web applications (WebAuthentication) on the FirstSpirit server, a technology is used which uses randomly generated **session cookies**. Through the use of session cookies, the user's login data only has to be transferred once from the web browser to the FirstSpirit server. After the successful login, the web browser uses exclusively the unique session cookie, which is valid for a limited period of time, and which is then sent from the web browser to the server with every further server enquiry, instead of the login data, in order to authenticate the user there.

The session cookie is an integral part of the Servlet API and is used for many other use cases besides authentication.

Many browsers (including Chrome 80) have massively restricted third-party cookies since the beginning of the year. All cookies that do not have the attribute `SameSite=None` are automatically restricted to first-level domains. **This behavior leads to problems when FirstSpirit web applications are integrated into other web applications (e.g. as IFrame).** In this case the new standard browser behavior ensures that the FirstSpirit session cookies are blocked by the browser and that the users in the embedded FirstSpirit web application can no longer be authenticated via the session cookie, for example.

For this use case with the current FirstSpirit release the session cookie can be extended by **the attribute `SameSite=None`**. `SameSite` is a standard that is intended to prevent cookies from being automatically sent by the browser with so-called cross-site requests and thus offers protection against cross-site request forgery (CSRF). In addition to this security aspect, the `SameSite` attribute allows you to define which cookies can be read in which context.



! The `SameSite` attribute requires a “Secure” flag. Cookies with `SameSite=None` without a “Secure” flag are rejected by the browser. The “Secure” flag defines that a cookie is always sent over a secure HTTPS connection.

The value for the FirstSpirit Session Cookies can be set via the configuration file `fs-server.conf`, both globally via the parameter `servletSessionCookieSameSite` and individually for specific WebApp paths, e.g. `servletSessionCookieSameSite.fs5webmon=None` for FirstSpirit ServerMonitoring. A WebApp-specific configuration overwrites the global setting `servletSessionCookieSameSite` for this WebApp path.

In the default configuration (of the `fs-server.conf` config file) no global value is set for `servletSessionCookieSameSite`.

```
# Servlet engine session cookie SameSite attribute. If left empty, the SameSite
# attribute for the session cookie is not
# set and the servlet engine defaults apply.
# Supported values: None, Strict, Lax
servletSessionCookieSameSite=
# Servlet engine session cookie SameSite attribute for a specific webapp context path.
# 'ROOT' is the reserved name for the root webapp context path.
# servletSessionCookieSameSite.ROOT=None
# servletSessionCookieSameSite.fs5webmon=None
# servletSessionCookieSameSite.webappContextPath=None
```

Possible values for the `SameSite` attribute:

- **Strict:**
 - The session cookie is only sent in the first-party context (i.e. only if the page for the cookie matches the URL in the browser) and
 - not together with cross-site requests initiated by third-party websites.
- **Lax:**
 - The session cookie is only sent in the first-party context (i.e. only if the page for the cookie matches the URL in the browser) and
 - only together with cross-site requests that are considered “safe”. This applies to secure HTTP methods (GET, HEAD, OPTIONS, and TRACE) and top-level navigation (actions



that cause the URL in the browser address bar to change, such as links). `SameSite=Lax` is the default setting in modern browsers.

- None:
 - The session cookie is sent in all contexts (i.e. also in the third-party context), i.e. sending is allowed across origins.
 - In this setting, the attribute does not provide any additional protection against CSRF. However, this setting can be useful if a FirstSpirit web application is to be integrated into another web application.
- Value not set (FirstSpirit default):
 - If the value is not set, the default settings of the Servlet Engine are used.
 - If no value is configured here for the `SameSite` attribute, the browser default setting is used. Modern browsers interpret an unset `SameSite` attribute as `SameSite=Lax`.



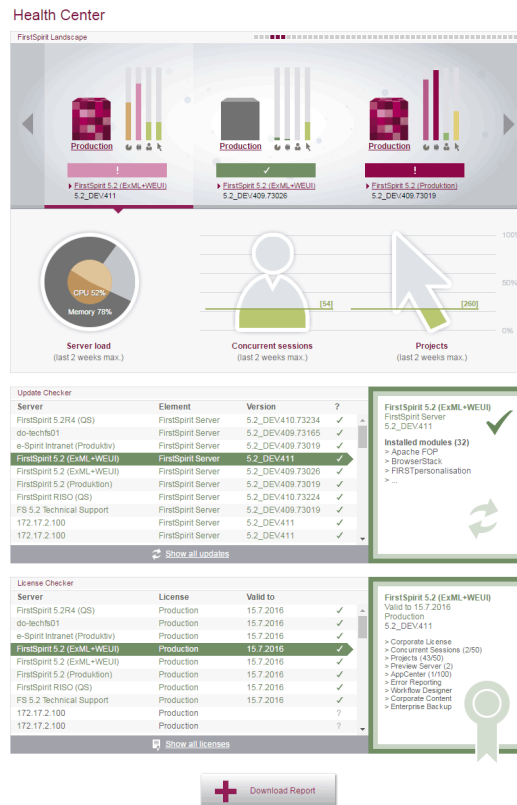
e-Spirit recommends retaining the default settings of the `fs-server.conf` configuration file. In most cases the default setting covers both security aspects (good protection against cross-site request forgery) and user concerns (good user experience). Only in exceptional cases (e.g. FirstSpirit as an embedded web app) a change is necessary.

1.29 The new FirstSpirit Health Center 5.2R4

The browser-based FirstSpirit ServerMonitoring is used to monitor the FirstSpirit Server. In addition to current operational parameters such as memory utilization, number of users, projects and sessions, it shows configuration parameters and error reports of the server. Beyond that, the server can be configured by means of the ServerMonitoring, too.

Whereas until now you could retrieve system information for the local FirstSpirit Server using the page “State” (below the menu entry “Overview”), the new FirstSpirit Health Center provides from FirstSpirit version 5.2R4 onward data relating to hardware utilization, as well as clearly displaying information on which FirstSpirit versions and licenses are being used by all FirstSpirit servers on a network. You can therefore see at a glance where optimizations can be made in terms of the hardware and software used for FirstSpirit. This Health Center is the entry point for the FirstSpirit ServerMonitoring.





FirstSpirit Health Center

Thanks to the color coding used in the top area of the page (“FirstSpirit Landscape”), any looming **hardware** bottlenecks can be identified at a glance, so targeted measures can be taken at an early stage before there are any application delays or even system failures.

You can also use the Health Center to make sure, with the help of the system, that the local FirstSpirit server and/or all FirstSpirit servers on your network always have the most up-to-date software. Only a current **FirstSpirit version** can ensure that all FirstSpirit functions will be available and that the software will run as well and reliably as possible. You can use the Health Center to update your local server as well as other FirstSpirit Servers which can be reached on the network.

Note: To check if a FirstSpirit server uses the latest software version, a license ID is sent to e-Spirit, since this is all the information that is needed to carry out a detailed and accurate check. The license ID can also be used to check whether the maintenance contract for this license is still valid and whether the customer is therefore entitled to have errors fixed, for example.

If FirstSpirit is to run smoothly, it is also very important to use a valid **license** license that is appropriate for the type of use in question. Linked to the license are, among other things, the license holder’s



maintenance permissions; this means that only if the customer has a valid license in conjunction with a valid maintenance contract will he be entitled to have reported errors fixed, for example. You can use the Health Center to update the license of your local server as well as those of other FirstSpirit Servers which can be reached on the network.

All the utilization/version and license data from this overview page can be summarized and downloaded in a file (.json format).

For more information see *FirstSpirit Manual for Administrators*,

- Chapter “FirstSpirit ServerMonitoring”
- Chapter “Licence configuration (fs-license.conf)”

and *FirstSpirit Installation Instructions*.

Modifications concerning the visualization of the used license were made within the scope of this Health Center implementation, too. The license with license type and licensee will now be displayed at the following points:

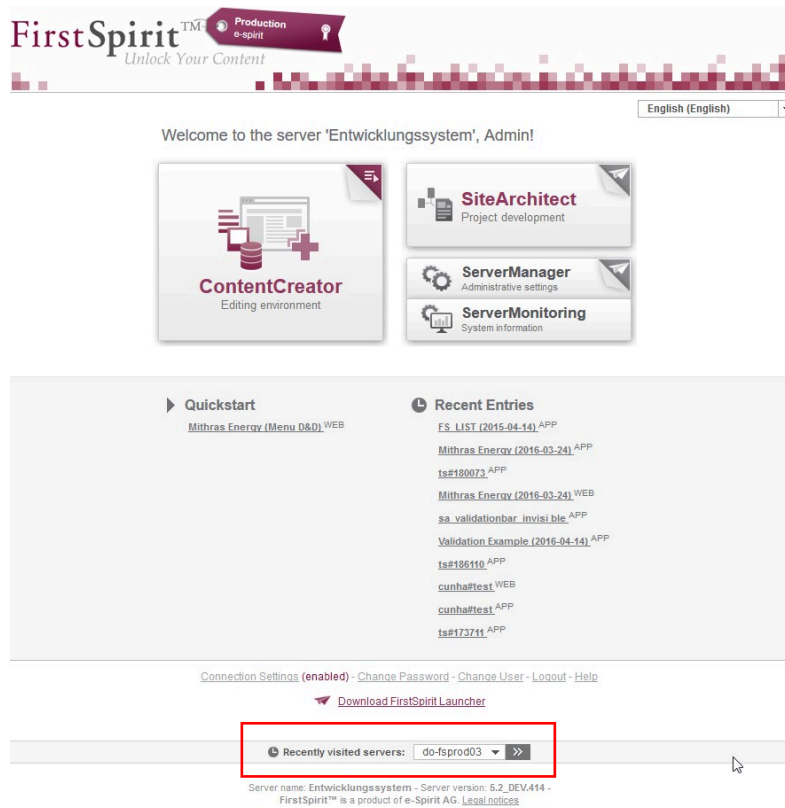
- FirstSpirit start page:



- FirstSpirit SiteArchitect:
 - start dialog (“Splash screen”)
 - horizontal tool bar
- FirstSpirit ContentCreator:
 - start dialog (“Splash screen”)
 - Page status area

Furthermore, FirstSpirit servers, on which the user was recently logged in, can be selected via the FirstSpirit start page. The start page of the selected server will open in a new browser window:



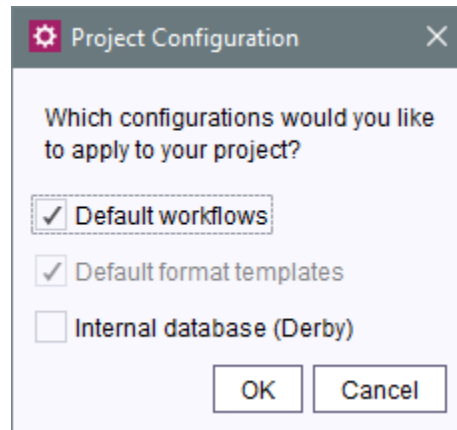


1.30 Database Handling: Internal Derby database will no longer be used by default in newly created projects 2018-06

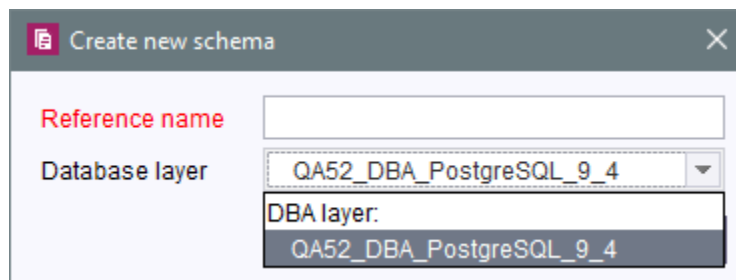
During creation of a new FirstSpirit project (FirstSpirit ServerManager / “Project / Add new”), an administrator may choose whether the internal database (Apache Derby) which is provided as part of FirstSpirit should be activated for the project and thus if write access to this database should be enabled for this project. Until now, this option in the dialog “Project Configuration” was active (“on”) by default, such that the internal Derby database could be used by default during every project creation process.

As of the current release of FirstSpirit, this option is inactive (“off”) by default:





If this option remains “off” (inactive), the project must be configured to use a different database (FirstSpirit ServerManager / “Project properties / Databases / Selected”) such that a database layer may be selected during creation of a database schema in the project (FirstSpirit SiteArchitect / “Templates / Database Schemata / New / Create new schema” or “Create schema from db”):



The option in the dialog “Project Configuration” will now always be regarded correctly.

The integrated Apache Derby database is not suitable for use in production scenarios and should only be used for testing. In order to further emphasize this distinction, the label of this option has now also been changed from “Default database” to “Internal database (Derby)”.

1.31 Extending debugging in FirstSpirit ContentCreator 2018-07

A new switch has been added to `fs-server.conf` to simplify debugging specifically on development servers in FirstSpirit ContentCreator:

```
webedit.sendScriptCauseToClient
```



If this switch is set to *true* (`webedit.sendScriptCauseToClient=true`), the exception trace for script errors is sent to the browser. The cause of the error is displayed in more detail in the error dialog and the complete trace is displayed in the browser console. The function is deactivated by default (*false*).

1.32 IBM AIX and Solaris are no longer supported 2019-10

FirstSpirit is operated successfully by customers and partners with a wide range of different third-party components (operating systems, JDKs, servlet engines, application servers, databases). The high number of supported third-party components, short release cycles, as well as the many combination and configuration possibilities of third-party components lead to a very high test complexity.

In order to maintain our high software quality standards, we have to manage complexity and therefore focus on the third-party components that are used successfully by our customers and cover the majority of the market. As a result, the operating systems

- IBM AIX
- Solaris

are **no longer supported**. (The end of support was announced with FirstSpirit 2019-06).

For a complete list of supported operating systems see [Technical requirements and recommendations \(Documentation for administrators\)](#).

1.33 Support for WebSphere Application Server will be discontinued in the future 2019-05

FirstSpirit is operated successfully by customers and partners with a wide range of different third-party components (operating systems, JDKs, servlet engines, application servers, databases). The high number of supported third-party components, short release cycles, as well as the many combination and configuration possibilities of third-party components lead to a very high test complexity.

In order to maintain our high software quality standards, we have to manage complexity and therefore focus on the third-party components that are used successfully by our customers and cover the majority of the market. Going forward, we intend to support the following application servers:

- Apache HTTP Server



- Apache Tomcat
- Microsoft Internet Information Server

The yet supported WebSphere Application Server will be discontinued in the future.

For a complete list of supported application servers see [Technical requirements and recommendations \(Documentation for administrators\)](#).

1.34 Change the order of the project languages by drag-and-drop 2020-02

All languages used in a project are listed via the project properties in the FirstSpirit Server Manager (“FirstSpirit ServerManager / Project / Properties / Languages”). The defined project languages are displayed in the defined order in SiteArchitect. In addition to using the context menu, the order of the project languages can now also be changed by using the mouse pointer (drag-and-drop).

The following applies: The master language always remains at the top of the sequence.

1.35 The support for the Windows installation program and the tar archive (Unix) is discontinued 2020-06

With the end of Java 8 support, the support for the Windows installation program (.exe) (as announced with 2018-06) and at the same time the support for the previous tar archive (.tgz) for all Unix systems will also be discontinued.

The previous installation options will be replaced by new installation options for the FirstSpirit server and update options for the FirstSpirit backend, which were released with FirstSpirit 2019-06:

- `fs-install-[version].tar.gz` to install the FirstSpirit server and
- `fs-update-[version].tar.gz` to update the FirstSpirit backend.

The new archives can be used flexibly for different requirements. They are compatible with all supported operating systems and can be used for servers in isolated and legacy mode.

Another benefit of the new installation and update options is the automatic update of the (Java) version-specific start parameters for the server start. For all new installations based on the installation archive



`fs-install-[version].tar.gz`, a configuration file `fs-wrapper-vendor.conf` is created, which contains the recommended manufacturer start options for starting the FirstSpirit server. This file is automatically updated when the FirstSpirit backend is updated via the FirstSpirit update archive `fs-update-[version].tar.gz` - so it always contains the current start options for the respective Java version.

Further documentation:

- [Installing FirstSpirit](#)
- [Updating FirstSpirit](#)
- [Java VM and Wrapper \(fs-wrapper*.conf\)](#)
- [FirstSpirit ServerMonitoring / FirstSpirit / Configuration / Startup options](#)

1.36 End of support: Java Web Start 2020-06

Up to now, the FirstSpirit desktop apps (FirstSpirit SiteArchitect and ServerManager) could be started and updated (roll-out) via Java Web Start or via the FirstSpirit Launcher.

The Java Web Start functionality is included in Oracle Java 8, but is not supported from Oracle Java 11 on. OpenJDK does not offer a comparable technology. Therefore, since FirstSpirit does no longer support Oracle Java 8, **the option of starting and rolling out the FirstSpirit desktop applications via Java Web Start will no longer be supported** (as announced with 2019-10). The FirstSpirit JNLP files, which were required for Java Web Start, will also be dropped.

In most cases it is possible to switch to the new [FirstSpirit Launcher](#) without having to modify the configuration. The FirstSpirit Launcher supports a fully automatic update (of both the Launcher itself and the JRE). When using the launcher, the launcher version available on the FirstSpirit server is determined and an update is started if the version on the server is higher. What's more, the new Launcher offers a tray application that gives the user a convenient overview of the FirstSpirit Java applications that are currently active and that have been used recently.

Further documentation:

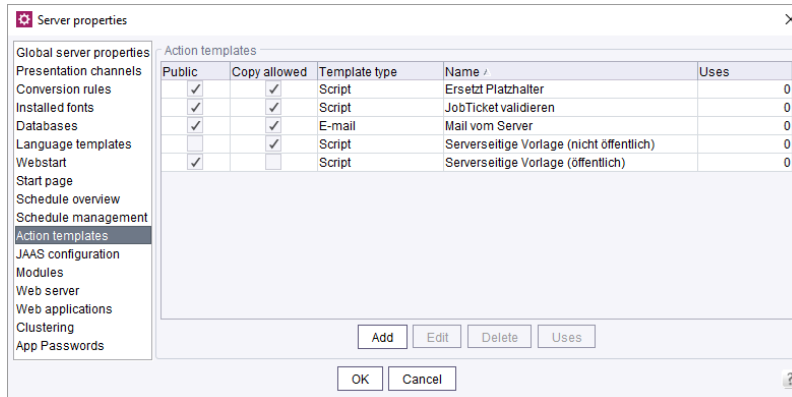
- [Installation FirstSpirit Launcher](#)



1.37 Setting restrictions on the use of action templates 2018-06

Defining action templates

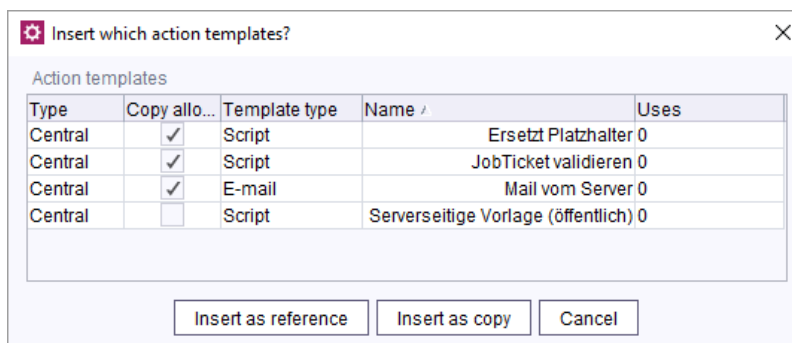
In FirstSpirit ServerManager, the table of action templates (“Server properties / Action templates”) has been augmented with a new column “Copy allowed”:



Copy allowed: If this option is active, the action template may be added to a schedule task as a copy, and this copy can subsequently be edited there. If this option is inactive, the action template can only be added to a schedule task as a reference.

Using action templates

In the server or project properties, page “Schedule management”, an action template may then be used to add a new action to a schedule task:



- Using **Insert as copy**, the action will be added to the schedule task as a copy. Copies of an action can subsequently be edited as usual.
- Using **Insert as reference**, the action will be added to the schedule task as a reference. References of an action cannot be edited within a schedule task; they will be displayed in the table with italic type.

1.38 Removal of "InternalJetty" 2019-02

As of FirstSpirit 2018-08, the functionality of the integrated Jetty server ("InternalJetty") is no longer supported.

As announced, this functionality will soon be removed entirely. All uses of "InternalJetty" should be migrated in a timely manner to alternative web server types that are recommended for use in production scenarios if this hasn't been carried out yet.

For further information, see (among others)

- FirstSpirit Community (<https://community.e-spirit.com/docs/DOC-2167>)
- "FirstSpirit Release Notes" for FirstSpirit 5.2R18
 - Chapter "Eclipse Jetty"
- "FirstSpirit Release Notes" for FirstSpirit 2018-09
 - Chapter "Migrating from the InternalJetty to a web server for productive use"
- "FirstSpirit Release Notes" for FirstSpirit 2018-10
 - Chapter "Usage of the 'InternalJetty' web server"

If you require assistance with migration, please contact e-Spirit Technical Support.

1.39 Obtaining the status of a FirstSpirit server during start-up 2018-12

During start-up of a FirstSpirit server, information about the current runlevel is now provided. These runlevels indicate if or when certain server functionality is available:

- SHUTDOWN (runlevel 0)
The server is shut down.



- **IN_PROGRESS (runlevel 20)**
The server is starting up or shutting down, no functionality is guaranteed to be available.
- **CORE_STARTED (runlevel 40)**
Basic functionality is available, the server can be reached via the SOCKET port.
- **ROOT_WEBAPP_STARTED (runlevel 60)**
The server can be reached via the HTTP port.
- **CORE_WEBAPPS_STARTED (runlevel 80)**
The global web applications are available.
- **STARTED (runlevel 100)**
All FirstSpirit functionality is available (including project-local web applications).

The runlevel is output in various places:

- according log output in the file `fs-server.log` or `fs-wrapper.log`
Example:

```
INFO <timestamp> (de.espirit.firstspirit.server.RunLevelHolder): Reached run level:  
STARTED(100)
```

- in the file `~FS/.fs.lock`
(except for runlevel 0, in which case this file does not exist)
- using the API, via the `RunLevelAgent`
(package `de.espirit.firstspirit.agency`, FirstSpirit Developer API)

API Example 1

```
import de.espirit.firstspirit.agency.RunLevelAgent;  
runLevelAgent = context.requireSpecialist(RunLevelAgent.TYPE);  
context.logInfo("current runlevel: " + runLevelAgent.getRunLevel());
```

API Example 2



```
import de.espirit.firstspirit.agency.RunLevelAgent;
import de.espirit.firstspirit.server.RunLevel;
import java.time.Duration;
runLevelAgent = context.requireSpecialist(RunLevelAgent.TYPE);
runLevelAgent.waitForRunLevel(RunLevel.STARTED, Duration.ofMinutes(60));
context.logInfo("Runlevel 100 erreicht: " + runLevelAgent.getRunLevel());
```

1.40 Expansion of the log file to include audit logging 2018-08

To ensure that FirstSpirit Servers operate securely and without any problems, audit functions have been added to the logging feature, enabling suspicious activities to be traced and assigned in order to prevent permissions being misused. Audit logging is disabled by default, but can be enabled as required with little effort.

The following activities can be tracked:

- Creating / deleting projects
- Creating / deleting users
- Creating / deleting groups
- Adding users to / removing users from a project
- Installing / refreshing / deleting modules
- Creating / refreshing / deleting schedules (globally and for a specific project)
- Creating / refreshing / deleting action templates (globally and for a specific project)
- All project amendments via the ServerManager apart from adding a font and changing the repository version

There are three log levels that can be output: INFO, DEBUG, and TRACE.

- **INFO:** General output of *who* has made *which* change *where*. The “who” is defined by the user name, the user ID, and the session context.



- **DEBUG:** This log level also provides an easy to understand, simple comparison view of the changes.
- **TRACE:** This outputs all the modified configurations in full. Changes are highlighted so they are easy to spot.

The new audit functions can be enabled in `fs-server.conf` by activating parameter **audit.logging.enabled=true**. Once enabled, audit logging is persistently stored in the `fs-server.log` file by default. Audit logging behavior can be adjusted using the Log4j configuration.

Example configuration for simple audit logging at the DEBUG level with an output in `fs-audit.log`:

```
# enable audit logging
log4j.logger.de.espirit.firstspirit.logging.audit=DEBUG, audit
# disable root logger for audit logging (fs)
log4j.additivity.de.espirit.firstspirit.logging.audit=false
log4j.appender.audit=org.apache.log4j.RollingFileAppender
log4j.appender.audit.File=/home/fstester07/firstspirit/log/fs-audit.log
log4j.appender.audit.MaxFileSize=5MB
# keep only one backup file
log4j.appender.audit.MaxBackupIndex=1
log4j.appender.audit.layout=org.apache.log4j.PatternLayout
log4j.appender.audit.layout.ConversionPattern=%p %d (%c) %m%n
```

Example audit logging with output of INFO and DEBUG messages in `fs-audit.log` and TRACE messages in `fs-traceaudit.log`:



```
# enable audit logging with two logfiles.
# The audit log for INFO and DEBUG and the traceAudit log for TRACE logging
log4j.logger.de.espirit.firstspirit.logging.audit=TRACE, audit, traceAudit
# disable root logger for audit logging (fs)
log4j.additivity.de.espirit.firstspirit.logging.audit=false
log4j.appender.audit=org.apache.log4j.RollingFileAppender
log4j.appender.audit.File=/home/fstester07/firstspirit/log/fs-audit.log
log4j.appender.audit.MaxFileSize=5MB
#don't log TRACE to the audit log
log4j.appender.audit.Threshold=DEBUG
# keep only one backup file
log4j.appender.audit.MaxBackupIndex=1
log4j.appender.audit.layout=org.apache.log4j.PatternLayout
log4j.appender.audit.layout.ConversionPattern=%p %d (%c) %m%n
log4j.appender.traceAudit=org.apache.log4j.RollingFileAppender
log4j.appender.traceAudit.File=/home/fstester07/firstspirit/log/fs-traceaudit.log
log4j.appender.traceAudit.MaxFileSize=5MB
# log TRACE only to the traceAudit log
log4j.appender.traceAudit.filter.a=org.apache.log4j.varia.LevelRangeFilter
log4j.appender.traceAudit.filter.a.LevelMin=TRACE
log4j.appender.traceAudit.filter.a.LevelMax=TRACE
# keep only one backup file
log4j.appender.traceAudit.MaxBackupIndex=1
log4j.appender.traceAudit.layout=org.apache.log4j.PatternLayout
log4j.appender.traceAudit.layout.ConversionPattern=%p %d (%c) %m%n
```

A logging entry at the INFO level when the members of a project group are changed looks like this, for example:

```
INFO 2018-07-10 08:34:50,443 (de.espirit.firstspirit.logging.audit.ProjectDTOLogger)
Benutzername ( id: 5471 ) changed project properties for
{ project : Mithras ; id : 296791 }
172.17.16.206 (fsSession=877290240094464842, fsLogin=FirstSpiritLogin,
session=SystemUser, client=Windows 10 10.0 amd64
(Java(TM) SE Runtime Environment 1.8.0_171-b11))
```

1.41 FirstSpirit is currently not compatible with Tomcat 10 2020-03

Apache Tomcat can be used as an external web server with FirstSpirit, and can be operated either on the same host as the FirstSpirit server or on its own dedicated host (standalone / remote).



FirstSpirit is currently compatible with the following Tomcat versions:

- Apache Tomcat 9.0.31 or higher
- Apache Tomcat 8.5.51 or higher

With the release of the milestone 1 version of Tomcat 10 on 20.02.2020, there was a change from Java EE to Jakarta EE (see <http://tomcat.apache.org/>).

This changed the namespace (package) for all implemented APIs from `javax.*` to `jakarta.*`. This change requires extensive adjustments to the FirstSpirit web applications (FirstSpirit Start Page, ContentCreator, etc.) to enable migration from Tomcat 9.0 and lower to Tomcat 10 and higher.

At the current time FirstSpirit is incompatible with Tomcat 10 and the use of a Tomcat version higher than 9.0 is also not recommended.

1.42 FirstSpirit ServerMonitoring: Display of user sessions 5.2R16

The display of user sessions in FirstSpirit ServerMonitoring was intermittently erroneous due to incorrectly stored graph data (“FirstSpirit / Monitoring / Sessions” and “Overview / State, panel Sessions”).

As of the current version of FirstSpirit, values will be stored correctly again, and the graph display is again correct as of this version. Graph data which were intermittently incorrectly stored will continue to be displayed incorrectly in the graphs.

1.43 FirstSpirit web server configuration (inc. Jetty) 2018-08

“Eclipse Jetty”, the open-source product integrated in FirstSpirit, is used to provide a web server with a servlet engine that runs as part of the FirstSpirit Server in the same VM. This integrated web server is only intended to be used for test purposes, so that customers can use FirstSpirit directly with web/application server functions and do not need to install and connect an external web server beforehand. In productive use, and especially in operational scenarios that require a more complex configuration, however, a dedicated web server of an Apache Tomcat type, for example, should always be used and integrated into FirstSpirit.

To become less reliant on implementation by the manufacturer, for security reasons and so that it is easier to provide support for the functions within FirstSpirit, the Jetty functionality that is already



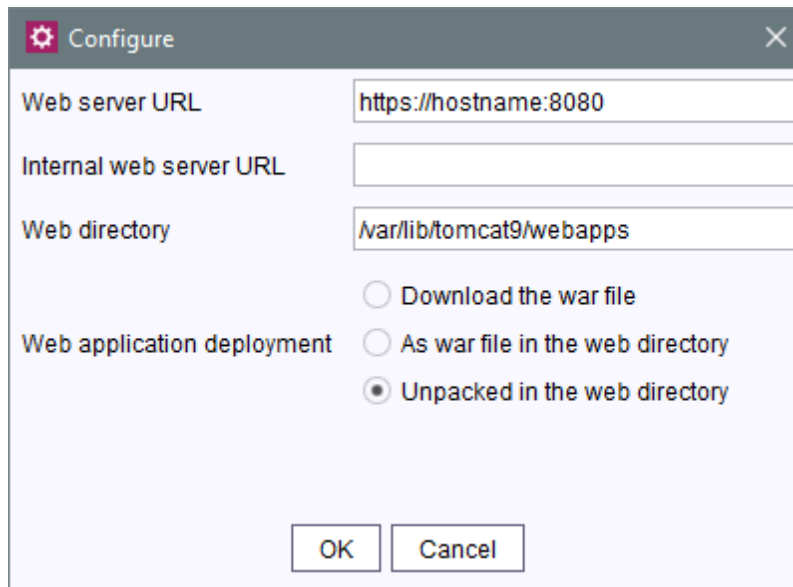
integrated (“InternalJetty”) has been transferred to a system module (“fs-jetty.fsm”). The latest release represents the official release of this module.

The functionality of the built-in Jetty “InternalJetty” has been discontinued with FirstSpirit version 5.2R18 and support for it will cease with the latest release. The Jetty module can be used as an alternative (see the *FirstSpirit Manual for Administrators*, “FirstSpirit ServerManager / Server properties / Web server” chapter). However, the module is not designed for productive use either and as such it only supports basic configuration options. For example, configuration is only possible via the graphical interface (and not via text files in the file system, “fs-webapp.xml”) and the module does not offer the configuration of the web server as a reverse proxy.

To enable customers who already have FirstSpirit installations to easily switch to more long-term solutions, the latest release provides new options for configuring web servers that can be used in production.

Expansion of the “External” web server type

The existing “External” web server type (external web servers which were not previously supported by FirstSpirit) has been expanded by adding a deployment option in the file system:



The image shows a 'Configure' dialog box with the following fields and options:

- Web server URL:
- Internal web server URL:
- Web directory:
- Web application deployment options:
 - Download the war file
 - As war file in the web directory
 - Unpacked in the web directory

At the bottom of the dialog are 'OK' and 'Cancel' buttons.

FirstSpirit does not support direct control of the referenced web server and other configuration options, which must be employed manually in the web server itself.



Web applications configured in FirstSpirit are combined in a War file for deployment. In the case of an external web server in the past, this could simply be downloaded and then had to be installed manually.

With the latest release, the War file can also

- Be saved directly to the specified web directory (**As War file in web directory** option), i.e., `web/fs5root.war` or `web/ROOT.war`
- Be unpacked in the specified web directory (**Unpacked in web directory** option), i.e., `web/fs5root/` or `web/ROOT/`

These options can be used in configuration scenarios where previously an Apache Tomcat, for example, was used in addition to the “InternalJetty” (parameter `INTERNAL_SERVLET_ENGINE=1` in file `fs-server.conf`) as an active external web server and used the same web directory as the “InternalJetty”. In a development scenario, the unpacked War file can also serve debugging purposes.

Root web applications with /context names are saved in the file system with the name “ROOT”.

The **Download War file** option allows the War file to be downloaded as before (e.g., in the “FirstSpirit ServerManager / Server properties / Web applications” area), then installed on the external web server manually.

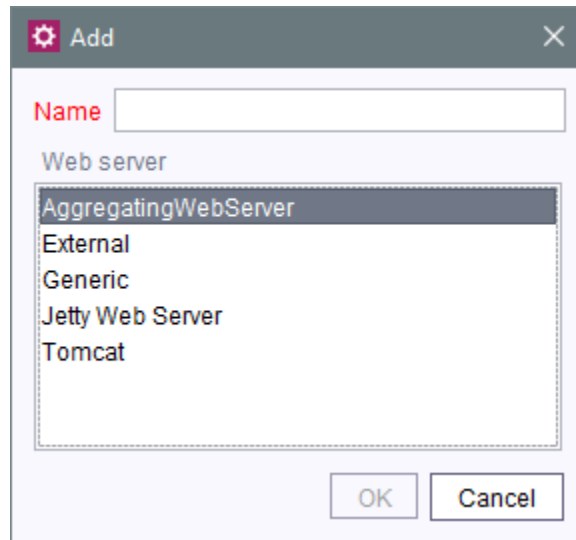
For more information on using the “External” web server type, see the *FirstSpirit Manual for Administrators*,

- “FirstSpirit ServerManager / Server properties / Web server”
- “Configuration of the FirstSpirit Server / Integration in external web servers”
- And more

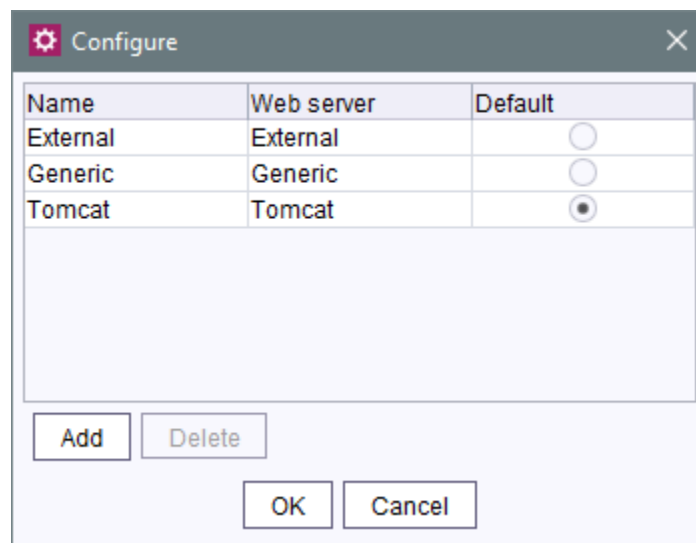
New web server type “Aggregating Web Server”

A new type of web server has been added too: the “Aggregating Web Server”:





It supports the control of several web servers simultaneously, including those of different types. Actions such as deployment are performed on all configured application servers in parallel. This enables a fallback scenario to be put in place where, for example, a web server A and a web server B with the same settings / data are operated in parallel. If one of the web servers fails, the other can be used instead with no problem whatsoever (e.g., to configure / administer FirstSpirit). This function can be used to reproduce a configuration scenario, for instance, in which the “InternalJetty” and a Tomcat were previously operated in parallel.



Add: This button can be used to add existing web servers to the Aggregating Web Server. “InternalJetty” type web servers cannot be selected (this type is no longer supported), nor can other web servers of the “Aggregating Web Server” type.

All actions taken for the Aggregating Web Server (e.g., installing and refreshing web applications) are executed for all the web servers selected here.

Default: This radio button is used to define a web server that will serve as the default web server. The URL configured for this web server is used universally to generate URLs for all web servers of the Aggregating Web Server.

1.44 Release of tar.gz archives for installing and updating the FirstSpirit Server 2019-06

With the current FirstSpirit release we also officially release the new **tar.gz archives** for **installing and updating the FirstSpirit Server**.

- `fs-install-[version].tar.gz` to install the FirstSpirit Server and
- `fs-update-[version].tar.gz` to update the FirstSpirit Server.

The new archives can be deployed flexibly in different customer-specific environments (i.e. operating systems, legacy mode, java version). They were introduced, starting their **EAP phase**, with **FirstSpirit 2018-11**, and have successfully been used since.

Requirements for operating a FirstSpirit Server are “Java” and the “Java Service Wrapper”. The “Java Service Wrapper” and related control files are provided by e-Spirit. They constitute the FirstSpirit server’s operations layer. A Java version is not provided by e-Spirit.

Installing via Tar-Gzip install archive

Installing from a tar.gz archive (`fs-install-[version].tar.gz`) consists of 5 steps:

1. Unpack the install archive. Where necessary the archive has to be decompressed first (**G(un)zip**), then extracted.



2. Copy the FirstSpirit server file `fs-isolated-server.jar` for the desired FirstSpirit version to the directory `~FS/server/lib-isolated`. (~FS = directory containing the FirstSpirit server installer files)
3. Copy the license file (`fs-license.conf`) to the directory `~FS/conf`. (the license file can be requested from your designated Account Manager or via <https://help.e-spirit.de/>.)
4. Set the environment variable `FS_JAVA_HOME` to the directory with the desired Java version (e.g. `FS_JAVA_HOME=C:\Program Files\Java\jdk-11`). (alternatively the complete Java path can also be specified in the file `fs-wrapper.isolated.conf`.)
5. Start the FirstSpirit servers for the first time:
 - under Linux with `~FS/bin/fs5 start`
 - under Windows with `~FS\bin\fs5 install` and `~FS\bin\fs5 start` (by starting the service just installed)
or (alternatively with `~FS\bin\fs5.cmd console` (without using a Windows service)



Attention! For `fs5 install` under Windows you need system administrator privileges.

The following assumptions are made in this manual:

- You are installing in Isolated mode (see).
- The HTTP port will be 8000 and the socket port 1088.

Installing the Windows service

- `~FS\bin\fs5 install`
The Windows service can be configured via the `wrapper.ntservice.*` parameters in the file `fs-wrapper.isolated.conf` (or `fs-wrapper.conf`, respectively).

Installing with a different port



- Before step 5) (Start the FirstSpirit servers) you can modify `HTTP_PORT` and/or `SOCKET_PORT` in the file `~FS/conf/fs-server.conf`.

Installing in legacy mode

- Instead of step 2) (Copy the FirstSpirit server file `fs-isolated-server.jar`) copy the file `fs-server.jar` for the desired FirstSpirit version to `~FS/server/lib`.
- Before step 5) (Start the FirstSpirit servers) delete the file `~FS/bin/fs5.mode` and rename `~FS/bin/fs5.mode.legacy` to `~FS/bin/fs5.mode`.

Hints for installing FirstSpirit under Linux:

- We strongly advise against operating FirstSpirit as the root user.
- Users and groups are not created automatically, i.e. the administrator has create and configure an account before installing FirstSpirit.
- Services also have to be managed by the administrator - with `firstspirit5/bin/fs5.init` we are providing an example for `SysV-Init`.

Demo project “Mithras Energy”

After the installation you can also download the demo project “Mithras Energy” with the respective modules and install both via the ServerManager. To be able to fully use the demo project the module Apache FOP (`fs-fop.fsm`) is required.

Updating via tar-gzip update archive

The FirstSpirit server's operation layer (**Java Service Wrapper** and configuration files) can be updated with the tar.gz archive `fs-update-[version].tar.gz`.

To update the operations layer unpack the archive in your FirstSpirit server directory.

Example call under Linux:

```
~/firstspirit5$ tar xvfz fs-update-[version].tar.gz
```



After unpacking take note of the unpacked files' user and group access right, and adjust them if necessary.

1.45 Changed standard configuration of session cookies for new installations 5.2R5

FirstSpirit uses several standard web applications (fs5root, fs5webedit, fs5webmon, fs5preview, fs5staging) as well as optional, project-local web applications (fs5webedit_PROJECTID and fs5preview_PROJECTID).

The optional parameter `servletSessionCookieName` in the file `fs-server.conf` may be used to define a FirstSpirit-specific session cookie name for all web applications (see *FirstSpirit Manual for Administrators*).

In the past, this parameter was not specified with a preset value. If no value is defined for `servletSessionCookieName`, the cookie name specified by the WebApp server will automatically be used, in most cases, JSESSIONID.

Previous standard configuration:

```
# Servlet engine session cookie name.
# If left empty the servlet engine default is used (JSESSIONID in most cases).
# servletSessionCookieName=FS${FS_MAJOR}${FS_MINOR}SESSIONID
servletSessionCookieName=
# Servlet engine session cookie name for a specific webapp context path.
# 'ROOT' is the reserved name for the root webapp context path.
# servletSessionCookieName.ROOT=FS${FS_MAJOR}${FS_MINOR}ROOTID
# servletSessionCookieName.fs5webmon=FS${FS_MAJOR}${FS_MINOR}WEBMONID
# servletSessionCookieName.webappContextPath=FS${FS_MAJOR}${FS_MINOR}WEBAPPXYID
```

As of FirstSpirit version 5.2R5, the standard configuration of the parameters `servletSessionCookieName` (cookie name for all web applications) and `servletSessionCookieName.ROOT` (cookie name for the root application) will be as follows:

```
# Servlet engine session cookie name.
servletSessionCookieName=FS${FS_MAJOR}${FS_MINOR}SESSIONID
# Servlet engine session cookie name for root webapp context path.
servletSessionCookieName.ROOT=FS${FS_MAJOR}${FS_MINOR}ROOTID
```



This changed behavior only affects new installations. For existing installations of FirstSpirit, the previous configuration will be preserved.

1.46 Changed location for the JAR cache 2018-08

The FirstSpirit server automatically creates a working directory in the file system for storing JAR files (“JAR cache”).

Previous location: The JAR files were stored in the user home directory of the FirstSpirit user (in the directory `.firstspirit`, for example `/home/[fsuser]/.firstspirit_5.2R1807/jars/`).

Current location: The JAR files are now stored on the server side in the “work” directory of the FirstSpirit server. By default, the JAR files are located below the FirstSpirit base directory in the directory `${cmsroot}/work/storage/jars`.
(`${cmsroot}` is used here as placeholder for the FirstSpirit base directory).

If the JAR files cannot be written on the server side because of missing write permissions, they are stored — as before — in the user home directory of the FirstSpirit user (e.g. in `/home/[fsuser]/.firstspirit_5.2R1807/jars/`).

1.47 Modified protocol for FirstSpirit web applications 5.2R4

Usually, FirstSpirit versions are forward and backward compatible if only the number of the minor or build version changes. In order to support the new FirstSpirit Health Center functionality, the protocol for FirstSpirit web applications was modified and is now incompatible to that of previous versions. As in any upgrade and downgrade procedure, it is necessary to ensure that the FirstSpirit web applications are compatible with the FirstSpirit server software's version.

If JAR files were manually deployed into web applications or onto web servers, the following message may be written to the log:

```
java.lang.IllegalArgumentException: Wrong protocol version (4653080000)
```

In this case, the JAR files must be updated manually.



1.48 Generation: Files without content 2019-03

Up to now, files without content could be created during generation. This behavior has been adjusted so that no files are generated in this case and the standard behavior of the delivery system can therefore be used (for example, 404 errors in Web servers

A corresponding `INFO` message is recorded in the log:

```
page produced no output, no output file has been created!
```

Note: For example, if the file contains a space, it will be created normally.

1.49 Generation directories of deleted orders are cleaned up. 2020-04

If a schedule with a generation action is deleted and there is a corresponding directory for this schedule on the application server on which the Staging Web application is running, the corresponding directory on the application server is also deleted.

1.50 Installing and updating the FirstSpirit server via tar.gz archives

2018-11

A new installation and update option for the FirstSpirit server was developed to meet the changed requirements of modern software operation.

This new development of as flexible an installation process as possible presents a challenge, since the previous Windows Installer will be obsolete when support for Oracle Java 8 for the FirstSpirit server ends (deprecated with FirstSpirit 2018-06).

The following aspects were considered during development:

- technological neutrality, i.e. as little dependency as possible on operating system dependent software
- KISS principle (Keep it simple, stupid), i.e. preferably finding a simple solution



- exactly one tool for one purpose, here:
 - for installing
 - for updating
- the same tool for all supported operating systems
- separation of the operations layer i.e. what is required for controlling the FirstSpirit server
- modular and extensible design

Operating a FirstSpirit-Servers requires “Java” and the “Java Service Wrapper”.

The “Java Service Wrapper” and related control files are provided by e-Spirit. They constitute the FirstSpirit server's operations layer. A Java version is not provided by e-Spirit.

This new development's result can be tested as part of an Early Access Programme (“EAP”) starting with FirstSpirit 2018-11. An early, constructive feedback helps us to identify problems faster and more easily, thus allowing us to add missing functionality. For feedback please consult our Technical Support (for partners) or your designated Account Manager (for customers).

Installing via Tar-Gzip install archive

We chose to use the tar-gzip format for the installation process, since it is already being used for several purposes in FirstSpirit. The tar-gzip archive for installation can be identified by its filename: it begins with the prefix `fs-install` and the file ending is `tar.gz`, e.g.

```
fs-install-5.2.181105.tar.gz
```

Installing from a tar.gz archive consists of 5 steps:

1. Unpack the install archive. Where necessary the archive has to be decompressed first (**G(un)zip**), then extracted.
2. Copy the FirstSpirit server file (`fs-isolated-server.jar`) for the desired FirstSpirit version to the directory `~FS/server/lib-isolated`. (`~FS` = directory containing the FirstSpirit server installer files)



3. Copy the license file (`fs-license.conf`) to the directory `~FS/conf`. (the license file can be requested from your designated Account Manager or via <https://help.e-spirit.de/>.)
4. Set the environment variable `FS_JAVA_HOME` to the directory with the desired Java version (e.g. `FS_JAVA_HOME=C:\Program Files\Java\jdk1.8.0_181`). (alternatively the complete Java path can also be specified in the file `fs-wrapper.isolated.conf`.)
5. Start the FirstSpirit servers for the first time:
 - under Linux with `~FS/bin/fs5 start`
 - under Windows with `~FS\bin\fs5 install` and `~FS\bin\fs5 start` (by starting the service just installed) or (alternatively with `~FS\bin\fs5.cmd console` (without using a Windows service)



Attention! For `fs5 install` under Windows you need system administrator privileges.

The following assumptions are made in this manual:

- You are installing in Isolated mode (see).
- The HTTP port will be 8000 and the socket port 1088.

Installing the Windows service

- `~FS\bin\fs5 install`
The Windows service can be configured via the `wrapper.ntservice.*` parameters in the file `fs-wrapper.isolated.conf` (or `fs-wrapper.conf`, respectively).

Installing with a different port

- Before step 5) you can modify `HTTP_PORT` and/or `SOCKET_PORT` in the file `~FS/conf/fs-server.conf`.

Installing in legacy mode



- Instead of step 2) copy the file `fs-server.jar` for the desired FirstSpirit version to `~FS/server/lib`.
- Before step 5) delete the file `~FS/bin/fs5.mode` and rename `~FS/bin/fs5.mode.legacy` to `~FS/bin/fs5.mode`.

Hints for installing FirstSpirit under Linux:

- We strongly advise against operating FirstSpirit as the root user.
- Users and groups are not created automatically, i.e. the administrator has create and configure an account before installing FirstSpirit.
- Services also have to be managed by the administrator - with `firstspirit5/bin/fs5.init` we are providing an example for SysV-Init.

Demo project “Mithras Energy”

After the installation you can also download the demo project “Mithras Energy” with the respective modules and install both via the ServerManager. To be able to fully use the demo project the module Apache FOP (`fs-fop.fsm`) is required.

Updating via tar-gzip update archive

In order to keep the operations layer of a FirstSpirit server (“Java Service Wrapper” and control files) up-to-date, we now provide a so-called "update archive". Again we chose tar-gzip as the file format. The archive's file name starts with `fs-update` and the file ending is `tar.gz`, e.g.

```
fs-update-5.2.181105.tar.gz
```

To update the operations layer unpack the archive in your FirstSpirit server directory.

Example call under Linux:

```
~/firstspirit5$ tar xvfz fs-update-5.2.181105.tar.gz
```



After unpacking take note of the unpacked files' user and group access right, and adjust them if necessary.

Since this new update process is still in the EAP phase, we do not recommend using it in production environments.

1.51 Isolated mode: Jetty web server is now also available as a module

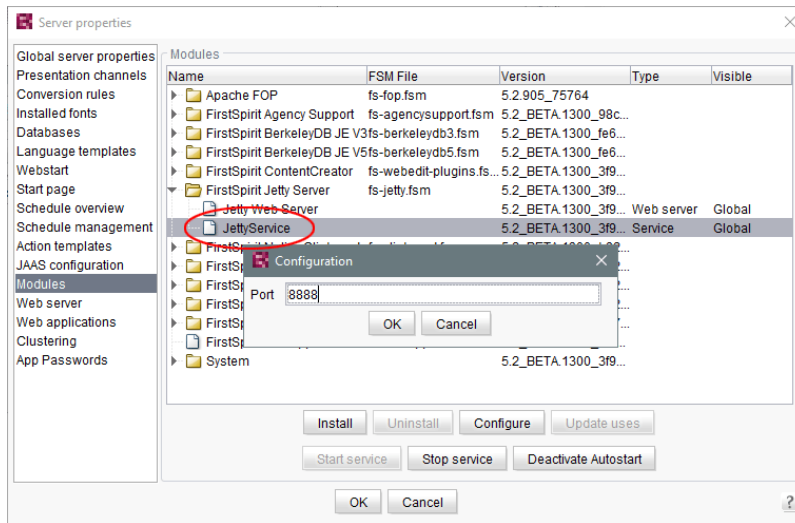
5.2R13

Using the open source product “Eclipse Jetty”, which is integrated into FirstSpirit, a web server as well as a JSP/Servlet-Engine are provided, running as part of the FirstSpirit server in the same VM.

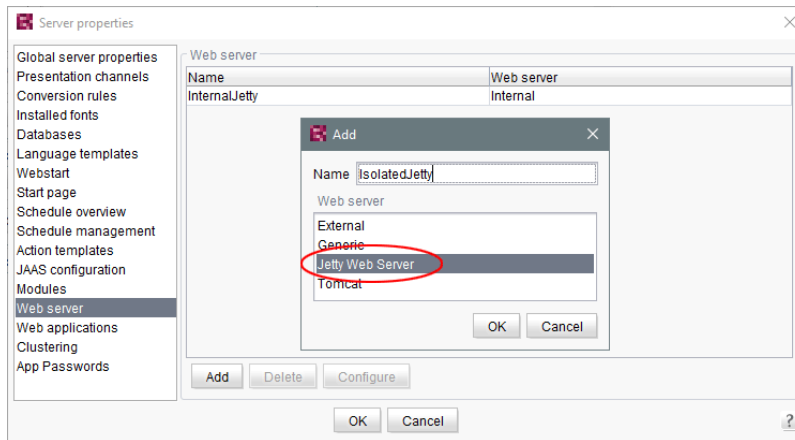
As part of the refactoring for the module development in the so-called “Isolated mode” (see *FirstSpirit Developer Manual for components (German only)*, chapter “Isolated mode”), Jetty has been implemented as a module: `fs-jetty.fsm`. Because of the isolated class loading the Jetty server behaves like an external web server and is therefore suitable for being used with a FirstSpirit server operated in “Isolated mode”. The module may be installed parallel to the previous implementation “InternalJetty” (see *FirstSpirit Manual for Administrators*, chapter “Apache HTTP Server with the Jetty servlet engine” e.g. the parameter `INTERNAL_SERVLET_ENGINE` in `fs-server.conf` is set to 1 or undefined).

In order to use Jetty as a module, the module has to be installed on the FirstSpirit server and the corresponding service “JettyService” has to be started in the server properties of the ServerManager. Here it is also possible to configure the favored port (changing the port requires a restart of the service):



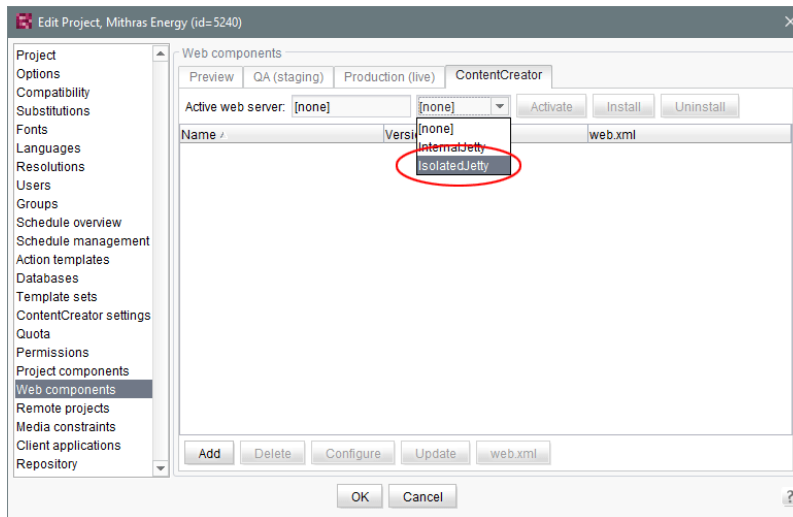


A new web server of the type “Jetty Web Server” may be added using “Webserver” in the server properties (e.g. with the name “IsolatedJetty”):



The web server may now be selected in the project properties under “Web components”:





! Both the previous implementation “InternalJetty” as well as the new module are not suitable for productive use and should only be used for testing purposes.

1.52 Java 12 2019-03

For the FirstSpirit product, e-Spirit supports the current, released Java version as well as the latest LTS variant (long-term support). This applies to both the FirstSpirit server and the FirstSpirit desktop applications.

These are for the current FirstSpirit version:

- Oracle Java 11 (in the current version)
- Oracle Java 8 (in the current version)
- OpenJDK 11 (in the current version)
- OpenJDK 8 (in the current version)

Oracle Java 12 will be released (GA) in March 2019. The test phase for the use of Java 12 with FirstSpirit is currently starting. The FirstSpirit desktop applications (SiteArchitect, ServerManager) and the FirstSpirit server will be subject to intensive internal tests. The goal is to release Java 12 for use with FirstSpirit in a future FirstSpirit release.

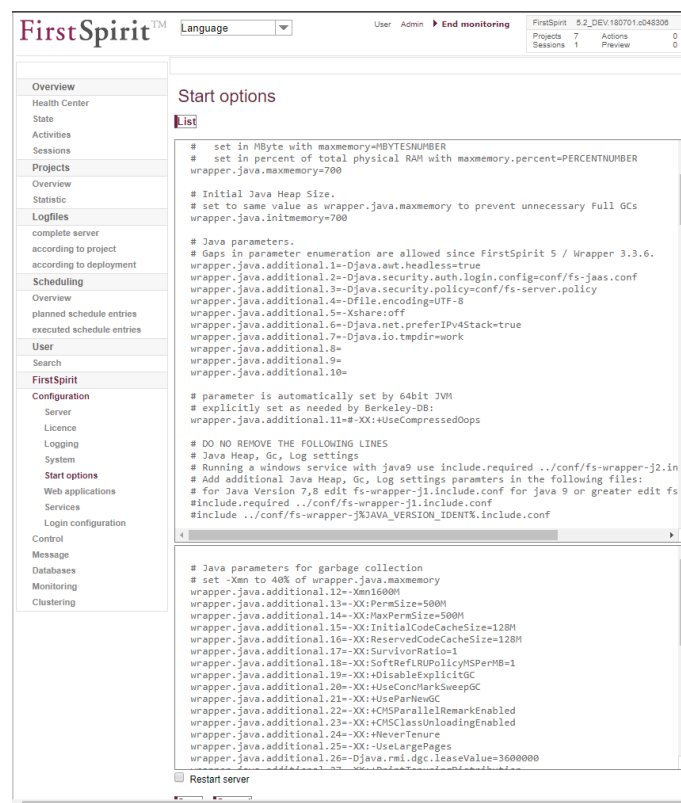


1.53 Java-version-specific wrapper files can be edited via ServerMonitoring 2018-07

The server start and the FirstSpirit Server Java system can be configured using the “wrapper” files `fs-wrapper*.conf`.

Previously, `fs-wrapper-j*.include.conf` files containing Java-version-specific parameters could only be edited in the file system.

With the latest FirstSpirit release, the parameters of the wrapper files `fs-wrapper-j#.include.conf` can – like the default wrapper file `fs-wrapper.conf` – also be edited via FirstSpirit ServerMonitoring, and specifically under “FirstSpirit / Configuration / Start options”:



The screenshot shows the FirstSpirit ServerMonitoring interface. The left sidebar contains a navigation menu with categories like Overview, Health Center, State, Activities, Sessions, Projects, Overview, Statistic, Logfiles, complete server, according to project, according to deployment, Scheduling, Overview, planned schedule entries, executed schedule entries, User, Search, FirstSpirit, Configuration, Server, Licence, Logging, System, Start options, Web applications, Services, Login configuration, Control, Message, Databases, Monitoring, and Clustering. The main content area is titled 'Start options' and contains a list of configuration parameters for the Java wrapper. The parameters are listed in a text window, with some lines highlighted in blue. The parameters include:

```
# set in MByte with maxmemory=MBYTESNUMBER
# set in percent of total physical RAM with maxmemory.percent=PERCENTNUMBER
wrapper.java.maxmemory=700
# Initial Java Heap Size.
# set to same value as wrapper.java.maxmemory to prevent unnecessary Full GCs
wrapper.java.initmemory=700
# Java parameters.
# Gaps in parameter enumeration are allowed since FirstSpirit 5 / Wrapper 3.3.6.
wrapper.java.additional.1=-Djava.awt.headless=true
wrapper.java.additional.2=-Djava.security.auth.login.config=conf/fs-jaas.conf
wrapper.java.additional.3=-Djava.security.policy=conf/fs-server.policy
wrapper.java.additional.4=-Dfile.encoding=UTF-8
wrapper.java.additional.5=-Xshareoff
wrapper.java.additional.6=-Djava.net.preferIPv4Stack=true
wrapper.java.additional.7=-Djava.io.tmpdir=work
wrapper.java.additional.8=
wrapper.java.additional.9=
wrapper.java.additional.10=
# parameter is automatically set by 64bit JVM
# explicitly set as needed by Berkeley-DB
wrapper.java.additional.11=-XX:+UseCompressedOops
# DO NOT REMOVE THE FOLLOWING LINES
# Java Heap, GC, Log settings
# Running a windows service with java9 use include.required ../conf/fs-wrapper-j2.in
# Add additional Java Heap, GC, Log settings parameters in the following files:
# for Java Version 7,8 edit fs-wrapper-j1.include.conf for java 9 or greater edit fs
#include.required ../conf/fs-wrapper-j1.include.conf
#include ../conf/fs-wrapper-j%JAVA_VERSION_IDENT%.include.conf
```

At the bottom of the text window, there is a 'Restart server' button.

The text window at the top contains the configuration of the `fs-wrapper.conf` or `fs-wrapper.isolated.conf` file, if the FirstSpirit Server is operating in “Isolated mode”.

The text window at the bottom contains the configuration of the `fs-wrapper-j1.include.conf` or `fs-wrapper-j2.include.conf` file, depending on which Java version the FirstSpirit Server is using



(`fs-wrapper-j1.include.conf` if the server is using Java 8, `fs-wrapper-j2.include.conf` if the server is using Java 10).

Click on **Edit** to edit the existing configuration.

Click on **Save** to save the changes in the corresponding configuration file(s). If invalid configuration settings are made, the error will be flagged up in ServerMonitoring when the configuration is saved and the save operation will not be completed.

1.54 Automatically update Java version-specific wrapper files 2020-04

The FirstSpirit Java VM is started and stopped via the Tanuki Java Service Wrapper.

Previous behavior:

The start parameters of the Java VM were defined with the help of a corresponding configuration file for the wrapper (`fs-wrapper[.isolated].conf`).

When changing the Java version, the start parameters were adjusted. The changed configuration was directly available for new FirstSpirit installations. For existing installations, the changed configuration of the start parameters had to be adapted manually.

New behavior:

This behavior is improved with the current FirstSpirit release. For this purpose, the startup options have been split into two separate configuration files:

- New: `fs-wrapper-vendor.conf` contains the recommended vendor startup options
- Changed: `fs-wrapper[.isolated].conf` now only contains the startup options that should be adjusted server specific

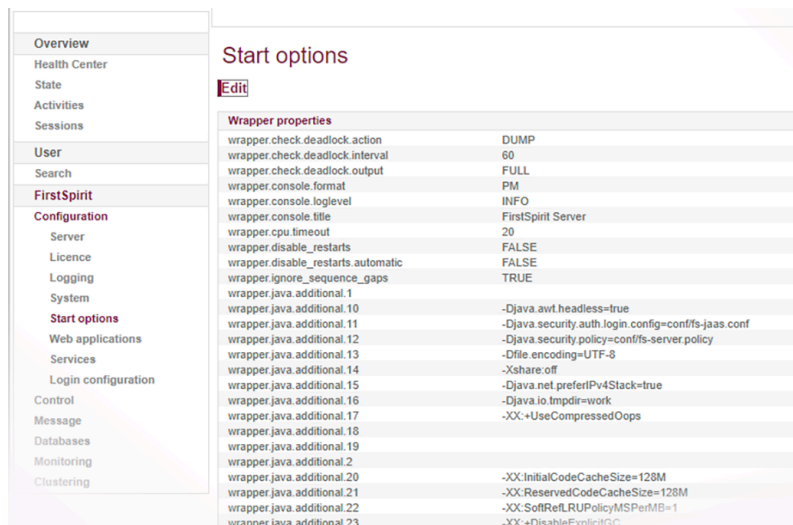
Objective: The new configuration file `fs-wrapper-vendor.conf` is part of the FirstSpirit update archive `fs-update-[version].tar.gz`. When updating the FirstSpirit server via the update archive `fs-update-[version].tar.gz` the startup options are automatically updated. Thus, the configuration adjustments are also available for existing FirstSpirit installations without any manual adjustments.



! The configuration file `fs-wrapper-vendor.conf` should not be changed. Should it be necessary in individual cases to adjust the recommended vendor startup options, the corresponding startup parameters should be redefined in the configuration file `fs-wrapper[.isolated].conf` (and not overwritten in `fs-wrapper-vendor.conf`).

Display via FirstSpirit ServerMonitoring

The start options from both configuration files are displayed via FirstSpirit ServerMonitoring (at “FirstSpirit” / “Configuration” / “Startup options”). Here the values from both files are combined in one view:



Display of the startup options (ServerMonitoring)

Editing via FirstSpirit ServerMonitoring

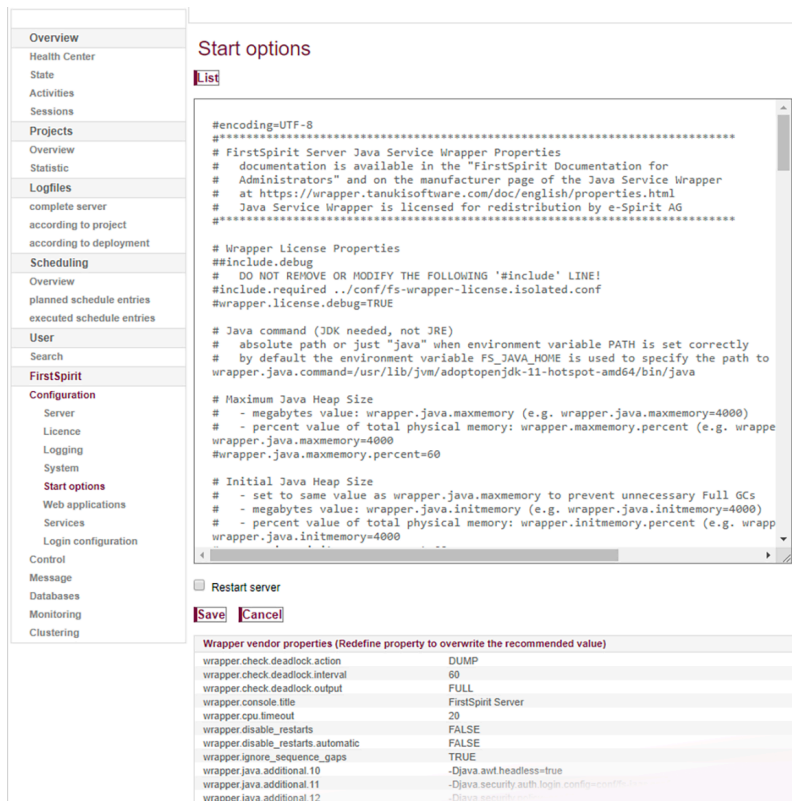
By clicking on “Edit”, the start options can be edited via the FirstSpirit ServerMonitoring (at “FirstSpirit” / “Configuration” / “Startup options”). Only the content of the configuration file `fs-wrapper[.isolated].conf` is offered for editing.

The start parameters of the configuration file `fs-wrapper-vendor.conf` are displayed read-only at the bottom, with the note that the values for overwriting should be redefined (“manufacturer properties: Redefine property to overwrite the recommended value”).



Clicking “Save” saves the changes to the configuration file. If invalid configuration settings are made, the error is indicated in the ServerMonitoring when saving the configuration and the save operation will not be completed.

By transferring and changing the values in the configuration file `fs-wrapper[.isolated].conf` all parameters of the configuration file `fs-wrapper-vendor.conf` can be overwritten (not only the general Java parameters `wrapper.java.additional.#`)



Editing of the startup options (ServerMonitoring)

Migration guide

To convert to the new behavior, the following steps should be carried out for all existing FirstSpirit installations:

1. Download the update archive `fs-update-[version].tar.gz`. The changes are available for update archives **from version 1.0.5** on. The update archive is available for download (if you need login data, please contact the **Technical Support**).



2. Stop the FirstSpirit server.
3. First, decompress the update archive `fs-update-[version].tar` (e.g., via g(un)zip) and then unpack it to the desired FirstSpirit installation directory. Example call under Linux:

```
~/firstspirit5$ tar xvfz fs-update-[version].tar.gz
```
4. Compare the configuration files
`<FirstSpiritROOT>/conf/fs-wrapper[.isolated].conf`
and
`<FirstSpiritROOT>/conf/conf-all/fs-wrapper[.isolated].conf.default.txt`
Then, adjust the parameters with different values in the following file:
`<FirstSpiritROOT>/conf/conf-all/fs-wrapper[.isolated].conf.default.txt`
Especially, the following parameters have to be taken care of:
`wrapper.java.command`
`wrapper.java.maxmemory`
`wrapper.java.initmemory` (set to the value of `wrapper.java.maxmemory`)
`wrapper.ntservice.name` (only at Windows))
`wrapper.umask`
If known, apply self-defined parameters to `<FirstSpiritROOT>/conf/conf-all/fs-wrapper[.isolated].conf.default.txt`
(ideally, no adjustments are required).
5. After the adjustment, rename the file
`<FirstSpiritROOT>/conf/fs-wrapper[.isolated].conf`
to
`<FirstSpiritROOT>/conf/fs-wrapper[.isolated].old.`
6. Then rename the file
`<FirstSpiritROOT>/conf/conf-all/fs-wrapper[.isolated].conf.default.txt`
to
`<FirstSpiritROOT>/conf/fs-wrapper[.isolated].conf`
7. Start the FirstSpirit server.



- 8. Optional: If no problems occurred after several days of operation, the file `<FirstSpiritROOT>/conf/fs-wrapper[.isolated].old` can be deleted.

Further documentation:

- Java-VM and -Wrapper (fs-wrapper*.conf)
- Java Wrapper Parameters
- FirstSpirit ServerMonitoring / FirstSpirit / Configuration / Startup Options
- Updating FirstSpirit

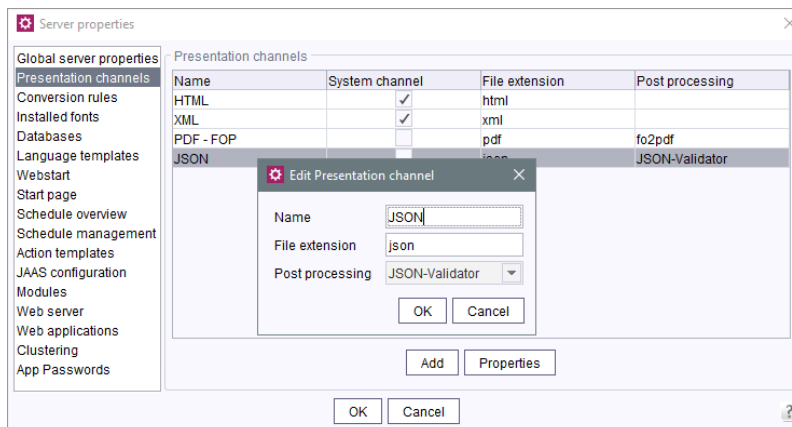
1.55 JSON validator 2019-01

JSON (*JavaScript Object Notation*, see <https://json.org/>) is the standard format for *FirstSpirit CaaS*. Example:

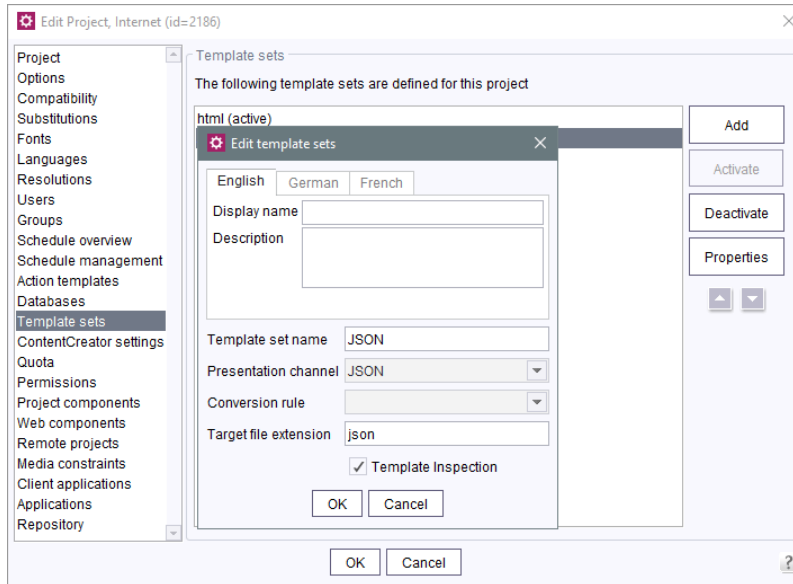
```
{ "headline": "First Page", "text": "my text" }
```

With the current release FirstSpirit now supports JSON validation to facilitate template development.

To use the validator you have to create a presentation channel, under “Presentation channels” in the ServerManager, that uses “JSON-Validator” for post processing:



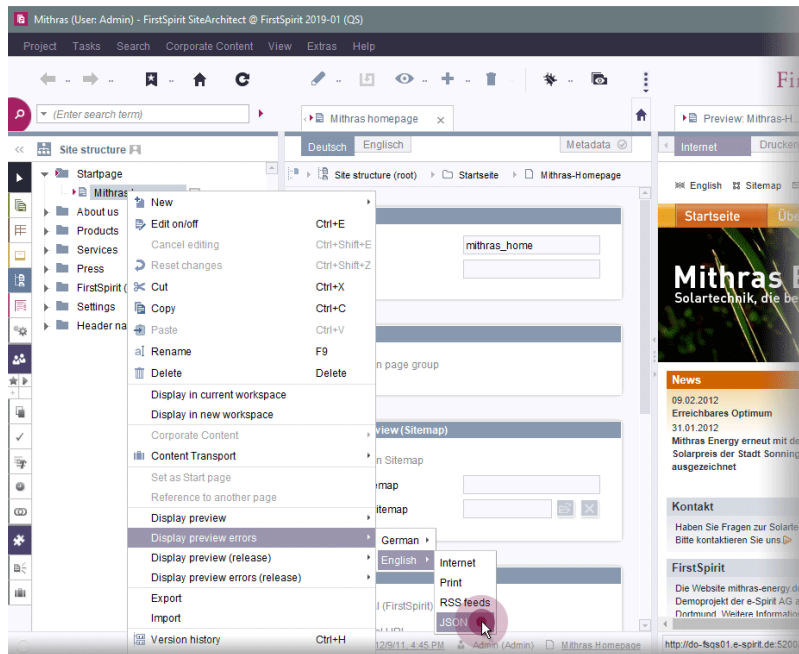
In your project's properties under “Template sets” you create a template set which is using the presentation channel created before:



Validation errors are indicated by incomplete JSON output in the preview pane, i.e. by the JSON not being shown until the last closing curly bracket.

Error details can be found under “Display preview errors” in the respective page's context menu under *Page content* or *Site structure*:





In addition, template validation has been extended to support JSON in general (when saving the template).

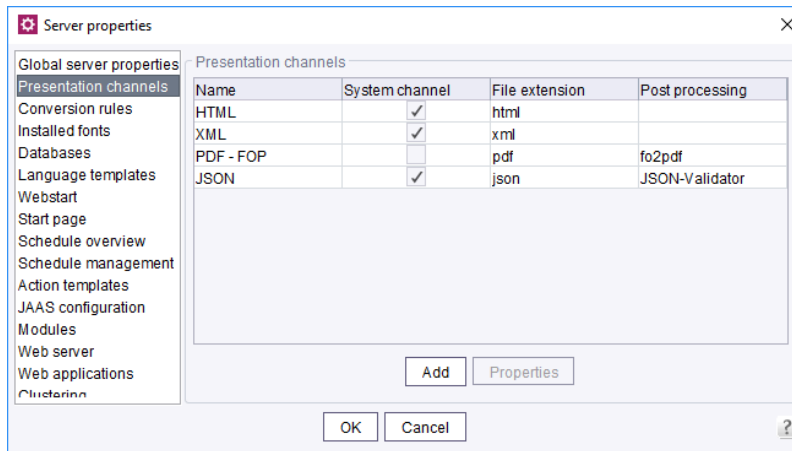
1.56 JSON: New system presentation channel 2019-08

FirstSpirit supports template development for JSON output with a JSON validator.

New functionality:

With the current FirstSpirit release we provide a system presentation channel for JSON. After updating the FirstSpirit server, the new system channel can be accessed via “Server properties” >> “Presentation channels” in your Server Manager:



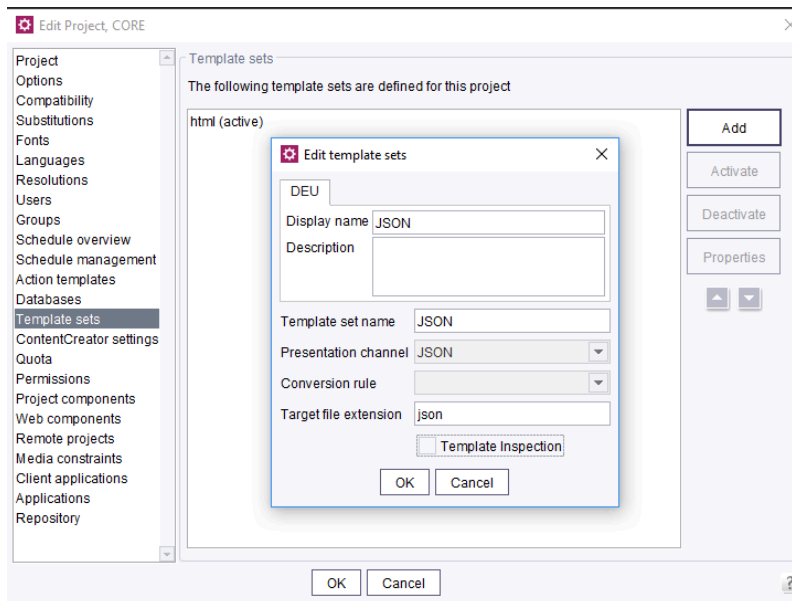


Server properties - Presentation channels - JSON

The new channel uses the “JSON-Validator” for post-processing.

Note: A system presentation channel cannot be edited or deleted.

To activate the new channel in your projects, a corresponding template set must be added in the project's properties under “Template sets”:



Project properties - Template sets - JSON

It is recommended to disable the “Template Inspection” option.



Project configuration:

In the respective template, JSON output is displayed on the JSON channel tab (if it was previously connected to a preview page from the structure, see *Templates (basics) / Composition of templates / Page templates / Properties tab* (→*FirstSpirit Online Documentation*)).

```
{ "headline": "First Page", "text": "my text" }
```

Syntax errors inside the JSON output will be flagged with a note on the corresponding position, e.g.

```
"hidden":false,"newRow":true,"text":"<h3> <----- INVALID JSON: expected ',' or '}' - got '>'
```

As with most syntax checks, an error can trigger a series of alleged subsequent errors, which will be resolved by correcting the first error. For more detailed information on the error, the context menu function “Display preview errors” can be called on the corresponding page under “Contents” or “Structure” for the JSON Channel.

How do servers behave that already use a JSON channel?

FirstSpirit supports the JSON validation to facilitate template development since FirstSpirit 2019-01. Previously, however, a corresponding presentation channel had to be created manually (no system channel). The JSON validator could be selected for post-processing in this channel's properties.

On instances that already use a channel called “JSON”, this existing channel will remain unchanged during the update process. In this case, no new system channel is created.

The documentation will be updated as soon as possible. The Information will then be accessible at: *FirstSpirit ServerManager / Support for JSON* (→*Documentation for Administrators*).

1.57 Configuration of JVM time-to-live (TTL) for DNS name look-ups

2018-11

Caching of DNS entries can now optionally be configured via the parameter `networkaddress.cache.ttl` in the file `fs-server.conf`.



```
# Permanent Caching - Java Default Setting
networkaddress.cache.ttl=-1
```

```
# Caching limited to a maximum of 60 seconds
networkaddress.cache.ttl=60
```

Background: The Java Virtual Machine (JVM) stores DNS name look-ups in the cache for a certain amount of time, known as time-to-live (TTL). A long-term TTL is problematic if the DNS name entries change, e.g. due to fail-overs (e.g. for sending e-mails) if the IP address of the SMTP server changes or due to operation in cloud mode. If the IP address of a resource is changed, a low TTL value (e.g. 60 seconds) ensures that the FirstSpirit server can obtain and use the new IP address of that resource by way of a new DNS query.

The default TTL value depends upon the JVM that is in use. The default TTL value corresponds to the value of the parameter of the same name in the `java.security` file of the JDK or `-1` if no corresponding value was set. In the latter case (value is `-1`), the DNS entries are cached until the next restart of the Java VM.

The configured value is read from the configuration file as the server starts and is adopted accordingly via `Security.setProperty`.

If the parameter is not set, the JDK's TTL value is preserved.

1.58 Configuration of session cookies (fs-server.conf) 5.2R5

Within the FirstSpirit web applications (fs5root, fs5webedit, fs5webmon, fs5preview, fs5staging), unified session cookies can be used. In conjunction with an application server or a firewall (operated on the application server), additional session cookies can be set, e.g. for authentication purposes. The names of these additional session cookies must be made known to FirstSpirit via the parameter `clientCookieNames`. During start of SiteArchitect or ServerManager, FirstSpirit passes the cookies defined in this parameter via the Java Web Start file (`FirstSpirit.jnlp`) or the FirstSpirit Launcher (`FirstSpirit.fslnch`) downloaded on the client side. The cookies will also be passed to the browser engine used in the project and thus will be available for use in the integrated preview in SiteArchitect. The same cookie will be used in three distinct session contexts (web browser: HTTP client, SiteArchitect: client/server communications, SiteArchitect: integrated browser engine).



As of the current FirstSpirit version, the configuration file “fs-server.conf” now allows optional configuration of specific values for these non-FirstSpirit session cookies. The new attributes can define values for domain, path, and the secure flag of the session cookie. This is necessary when the corresponding values cannot be read directly from these non-FirstSpirit session cookies.

`clientCookie.{cookieName}.domain`: Specifies the domain used for the session cookie. If no value is given, the cookie will carry the URL from which the client was started (including the host name).

`clientCookie.{cookieName}.path`: Specifies the path of the session cookie. Default value: /

`clientCookie.{cookieName}.secure`: The secure flag limits the transmission of the session cookie. If the value is `true`, the cookie will only be sent to the server if communication takes place via HTTPS (if the URL meets the domain and path requirements). If the value is `false`, the cookie will be sent in both HTTP and HTTPS communications.

Example (`fs-server.conf`):

```
clientCookieNames=cookieName1
clientCookie.cookieName1.domain=* .domain.com
clientCookie.cookieName1.path=/
clientCookie.cookieName1.secure=true
```

1.59 Configuration settings for the server start depending on the Java version (`fs-wrapper.conf`) 2018-11

The `conf` directory of the FirstSpirit server contains files that hold important configuration settings for the server start and the Java system of the FirstSpirit server. The following files may be present:

- the file `conf/fs-wrapper.conf` (general configuration of the Java VM for non-isolated installations)
- the file `conf/fs-wrapper.isolated.conf` (general configuration of the Java VM for isolated installations)
- the file `conf/fs-wrapper.slave.conf` (general configuration of the Java VM for cluster nodes)



- the file `conf/fs-wrapper-j1.include.conf` (configuration of special start parameters for Oracle Java 8)
- the file `conf/fs-wrapper-j2.include.conf` (configuration of special start parameters for Oracle Java versions ≥ 9)

New behavior: The configuration of the wrapper has been adapted so that the Java-specific parameters can be passed in a single configuration file. Additional syntax is used to configure for which Java version the parameters are evaluated (see below). The additional include files `fs-wrapper.isolated-j#.include.conf` are no longer needed with the new configuration and can be deleted after the configuration has been adapted.

The Java-specific parameters are configured via `wrapper.java.additional.<n>.java_version.min` or `wrapper.java.additional.<n>.java_version.max` in the appropriate file.

Syntax:

FirstSpirit may only be started with Java versions ≥ 8 :

```
wrapper.java.version.min=8
```

This parameter is only used for Java version 8. As of Java version 9, this parameter is ignored:

```
wrapper.java.additional.40=-XX:+UseConcMarkSweepGC
wrapper.java.additional.40.java_version.max=8
```

This parameter is only used for Java versions ≥ 9 . For Java version 8 this parameter is ignored:

```
wrapper.java.additional.60=--add-exports=java.base/sun.security.util=ALL-UNNAMED
wrapper.java.additional.60.java_version.min=9
```

This parameter is only used for Java version 10. It is ignored for all other Java versions:

```
wrapper.java.additional.65=--add-modules=java.activation
wrapper.java.additional.65.java_version.min=10
wrapper.java.additional.65.java_version.max=10
```



A complete description of the parameters and further information can be found here:

<https://wrapper.tanukisoftware.com/doc/english/prop-java-additional-n.html>

Prerequisite for using the new configuration:

An update of the Tanuki Java Service Wrapper to version 3.5.36 is necessary.

The update can be performed:

- via the file `fs-update-<version>.tar.gz`. (when using the new Tar-Gzip update archive, see “Installing and updating the FirstSpirit server via tar.gz archives”) or
- as described in the FirstSpirit installation guide using the appropriate installer (currently still recommended for productive environments, since updating via the file `fs-update-<version>.tar.gz` is still in the EAP phase).

! Java EA versions are not supported, i.e. it is not possible to start the FirstSpirit server with a corresponding version, e.g. OpenJDK Runtime Environment 18.9 (build 11-ea+25).

When is the change to the new configuration necessary?

It is necessary to adapt the existing configuration to the new parameters:

- after an update of the Java Service Wrapper (see above) *and*
- when using a Java version ≥ 9

In this case, the FirstSpirit server will no longer start without the configuration adjustment.

For all other cases (Java version < 9 , older version of the Java Service Wrapper) the configuration changes are not mandatory.

For installations in Isolated mode and when using Java versions ≥ 9 the environment variable `JAVA_VERSION_IDENT` must be set.

Background: When updating via `fs-update-<version>.tar.gz`, the files `bin/fs5` (under Linux) and `bin/fs5.cmd` (under Windows) are also updated. Since the new versions of the file `conf/fs-wrapper.isolated.conf` no longer use “includes”, the updated versions of the files `bin/fs5` (under Linux) and `bin/fs5.cmd` (under Windows) no longer contain a corresponding check. In order to be



able to use the previous file `conf/fs-wrapper.isolated.conf` unchanged, it makes sense to set the result of the corresponding check via the environment variable `JAVA_VERSION_IDENT`:

- Value 1 when using Java 8
- Value 2 when using newer Java versions (≥ 9)

How to change an existing configuration?

The file `conf/conf-all/fs-wrapper.conf.default.txt` contains a default configuration provided by e-Spirit using the new syntax. This default configuration can be used as foundation for the new configuration.

! The provided standard configuration of the Java Service Wrapper may differ from the configuration in concrete customer installations. The concrete parameters and values of the files `fs-wrapper.conf` respectively `fs-wrapper.isolated.conf` and the include files `fs-wrapper-j#.include.conf` must be incorporated in the new configuration and adapted to the new syntax (if they differ from the standard configuration).

1.60 Conversion of the Oracle Berkeley DB (EAP) 5.2R19

The latest version of FirstSpirit provides a conversion tool (currently still the Early Access Program (“EAP”)) that can be used for the simple conversion of all data stored in Berkeley DBs on existing FirstSpirit servers to Berkeley DB 7 format by entering just a few commands in the command line (“project repositories” and “internal repositories”). The exact procedure is described in the section “Recommended procedure for a conversion to Berkeley DB ”7. As server-level data also has to be converted, a conversion of this nature can only be performed when the FirstSpirit Server is offline in order to prevent any loss of data. A conversion will generally be completed in a short time. Only in exceptional cases may it take up to several hours; for example, in the event of very large and/or numerous projects. To make it easier for customers to calculate appropriate maintenance windows, plans are underway to publish comparison values relating to project size and conversion duration in future release notes. These values will have been established from conversions that have already been performed in production conditions.

Berkeley 7 is not compatible with Java 7. The FirstSpirit Server therefore requires at least Java 8 in order to use Berkeley 7.

Compatibility of FirstSpirit versions



An official release of Berkeley version 7 is intended for FirstSpirit version 5.2R20 or R21 (April/May 2018). Following a transitional period, during which Berkeley versions 3, 5, and 7 will be able to be used in parallel on FirstSpirit servers, it is planned – for reasons relating to maintainability – to only offer version 7 and to withdraw support for versions 3 and 5 from around the end of 2018. After this point in time, FirstSpirit servers which are still running version 3 and/or 5 will then no longer start. Consequently, a server-wide switch to version 7 must be completed by this date. Switching from version 3 or 5 to 7 at the earliest possible opportunity is therefore recommended.

Following a conversion to Berkeley version 7, a FirstSpirit downgrade to versions earlier than version 5.2R18 will no longer be possible. A downgrade to FirstSpirit version 5.2R18 is possible, however. After a downgrade, the file `fs-berkeleydb7.fsm` should be manually deleted from the `../data/modules` sub-directory.

Using the conversion tool

The “BerkeleyUtil” conversion tool is a command line tool that can be used to convert all data from the project repositories and internal repositories of a FirstSpirit server to Berkeley DB 7 format. The tool is contained in the `fs-server.jar` file and is rolled out to the “bin” directory when the server is started.

Prerequisites:

- Oracle Java: min. version 8
- The tool is only permitted to be used once the corresponding FirstSpirit server has been powered down.
- Sufficient memory space: Three times the memory space of the biggest database that is being converted will potentially be required temporarily.

Call and options:

```
java -jar BerkeleyUtil.jar COMMAND [OPTION]... PATH
```

First `-jar` must be used to specify the path under which the `BerkeleyUtil.jar` file is located on the FirstSpirit server, by default in the “bin” directory, e.g.

```
java -jar firstspirit/bin/BerkeleyUtil.jar
```



The following commands can be used for the `COMMAND` placeholder:

- `-c, --convert`: converts all uses below the specified directory (see `PATH` below) to Berkeley DB version 7 (complete FirstSpirit server)
 - `--convert-acl`: converts all ACL databases to Berkeley DB 7
 - `--convert-project`: converts all project repositories to Berkeley DB 7
 - `--convert-server`: converts all internal repositories to Berkeley DB 7
- `-d, --dump`: repairs the desired repository as a copy (standard mode I)
- `-h, --help`: display of the help
- `-l, --list`: lists the names, version, and path of all repositories on the server
- `-r, --recover`: attempts to restore the desired repository (standard mode II)
- `-R, --RECOVER`: attempts to restore the desired repository (with advanced error corrections)
- `-t, --verify`: checks the desired repository

The commands cannot be combined, i.e. each command requires a separate call.

Important: The commands `-d`, `-r` or `-R` should only be used following a prior analysis. Please contact Technical Support for support issues.

The following `OPTION` can be used:

`--dump-dir <directory>`: For the conversion or recovery of a repository, a copy is first created that is then imported. This call can be used to specify a directory in which the temporary copy is to be created.

`PATH` must be used to specify the path to the directory to be taken into account by the tool, e.g.

- to the root directory of the FirstSpirit server: `/firstspirit`
- to a directory of a Berkeley DB on the FirstSpirit server, e.g. `/firstspirit/data/projects/project_123/repository` (repository of a project), `/firstspirit/data/projects/project_123/registry` (registry of a project)



Example call:

```
java -jar firstspirit/bin/BerkeleyUtil.jar -l firstspirit
```

This call lists all Berkeley databases of the FirstSpirit server installed in the “firstspirit” directory and displays its versions.

Recommended procedure for a conversion to Berkeley DB 7

1) It is recommended to test the conversion to version 7 for one (small test) project first which uses the Berkeley DB in version 5, via switching the version in FirstSpirit ServerManager in the project settings, “Repository” section, “Backend” dropdown list. When the conversion was successful (= the project can be opened and edited in FirstSpirit SiteArchitect), you can proceed with step 2).

2) The FirstSpirit server must be powered down for a conversion via the conversion tool. For this reason, a conversion should be carried out during a maintenance interval.

3) Migrate the entire FirstSpirit server to version 7.

To do this, run the following example call (modified to the path of the root directory of the FirstSpirit server):

```
java -jar -Xmx#m firstspirit/bin/BerkeleyUtil.jar -c /firstspirit
```

The conversion process should be started with sufficient memory. As a rule of thumb, `-Xmx#m` should be used with the same value as defined for the `wrapper.java.maxmemory` for the FirstSpirit server (see *FirstSpirit Manual for Administrators*).

Important: The conversion process can take some time depending on the size and number of the repositories present on the FirstSpirit server (a maximum of a few hours). The conversion should not be canceled during this time as this could cause data loss and inconsistencies! In the event of canceling the process there is no rollback, and manual intervention will be required. Please contact Technical Support.

4) If the conversion was completed successfully, a corresponding message is output in the log, e.g.

```
<timestamp> [INFO Bdb7Convert] BerkeleyDB version 7 conversion successful,  
marker file written: firstspirit/data/server/berkeleydb.7
```



5) The following parameter must be entered in the `fs-wrapper.conf` file:

```
-DBerkeleyDB7=1
```

6) The FirstSpirit server can then be started and used as normal.

Troubleshooting

If a conversion is not completed successfully, a corresponding message is output in the log, e.g.,

```
<timestamp> [WARN Bdb7Convert] BerkeleyDB version 7 marker file not written,  
1 errors during the conversion process.
```

In this case, running the conversion again can resolve the issue.

If this is not successful, please contact Technical Support. The same applies if a conversion process had to be canceled. Message in the log on server start:

```
FATAL <timestamp> (de.espirit.firstspirit.server.ServerManagerImpl):  
Incomplete BerkeleyDB version 7 conversion detected
```

For assistance from Technical Support, please have the log file from the last execution of the conversion tool to hand.

1.61 Conversion of the Oracle Berkeley DB (EAP) 5.2R20

Various improvements have been made to the conversion tool `BerkeleyUtil.jar` provided with FirstSpirit version 5.2R19. This tool can be used for the simple conversion of all data stored in Berkeley DBs on existing FirstSpirit servers to Berkeley DB 7 format by entering just a few commands in the command line, and it is still in “EAP” state (early access program).

New parameters and modifications:

- The command `-l` (`--list`) now defines the size, in addition to the name, path, and version of all repositories on the server.
- The option `-v` (`--verbose`) can now be used to output additional logs, such as the stacktrace for error messages.



- The `-f` (`--fast`) option allows faster in-place conversion of project repositories. However, this should only be done if there is an up-to-date backup, since in rare cases existing problems in a repository can lead to it being irreparably damaged during a conversion.

By default, a copy of the repository to be converted is created first, but when the option `-f` is used this copy is not created. Although it is more secure, the process of copying requires a little more time and temporary memory space. It also optimizes the repository to be converted so that it no longer contains unnecessary data.

Furthermore, write access from `BerkeleyUtil.jar` is now for security reasons only possible if the corresponding database is not opened for writing by another process.

Note: Conversion via `BerkeleyUtil.jar` should be performed on Unix systems by that user for which the FirstSpirit-Server was installed.

1.62 Conversion tool "BerkeleyUtil": Exclusion of directories 2018-11

The conversion tool "BerkeleyUtil" may be used to convert all data stored in the Berkeley DBs on existing FirstSpirit servers to the Berkeley DB 7 format, comfortably with few commands and via the command prompt.

The tool now provides the option to exclude individual directories from consideration and conversion. By default, all directories whose names begin with `.` will be excluded. If other directories should be excluded, these must be provided via the parameter `--exclude` in the form of a suitable RegEx.

For further information, see *FirstSpirit Manual for Administrators*, chapter "FirstSpirit ServerManager / Project properties / Repository".

1.63 "BerkeleyUtil" conversion tool: Function of the "--convert-server" option has been corrected 2018-07

Oracle Berkeley DB is used in FirstSpirit as a repository for saving content data. Until now, versions 3 and 5 have been in use and running reliably and stably for many years. However, in order to benefit from performance advantages, to remain at the forefront of technical development, and last but not least, for security reasons, plans are in place to update the internal Berkeley DB to version 7 in the near future. The "BerkeleyUtil" tool can be used for the simple conversion of all data stored in Berkeley DBs on existing FirstSpirit servers to Berkeley DB 7 format by entering just a few commands in the command line.



In the latest FirstSpirit release, an error affecting the conversion of Berkeley DBs with the “BerkeleyUtil” conversion tool when using the `--convert-server` option has been resolved. The error could result in incorrect project states being generated.

Incorrect project states can now be corrected by converting the server again (option `-c`).

For more information about the “BerkeleyUtil” conversion tool, see *FirstSpirit Manual for Administrators*, “FirstSpirit ServerManager / Project properties / Repository”.

1.64 Conversion tool "BerkeleyUtil": In the event of an error, the original data is saved in a backup folder. 2018-07

The conversion tool “BerkeleyUtil” can be used to convert data from existing FirstSpirit servers saved in Berkeley databases into the Berkeley DB 7 format. This can be done conveniently with only a few commands within the command prompt.

In case of problems occurring while converting, the original data from the database is saved inside a backup folder on the FirstSpirit server. This is done even if said problems are solved during the conversion. The data can be looked at and possibly analysed at a later time. The backup folder is created next to the original database folder. The name of the folder consists of the name of the original folder, suffixed by *backup* and the time stamp of the conversion. The creation of the backup folder is persisted by a warning in the log file, e.g.

```
[WARN BdbRecover] Keeping backup directory due to errors or warnings during recovery:
./data/schedule/624060/acl_backup_20180711_110345
```

In case of listing or checking databases (`-l / --list` or `-t / --verify`) all existing backup folder are logged as warnings.

```
[WARN BdbScanner] Incomplete conversion/restore detected:
./data/schedule/624060/acl_backup_20180711_110345
```

1.65 Logging in "fs-server.log" (NoRouteToHostException) 5.2R7

Due to a change regarding the communication between multiple FirstSpirit servers in a network, an increased logging in the log file `fs-server.log` like



```
INFO 15.03.2016 10:46:23.550 (org.apache.http.impl.execchain.RetryExec): I/O
exception (java.net.NoRouteToHostException) caught when processing request to
{}->http://testserver:8000: No route to host
```

may happen, e.g. when a FirstSpirit server is not reachable (“http://testserver:8000” in the example above).

These entries can be suppressed with the newly implemented parameter `log4j.logger.org.apache.http.impl.execchain.RetryExec` in the file `fs-logging.conf`. The parameter has to be set to `WARN` in order to increase the log level:

```
log4j.logger.org.apache.http.impl.execchain.RetryExec=WARN
```

With FirstSpirit servers running the current FirstSpirit version the parameter will be set by default. For existing FirstSpirit servers upgraded to the current FirstSpirit version, the parameter has to be added manually to the file `fs-logging.conf` (in the subdirectory `conf` of the FirstSpirit server).

For more information regarding the file `fs-logging.conf` please see *FirstSpirit Manual for Administrators*, Chapter “Logging configuration (fs-logging.conf)”.

1.66 MBeans for visualization and control of database connections ("ConnectionPool") 5.2R5

Java Management Extensions (JMX) provide a standardized interface for the management of Java applications. Using the JMX console, it is possible to monitor and manage a FirstSpirit server. While FirstSpirit ServerMonitoring is primarily used for manual monitoring of a FirstSpirit server, the JMX interface is used for automatic monitoring and can integrate into existing, enterprise-wide monitoring infrastructures. All values and operations are provided by Managed Beans (“MBeans”).

The current FirstSpirit version provides MBeans in the JMX console entry “ConnectionPool” which allow visualization and control of database connections.

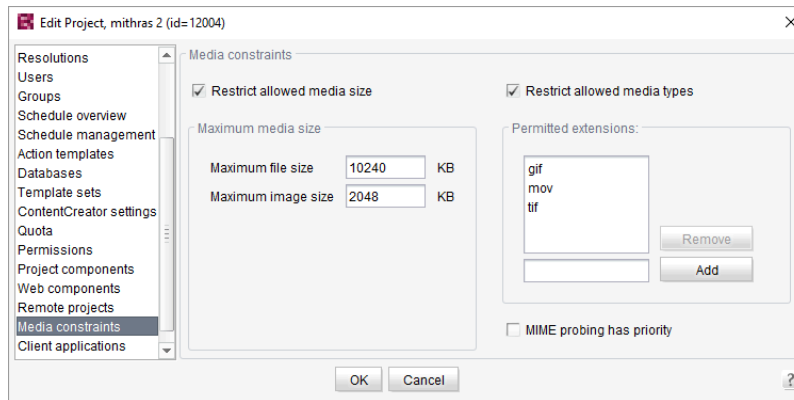
For further information, see *FirstSpirit Manual for Administrators*, chapter “ConnectionPool”.



1.67 Media Constraints: MIME Type Detection 5.2R17

Previous behavior: Media constraints for non-image files are generally based upon file name extensions, not MIME types.

New behavior: In project settings for media constraints, the new option “MIME probing has priority” is available as a checkbox.



- If the option is *active* (checkbox marked), media constraints prioritize MIME type detection over the file name extensions set in “Permitted extensions”. If the detected type does not correlate to the permitted file name extensions, a file upload will be denied.
- If the option is *inactive* (checkbox not marked), media constraints for non-image files consider only file name extensions, not MIME types.

1.68 Media: Assigning File Extensions to MIME Types 5.2R10

The FirstSpirit Media Store is designed to manage files of different formats within a project. They can be uploaded to FirstSpirit via SiteArchitect and ContentCreator.

Most file formats are already known by FirstSpirit and they are filed in the Media Store with the appropriate MIME type when uploaded. It is possible to search for MIME types in SiteArchitect, for example, and access them in templates and via API. For special file types which are not known in FirstSpirit, mapping can now be carried out on the desired MIME types, namely via a new parameter in the `fs-server.conf` configuration file:



```
mime.types.additional
```

Using this parameter, the desired MIME type and the file extension can be specified, separated with a colon. Several mappings can be specified, separated with semicolons.

Example:

```
mime.types.additional=application/zip:fsr;text/plain:conf
```

If this parameter is edited via ServerMonitoring, changes are factored in immediately; the server does not need to be restarted.

In this context, the detection of file extensions when uploading files to FirstSpirit has also been improved.

1.69 Metaspace: Note on the configuration of the Java VM 2020-02

The metaspace (another native memory area next to the heap) is automatically managed by the Java VM. A different configuration of this memory area, for example using the parameters `MetaspaceSize` or `MaxMetaspaceSize`, is **no longer recommended**.

These parameters can be configured in the configuration file `fs-wrapper*.conf` and were previously set automatically, provided that the installation or update of the FirstSpirit server was carried out via an old installation path, e.g. the Windows installation file (.exe): for Microsoft Windows Server (discontinued with 2018-06).

Please check if your configuration conforms to this recommendation. If necessary, you can manually remove the `MetaspaceSize` or `MaxMetaspaceSize` parameters from the `fs-wrapper*.conf`.

If you install or upgrade using the new Tar Gzip archives (released with 2019-06), no adjustment is required:

- `fs-install-[version].tar.gz` for installing the FirstSpirit server and
- `fs-update-[version].tar.gz` for updating the FirstSpirit server

Further documentation:



- for the configuration of the Java VM and Wrapper (fs-wrapper*.conf)
- to common Java parameters for the Java VM
- to external application server requirements

1.70 Possible problems when updating FirstSpirit with external application servers 2018-06

When using an external application server (Apache Tomcat, Jetty-Modul, ...), where FirstSpirit web applications are automatically installed as WAR files, updating FirstSpirit (e.g. to version 2018-06) can cause problems. As a result the application server will start up much slower than usually, rendering the FirstSpirit start page inaccessible. You can avoid these problems by:

- making sure that the application server is active during the update, i.e. neither shut down before nor during the update, until all FirstSpirit web applications are updated.
- deleting the application engine's webapps directory (e.g. `~Tomcat/webapps` or `~firstspirit/data/modules/FirstSpirit Jetty Server.JettyService/webapps`).

Application servers, where the update is not automated with WAR files, are not affected; an update should not cause problems.

Note: the root of the problems has been eliminated with version 2018-06. But since older webapps are not fixed yet, the problems described here can still occur during the update process.

1.71 New Configuration Opportunity for Timeouts in LDAP Sections and for Login to the Root Web Application (fs-server.conf) 5.2R20

The FirstSpirit server allows creation of several LDAP configurations (so-called “sections”, see *FirstSpirit Server configuration / Configuration files (FirstSpirit Server) / FirstSpirit Server (fs-server.conf) / LDAP (→Documentation for Administrators)*). Each section contains at least one entry for an LDAP server which provisions LDAP data.

If a server fails or takes too long to answer (>30 seconds), timeouts may arise:



- timeout during login to the root web application
- timeout of the LDAP connection

The time span after which a timeout occurs may now be increased via the parameters `web.login.timeout` and `LDAP.TIMEOUT` (default value: 30).

Configuration of timeout for login to the root web application:

```
# login timeout in seconds for web authentication
web.login.timeout=30
```

Configuration of LDAP timeout:

```
// connect and read timeout in seconds
LDAP.TIMEOUT=30
```

1.72 New MBeans 5.2R15

Java Management Extensions (JMX) provide a standardized interface for the management of Java applications. Using the JMX console, it is possible to monitor and manage a FirstSpirit server. While FirstSpirit ServerMonitoring is primarily used for manual monitoring of a FirstSpirit server, the JMX interface is used for automatic monitoring and can integrate into existing, enterprise-wide monitoring infrastructures. All values and operations are provided by Managed Beans (“MBeans”).

The current FirstSpirit version provides new MBeans:

- `ConnectionPool`
- `License`
- `ProjectManager`
- `ScheduleManager`
- `SessionCounter`



For more information see also help texts in the tool (JVisualVM or JConsole.)

1.73 New FirstSpirit Launcher 2018-08

Up until now, the only way to start and update (“roll out”) FirstSpirit SiteArchitect and ServerManager was

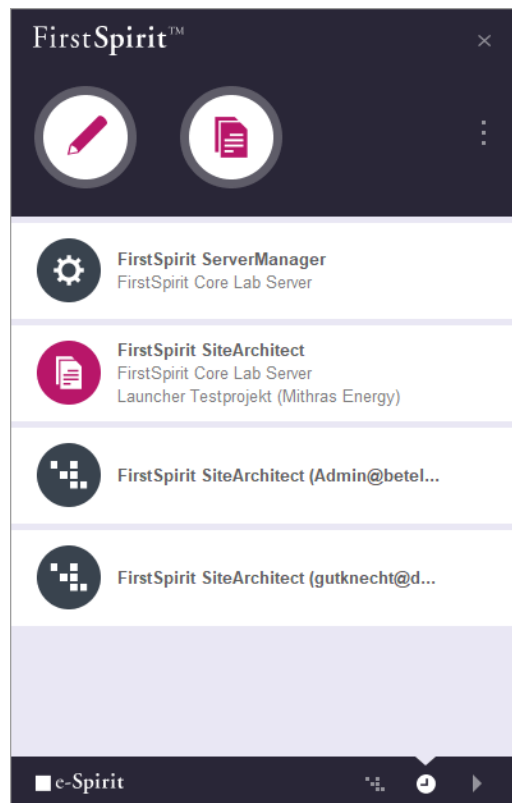
- By using **Java Web Start** technology or
- By using the **FirstSpirit Launcher**

To be able to use Java Web Start, Java (a Java Runtime Environment (JRE)) has to be installed on the FirstSpirit editor’s workstation and Java Web Start has to be activated in the browser.

Due to the repeated discovery of security gaps in many Oracle Java versions, high administration and maintenance overheads due to the regular requirement for updates, and incompatibilities with software components in other Java versions running on workstations, FirstSpirit has for some time offered the FirstSpirit Launcher as an alternative for starting FirstSpirit SiteArchitect and ServerManager. See also *FirstSpirit Manual for Administrators*, “FirstSpirit start page / Areas of the start page / FirstSpirit Launcher” and the FirstSpirit installation instructions, “FirstSpirit Launcher” chapter.

The previous version of the FirstSpirit Launcher was only available for Windows systems, however, and was not capable of updating automatically. With the latest release, a new version of the Launcher is now available, which is based on different technology, supports the use of macOS, and in principle can run on Linux too. That said, due to the numerous different distributions that exist, the functionality of the FirstSpirit Launcher under Linux cannot be guaranteed. Therefore, the Launcher is not officially supported for Linux platforms (“unsupported”). The new version also supports a fully automatic update (of both the Launcher itself and the JRE). When the Launcher is used, the version of it available on the corresponding FirstSpirit Server is determined and an update is started if the version on the Server is later. What’s more, the new Launcher offers a tray application that gives the user a convenient overview of the FirstSpirit Java applications that are currently active and that have been used recently:





The new version of the Launcher is currently in “EAP” state (early access program).

The Java Web Start functionality is currently still included in Oracle Java 8 and 10, but will not appear in Oracle Java 11 (18.9). OpenJDK does not offer a comparable technology. For these reasons, the FirstSpirit Launcher that is currently being used will be removed in Q4 2018. In most cases it is possible to switch to the new Launcher without having to modify the configuration.

Prerequisites

To use the FirstSpirit Launcher on a local workstation, users need write and execution permissions in the following directories:

```
C:\Users\{username}\AppData\Local\Programs\FSLauncher
C:\Users\{username}\.firstspirit\FSLauncher
```

The Launcher and any log files from installation procedures and Launcher updates are located under `~\AppData\Local\Programs\FSLauncher`.

Resources for starting FirstSpirit SiteArchitect and ServerManager (*fs-client.jar*, the JRE, and Launcher-specific data) and the Launcher log files are located under `~\.firstspirit\FSLauncher`.



If the user does not have the corresponding permissions, an exception will be thrown and it will not be possible to use the FirstSpirit Launcher.

If files in these directories are deleted manually, they will be rolled out again or created by the Launcher the next time the client is started.

Download and installation

The new FirstSpirit Launcher must first be installed on the workstation of the user who is to use it – regardless of whether the Launcher has previously been installed / used in earlier versions of FirstSpirit. This can be done

1. For a local workstation only or
2. For multiple client workstations in a group

In both cases, the Launcher is installed with the installation file `FSLauncherSetup.exe`. This file can be downloaded via the FirstSpirit start page (“Download FirstSpirit Launcher” link). For more information, see the *FirstSpirit installation instructions*, Chapter 4.2.4.2 “Installation”.

1) Installation of the Launcher locally on the workstation

How to install the new FirstSpirit Launcher on a local workstation is described in Chapter 4.2.4.2 “Installation” of the *FirstSpirit installation instructions*.

2) Group-based installation of the Launcher on multiple workstations (GPO)

Group-based installation for multiple workstations is no longer performed using an MSI Installer, as was previously the case, but can be distributed to the required client workstations in an organization using the silent mode of the `FSLauncherSetup.exe` installer via a software distribution method anchored in the organization (e.g., an Active Directory group policy) (“unattended installation”). The Launcher is installed automatically in the `FSLauncherSetup.exe` directory by entering a call in the

```
FSLauncher.exe -q
```

command line, without the client user having to make any further entries.

The required installation folder can be transferred using the `-dir` parameter as an option (in this case with the default value):

```
FSLauncher.exe -q -dir %LOCALAPPDATA%\Programs\FSLauncher
```



Distribution scenarios that have already been set up for the “old” FirstSpirit Launcher via MSI must be adapted accordingly.

The `externalLauncherGroup` parameter in the `fs-server.conf` configuration file is used to change the connection settings for one or more external groups (e.g., from LDAP) so that SiteArchitect and ServerManager are started via the FirstSpirit Launcher instead of via Java Web Start (current default setting). This involves specifying the relevant group name. All the members of this external group then start the applications via the FirstSpirit Launcher. See also *FirstSpirit Manual for Administrators*, “Configuration of the FirstSpirit Server / Configuration files (FirstSpirit Server) / FirstSpirit Server (fs-server.conf) / Server”, section “externalLauncherGroup”.

Exemplary definition of an external group from LDAP:

```
externalLauncherGroup=CN=fs-dev,OU=FIRSTspirit,OU=Projekte,DC=e-spirit,DC=de
```

If the FirstSpirit Launcher from an earlier FirstSpirit release has been used previously on the local workstation, the new version of the Launcher will be used automatically following successful installation. The “old” Launcher will no longer be taken into account and the associated files can be removed from the file directory manually, e.g., using a suitable uninstallation routine.

Firewall / reverse proxy

If FirstSpirit is operated with SSO and firewall / reverse proxy, FirstSpirit must still be notified of the names of the session cookies used for authentication. The parameter `clientCookieNames` in configuration file `fs-server.conf` is used for this purpose (see also *FirstSpirit Documentation for Administrators*, “Configuration of the FirstSpirit Server / Configuration files (FirstSpirit Server) / FirstSpirit Server (fs-server.conf) / Communication” chapter). Only then can Launcher-specific connections (e.g., for downloading resources and connecting SiteArchitect or ServerManager to the FirstSpirit Server) run in the context of the existing browser connection, without having to execute another authentication process at the reverse proxy / firewall.

There are just a few scenarios in which the required session cookies cannot be passed to the FirstSpirit Server and are instead intercepted by the reverse proxy / firewall. If SiteArchitect or ServerManager will not start in such cases, the `~/fs5root/jnlp/` directory must be released in the firewall. This release is not a security issue, as the Launcher only downloads resources from this directory, no other communication takes place over this path. What’s more, access is secured via random paths which are only available temporarily for the respective user session. The `~/fs5root/servlet` area (which is protected by the FirstSpirit security filter) also needs to be released in the firewall for client-server communication over HTTP/HTTPS in such instances.



Compatibility / upgrade and downgrade compatibility

From FirstSpirit 2018-08, only the new version of the Launcher will be available to download via the FirstSpirit start page.

However, a FirstSpirit Server running with a FirstSpirit version 2018-08 and higher will in principle be able to operate with a Launcher from FirstSpirit 2018-07 or earlier. Similarly, vice versa: A FirstSpirit Server running with a FirstSpirit version 2018-07 or earlier can be operated with a Launcher from FirstSpirit 2018-08 and higher. When using a Launcher from FirstSpirit version 2018-08 or higher and subsequently installing a Launcher from FirstSpirit version 2018-07 or earlier (downgrade), the older version of the Launcher might no longer function if the JRE has been swapped manually.

This is because while Launcher versions before 2018-08 expect a specific directory structure with regard to the Java archive (*jre-win.zip*), this is no longer necessary with FirstSpirit 2018-08 and higher.

If the FirstSpirit Launcher from an earlier FirstSpirit release has been used previously on the local workstation, the new version of the Launcher will be used automatically following successful installation. The old Launcher and its associated files will no longer be taken into account and can therefore be uninstalled.

Existing firewall configurations in which the “old” FirstSpirit Launcher has previously worked will remain functional and do not usually need to be changed when using the “new” Launcher.

For more information, see also *FirstSpirit Manual for Administrators*, “FirstSpirit start page / Areas of the start page / FirstSpirit Launcher”.

1.74 Optimization in Schedule Management 5.2R18

During the following actions, the associated project is temporarily deactivated:

- Switching the repository backend (“FirstSpirit ServerManager / Project properties / Repository / Backend”)
- Installing an archive (“FirstSpirit ServerManager / Project / Archive / Install archive”)

As of the current version of FirstSpirit, schedule tasks configured in such a project will no longer be deactivated (Schedule management / option “active”) as the project is temporarily deactivated. Schedule tasks that are currently running will be aborted (status “aborted”) when one of the actions listed above is started; the action will only be executed once schedule task has been ended.



1.75 Optimizations related to use of the FirstSpirit Launcher 5.2R3

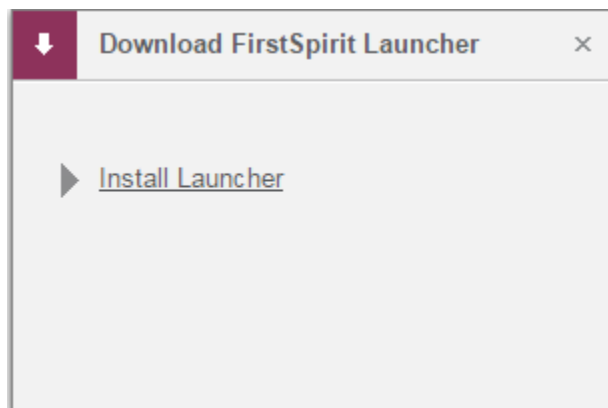
FirstSpirit version 5.2R3 features several optimizations related to use of the FirstSpirit Launcher:

Use of the FirstSpirit Launcher is now possible via HTTPS. The entire client-server communication, including download of JAR and JRE files, can be encrypted.

Restriction of using the FirstSpirit Launcher via SSL: SSL certificates can currently (as of January 2016) not be validated while downloading the JRE and JAR files from a FirstSpirit server. However, validation of SSL certificates is planned for a future release.

Furthermore, security related to the use of authentication cookies has been improved. In order to successfully use the Launcher, the required cookies (see parameter `clientCookieNames` in the configuration file `fs-server.conf`) must be configured with an adequate lifespan. See also *FirstSpirit Manual for Administrators*, chapter “Area: Communication”.

Roll-out via MSI: Installation of the Launcher on a single workstation (until FirstSpirit version 5.2R2, inclusively: “Install Launcher as user”) may still be performed via the FirstSpirit start page (from FirstSpirit version 5.2R3 onwards: “Install Launcher”).



Installation for multiple workstations (until FirstSpirit version 5.2R2, inclusively: Install Launcher as administrator) requires execution of the file `FSLauncherSetup.msi`, available in `~FirstSpirit5\web\fs5root\clientjar`. See also *FirstSpirit Installation Instructions*, chapter “Distribution of MSI packages with a GPO”.

For improved clarity and due to permissions, the Launcher now consistently uses one directory to store files.



For further information, see

- *FirstSpirit Installation Instructions*, chapter “FirstSpirit Launcher (new in V5.2)”
- *FirstSpirit Manual for Administrators*, chapter “FirstSpirit Launcher”
- *FirstSpirit Manual for Administrators*, chapter “Area: Communication”

1.76 Projekt export/import, external Synchronization, ContentTransport: Behavior of self-referencing remote connections 2019-07

If a project has remote connections to itself (“self-referencing”), these are now automatically adapted during a project export and import so that they continue to point to the same project (= the project that was imported) after the import. They are therefore still self-referencing.

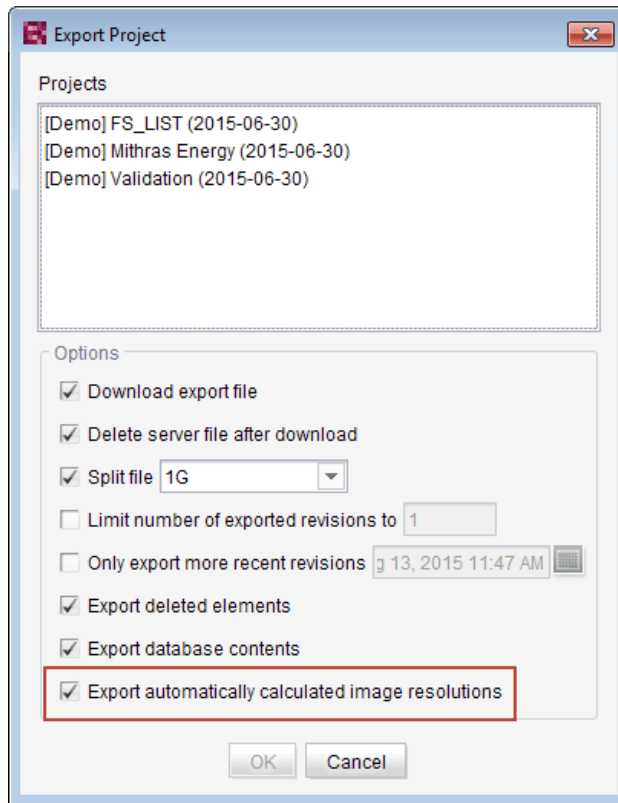
This behavior also applies when using external synchronization or ContentTransport.

1.77 Reduce project exports by excluding pre-calculated image resolutions 5.2R2

The export function (“FirstSpirit ServerManager / Project / Export”) or the “Execute project backup” schedule entry (“FirstSpirit ServerManager / Project / Schedule management”) can be used to create a compressed file of FirstSpirit projects so that these can then be transferred to another FirstSpirit Server, for example.

Resolutions that have been defined for a project can be automatically calculated by the system and saved on the server side. This method speeds up generation times. (Generating large numbers of media in many different resolutions is very time-intensive. With FirstSpirit version 5.2R2, these automatically calculated image resolutions can now be excluded from the export. To enable this, the “Export automatically calculated image resolutions” checkbox must be unchecked.





In this case, the content of the server-side image cache (MEDIA_STORE_CACHED_PICTURES) is not exported.

This checkbox is not selected by default.

For more information, see *FirstSpirit Manual for Administrators*, chapter

- “Export”
- “Resolutions”
- “Execute project backup”

The process of exporting automatically calculated image resolutions can also be controlled via the FirstSpirit Access API using the `setExportCachedPictures(final boolean exportCachedPictures)` method in the `ExportParameters` interface.



1.78 Project archiving: Abort archival due to insufficient available storage space 5.2R15

FirstSpirit uses repositories to archive and maintain version histories of project data. Each project has a repository in the server directory `data\projects\`. For each action carried out in the project, data is written to the repository. This applies to actions that create new elements as well as actions that delete elements. In addition, deleted elements are not removed from the repository. Since new data is always being added, the repository will continue to grow and will always require more hard disk space.

The schedule action “Archive old project states” is used to carry out archival of the selected project so that data which is no longer required is moved out of the project and into a repository, thereby reducing load times and increasing the performance of the FirstSpirit server. Data is moved from the repositories to archive files. Archive files that are no longer required can subsequently be deleted in order to free up hard disk space.

During archival, the available storage space of the volume in which the repository directory is located will now be monitored. If the available storage space falls below the following thresholds, the archival run will be aborted:

- `option hdd.limit` (configuration file `fs-server.conf`)
- the available storage space is less than half of what was available at the time archival was started

If archival is aborted due to these conditions, the following message will be written to the server log:

```
repository iteration interrupted, file system usage limit reached - lastId=[ID]
```

The log entry mentions the ID of the last archived element of this archival run. When the archival schedule task is started again, archival will continue from this point.

For further information about project archiving, see *FirstSpirit Manual for Administrators*, Chapter

- “FirstSpirit ServerManager / Project archiving”
- “FirstSpirit ServerManager / Schedule entry planning / Project-based actions / Archive old project states”



1.79 Importing a project with missing presentation channel 5.2R13

If a project with a template set (“ServerManager / Project properties / Template sets”) is imported to a FirstSpirit Server for which there is no presentation channel (“ServerManager / Server properties / Presentation channels”) on the server, this is now logged with the following error:

```
Error: Unable to map channel for template set 'html', channel 5 not found
```

In order to use the project, it must be activated in the ServerManager after importing via the “Project / Reactivate” function, and the desired template set (available on the server) must be selected under “Project properties / Template sets”.

1.80 Project import: Improved behavior while handling corrupt project archives 2019-08

Using the project import (via the FirstSpirit ServerManager or the FirstSpirit Access API), previously exported project archives can be transferred to the FirstSpirit server.

Project archives from the server's export directory:

- can be provided via the FirstSpirit ServerManager (ServerManager - Project - Import - File - Button: Server) or
- can be obtained via the local file system (ServerManager - Project - Import - File - Button: Local)

New behavior: For FirstSpirit server's export directory:

Corrupt project archives are no longer shown in the list of available project archives and can therefore no longer be selected for project import.

- ServerManager: (Project - Import - File - Button: Server) or
- FirstSpirit Access API: (when calling the methods `listExportFiles()` and `downloadExportFile(ExportFile)`) (Package: `de.espirit.firstspirit.access.admin.ProjectStorage`)

New behavior: For project archives obtained from the local file system:



If a corrupt project archive is selected during the project import, the import of the corrupted file is blocked and an error message is displayed.

```
File upload failed; selected file may be corrupt!
```

- ServerManager: (Project - Import - File - Button: Local - Select file) and start the import or
- FirstSpirit Access API: (when calling the method `startImport(...)`) (Package: `de.espirit.firstspirit.access.admin.ProjectStorage`)

1.81 Refactoring of the file `fs-webapp.xml` (web server "Jetty") 5.2R12

The file `fs-webapp.xml` in the sub-directory "conf" of the FirstSpirit server contains configuration settings for the internal web server "Jetty". Due to refactoring measures, entries were removed from this file. This change only affects new installations. For existing FirstSpirit installations, this change may be carried out manually by the FirstSpirit administrator if so desired.

The following lines may be removed from the file `fs-webapp.xml`:



```
<!-- FirstSpirit Web Applications -->
<!-- ===== -->
<New class="de.espirit.firstspirit.server.jetty.
JettyManagerImpl$FailSafeWebAppContext">
<Arg><Ref refid="Contexts"/></Arg>
<Arg><SystemProperty name="WEBAPP_ROOT_PATH"/></Arg>
<Arg><SystemProperty name="WEBAPP_ROOT_URL"/></Arg>
</New>
<New class="de.espirit.firstspirit.server.jetty.
JettyManagerImpl$FailSafeWebAppContext">
<Arg><Ref refid="Contexts"/></Arg>
<Arg><SystemProperty name="WEBAPP_WEBMON_PATH"/></Arg>
<Arg><SystemProperty name="WEBAPP_WEBMON_URL"/></Arg>
</New>
<New class="de.espirit.firstspirit.server.jetty.
JettyManagerImpl$FailSafeWebAppContext">
<Arg><Ref refid="Contexts"/></Arg>
<Arg><SystemProperty name="WEBAPP_WEBEDIT5_PATH"/></Arg>
<Arg><SystemProperty name="WEBAPP_WEBEDIT5_URL"/></Arg>
</New>
<New class="de.espirit.firstspirit.server.jetty.
JettyManagerImpl$FailSafeWebAppContext">
<Arg><Ref refid="Contexts"/></Arg>
<Arg><SystemProperty name="WEBAPP_STAGING_PATH"/></Arg>
<Arg><SystemProperty name="WEBAPP_STAGING_URL"/></Arg>
</New>
<New class="de.espirit.firstspirit.server.jetty.
JettyManagerImpl$FailSafeWebAppContext">
<Arg><Ref refid="Contexts"/></Arg>
<Arg><SystemProperty name="WEBAPP_PREVIEW_PATH"/></Arg>
<Arg><SystemProperty name="WEBAPP_PREVIEW_URL"/></Arg>
</New>
```



The integrated web server Jetty is not fit for use in production scenarios and should only be used for testing.



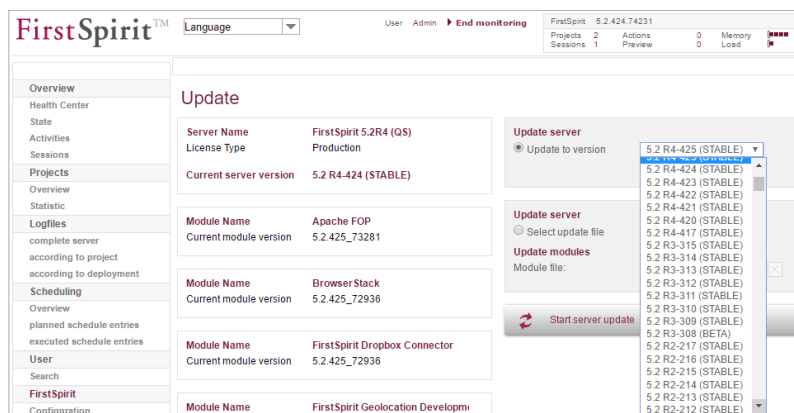
1.82 Server updates using "pull" method 5.2R5

Only a current FirstSpirit version can ensure that all FirstSpirit functionality will be available and that the software will run as well and as reliably as possible. We therefore recommend updating existing FirstSpirit servers regularly and timely. FirstSpirit offers several update methods.

From FirstSpirit version 5.2R5 onward, it is no longer possible to perform updates via Linux package systems. Instead, FirstSpirit now offers uniform, platform-neutral update management for all FirstSpirit servers.

Updating to a newer software version **via locally available files** may be performed using FirstSpirit ServerMonitoring, via “FirstSpirit – Control – Update” or “FirstSpirit – Control – Network” (“Push”).

There, you can now also perform an update **via the update service** (web interface to e-Spirit, “Pull”). The file(s) required for the update is/are downloaded via web interface and then installed. When updating via this update service, various FirstSpirit software versions are available, indicating version line as well as release status:



The screenshot shows the FirstSpirit web interface with the 'Update' section active. The interface includes a sidebar with navigation options like Overview, Health Center, State, Activities, Sessions, Projects, Overview, Statistic, Logfiles, complete server, according to project, according to deployment, Scheduling, Overview, planned schedule entries, executed schedule entries, User, Search, and FirstSpirit Configuration. The main content area is titled 'Update' and shows the following information:

- Server Name:** FirstSpirit 5.2R4 (QS)
- License Type:** Production
- Current server version:** 5.2 R4-424 (STABLE)
- Module Name:** Apache FOP
- Current module version:** 5.2.425_73281
- Module Name:** Browser Stack
- Current module version:** 5.2.425_72936
- Module Name:** FirstSpirit Dropbox Connector
- Current module version:** 5.2.425_72936
- Module Name:** FirstSpirit Geolocation Developm

On the right side, there are two sections for updating:

- Update server:** Includes a dropdown menu for selecting a version (currently showing 5.2 R4-425 (STABLE)) and a radio button for 'Update to version'.
- Update modules:** Includes a dropdown menu for selecting a version (currently showing 5.2 R4-425 (STABLE)) and a radio button for 'Select update file'.

At the bottom right, there is a 'Start server update' button.

This functionality is only available if the FirstSpirit server was started using the Java wrapper.

For further information, see

- *FirstSpirit Manual for Administrators*,
 - Chapter “Updating the FirstSpirit Server”
- *FirstSpirit Installation Instructions*,
 - Chapter “Update”



1.83 Server Update: File name change for backup copies of files 5.2R6

An update of a FirstSpirit server to a newer software version can be started via FirstSpirit ServerMonitoring (e.g. “FirstSpirit / Control / Update”). During the update process, the file `fs-server.jar` which contains the new FirstSpirit version will be copied to `~\server\lib\`. The old `fs-server.jar` file will be kept as a backup copy in the same directory. The file name of this backup copy will be formed by appending the current date and the suffix `.old`. Additionally, from the current FirstSpirit version onwards, the original file name `fs-server.jar` will be changed to `fs-server.jar`. Example for the file name of an `fs-server.jar` backup copy:

```
fs-server.jar_20160921_155039.old
```

In previous FirstSpirit versions, the file name would have been formed as follows:

```
fs-server.jar_20160921_155039.old
```

For further information about server updates via FirstSpirit ServerMonitoring, see *FirstSpirit Manual for Administrators*, chapter “Updating the FirstSpirit Server”.

1.84 Server update: Improved schedule logging 5.2R6

It is also possible to update the FirstSpirit Server using a schedule designed for this purpose (FirstSpirit ServerManager, menu “Server / Properties / Schedule management”, action “Server update”).

To improve traceability, logging is now carried out with the current FirstSpirit version if a more recent version of FirstSpirit is not available for update purposes (this takes place in the applicable `fs-schedule.*.log` schedule log file and in the `fs-server.log` file). For example:

```
INFO 20.10.2016 09:30:00.113 (de.espirit.firstspirit.server.scheduler.update.ServerUpdateTaskExecutor): FirstSpirit server is up-to-date, no newer version available
```

If there is a new FirstSpirit version available for update purposes, logging is carried out with the current server version and the version to which the FirstSpirit Server is updated.

For more information, see *FirstSpirit Manual for Administrators*, Chapter “Updating the FirstSpirit Server”, specifically the “Automatic update via the update service” section.



1.85 ServerManager: Deleting template sets 2020-03

Template sets (e.g., “Intranet”, “RSS feed”) are defined for the project from the presentation channels (e.g., “json”, “html”). Template sets for a project are created and edited via “FirstSpirit ServerManager / Project properties / Template sets”.

Template sets can now be removed from the project via “FirstSpirit ServerManager / Project properties / Template sets / Delete” (previously it was only possible to deactivate them). To prevent accidental deletion, an additional dialog box is shown before deletion (“Do you really want to delete this template set?”).



The deletion of a template set cannot be undone!

If a template set is accidentally removed from a project, please contact our [Technical Support](#) team immediately to restore the template set.

For more information on template sets, see the [Documentation for administrators](#).

1.86 SMTP Authentication 5.2R3

FirstSpirit version 5.2R3 enables sending e-mails via SMTP using authenticated connections. Authentication is configured in the configuration file `fs-server.conf`:

`mail.smtp.login`: This parameter specifies the user name used to authenticate against the SMTP server. The user configured here must be known by the specified SMTP server. Additionally, this user's valid password must be configured using the parameter `mail.smtp.password` (see below).

`mail.smtp.password`: This parameter specifies the password of the user (`mail.smtp.login`) used to authenticate against the SMTP server.

If both parameters (`mail.smtp.login` and `mail.smtp.password`) are configured, mail submission by FirstSpirit will use authenticated connections. If these parameters are not specified, authenticated connections will not be used.



The Java interface “Javamail” provides further parameters and configuration opportunities for mail submission (e.g. configuration of encryption). These parameters may be configured in the file `fs-server.conf`, prefixed with `javamail`, e.g.:

```
javamail.mail.smtp.starttls.enable=true
javamail.mail.smtp.starttls.required=true
# enable SASL to support CRAM-MD5 authentication
javamail.mail.smtp.sasl.enable=true
```

For further information, see

- *FirstSpirit Manual for Administrators*, chapter “Area: Mail”
- [Javamail API](#)

1.87 SSL Encryption: Modifications to "fs-server.conf" 2019-02

For security reasons, the TLS Cipher Suite, which has been intended by FirstSpirit as a standard for internal communications until now, is no longer supported by Java 8u201, 8u202, 11.0.2, and higher.

In existing FirstSpirit installations, if the associated parameter `fs.ssl.cipherSuites` in the file `fs-server.conf` is still set to the value `TLS_DH_anon_WITH_AES_128_CBC_SHA`, this parameter must be removed manually or its value must be adjusted, otherwise FirstSpirit SiteArchitect and web applications may no longer be able to start. To ensure secure encryption, the first step is to install a trustworthy certificate (via a certificate store) and then configure the `DEFAULT` value at this point. See also *FirstSpirit Manual for Administrators*, “FirstSpirit Server configuration / Configuration files (FirstSpirit Server) / FirstSpirit Server (fs-server.conf) / SSL Parameters”.

FirstSpirit-side, the default value of the parameter `fs.ssl.protocols` was updated from `TLSv1` to `TLSv1.2` in this context. For future-proofing, this parameter's value should be adjusted manually in the file `fs-server.conf` in existing FirstSpirit installations if its value is still set to `TLSv1`.



1.88 Start-up process: FirstSpirit server starts up independently of web application updates 5.2R6

Previously, problems could arise during start-up of a FirstSpirit server if the update of a web application took an inordinately long time. Furthermore, the start-up process of a FirstSpirit server was considered to be finished only once the web applications were updated.

As of the current FirstSpirit version, the start-up process is considered to be finished **before** web application updates are performed. This implies that communication with the FirstSpirit server via API is already possible before web applications are up-to-date.

For further information about FirstSpirit web applications, see *FirstSpirit Manual for Administrators*, chapter “FirstSpirit web application configuration”.

1.89 Starting process: Improved stability when accessing FirstSpirit web applications on external web servers 5.2R6

Using an external web server (for example Apache Tomcat) could led to problems concerning starting the FirstSpirit web applications on the external web server (for example FirstSpirit start page, ContentCreator etc.) because of varying start speed and / or start order of these servers.

Starting with the current FirstSpirit version, the external web server (for example Apache Tomcat) waits up to 5 minutes for a connection to the FirstSpirit server now. The FirstSpirit server can be started within this time interval. The external web server checks every 10 seconds if a connection can be established to the FirstSpirit server. When a connection can be established the FirstSpirit web applications connect automatically to the server.

Thus, for ensuring a frictionless start of external web server, FirstSpirit server and FirstSpirit web applications you should start the external web server always first and the FirstSpirit server afterwards. Moreover, this allows that the FirstSpirit server will be able to install updates of web applications, if necessary, in any case because the external web server has already been started at this time.

For more information about using external web servers with FirstSpirit please see *FirstSpirit Manual for Administrators*, chapter “Integration into an external web server”.



1.90 Adjustment of the Technical Datasheet 2018-12

As an Enterprise Content Management System, FirstSpirit is designed for use in complex IT landscapes and supports a multitude of operating systems, Java run-time environments, and databases. In order to guarantee high software quality and to ensure that FirstSpirit operates reliably in all supported configurations, regular testing is undertaken as part of the quality assurance process. The high number of supported third-party components, short release cycles, as well as combination and configuration possibilities of third-party components lead to an extremely high test complexity.

For increased planning certainty on the side of customers and partners, the “FirstSpirit Technical data sheet” lists all operating systems, Java environments, application servers, etc. as well as the specific version of each which are supported for operations with FirstSpirit. Third-party components which are being tested internally and proactively on a regular basis are categorized as **Actively supported**. Furthermore, a recommended system configuration which is also in use internally by e-Spirit is called **Reference**. As a rule, many other configurations and components are also compatible with FirstSpirit, but this cannot be ensured with regular, internal testing due to the test complexity described above. System configurations, for example, which are/were put into operation successfully by a customer or a partner or older system configurations which are no longer being tested regularly by e-Spirit thus receive the categorization **Passively supported** at this time. Should issues arise in such configurations, e-Spirit can undertake troubleshooting measures on the basis of submitted issue reports (given a current software maintenance contract), but only in a limited time frame - this does not constitute entitlement, however. Only in the case of software configurations which are categorized as **Not supported**, e-Spirit will take no measures to resolve issues which may arise.

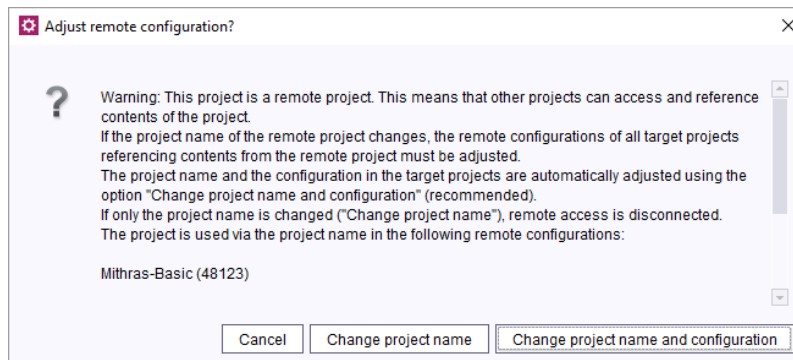
Due to increasing test complexity and the continuously broadening testing arena, e-Spirit plans to more strongly consider third-party components and combinations which cover as large as possible market segments in its selection in the future. Besides system configurations which are successfully put into operation by customers, planning is also to include forward-looking software and hardware trends. The goal is to test the newest version of a given third-party component for operation with FirstSpirit in order to officially approve it as quickly as possible.

In the near future, the “FirstSpirit Technical data sheet” will be revised in order to better reflect the developments described above. With the current release, this focus is already partially reflected, and the status of individual operating systems has been adjusted.



1.91 Renaming Projects With Remote Connection 2018-09

When a so-called “remote project” is renamed (“FirstSpirit ServerManager / Projekteigenschaften / Projekt”, Feld “Name”), a dialog will be displayed when confirming with “OK”. This dialog includes a list of target projects which use the project name in their respective remote configurations:



Cancel: The project name of the remote project will not be changed.

Change project name: The project name of the remote project will be changed. No changes will be made to the remote configurations of the affected target projects; remote access will be disabled. A manual change in the remote configuration of the affected target projects can restore this connection.

Change project name and configuration: The project name of the remote project will be changed. In the remote configurations of the affected target projects, the project name will be changed as well, ensuring that remote access remains active.

! If the remote connection of a target project cannot be changed, e.g. because the target project is being edited by another user at the time or the user attempting to carry out this change doesn't have the necessary permissions in the target project, an error message indicating this will be displayed.

For further information on remote projects please refer to *FirstSpirit Manual for Administrators*, Chapter “FirstSpirit ServerManager / Project properties / Remote projects”.



1.92 Support for PostgreSQL 10.x and PostgreSQL 11.x 2019-12

As of the current FirstSpirit release, the **recommended PostgreSQL database version (reference)** for use with the FirstSpirit Server changes to:

- PostgreSQL 11 (previously: PostgreSQL 9.4)

Additionally **PostgreSQL 10.x** and **PostgreSQL 11.x** have been added to the list of **compatible databases**.

A complete list of the supported databases for the FirstSpirit Server can be found in [Technical requirements and recommendations \(Documentation for administrators\)](#).

1.93 Improved logging when starting the JettyService 2019-12

“Eclipse Jetty”, the open-source product integrated in FirstSpirit, provides a web server and a JSP/servlet engine which run as part of the FirstSpirit Server in the same VM. The `fs-jetty.fsm` module must be installed on the FirstSpirit Server and the associated “JettyService” service started in the server properties of the ServerManager.

For better error analysis, the latest version of FirstSpirit now creates a log if problems occur when starting the “JettyService” (in file `fs-server.log`). The underlying exception will also be thrown in the event of an error.

Example (log outputs if the HTTP port is set to a port that is already in use):

```
INFO (...)(de.espirit.firstspirit.server.AbstractManagerHost):
Starting JettyService ...
INFO (...) (de.espirit.firstspirit.modules.jetty.JettyServiceImpl):
Starting Jetty server on unencrypted port 9000...
ERROR (...) (de.espirit.firstspirit.modules.jetty.JettyServiceImpl):
Jetty server could not be started - (...).JettyServiceException:
Unable to start server - java.io.IOException: Failed to bind to 0.0.0.0/0.0.0.0:9000
FSVersion=5.2_DEV.191200.a15e515;JDK=11.0.5 64bit AdoptOpenJDK; (...)
INFO (...) (de.espirit.firstspirit.server.AbstractManagerHost):
JettyService started successfully in 166ms
FATAL (...) (de.espirit.firstspirit.server.AbstractManagerHost):
manager not started: 'JettyService' (class com.sun.proxy.$Proxy27)
```



1.94 Security improvements in FirstSpirit ServerMonitoring and web applications 5.2R2

Implemented measures to improve security in FirstSpirit ServerMonitoring as well as in FirstSpirit web applications.

1.95 Improvements of the FirstSpirit Launcher 2018-09

Several Aspects of the FirstSpirit Launcher have been improved:

- The current version of the launcher is displayed within the loading splash screen and can additionally be viewed via the option “About FirstSpirit Launcher” in the tray application.
- The auto update is now aborted if the user has insufficient permissions in the installation folder. The event is logged, and the administrator has to perform the update if desired.
- Several small bugs have been fixed.

1.96 Connection problem fixed and libraries updated 2019-06

A problem has been solved which in rare cases could cause the connection from the SiteArchitect to the server to be closed.

The following libraries have been updated:

- commons-codec-1.11
- commons-logging-1.2
- httpclient-4.5.8
- httpcore-4.4.11
- httpmime-4.5.8
- jna-4.5.2



1.97 Encryption of passwords in FirstSpirit configuration files 5.2R16

Passwords in FirstSpirit configuration files can now be encrypted.

For further information, see *FirstSpirit Manual for Administrators*, chapter “FirstSpirit Server configuration / Configuration files (FirstSpirit Server) / FirstSpirit Server (fs-server.conf) / Password encryption”.

Note about downgrade ability: Passwords which have been encrypted with this new functionality cannot be used with FirstSpirit versions lower than 5.2R16. If a downgrade should be performed, the passwords must be decrypted prior to the downgrade. If the configuration references a key file, it must be present on the FirstSpirit server.

1.98 Usage of the "InternalJetty" web server 2018-10

If one or more web applications are configured to run on the “InternalJetty” of a FirstSpirit server, the start page of the FirstSpirit server will show a warning to users with the administrator role:

```
Internal Jetty usage detected:...
```

1.99 Using wildcards to configure redirect URLs (fs-server.conf) 2019-12

Redirections in the client-server communication are restricted by the FirstSpirit server for security reasons. Using the optional parameter `allowedRedirectHosts` in the configuration file `fs-server.conf` URLs can be defined to which a redirect is to be allowed. If an HTTP error 403 with the error cause “Forbidden request host:” occurs during access to FirstSpirit, one should check whether access to the FirstSpirit server with the specified host name is to be permitted in the URL and, if necessary, the corresponding host name is to be added to the `allowedRedirectHosts` parameter in the `fs-server.conf` file. Example:

```
allowedRedirectHosts=localhost,firstspirit,firstspirit.example.com,192.1.1.1
```

New functionality

Now the use of wild-card characters is possible. These wild-cards can be used for the top subdomain as well as within a subdomain.



Examples for possible wild-cards:

```
*.example.com
```

```
first*.example.com
```

```
*spirit.example.com
```

```
f*spirit.example.com
```

```
firstspirit.*xample.com
```

Not allowed are:

- Wild-cards in IP addresses
- multiple wild-cards inside a single definition
- replacing a whole domain with a wildcard

Examples for prohibited definitions:

```
*.168.1.1
```

```
f*spir*.example.com
```

```
firstspirit.*.com
```

```
*.com
```

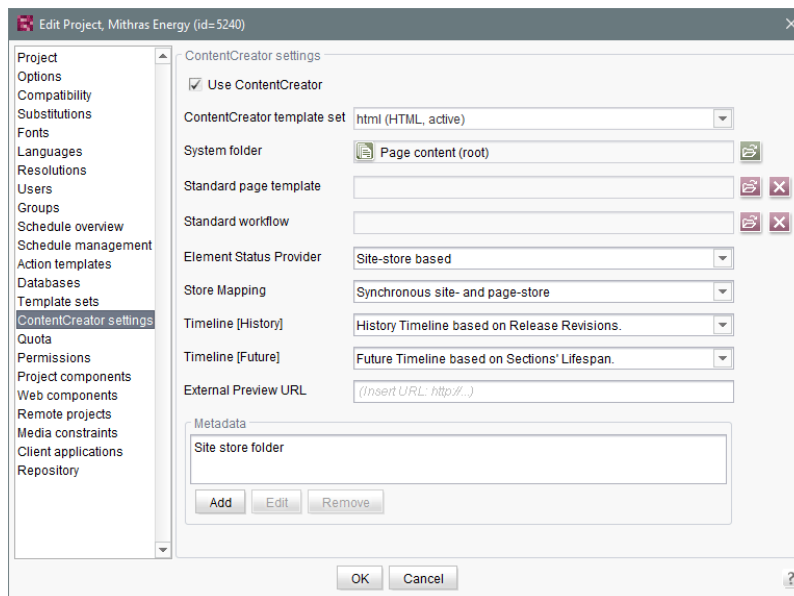
```
*
```



For further information on the parameter `allowedRedirectHosts` see [Documentation for Administrators](#).

1.100 Using preview applications in the ContentCreator (TPP) 5.2R16

If an external web application is to be used for the preview in FirstSpirit (a Single Page Application, “SPA”, for example), the respective URL can be entered into the “External Preview URL” text field in the FirstSpirit ServerManager under “Project / Properties / ContentCreator settings”:



The preview application can then be used in the ContentCreator. If the linked application has been suitably prepared, the editor can still edit, create, and delete the contents displayed in the preview area with the functions of the ContentCreator. Relevant application examples are described in the CaaS documentation.

Please make sure that the URL specified here contains the protocol of the external web application. If the text field is empty (“Insert URL: http://...”), the internal ContentCreator preview function is used as before.

The URL can be read and also set by API (`getWebeditPreviewUrl` or `setWebeditPreviewUrl` method, `Project` interface, `de.espirit.firstspirit.access.project` package, FirstSpirit Access API).



1.101 Expired license warning 5.2R2

A license is required to operate a FirstSpirit Server. This can be found in the form of a file with the name `fs-license.conf` and it contains information including the temporal validity of the license (`license.EXPDATE` parameter). A warning e-mail may be sent before or after the expiration date.

Previously, an e-mail was always sent to a configured e-mail address as well as to e-Spirit. With FirstSpirit version 5.2R2, only one e-mail is now sent if an e-mail address is configured via the `LICENSE_EXPIRATION_MAIL_ADDRESS` parameter in the `fs-server.conf` file. E-mails are no longer sent to e-Spirit automatically.

For more information, see *FirstSpirit Manual for Administrators*, chapter “Area: Misc”.

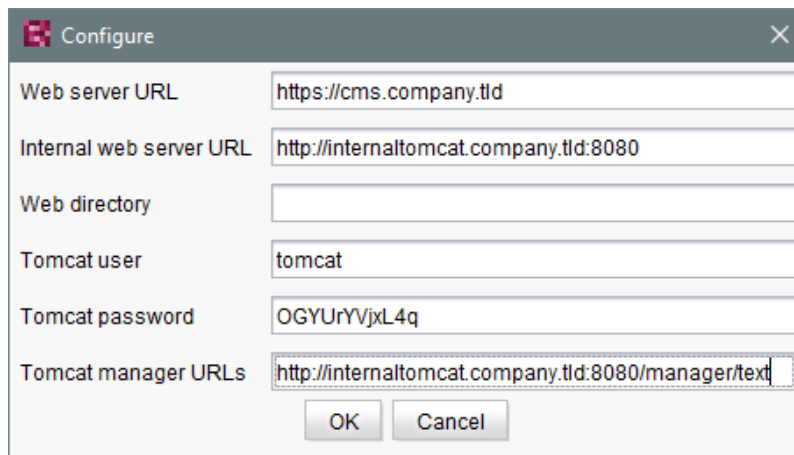
1.102 Updating web applications on external web servers 5.2R7

FirstSpirit may be operated with external web servers (e.g. Apache Tomcat), for example in order to use special server-side implementations such as PHP or ASP.

During each start-up phase, the FirstSpirit server checks if the version of each web application rolled out to an external web server is up-to-date. If this is not the case, the FirstSpirit server updates the web application. Generally, the check if a web application is up-to-date is possible with the previous web server configuration (via the “Web server URL”, see illustration below). In some cases, however, this check is not possible via this URL, such that the web applications would be updated during each start-up phase of the FirstSpirit server. In these cases, from the current FirstSpirit version onwards, the internal web server URL of the web server may be configured for each web server (ServerManager / Server properties / area “Web server”, field “Internal web server URL”).

E.g. for the type “Tomcat”:





The screenshot shows a 'Configure' dialog box with the following fields and values:

Field	Value
Web server URL	https://cms.company.tld
Internal web server URL	http://internaltomcat.company.tld:8080
Web directory	
Tomcat user	tomcat
Tomcat password	OGYUrYVjxL4q
Tomcat manager URLs	http://internaltomcat.company.tld:8080/manager/text

Buttons: OK, Cancel

Notes: The URL will only be used if the web directory is not set (field “Web directory”). The field “Internal web server URL” is not evaluated for web servers of the type “External” at the moment.

In this context, a method `getInternalURL` has been added to the interface `WebServer` (FirstSpirit Developer API, package `de.espirit.firstspirit.module`). This method provides the URL that is set for a web server in the field “Internal web server URL”.

For further information about use and configuration of web servers, see *FirstSpirit Manual for Administrators*:

- “Web server configuration (fs-webapp.xml)”
- “Integration into an external web server”
- “Web server”

1.103 Web server "Jetty" is now system module 5.2R20

The module `fs-jetty.fsm` (currently in the Early Access Program (“EAP”)) which will replace the earlier implementation “InternalJetty”, is now available as system module. This means that it exists on newly installed FirstSpirit servers as well as on existing FirstSpirit servers when they are updated to FirstSpirit version 5.2R20. The module needs no more to be installed manually.

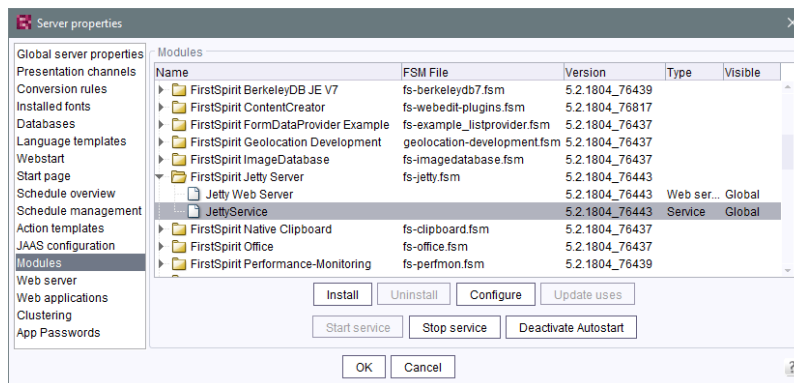
This module bases on the most recent version: 9.4. However, this version is not compatible with Java 7 and requires at least Java 8.



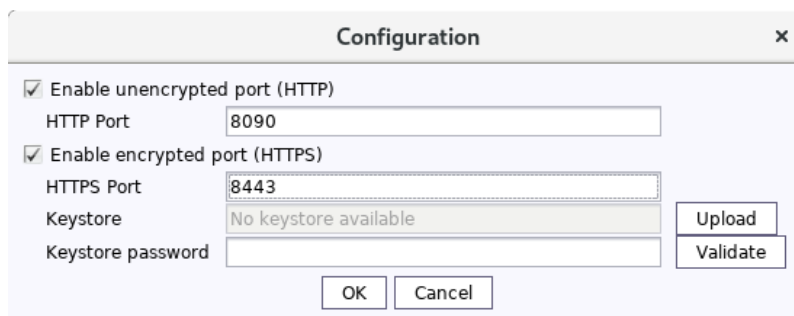
The functions of the integrated Jetty server (“InternalJetty”) were deprecated / discontinued with FirstSpirit version 5.2R18, and are scheduled to cease existing at all in August 2018 (FirstSpirit version 5.2R24). In the meantime, the currently integrated Jetty functions as well as Jetty as a module will be available in parallel with one another. During this period, it will be possible to test out the module and convert the operation of existing FirstSpirit installations that use Jetty to the Jetty module.

! Both the earlier implementation “InternalJetty” and the new implementation as a module run within the same JavaVM as the FirstSpirit server. This configuration is not suitable for production operation and should only be used for tests. For more complex configuration requirements (e.g. adjustment of memory size, timeouts, number of threads per deployed application, ...), use of an external web server (e.g. Tomcat) is recommended.

In order to use Jetty as a module, the corresponding service “JettyService” has to be started in the server properties of the ServerManager:

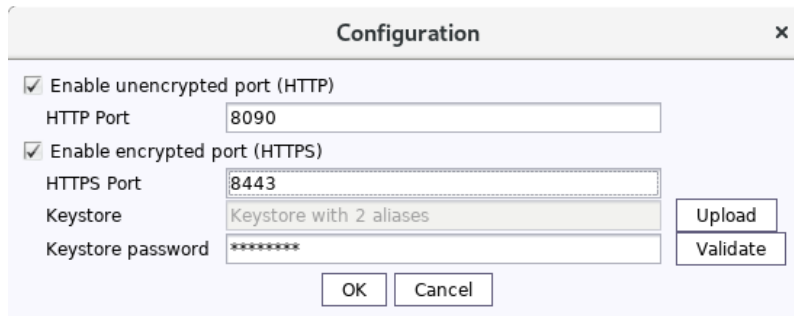


Here it is also possible to configure the favored port. (Changing this configuration requires a restart of the service “JettyService”):



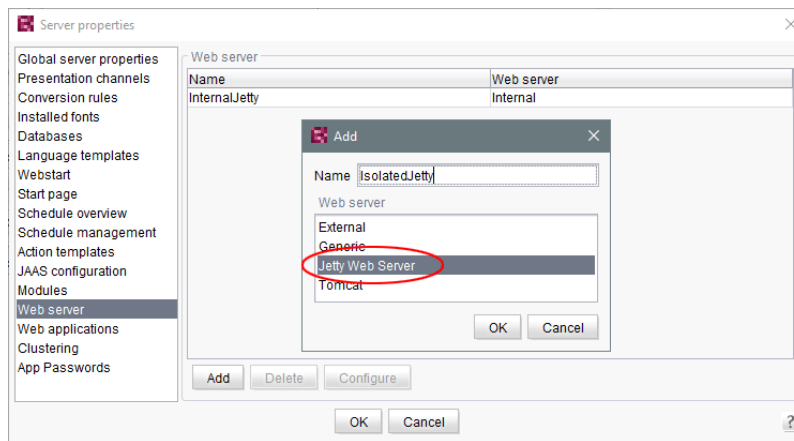
Creating encrypted connections (HTTPS) requires a keystore in JKS format. This can be uploaded using the button “Upload”.

After uploading the keystore and entering the corresponding password, a click on the button “Validate” checks the entered configuration. When successful, the number of detected aliases is displayed:



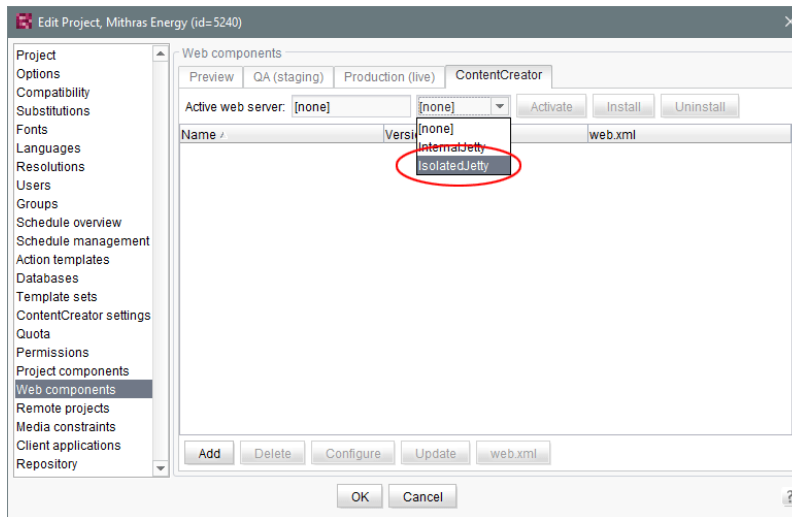
Configuration is completed with “OK”.

A new web server of the type “Jetty Web Server” may be added using “Webserver” in the server properties (e.g. with the name “IsolatedJetty”):



The web server may now be selected in the project properties under “Web components”:



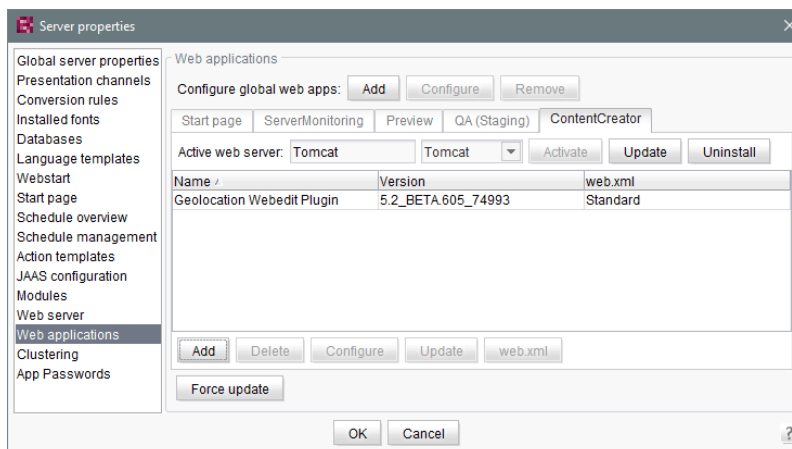


1.104 Web server Apache Tomcat: Automatic update of web applications

5.2R6

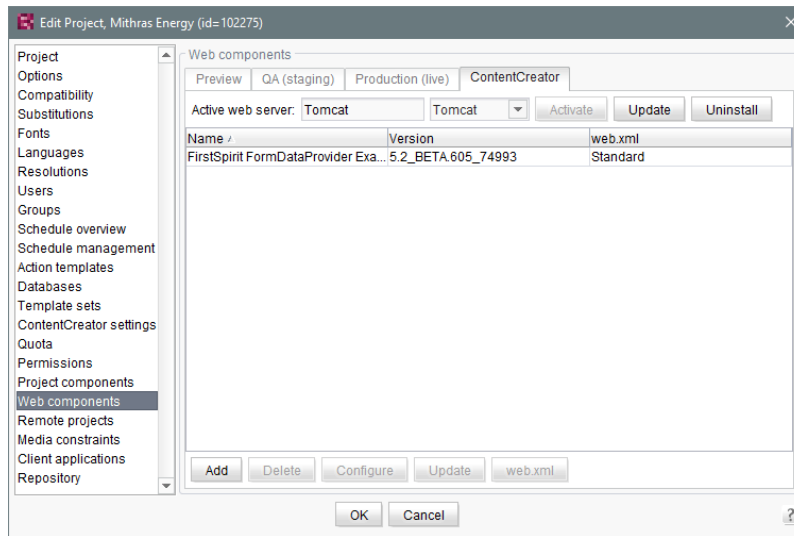
Apache Tomcat may be used as an external web server with FirstSpirit, operating either on the same host that runs FirstSpirit or on a dedicated host (“stand-alone” / “remote”).

Until now, if a stand-alone Tomcat was used, web applications installed on that Tomcat had to be updated manually upon each FirstSpirit update, e.g. via the buttons “Force update”, “Install” / “Activate” or “Update”, respectively, in FirstSpirit ServerManager, “Server properties / Web applications”



or in “Project properties / Web components”





As of the current version of FirstSpirit, the FirstSpirit server will recognize if web applications on a Tomcat are not up-to-date and will trigger an update.

For further information, see *FirstSpirit Manual for Administrators*, chapters

- “Tomcat servlet engine on a dedicated host”
- “Web server”
- “Web applications”
- “Web components”

1.105 Web server configuration: web servers will now be activated automatically 2018-09

In previous versions of FirstSpirit, after installing web applications or web components, web servers had to be activated explicitly in order for them to be used. As of the current FirstSpirit release, web servers will now be activated automatically.

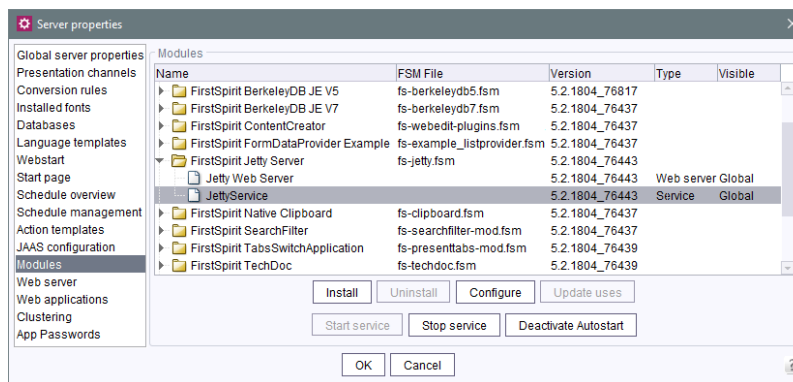
The associated button “Activate” in FirstSpirit ServerManager (“Server properties / Web applications” and “Project properties / Web components”) has been removed.



1.106 Web server configuration: new FirstSpirit installations use the web server "FirstSpirit Jetty Server" 2018-09

Since FirstSpirit 2018-08, the functionality of the integrated Jetty “InternalJetty” is no longer supported. The web server “FirstSpirit Jetty Server” can be used instead (see also Chapter “Migrating from the InternalJetty to a web server for productive use”).

New installations (FirstSpirit servers that are installed with FirstSpirit 2018-09 or higher) use the web server “FirstSpirit Jetty Server” as standard starting with the current FirstSpirit Release. The dependent service “JettyService” is started automatically with the start of the FirstSpirit server:



This web server is used automatically for the FirstSpirit web applications.

Unlike in previous FirstSpirit versions, the default value of the `INTERNAL_SERVLET_ENGINE` parameter in the configuration file `fs-server.conf` is for new installations now `0`. This value should not be modified, it can be omitted in subsequent versions of FirstSpirit.

For further information please refer to *FirstSpirit Manual for Administrators*, Chapter “FirstSpirit ServerManager / Server properties / Web server”, “Jetty Web Server” paragraph.

1.107 Further optimizations to "BerkeleyUtil" 5.2R21

The following optimizations have been made to the “BerkeleyUtil” (`BerkeleyUtil.jar`) conversion tool in the latest FirstSpirit version:

Log file

The conversion actions are now logged in a log file as standard. The log file name is `berkeley_util_yyyyMMdd_HHmms.log`; for example:



```
berkeley_util_20180502_113208.log
```

If you convert an entire FirstSpirit Server, the file is stored in the *log* directory of the server. If you convert individual databases, the file is stored in the directory which was specified as the start directory (*PATH* parameter).

The creation of this log file can be deactivated with the `--no-log-file` option.

Calculating the amount of hard disk space that is likely to be required

While converting the Berkeley databases of a FirstSpirit Server using the tool, you may temporarily require three times the memory space of the largest database that is being converted. The latest FirstSpirit version now checks to see if there is sufficient free hard disk space before converting each database. If this is not the case, the conversion will **not** be executed. The conversion for this database then stops with an `Insufficient free space` error message. If this happens, create more space or remove files from the directory before starting a new conversion.

Note: In very rare cases, the conversion tool is unable to calculate the required storage space reliably. If the available disk space is too low, the conversion terminates with the following error message: `Error converting BerkeleyDB`. If this happens, please contact Technical Support.

In order to help calculate the conversion time with more accuracy, a list of the individual databases by type and size as well as a summary of the amount of data to be converted is now added when the `-l` or `--list` parameter (`Disk space usage:...`) is used.

For example:



```
02.05.2018 11:26:05.504 [INFO BdbScanner] Scanning BerkeleyDBs in: firstspirit
02.05.2018 11:26:33.044 [INFO BdbList] V7 Repository: firstspirit/data/projects/
  project_221354/repository/bdb7 - 2,56 MB + 16,95 MB BLOBS
...
02.05.2018 11:26:33.053 [INFO BdbList] V5 Repository: firstspirit/data/projects/
  project_287731/repository/bdb5 - 16,77 MB + 2,32 MB BLOBS
...
02.05.2018 11:26:33.062 [INFO BdbList] V7 Registry: firstspirit/data/projects/
  project_221582/registry - 6,92 KB
...
02.05.2018 11:26:33.073 [INFO BdbList] V7 Registry: firstspirit/data/registry
  - 23,11 MB
02.05.2018 11:26:33.073 [INFO BdbList] V7 ArchiveDB: firstspirit/archive/
  project_221354/db2 - 17,55 KB
...
02.05.2018 11:26:33.076 [INFO BdbList] V7 AccessControlDB: firstspirit/data/schedule/
  225219/acl - 1,69 MB
...
02.05.2018 11:26:33.079 [INFO BdbList] Disk space usage:
02.05.2018 11:26:33.080 [INFO BdbList] V5 Repository - 55,26 MB + 68,61 MB BLOBS
02.05.2018 11:26:33.080 [INFO BdbList] V7 Repository - 28,9 GB + 7,74 GB BLOBS
02.05.2018 11:26:33.081 [INFO BdbList] V7 Registry - 169,51 MB
02.05.2018 11:26:33.081 [INFO BdbList] V7 ArchiveDB - 848,59 MB
02.05.2018 11:26:33.081 [INFO BdbList] V7 AccessControlDB - 35,67 MB
02.05.2018 11:26:33.082 [INFO BdbList] Total - 29,98 GB + 7,81 GB BLOBS
```

Examples of conversion times

Large FirstSpirit Server:

- More than 100 projects
- FirstSpirit installation directory > 1 TB, of which > 500 GB in Berkeley DB directories (without “blob” directories)
- With a very large project (“bdb” directory > 250 GB)

Conversion time with 20 GB of main memory: < 12 hours

Conversion time with 4 GB of main memory: > 24 hours

Medium-sized FirstSpirit Server:



- 27 projects
- FirstSpirit installation directory < 1 TB, of which > 250 GB in Berkeley DB directories (without “blob” directories)
- With a large project (“bdb” directory > 50 GB)

Conversion time with 4 GB of main memory: < 6 hours

Medium-sized FirstSpirit Server:

- 27 projects
- FirstSpirit installation directory > 100 GB, of which > 50 GB in Berkeley DB directories (without “blob” directories)
- “bdb” directory of the largest project approximately 25 GB

Conversion time with 20 GB of main memory: < 2 hours

Fast conversion of the same server: > 8 minutes

The information above distinguishes between the “bdb” directories and the “blob” directories of the FirstSpirit Server because they are handled differently:

If there is a project in Berkeley version 5, the “blob” directory will not be changed during the conversion. If there is a project in Berkeley version 3, the files in the “blob” directory will be moved into new subfolders, but this will not affect the duration of the conversion.

Unless the `-f` option has been enabled, however, the contents of the “bdb” directories are exported to new files and then imported into a newly created database.

Note: The values shown here are only comparison values, as FirstSpirit installations differ greatly from customer to customer. The duration of a FirstSpirit Server conversion is highly dependent on the number and size of projects as well as on the specific way in which the customer is using the system.

Note: On Unix systems, the `BerkeleyUtil.jar` conversion should be executed by the user who will then be using the Berkeley databases. In practice, this means the user who is the administrator for the FirstSpirit Server or the Application Server.



1.108 Forwarding of HTTP Header Information to an External Preview URL

5.2R3

FirstSpirit version 5.2R3 introduces the parameter `preview.externalDeliveryForwardHttpHeaders` which may be specified in the file `fs-server.conf`. This parameter accepts a comma-separated list which contains the names of HTTP header fields which should be forwarded to the external web server specified by the parameter `preview.externalDeliveryURL`. Evaluation of this parameter is case-insensitive.

Possible values:

- Parameter is specified with an empty value
No header fields and cookies are forwarded to the external web server.
- `preview.externalDeliveryForwardHttpHeaders=Cookie` (Default)
Cookies set in header fields will be forwarded to the external web server, other header fields will not be forwarded. This setting is also used if the parameter is not specified in `fs-server.conf`.
- `preview.externalDeliveryForwardHttpHeaders=*`
All header fields will be forwarded to the external web server. (Note: If the wildcard `*` is contained in a comma-separated list that contains explicit mentions of HTTP header fields, the wildcard will be ignored.)
- `preview.externalDeliveryForwardHttpHeaders=f1,f2`
The HTTP header fields named “f1” and “f2” will be forwarded to the external web server.

For further information, see *FirstSpirit Manual for Administrators*, chapters

- “Area: Preview”
- “Passing authentication cookies”

1.109 Caching of preview files 5.2R7

When a preview is requested, the previewed page may be cached such that, at a later time, further preview requests for this page may be displayed more quickly.



Multi Perspective Preview (MPP) allows previews of pages as they would look at future dates. These previews were previously also cached by default. As of the current FirstSpirit version, caching of these future previews may now be deactivated globally as needed.

Configuration of this caching behavior is carried out in the configuration file `fs-server.conf` using the new parameter `preview.enableTemporalPreviewCache`:

- `true`: Preview pages will be cached. This potentially creates many files, enabling previews for previously viewed pages to load faster. (Default value)
- `false`: Preview pages will **not** be cached. This causes all relevant files to be created anew upon a preview request. This potentially causes more load but creates fewer files in the cache directory.

Use of `true` is recommended if editors are able to request previews for pages as they would look at future dates via the MPP timeline.

Until now, due to the previous caching implementation, it was possible that previews of pages representing future states were not always up-to-date or correct. This erroneous behavior was also corrected in this context.

For further information about MPP, see

- *FirstSpirit SiteArchitect / FirstSpirit AppCenter / Integrated preview / Multi Perspective Preview (→Documentation FirstSpirit SiteArchitect)*
- *Template development / JavaScript APIs / Multi Perspective Preview (→FirstSpirit Online Documentation)*

For further information about the new parameter `preview.enableTemporalPreviewCache`, see *FirstSpirit Manual for Administrators*, chapter “Area: Preview”.



2 Administration / Modules

2.1 Log in via Kerberos ticket "KerberosLoginModule") 5.2R2

To log into FirstSpirit via the Kerberos login module (module name: `de.espirit.firstspirit.server.authentication.KerberosLoginModule`), a Kerberos ticket is accepted, which is passed from the web browser to the FirstSpirit Server.

The `sendAccepted` parameter can be used to influence the HTTP status code in the case of a handshake. If the handshake is successful, "OK" (200) is sent with FirstSpirit version 5.2R2. "ACCEPTED" (202) was sent prior to FirstSpirit version 5.2R2. Depending on the infrastructure in use, this status (202) may not be accepted as "valid", something which may cause indexing problems, for example. This default behavior has therefore been changed as of 5.2R2. It is possible to restore the old behavior by setting the parameter `sendAccepted` to the value `true` (file `fs-jaas.conf`, default value: `false`).

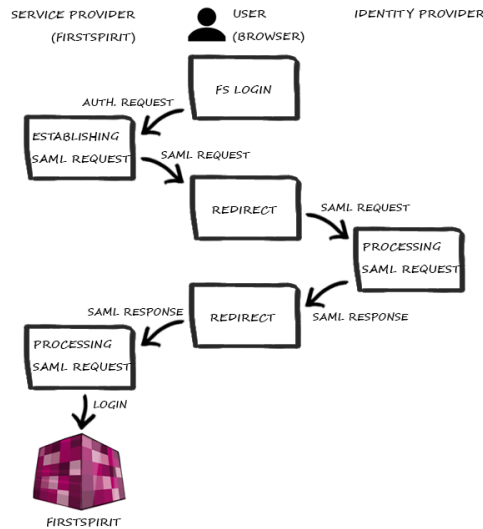
For more information, see

- *FirstSpirit Manual for Administrators*, chapter "Kerberos ticket (integrated Windows login)"
- Module documentation for *FirstSpirit Dynamic Personalization*, chapter "'Kerberos Login' login module"

2.2 The FirstSpirit SAML Login Module is released. 2019-02

The FirstSpirit SAML Login Module is released with FirstSpirit 2019-02. By using the module it is possible to implement Single sign-on (SSO) via the SAML v2.0 standard in FirstSpirit. The login to the FirstSpirit server is then no longer carried out directly, but indirectly via an identity provider. The module is conceptually capable of communicating with all identity providers that support the SAML V2.0 standard. e-Spirit tested and actively maintains the use with Keycloak version 4.6.0 or higher ([Keycloak Homepage](#)).





Login process when using the SAML module (simplified)

When utilizing the module, some restrictions have to be considered:

- When using the SAML login module, it must be noted that only the process of logging in is implemented. There is no communication between the module and the identity provider about a user logging out. This means that if the user logs out from the identity provider, this has no direct effect on the login to FirstSpirit. Likewise, when the user logs out of FirstSpirit, he will not be logged out of the identity provider, and the session there will not be rendered invalid.
- The used API, OneLogin's SAML Java Toolkit, provides only "Single Group/Role Attributes".
- Only one identity provider can be set up per FirstSpirit Server. It is not possible to configure different identity providers on a project basis.

2.3 Changed directory for the FirstSpirit Template Debugger 2019-04

The FirstSpirit Template Debugger both supports software-based troubleshooting in the HTML code and helps the developer when new templates are being developed or existing templates are being expanded.

Due to user access rights the data generated by the Debugger is no longer saved in the user profile directory `.fsdebugger`:



```
C:\Users\USERNAME\.fsdebugger
```

Instead, the data is now saved in the directory which is configured via the parameter `CLIENT_HOME_DIR` in the file `fs-server.conf`. By default this is the subdirectory

```
.firstspirit_5.2R<Version>
```

in the user home directory.

If the debugger was used **before an update to FirstSpirit 2019-04** and the data it generated is still required, the corresponding directory must be moved to the new location.

Example:

For the project with the ID 12345, the directory

```
~/fsdebugger/p12345
```

must be moved to

```
~/firstspirit_5.2R1904/.fsdebugger/p12345
```

If the standard user home directory of FirstSpirit is used (`.firstspirit_*`), this changes with each FirstSpirit release. If corresponding configurations are required beyond a FirstSpirit version change, either a separate user home directory should be defined (e.g. via the parameter `CLIENT_HOME_DIR_WINDOWS=C:/fstemp`), or the corresponding configuration directory must be moved each time.

If the data generated by the Debugger is no longer needed, the directory `~/fsdebugger` can be deleted.

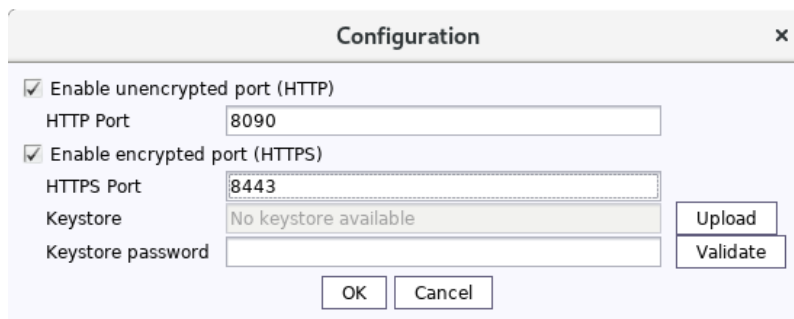
Each time SiteArchitect or ServerManager are started, all `.firstspirit_*` directories in which no file has been changed for 30 days are deleted. As of FirstSpirit 2019-04, this also applies to the `.fsdebugger` directories.



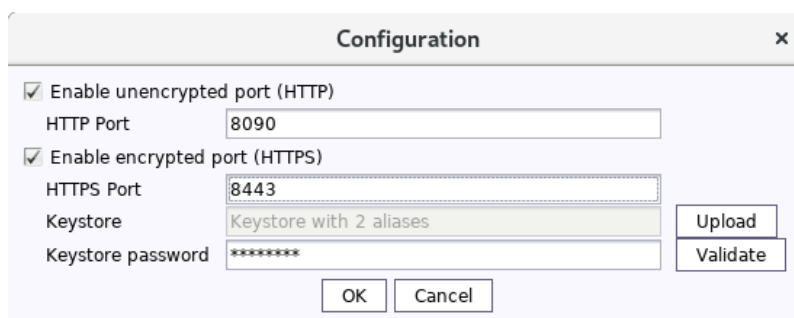
2.4 HTTPS Support for the Module "Eclipse Jetty" (EAP) 5.2R19

With FirstSpirit version 5.2R13 the new module providing the servlet container Eclipse Jetty has been introduced. Support for servers running in legacy mode was added with 5.2R18 in context of the Early Access Program. In order to ease the migration from using the internal Jetty server to using the Jetty module, the current version of FirstSpirit adds support for encrypted connections (HTTPS).

Creating encrypted connections requires a keystore in JKS format. This can be uploaded using the configuration dialog of the JettyService ("FirstSpirit ServerManager / Server Properties / Modules / FirstSpirit Jetty Server / JettyService").



After uploading the keystore and entering the corresponding password, a click on the button "Validate" checks the entered configuration. When successful, the number of detected aliases is displayed.



A restart of the JettyService is required in order to apply the new configuration.



2.5 New FirstSpirit login module with SSO via SAML 2.0 (EAP) 2018-12

The FirstSpirit SAML Login Module supports “single sign-on” authentication in FirstSpirit via SAML 2.0 standard. The module is currently in the EAP phase and has so far only been used with Keycloak version 4.6.0 or higher ([Keycloak homepage](#)).

Due to the EAP status, the module is not shipped with FirstSpirit 2018-12. If there is interest in participating in the EAP phase, please contact e-Spirit Technical Support.

3 General

3.1 Code signing certificate updated 5.2R5

The content of FirstSpirit JAR files is signed with a certificate. This procedure is also called “code signing”. In the current FirstSpirit release, the content is signed with a new certificate that is valid until 2018-06-13 (13 June 2018).

Please refer also to Chapter 1 “Code signing certificates”.

3.2 Code signing certificate updated 5.2R9

The content of FirstSpirit JAR files is signed with a certificate. This procedure is also called “code signing”. In the current FirstSpirit release, the content is signed with a new certificate that is valid until 2019-07-24 (24 July 2019).

Some certificates used by existing FirstSpirit servers expired on 2017-05-21 (21 May 2017), affected FirstSpirit servers must be updated.

3.3 Code signing certificate updated 2018-06

The content of FirstSpirit JAR files is signed with a certificate. This procedure is also called “code signing”. In the current FirstSpirit release, the content is signed with a new certificate that is valid until 22.07.2020.

3.4 Code signing certificate updated 2019-07

The content of FirstSpirit JAR files is signed with a certificate. This procedure is also called “code signing”. In the current FirstSpirit release, the content is signed with a new certificate that is valid until 08/23/2021.



3.5 Main memory requirements for FirstSpirit SiteArchitect 5.2R15

As of the current FirstSpirit version, the standard value for maximum heap size (Xmx) of FirstSpirit SiteArchitect was increased to 1024MB. Thus, FirstSpirit SiteArchitect now requires at least 1024MB of free main memory, as opposed to the previously required 768MB.

For further information, see *FirstSpirit Technical Data Sheet*.

3.6 Announcement: FirstSpirit Experience Accelerator 2020-02

e-Spirit has so far provided demo projects with sample basic content and configurations. These will be replaced in the future by the contemporary “**FirstSpirit Experience Accelerator**”. The FirstSpirit Experience Accelerator is a new, important building block in the FirstSpirit ecosystem. It contains reference implementations for important content modules (including Shoppable Image and Video, Touchpoint Editing, Teaser Carousel, and Banner) and can be used as a quick entry into a new FirstSpirit project. The objective of the FirstSpirit Experience Accelerator is a faster product launch in the enterprise and eCommerce environment.

The “Mithras Energy” demo project (for ContentCreator and SiteArchitect) will be dropped in the future and will no longer be distributed with FirstSpirit.

3.7 Browser compatibilities (Micorsoft Edge) 2020-01

In general FirstSpirit always works with the latest version of a third-party component. They are regularly tested by e-Spirit AG and measures are taken to eliminate any errors and incompatibilities. This also applies to browsers for using FirstSpirit ServerMonitoring, ContentCreator and FragmentCreator.

The recommended browsers for **FirstSpirit FragmentCreator** are currently:

- Google Chrome
- Microsoft Edge

Microsoft Edge was recently moved to a new technological basis (Chromium) by the manufacturer. This new version will be automatically delivered to customers as planned with a Windows update from mid-January 2020.



Also in this case FirstSpirit supports the latest version of Microsoft Edge. In particular, MicroApps (MicroApp Framework) do not work with “old” versions of Microsoft Edge, so the new (chromium-based) version of Microsoft Edge should be used for working with FirstSpirit.

3.8 Display of Version Information 2018-06

In the course of introducing the new release naming scheme (for more information, see the separate passage in the introduction chapter of these release notes), the display of version information in FirstSpirit has been modified and/or extended.

- **FirstSpirit Start Page:** Clicking on the version number in the footer (“Server version”) will cause a dialog to open which displays information about the server (server name, FirstSpirit version, license). Clicking on “Show all details” in that window will reveal more information: Java version, operating system, web server, browser.
- **FirstSpirit SiteArchitect:** The splash screen which is displayed while FirstSpirit SiteArchitect starts as well as the dialog “Help / About FirstSpirit” have been redesigned and now show the server name, the FirstSpirit version in use, names of the user and of the current project, and the license. In the dialog “Help / About FirstSpirit”, clicking on “Show all details” will reveal further information which is less relevant for editors (e.g. group memberships, Java version, operating system, etc.).
- **FirstSpirit ContentCreator:** The “About” dialog which will be shown when clicking on the FirstSpirit icon at the far left of the menu bar now primarily displays the server name, the FirstSpirit version in use, names of the user and of the current project, and the license. Clicking on “Show all details” will reveal further information which is less relevant for editors (Java version, operating system, web server, browser).

3.9 Databases: Support for MariaDB 5.2R12

FirstSpirit has been designed as an enterprise content management system for application in complex IT landscapes, and supports various operating systems, Java runtime environments, and databases.

As of the current FirstSpirit version, MariaDB (cf. also to <https://mariadb.org>) is officially supported for use with FirstSpirit, in version 10.1. Reference version is 10.1.23.

Note: Please use the MySQL JDBC driver for MariaDB (`mysql-connector-java-x.x-bin.jar`).



For further information, see *FirstSpirit Technical Datasheet* and *FirstSpirit Server configuration / Database connection / Examples of application* (→*Documentation for Administrators*).

3.10 Databases: Support for Microsoft SQL Server 2016 and data type

"n`text`" 5.2R10

FirstSpirit has been designed as an enterprise content management system for application in complex IT landscapes, and supports various operating systems, Java runtime environments, and databases.

As of the current FirstSpirit version, **Microsoft SQL Server**, version **2016**, is now officially supported for use with FirstSpirit as a database server running on Windows servers.

This means that reference versions of Microsoft SQL Server are versions 2014 and 2016. Versions 2008 and 2012 are passively supported. Support for Microsoft SQL Server 2005 has ended.

For further information, see *FirstSpirit Technical Datasheet*.

Because the data type `ntext`, which is used by Microsoft SQL Server, has been marked “deprecated” by the manufacturer (see <https://docs.microsoft.com/en-us/sql/t-sql/data-types/nchar-and-nvarchar-transact-sql>), the column type for XML data in FirstSpirit (column type “FirstSpirit-Editor”, “SiteArchitect / Database schemata / Database schema / Create column / Data type”) was changed from using `ntext` to using `nvarchar(max)`. This complies with Microsoft's recommendation. This means that contents of the column type “FirstSpirit-Editor” will now be mapped to `nvarchar(max)` and no longer to `ntext`. Existing columns which use the type `ntext` are not affected by this change: in existing projects, these will continue to be mapped to `ntext`.

3.11 End of Java 8 support 2020-06

With the current FirstSpirit release, Oracle Java 8 and OpenJDK 8 are no longer supported by FirstSpirit.

Background: FirstSpirit is operated successfully by customers and partners with a wide range of different third-party components (operating systems, JDKs, servlet engines, application servers, and databases) and external libraries. Some of these components / libraries are no longer compatible with Java 8 in their current version. This applies, for example, to the internal Apache Derby database supplied with FirstSpirit. As a consequence, updates can no longer be carried out for those third-party components / libraries, which is particularly critical for security-relevant updates.



Oracle has not provided any public updates for Java 8 since February 2019 and recommends that developers and end users transition to a higher Java version in order to continue receiving public updates and security enhancements.

Also, with the end of Java 8 support, as announced before:

- The support for the **Windows installer** and the legacy **tar archive (.tgz) for all Unix systems** is dropped. We advise our customers to use the new installation method via the install archive (see [Installing FirstSpirit](#)).
- The option of starting the FirstSpirit desktop applications via **Java Web Start is no longer available**. (The Java Web Start functionality is included in Oracle Java 8, but is not supported from Oracle Java 11 on. OpenJDK does not offer a comparable technology.) Therefore, SiteArchitect and ServerManager can now be started solely via the FirstSpirit Launcher (see [FirstSpirit Launcher documentation](#)). The FirstSpirit JNLP files, which were required for Java Web Start, will also be dropped.

The ramp-down phase for Java 8:

- started as planned in the second quarter of 2020. First, the Java 8 compatibility tests were gradually reduced.
- **With the current FirstSpirit version**, Java 8 functionality has been removed from FirstSpirit:
 - Wrapper configuration: All definitions for Java 8 have been removed from the standard configuration files for the Java Service Wrapper (`fs-wrapper[.isolated].conf`, `fs-wrapper-vendor.conf`) provided by e-spirit. The standard configuration files are provided via the FirstSpirit installation archive or the FirstSpirit update archive and can be found in the folder `<FirstSpiritROOT>/conf/conf-all/` after a new installation or after updating the FirstSpirit backend. The adjustments are included from wrapper version 1.0.8 onwards.
A Java version 11 or higher is now required to start the FirstSpirit server.
 - Launcher JRE module: Oracle Java 8 and AdoptOpenJDK 8 are no longer included in the FirstSpirit Launcher JRE module. The FirstSpirit Launcher JRE module currently offers the versions AdoptOpenJDK 11.0.7+10 (default) and AdoptOpenJDK 14+36.



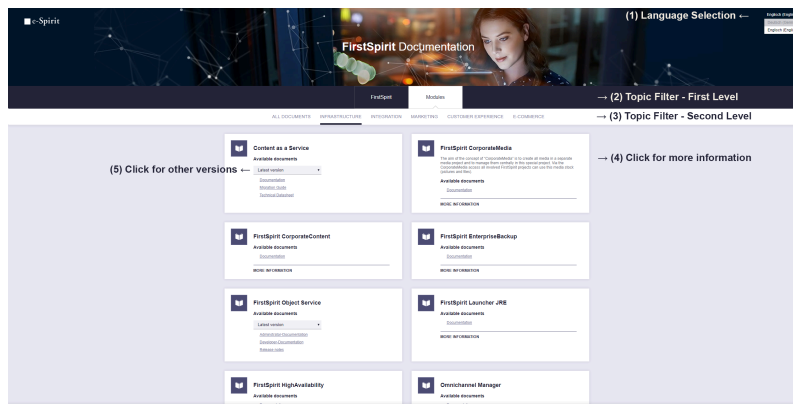
- In 2020Q4 the byte code level will be switched from Java 8 to Java 11. **From this point on, all Java versions prior to Java 11 (LTS) will be incompatible with FirstSpirit.**

This means that FirstSpirit will no longer be executable with Oracle Java 8 or OpenJDK 8 and that e-Spirit AG will no longer implement any measures to eliminate errors or problems associated with Java 8. We recommend that you switch to a higher Java version soon.

! On the server side, a change from Java 8 to Java 11 (and higher) should be tested extensively on a test system, especially when using third-party components and individual customer extensions. Java 8 and Java 11 in parts differ considerably, which may result in existing libraries and implementations being incompatible with Java 11 (and higher). In such cases, updating the respective libraries, if possible, may help. When changing from Java 8 to Java 11 (and higher) we recommend changing the FirstSpirit server to Isolated Mode at the same time, in order to avoid having to test modules and implementations twice. For this topic, see [Switching to Isolated Mode](#).

3.12 FirstSpirit Documentation (docs.e-spirit.com) 2019-08

The FirstSpirit product documentation is now available via docs.e-spirit.com.



FirstSpirit Documentation (docs.e-spirit.com)

The documentation contains:

- Manuals (for administrators, template developers, module developers, editors)
- Descriptions of single functionalities (e.g. “External Synchronization” or “Isolated Mode”)



- Documentation on FirstSpirit modules (e.g. “FirstSpirit Intelligent Content Engine”, “Omnichannel Manager”)
- Technical data sheets (for FirstSpirit and some FirstSpirit modules)
- API documentation
- installation instructions
- migration instructions
- and other documents

Usually, documents are always provided in both German and English. The **Language Selection (1)** in the top right-hand corner allows you to switch from German-language documents to English-language documents (and vice versa).

Content can be filtered via the buttons “FirstSpirit” or “Modules” **on the first level (2)** and via FirstSpirit user groups (editors, developers, administrators) or module topics (infrastructure, integration, marketing, customer experience, e-commerce) **on the second level (3)**. The “**All documents**” button lists all documents in the respective area (“FirstSpirit” or “Modules”). Please note that a search option is scheduled for a later version.

A click on the “**More information**” **button (4)** displays a short description of the documentation.

Some documents are offered for different versions (of a module). In this case, a combo box is available **for selecting the required version (5)**.

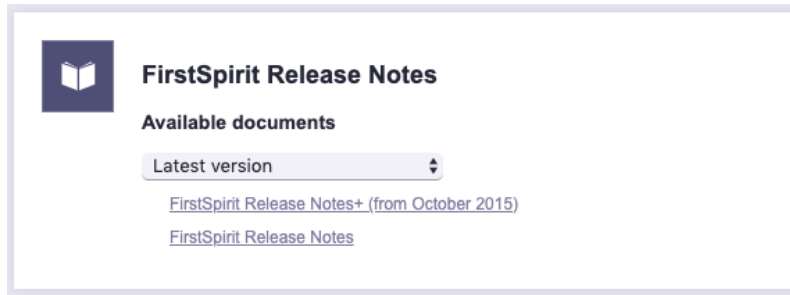
The former entry point into the publicly available FirstSpirit documentation is now accessible via the following click path:

docs.e-spirit.com >> “FirstSpirit” >> “FirstSpirit Online Documentation”.

3.13 FirstSpirit Documentation (docs.e-spirit.com): Release Notes 2019-09

The FirstSpirit Release Notes are now available via <https://docs.e-spirit.com/> in the “FirstSpirit”/“All Documents” area and via the filtered “FirstSpirit”/“Administrators” view.





FirstSpirit Release Notes (docs.e-spirit.com)

3.14 FirstSpirit documentation: PDF format discontinued 2020-04

Documentation for all FirstSpirit products is now provided in the HTML format.

Until recently, we have provided documentation in the PDF format as well, but as of the current release, we will discontinue those efforts.

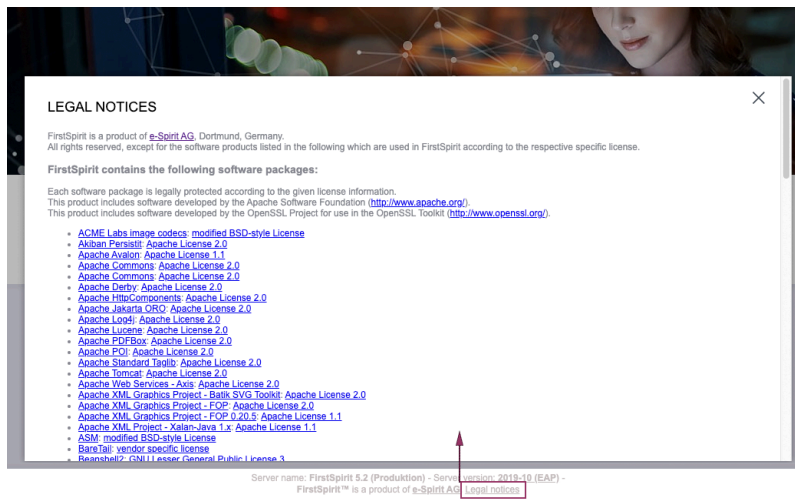
More specifically:

- The navigation entry “Documentation” has been removed from the FirstSpirit online documentation interface.
- The DVD index, that depends on the beforementioned navigation structure of the online documentation, has now been detached and will keep the state it had in FirstSpirit Release 2020-03.
- The conversion of the FirstSpirit release notes to the HTML format is currently ongoing (for the duration, release notes will be provided in the PDF format).
- Currently, the documentation for some of our FirstSpirit modules is only available in the PDF format, and may still be obtained from <https://docs.e-spirit.com/>.



3.15 FirstSpirit start page: information on third-party software and modules 2019-10

The “Legal notices” link at the bottom of the FirstSpirit start page can be used to call up information regarding third-party software being used and the license.



FirstSpirit start page: legal notices after login

New behavior:

In the current release, this information is still only accessible to users who have previously been authenticated in the system.

In addition, the current release enables information regarding the name, version, and where applicable, license information for the FirstSpirit modules installed on the server to be displayed via the “Legal notices” link.

For module developers:

The “Legal notices” section lists all modules that contain license information regarding their dependencies.

These are all modules (FSM archives) which implement the `<licenses><Path to licensefile></licenses>` tag in the `module[-isolated].xml` module descriptor, for example:




```
<module>
  ...
  <licenses>META-INF/licenses.csv</licenses>
  ...
</module>
```

The CSV file passed here must start with the following row:

```
"artifact","moduleUrl","moduleLicense","moduleLicenseUrl"
```

In the following rows, one piece of license information is then stored in each row in the specified format. Any information that is missing is represented by an empty entry.

Example:

```
"artifact","moduleUrl","moduleLicense","moduleLicenseUrl "
"myClass",,"meine Klasse","http://www.example.org"
```

3.16 IDs in FirstSpirit Release Notes: New prefix "CXT" 2019-05

For better clarity of the release notes, the prefix *CXT* was introduced in the “ID” column of the tables contained in the release notes with FirstSpirit 2019-03 for features and bug fixes relating to “FirstSpirit Content Experience Tools”. Release Notes entries relating to the core product will continue to receive the *CORE* prefix.

3.17 IDs in FirstSpirit release notes 2018-10

FirstSpirit release notes are created with FirstSpirit. Some time ago, in order to advance and optimize the agility of its software development process, e-Spirit has introduced a new tool for internal project management and tracing. This tool now also serves bug tracking purposes.

As of the current FirstSpirit release, the IDs given in the first column of the release notes' issue tables reference this new tool.

While the IDs previously were six-digit numbers, they are now four-digit numbers.



3.18 Java version specifications 2019-09

For support requests, reporting bugs, etc., the Java version used is often relevant. It can be read at various points, e.g. via a corresponding link on the FirstSpirit start page, dialogfenster “Help / About FirstSpirit” in FirstSpirit ServerManager and SiteArchitect...

As of the current release, the Java runtime version (e.g. *12.0.2+10*) is now displayed at these points instead of the Java version (e.g. *12.0.2*).



3.19 Java Wrapper (fs-wrapper.*.conf): Standard recognition of 32 and 64 bit systems has been deactivated 2018-07

JavaVMs are started in 32-bit mode by default on certain platforms. The 64-Bit-Java-VM can be activated on 64-bit systems with `-d64` parameter on the Java command line. This switchover can be made automatically with the Java Wrapper (file `fs-wrapper.conf` in the sub-directory `conf` of the FirstSpirit server) by means of the `wrapper.java.additional.auto_bits` parameter. Due to a bug in the Java Wrapper, the default value for this parameter has been changed from `true` to `false`.

For new installations with FirstSpirit 2018-07 and later that use Oracle Java 10 or higher, no modifications are necessary.

For existing FirstSpirit installations that use Oracle Java 10 or higher, the line



```
wrapper.java.additional.auto_bits=true
```

in the file `fs-wrapper.conf` and possibly as well in the files `fs-wrapper.*.conf` in the sub-directory `<FirstSpiritROOT>/conf` must be replaced by

```
wrapper.java.additional.auto_bits=false
```

Installations that use Oracle Java 8 are not affected by this error.

For more informations please see *FirstSpirit Manual for Administrators*, “FirstSpirit Server configuration / Configuration files (FirstSpirit Server) / Java VM and Wrapper (fs-wrapper.conf) / Java Wrapper Parameters”.

3.20 Java: Current status and outlook 2019-10

For FirstSpirit, e-Spirit supports:

- OpenJDK: the current Java version as well as the latest LTS (Long-Term-Support) variant.
- Oracle Java: only the latest LTS (Long-Term-Support) variant.

This applies to both the FirstSpirit Server and the FirstSpirit desktop applications.

As an exception from this rule e-Spirit on an interim basis continues to support Oracle Java and OpenJDK version 8. Support for Java 8 will cease in the future (see below for “Outlook Java 8 support”).

As of FirstSpirit 2019-10, OpenJDK 13 (non-LTS; Release Date 2019-09) is officially approved for use with FirstSpirit (the FirstSpirit Server and the FirstSpirit desktop applications).

Adopt OpenJDK 13 is included in the “FirstSpirit Launcher JRE” module (see module “FirstSpirit Launcher JRE”: Updating Java versions). After the appropriate configuration, the FirstSpirit desktop applications can be started via the “FirstSpirit Launcher JRE” module using the FirstSpirit Launcher with Adopt OpenJDK 13. (For documentation on the “FirstSpirit Launcher JRE” module, see the [corresponding documentation](#)).

With the support for OpenJDK 13, the support for **OpenJDK 12** (non-LTS; Release Date 2019-03) expires.



FirstSpirit is expected to remain functional with OpenJDK 12. However, e-Spirit AG will neither carry out tests with OpenJDK 12 nor implement any measures designed to eliminate errors or problems that are exclusively associated with the use of OpenJDK 12.

Current status: The following JDKs are therefore compatible for FirstSpirit 2019-10:

- Oracle Java 11 (in the current version) (LTS)
- Oracle Java 8 (in the current version) (LTS; outdated)
- OpenJDK 13 (in the current version) (non-LTS)
- OpenJDK 11 (in the current version) (LTS)
- OpenJDK 8 (in the current version) (LTS; outdated)

A complete list of the supported Java versions can be found in [Technical requirements and recommendations \(Documentation for administrators\)](#).

Outlook Java 8 support:

As part of product maintenance, discontinuation of support for Java 8 was announced with FirstSpirit 2019-05 (*).

FirstSpirit is scheduled to no longer support Oracle Java 8 and OpenJDK 8 from June 2020.

(*) Oracle themselves have not provided any public updates for Java 8 since February 2019 and recommend that developers and end users transition to a higher Java version in order to continue receiving public updates and security enhancements.

Background: FirstSpirit is operated successfully by customers and partners with a wide range of different third-party components (operating systems, JDKs, servlet engines, application servers, databases) and external libraries. Some of these components / libraries are no longer compatible with Java 8 in the current version. This applies, for example, to the internal “Apache Derby” database supplied with FirstSpirit. This means that updates can no longer be carried out for these third-party components / libraries, which is particularly critical for security-relevant updates.



- ! If security gaps or security-relevant problems should occur under Java 8 in the future, e-Spirit AG reserves the right to terminate Java 8 support for FirstSpirit prematurely (before June 2020).

With the end of Java 8 support, as announced before, also:

- the support for the Windows installer will be dropped. We advise our customers to use the new installation method via the install archive (see [Installing FirstSpirit](#)) and
- the option of starting the FirstSpirit desktop applications via Java Web Start will no longer be available. (The Java Web Start functionality is included in Oracle Java 8, but will not appear in Oracle Java 11. OpenJDK does not offer a comparable technology.) SiteArchitect and ServerManager can then be started only via the FirstSpirit Launcher (see [FirstSpirit Launcher documentation](#)).

The ramp-down phase for Java 8 will start as planned in Q2-2020 and will gradually reduce the Java 8 compatibility tests. In Q4-2020 the byte code level will be switched from Java 8 to Java 11. **From this point on, all Java versions prior to Java 11 (LTS) will be incompatible with FirstSpirit.**

This means that FirstSpirit will no longer be executable with Oracle Java 8 or OpenJDK 8 and that e-Spirit AG will no longer implement any measures to eliminate errors or problems associated with Java 8. **We recommend that you switch to a higher Java version soon.**

- ! On the server side a switch from Java 8 to Java 11 (and higher) should be tested extensively on a test system, especially when using third-party components and individual customer extensions! Java 8 and Java 11 in parts differ significantly, possibly rendering existing libraries and implementations incompatible with Java 11 (and higher). In such cases updating the respective libraries can help, if updates exist. When changing from Java 8 to Java 11 (and higher) we recommend switching the server to Isolated Mode at same time, in order to avoid having to test modules and implementations twice. For this topic see [Switching to Isolated Mode](#).

3.21 Java: Current status and outlook 2020-04

For operating FirstSpirit, e-Spirit AG supports:

- OpenJDK: the current Java version as well as the latest LTS (Long-Term-Support) variant.



- Oracle Java: only the latest LTS (Long-Term-Support) variant.

This applies to both the FirstSpirit Server and the FirstSpirit desktop applications.

Deviating from this rule, e-Spirit AG continues to support Oracle Java and OpenJDK Version 8 for the time being, and will discontinue support for Java 8 in the future (see below for Outlook Java 8 support).

As of FirstSpirit 2020-04, OpenJDK 14 (non-LTS; release date 2020/03) is officially approved for use with FirstSpirit (i.e, the FirstSpirit Server and the FirstSpirit desktop applications).

AdoptOpenJDK 14 is included in the “FirstSpirit Launcher JRE” module (see module “FirstSpirit Launcher JRE”: Updating Java versions). After appropriate configuration, FirstSpirit desktop applications can be started via the “FirstSpirit Launcher JRE” module using the FirstSpirit Launcher with AdoptOpenJDK 14. (For documentation on the “FirstSpirit Launcher JRE” module, see the [corresponding documentation](#)).

With support for OpenJDK 14, support for **OpenJDK 13** (non-LTS; release date was 2019/07) expires.

FirstSpirit is expected to remain functional with OpenJDK 13. However, e-Spirit AG will neither carry out tests with OpenJDK 13 nor implement any measures designed to eliminate errors or problems that are exclusively associated with the use of OpenJDK 13.

Current status: The following JDKs are therefore compatible for FirstSpirit 2020-04:

- Oracle Java 11 (in its current version) (LTS)
- Oracle Java 8 (in its current version) (LTS; outdated)
- OpenJDK 14 (in its current version) (non-LTS) (**)
- OpenJDK 11 (in its current version) (LTS) (**)
- OpenJDK 8 (in its current version) (LTS; outdated) (*) (**)

(*) Version 8u242 (Outdated) contained in the “FirstSpirit Launcher JRE” module will not be updated to version 8u252 (Outdated) in April 2020.

(**) Recommended: Use of the OpenJDK distribution AdoptOpenJDK (HotSpot JVM).



A complete list of the supported Java versions can be found in [Technical requirements and recommendations \(Documentation for administrators\)](#).

Outlook Java 8 support:

As part of product maintenance, discontinuation of support for Java 8 was first announced with FirstSpirit 2019-05 (**).

FirstSpirit is scheduled to no longer support Oracle Java 8 and OpenJDK 8 from June 2020.

(**) Oracle has not provided any public updates for Java 8 since February 2019 and recommends that developers and end users transition to a higher Java version in order to continue receiving public updates and security enhancements.

Background: FirstSpirit is operated successfully by customers and partners with a wide range of different third-party components (operating systems, JDKs, servlet engines, application servers, and databases) and external libraries. Some of these components / libraries are no longer compatible with Java 8 in its current version. This applies, for example, to the internal “Apache Derby” database supplied with FirstSpirit. As a consequence, updates can no longer be carried out for those third-party components / libraries, which is particularly critical for security-relevant updates.

Should security gaps or security-relevant problems occur under Java 8 in the future, e-Spirit AG reserves the right to terminate Java 8 support for FirstSpirit prematurely (before June 2020).

Also, with the end of Java 8 support, as announced before:

- The support for the Windows installer will be dropped. We advise our customers to use the new installation method via the install archive (see [Installing FirstSpirit](#)).
- The option of starting the FirstSpirit desktop applications via Java Web Start will no longer be available. (The Java Web Start functionality is included in Oracle Java 8, but is not supported from Oracle Java 11 on. OpenJDK does not offer a replacement.) Therefore, SiteArchitect and ServerManager may only be started via the FirstSpirit Launcher (see [FirstSpirit Launcher documentation](#)). The FirstSpirit JNLP files, which were required for Java Web Start, will also be dropped.

The ramp-down phase for Java 8 started as planned in the second quarter of 2020 and will gradually reduce the Java 8 compatibility tests. In 2020Q4 the byte code level will be switched from Java 8 to



Java 11. **From this point on, all Java versions prior to Java 11 (LTS) will be incompatible with FirstSpirit.**

This means that FirstSpirit will no longer be executable with Oracle Java 8 or OpenJDK 8 and that e-Spirit AG will no longer implement any measures to eliminate errors or problems associated with Java 8. **We recommend that you switch to a higher Java version soon.**



On the server side, a change from Java 8 to Java 11 (and higher) should be tested extensively on a test system, especially when using third-party components and individual customer extensions. Java 8 and Java 11 in parts differ considerably, which may result in that existing libraries and implementations are not compatible with Java 11 (and higher). In such cases, updating the respective libraries may help, if possible. When changing from Java 8 to Java 11 (and higher) we recommend changing the FirstSpirit server to Isolated Mode at same time, in order to avoid having to test modules and implementations twice. For this topic see [Switching to Isolated Mode](#).

3.22 JSON support in FirstSpirit 2019-12

JSON (JavaScript Object Notation) is a lightweight data-interchange format (see also [json.org](https://www.json.org/) and [FirstSpirit Documentation - JSON](#)).

FirstSpirit now has its own JSON channel. The JSON system presentation channel is now available on every FirstSpirit server and should be used for the output of JSON.

json() function

The current FirstSpirit release introduces the json() function. The json() function will transform any FirstSpirit element into a JSON object structure.

This JSON object structure can then be rendered to the JSON channel using a `$CMS_VALUE(. . .)$` statement. The most basic use case would render an FirstSpirit page as a JSON document:

```
$CMS_VALUE( json( #this ) )$
```

In this statement the current page `#this` is passed to the json() function, which transforms the page into the JSON object structure. JSON object structure is then rendered to the JSON channel using the surrounding `$CMS_VALUE(. . .)$` statement.



Output example of a FirstSpirit page reference (simplified):

```
{
  "fsType": "PageRef",
  "name": "order_page",
  "formData": {
    "page_formfield1": {},
    "page_formfield2": {}
  },
  "children": [
    {
      "fsType": "Body",
      "name": "body_1",
      "children": [
        {
          "fsType": "SectionReference",
          "name": "section_1",
          "formData": {
            "cms_formfield11": {},
            "cms_formfield12": {}
          }
        },
        {
          "fsType": "SectionReference",
          "name": "section_2",
          "formData": {
            "cms_formfield21": {},
            "cms_formfield22": {}
          }
        }
      ]
    }
  ]
}
```

The default JSON output format includes:

- the page reference itself
- the page reference attribute “children” contains the content areas (“bodies”) in a JSON array



- each “body” in the JSON array is a JSON object which in turn has a “children” attribute that includes the associated paragraph objects (“Sections”)
- each JSON object in the JSON object structure has standard attributes (e.g. “fsType”) as well as other type-specific attributes
- elements with a form (for example, pages and sections have a “formData” attribute
- the “formData” attribute is a JSON object and contains the form data as key-value pairs where:
 - the name of the input component is the JSON key
 - the value is a JSON object representing the form component.

Configuration Options

The JSON output may be configured to support specific usecases. The configuration is done via the system object `#global.json`:

```
$CMS_SET(#global.json.prettyPrinting, true)$
```

In the above example, the `prettyPrinting` option is enabled. With the `prettyPrinting` option enabled JSON output is rendered in a structured, human-readable form. For an overview of the configuration options see *Enhanced JSON support / Configuration* (→*FirstSpirit Online Documentation*).

JSON API

The `json()` function returns an object from the FirstSpirit JSON API. Often this is a `JsonObject` or `JsonArray` object instance. Using the API provided by these instances, individual attributes of the JSON output may be modified **before** it is written to the JSON output channel:

```
$CMS_VALUE(json(#this).removeKey("formData"))$
```

In the above example, the “formData” attribute is removed from the JSON object resulting in a JSON output where the form data is omitted.

FirstSpirit Developer API:



- `de.espirit.firstspirit.generate.functions.json`
- `de.espirit.firstspirit.json`

3.23 New JSON format version 1.1 2020-02

With the current FirstSpirit release a new version of the JSON output format is released. The **new JSON format version 1.1** contains several improvements over version 1.0 (see below). Starting with FirstSpirit 2020-02 the new format version will be used (default setting).

The previous format version 1.0 remains supported but is to be replaced in the medium term.

The format version can be set explicitly via the JSON settings:

```
$CMS_SET(#global.json.formatVersion, "1.1")$
```



If a stable JSON output is needed even after FirstSpirit updates have been performed, the format version should be set explicitly in the project settings, under “Global Settings”.

If the format version is not set explicitly, the latest JSON format version (now 1.1) will always be used.

Overview of the changes:

1) New attribute “page” for page references:

When rendering a page reference, the corresponding page is now rendered as a child attribute “page”.

As a result, the page reference attributes only contain values of the page reference. All values that belong to the page (for example, the attribute “formData”) are now in the page's JSON object. (Previously, when a page reference was rendered, the values from both the page and the page reference were merged to keep the JSON object structure as simple as possible).

2) The attribute “metaFormData” is always rendered by default:

Any object's meta data will now be rendered, unless rendering is explicitly disabled via `$CMS_SET(#global.json.metaDataRendering, false)$`.



Before the behavior was opposite - metadata rendering explicitly had to be activated with `$CMS_SET(#global.json.metadataRendering, true)$`.

3) Rendering of display names (attribute “displayname”):

The display name is rendered in the current language, in the attribute “display name”, for all nodes that can have display names.

When no display name was defined, the display name is taken from the master language. If that display name has not been set either, the node's reference name is rendered.

4) The attribute “valueSchema” has been removed:

The attribute “valueSchema” is no longer being rendered.

5) The attribute “identifier” has been removed (rendering of input components):

When rendering the data of input components only the attribute “name” is being rendered. The attribute “identifier” has been removed, since both attributes contained the same information.

Rendering of a page reference in format version 1.1 (simplified representation):

```
{
  "fsType": "PageRef",
  "name": "pt_metadata_selective_1",
  "displayName": "pt_metadata_selective",
  "identifier": "15ff7b8d-9059-4721-b92b-e697e153fc85",
  "uid": "pt_metadata_selective_1",
  "uidType": "SITESTORE_LEAF",
  "metaFormData": {
    "meta_field1": {
      "fsType": "CMS_INPUT_TEXT",
      "name": "meta_field1",
      "identifier": "meta_field1",
      "value": null,
      "valueSchema": {
        "type": "null"
      }
    },
    "meta_field2": {
      "fsType": "CMS_INPUT_TEXT",
```



```
    "name": "meta_field2",
    "identifier": "meta_field2",
    "value": "value_field2_set",
    "valueSchema": {
      "type": "string"
    }
  },
  "meta_field3": {
    "fsType": "CMS_INPUT_DATE",
    "name": "meta_field3",
    "identifier": "meta_field3",
    "value": null,
    "valueSchema": {
      "type": "null"
    }
  }
},
"page": {
  "fsType": "Page",
  "name": "pt_metadata_selective_1",
  "displayName": "pt_metadata_selective",
  "identifier": "76a0b7c2-3ec8-4908-88e8-53c2f43d9902",
  "uid": "pt_metadata_selective_1",
  "uidType": "PAGESTORE",
  "template": {
    "fsType": "PageTemplate",
    "name": "pt_empty_page",
    "displayName": "pt_empty_page",
    "identifier": "7c020f2f-719c-4334-8efc-f44015333d2a",
    "uid": "pt_empty_page",
    "uidType": "TEMPLATESTORE"
  },
  "formData": {
  },
  "metaFormData": {
    "meta_field1": {
      "fsType": "CMS_INPUT_TEXT",
      "name": "meta_field1",
      "identifier": "meta_field1",
      "value": "value_field_1",
      "valueSchema": {
        "type": "string"
      }
    },
    "meta_field2": {
```



```
    "fsType": "CMS_INPUT_TEXT",
    "name": "meta_field2",
    "identifier": "meta_field2",
    "value": null,
    "valueSchema": {
      "type": "null"
    }
  },
  "meta_field3": {
    "fsType": "CMS_INPUT_DATE",
    "name": "meta_field3",
    "identifier": "meta_field3",
    "value": null,
    "valueSchema": {
      "type": "null"
    }
  }
},
"children": [
]
}
```

3.24 New Technical Datasheet for FirstSpirit 2019-02

FirstSpirit is operated successfully by customers and partners with a wide range of different third-party components (operating systems, JDKs, servlet engines, application servers, databases).

The Technical Datasheet provides:

- an overview of recommended reference system configurations for operation with FirstSpirit,
- an extended list of further compatible system configurations that have been checked by e-Spirit and deemed functional, and
- under the item “Not supported” a list of system configurations that are known to cause problems or are highly likely to cause problems.

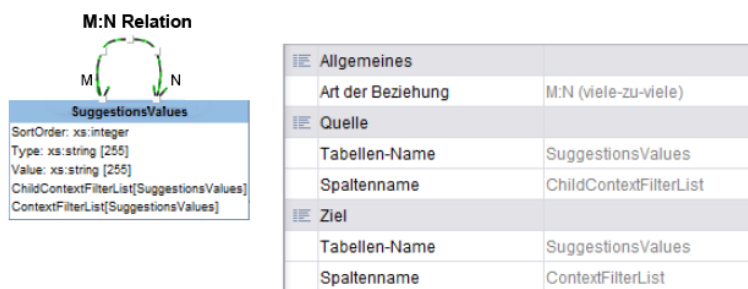


The Technical Datasheet for FirstSpirit has been revised. It is available under the chapter “Technical Requirements and Recommendations” as part of the documentation for administrators (HTML): <https://docs.e-spirit.com/odfs/edocs/admi/introduction/index.html>

A PDF version of the Technical Datasheet can be obtained from the start page of the FirstSpirit documentation: <https://docs.e-spirit.com/odfs/documentation/technical-docum/index.html>.

3.25 Query: Erroneous query results related to self-referencing M:N relations 2018-09

Queries are used to limit the number of datasets of a data source or to sort them for output. In (database) tables that had a self-referencing M:N relation (upon itself), the attributes were switched. In this case, queries returned erroneous results.



Current behavior for new database schemata: For newly-created database schemata, this error was fixed.

Current behavior for existing database schemata: For all existing database schemata, the erroneous behavior will be retained so that existing projects are not affected by any behavior change. Existing schemata can be adjusted manually to support the new behavior. For this, the version attribute in the schema's persistence (“schema.xml”) must be edited. Please contact Technical Support for help in this matter. After this change, the affected queries in projects must be adjusted manually.

Workaround for existing database schemata: For existing database schemata, the erroneous behavior can be worked around by “switching” the appropriate attribute names in queries:



```

<QUERY entityType="SuggestionsValues">
  <FILTERPARAM [...] value=" "/>
  <FILTERPARAM [...]
  <AND>
    <EQ attribute="datatype.Name" parameter="
    <EQ attribute="ContextFilterList.Value" ← <EQ attribute="ChildContextFilterList.Value"
  [...]
</QUERY>
    
```

Switching the attribute names (workaround)

3.26 Release notes: chapter sorting 2019-02

FirstSpirit release notes are provided in German and English for

- individual releases (file name: Releasenotes_<Release>.pdf or Releasenotes_<Release>_EN.pdf)
- combined for all releases (file name: Releasenotes_<Release>_combined.pdf or Releasenotes_<Release>_EN_combined.pdf)

e.g., Releasenotes_2019_01_EN.pdf or Releasenotes_2019_01_EN_combined.pdf.

Entries in the FirstSpirit release notes are categorized in different ways to enable quick access to relevant topics:

- The **first chapters** contain descriptions of new features, generally set out according to target user group/FirstSpirit component.
- The **“Deprecations” chapter** provides a clear list of functions that are being discontinued with the date of their withdrawal.
- The **“Overview” chapter** lists the functions implemented in the current release and relevant rectified errors in table format, sorted by their ID in the internal bug tracking system and labeled with categories.
- In the release-specific editions it is possible to jump from a category to the last part of the document (**“Categories” chapter**) which lists all entries by category, also in table format.

The entries are sorted alphabetically in the current release. Furthermore, the sorting / chapter numbering of the entries in the English release notes has been aligned with the sorting of the entries in the German release notes. This means that the entries can be found under the same chapter number in both languages.



3.27 External database support via the DatasetDataAccessPlugin 2020-04

The DatasetDataAccessPlugin was extended in such a way that external data sources configured in FirstSpirit, on which FirstSpirit does not have write permissions (e.g. read-only referenced databases), can now also be referenced via the FS_INDEX input component.

In this case a coded variant of the primary key of the respective table is used as identifier.

3.28 Support of performance analyses on preview pages 2019-05

To analyze performance problems in connection with the preview, it is now possible to get a summary of the duration of the single accesses.

To call the performance analysis, the parameter

```
/showLog=profile
```

must be added to the preview URL.



Log for [preview of node 113993, project 113425, language 'DE', release=false](#)

remote calls

name	total time	count	min	max	average
de.espirit.firstspirit.manager.StoreManager.getSubTree	32	44	0	3	0.72
de.espirit.firstspirit.manager.StoreManager.getElement	17	16	0	5	1.06
de.espirit.firstspirit.manager.MediaManager.getPictureMetaData	15	12	0	4	1.25
de.espirit.firstspirit.manager.ContentManager.executeQuery	12	1	12	12	12.0
de.espirit.firstspirit.manager.ContentManager.fetchByKeys	10	1	10	10	10.0
RepositoryManager.getNearestContentString	7	12	0	2	0.58
de.espirit.firstspirit.manager.ReferenceManager.getIncomingReferences	3	1	3	3	3.0
WebServerManager.getContextName	1	1	1	1	1.0
TemplateManager.getConversionTable	0	1	0	0	0.0

total duration = 214ms
remote duration = 97ms

template calls

name	total time	count	min	max	average
Template 'Homepage' (id=113439)	206	1	206	206	206.0
Template 'Text / Bild (Homepage-Teaser)' (id=113441)	30	3	7	14	10.0
Template 'Pressemitteilungen-Teaser' (id=113458)	27	1	27	27	27.0
Template 'Allgemeine Kopfzeile' (id=113440)	26	1	26	26	26.0
Link Template 'globallinksinternal' (id=115899)	17	4	1	7	4.25
Template 'Text / Bild (Marginal-Teaser)' (id=113442)	13	4	2	5	3.25
Template 'Tag-Cloud' (id=113446)	6	1	6	6	6.0
Format Template 'search' (id=113599)	5	1	5	5	5.0
Link Template 'tagcloudlinkinternal' (id=115893)	4	9	0	2	0.44
Format Template 'hometeaser' (id=113819)	2	7	0	2	0.28
Link Template 'textlinkinternal' (id=115891)	2	1	2	2	2.0
Format Template 'tooltip' (id=115411)	2	10	0	1	0.2
Template 'Projekteinstellungen' (id=113438)	1	1	1	1	1.0
Template 'Sprachabhängige Bezeichnung' (id=113448)	1	13	0	1	0.07
Format Template 'teaserboxtext' (id=114013)	0	6	0	0	0.0
Format Template 'p' (id=113524)	0	2	0	0	0.0

Display of the performance analysis for a preview page

3.29 Publication of FirstSpirit Javadoc via separate Jar files 5.2R9

Javadoc is used for documenting the FirstSpirit API. Starting with the current FirstSpirit version, this documentation is published additionally in separate Jar files (`fs-api-javadoc.jar` and `fs-isolated-runtime-javadoc.jar`), for example in order to make it easier to access it from IDEs.

3.30 Using FirstSpirit Desktop Apps with macOS X 10.15 (Catalina)

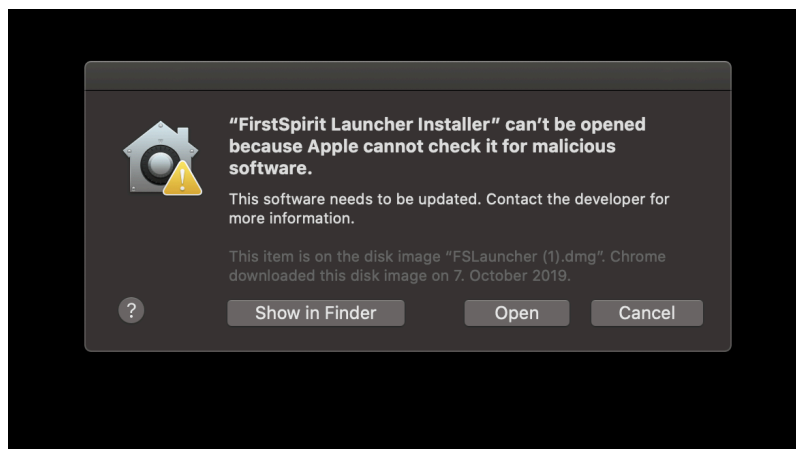
2019-10

Starting with version 10.15 of the operating system macOS (“Catalina”) “notarization” is required for any software that is to run on the operating system. This partially affects the use of the FirstSpirit Launcher, too, which is recommended for starting the FirstSpirit Desktop Apps (SiteArchitect, ServerManager).

- For users who have already operated the FirstSpirit Desktop Apps via FirstSpirit Launcher **before** switching from an earlier version to macOS 10.15, nothing changes.



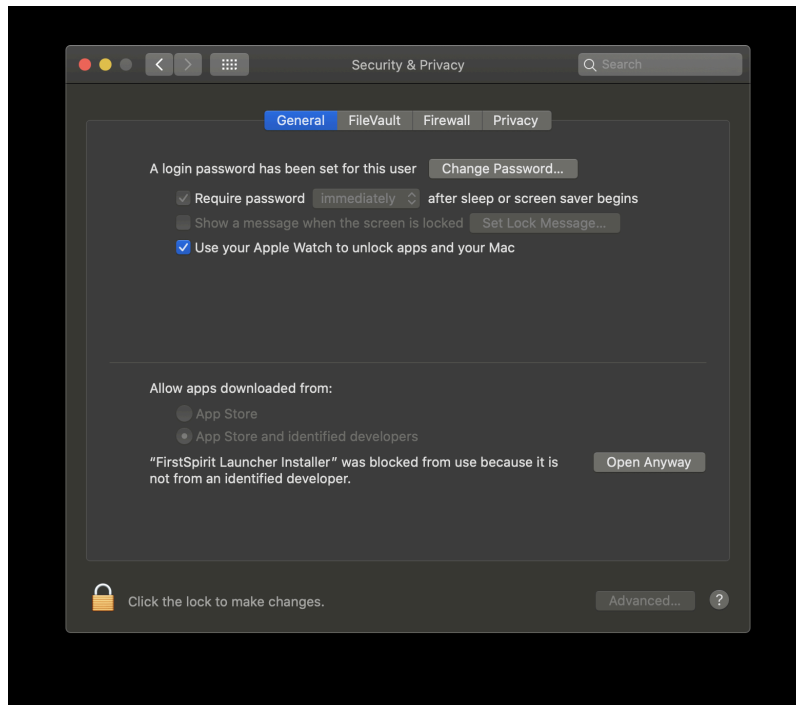
- For a **new** installation of the FirstSpirit Launcher on a macOS from version 10.15, the following workaround can be used to bypass the “Gatekeeper” security function, which prevents the installation by default (error message: “FirstSpirit Launcher Installer' can not be opened because Apple cannot check it for malicious software.”):
 1. (Download FirstSpirit Launcher from the FirstSpirit startpage)
 2. (find the downloaded file `FSLauncher.dmg` in the file system, double click / open)
 3. keep Ctrl key pressed
 4. click the icon of the “FirstSpirit Launcher Installer”
 5. if the “Open” button appears in the following error dialog, the launcher can be installed



If necessary, repeat steps 3 and 4 until the “Open” button appears.

Alternative: Start the “FirstSpirit Launcher Installer” file from the tab “Security & Privacy” in the system preferences (button “Open Anyway”):





For more information about the FirstSpirit Launcher please see

- <https://docs.e-spirit.com/odfs/edocs/admi/firstspirit-sta/areas-the-start/firstspirit-lau/index.html>
- https://docs.e-spirit.com/odfs/edocs/inst/starting-applic/index.html#firstspirit_launcher

For background information about “Notarizations” for Apple apps please see

- <https://developer.apple.com/videos/play/wwdc2019/703/>
- https://developer.apple.com/documentation/security/notarizing_your_app_before_distribution

4 ContentCreator

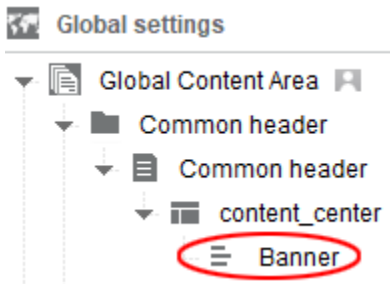
4.1 "NewSectionExecutable": Support for Global Content 2018-06

In `ContentCreator`, the `class de.espirit.firstspirit.webedit.server.executables.NewSectionExecutable` (short: `NewSection`) may be used on pages to create sections by way of accordingly configured `FS_BUTTON` input components. This requires that the `FS_BUTTON` component is referenced by the function



`fsbutton(...)` within the HTML template set of the desired page template. The parameters `page` and `body` are used to specify the page and the content area, respectively, into which the new section should be inserted.

As of the current version of FirstSpirit, `NewSection` may now be used to create sections within “Global Pages” as well.



In order to achieve this, the new parameter `store` must be passed to the executable, carrying the value “globalstore”.

Example code for an HTML template set in the page template of a Global Page within which new sections should be inserted:

```
<span$CMS_VALUE(fsbutton(editorName:"pt_createSection",
  parameter:{"page":#global.page.id,
             "store":"globalstore",
             "body":"content_center"}))$>
</span>
```

where “pt_createSection” is the identifier of the FS_BUTTON input component and “content_center” is the identifier of the content area.

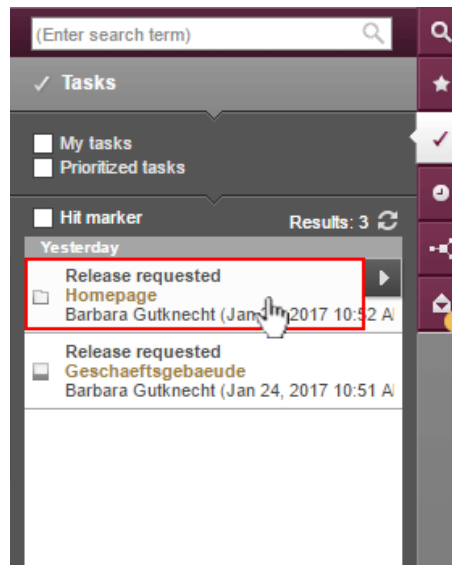
If the parameter `store` is not specified, the Page Content store is considered as the target by default (“store” : “pagestore”).

For further information, see *FirstSpirit Online Documentation*, “Template development / ContentCreator / Functional scope”.



4.2 Workflows on media and media folder elements 5.2R7

In the report area, the report “Tasks” shows the tasks that are available to the current user. In addition to media elements, as of the current FirstSpirit version, this report also displays media folder elements that are in a workflow:



Clicking on a media folder entry will open the dialog “Manage media”.

In order to advance media and media folder elements in a workflow, use the following button:



Clicking the button will open a drop-down menu that shows the available next steps in the workflow. Clicking on an entry in that menu (e.g. “check release”) will open the dialog to set information for the next workflow step.

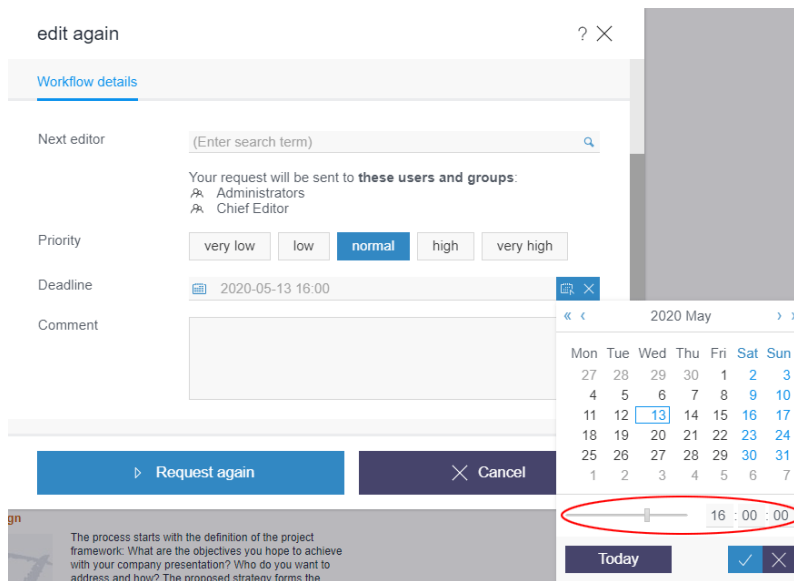
For further information, see *FirstSpirit Manual for Editors (ContentCreator)*, chapter “Report area / Tasks”.



4.3 Workflows: Selecting a deadline time 2020-05

For workflows, a deadline can be specified by which the entire workflow must be completed. The deadline, which can be selected by the editor, is shown to the next editor in the corresponding action window. Furthermore, the deadline is shown in the report area for tasks.

Previously, it was only possible to select a date as the deadline. In the current release, a time can also be selected.



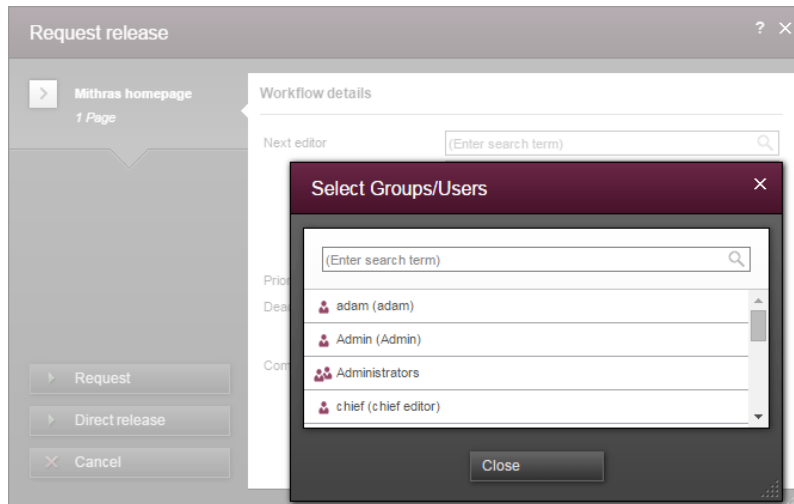
4.4 Selection dialog for next editor(s) of a workflow 5.2R4

In FirstSpirit, a workflow is always a sequence of tasks or work steps which are carried out in a given order. Each task can be assigned to a user or a group of users. The workflow controls the logical sequence of individual tasks so that only the currently appropriate task can be carried out. If a user completes one task, another user responsible for carrying out the next task is automatically notified.

In ContentCreator, workflows can be started and transitions within an active workflow can be triggered using the page status display (e.g. "Modified page", "In workflow") in the ContentCreator toolbar. In the activity dialog for this workflow, the option "Next editor" may be used to define which user or user group should be notified that the workflow has been transitioned to the next task.



To this end, the user's name may be entered directly into the “Next editor” text box, or a drop-down list showing a number of available users can be opened by simply clicking on this text box. As of FirstSpirit version 5.2R4, users may also open a larger selection dialog by either clicking on the magnifying glass icon in the text box or by clicking on the entry “Show more entries...” at the bottom of the drop-down list:



Dialog "Select Groups/Users"

This dialog lists all available users and user groups and supports search functionality. By clicking on the user or group's entry in the list, this user or group is selected, and the dialog closes automatically, adding that user or group to the “Next editor” field in the activity dialog.

For further information, see *FirstSpirit Manual for Editors (ContentCreator)*, “Report area / Tasks / Workflows”.

4.5 Identification of user interface elements 5.2R7

As of the current FirstSpirit version, user interface (UI) elements in ContentCreator (e.g. menus “Contents”, “Media”, and “Actions”; menu entries; input components; and report parameters) are identified in HTML. This supports better identification of these elements, e.g. for UI tests.

4.6 User prompting/UX: Display of check boxes, radio buttons and toggles 2020-05

The input elements “check box” (CMS_INPUT_CHECKBOX), “radio button” (CMS_INPUT_RADIOBUTTON) and “toggle” (CMS_INPUT_TOGGLE) allow the selection of



values specified by the project developer. “Radio buttons” and “toggles” allow the selection of one value; a “check box” allows the selection of multiple values. With “radio buttons” and “toggles”, activating a field deactivates any previously selected field; with a “check box”, this is not the case.

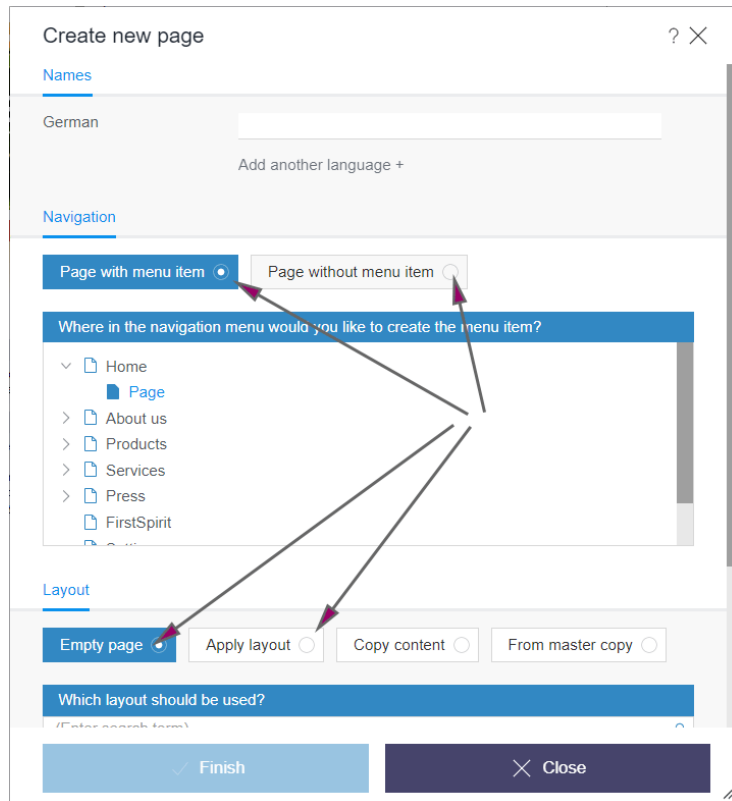
In the new FirstSpirit ContentCreator, these input elements are now once again easier to distinguish from one another. The editor can more easily see the status of these input elements in a form and how they are operated: “Radio buttons” are now represented by circles, while “check boxes” are boxes.

The image shows a form with four sections:

- Contact person:** Four buttons. "Mr. Smith" and "Mrs. Big" are blue with white checkmarks. "Mrs. Meyer" and "Mr. Miller" are white with grey borders and empty checkboxes.
- Color selection:** Four buttons. "Blue" and "Green" are white with grey borders and empty circles. "Red" is blue with a white circle containing a dot. "Yellow" is white with a grey border and an empty circle.
- On/off:** One blue button with a white checkmark.
- On/off (Radiobutton):** Two buttons. "On" is blue with a white circle containing a dot. "Off" is white with a grey border and an empty circle.

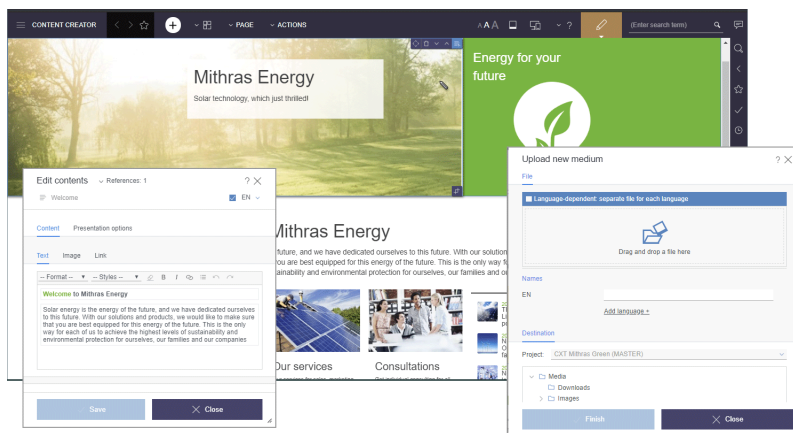
This new visualization also affects ContentCreator dialogs, such as the “Create new page” dialog:





4.7 ContentCreator re-design: Current time scheduling 2019-11

The design of the FirstSpirit ContentCreator is currently being revised. In principle, the new design does not involve any functional changes for editors. However, the user guidance at some central points has been additionally optimized.



At the same time, the development of ContentCreator and of MicroApp Framework (FragmentCreator, MicroApps...) will be placed on a common technological basis, so that functionalities implemented in the future will be directly available for both ContentCreator and CXT.

As of FirstSpirit 2019-10, the revised ContentCreator is in its ramp-up phase and is available for testing to selected customers and partners. Feedback from this phase is included immediately in the development process.

The further time schedule is as follows:

- *FirstSpirit 2020-01*: Official release of the revised ContentCreator. You can easily switch between old and new ContentCreator using a checkbox in FirstSpirit ServerManager.
- *FirstSpirit 2020-02/03*: The revised ContentCreator is used by default for all projects (first for cloud customers, then also for on-premise customers). If necessary, you can switch back to the “old” ContentCreator by deactivating the checkbox.
- *FirstSpirit 2020-07*: Removal of the “old” ContentCreator. Then all customers will only have access to the revised ContentCreator.

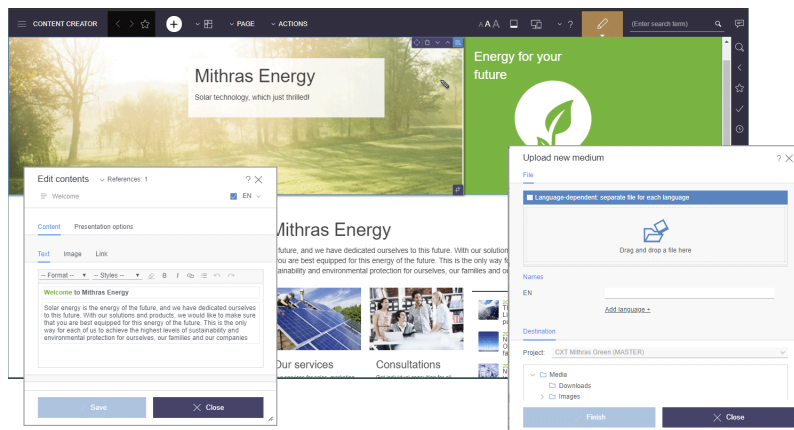
The user documentation for the ContentCreator is currently being revised and adapted to the new design. With FirstSpirit 2019-11, the presentation in this documentation already partially corresponds to the future interface and may differ from the ContentCreator you are using.

Note on migration: In principle, switching to the revised ContentCreator does not involve any migration effort. Only in very rare cases can compatibility problems with customer-specific modules occur. Early testing of the revised ContentCreator on customer-specific development instances is therefore recommended so that such problems can be resolved at short notice, if necessary with the support of e-Spirit.

4.8 ContentCreator re-design: Current time scheduling 2019-12

The design of the FirstSpirit ContentCreator is currently being revised. In principle, the new design does not involve any functional changes for editors. However, the user guidance at some central points has been additionally optimized.





At the same time, the development of ContentCreator and of MicroApp Framework (FragmentCreator, MicroApps...) will be placed on a common technological basis, so that functionalities implemented in the future will be directly available for both ContentCreator and CXT.

As of FirstSpirit 2019-10, the revised ContentCreator is in its ramp-up phase and is available for testing to selected customers and partners. Feedback from this phase is included immediately in the development process.

The further time schedule is as follows:

- *FirstSpirit 2020-01*: Official release of the revised ContentCreator. You can easily switch between old and new ContentCreator using a checkbox in FirstSpirit ServerManager.
- *FirstSpirit 2020-02/03*: The revised ContentCreator is used by default for all projects (first for cloud customers, then also for on-premise customers). If necessary, you can switch back to the “old” ContentCreator by deactivating the checkbox.
- *FirstSpirit 2020-07*: Removal of the “old” ContentCreator. Then all customers will only have access to the revised ContentCreator.

The user documentation for the ContentCreator is currently being revised and adapted to the new design. Since FirstSpirit 2019-11, the presentation in the documentation already partially corresponds to the future interface and may differ from the ContentCreator you are using.

Note on migration: In principle, switching to the revised ContentCreator does not involve any migration effort. Only in very rare cases can compatibility problems with customer-specific modules occur.

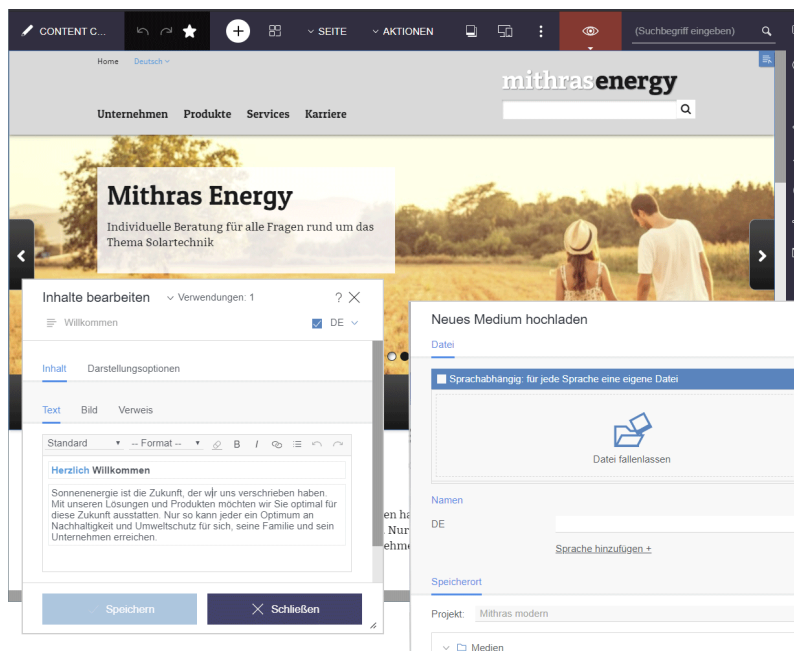


Early testing of the revised ContentCreator on customer-specific development instances is therefore recommended so that such problems can be resolved at short notice, if necessary with the support of e-Spirit.

4.9 ContentCreator re-design: Release 2020-01

The design and technical basis of the FirstSpirit ContentCreator have been revised. The use of the revised ContentCreator (also “FirstSpirit CXT ContentCreator”) is officially released with the current FirstSpirit release, the ramp-up / EAP phase is completed.

In principle, the new design does not involve any functional changes **for editors**. At a few central points, the user guidance has been additionally optimized.



In addition to the new design with fresher colours and modern design language, the redesigned menu bar is particularly striking: The status display has been moved to the right-hand edge of the ContentCreator and actions for creating new content can now be found centrally and prominently under the + icon. Another new feature is that not only pages and datasets are now displayed in the working area, but also media: in contrast to the dialog/window variant of Media administration previously used, this brings with it completely new viewing and editing options: for example, it is now also possible to crop images there. For easier orientation, the menu bar now also shows the element level on which the user is currently located.



The report area has been extended to display recently visited elements (“Visited lately”). Additionally, the so-called “Dashboard” now displays the information of the most important reports: the status of the current element, possibilities to start or switch workflows on the element, open tasks and latest visited elements.

For developers, a change to the revised ContentCreator does not in principle involve any migration effort either. Only in very rare cases can there be any compatibility problems with customer-specific modules. In this case please contact e-Spirit Technical Support (<https://help.e-spirit.com>).

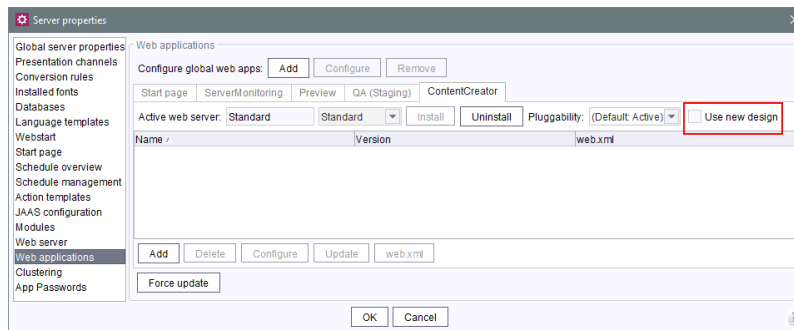
How to activate the revised “FirstSpirit CXT ContentCreator”

The revised ContentCreator is automatically available with the current FirstSpirit release in the form of a module. In future releases the module will receive new features and bug fixes - like other modules - automatically through updates of the FirstSpirit server.

By default, the classic ContentCreator with the “old” design is used for all projects.

In order to use the revised “FirstSpirit CXT ContentCreator”, it must be activated (server-wide or project-wise, as required). This is done in the FirstSpirit ServerManager, in each case using the “Use new design” checkbox. This must be activated in the following places:

- 1) in “Server properties / Web applications” / “ContentCreator” tab:

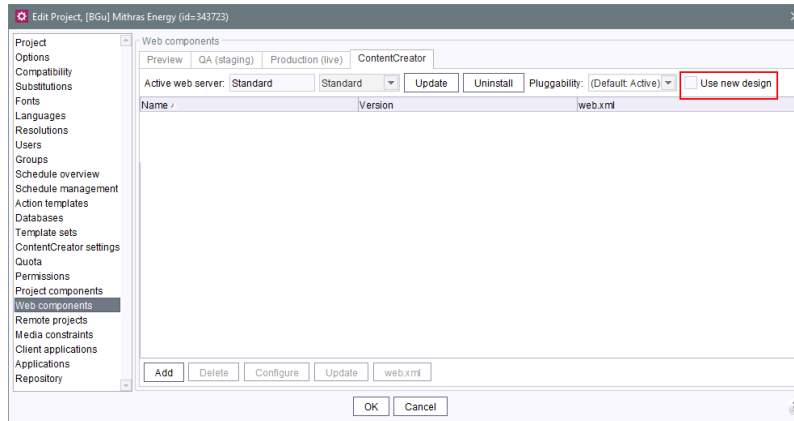


This setting affects all projects that use the global ContentCreator instance. (“Global ContentCreator instance”: No web server is configured on the “ContentCreator” tab in the “Project properties / Web components”: “[None]”).

- 2) in “Project properties / Web components” / “ContentCreator” tab:



If there are **project-local ContentCreator instances**, the checkbox must also be activated for these. (“Project-local ContentCreator instance”: A different web server is configured on the “ContentCreator” tab in “Project properties / Web components”.)



! **Important:** The “Pluggability” option must always be set to “Active”.
If “Jetty Web Server” is to be used as web server, FirstSpirit must be used at least in version 2019-12.

The modifications must be deployed (“Update” or “Install” button).

With these settings, **all** projects on the server use the ContentCreator in the new design. For example, if you want to test the new design for **one** project only, a local ContentCreator instance must exist for this project. The new design must be activated for this instance using the respective checkbox. In the server properties, the checkbox must then be deactivated. If necessary, you can switch between the two ContentCreator versions by activating / deactivating the checkbox (and then deploying).

Documentation

Currently, the user documentation for the ContentCreator is being revised and adapted to the new design; other documentation (e.g. “FirstSpirit Online Documentation” (ODFS)) will follow. The presentation in the documentation therefore does not yet correspond in places to the interface in the new design and may differ from the ContentCreator that you are using.

Further planning



- *FirstSpirit 2020-02/03*: The revised ContentCreator will be used by default for all projects (first for cloud customers, then also for on-premise customers). If necessary, you can switch back to the “old” ContentCreator by deactivating the checkbox.
- *FirstSpirit 2020-07*: Omission of the “old” ContentCreator. Then only the revised ContentCreator will be available to all customers. Until then the functionality and compatibility of customer-specific modules should be checked and - if necessary with the help of e-Spirit - adapted to the new technological basis.

4.10 ContentCreator: New options for editing content 2019-02

FirstSpirit 2018-12 implemented a basic functionality which allows fragments and variants from a CXT project to not only be referenced in FirstSpirit projects, but also to be edited from ContentCreator (CORE-8101).

The current release continues this development: With the new `externalReference` parameter in `editorId()` calls, external references of the relevant FS_INDEX component can now be marked for use in ContentCreator.

The parameter expects the identifier of references that are saved in the FS_INDEX component.

Example:

```
<div$CMS_VALUE(editorId(editorName:"fs_index"))$>
  $CMS_FOR(i, [0..fs_index.identifiers.size-1])$
  $CMS_SET(objectId, fs_index.identifiers[i])$
  <div$CMS_VALUE(editorId(editorName:"fs_index", externalReference: objectId))$>
  </div>
  $CMS_END_FOR$
</div>
```

In this case, `fs_index` is the identifier of the relevant FS_INDEX component.

`objectId` represents a fragment entry of the FS_INDEX component.

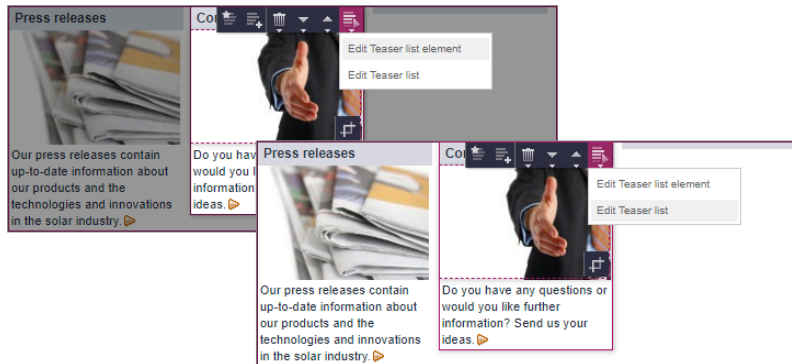
Effects in ContentCreator

As part of this new development, the EasyEdit icon bar in ContentCreator for cases where input forms allow inputs on multiple levels has also been redesigned.



In the case of multiple overlapping levels, the corresponding icon bars are grouped into a single bar. The actions for the different levels are displayed from inside (on the right in the toolbar) to outside (on the left in the icon bar).

If the mouse pointer is hovered over an icon in the icon bar, highlighting is used to visualize which level the relevant action relates to.



As soon as an action appears multiple times in a consolidated icon bar, the instances of the same action are grouped together and displayed as an icon with an arrow symbol. The user can click on the icon and use a popup menu to select the actual action or the level for which the action is to be performed. The relevant level is highlighted in the same way as for the individual actions.

4.11 Dynamically resizable report sidebar 5.2R8

The width of the report sidebar may be adjusted by dragging the vertical divider bar using the mouse (left-click and hold). The selected width will be preserved if the report sidebar is closed and then reopened.

4.12 Create new list items using the FS_BUTTON 5.2R2

In the input components for creating lists:

- FS_CATALOG
- FS_INDEX
- FS_LIST (DATABASE and INLINE types)



the ContentCreator in FirstSpirit version 5.2R2 can now be used to create entries in the preview at the same time as creating new sections using a direct button, icon or link, without first having to open the form, for example:



The use of this functionality requires the use of the newly implemented FS_BUTTON handler class `de.espirit.firstspirit.webedit.server.executables.NewListEntryExecutable` (abbreviation: `NewListEntry`).

Example:

```
<FS_BUTTON
  name="button"
  hidden="yes"
  icon="fs:new"
  onClick="class:NewListEntry"
  onDrop="class:NewListEntry"
  style="firstspirit"
  useLanguages="no">
  <LANGINFOS>
    <LANGINFO lang="" label="New entry"/>
    <LANGINFO lang="DE" label="Neuer Eintrag"/>
  </LANGINFOS>
</FS_BUTTON>
```



The relevant HTML code is rendered in the HTML presentation channel inside a “\$CMS_VALUE(...)\$” instruction via the `fsbutton(...)` function. To do this, the input component (in this case: “st_createListEntry”) must be specified via the mandatory parameter `editorName`. The input component (in this case: “st_linklist”) in which the new entry is to be created must be specified via the mandatory parameter `editorId`. A further mandatory detail includes “json: true”, e.g.,

```
<div$CMS_VALUE(fsbutton(
    editorName: "st_createListEntry",
    parameter: {
        "editorId": editorId(editorName:"st_linklist", json: true)
    }
))$></div>
```

For more information, see *FirstSpirit Online Documentation*, chapter “Template development / ContentCreator / Functional scope”, section “FS_BUTTON handler classes”.

4.13 Filter in FS_REFERENCE via <SOURCES> 5.2R3

The input component FS_REFERENCE enables referencing of one element selected by a user. Selection of an element for referencing may be limited to specific stores and/or folders by using the tag <SOURCES>.

In rare cases, special configurations could lead to erroneous behavior in ContentCreator: in such cases, not all elements eligible for selection were displayed. This behavior was corrected in FirstSpirit version 5.2R3.

Due to this fix, it is recommended that existing uses of FS_REFERENCE configurations with a <SOURCES> tag be checked to ensure that element selection controls associated with FS_REFERENCE components display the desired set of elements in allowed sources and omit elements that are not in allowed sources.

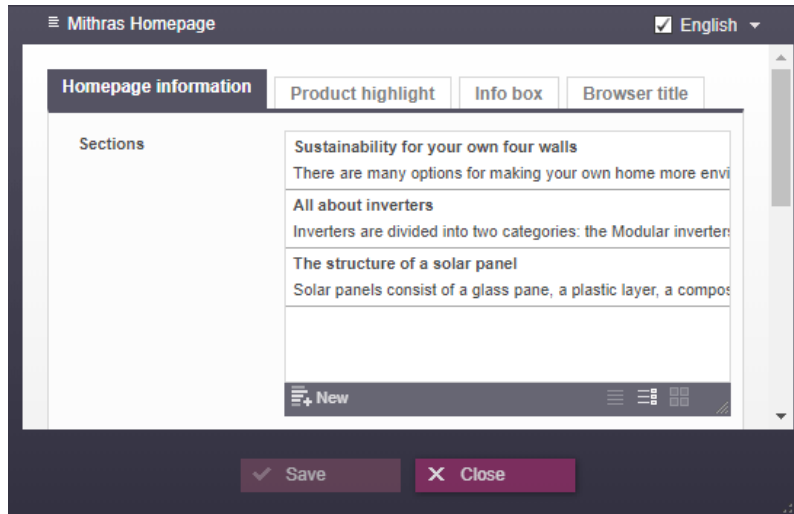
For further information, see

- *FirstSpirit Online Documentation*, “Template development / Forms / Input components / REFERENCE”
- *FirstSpirit Manual for Editors (ContentCreator)*, “Editing the preview page / Standard input elements / Reference selection”



4.14 FS_CATALOG: New Entry Form Is Opened Immediately 5.2R19

The input component for catalog lists (FS_CATALOG) allows creation and maintenance of content lists. The entries of such a list may be sections or links.



Clicking the button “New” (and selecting the desired template, if necessary)



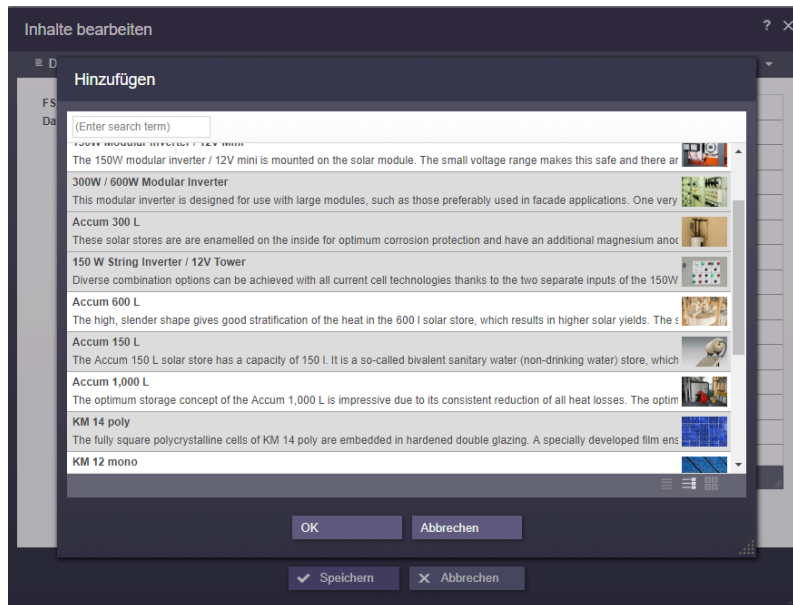
previously only resulted in the addition of the new entry to the catalog list. Now, the form associated with the new entry is opened immediately so that the editor may directly input the desired content.

For further information, see *FirstSpirit Manual for Editors (ContentCreator)*, “Editing the preview page / Standard input elements / Catalog lists (FS_CATALOG)”.

4.15 FS_INDEX: multiple selection possible in selection dialog 5.2R20

The input component for index lists (FS_INDEX) supports multiple selection of entries. Via the selection dialog, several elements can now be selected from the connected data source and added to the index list at once.





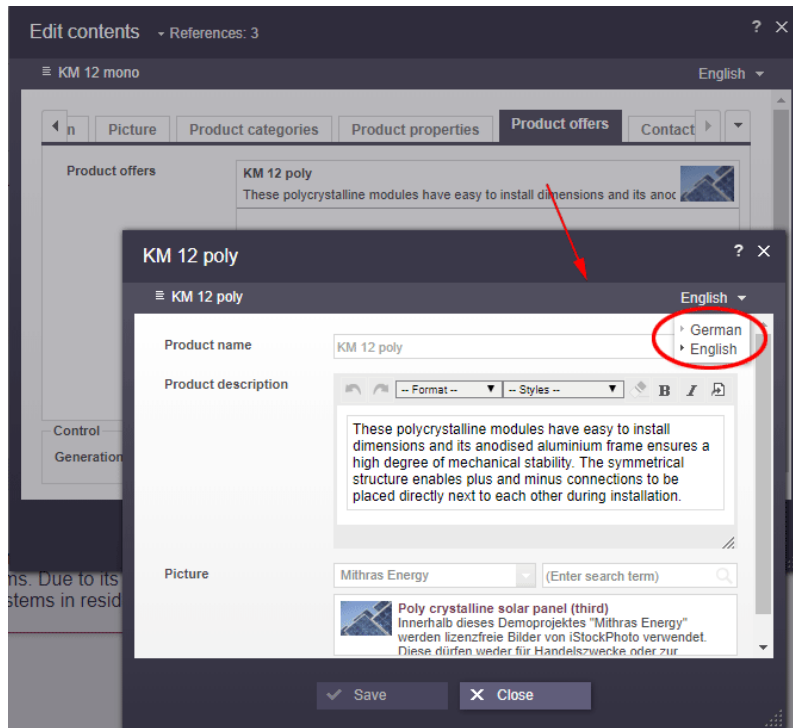
Any restrictions on the number of entries in the list component that may be defined in the template will not be considered during selection.

4.16 FS_INDEX: Language can now be changed in the internal elements

2018-07

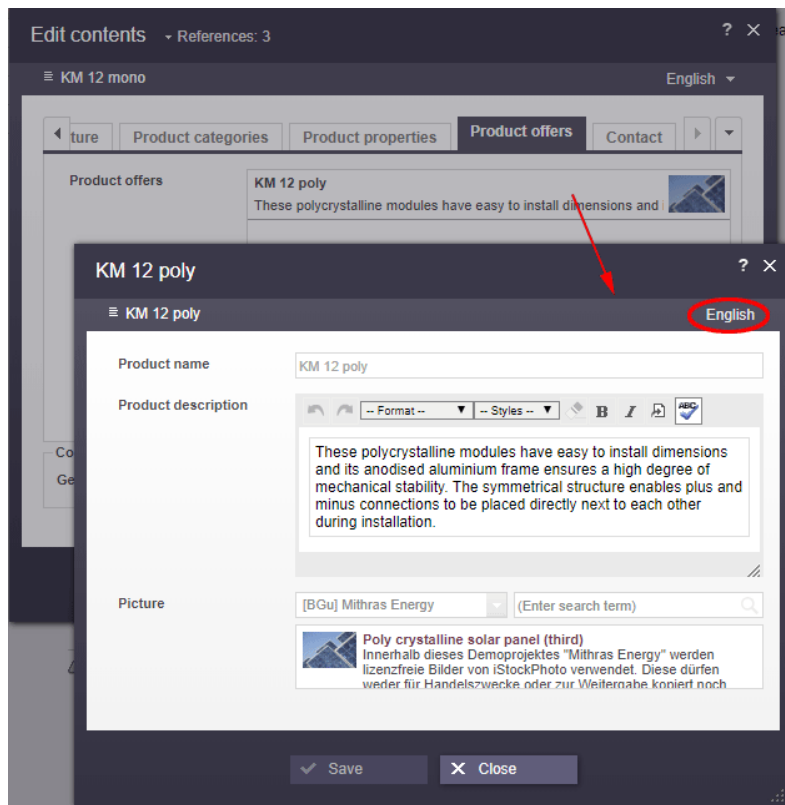
Elements in the FS_INDEX input element (e.g., datasets) can now be edited language-dependently in edit mode in FirstSpirit ContentCreator: There is now a corresponding drop-down box in the internal form from which the required project language can be selected:





Previously, the edit window of the internal element had to be closed before you could select a different language and edit the associated content:





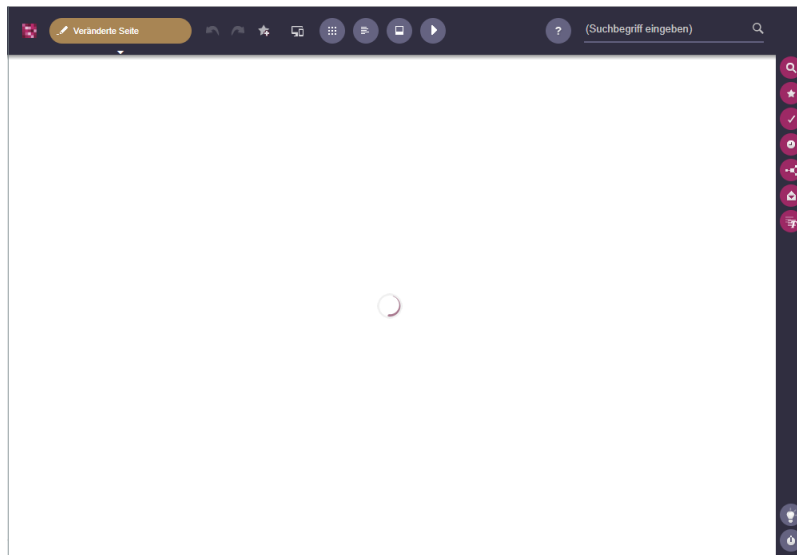
For more information about FS_INDEX, see

- *FirstSpirit Online Documentation*, “Template development / Forms / Input components / INDEX”
- *FirstSpirit Manual for Editors (ContentCreator)*, “Editing a preview page / Input elements / Index”

4.17 Loading animation when loading a page 2019-06

A loading animation in the ContentCreator now shows that the preview of a page is loaded. Previously, only white background was displayed for pages that took a long time to load.





4.18 Deletion of bookmarks and master copies 5.2R7

Frequently used elements may be bookmarked in FirstSpirit to enable easy access. In ContentCreator, an element is bookmarked by using the following button in the toolbar:



Bookmarked elements are then shown in the report area.

Here, bookmarked elements may also be set as master copies so that new elements may quickly be created based on the data of such frequently used elements. A bookmark may be set as a master copy by using the following button:



For sections, this button is also available within the section's toolbar in the preview.

If an element (e.g. a section) that is bookmarked as a master copy is deleted, the current FirstSpirit version will now show a confirmation dialog with the following note:

“The element 'xyz' is a master copy, would you like to delete it anyway?”



If the user clicks OK, the section and its associated master copy bookmark in the report area will be deleted.

Furthermore, elements which are bookmarked can now be deleted without errors in all cases.

For further information, see *FirstSpirit Manual for Editors (ContentCreator)*, “Report area / Bookmarks”.

4.19 Media Galleries in ContentCreator (Alternative to FS_LIST) 2019-10

Images from the Media Store can be output in FirstSpirit in a gallery view.

Until now, only the input component for creating and managing lists `FS_LIST` with tag `MEDIAMODE` could be used to maintain the media gallery (e.g. selecting the images that should belong to the gallery). This input component is expected to be omitted on 01.01.2020. The input components `FS_CATALOG` and `FS_INDEX` can be used as replacements.

As of the current FirstSpirit release, the FirstSpirit ContentCreator provides a new way of maintaining media galleries: via drag-and-drop.

For this purpose an input component of type `FS_INDEX` (instead of `FS_LIST` as before) can be used with the `DatasetDataAccessPlugin` which is supplied as standard (tag `SOURCE`):

Example (template for creating and maintaining the gallery, “Gallery template”):

```
<FS_INDEX name="st_picturelist" useLanguages="no">
  <LANGINFOS>
    <LANGINFO lang="*" label="Pictures"/>
    <LANGINFO lang="DE" label="Bilder"/>
  </LANGINFOS>
  <SOURCE name="DatasetDataAccessPlugin">
    <TEMPLATE uid="Products.gallery_media"/>
  </SOURCE>
</FS_INDEX>
```

The `uid` attribute in the `TEMPLATE` tag specifies the reference name of the table template in which the media is stored.

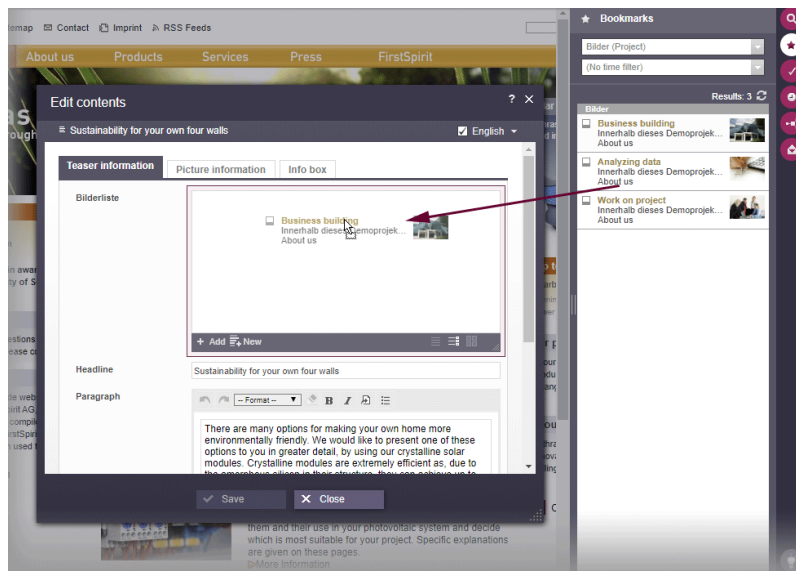
To store the images in the relevant table, an `FS_REFERENCE` component must be defined in the corresponding table template:



Example (table template for storing the images, “Image template”):

```
<FS_REFERENCE name="cs_media" hFill="yes" upload="yes">
  <LANGINFOS>
    <LANGINFO lang="*" label="Medium"/>
  </LANGINFOS>
</FS_REFERENCE>
```

If this FS_REFERENCE component is selected on the “Properties” tab of the “Image template” in the field “Drop Editor” (in this example: *cs_media*), the ContentCreator editor can drop images (e.g. from a report) into the open form of the table template:



In the example described, the component not only allows you to select images that already exist in the project, but also to upload new images (due to the attribute `upload="yes"`). After the drop, a dialog opens in which the storage location for the new image to be uploaded can be determined.

With each drop of an image a new entry is created in the FS_INDEX component in which the image is referenced. At the same time, a dataset with the dropped image is created in the referenced table. If there are mandatory fields in the dataset to be created that must be filled in by the editor, or rule violations that prevent storing, the editing window with the available input components opens after releasing the mouse button.

Notes



- Drag-and-drop of multiple images simultaneously is currently not supported.
- The FS_INDEX component allows you to drop images into the open form. If images are to be dropped directly onto the preview, FS_BUTTON with `NewListEntryExecutable` can be used for this:

Example for the “Form” tab:

```
<FS_BUTTON
  name="pt_createIndexElement"
  hidden="yes"
  icon="fs:new"
  onDrop=
    "class:de.espirit.firstspirit.webedit.server.executables.NewListEntryExecutable"
  style="firstspirit"
  useLanguages="no">
  <LANGINFOS>
    <LANGINFO lang="" label="Create mediaelement"/>
  </LANGINFOS>
</FS_BUTTON>
```

Example for the “Output” tab:

```
<span$CMS_VALUE(
  fsbutton(
    editorName:"pt_createIndexElement",
    parameter:{"editorId": editorId(editorName:"st_picturelist", json: true)}
  )
)$></span>
```

Zu allgemeinen Informationen zum Konzept von Medien-Galerien siehe [FirstSpirit Online Dokumentation](#).

4.20 Navigation view and evaluation of permissions: Hiding invisible elements 2020-06

Permission management in FirstSpirit makes it possible to assign permissions to users and groups. Permissions can be assigned with a high level of granularity for each FirstSpirit element in a project.

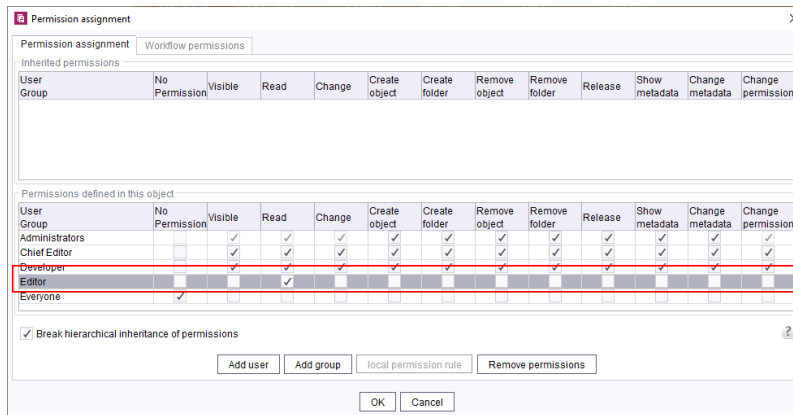


Permissions are assigned in FirstSpirit SiteArchitect using the “Extras / Change permissions” context menu function on the required element or subtree of a project.

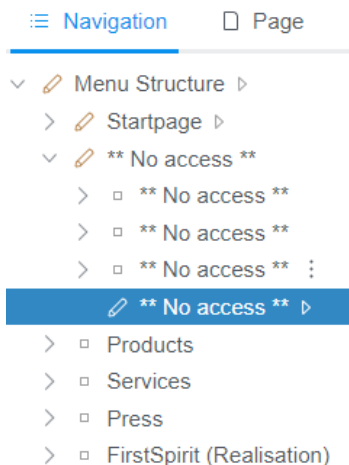
Elements of the Site Store (menu levels, page references, etc.)



that are not visible to the current user (“Visible” checkbox is deactivated), such as



are now no longer shown on the left-hand edge of the screen in the navigation view. Previously, **** No access **** was shown in these cases:



If a user or a group should not be able to **edit** the content of a page, the permissions for the page in question need to be assigned in the **Page Store**.



For more information about permission assignment in FirstSpirit, see <https://docs.e-spirit.com/odfs/edocs/fsar/permissions-sit/editorial-permi/index.html>.

4.21 New navigation view in the ContentCreator combines hierarchical structure display, context information and editing options 2020-04

In order to make work for editors particularly simple and intuitive, the **preview** is the focus of the FirstSpirit ContentCreator's operating concept: Content is edited directly on the website in the browser. This allows the editor to see immediately how changes will later affect the website. Previously, only the preview itself and reports (e.g. search, Related elements) were used to navigate to the pages to be edited.

Due to increased requirements for editing projects using the ContentCreator, the current release now also displays the project or website structure in a **structure tree**.

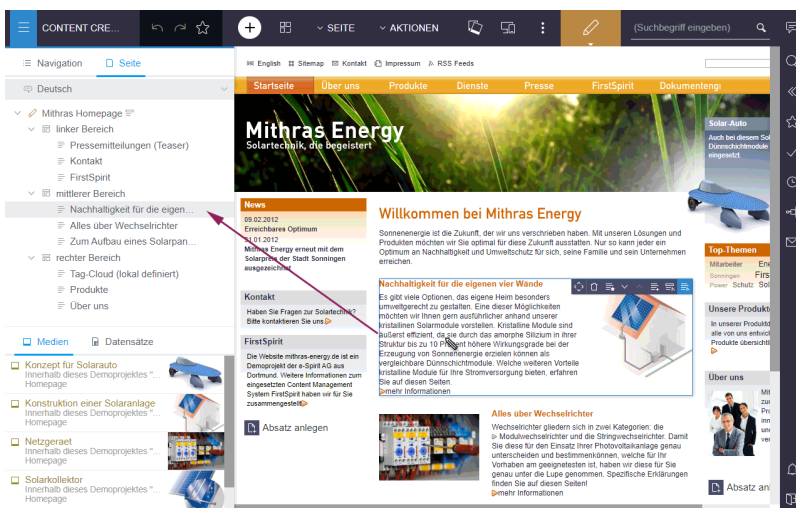
Among other things, it permits the following:

- a quick overview of structural relationships within the website structure (**hierarchy**)
- an uncomplicated, direct **navigation** to pages, even if they are not accessible via the website navigation (typical for landing pages or technical project pages)
- a quick overview of **contextual information** on individual pages (e.g. release status, presence of metadata, etc.)
- **editing** of properties and contents of pages and sections
- simple and intuitive **moving** of menu items

Synchronization and highlighting bridge the gap between preview and structure information: a click on an element in the structure shows the corresponding page in the preview and highlights it in the preview. In turn, the new navigation view also follows the editor's mouse pointer in the preview.

Additionally, the new navigation view allows switching between different **languages** of the project.





The corresponding function is located behind the icon on the far left of the menu bar:



In this context, the dialog for editing the navigation, which was previously available under the menu entry “Edit navigation” in the “ACTIONS” menu, has been removed, since the same functions are now offered by the new navigation view. Instead of the dialog, the “Edit navigation” menu entry now opens the navigation view.

It is planned to include new functions in this new navigation view in future releases. The new navigation view is **not** available in the old ContentCreator.

Note for developers and administrators: The new navigation view displays the **entire** site store of a project by default. Unlike before, editors can now navigate to any page. And thus, probably also to more “technical” pages that may not have any output that is readable by the editor. This should be taken into account during project development and nodes in the site store that are not relevant for editors should be hidden by appropriate permission assignment.

4.22 New ContentCreator: Rollout for all customers 2020-03

The design and technical basis of FirstSpirit ContentCreator were revised:



- With **FirstSpirit 2020-01**, the revised ContentCreator was officially released for use. Since this point, all customers have been able to use the revised design of the ContentCreator as long as the appropriate settings have been configured accordingly in server/project settings.
- With **FirstSpirit 2020-02**, the “new” ContentCreator was automatically rolled out to all cloud customers.

With the **current release**, the “new” ContentCreator is now automatically used **for all** projects started with ContentCreator (for cloud **and** on-premises customers).

If necessary, the customer can switch back to the “original” ContentCreator for a project by deactivating the checkbox “Use new design” on the “ContentCreator” tab in FirstSpirit ServerManager, under “Server properties / Web applications” or “Project properties / Web components”. See also *FirstSpirit Manual for Administrators*, [FirstSpirit ServerManager / Server properties / Web applications](#) or [FirstSpirit ServerManager / Project properties / Web components](#).

With FirstSpirit 2020-07, we are planning to remove the “old” ContentCreator design, so we recommend that customers start to use the “new” ContentCreator for all projects as soon as possible.

Why and how was the ContentCreator redesigned? – Check out our blog for a glimpse behind the scenes of the design and development process for the new ContentCreator: www.e-spirit.com/us/blog/contentcreator_redesign.html.

Interactive help and documentation

As part of the redesign, we incorporated more help messages and tips into the standard ContentCreator interface to help users understand the changes. These messages can be switched off in a message dialog (“Deactivate all tips”).

Large-scale updates were made to the user documentation for ContentCreator and the documentation for developers (“FirstSpirit Online Documentation” (ODFS)) based on the new design; other documentation will follow. In some places, the interfaces shown in the documentation do not match the interface in the new design and may differ from the version of ContentCreator you are using.

Information on using the new FirstSpirit ContentCreator

- Up to and including FirstSpirit 2020-01, the **Pluggability** option had to be set to “Active” for unrestricted use of the new FirstSpirit ContentCreator. Since the rollout of FirstSpirit 2020-02, pluggability is force-enabled for the new FirstSpirit ContentCreator. This means that if the new FirstSpirit ContentCreator is used, the system



automatically activates pluggability mode (log entry: WARN 03.02.2020 15:58:20.902 (de.espirit.firstspirit.server.module.WebServerManagerImpl): Force enabled pluggability for 'fs5webedit' in project '-1'.). This has no effect on the interface itself; the option “Pluggability” may still show as being set to “Inactive” even though the option is activated.

For further information on the option “Pluggability”, see also *FirstSpirit Manual for Administrators*, page [Web applications](#) or [Web components](#).

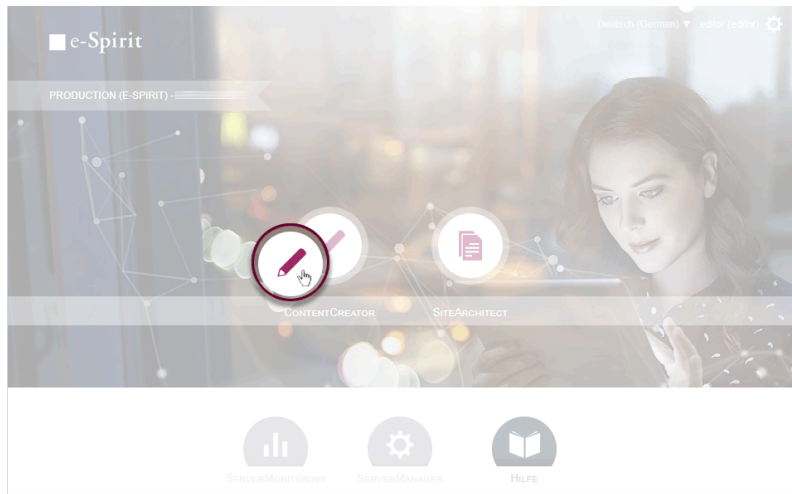
- The change in technologies used for the ContentCreator (“MicroApp Framework”) increases the resource and **system requirements**. This is particularly noticeable during the currently ongoing transition period, in which the “new” and the “old” versions of ContentCreator can be run in parallel.
 - For this reason, you should check and, if necessary, increase **resources**, in particular for the application server (e.g., Apache Tomcat) and specifically the **hard drive capacity** and **Java Heap**.
 - Where possible, ContentCreator should be used as a **global web application**. ContentCreator should only be run as its own project instance (“projectlocal”) where it is absolutely necessary to do so.
 - If Apache Tomcat is used as the application server, we recommend that Apache Tomcat is **restarted** after each update.
- If “Jetty Web Server” is used as a web server, you must use at least FirstSpirit version 2019-12.

4.23 Project selection 2020-03

With the current release, the handling of project selection has been improved.:

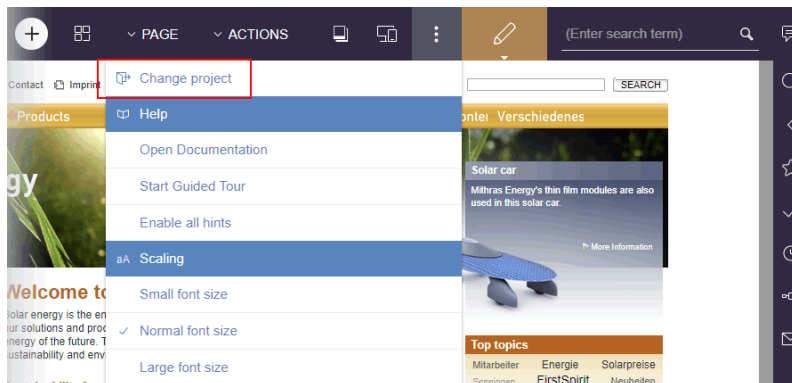
If only **one project** is available to the editor on a server, this project is started directly when ContentCreator is started via the FirstSpirit start page using the following icon:





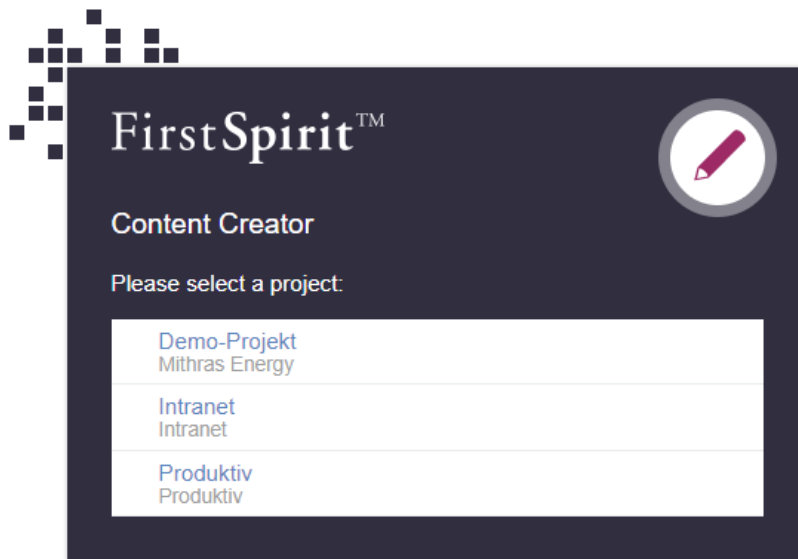
The project selection dialog is no longer displayed.

If **several projects** are available to the editor on a server, he can now easily switch between the projects using the new function “Change project” in the “Further functions” menu (3 points):



This function logs off the user and opens the project selection dialog from which the user can select the desired project for editing (via ContentCreator):



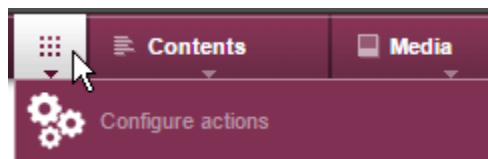


4.24 Project-specific action menu 5.2R6

As of the current FirstSpirit version, a project-specific actions menu can be offered to editors who use ContentCreator.



Configuration is carried out directly within ContentCreator, via the entry “Configure actions” in the menu. This requires project administrator privileges.



In the dialog which opens, the administrator may select the actions which should be available to all editors in this menu in this project (see also *FirstSpirit Manual for Editors (ContentCreator)*, page “ContentCreator menu functions”):



The set of selectable actions includes those that are offered by plug-in components implementing the interface

`de.espirit.firstspirit.webedit.plugin.WebeditToolbarActionsItemsPlugin` for the current project. The individual action items themselves are implementations of the interfaces `ExecutableToolbarActionsItem` or `ClientScriptProvidingToolbarActionsItem` (both in the package `de.espirit.firstspirit.webedit.plugin.toolbar`). The icons shown in the actions menu are specified by the implementations of the two toolbar actions item interfaces and should be sized 40x40 pixels for optimal display. If no icon is defined for an action, the first letter of the item will be used. See also *Plug-In Development / ContentCreator Extensions / Interactive Features / Toolbar Menu Items / Functional Overview* (→*FirstSpirit Online Documentation*).



These buttons may be used to reorder actions. In the menu, the actions will be shown to editors in an order analogous to that in the dialog “Configure actions for all users”.



Pressing this button removes the associated action from the project-specific menu. Optionally, actions can be deactivated via the list that is shown when clicking “Add action”.

4.25 Deactivating rule evaluation during generation of the ContentCreator preview 2018-09

As of the current FirstSpirit release, rule evaluation can be deactivated during generation of the FirstSpirit ContentCreator preview. This can be useful if rule evaluation causes long computation times during preview generation and thus may impact ContentCreator's performance.

- ! This functionality only affects the preview in ContentCreator; in forms in ContentCreator and in SiteArchitect, rule evaluation will continue to be carried out, and rule infractions will continue to be visualized if they are detected.



Deactivation of rule evaluation during preview generation affects the display of validation issues in ContentCreator. For further information, see the segment “Effects on the visualization of validation issues in ContentCreator”.

Deactivating rule evaluation for single elements in the output channel

Deactivation of rule evaluation can be configured via the function `editorId()` in the desired output channel tab of a template using the new parameter

```
previewRulesEvaluation
```

Possible values of this parameter are:

- `true`: default value if the parameter `previewRulesEvaluation` is not set; the rules defined for this template (tab “Rules”) will be evaluated and visualized without limitation.
- `false`: rule evaluation during preview generation in ContentCreator will be deactivated for the element associated with this use of `editorId`. In forms in ContentCreator and in SiteArchitect, rule evaluation and visualization of validation issues will be carried out as usual.

The value of this parameter is added to the parameter using a colon, e.g.:

```
previewRulesEvaluation:false
```

Example:

```
<div$CMS_VALUE(editorId(...))$>
  ...
  WITH VALIDATION
</div>
<div$CMS_VALUE(editorId(previewRulesEvaluation:false))$>
  ...
  NO VALIDATION
</div>
```



Explanation: For the element `<div $CMS_VALUE(editorId(previewRulesEvaluation:false))$>...</div>`, rule evaluation will be deactivated while it is generated for the ContentCreator preview.

For further information about the function `editorId()`, see *FirstSpirit Online Documentation*, pages

- “Template development / Content Highlighting and EasyEdit / Use in projects”
- “Template development / Template syntax / Functions / in instructions / editorId”

Deactivating rule evaluation for larger areas in output channel generation

Using the system object `#global`, rule evaluation during preview generation in ContentCreator can be deactivated for a larger area (e.g. a template). To this end, `#global` now includes the new property `previewRulesEvaluation`. Analogous to the parameter of the same name in the function `editorId()`, this property also supports the possible values `true` (default value) and `false`, e.g.:

```
$CMS_SET(#global.previewRulesEvaluation, false)$
```

Example:

```
$CMS_SET(#global.previewRulesEvaluation, false)$
<div$CMS_VALUE(editorId())$>
  NO VALIDATION
</div>
```

Explanation: Following the call `$CMS_SET(#global.previewRulesEvaluation, false)$`, rule evaluation during preview generation in ContentCreator will be disabled for all subsequent calls to `editorId()`.

For further information about the system object `#global`, see *FirstSpirit Online Documentation*, page “Template development / Template syntax / System objects / `#global` / Preview-specific”.

Use of both options in combination

For a differentiating configuration within a template, both new options may be combined, e.g.:



```

$CMS_SET(#global.previewRulesEvaluation, true)$
<div$CMS_VALUE(editorId())$>
    WITH VALIDATION
</div>
<div$CMS_VALUE(editorId(previewRulesEvaluation:false))$>
    NO VALIDATION
</div>

```

oder

```

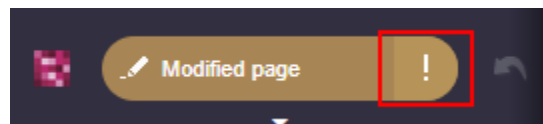
$CMS_SET(#global.previewRulesEvaluation, false)$
<div$CMS_VALUE(editorId())$>
    NO VALIDATION
</div>
<div$CMS_VALUE(editorId(previewRulesEvaluation:true))$>
    WITH VALIDATION
</div>

```

Effects on the visualization of validation issues in ContentCreator

The evaluation of rules in FirstSpirit SiteArchitect and ContentCreator is tied to a visualization: specifically in ContentCreator, rule infractions that were detected during preview generation will be shown in the page status and marked with a specific icon and highlighting in the preview (see also *FirstSpirit Online Documentation*, page “Template development / Rules / Display of a rule violation / in ContentCreator”). If rule evaluation during preview generation is deactivated by either of the means described above, any present but undetected validation issues will not be visualized in the ContentCreator page status and preview; in forms, however, rules will be evaluated regardless of output channel definition, and all present validation issues will be visualized there.

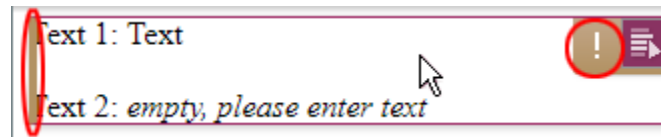
Affected visualizations:



Page status

(Below the menu entry “Validation issues”, only sections or the page itself are listed if validation issues for these elements are visualized in the preview.)





Highlighting and icon

Note: For content based on table templates (datasets), rule infractions are **never** visualized in the preview.

4.26 Rollout of the new ContentCreator 2020-02

Design and technical basis of the FirstSpirit ContentCreator have been revised. With FirstSpirit 2020-01 the use of the revised ContentCreator was officially released. Since then, all customers have been able to use the ContentCreator in the revised design, as long as this has been configured accordingly in the server/project settings.

As scheduled, the “new” ContentCreator will be automatically rolled out to all **cloud customers** with the current release: For all projects started with the ContentCreator, the revised design will be used as of this release.

If required, you can switch back to the “classic” ContentCreator for individual projects by deactivating the “Use new design” checkbox in the FirstSpirit ServerManager under “Project properties / Web components” / “ContentCreator” tab.

For **all customers**, the “new” ContentCreator will be used as planned with the upcoming release (FirstSpirit 2020-03): Then the revised ContentCreator will automatically be used for all projects. If any problems occur, the “old” can be easily switched back to if necessary. With FirstSpirit 2020-07, however, the ContentCreator in the “old” design will be discontinued as planned, so the recommendation is to use the new ContentCreator for all projects as early as possible.

Why was the ContentCreator revised at all and how? - Our blog article will give you a look behind the scenes of the design development for the new ContentCreator: https://www.e-spirit.com/en/blog/contentcreator_redesign.html.

Documentation

Currently, the user documentation for the ContentCreator is being revised and adapted to the new design; other documentation (e.g. “FirstSpirit Online Documentation” (ODFS)) will follow. The



presentation in the documentation therefore does not yet correspond in places to the interface in the new design and may differ from the ContentCreator that you are using.

In addition, you can now find the user documentation for the ContentCreator as an HTML version (instead of PDF) on the central documentation server docs.e-spirit.com.

Notes on operating the new FirstSpirit ContentCreator

- Up to now, for unrestricted use of the new FirstSpirit ContentCreator, the **Pluggability** option had to be set to “Active”. With the current release, pluggability is enforced for the new FirstSpirit ContentCreator. This means: If the new FirstSpirit ContentCreator is used, the Pluggability mode is automatically activated by the system (log entry: WARN 03.02.2020 15:58:20.902 (de.espirit.firstspirit.server.module.WebServerManagerImpl): Force enabled pluggability for 'fs5webedit' in project '-1'.). This has no effect on the user interface, so the “Pluggability” option may be set to “Inactive” even though the option is enabled.

For more information about the “Pluggability” option please see *FirstSpirit Manual for Administrators*, page [Web applications](#) or [Web components](#).

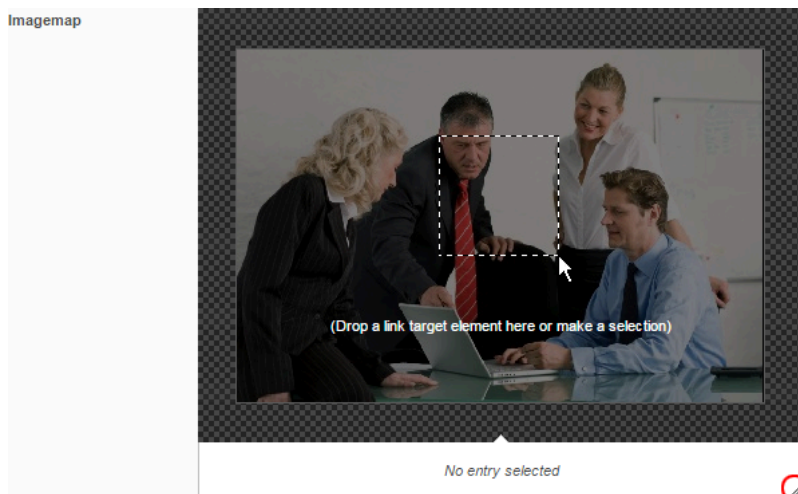
- The technology change of the ContentCreator (“MicroApp Framework”) leads to an increased resource requirement and **increased system requirements**. This is particularly noticeable during the current transition period, during which the “new” and the “old” ContentCreator can be operated in parallel.
 - For this reason, **resources** should be checked and, if necessary, increased especially in the area of the application server used (e.g. Apache Tomcat), especially the **hard disk space** and the **Java heap**.
 - If possible, the ContentCreator should be used as a **global Web application**. The ContentCreator should only be operated as a separate project instance (“project local”) if this is absolutely necessary.
 - When using Apache Tomcat as an application server, it is generally recommended that Apache Tomcat be **restarted** after each update of FirstSpirit.



4.27 Stepless Resizing of the Input Component "Link-Sensitive Graphic" (CMS_INPUT_IMAGEMAP) 5.2R3

Using the input component "Link-Sensitive Graphic" (CMS_INPUT_IMAGEMAP), link areas may be placed over a background image.

Starting with FirstSpirit version 5.2R3, the height of this input component may be adjusted by dragging the resize handle in the lower right corner of the input component.



The minimum height of this input component is 340 pixels.

For further information, see

- *FirstSpirit Manual for Editors (ContentCreator)*, "Editing a preview page / Input elements / Imagemap",
- *FirstSpirit Online Documentation*, "Template development / Forms / Input components / IMAGEMAP"

4.28 Tables: Vertical alignment of content in cells ("valign") 2020-05

The **vertical alignment** can now be determined for content in tables (CMS_INPUT_DOM / "Inline tables" and CMS_INPUT_DOMTABLE) in FirstSpirit ContentCreator. To do this, the new attribute `valign` can be used in a similar way to the existing attribute `align` (for horizontal alignment). The predefined keywords for the different alignments are



- *top*
- *middle* (default setting)
- *bottom*

1) Example – CMS_INPUT_DOM / Inline tables:

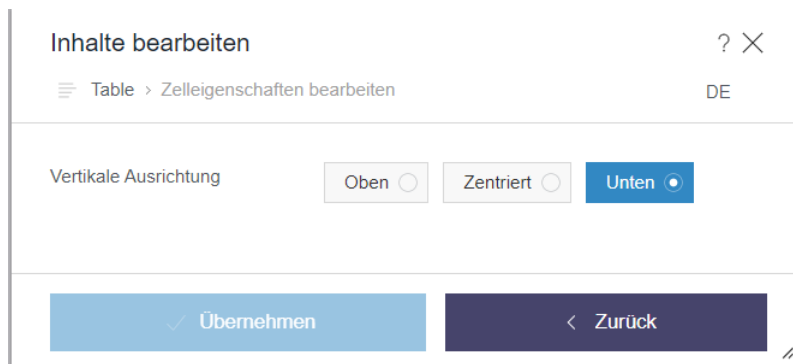
Style templates can be used to define table layout properties for inline tables, e.g., background color, text alignment, etc. The form for entering vertical text alignment in a style template (e.g., in the “standard style template”) must contain the identifier `valign`.

Example:

```
<CMS_INPUT_RADIOBUTTON name="valign" gridHeight="1" useLanguages="no">
  <ENTRIES>
    <ENTRY value="top">
      <LANGINFOS>
        <LANGINFO lang="" label="Top"/>
        <LANGINFO lang="DE" label="Oben"/>
      </LANGINFOS>
    </ENTRY>
    <ENTRY value="middle">
      <LANGINFOS>
        <LANGINFO lang="" label="Centre"/>
        <LANGINFO lang="DE" label="Zentriert"/>
      </LANGINFOS>
    </ENTRY>
    <ENTRY value="bottom">
      <LANGINFOS>
        <LANGINFO lang="" label="Bottom"/>
        <LANGINFO lang="DE" label="Unten"/>
      </LANGINFOS>
    </ENTRY>
  </ENTRIES>
  <LANGINFOS>
    <LANGINFO lang="" label="Vertical alignment"/>
    <LANGINFO lang="DE" label="Vertikale Ausrichtung"/>
  </LANGINFOS>
</CMS_INPUT_RADIOBUTTON>
```



Display in ContentCreator:



The alignment that is defined by the editor in the corresponding dialog “Edit cell properties” can be output in the HTML template set of the style template, for example, and therefore in the preview and on the generated page, e.g.,

```
...
style='
  ...
  $CMS_VALUE(if(!valign.isEmpty, "vertical-align:" + valign + ";"))$
  ...
  '
```

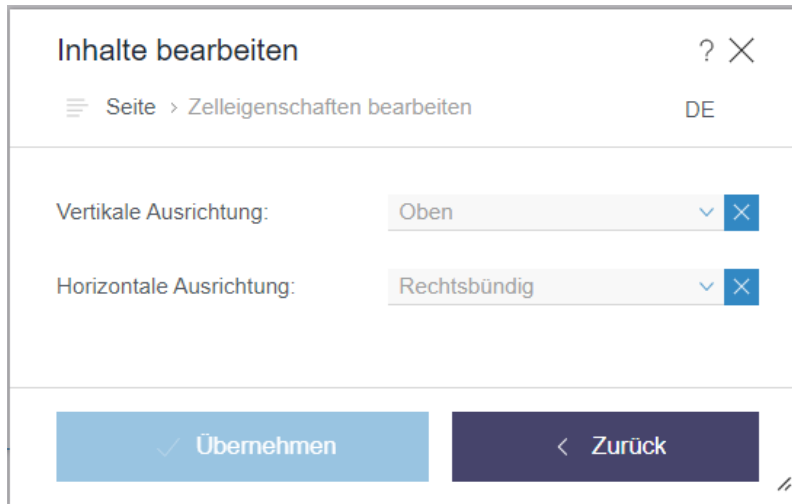
2) Example – CMS_INPUT_DOMTABLE:

For CMS_INPUT_DOMTABLE, cell properties are defined by the editor via a dialog that can be configured via the attribute `propertyConfig`. The vertical alignment of content can also be activated via the keyword `valign`, e.g.,

```
<CMS_INPUT_DOMTABLE name="table"
  propertyConfig="
    valign:Vertical alignment:
      [top:Top|middle:Middle|bottom:Bottom],
    align:Horizontal alignment:
      [left:Left|center:Center|right:Right]">
  <LANGINFOS>
    <LANGINFO lang="*" label="Table"/>
    <LANGINFO lang="DE" label="Tabelle"/>
  </LANGINFOS>
</CMS_INPUT_DOMTABLE>
```



Display in ContentCreator:



The properties of a cell of a CMS_INPUT_DOMTABLE, defined by the editor, can be evaluated and output via the HTML template set of the standard format template "Table cell". The system object #cell is available for this purpose.

Example:

```
<td..
...
$CMS_VALUE(if(!#cell.valign.isEmpty, " valign='" + #cell.valign + "'"))$
$CMS_VALUE(if(!#cell.align.isEmpty, " align='" + if(#cell.align == "block",
"justify", #cell.align) + "'"))$
...
</td>
```

Note: There are **no** plans to introduce corresponding support for the attribute valign for FirstSpirit SiteArchitect.

For more information, see

- Templates for inline tables: <https://docs.e-spirit.com/odfs/templates-basic/composition-tem/inline-tables/index.html>
- CMS_INPUT_DOMTABLE: <https://docs.e-spirit.com/odfs/template-develo/forms/input-component/domtable/index.html>



- #style system object: <https://docs.e-spirit.com/odfs/template-develo/template-syntax/system-objects/style/index.html>
- #cell system object: <https://docs.e-spirit.com/odfs/template-develo/template-syntax/system-objects/cell/index.html>

4.29 Improved performance when displaying datasets in input components 5.2R4

The input component CMS_INPUT_LIST allows selection of values which have been defined by project developers. When used in conjunction with CMS_INCLUDE_OPTIONS, database content can be displayed within the input component, e.g.

```
<CMS_INPUT_LIST name="IDENTIFIER">
  <CMS_INCLUDE_OPTIONS type="database">
    <LABELS>
      <LABEL lang="*">#item.COLUMN</LABEL>
    </LABELS>
    <TABLE>NAME_OF_TABLE_TEMPLATE</TABLE>
  </CMS_INCLUDE_OPTIONS>
  <LANGINFOS>
    <LANGINFO lang="*" label="Dataset selection"/>
  </LANGINFOS>
</CMS_INPUT_LIST>
```

In ContentCreator forms, depending on the browser, display of such an input component which references a data source that contains many datasets may be slow. As of FirstSpirit 5.2R4, the display is thus limited to 100 entries. If more than 100 datasets are available, the following message will be shown in the form: “The list of available entries has been truncated due to browser limitations. This input component is not suitable for lists of this size.” Please note that rules will only be applied to the entries displayed in the form.

It is recommended to use FS_INDEX (with an implementation of DataAccessPlugin) instead of CMS_INPUT_LIST.

For further information about CMS_INPUT_LIST, CMS_INCLUDE_OPTIONS, and FS_INDEX, see *FirstSpirit Online Documentation*,

- “Template development / Forms / Input components / INDEX”



- “Template development / Forms / Input components / LIST”
- “Template development / Forms / Data elements / OPTIONS / DATABASE”

4.30 Move sections into other content areas 5.2R2

If sections in ContentCreator could previously only be moved within the same content area, then it is now possible to also move them beyond content area boundaries.



Prerequisite: The section template for the section being moved must be approved for the content area it is being moved to.

For more information

- on working with sections in ContentCreator, see the *FirstSpirit Manual for Editors (ContentCreator)*, “Editing a preview page / Sections”
- on defining allowed section templates for a content area, see the *FirstSpirit Online Documentation*, “Templates (Basics) / Composition of templates / Page templates / Properties tab”

4.31 Use of the "old" ContentCreator 2020-04

The design and technical basis of FirstSpirit ContentCreator were revised.

By default, the “new” ContentCreator is automatically used for all projects that are started with the ContentCreator. However, you can switch back to the “classic” ContentCreator for individual projects if required.

With FirstSpirit 2020-07, the ContentCreator in the “old” design will be eliminated as planned. The recommendation is therefore to use the “new” ContentCreator for all projects as early as possible.

If one or more web applications are configured to run on the “old” of a FirstSpirit server, the start page of the FirstSpirit server will show a warning to users with the administrator role:

```
Legacy ContentCreator usage detected. Web application: ...
```



For further information please see <https://docs.e-spirit.com/odfs/edocs/admi/firstspirit-ser/server-properiti/web-application/index.html>.

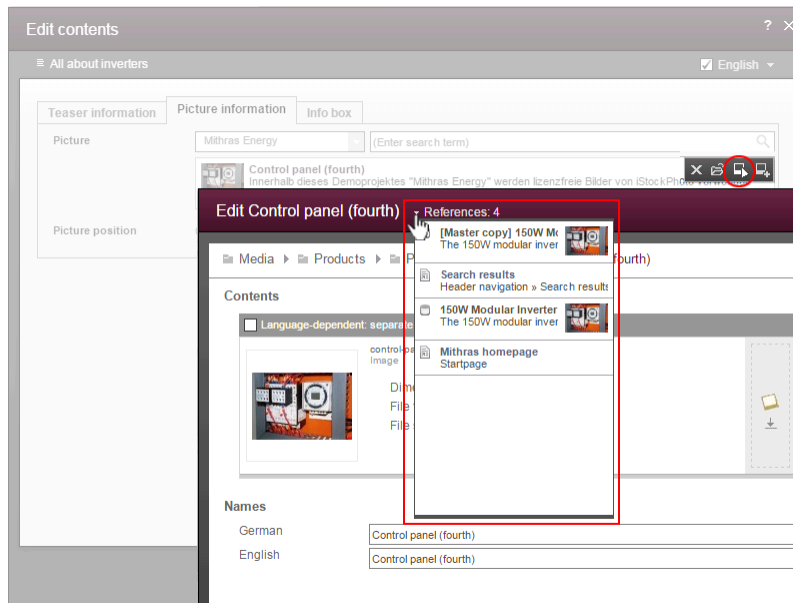


Note on the **new** ContentCreator: It is recommended that you use Google Chrome or Microsoft Edge on chromium basis for the new ContentCreator. The new ContentCreator is not compatible with Microsoft Internet Explorer.

4.32 Visualization of frequently used objects 5.2R2

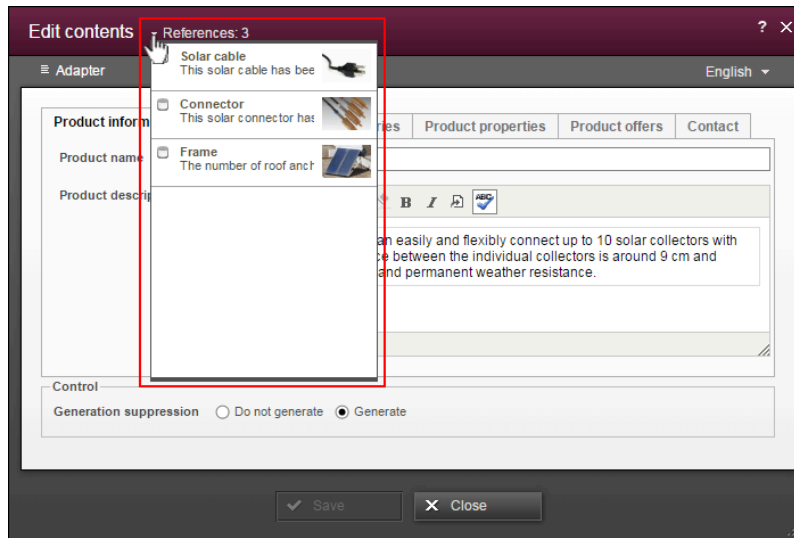
The ability to reuse content in content management systems ensures significant time and cost savings, reduces errors, and thereby increases the overall quality of the website. With this in mind, it is also possible to use a variety of objects such as images, sections, pages, and datasets several times in FirstSpirit; in other words, this content may appear in several places on the site. This means that changes to an object that are made on a preview page may affect other pages too.

With FirstSpirit version 5.2R2, the editor can now see – at various points of the editing process – that the object currently being edited is used on other pages (the same as the “Show usages” context menu function in SiteArchitect) so that changes may also be made there. An example of this can be found when editing media in a reference selection input element (“FS_REFERENCE”):



It can also be seen in a dialog for editing a dataset:





The number next to “References:” indicates the number of places (e.g., pages and/or datasets) where the object appears. In the case of referenced pages, it also includes the page which the editor is currently viewing.

Clicking on “References:” opens a window listing the pages by name together with an object type icon.

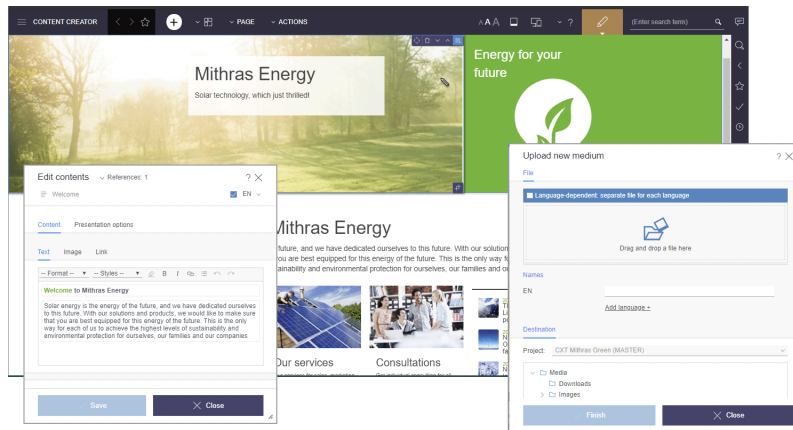
For more information, see *FirstSpirit Manual for Editors (ContentCreator)*.

4.33 Advance notice: Redesign and new technology 2019-09

The design of the FirstSpirit ContentCreator is currently being revised: it is becoming more modern and more state of the art, among other things by using more up-to-date colors and forms. The user interface is becoming clearer and tidier thanks to larger control elements. Text comes to the fore, is easier to read and thus improves accessibility.

In principle, the new design does not involve any functional changes for editors. For even more joy of use and less complexity, however, the user guidance at some central points has been additionally optimized (creation of new page elements, administration of images and media...).





At the same time, the development of ContentCreator and FirstSpirit Content Experience Tools (FragmentCreator, MicroApps...) will be placed on a common technological basis, so that functionalities implemented in the future will be directly available for both ContentCreator and CXT.

As of FirstSpirit 2019-10 there will be a ramp-up phase in which the “new” ContentCreator will be made available to selected customers and partners. The primary goal of this phase will be to finalize the new design and to detect any compatibility problems with customer-specific modules as early as possible. In this transition phase a project-related change between old and new ContentCreator will be possible.

An official release of the revised ContentCreator for all customers is planned for the beginning of 2020.

5 Input components

5.1 Changing the log level when indicating an old data format 2019-12

In the latest version of FirstSpirit, the log level of the message indicating that data has been detected in an old data format has been changed from *WARN* to *DEBUG*.

The name of the input component has also been added to the message to make it easier to identify in the project:

```
DEBUG 25.11.2019 15:18:37.236 {g-sec=982711,g-node=982709}
  (de.espirit.firstspirit.client.access.editor.lists.IndexEditorValueImpl):
  Loading FS_INDEX data for editor named 'test' from legacy persistency.
```

This message is output when the old data format is accessed to generate the preview.



Background: This message occurs only rarely. It only relates to data that was last saved with an outdated FirstSpirit version and in an input component that has already been removed (e.g., CMS_INPUT_CONTENTLIST – deprecated with FirstSpirit 5.0). This data may still be available in the old data format.



There are no plans to discontinue support for the old format. There is therefore no need to make manual modifications in the projects.

To remove the old data formats from a project:

- either save the input component again with the modified data or
- rewrite the FormData object

Example BeanShell script:

```
e.setLock(true);  
fs = e.getFormData();  
e.save("Remove old persistence format");  
e.release();  
e.setLock(false);
```

5.2 CMS_INPUT_DOM: Normalized output of block elements 2018-12

For HTML output of a CMS_INPUT_DOM component, the FirstSpirit-internal document model can be “normalized” to fit the HTML document model by calling

```
$CMS_VALUE(st_dom.normalize)$
```

This causes lists and tables to no longer be nested within block elements (usually, <p>).

In the past, the first call to `.normalize` caused all subsequent DOM output to be normalized, regardless of whether `$CMS_VALUE(st_dom)$` or `$CMS_VALUE(st_dom.normalize)$` was used. This erroneous behavior has now been fixed: `.normalize` now only applies to the current call to `$CMS_VALUE(st_dom.normalize)$`. Thus, calling `.normalize` is now necessary each time the variable should be output in a normalized fashion in the template.



If `.normalize` is used in existing FirstSpirit projects, project developers should check if templates (uses of `$(CMS_VALUE(st_dom))`) have to be modified accordingly.

For further information, see *FirstSpirit Online Documentation*,

- “Template development / Template syntax / Data types / DomElement”, method `normalize`
- “Templates (basics) / Composition of templates / Format templates / Output”

5.3 CMS_INPUT_IMAGE_MAP can obtain an additional "upload" attribute

5.2R21

CMS_INPUT_IMAGE_MAP can be expanded to include an additional `upload` attribute.

If the additional `upload="YES"` attribute is set, the following upload functions are released:

In ContentCreator

- Additional icon in the input component for uploading a file from the file system on the workstation computer
- Dragging and dropping a file from the file system on the workstation computer
 - onto the Imagemap in the preview
 - onto the input component in the open edit window

In SiteArchitect

- Additional icon in the input component for uploading a file from the file system on the workstation computer
- Dragging and dropping from the file system on the workstation computer directly onto the input form

For more information, see

- *FirstSpirit Online Documentation*, “Template development / Forms / Input components / IMAGE_MAP”



- *Documentation for FirstSpirit SiteArchitect*, “Input forms / Link-sensitive graphic”
- *FirstSpirit Manual for Editors (ContentCreator)*, “Editing a preview page / Input elements / Imagemap”

5.4 Duplicating entries in the input component FS_CATALOG 2018-09

In ContentCreator, it is now possible to duplicate an entry of the input component FS_CATALOG. The new button is available both in the form dialog as well as in the preview.



Button "Duplicate entry"

Clicking this button will duplicate the selected catalog entry.

5.5 Dynamic Forms: New Property "PRESET" 5.2R17

In templates, form defaults for input components may be specified by clicking the icon



in the “Form” tab of the respective template; this opens the dialog “Edit form defaults”.

The new property PRESET may be used to determine if the user is currently editing in this dialog:

```
<PROPERTY name="PRESET" source="#global"/>
```

This expression returns TRUE if the user is currently editing in the dialog “Edit form defaults”, otherwise it returns FALSE.

For further information, see *FirstSpirit Online Documentation*, chapter “Template development / Rules / Form properties <PROPERTY/> / Property PRESET”.

5.6 Input component for outputting a list of sections of a page: CMS_INPUT_SECTIONLIST 2019-10

The CMS_INPUT_SECTIONLIST input component can be used to create a list of sections of the current page. Sections can be selected from this by means of checkboxes. In addition, labeling can be assigned for each section, which can be taken into account in the output. This input component can be used, for example, to create a table of contents with jump labels to the sections, and thus represents an alternative to FS_LIST, type PAGE.

```
<CMS_INPUT_SECTIONLIST name="pt_sectionlist">  
  <LANGINFOS>  
    <LANGINFO lang="" label="Table of content"/>  
    <LANGINFO lang="DE" label="Inhaltsverzeichnis"/>  
  </LANGINFOS>  
</CMS_INPUT_SECTIONLIST>
```

Appearance in SiteArchitect:

TABLE OF CONTENTS	
<input type="checkbox"/> Press releases (Teaser)	
<input type="checkbox"/> Contact	
<input type="checkbox"/> FirstSpirit	
<input checked="" type="checkbox"/> Sustainability for your own four walls	Sustainability for your own four walls
<input checked="" type="checkbox"/> All about inverters	Our inverters
<input checked="" type="checkbox"/> The structure of a solar panel	The structure of a solar panel
<input type="checkbox"/> Tag-Cloud (local)	
<input type="checkbox"/> Products	
<input type="checkbox"/> About us	

Appearance in ContentCreator:



Table of contents		
<input type="checkbox"/>	Show all sections in overview	
<input type="checkbox"/>	Press releases (Teaser)	×
<input type="checkbox"/>	Contact	×
<input type="checkbox"/>	FirstSpirit	×
<input checked="" type="checkbox"/>	Sustainability for your own four walls	×
<input checked="" type="checkbox"/>	Our inverters	×
<input checked="" type="checkbox"/>	The structure of a solar panel	×
<input type="checkbox"/>	Tag-Cloud (local)	×
<input type="checkbox"/>	Products	×
<input type="checkbox"/>	About us	×

This input component returns a list of `SectionListEntry` objects.

You can use the method

- `getAnchorName()` (in Bean syntax: `.anchorName`) to get the name of the anchor generated by the section in HTML
- `getText()` (in Bean syntax: `.text`) get the label assigned to the section
- `getSectionName()` (in Bean syntax: `.sectionName`) get the reference name of the section

Example for outputting `CMS_INPUT_SECTIONLIST`:

```

$CMS_FOR(section, pt_sectionlist)$
  <li>
    <a href="#"$CMS_VALUE(section.anchorName)$">$CMS_VALUE(section.text)$</a>
  </li>
$CMS_END_FOR$
    
```

Migration notice

Data that was stored using an `FS_LIST`, type `PAGE`, can be read, processed and stored by the `CMS_INPUT_SECTIONLIST` input component after conversion to `CMS_INPUT_SECTIONLIST` (while retaining the identifier, attribute `name`). The output must be adjusted accordingly in the template when migrating.

The data format is compatible in both directions. This means that both `CMS_INPUT_SECTIONLIST` can read the `FS_LIST` data and `FS_LIST` can read the `CMS_INPUT_SECTIONLIST` data format. However,



FS_LIST should no longer be used, as it will no longer be supported by FirstSpirit as planned from January 2020 (see also chapter “FS_LIST omitted as of 01.01.2020”). Early conversion to alternatives (FS_INDEX, FS_CATALOG, CMS_INPUT_SECTIONLIST) is recommended.

5.7 Extended snippet access for FS_INDEX and FS_CATALOG 5.2R4

The “Snippets” can be used in many places in FirstSpirit: e.g., when displaying FirstSpirit objects in search results, in reports, and also to display entries in FS_CATALOG and FS_INDEX. In the definition of snippets (in templates) the template developer can specify what information about the FirstSpirit object is to be used in search results, reports, etc. and thus customize the content to meet the specific needs of editors and the conditions of the project concerned.

The following additions have been made to this area with FirstSpirit version 5.2R4:

FS_CATALOG: Simplified access to values using dot notation (`getItems` method)

The FS_CATALOG input component can be used to create and manage lists of sections or links.

It returns a `Catalog` object which contains `Card` objects. A `Card` object represents an entry in FS_CATALOG and contains information about

- the section or link template selected by the editor for this entry,
- the form fields defined in the selected template,
- the values saved by the editor in the form fields.

The new `getItems` method (in Bean syntax: `.items`) can be used to access `Card` data more directly and work with this data. It returns a list (`List` data type) of `FormData` objects:

```
FS_CATALOG_VAR.items
```

In order to be able to identify and output the value of a certain input component (`FormField`) in this list for a snippet definition, for example, both the identifier of the required input component and its position in the list must be specified:

```
FS_CATALOG_VAR.items[0].st_text
```



In this example, the value of “st_text” of the 1st entry in the FS_CATALOG component is identified with the “FS_CATALOG_VAR” identifier.

(This method is not only available in snippet definitions.)

FS_CATALOG: Access to snippets of entries (getSnippets method)

The new `getSnippets` method (in Bean syntax: `.snippets`) can now be used to access snippet values of the entries of an FS_CATALOG component. Instead of the identifier of the required input component (e.g., “st_text” for a CMS_INPUT_TEXT component), only the field of the snippet definition has to be specified when using `getSnippets`:

- `thumbnail` outputs the value of the “Thumbnail” field
- `header` outputs the value of the “Header” field
- `extract` outputs the value of the “Extract” field

of the snippet definition of the corresponding entry of the FS_CATALOG component.

The method returns a list (“List” data type). The required element of the list can be returned by specifying the position number (in square brackets, counting starts at 0).

Example:

```
FS_CATALOG_VAR.snippets[0].thumbnail  
FS_CATALOG_VAR.snippets[0].header  
FS_CATALOG_VAR.snippets[0].extract
```

The `FS_CATALOG_VAR.snippets[0].header` call returns the value from the field of the first entry of the FS_CATALOG component that is defined in the corresponding section or link template.

(This method is not only available in snippet definitions.)

The new `CatalogAccessor` data type has also been implemented in this context.

FS_INDEX: Access to snippets of a DataAccessPlugin (DAP, getSnippets method)

When an FS_INDEX input component is accessed via a `FormData` object, an `Index` type object containing a `Record` object for each entry in the index is returned. The `Index` object can be used both to manage the index entries and to create new entries.

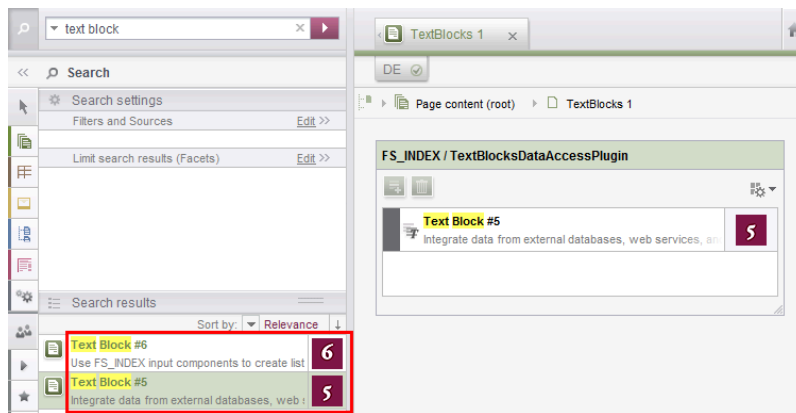


In template set and snippet definitions of templates, by contrast, when an FS_INDEX input component is accessed, an `IndexAccessor` type object is returned, which facilitates read access to the `String` identifiers of the entries saved in the component and to the data objects, which correspond to the entries and have been resolved via the `DataAccess` plug-in associated with the index component.

From FirstSpirit version 5.2R4, additional interfaces which are able to display these external data objects in the form of a snippet are available in this area (same as FS_CATALOG, see above). The following calls can be used within the snippet definition (notation):

```
FS_INDEX_VAR.snippets[0].thumbnail
FS_INDEX_VAR.snippets[0].header
FS_INDEX_VAR.snippets[0].extract
```

The `FS_INDEX_VAR.snippets[0]` call returns a snippet interface for the first DAP entry of the FS_INDEX component.



For more information, see *FirstSpirit Online Documentation*,

- “Template development / Template syntax / Data types / CatalogAccessor”
- “Template development / Forms / Input components / INDEX / Access to FS_INDEX”
- “Template development / Template syntax / Data types / IndexAccessor”



5.8 Error corrected when migrating data from FS_LIST (type SERVICE)

2019-12

As announced before FirstSpirit support of the FS_LIST input component is planned to be discontinued from January 2020 on. e-Spirit recommends developers and end users to switch to alternative FirstSpirit input components, e.g. FS_INDEX, at an early stage.

With the current FirstSpirit version an error was corrected that prevented the data stored by an FS_LIST (type SERVICE) input component from being read by an FS_INDEX input component (with DataAccessPlugin), even if the DataAccessPlugin used there was compatible with the stored data of the service in the FS_LIST.

Note on migration (with data):

A service written for use with FS_LIST must be replaced by a DataAccessPlugin that provides the appropriate functionality for FS_LIST.

For the DataAccessPlugin to be able to process the old data format (of the service), the `DataAccessSession.getData(...)` methods must be able to handle the identifiers of the previous service. These are passed as a string or list of strings. The individual strings each correspond to one identifier.

Example: FS_LIST (type SERVICE) contains the IDs 22, 333 and 4444.

These are automatically converted into a list of strings by FirstSpirit before calling the DataAccessPlugin respectively its `getData` method: ["22" , "333" , "4444"]



After the conversion to the new input components, a return to FS_LIST - even after a possible server downgrade - is no longer possible.

Please contact [e-Spirit Technical Support](#) if you have questions or feedback on the migration of FS_LIST.

Further documentation:

- A [migration guide](#) for existing projects is provided via the FirstSpirit Documentation.



- A [description of the Data Access infrastructure](#), which enables module developers to integrate external data sources into FirstSpirit, is provided via the FirstSpirit Documentation.
- FirstSpirit Developer API: interface [DataAccessPlugin](#) and interface [DataAccessSession](#)

5.9 FS_CATALOG: Representing language independent content (link lists) 5.2R16

The FS_CATALOG input component allows to create lists of either sections or links so that editors can maintain multiple sections or links directly within the component, without the need to switch to another input component, another section, and so on. To edit language-dependent contents corresponding tabs are provided.

Forms based on link templates always are language-independent. To provide better clarity, language tabs won't be shown anymore in FS_CATALOG components that allow selecting link templates (`<TEMPLATES type="link">`).

5.10 FS_CATALOG: Identification of entries ("cards") 2018-12

The input component FS_CATALOG enables creation of lists with sections or links. It returns a `Catalog` object. This object contains `Card` objects. Each `Card` object represents a single FS_CATALOG entry.

As of the current FirstSpirit release, a single entry ("card") of an FS_CATALOG can now be identified using a unique ID. This ID may be accessed during generation, for instance. Such an ID may look as follows:

```
c84c8dae-512a-4142-9068-85208d4072fe
```

Card objects: method `getId()`

`Card` objects now provide a new method `getId()` which may be used to obtain the ID of the associated FS_CATALOG entry.

Example:



```
<p>
  $CMS_FOR(var,st_catalog)$
    ID:  $CMS_VALUE(var.getId())$
  $CMS_END_FOR$
</p>
```

Here, *var* is the variable for the (list entry) object, *st_catalog* is the variable name of the FS_CATALOG component.

Catalog objects: method `find(String)`

Catalog objects now provide a new method `find(String)` which returns a `java.util.Optional<Card>` object which contains the `Card` object with the submitted ID (if present in the catalog).

The following syntax sample outputs the contents of the input component *st_text* of a specific entry (here, the FS_CATALOG entry with the ID `7644cfe2-b117-4ec7-bc94-bb8f255d1f59`):

```
$CMS_VALUE(st_catalog.find("7644cfe2-b117-4ec7-bc94-bb8f255d1f59").get().item.st_text)$
```

System object `#card`

The system object `#card` may be used to access the entry of an FS_CATALOG input component. It is available in the (section or link) templates which are being referenced by the FS_CATALOG input component, however, only in `$CMS_VALUE(. . .)$` calls, not in output via `$CMS_FOR(. . .)$`.

In order to obtain the ID of an entry, `#card` may also be used in conjunction with `getId()` in the referenced (section or link) template.

Example:

```
$CMS_VALUE(#card.getId())$
```

For further information, see *FirstSpirit Online Documentation*,

- “Template development / Forms / Input components / CATALOG”
- “Template development / Template syntax / Data types / Card”



- “Template development / Template syntax / Data types / Catalog”
- “Template development / Template syntax / System objects / #card”

5.11 FS_CATALOG: Nesting of language-dependent input components

5.2R5

From the current version of FirstSpirit onwards, the use of language-dependent input components within a language-dependent FS_CATALOG input component will be disallowed by default.

Old behavior

In previous FirstSpirit versions, it was technically possible to configure both FS_CATALOG and inner forms to be language-dependent. This frequently led to problems related to translation processes, general usability of input components for editors, and maintainability of project development as well as to impaired performance. Content entered by the editor into nested, language-dependent FS_CATALOG constructs could (especially so when using translation help) potentially not be output (e.g. during generation) or edited afterwards.

Thus, it was recommended to use language-independent input components within language-dependent FS_CATALOG input components. As a consequence, section templates that were meant to be used within both pages and FS_CATALOG input components had to be duplicated to produce a language-independent version (for use within language-dependent FS_CATALOG components) and a language-dependent version (for use in all other cases).

New behavior

Starting with the current version of FirstSpirit, all projects created with FirstSpirit version 5.2R5 or newer will by default be configured to disallow the use of language-dependent input components within a language-dependent FS_CATALOG input component. Language-dependent input components in templates that are used within a language-dependent FS_CATALOG component will automatically be treated as language-independent by FirstSpirit. This alleviates the disadvantages imposed by the old behavior.



The old behavior is not recommended, and future versions of FirstSpirit may cease to support it. Migration is recommended.



Compatibility with projects from older FirstSpirit versions

For projects that

- exist on a FirstSpirit server running a previous version that is upgraded to FirstSpirit version 5.2R5 or newer
- are imported from a FirstSpirit server running a previous version to a server running FirstSpirit version 5.2R5 or newer via project import functionality

the old behavior will be supported until further notice. In order to prepare projects that were created in previous versions of FirstSpirit for use with the new behavior, FirstSpirit offers two compatibility settings that allow a stepwise migration.



The data handling used differs between the old and new behavior. If language-dependent input components are used within a language-dependent FS_CATALOG input component in a project, the data of this FS_CATALOG component must be checked and - if necessary - backed up before the new behavior can be used project-wide. Without checks and backups, switching to the new behavior can cause data loss in the project: If the FS_CATALOG component or inner forms of this component already contain content, saving this FS_CATALOG component will cause content to be stored in the language the editor is currently editing (fallback: master language); if content exists in other languages, these language versions will be discarded.

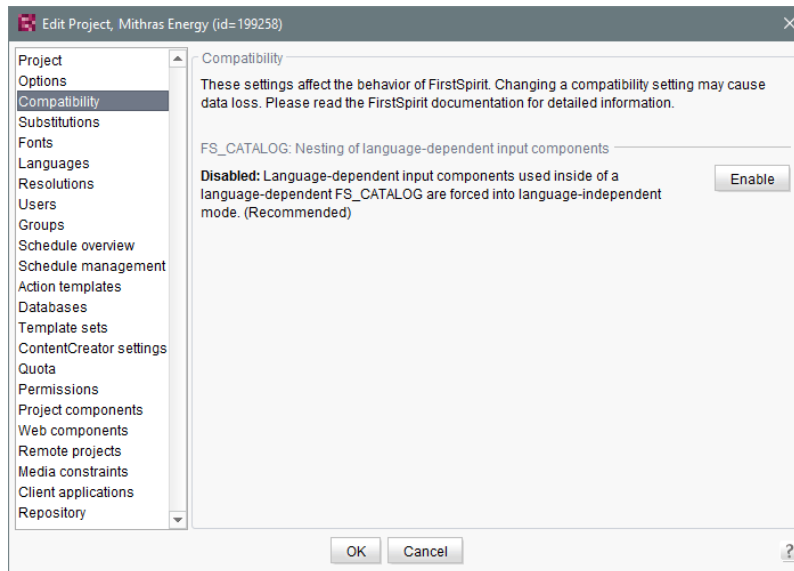
Both compatibility settings have the following effects:

- Compatibility setting “disabled”: Within a *language-dependent* FS_CATALOG input component, inner input components which are configured to be language-dependent in their template will be handled as *language-independent* (new behavior).
- Compatibility setting “enabled”: Within a *language-dependent* FS_CATALOG input component, inner input components which are configured to be language-dependent in their template will be handled as *language-dependent* (old behavior).

Compatibility for **individual FS_CATALOG input components** can be turned off in templates using a parameter, `forbidPolyglotDataHierarchy`. This allows application of the new behavior for single FS_CATALOG input components, while other FS_CATALOG input components for which this parameter is not set will continue to use compatibility with previous FirstSpirit versions.



Once all FS_CATALOG components are prepared for the new behavior, the compatibility setting can be deactivated **project-wide** (“FirstSpirit ServerManager / Project / Properties / Compatibility / FS_CATALOG: Nesting of language-dependent input components”):



The project-wide compatibility setting affects all language-dependent FS_CATALOG input components in a project.

From FirstSpirit version 5.2R5 onwards, when transporting project properties using “Content Transport” functionality or via a project export, this property will be included in the transport/export.

FirstSpirit API

Additionally, the methods `getForbidPolyglotDataHierarchy` and `setForbidPolyglotDataHierarchy` (FirstSpirit Access API, interface `Project`, package `de.espirit.firstspirit.access.project`) allow access via API to the value set in project properties. `getForbidPolyglotDataHierarchy` returns the currently set value of the compatibility setting “FS_CATALOG: Nesting of language-dependent input components”, while `setForbidPolyglotDataHierarchy` may be used to set this setting's value.

The `ProjectAgent`, obtainable via the `SpecialistsBroker` (both FirstSpirit Developer API, package `de.espirit.firstspirit.agency`), also provides a means to read the current value of the compatibility setting: `getForbidPolyglotDataHierarchy`.

For further information, see



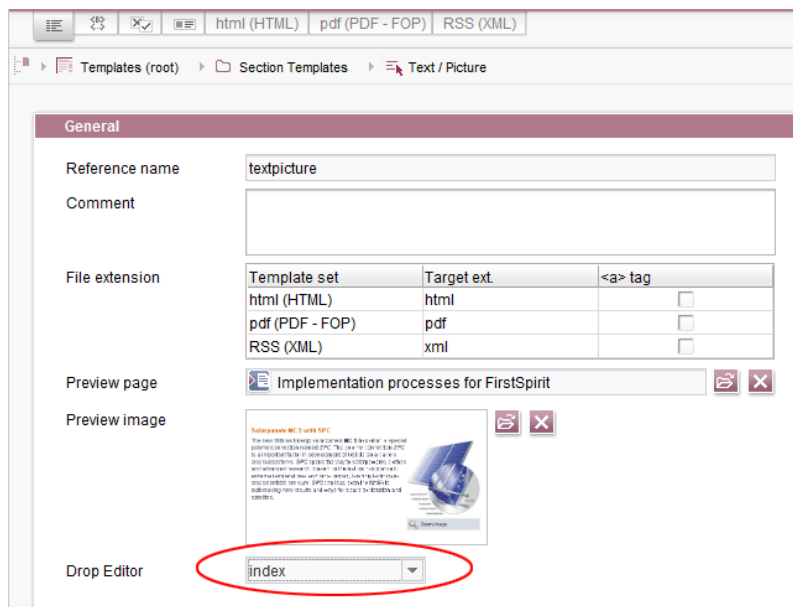
- *Template development / Forms / Input components / CATALOG (→FirstSpirit Online Documentation)*, parameter `forbidPolyglotDataHierarchy`
- *FirstSpirit Manual for Administrators*, chapter “Compatibility”
- Module documentation for “FirstSpirit CorporateContent”, chapter “Transporting project properties”

5.12 FS_INDEX: Editorial functionality using drag-and-drop 5.2R5

In ContentCreator, users may create sections, datasets, and links (in a rich-text editor or a table / CMS_INPUT_DOM or CMS_INPUT_DOMTABLE) by dragging and dropping content onto a specifically configured FS_BUTTON input component. To achieve this, a

- section template,
- link template, or
- table template

which should be used to create new content via drag-and-drop must be configured to use the desired target input component (tab “Form”) for such drag-and-drop content as its **Drop Editor** (tab “Properties”).



This way, elements provided by a DataAccessPlugin may be used via drag-and-drop in order to create a new section, dataset, or link (in CMS_INPUT_DOM/DOMTABLE). The element dragged and dropped onto the button will then be referenced by a target index component.

If a dataset provided by the DatasetDataAccessPlugin is dropped onto an FS_BUTTON with class NewSection (onDrop="class:NewSection") but is incompatible with any FS_INDEX components listed as drop editors (i.e. it does not match any table template configured for FS_INDEX components, tag SOURCE / TEMPLATE), the operation will be aborted with the error message “The transferred data has not been accepted”, and no section will be created. Due to technical reasons, a section will in fact be created and deleted again in the background, such that the page will afterwards be shown as changed.

In addition to the “Add” button and drag-and-drop onto an index component in an “Edit” dialog, it is now also possible to **add new entries to index components** by dragging a compatible dataset from a report (e.g. “Search”, “Bookmarks”, etc.) or data from a custom report implementation into the preview area.



The prerequisite is compatible mark-up added via editorId.

(Note: An appropriate preview page (“Properties” tab) must be selected so that datasets will appear in search, bookmarks etc.)

Entries within a form may now also be **replaced** with other compatible data from reports. A colored marker



Replace

or



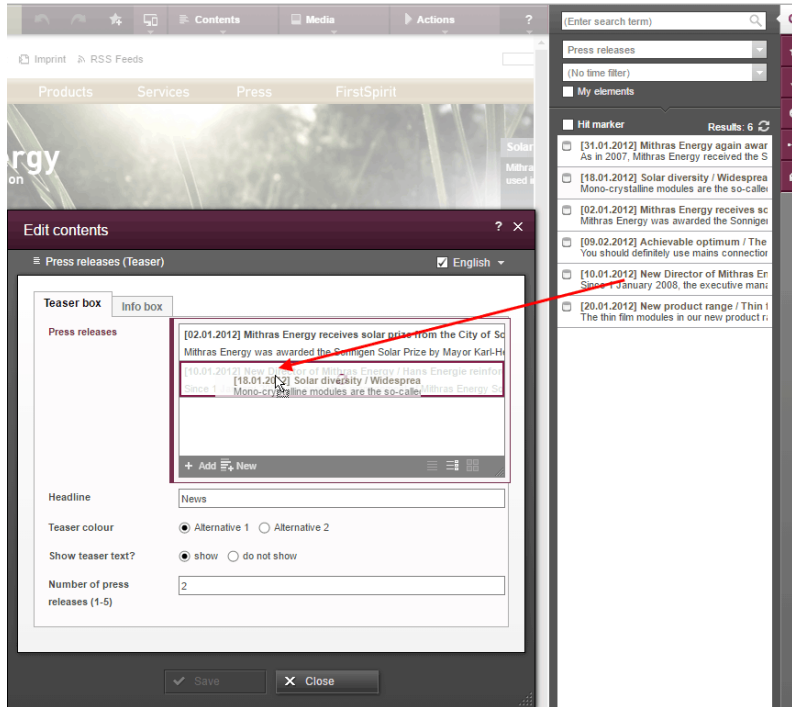
Move/Insert above



or

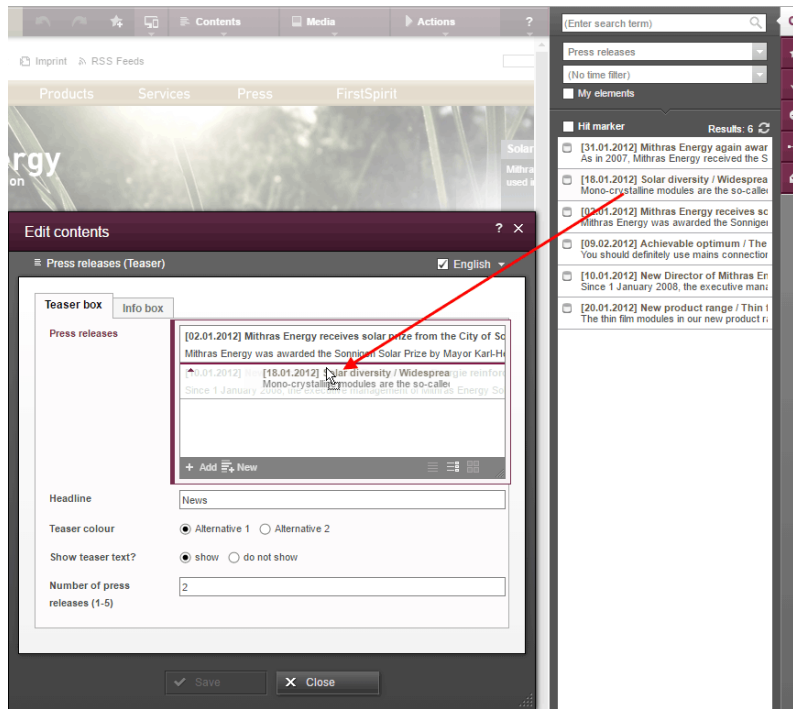
Move/Insert left

indicates whether the data would replace an existing entry if dropped:



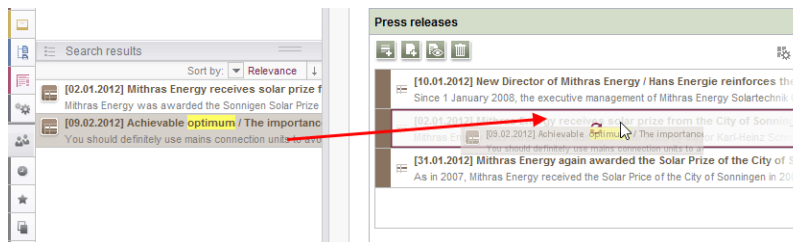
or be added as a new entry:





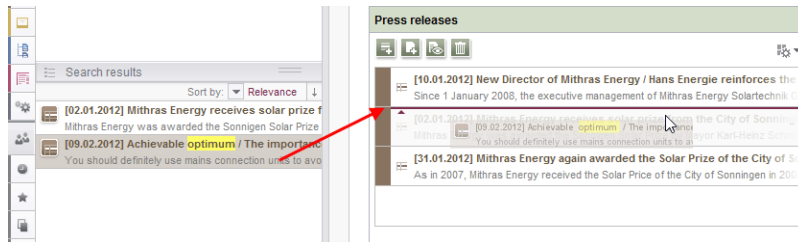
The order of entries may be modified by dropping an element that is already referenced in the component onto the form, but the dropped element will not be referenced twice.

In SiteArchitect, as of the current FirstSpirit version, data may also replace existing entries via drag-and-drop:



or be added as a new entry:





Note for use cases in which only one entry is to be selectable in FS_INDEX: If you would like that the editor can select only one entry within your FS_INDEX component, you can manage this using a rule with the ADD property and a “less than” check (using <LESS_THAN/>), for example

```
<RULE>
  <WITH>
    <LESS_THAN>
      <PROPERTY name="SIZE" source="fs_index"/>
      <NUMBER>1</NUMBER>
    </LESS_THAN>
  </WITH>
  <DO>
    <PROPERTY name="ADD" source="fs_index"/>
  </DO>
</RULE>
```

For technical reasons, starting with FirstSpirit version 5.2R5, the ADD rule is disregarded when replacing entries in ContentCreator **in the preview**. For ensuring that only the desired number of entries will not be exceeded, please use a rule with the restriction level SAVE, which will be applied when saving the form, for example



```
<RULE>
  <WITH>
    <LESS_THAN>
      <PROPERTY name="SIZE" source="fs_index"/>
      <NUMBER>2</NUMBER>
    </LESS_THAN>
  </WITH>
  <DO>
    <VALIDATION scope="SAVE">
      <PROPERTY name="VALID" source="fs_index"/>
      <MESSAGE lang="" text="The maximum number of entries is exceeded! Max. 1"/>
      <MESSAGE lang="DE" text="Anzahl der Einträge überschritten! Max. 1"/>
    </VALIDATION>
  </DO>
</RULE>
```

If an entry is added to FS_INDEX via the preview in ContentCreator even though there is already an entry, the form will open showing the rule violation (“The maximum number of entries is exceeded! Max. 1”) and it can only be saved if surplus entries have been removed.

For further information, see

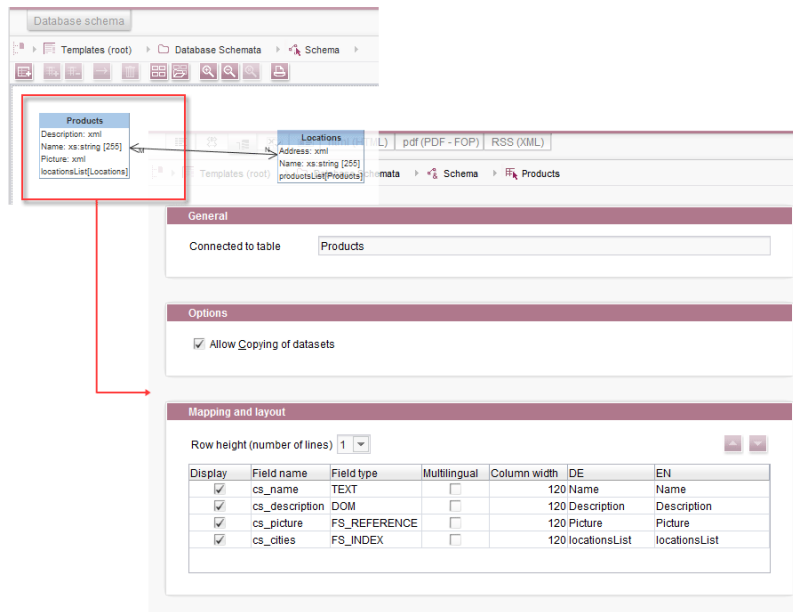
- *FirstSpirit Online Documentation*,
 - “Template development / ContentCreator / Functional scope”, section “FS_BUTTON handler classes”
 - “Template development / Rules”
- *FirstSpirit Manual for Editors (ContentCreator)*,
 - “Editing the preview page / Standard input elements / Lists (new, datasets)”
 - “Editing the preview page / The FirstSpirit operating concept”, section “Using drag-and-drop”
- *Documentation for FirstSpirit SiteArchitect*, “Default input forms / Index (FS_INDEX)”



5.13 FS_INDEX: Manually Sorting Datasets 5.2R17

FS_INDEX allows creation of lists of data which are provided by modules. FirstSpirit contains one solution which supports selection of datasets from data sources of a project (“DatasetDataAccessPlugin”).

Until now, the input component FS_INDEX, used in conjunction with “DatasetDataAccessPlugin”, already supported sorting datasets via drag-and-drop. This manual sort order was not stored in every case, however, and thus did not always affect the sort order when datasets were output. For FS_INDEX components which are mapped to a to-N foreign key relationship, the current version of FirstSpirit now supports editors' manual sorting of datasets, affecting both the display order in the input component as well as the output order.



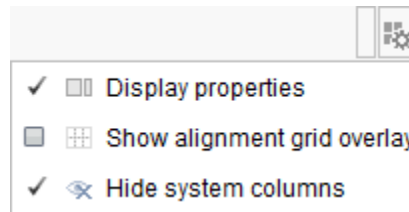
Database schema and table template

On a technical level, a new system column has been introduced:

```
FS_META_DATA
```

(may be shown in the database schema by deactivating “Customize layout / Hide system columns”)





Information about the sort order of the component's entries will be stored in this column.

In **newly created** database schemata or tables, this column is automatically created such that the new sorting functionality can be used right away.

In **already existent** database schemata, this column will be created in tables as soon as the respective schema is updated, i.e. the schema is modified and saved. Alternatively, the context menu item “Edit externally” may be used on the respective schema; either closing the dialog “Externally edited elements” via “Apply changes and close” or a sequence of clicking “Apply changes” and closing the dialog will cause the column to be created in the schema. During a project import into a FirstSpirit server, the column will automatically be added if necessary.



If a database schema which contains this new column is to be used in other projects (e.g. via FirstSpirit Content Transport), the database schema in the target project must be updated **before** conducting a transport of data from the source project into the target project, so that the sort order of datasets will be correctly retained in the target project.

Note: Output via the system object `#row` (e.g. in a content projection - see *FirstSpirit Online Documentation*, “Templates (basics) / Composition of templates / Database schemata / Dataset output”, section “via content projection”) does not regard the sort order.

Note: A migration from FS_LIST, type `DATABASE` to FS_INDEX may be realized programmatically by a template developer. The following script shows a procedural example. Prerequisite: The schema must already contain the column `FS_META_DATA`, and the FS_LIST definition must already be switched to FS_INDEX.

```
dataset = context.getElement();
dataset.setLock(true, false);
formData = dataset.getFormData();
form = formData.getForm();
indexComponent = form.findEditor("images");
source = indexComponent.source();
session = source.createSession(context, false);
positions = Collections.synchronizedSortedMap(new TreeMap());
pictures = formData.get(null, "images");
index = pictures.get();
for (record : index.iterator()) {
    data = session.getData(record.getIdentifier());
    formData = data.getFormData();
    position = formData.get(null, "position").get();
    positions.put(position, record);
}
sorted = positions.entrySet().stream().sorted(Map.Entry.comparingByKey());
index.clear();
for (el : sorted.iterator()) {
    index.add(el.getValue());
}
pictures.set(index);
dataset.setFormData(formData);
dataset.save("Re-sort", false);
dataset.setLock(false, false);
```

where

- *images* is the unique identifier of the FS_INDEX input component which should be migrated (and which is used to select datasets from the target table),
- *position* is the name of the column in which the sort order of datasets was stored (FS_LIST, tag *PERSISTENCEINDEX*).

For further information, see

- *FirstSpirit Online Documentation*, “Template development / Forms / Input components / INDEX”,
- *FirstSpirit Online Documentation*, “Templates (basics) / Composition of templates / Database schemata”,



- *Documentation for FirstSpirit SiteArchitect*, “Input forms / Index”,
- *FirstSpirit Manual for Editors (ContentCreator)*, “Editing a preview page / Input elements / Index”

5.14 FS_INDEX: Emptiness check with ".isEmpty" 5.2R7

The input component `FS_INDEX` *Template development / Template syntax / Data types / IndexAccessor* (→*FirstSpirit Online Documentation*).

Within output channel definitions, accessing the value set of an `FS_INDEX` input component returns an object of type `IndexAccessor`.

As of the current FirstSpirit version, the data type `IndexAccessor` includes a new implementation of the method `.isEmpty()` (in Bean syntax: `.isEmpty`). This method may be used to check whether or not the `FS_INDEX` input component contains entries.



- If the input component contains at least one entry, the method returns `false`.
- If the input component does not contain any entries, the method returns `true`.

Example:

```
$CMS_VALUE(fs_index.isEmpty)$
```



Previously, this method always returned `false`.

For further information, see *Template development / Template syntax / Data types / IndexAccessor* (→*FirstSpirit Online Documentation*).

5.15 FS_LIST will be removed as of 01/01/2020 2019-07

The input component for creating and managing lists FS_LIST was deprecated with FirstSpirit 5.2R3.

It will be removed as of 01/01/2020.

The input components FS_CATALOG and FS_INDEX can be used as replacements.

5.16 FS_LIST input component dropped 01/01/2020 2019-10

With FirstSpirit version 5.2R3 the input component FS_LIST, for creating and maintaining list, has been deprecated:

FirstSpirit support of the input component is planned to be discontinued from January 2020 on.

In order to make the phasing out of FS_LIST as low-risk as possible, the removal is carried out in several steps.

the ramp down phase for the FS_LIST input component is scheduled to start with FirstSpirit 2019-11:

1. **With FirstSpirit 2019-11** in all projects, that use the input component FS_LIST:
 - when opening the respective forms or
 - when generating data from the FS_LIST input component

adeprecation warning will be logged. The component remains fully functional, though, and can still be used.

2. **With FirstSpirit 2020-01** the input component is deactivated by default in all projects. The component can no longer be used from this point on. That means:
 - forms with FS_LIST can no longer be edited and
 - the expected output will no longer be generated.



3. In order to minimize the risk of production problems, particularly for customers with longer update cycles, during a six months transition period it will be possible to temporarily re-active FS_LIST. In order to do so please contact [e-Spirit Technical Support](#).
4. **With FirstSpirit 2020-07** the input component will be **removed** from FirstSpirit, and can no longer be used in any project from that moment on.



e-Spirit recommends developers and end users to switch to alternative FirstSpirit input components at an early stage.

Before updating to FirstSpirit 2020-01 or higher, all FS_LIST uses must be converted to one of the successor components.

As replacements the input components [FS_CATALOG](#), [FS_INDEX](#), and [CMS_INPUT_SECTIONLIST](#) are available, likewise providing functionality for the bundling of contents and thus largely taking over the FS_LIST use cases.

- FS_LIST, type DATABASE can be replaced by an [FS_INDEX](#) input component.
- FS_LIST, type INLINE can be replaced by an [FS_CATALOG](#) input component.
- FS_LIST with tag MEDIAMODE can be replaced by an [FS_INDEX](#) input component, when using the `DatasetDataAccessPlugin` (tag SOURCE), which is delivered with FirstSpirit by default.
- FS_LIST, type PAGE can be replaced by the input component [CMS_INPUT_SECTIONLIST](#).
- FS_LIST, type SERVICE can be replaced by an [FS_INDEX](#) input component, when using a corresponding data access plug-in.

A detailed guide and tools for the transition of existing projects will be provided soon in the [FirstSpirit Community](#).



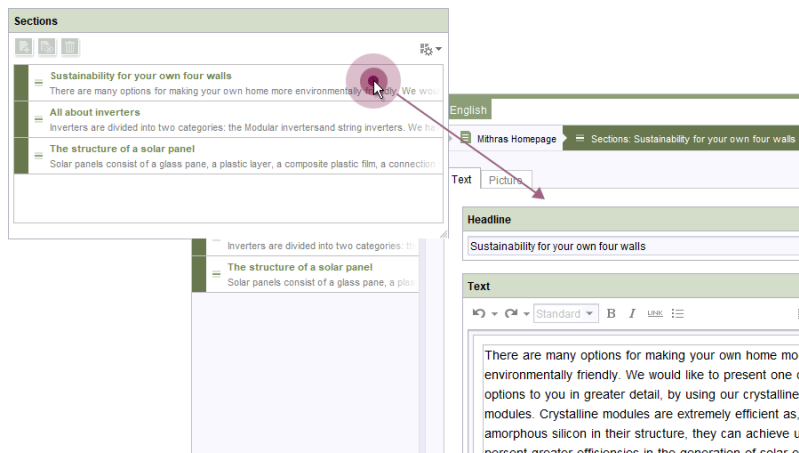
After the transition to the new input components a return to FS_LIST is not possible - not even after a server downgrade.



Please contact [e-Spirit Technical Support](#) if you have questions or feedback regarding the migration away from FS_LIST.

5.17 FS_LIST, FS_INDEX, FS_CATALOG: Optimization of Multi-Language Display 5.2R19

The input components FS_LIST, FS_INDEX, and FS_CATALOG may be used to create lists of entries which are based on section or link templates or contain datasets. In these (“outer”) components, the contents of inner components are used as labels to display the inner components. For FS_CATALOG and FS_INDEX, the definition in the tab “Snippet” of the associated templates is used; for FS_LIST, the value of the inner input component or the configuration via the tag *LABELS / LABEL* is used. Example FS_CATALOG:



- **outside:** label “Sections”
- **inside:** label “Sustainability for your own four walls | There are many options...” etc.

In projects with multiple project languages (also known as “content languages”), depending on the input component's configuration, the contents may be language-dependent (= different content/values in different languages, `useLanguages=“yes”`).

As of the current version of FirstSpirit, labels of inner components will always be displayed in the language that is chosen via the language tab, independently of the setting in the menu “View / Preferred display language”. Thus, in a language tab *EN*, contents will always be displayed in the language *EN*. Previously, the display language (e.g. *DE*) was used in some cases.



5.18 FS_LIST: Ramp-down phase: Deprecation warnings 2019-12

With FirstSpirit 2019-12, the ramp-down phase for the FS_LIST input component is extended by additional use cases. A **Deprecation warning** can now also occur in projects that were still running without warnings in FirstSpirit 2019-11. The component remains fully functional with FirstSpirit 2019-12 and can still be used.

Before updating to FirstSpirit 2020-01 or higher, all FS_LIST uses must be converted to one of the successor components.

Overview: steps of the ramp down phase for the FS_LIST input component

In order to make the phasing out of FS_LIST as low-risk as possible, the removal is carried out in several steps:

1. (Done) With FirstSpirit version 5.2R3 the input component FS_LIST, for creating and maintaining lists, has been deprecated.
2. (Done) With FirstSpirit 2019-11 in all projects, when generating or previewing data from the FS_LIST input component a **deprecation warning** will be logged. The component remains fully functional, though, and can still be used.
3. **Next step:** With FirstSpirit 2020-01 the input component is **deactivated by default** in all projects. The component can no longer be used from this point on. That means:
 - forms with FS_LIST can no longer be edited and
 - the expected output will no longer be generated.
4. In order to minimize the risk of production problems, particularly for customers with longer update cycles, during a six months transition period it will be possible to temporarily re-active FS_LIST. In order to do so please contact [e-Spirit Technical Support](#).
5. **With FirstSpirit 2020-07** the input component will be **removed** from FirstSpirit, and can no longer be used in any project from that moment on.



Migration: switch to alternative FirstSpirit input components

- !** e-Spirit recommends developers and end users to switch to alternative FirstSpirit input components at an early stage.
Before updating to FirstSpirit 2020-01 or higher, all FS_LIST uses must be converted to one of the successor components.

As replacements the input components **FS_CATALOG**, **FS_INDEX**, and **CMS_INPUT_SECTIONLIST** are available, likewise providing functionality for the bundling of contents and thus largely taking over the FS_LIST use cases.

- FS_LIST, type DATABASE can be replaced by an **FS_INDEX** input component.
- FS_LIST, type INLINE can be replaced by an **FS_CATALOG** input component.
- FS_LIST with tag MEDIAMODE can be replaced by an **FS_INDEX** input component, when using the `DatasetDataAccessPlugin` (tag SOURCE), which is delivered with FirstSpirit by default.
- FS_LIST, type PAGE can be replaced by the input component **CMS_INPUT_SECTIONLIST**.
- FS_LIST, type SERVICE can be replaced by an **FS_INDEX** input component, when using a corresponding data access plug-in.

A detailed guide for the transition of existing projects is provided via the [FirstSpirit Documentation](#).

- !** After the transition to the new input components a return to FS_LIST is not possible - not even after a server downgrade.

Please contact [e-Spirit Technical Support](#) if you have questions or feedback regarding the migration away from FS_LIST.



5.19 FS_LIST: Ramp-down phase: The input component is no longer supported 2020-01

With FirstSpirit 2020-01, the input component FS_LIST is no longer supported. The component can no longer be used from this point on. That means forms with FS_LIST can no longer be edited and the expected output will no longer be generated.

Overview: steps of the ramp down phase for the FS_LIST input component

In order to make the phasing out of FS_LIST as low-risk as possible, the removal is carried out in several steps:

1. (Done) With FirstSpirit version 5.2R3 the input component FS_LIST, for creating and maintaining lists, has been deprecated.
2. (Done) With FirstSpirit 2019-11 in all projects, when generating or previewing data from the FS_LIST input component a **deprecation warning** will be logged.
3. (Done) With FirstSpirit 2020-01 the input component is **no longer supported**. The component can no longer be used from this point on.
4. In order to minimize the risk of production problems, particularly for customers with longer update cycles, during a six months transition period it will be possible to temporarily re-active FS_LIST. In order to do so please contact [e-Spirit Technical Support](#).
5. **With FirstSpirit 2020-07** the input component will be **removed** from FirstSpirit, and can no longer be used in any project from that moment on.

Migration: switch to alternative FirstSpirit input components



e-Spirit recommends developers and end users to switch to alternative FirstSpirit input components at an early stage.

Before updating to FirstSpirit 2020-01 or higher, all FS_LIST uses must be converted to one of the successor components.



As replacements the input components **FS_CATALOG**, **FS_INDEX**, and **CMS_INPUT_SECTIONLIST** are available, likewise providing functionality for the bundling of contents and thus largely taking over the **FS_LIST** use cases.

- **FS_LIST**, type **DATABASE** can be replaced by an **FS_INDEX** input component.
- **FS_LIST**, type **INLINE** can be replaced by an **FS_CATALOG** input component.
- **FS_LIST** with tag **MEDIAMODE** can be replaced by an **FS_INDEX** input component, when using the `DatasetDataAccessPlugin` (tag **SOURCE**), which is delivered with FirstSpirit by default.
- **FS_LIST**, type **PAGE** can be replaced by the input component **CMS_INPUT_SECTIONLIST**.
- **FS_LIST**, type **SERVICE** can be replaced by an **FS_INDEX** input component, when using a corresponding data access plug-in.

A detailed guide for the transition of existing projects is provided via the [FirstSpirit Documentation](#).

! After the transition to the new input components a return to **FS_LIST** is not possible - not even after a server downgrade.

Please contact [e-Spirit Technical Support](#) if you have questions or feedback regarding the migration away from **FS_LIST**.

5.20 **FS_LIST: Start of the ramp-down phase: Deprecation warnings**

2019-11

With FirstSpirit version 5.2R3 the input component **FS_LIST**, for creating and maintaining lists, has been deprecated:

FirstSpirit support of the input component is planned to be discontinued from January 2020 on.

In order to make the phasing out of **FS_LIST** as low-risk as possible, the removal is carried out in several steps.

the ramp down phase for the **FS_LIST** input component starts with FirstSpirit 2019-11:



1. **With FirstSpirit 2019-11** in all projects, when generating or previewing data from the FS_LIST input component a **deprecation warning** will be logged. The component remains fully functional, though, and can still be used.
2. **With FirstSpirit 2020-01** the input component is deactivated by default in all projects. The component can no longer be used from this point on. That means:
 - forms with FS_LIST can no longer be edited and
 - the expected output will no longer be generated.
3. In order to minimize the risk of production problems, particularly for customers with longer update cycles, during a six months transition period it will be possible to temporarily re-active FS_LIST. In order to do so please contact [e-Spirit Technical Support](#).
4. **With FirstSpirit 2020-07** the input component will be **removed** from FirstSpirit, and can no longer be used in any project from that moment on.



e-Spirit recommends developers and end users to switch to alternative FirstSpirit input components at an early stage.

Before updating to FirstSpirit 2020-01 or higher, all FS_LIST uses must be converted to one of the successor components.

As replacements the input components [FS_CATALOG](#), [FS_INDEX](#), and [CMS_INPUT_SECTIONLIST](#) are available, likewise providing functionality for the bundling of contents and thus largely taking over the FS_LIST use cases.

- FS_LIST, type DATABASE can be replaced by an [FS_INDEX](#) input component.
- FS_LIST, type INLINE can be replaced by an [FS_CATALOG](#) input component.
- FS_LIST with tag MEDIAMODE can be replaced by an [FS_INDEX](#) input component, when using the `DatasetDataAccessPlugin` (tag SOURCE), which is delivered with FirstSpirit by default.
- FS_LIST, type PAGE can be replaced by the input component [CMS_INPUT_SECTIONLIST](#).



- FS_LIST, type SERVICE can be replaced by an FS_INDEX input component, when using a corresponding data access plug-in.

A detailed guide for the transition of existing projects is provided via the [FirstSpirit Documentation](#) .

! After the transition to the new input components a return to FS_LIST is not possible - not even after a server downgrade.

Please contact [e-Spirit Technical Support](#) if you have questions or feedback regarding the migration away from FS_LIST.

5.21 Media Galleries in SiteArchitect (Alternative to FS_LIST) 2019-11

Images from the Media Store can be output in FirstSpirit in a gallery view.

Until now, only the input component for creating and managing lists FS_LIST with tag MEDIAMODE could be used to maintain the media gallery (e.g. selecting the images that should belong to the gallery). This input component is expected to be omitted on 01.01.2020.

As of the current FirstSpirit release, the FirstSpirit SiteArchitect provides a new way of maintaining media galleries.

(This functionality is already supported in ContentCreator - see [FirstSpirit Release Notes 2019-10](#)).

Configuration

For this purpose an input component of type FS_INDEX (instead of FS_LIST as before) can be used with the DatasetDataAccessPlugin which is supplied as standard (tag SOURCE):

Example (template for creating and maintaining the gallery, “Gallery template”):



```
<FS_INDEX name="st_picturelist" useLanguages="no">
  <LANGINFOS>
    <LANGINFO lang="*" label="Pictures"/>
    <LANGINFO lang="DE" label="Bilder"/>
  </LANGINFOS>
  <SOURCE name="DatasetDataAccessPlugin">
    <TEMPLATE uid="Products.gallery_media"/>
  </SOURCE>
</FS_INDEX>
```

The `uid` attribute in the `TEMPLATE` tag specifies the reference name of the table template in which the media is stored.

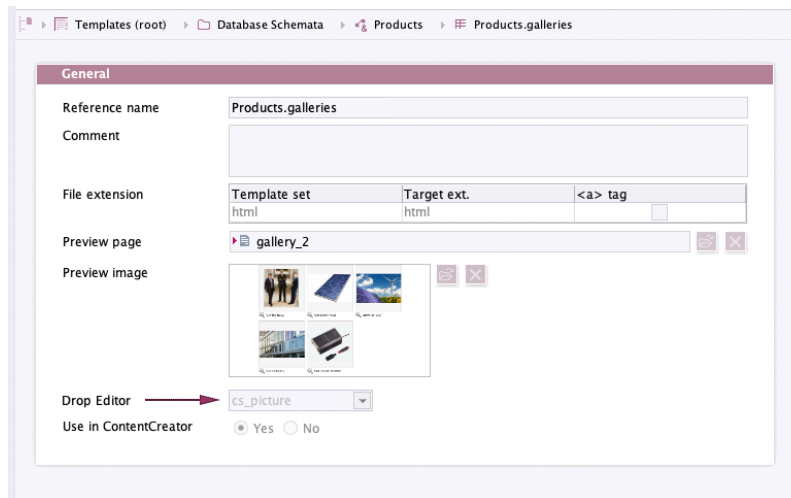
To store the images in the relevant table, an `FS_REFERENCE` component must be defined in the corresponding table template:

Example (table template for storing the images):

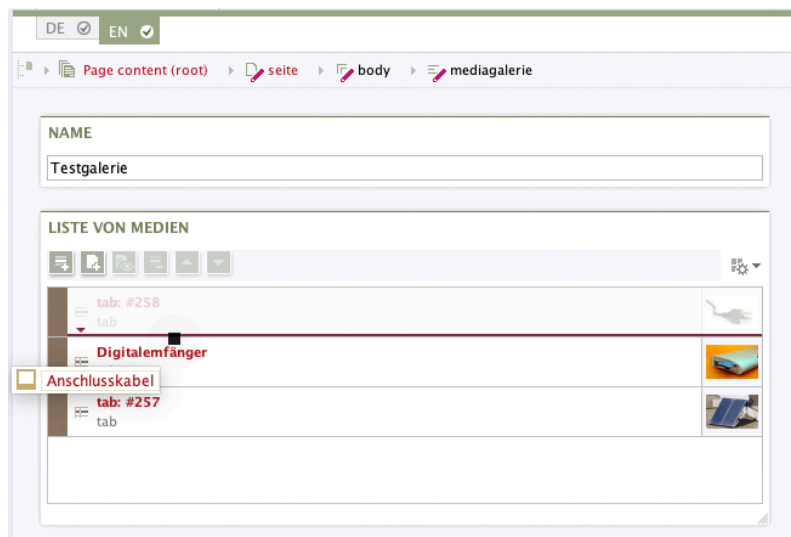
```
<FS_REFERENCE name="cs_picture" hFill="yes" upload="yes">
  <FILTER>
    <ALLOW type="PICTURE"/>
  </FILTER>
  <LANGINFOS>
    <LANGINFO lang="*" label="Medium"/>
  </LANGINFOS>
</FS_REFERENCE>
```

If this `FS_REFERENCE` component is selected on the “Properties” tab of the “Table template” in the field “Drop Editor” (in this example: “`cs_picture`”), the SiteArchitect editor can drop images (e.g. from the media store or from the local file system) into the open form of the table template:





Properties - Table template- Configure Drop Editor



Drag-and-drop into the media gallery

In the example described, the component not only allows you to select images that already exist in the project, but also to upload new images (due to the attribute `upload="yes"`). After the drop, a dialog opens in which the storage location for the new image to be uploaded can be determined.

With each drop of an image a new entry is created in the `FS_INDEX` component in which the image is referenced. At the same time, a dataset with the dropped image is created in the referenced table. If there are mandatory fields in the dataset to be created that must be filled in by the editor, or rule violations



that prevent storing, the editing window with the available input components opens after releasing the mouse button.

Notes

- Drag-and-drop of multiple images simultaneously is currently not supported.
- The FS_INDEX component allows you to drop images into the open form. If images are to be dropped directly onto the preview, FS_BUTTON with `NewListEntryExecutable` can be used for this:

Example for the “Form” tab:

```
<FS_BUTTON
  name="pt_createIndexElement"
  hidden="yes"
  icon="fs:new"
  onDrop=
    "class:de.espirit.firstspirit.webedit.server.executables.NewListEntryExecutable"
  style="firstspirit"
  useLanguages="no">
  <LANGINFOS>
    <LANGINFO lang="*" label="Create mediaelement"/>
  </LANGINFOS>
</FS_BUTTON>
```

Example for the “Output” tab:

```
<span$CMS_VALUE(
  fsbutton(
    editorName:"pt_createIndexElement",
    parameter:{"editorId": editorId(editorName:"st_picturelist", json: true)}
  )
)></span>
```



5.22 Methods ".convert" and ".convert2" in FS_LIST 5.2R4

With FirstSpirit version 5.1 the attribute `convertEntities` of a form field may not have been respected inside a `FS_LIST` component. This could have been corrected using the functions `.convert` or `.convert2` in the corresponding template.

With FirstSpirit version 5.2 the behaviour in `FS_LIST` has been corrected, so that the usage of `.convert` and `.convert2` than led to a duplicate conversion in these cases.

With FirstSpirit v5.2R4 this duplicate conversion will now be suppressed. These cases are logged in the generation log:

```
supressing duplicate conversion of field 'st_test'
```

5.23 Output optimization of FS_INDEX-content containing data from a DataAccessPlugin 2019-10

Using an `FS_INDEX` type input component, it is possible to connect external components or modules which are providing data for the input component. Using an implementation of the type `DataAccessPlugin` for example it is possible to connect external web services for data access. The `FS_INDEX` input component saves references of external data objects with identifiers in string format. To get the actual data of an index entry, the `DataAccessPlugin Session` object has to be adressed, to access and process the data object using the string identifier.

Within output channel definitions an object of type `IndexAccessor` is returned, when accessing the value set of an `FS_INDEX` input component. This gives access to the stored string identifiers, and additionally provides a list of the respective data objects.

In FirstSpirit 2019-10 the distribution of `FS_INDEX` content containing data from a `DataAccessPlugin` was optimized. Now, values are stored in an `IndexAccessor` object upon first access and won't be resolved through the `DataAccessPlugin` again on repeated access.

5.24 Improved Deprecation Warnings 2020-01

Starting with **FirstSpirit 2019-11** when generating or previewing data from input components with the status "deprecated" a deprecation warning is logged. This message is meant to make it easier for



users to locate and migrate “deprecated” input components (e.g. in order to facilitate the FS_LIST input component’s ramp-down phase).

With the current FirstSpirit release this service is improved. This was achieved by consolidating all deprecation warnings of a project, and writing them to the first section of the log file (in the case of generation in the generation log file, and in the case of a preview under “Show preview errors”).

Note: Now when invoking “Show preview errors” on a page, the deprecation warnings for input components without any connection to that page will also be rendered.

“Deprecated” input components:

- are no longer maintained by e-Spirit
- are still functional and can be used in FirstSpirit projects
- will be dropped in the future

The following input components are currently “deprecated”:

- CMS_INPUT_CONTENTAREALIST (should be migrated to FS_CATALOG)
- CMS_INPUT_CONTENTLIST (should be migrated to FS_INDEX)
- CMS_INPUT_FILE (should be migrated to FS_REFERENCE)
- CMS_INPUT_LINKLIST (should be migrated to FS_CATALOG)
- CMS_INPUT_OBJECTCHOOSER (should be migrated to FS_INDEX)
- CMS_INPUT_PAGEREF (should be migrated to FS_REFERENCE)
- CMS_INPUT_PICTURE (should be migrated to FS_REFERENCE)
- CMS_INPUT_TABLIST (should be migrated to FS_INDEX)

When using a deprecated input component and

- generating or



- calling “Show preview errors” on a page

all deprecation warnings of a project, with the location of the usage (i.e. the respective template), are logged. Example:

```
Usage of deprecated form element CMS_INPUT_PICTURE for variable 'ttPicture' in
template 'testschema.testtable' (ID: 455559)
```

This applies to all components used in a form, even if they do not render contents via the template.

The deprecation warning can be disabled by

- commenting out the input component in the form with CMS_COMMENT or by
- migrating the input component in the project to a different input component.

Contact [e-Spirit Technical Support](#) if you have questions or feedback regarding the migration.

6 External Synchronization

6.1 Update of internally used software 2019-09

With the current FSDevTools release, the following, internally used software has been updated:

- **Library com.fasterxml.jackson.core:jackson-databind**
Update from version 2.9.8 to version 2.9.9.2

6.2 General changes to the data format 5.2R14

In the course of export format readjustment, an export will now only create one directory named `.FirstSpirit` at the highest directory level instead of creating several directories of that name.

If exports have been made using “External Synchronization” in earlier versions of FirstSpirit, the first export with the current version of FirstSpirit will remove all existing subdirectories named `.FirstSpirit` from the external synchronization directory in the file system. Only one directory named `.FirstSpirit` will remain, at the highest directory level.



In order to create the new export format after an upgrade from an earlier version of FirstSpirit, it is stringently required to perform a new export with the option `deleteObsoleteFiles` activated. (If **FSDevTools** are used (recommended best practice), this option is activated by default.)

The directory `.FirstSpirit` at the highest directory level contains internal meta information for successful synchronization of external content with the FirstSpirit project. **When using a version control system, this directory should not be versioned!**

Furthermore, the contents of the files `Info.txt` and `Files.txt`, which also contain internal meta information, have been changed, and the files have been renamed to `FS_Info.txt` and `FS_Files.txt`, respectively. In this context, the format of the file `Entities.xml`, which contains contents of datasets, has been changed as well.

6.3 Consideration of Custom Properties in External Synchronization

5.2R17

The method `setCustomProperties` (interface `Project`, package `de.espirit.firstspirit.access.project`, FirstSpirit Access API) may be used to set custom project properties (“custom properties”). These may be relevant e.g. in the context of FirstSpirit CaaS.

As of the current version of FirstSpirit, such custom properties may now be synchronized using “FirstSpirit External Synchronization”. To this end, a new *ProjectPropertyType* (enum `PropertiesTransportOptions.ProjectPropertyType`, package `de.espirit.firstspirit.transport`, FirstSpirit Developer API) was introduced:

```
CUSTOM_PROPERTIES
```

Example command line call:

```
fs-cli -p DevProject -sd "D:\Git\DevProject" export projectproperty:CUSTOM_PROPERTIES
```

This call causes the inclusion of custom project properties in the export.



6.4 GUI will be omitted 5.2R4

Previous feedback and experience show that the external synchronization, which has been provided since FirstSpirit 5.1, is mainly used programmatically in the context of a distributed development process - instead via the GUI within the SiteArchitect. For this reason we decided to omit the GUI with FirstSpirit 5.2R4.

We ask all customers and partners to switch their development process to our API or to the command line tool “FSDevTools”. It encapsulates the existing API and can be used via the command line or an IDE.

Please contact our Technical Support if any problem occurs while changing your development process.

Further information can be found in the [Community](#).

6.5 Detection of empty directory structures (missing meta files) 5.2R14

Especially when using “FirstSpirit External Synchronization” in distributed development, empty directory structures (i.e. directories without meta files `FS_Files.txt`, `FS_Info.txt`, `FS_References.txt`, `StoreElement.xml`, etc.) may remain, e.g. due to moving folders in FirstSpirit. In this case, the FirstSpirit objects in the file system will no longer be recognized as such.

If these meta files are missing, an error message will be output if an export or an import is attempted, and the export/import will be prevented. If `deleteObsoleteFiles` is set to “true”, an export will only log a warning.

6.6 Export: Additional information about exported files (interface "ExportOperation.Result") 5.2R14

In addition to providing information about files which were created in, deleted from, or updated in the file system during an export, the interface `ExportOperation.Result` now includes newly implemented methods which provide information about moved files as well as other information (FirstSpirit Developer API, package `de.espirit.firstspirit.store.access.nexport.operations`, interface `ExportOperation.Result`).

When using **FSDevTools** (recommended best practice), this information will already be evaluated and displayed in the log.



6.7 Export: Explicitly and implicitly selected objects 5.2R14

Because “External Synchronization” is designed for synchronization of partial trees between projects, for each FirstSpirit object that is exported via the “External Synchronization” functionality, the following objects will also be exported:

- all parent objects of the exported object
- all child objects of the exported object

This leads to a distinction between explicitly and implicitly selected objects:

- **Explicit:** The object selected for export as well as all child objects
- **Implicit:** The chain of parent objects of the object selected for export

During an import, explicitly exported objects will be created in the target project if they are not present there and will be updated (i.e. overwritten with each object's respective state in the source project) in the target project if they are already present.

Implicitly exported objects, however, will now only be created in the target project during an import if they are not present there and will no longer be updated if they are already present. Previously, implicitly exported objects were overwritten in the target project with each object's respective state in the source project even if they were already present in the target project.

6.8 Export: Folder "Lost & Found" will no longer be exported 5.2R14

“Lost & Found” folders are created as needed directly underneath the root node of a store in a target project if a parent element (folder) is exported from a source project and imported (“updated”) into a target project, but the child elements of this folder are only present in the target project.

Previously, during an export, such “Lost & Found” folders were exported if they were selected for export. As of the current FirstSpirit version, these folders will by default no longer be exported.

This behavior may be controlled via the method `setExportLostAndFound(boolean enable)` of the interface `ExportOperation` (package



`de.espirit.firstspirit.store.access.nexport.operations`, FirstSpirit Developer API). The default value is `false`.

6.9 External Synchronization: More stable identification of objects (using GIDs) 5.2R12

The identification of objects via the functionality “External Synchronization” now uses GIDs (“global IDs”). GIDs are project data that are used internally for object referencing. As opposed to UIDs, GIDs are not affected by manual changes, such as renaming an object in either source or target projects, and thus allow for more stable behavior when exporting or importing objects.

Previous behavior: When importing an object from a source project into a target project, External Synchronization attempted to identify a matching object in the target project using the UID. If an object was identified, modifications to that object in the target project were overwritten. If no object could be identified, the object was created in the target project.

Changes to the UID of the object in either the source or the target projects had the effect that, during a subsequent import into the target project, a matching object could not be identified, always leading to *creation of a new object* in the target project.

Current behavior: When importing an object from a source project into a target project, External Synchronization now attempts to identify a matching object in the target project using the GID. If an object is identified, modifications to that object in the target project will be overwritten. Even if the UID of the object was changed, the object can now be identified in the target project. If no matching object can be identified using the GID, an attempt will be made to identify a matching object using the UID (see “Previous behavior”).

6.10 Export format updated 2019-09

With this FirstSpirit release the export format for “external synchronization” is updated. An attribute, that was incorrectly created for datasets with foreign key relations and potentially lead to a misleading detection that data had been changed by external systems, was removed.

The updated format is compatible with the previous format, which means:

- Exports in the new format can be imported into FirstSpirit servers that run on previous FirstSpirit versions.



- Exports in legacy format can be imported into FirstSpirit servers that run the updated FirstSpirit version.

6.11 Import: Abort in case of required but missing objects 5.2R14

Many objects in FirstSpirit projects have dependencies to other projects, also called “references”. Among others, one goal of a successful use of “FirstSpirit External Synchronization” is to export partial trees from one project into another which will be functional in the target project. This means that the objects referenced by an exported object must be exported as well. There are two types of dependencies:

- **Required missing references:** referenced objects which are necessary in order to export a complete and functional partial tree of a project. E.g. if a page is exported, the templates upon which the page is based are required so that the page can be displayed in another FirstSpirit project following an import. The user must ensure that the required dependencies are present in the target project.
- **Optional missing references:** referenced objects which are referenced by an exported object but which are not necessary in order to export a complete and functional partial tree of a project. E.g. if a page is exported, the media objects referenced by this page are not necessary to display the page itself in the target project following an import and thus do not have to be included in the export/import.

During an import, dependencies will now be checked and the import will be aborted if this import would cause required missing dependencies in the target project. In this case, a `ValidationException` will be thrown. This exception provides information about the required missing dependencies in the target project. Until now, the import was carried out without throwing an exception.

In the course of this behavioral change, the FirstSpirit Developer API interfaces

- `FeatureError` (`package de.espirit.firstspirit.store.access.feature`)
- `SyncOperationException`
(`package de.espirit.firstspirit.store.access.nexport.exceptions`)

have been extended.



6.12 Import: Deletion of objects 5.2R14

Deletion of objects in one project will now be correctly regarded during an import into other projects. This means that objects which have been deleted in the project of developer A will now also be deleted in the project of developer B during an import of the respective state.

If there are still required inbound references to such deleted objects, these objects will be moved to the folder "Lost & Found". (Required references are dependent objects which are required for the functionality of an object in the target project, e.g. the page template (Templates store), which is required for the existence of a page (Page Content store), or the page (Page Content store), which is required for the existence of a page reference (Site Structure store).

Previously, objects deleted in the source project were not deleted in the target project upon import.

This behavior now also applies to the functionality "FirstSpirit ContentTransport". Here, objects which did not have required inbound references were moved to the folder "Lost & Found". Now, they will be deleted.

6.13 Import: Identification of new and modified datasets using API (interface "ImportOperation.Result") 5.2R14

As of the current version of FirstSpirit, the method `getCreatedEntities()` of the interface `ImportOperation.Result` (FirstSpirit Developer API, package `de.espirit.firstspirit.store.access.nexport.operations`) has been optimized: when importing datasets, it now only considers datasets which have been newly created since the last import. Previously, it also considered modified datasets.

Modified datasets may now be identified using the newly implemented method `getUpdatedEntities()`. Datasets which have not been modified since the last import will now not be considered by the methods `getCreatedEntities()` and `getUpdatedEntities()` during a subsequent import.

For datasets from tables with 1:N or M:N relations, the methods `getCreatedEntities()` and `getUpdatedEntities()` will always consider **both** datasets of the relation (thus, a minimum of two datasets).

When using **FSDevTools** (recommended best practice), this information will already be evaluated and displayed in the log.



6.14 Deletion of obsolete files and additional logging 5.2R7

In the course of expanding and optimizing the feature set of the FirstSpirit functionality “External Synchronization”, as of the current FirstSpirit version, the default value of the method `setDeleteObsoleteFiles(boolean enable)` of the interface `ExportOperation` (FirstSpirit Developer API, package `de.espirit.firstspirit.store.access.nexport.operations`) has been changed from `false` to `true`.

Example

Initial situation in the project:

```
PageStore
|-- PageFolder 'A'
`-- PageFolder 'B'
```

1. Export: Export of 'A'

In the synchronization directory, the following structure will be created:

```
Synchronization Directory
|-- .FirstSpirit
|   |-- ...
|-- PageStore
|   |-- 'A'
|       |-- StoreElement.xml
|       |-- ...
```

2. Export: Export of 'B' ('A' is not included in the export set)

In the synchronization directory, the files previously created for 'A' will be deleted. The file structure will subsequently look as follows:

```
Synchronization Directory
|-- .FirstSpirit
|   |-- ...
|-- PageStore
|   |-- 'B'
|       |-- StoreElement.xml
|       |-- ...
```



If the files for 'A' should be retained, both elements ('A' and 'B') must be added to the `ExportOperation` and exported via this operation:

2a) Export of 'A' and 'B'

The file structure will subsequently look as follows:

```

Synchronization Directory
|-- .FirstSpirit
|   |-- ...
|-- PageStore
|   |-- 'A'
|   |   |-- StoreElement.xml
|   |   |-- ...
|   |-- 'B'
|   |   |-- StoreElement.xml
|   |   |-- ...

```

(Generally, during use of the functionality “External Synchronization”, only files will be removed that have been created by this functionality.)

Previously, such files were retained by default. This potentially led to the retention in the file system of files associated with elements that have been deleted in FirstSpirit. Existing scripts may require modification.

In this context, **export logging** has been expanded to help better identify which parameters were set for an export. Now, the following parameters and their set values will be output via INFO logging:

- `deleteObsoleteFiles` (method `setDeleteObsoleteFiles(true|false)`)
- `exportRelease` (method `setExportRelease(true|false)`)
- `exportParents` (method `setExportParentElements(true|false)`)
- `exportChildren` (method `setExportChildElements(true|false)`)

Example (all in one line):

```

ExportParameters = { deleteObsoleteFiles=false, exportRelease=true,
exportParents=true, exportChildren=true, [...] }

```



6.15 New method "getModifiedProjectProperties" returns imported project properties 5.2R4

Using the functionality "External Synchronization", structures of a FirstSpirit project (e.g. templates, partial store trees, project properties) can be exported into a file system, creating a folder hierarchy which reflects the project's structures. Export and import is carried out using interfaces and methods of the FirstSpirit Developer API.

In addition to the project content that is entered in SiteArchitect and/or ContentCreator, project properties can also be exported/imported with the "External synchronization" function, including across servers. This method can be used, for example, to transfer the properties of a project to an empty project as well as to synchronize the project configuration of multiple projects.

You can use the method `getModifiedProjectProperties()` of the interface `ImportOperation.Result` (FirstSpirit Developer API, package `de.espirit.firstspirit.store.access.nexport.operations`), which has been introduced with FirstSpirit version 5.2R4, to identify if and which type of project settings were imported (for example template sets).

6.16 New method "setExportRelease" to specify whether the release or the current state of elements should be exported 5.2R4

FirstSpirit version 5.2.313 introduces a new method, `setExportRelease(boolean)`, in the interface `ExportOperation` (package `de.espirit.firstspirit.store.access.nexport.operations`), which can be used to specify whether the "release" or the "current" state of selected elements should be exported.

In the same FirstSpirit version, the method `setExportReleaseEntities(boolean)` in the interface `ExportOperation` has been marked "deprecated" and may be removed in future versions. Uses of this method should be replaced with `setExportRelease(boolean)`. Methods set to the "deprecated" state can still be used, but as they will be omitted in subsequent versions, this is not advisable. If methods, classes, and interfaces that are no longer supported or are set to deprecated are used in scripts and/or modules, entries are written to log files accordingly (e.g., server log, generation log, etc.). The corresponding log entries should be checked and the cause(s) remedied.



6.17 New method "setIgnoreEntities" replaces "setCreateEntities" 5.2R4

The interface `ImportOperation` (FirstSpirit Developer API, package `de.espirit.firstspirit.store.access.nexport.operations`) provides methods with which files may be imported from an external file system into a FirstSpirit project based on customer-specific rules using the functionality "External Synchronization".

The method `setIgnoreEntities(boolean ignore)` replaces the method `setCreateEntities`, which has been deprecated as of FirstSpirit version 5.2R4. The new method controls whether existing entities should be imported into the FirstSpirit project.

The default setting is `false`, which causes External Synchronization to import all entities that are currently stored in the file system into the FirstSpirit project, updating existing entities in the project to reflect the data imported from the file system or, if necessary, creating new entities with that data. In order to suppress import of entities from the file system into the project and preserve the entities that exist in the project, call `setIgnoreEntities(boolean ignore)`, providing the `ignore` value `true`.

For further information, see

- *FirstSpirit Online Documentation* "Advanced topics / External synchronization"
- FirstSpirit Developer API, package `de.espirit.firstspirit.store.access.nexport.operations`

6.18 Optimized performance 5.2R2

"External synchronization" is used to export substructures from FirstSpirit (e.g., templates, store subtrees, project properties) in a file system structure with a folder hierarchy. FirstSpirit version 5.2R2 optimized performance when adding elements via the user interface.

For more information on the "external synchronization" function, see *FirstSpirit Online Documentation*, "Advanced topics / External synchronization".

6.19 Proxy support for FSDevTools 2019-09

The "FSDevTools" command line tool simplifies export and import operations between a FirstSpirit project and the file system using predefined commands. The latest FSDevTools [release 2.4.761](#) may



now be configured to connect to the FS server using a proxy server. The configuration parameters are set via the command line.

Proxy Host: This parameter is used to specify the host name and possibly the domain of the proxy server. The value specified can be a host name, a fully qualified domain name, or an IPv4 or IPv6 address.

```
--httpproxyhost
```

(Short form: -hph)

Proxy Port: This parameter is used to specify the port number where the proxy server is listening for HTTP and/or HTTPS requests.

```
--httpproxyport
```

(Short form: -hpp)

Example call via command line:

```
fs-cli -h example.com -port 4242 -c HTTP -hph myproxy.com -hpp 8080 [...]
```



The proxy settings will only work in HTTP/HTTPS connection mode (not in socket mode).

Log output after a successful call:

```
INFO Using http proxy 'myproxy.com:8080'
```

This proxy support functionality is based on a pull request provided by an external party for the project “FSDevTools” (see <https://github.com/e-Spirit/FSDevTools/pull/26>).



6.20 Update of "FSDevTools" 2018-08

FSDevTools version 2.1.659 or higher is needed to use "FirstSpirit External Synchronization" with the latest FirstSpirit release:

<https://github.com/e-Spirit/FSDevTools/releases/tag/2.1.659>

For more information, see also the documentation for "FirstSpirit External Synchronization", "Getting started / Components / 'FSDevTools' command line tool".

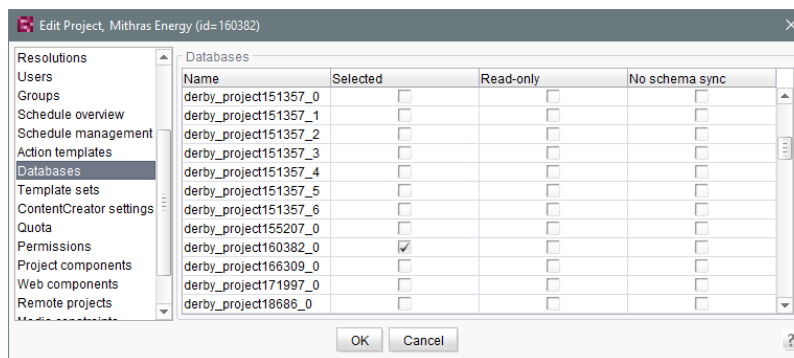
7 External Synchronization / Content Transport

7.1 Export of database schema information has been modified 5.2R13

By using the keyword `COMMON` it is possible to export or import the properties of a project:

```
fs-cli export projectproperty:COMMON
```

The current FirstSpirit version does not transmit information about layers used by the project anymore (FirstSpirit ServerManager, "Project properties/ Databases"):



- "Selected"
- "Read-only"
- "No schema sync"

This change also affects FirstSpirit Content Transport.



7.2 External Synchronization and Content Transport: Improved support for shared access to a database 2020-05

Using the “FirstSpirit External Synchronization” and “FirstSpirit Content Transport” mechanisms, database content (datasets) and the associated database structures (schemas, tables, columns) of a FirstSpirit project (source project) can be exported and imported into other FirstSpirit projects (target projects). The `dbName`s of column names and tables are recalculated during synchronization. This behavior can, under the following conditions, lead to the problem that columns and tables in the target projects cannot be found in the database:

- the FirstSpirit schemas of the participating projects reference the same database tables (and do not point to their own database tablespaces) and
- the `dbName`s do not match the automatically calculated `dbName`s

For this special use case an additional mapping file (`Mapping.xml`) can now be used when exporting and importing database schemas. In this file the database names of the source project are stored together with FirstSpirit's own unique identifiers (UUIDs), e. g.:

```
<xs:gid dbName="j_categories_column_x" uuid="66843bbe-da0d-46e3-a136-76bd93d782bb"/>
<xs:gid dbName="j_categories_column_y" uuid="4ba29641-26af-4edd-bac0-5a352913974d"/>
...
```

Using this unique assignment, it is now possible to synchronize the database schemas of read-only-connected databases (“No Schema Sync”) via “External Synchronization” or “Content Transport” as follows:

- If a schema is changed in the source project and synchronized with other FirstSpirit projects using one of the two mechanisms, the names of database tables and database columns are transferred from the source project to the target projects.
- If a new database table or database column is created in the target project, the corresponding `dbName` of the source schema is now preferred.

When using “FirstSpirit External Synchronization” the mapping file (`Mapping.xml`) can be added to the export file via a new option in the interface `ExportOperation.SchemaOptions` (`setExportGidMapping=true`) as follows:



```
ExportOperation exportOperation = ... // get the export operation via agent;  
ExportOperation.SchemaOptions schemaOptions = exportOperation.addSchema(schema);  
schemaOptions.setExportGidMapping(true);  
ExportOperation.Result result = exportOperation.perform(...);
```

The previous export format did not have to be extended for the new functionality. The **export format in version 3.2** can still be used.

! The command line tool “FSDevTools” will only support the new option **from version 2.6 on**. This version is not yet available. By default, no mapping file is created when using “FSDevTools” (`setExportGidMapping=false`).

Without a mapping file (default behavior when using “FirstSpirit External Synchronization”) the `dbnames` of the column names and tables are recalculated as before during synchronization. For the regular use cases there will be no deviation during recalculation, so that the use of a mapping file is not necessary.

When using the “FirstSpirit Content Transport” functionality, the mapping file (`Mapping.xml`) is automatically generated and used.

7.3 New export format (version 3.2) 2019-04

“External synchronization” is used to export substructures from FirstSpirit (e.g., templates, project properties) to a file system structure with a folder hierarchy. This functionality is used for distributed project development with several team members. Each team member works in their own local FirstSpirit development environment (with a local server and their own database). An export format which identifies project content by means of unique identifiers (UUIDs) is used for exchanging and synchronizing data.

The export format for the “External synchronization” and “Feature transport” functionalities has been improved with the latest FirstSpirit release.

Previous behavior

Database content was previously identified using a unique identifier for the database during synchronization.



This could cause problems during the transportation of schemata and/or entities if different database systems (e.g., Oracle and MySQL) were used during the distributed development process and there were different restrictions relating to the maximum length of designations (particularly column names) for these databases. This meant that the unique identifiers could change during synchronization and that synchronization was no longer possible without issues.

New behavior

Tables and column names are no longer assigned internally using the unique database identifiers. Instead, separate unique identifiers (UUIDs) which are specific to FirstSpirit are used (similar to FirstSpirit templates). This guarantees a unique assignment during synchronization, even across different database systems.



After an update or upgrade to FirstSpirit 2019-04, the project in question must be fully exported (via External Synchronization) so that the format changes take effect. The method `setDeleteObsoleteFiles` must be set to `true` in the process. (This is the default setting when using FSDevTools.)



Downgrading FirstSpirit versions which use the new export format (to versions which use the old export format) is not supported. In such cases, please contact e-Spirit directly.

If you attempt to use the new export format (from version 3.2 onwards) with an older version of FirstSpirit, an error will be recorded:

```
ERROR Import operation not successful
de.espirit.firstspirit.store.access.nexport.exceptions.SyncOperationException:
  [ExternalSync - Import] failed: Unsupported export version '3.2' for element:
  ContentStore
```

8 FirstSpirit Content Experience Tools (CXT)

8.1 Update of internally used software 2019-09

As of the current release, the following software used internally for FirstSpirit Content Experience Tools (CXT) has been updated:



- **Library com.fasterxml.jackson.core:jackson-databind**
Update from version 2.9.8 to version 2.9.9.3
- **Spring Boot**
Update from version 2.1.3 to version 2.1.7

8.2 Latest module versions 2019-05

FirstSpirit 2019-05 supports the following module versions for “FirstSpirit Content Experience Tools”:

Module / file name	Version number
FirstSpirit DAP Bridge	1.15
dataservice-[version].fsm	
FirstSpirit FragmentCreator	1.18
fragment-creator-[version].fsm	
FirstSpirit Fragment DAP	1.12
fragmentdap-[version].fsm	
FirstSpirit Media DAP	1.10
mediadap-[version].fsm	
FirstSpirit Markdown	1.10
markdown-editor-[version].fsm	
FirstSpirit Tagging Editor	1.10
tagging-editor-[version].fsm	
FirstSpirit FragmentCreator - Caas Integration	1.6
caas-integration-[version].fsm	

8.3 Latest module versions 2019-06

FirstSpirit 2019-06 supports the following module versions for “FirstSpirit Content Experience Tools”:

Module / file name	Version number
FirstSpirit DAP Bridge	1.16
dataservice-[version].fsm	
FirstSpirit FragmentCreator	1.21
fragment-creator-[version].fsm	
FirstSpirit Fragment DAP	1.14
fragmentdap-[version].fsm	



FirstSpirit Media DAP	1.12
mediadap-[version].fsm	
FirstSpirit Markdown	1.11
markdown-editor-[version].fsm	
FirstSpirit Tagging Editor	1.11
tagging-editor-[version].fsm	
FirstSpirit FragmentCreator - Caas Integration	1.8
caas-integration-[version].fsm	

8.4 Latest module versions 2019-07

FirstSpirit 2019-07 supports the following module versions for “FirstSpirit Content Experience Tools”:

Module / file name	Version number
FirstSpirit DAP Bridge	1.18
dataservice-[version].fsm	
FirstSpirit FragmentCreator	1.23
fragment-creator-[version].fsm	
FirstSpirit Fragment DAP	1.15
fragmentdap-[version].fsm	
FirstSpirit Media DAP	1.14
mediadap-[version].fsm	
FirstSpirit Markdown	1.12
markdown-editor-[version].fsm	
FirstSpirit Tagging Editor	1.12
tagging-editor-[version].fsm	
FirstSpirit FragmentCreator - Caas Integration	1.9
caas-integration-[version].fsm	

8.5 Latest module versions 2019-08

FirstSpirit 2019-08 supports the following module versions for “FirstSpirit Content Experience Tools”:

Module / file name	Version number
FirstSpirit CXT DAP Bridge	1.19
dataservice-[version].fsm	
FirstSpirit CXT FragmentCreator	1.24



fragment-creator-[version].fsm	
FirstSpirit Fragment DAP	1.16
fragmentdap-[version].fsm	
FirstSpirit Media DAP	1.15
mediadap-[version].fsm	
FirstSpirit Markdown Editor	1.13
markdown-editor-[version].fsm	
FirstSpirit Tagging Editor	1.13
tagging-editor-[version].fsm	
FirstSpirit CXT FragmentCreator - CaaS Integration	1.10
caas-integration-[version].fsm	

8.6 Latest module versions 2019-09

FirstSpirit 2019-09 supports the following module versions for “FirstSpirit Content Experience Tools”:

Module / file name	Version number
FirstSpirit CXT DAP Bridge	1.20
dataservice-[version].fsm	
FirstSpirit CXT FragmentCreator	1.27
fragment-creator-[version].fsm	
FirstSpirit Fragment DAP	1.17
fragmentdap-[version].fsm	
FirstSpirit Media DAP	1.16
mediadap-[version].fsm	
FirstSpirit Markdown Editor	1.14*
markdown-editor-[version].fsm	
FirstSpirit Tagging Editor	1.14
tagging-editor-[version].fsm	
FirstSpirit CXT FragmentCreator - CaaS Integration	1.11
caas-integration-[version].fsm	

* The module “FirstSpirit Markdown Editor” requires from version 1.14 FirstSpirit 2019-08 or higher.



8.7 Latest module versions 2019-10

FirstSpirit 2019-10 supports the following module versions for “FirstSpirit Content Experience Tools”:

Module / file name	Version number
FirstSpirit CXT DAP Bridge dataservice-[version].fsm	1.21
FirstSpirit CXT FragmentCreator fragment-creator-[version].fsm	1.28
FirstSpirit Fragment DAP fragmentdap-[version].fsm	1.18
FirstSpirit Media DAP mediadap-[version].fsm	1.17
FirstSpirit Markdown Editor markdown-editor-[version].fsm	1.15*
FirstSpirit Tagging Editor tagging-editor-[version].fsm	1.15
FirstSpirit CXT FragmentCreator - CaaS Integration caas-integration-[version].fsm	1.12

* The module “FirstSpirit Markdown Editor” requires from version 1.14 FirstSpirit 2019-08 or higher.

8.8 Latest module versions 2019-11

FirstSpirit 2019-11 supports the following module versions for “FirstSpirit Content Experience Tools”:

Module / file name	Version number
FirstSpirit CXT DAP Bridge dataservice-[version].fsm	1.22
FirstSpirit CXT FragmentCreator fragment-creator-[version].fsm	1.29
FirstSpirit Fragment DAP fragmentdap-[version].fsm	1.19
FirstSpirit Media DAP mediadap-[version].fsm	1.19
FirstSpirit Markdown Editor	1.16*



markdown-editor-[version].fsm	
FirstSpirit Tagging Editor	1.16
tagging-editor-[version].fsm	
FirstSpirit CXT FragmentCreator - CaaS	1.13
Integration	
caas-integration-[version].fsm	

* The module “FirstSpirit Markdown Editor” requires from version 1.14 FirstSpirit 2019-08 or higher.

8.9 Latest module versions 2019-12

FirstSpirit 2019-12 supports the following module versions for “FirstSpirit Content Experience Tools”:

Module / file name	Version number
FirstSpirit CXT DAP Bridge	1.23
dataservice-[version].fsm	
FirstSpirit CXT FragmentCreator	1.31
fragment-creator-[version].fsm	
FirstSpirit Fragment DAP	1.20
fragmentdap-[version].fsm	
FirstSpirit Media DAP	1.20
mediadap-[version].fsm	
FirstSpirit Markdown Editor	1.17*
markdown-editor-[version].fsm	
FirstSpirit Tagging Editor	1.17
tagging-editor-[version].fsm	
FirstSpirit CXT FragmentCreator - CaaS	1.15
Integration	
caas-integration-[version].fsm	

* The module “FirstSpirit Markdown Editor” requires from version 1.17 FirstSpirit 2019-12 or higher.

8.10 Latest module versions 2020-01

FirstSpirit 2020-01 supports the following module versions for “FirstSpirit Content Experience Tools”:

Module / file name	Version number
--------------------	----------------



FirstSpirit CXT DAP Bridge	1.24
<code>dataservice-[version].fsm</code>	
FirstSpirit CXT FragmentCreator	1.32
<code>fragment-creator-[version].fsm</code>	
FirstSpirit Fragment DAP	1.20
<code>fragmentdap-[version].fsm</code>	
FirstSpirit Media DAP	1.20
<code>mediadap-[version].fsm</code>	
FirstSpirit Markdown Editor	1.17*
<code>markdown-editor-[version].fsm</code>	
FirstSpirit Tagging Editor	1.17
<code>tagging-editor-[version].fsm</code>	
FirstSpirit CXT FragmentCreator - CaaS Integration	1.15
<code>caas-integration-[version].fsm</code>	

* The module “FirstSpirit Markdown Editor” requires from version 1.17 FirstSpirit 2019-12 or higher.

8.11 Latest module versions 2020-02

FirstSpirit 2020-02 supports the following module versions for “FirstSpirit Content Experience Tools”:

Module / file name	Version number
FirstSpirit CXT DAP Bridge	1.25
<code>dataservice-[version].fsm</code>	
FirstSpirit CXT FragmentCreator	2.0
<code>fragment-creator-[version].fsm</code>	
FirstSpirit Fragment DAP	1.21
<code>fragmentdap-[version].fsm</code>	
FirstSpirit Media DAP	1.21
<code>mediadap-[version].fsm</code>	
FirstSpirit Markdown Editor	1.18*
<code>markdown-editor-[version].fsm</code>	
FirstSpirit Tagging Editor	1.18
<code>tagging-editor-[version].fsm</code>	
FirstSpirit CXT FragmentCreator - CaaS Integration	1.17



caas-integration-[version].fsm

* The module “FirstSpirit Markdown Editor” requires from version 1.17 FirstSpirit 2019-12 or higher.

8.12 Latest module versions 2020-03

FirstSpirit 2020-03 supports the following module versions for “FirstSpirit Content Experience Tools”:

Module / file name	Version number
FirstSpirit CXT DAP Bridge	1.26
dataservice-[version].fsm	
FirstSpirit CXT FragmentCreator	2.1
fragment-creator-[version].fsm	
FirstSpirit Fragment DAP	1.22
fragmentdap-[version].fsm	
FirstSpirit Media DAP	1.22*
mediadap-[version].fsm	
FirstSpirit Markdown Editor	1.19*
markdown-editor-[version].fsm	
FirstSpirit Tagging Editor	1.19
tagging-editor-[version].fsm	
FirstSpirit CXT FragmentCreator - CaaS Integration	1.18
caas-integration-[version].fsm	

* These modules require FirstSpirit 2020-03 or higher from this version.

8.13 Latest module versions 2020-04

FirstSpirit 2020-04 supports the following module versions for “FirstSpirit Content Experience Tools”:

Module / file name	Version number
FirstSpirit CXT DAP Bridge	1.27
dataservice-[version].fsm	
FirstSpirit CXT FragmentCreator	2.2
fragment-creator-[version].fsm	
FirstSpirit Fragment DAP	1.23



fragmentdap-[version].fsm	
FirstSpirit Media DAP	1.23*
mediadap-[version].fsm	
FirstSpirit Markdown Editor	1.20*
markdown-editor-[version].fsm	
FirstSpirit Tagging Editor	1.20
tagging-editor-[version].fsm	
FirstSpirit CXT FragmentCreator - CaaS	1.19
Integration	
caas-integration-[version].fsm	

* These modules require FirstSpirit 2020-03 or higher from this version.

8.14 Latest module versions 2020-05

FirstSpirit 2020-05 supports the following module versions for “FirstSpirit Content Experience Tools”:

Module / file name	Version number
FirstSpirit CXT DAP Bridge	1.28
dataservice-[version].fsm	
FirstSpirit CXT FragmentCreator	2.4
fragment-creator-[version].fsm	
FirstSpirit Fragment DAP	1.25
fragmentdap-[version].fsm	
FirstSpirit Media DAP	1.23*
mediadap-[version].fsm	
FirstSpirit Markdown Editor	1.21*
markdown-editor-[version].fsm	
FirstSpirit Tagging Editor	1.21
tagging-editor-[version].fsm	
FirstSpirit CXT FragmentCreator - CaaS	1.21
Integration	
caas-integration-[version].fsm	

* These modules require FirstSpirit 2020-03 or higher from this version.



8.15 Latest module versions 2020-06

FirstSpirit 2020-06 supports the following module versions for “FirstSpirit Content Experience Tools”:

Module / file name	Version number
FirstSpirit CXT DAP Bridge	1.29
<code>dataservice-[version].fsm</code>	
FirstSpirit CXT FragmentCreator	2.6
<code>fragment-creator-[version].fsm</code>	
FirstSpirit Fragment DAP	1.26
<code>fragmentdap-[version].fsm</code>	
FirstSpirit Media DAP	1.23*
<code>mediadap-[version].fsm</code>	
FirstSpirit PageRef DAP	1.0
<code>pagerefdap-[version].fsm</code>	
FirstSpirit Markdown Editor	1.21*
<code>markdown-editor-[version].fsm</code>	
FirstSpirit Tagging Editor	1.21
<code>tagging-editor-[version].fsm</code>	
FirstSpirit CXT FragmentCreator - CaaS Integration	1.21
<code>caas-integration-[version].fsm</code>	

* These modules require FirstSpirit 2020-03 or higher from this version.

8.16 Modification of the paths of the fragment entities in FirstSpirit Content as a Service (CaaS) 2019-05

Via the “CaaS Integration” module, the contents of a fragment project can be published via FirstSpirit Content as a Service (CaaS).

With the current release, the paths of the fragment entities in FirstSpirit CaaS have changed. For stability reasons, the path is no longer based on the display name, but on the UID of the corresponding page template. (Each page template represents a fragment type (“Category”, FirstSpirit CaaS: “Collection”).)

Previously, the path of a fragment was formed as follows:




```
/${project_name}/${template_name}/${fragment_uid}
```

Now the path is formed as follows:

```
/${project_name}/${template_uid}/${fragment_uid}
```

In existing installations, the content will be deployed to a different location than before with the current release. Content from previous deployments is **not** automatically deleted by deploying with the current release. To avoid inconsistencies, this “old” content should be deleted manually. In third-party systems (“Apps”) that utilize content stored in FirstSpirit CaaS, the access must be adapted accordingly to the new syntax of the paths, and the content should then be deployed again in FirstSpirit CaaS.

8.17 Announcement: Release of FragmentCreator and availability in the Cloud / SaaS 2019-06

Release

As of the upcoming release **FirstSpirit 2019-07**, FragmentCreator will be released, the ramp-up- / EAP-phase will be finished.

The new client passed extensive internal quality assurance tests and was tested in real customer scenarios. With the release the FragmentCreator officially becomes another product of the FirstSpirit family. It can be operated stably and is subject to the general maintenance regulations of e-Spirit. Bugs can - as with other e-Spirit software products - be reported regularly to e-Spirit Technical Support (<https://help.e-spirit.com>).

The underlying CXT platform, on which FragmentCreator is based, is currently being further developed. The release of this platform is planned for a future release.

Availability in the Cloud

FirstSpirit is also increasingly being hosted in a SaaS model. The costs and responsibility for providing and updating the infrastructure lie with an external service provider. (More information on this topic can be found in the blog entry [FirstSpirit in the Cloud](#).)

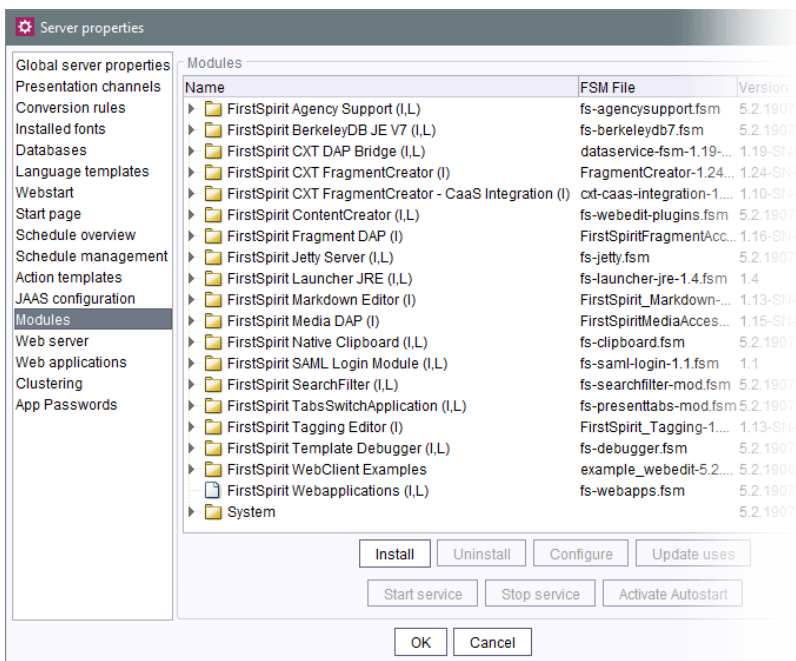
As of the upcoming release **FirstSpirit 2019-07**, FragmentCreator will also be available in the FirstSpirit cloud and can then be used by customers who use FirstSpirit Cloud and have a corresponding license for FragmentCreator.



8.18 Display names of CXT modules 2019-08

The display names of the FirstSpirit modules used for CXT have been adjusted:

- The addition *CXT* indicates that the module in question can only run under FirstSpirit CXT.
- The addition *(I)* indicates that the respective module can only be operated on FirstSpirit servers that are running in “Isolated mode”.



The functionality and the file name of the modules are not affected by this change.

FirstSpirit 2019-08 and higher

FirstSpirit CXT DAP Bridge (I,L)
 FirstSpirit Fragment DAP (I)
 FirstSpirit CXT FragmentCreator (I)
 FirstSpirit CXT FragmentCreator - CaaS
 Integration (I)
 FirstSpirit Markdown Editor (I)
 FirstSpirit Media DAP (I)
 FirstSpirit Tagging Editor (I)

up to now

FirstSpirit DAP Bridge (I,L)
 FirstSpirit Fragment DAP
 FirstSpirit FragmentCreator
 FirstSpirit FragmentCreator - CaaS Integration (I)
 FirstSpirit Markdown Editor
 FirstSpirit Media DAP (I)
 FirstSpirit Tagging Editor (I)



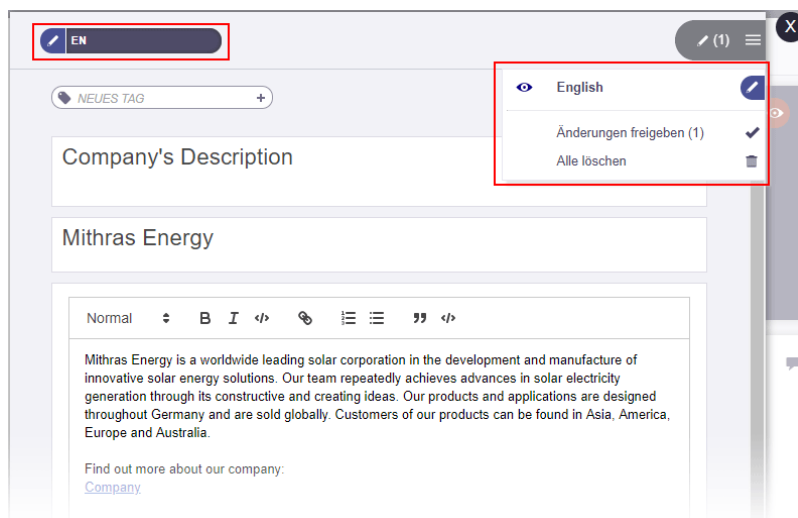
8.19 Restricting fragment editing in the MicroApp to specific variants

2019-10

When using the “Edit fragment” MicroApp, the current variant of a fragment is opened for editing by default. The current release enables the variants that are displayed to and can be edited by the user to be determined.

To do this, a valid `documentId` or `fragmentId` must be specified, as well as the newly introduced `dimensionFilterList` attribute. The `dimensionFilterList` attribute expects a list of maps from the name and the value of the edition(s) to be displayed.

The window that opens then only displays the content that matches the specified values. The “Release changes” and “Delete” menu functions then also only refer to the predefined variants.



Examples:

1) The respective fragment is displayed in the *language* edition with the value *DE*, *EN*, or *ES* (generally the languages are “German”, “English”, and “Spanish”, if present in the project):



```
let ctx = {
  projectId: 12345,
  command: "EditFragment",
  documentId:null, /*GUELTIGE DOCUMENT-ID */
  fragmentId: null, /* ODER GUELTIGE FRAGMENT-ID*/
  dimensionFilterList: [
    {"filterName":"language","filterValues":["DE", "EN", "ES"]}
  ]
};
CxtMicroApps.requestMicroApp("firstspirit-fragments-edit",context);
```

2) Display of the respective fragment is restricted to the *language* edition with the value *DE*, *EN*, or *ES*, as well to the *device* edition with the value *Desktop*, and the *season* edition with the *autumn* value:

```
let ctx = {
  projectId: 12345,
  command: "EditFragment",
  documentId:null, /*GUELTIGE DOCUMENT-ID */
  fragmentId: null, /* ODER GUELTIGE FRAGMENT-ID*/
  dimensionFilterList: [
    {"filterName":"language","filterValues":["DE", "EN", "ES"]},
    {"filterName":"device","filterValues":["Desktop"]},
    {"filterName":"season","filterValues":["autumn"]}
  ]
};
CxtMicroApps.requestMicroApp("firstspirit-fragments-edit",context);
```

8.20 Labeling input elements in FragmentCreator ("display language")

2020-06

FirstSpirit provides consistent support for the multi-language concept:

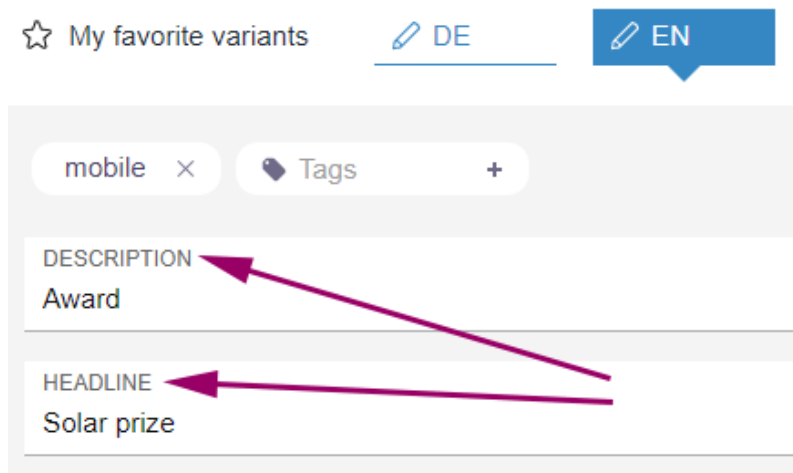
- Via the start page, it is possible to select the language for the labeling on the menu bar, dialogs, etc. (**interface language**).
The interface languages that are currently available are English, German, Spanish, French, Italian, Dutch, and Russian.
- However, the project developer uses the **editorial language** (also called the **display language**) to control the language for displaying input elements, tooltips, etc.



The lang attribute (in the LANGINFOS / LANGINFO tag) is now taken into account for the editorial language, e.g.:

```
<CMS_INPUT_TEXT name="headline" useLanguages="no">
  <LANGINFOS>
    <LANGINFO lang="*" label="Headline"/>
    <LANGINFO lang="DE" label="Überschrift"/>
  </LANGINFOS>
</CMS_INPUT_TEXT>
```

If the interface language selected is “German”, the input element labeling (label attribute) also takes “German” into account (“DE” in the example above):



In the case of interface languages that are not included in the editorial languages available, the **master language** is used as a fallback option.

8.21 DataAccessPlugin: Identifying the client language 2019-12

The UI language (also “Locale”) is set via a corresponding combobox on the FirstSpirit start page. Which one is selected there can now be determined when using *DataAccessPlugins* via `de.espirit.firstspirit.agency.LocalizationAgent` by means of the `getLocale()` method.

Fallback are the browser settings. However, only the first language is taken into account.



8.22 Hiding input components: "hidden" parameter 2019-12

With the current release, the `hidden` parameter can be used for input components.

If

```
hidden="YES"
```

is specified in the form for a fragment, the input component will be hidden for the editor. This means that the component can be used for non-editorial operational scenarios, for example.

Input components are visible for the editor by default as follows:

```
hidden="NO"
```

8.23 Extension of MicroApps API: Embedding of MicroApps into a page ("widget") 2020-05

Previously, MicroApps in MicroApp Framework could be called up as modal dialogs via the MicroApps API (`CxtMicroApps.getButtons(context)`).

In the current release, the MicroApps API has been expanded to include the method `CxtMicroApps.embedMicroApp`, which can be used to embed MicroApps directly into an HTML page ("widget").

The API also allows handlers to be added and used, and enables responses to events.

Note: The API is currently intended for internal use only and is being tested internally and by partners. In the future, it will also be made available to external customers.

8.24 Error analysis for MicroApp Framework 2020-04

An incorrect configuration is a common source of errors. It can result in the software not functioning as expected or not functioning at all.

The latest release makes it possible to set up an error page for the MicroApp Framework which presents the current configuration of the server clearly and lists error messages.



The error page is accessible via

```
/status
```

for administrators, appended to the URL of the FragmentCreator, e.g.

```
http://myServer:8080/fragments/status
```

Server Status

Generic Information

Server Name localhost
 Server Version 5.2.290312.78911
 Application Server Apache Tomcat/9.0.31
 Java Version Ubuntu 11.0.6
 Operating System Linux 4.15.0-91-generic
 Client Version 2.1

Configuration check

	Option name	Value	Details
PASSED	<NONE>	</>	Application startup has finished successfully.
PASSED	webServiceBaseUrl	http://localhost:8080/FragmentCreator/	The webServiceBaseUrl points to a local address.
PASSED	webServiceBaseUrl	http://localhost:8080/FragmentCreator/	Local web services are accessible.
PASSED	webServiceBaseUrl	http://localhost:8080/FragmentCreator/	Local web services are accessible through Feign.
PASSED	webServiceBaseUrl	http://localhost:8080/FragmentCreator/	Service Discovery is available and lists services.
WARN	externalBaseUrl	http://localhost:8080/FragmentCreator/	externalBaseUrl does not use HTTPS.
PASSED	firstSpiritDataServiceBaseUrl	http://localhost:8080/cxt/	Connection to DAP Bridge successful.
WARN	corsAllowedOrigins	*	All hosts are allowed as CORS origins. Provide a specific list in order to increase security.

Recent HTTP traces

Timestamp	Request method	URI	Response code
2020-03-18T12:10:41.211362Z	POST	http://localhost:8080/FragmentCreator/eureka/peerreplication/batch/	200
2020-03-18T12:10:41.416320Z	GET	http://localhost:8080/FragmentCreator/firstspirit-connector/server/info	200
2020-03-18T12:10:40.582069Z	GET	http://localhost:8080/FragmentCreator/widgets/html/firstspirit-fragments-project-list	200
2020-03-18T12:10:41.431426Z	GET	http://localhost:8080/FragmentCreator/widgets/common/menu.js	200

Along with providing information about the server, it also runs a test on the configuration and lists the most recent HTTP requests and log messages.

In order to receive log messages, the logging.file.name parameter must be specified with the desired log file (e.g., /tmp/fc.log) in the web.xml file, e.g.

```
logging.file.name=/home/tomcat/logs/fragments.log
```

or alternatively in the properties file /config/cxt-fragment-creator.properties.

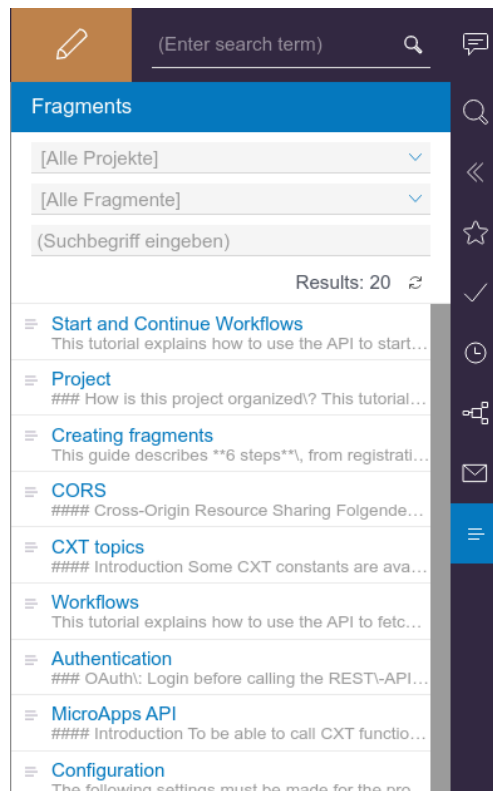
See also the manual for the MicroApp Framework, <https://docs.e-spirit.com/odfs/edocs/cxt/installation-mo/installing-modu/fragmentcreator/index.html>.



8.25 Fragment DAP: filter fragments in report by category 2020-05

Previously, the Fragment DAP `<SOURCE name="FirstSpiritFragmentAccess/FSFACConnector">` report allowed to filter for fragments based on a remote project filter and search terms. With this release, a new filter adds the option to limit the listed fragments based on their category.

The default filter settings are unrestricted, which allows to view all available fragments from every remote project.



Fragment DAP report with no filters applied

In addition to the previous functionality that allowed searching for search terms or limiting the list to fragments from a specific project, the new drop-down menu for category filtering is added. It contains all categories of the remote projects and selecting any category will filter for fragments that belong to that category.



In case that the same category name is available in more than one project, selecting that category filter displays all fragments belonging to that category from any project. To filter the results, a specific project or search terms be applied, just as before.

8.26 Starting FragmentCreator with parameterized URL 2019-10

Parameters can be passed by URL to start the FragmentCreator, e. g.

```
localhost:8000/fragments?category=single_text&search=Test
```

As of the current release, the following parameters can be used, in addition to the project ID

Parameter name	expects	functionality
search	search term / text	opens the FragmentCreator with the specified search term
category	UID of the desired category (page template on which the desired fragment type is based)	opens the FragmentCreator with the specified category
fragment	fragmentId	opens the FragmentCreator with the specified fragment
variant	variantId	opens the FragmentCreator with the specified variant

The parameters can be combined. They are evaluated with the following priority:

1. variant
2. fragment
3. search, category

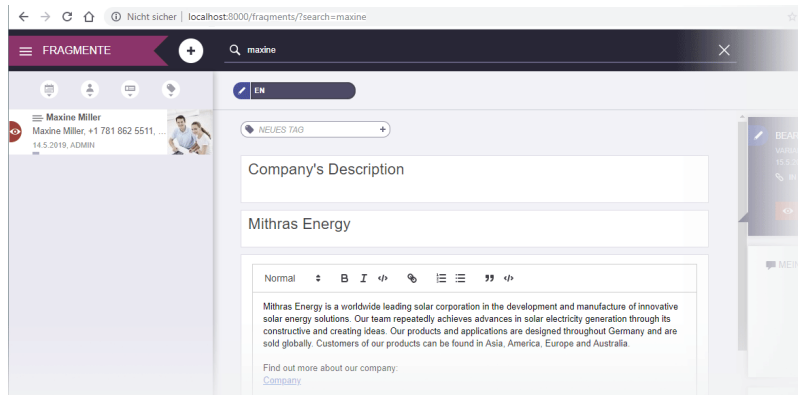
This means that if a variant and a search term are specified, the `search` parameter will be ignored. If no project ID is specified, the call refers to the last opened project.

Example:

```
localhost:8000/fragments?search=Test
```

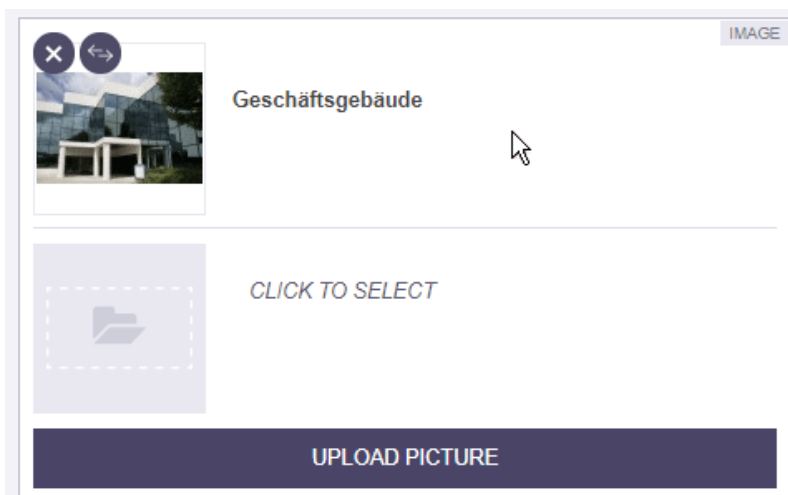


Starts FragmentCreator with the search term *Test*.



8.27 FragmentCreator: Easier selection of other medium 2020-01

Media in an input component FS_INDEX with *DataAccessPlugin* component “FirstSpiritMediaAccess/Connector” can now be replaced more easily. The following icon was introduced for this purpose:



A click on it opens the selection dialog from which the desired medium can be selected.

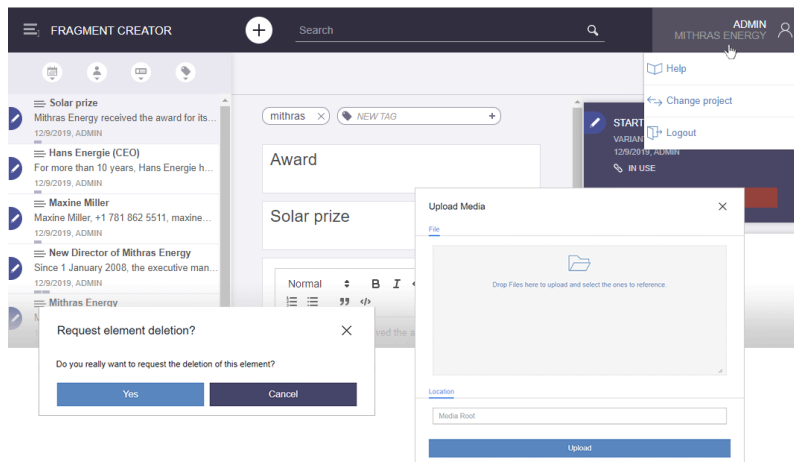


8.28 FragmentCreator: Design revision 2019-12

As part of the revision and consolidation of the technical basis for FirstSpirit ContentCreator and FragmentCreator, the graphical user interface of FragmentCreator is currently also being revised and adapted to the design principles of ContentCreator. As a result, editors not only benefit from a higher recognition effect, but e-Spirit can also make even better use of developmental synergies.

The design update does not involve any functional changes for editors or developers. All functions are still available in familiar places. Also, it drives no additional effort for developers and operations.

Introducing the first design changes in the current FirstSpirit release affects the menu bar and dialogs, for example for creating fragments, uploading media and editing workflows.



As of the current FirstSpirit version, the design overhaul is not yet completed and will be pursued over future releases. Documentation will be revised incrementally. Thus, screenshots in documentation may not yet reflect the current design.

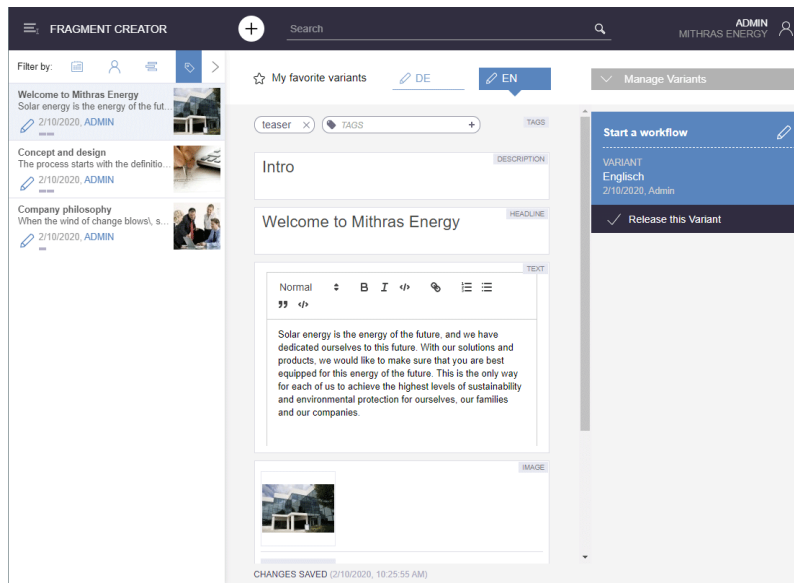
8.29 FragmentCreator: Design revision 2020-02

As part of the revision and consolidation of the technical basis for FirstSpirit ContentCreator and FragmentCreator, the graphic interface of FragmentCreator was revised and adapted to the design principles of ContentCreator (see also the “Rollout of the new ContentCreator” chapter).

In principle, no functional changes for editors or developers are associated with the design update. Generally, all functions in the user interfaces are available in their familiar positions. The design update will not give rise to any additional development or operational work.



The design changes relate to the color and shape of the icons, fonts, and background colors:



For better orientation, the currently selected fragment is now highlighted more clearly in the **fragment list** (left side of the screen). The current user is now displayed in the fragment list in blue font, all other users in grey font.

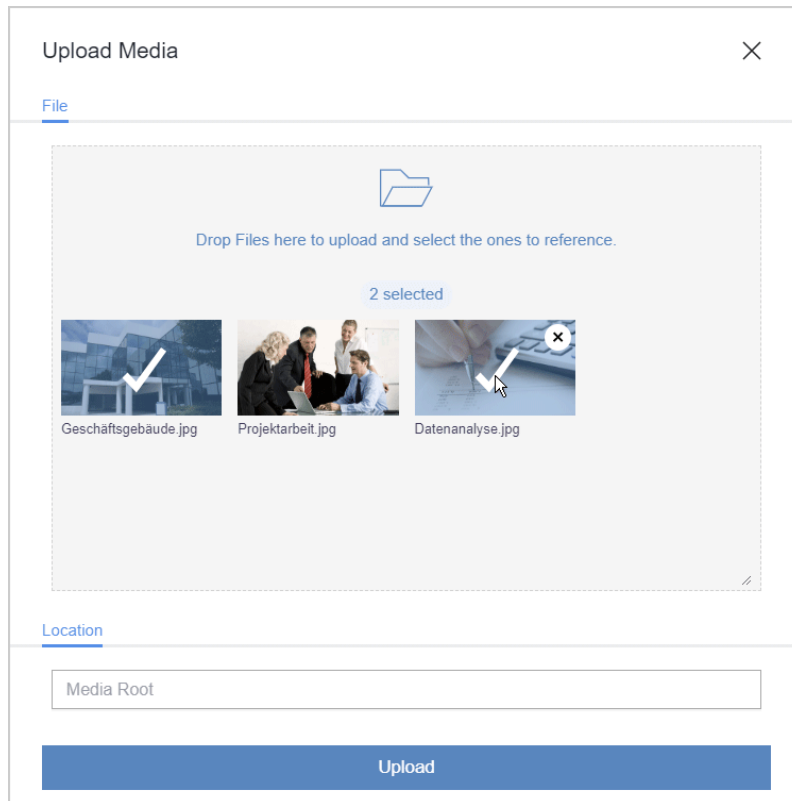
In the **variant overview** (right side of the screen, “Manage Variants”) you can now select more than one variant with a click and start a workflow for them.

The **detailed information** that was previously displayed for the selected fragment or variant underneath the task area in the bottom right-hand corner is the same as the information in the status display. Therefore, it has now been removed to make the display clearer.

The user guidance when **uploading and selecting pictures** in an input element (button “Upload Picture”) has also been improved in this context:

In principle, all pictures that are dragged into the upload dialog by drag-and-drop will now be referenced in the respective input element after the upload (visualized by check mark symbols). Previously, the pictures to be referenced in the input element had to be actively selected.





By clicking on the desired picture you can still select/unselect it. This allows you to control which pictures are to be referenced in the relevant input element.

After a successful upload (button “Upload”) the upload dialog now closes automatically and no longer needs to be closed manually. Exception: If an error occurs, the dialog remains open, shows a corresponding error message and the affected pictures are not uploaded.

The adaptation of the documentation with regard to the design and the revised functionalities is successive, therefore the presentation in the documentation potentially no longer corresponds to the current software status.

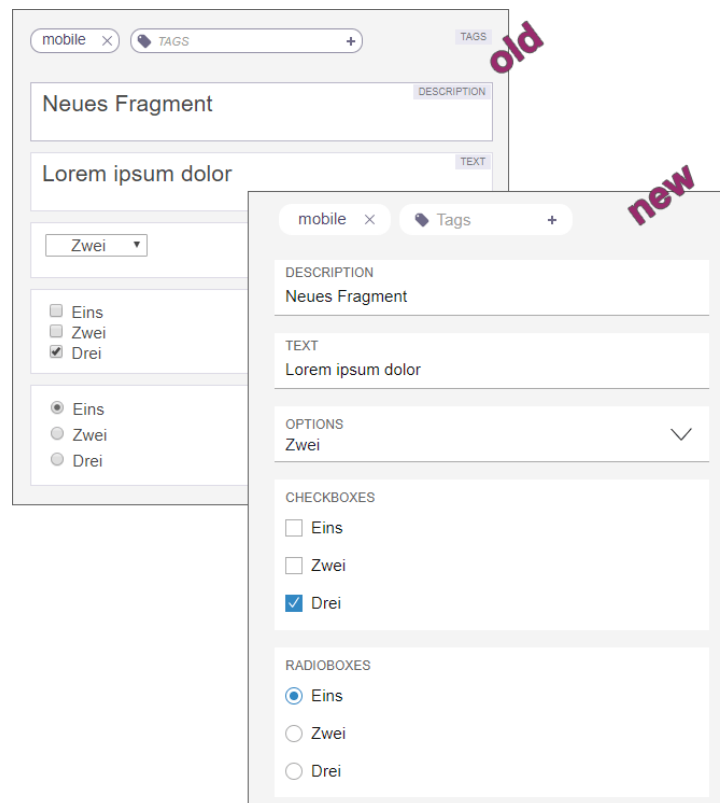
8.30 FragmentCreator: Revision of the design (input fields) 2020-05

As part of the revision and merging of the technical basis for FirstSpirit ContentCreator and FragmentCreator, the graphic interface of FragmentCreator was revised and adapted to the design principles of ContentCreator.



The design update does not involve any functional changes for editors or developers. All functions in the interfaces are available in principle at the known positions. Neither on the development side nor on the operational side are there any costs associated with the design update.

The modifications of the current release primarily affect the input fields for text and selection as well as the tags (CMS_INPUT_TEXT, CMS_INPUT_CHECKBOX, CMS_INPUT_COMBOBOX, CMS_INPUT_RADIOBUTTON, FS_TAGGING and others).



The adaptation of the documentation with regard to the design is successive, therefore the presentation in the documentation potentially no longer corresponds to the current software status.

8.31 Release of FragmentCreator and availability in the cloud / SaaS

2019-07

Release

FragmentCreator is now officially released, the ramp-up- / EAP-phase has been finished.



The new client passed extensive internal quality assurance tests and was tested in real customer scenarios. With the release the FragmentCreator officially becomes another product of the FirstSpirit family. It can be operated stably and is subject to the general maintenance regulations of e-Spirit. Bugs can - as with other e-Spirit software products - be reported regularly to e-Spirit Technical Support (<https://help.e-spirit.com>).

The associated **documentation** can be accessed via the left navigation column in the *FirstSpirit Online Documentation* (“ODFS”, menu item “Documentation 'Content Experience Tools'”). The online documentation is available on every local server (on the FirstSpirit startpage: “Help” icon, in the clients: “Help” menus) or at docs.e-spirit.com.

The underlying CXT platform, on which FragmentCreator is based, is currently being further developed. The release of this platform is planned for a future release.

Availability in the cloud

FirstSpirit is also increasingly being hosted in a SaaS model. The costs and responsibility for providing and updating the infrastructure lie with an external service provider. (More information on this topic can be found in the blog entry [FirstSpirit in the Cloud](#).)

FragmentCreator is now also available in the FirstSpirit cloud and can then be used by customers who use FirstSpirit Cloud.

8.32 FS_INDEX now also supports the creation of fragments of several different categories (tag CATEGORY) 2020-04

With the fragment DAP, fragments from one fragment project can be referenced in another fragment project, edited there and new ones can be created. The input component FS_INDEX with DataAccessPlugin component *FirstSpiritFragmentAccess/FSFAConnector* used for this.

The CATEGORY tag was previously used to restrict the selection to certain categories. If **only one** category was specified, a button was added to FS_INDEX, via which new fragments of the relevant category could be created.

As of the current release, the creation of fragments of different categories is now also supported if **several** categories are specified.

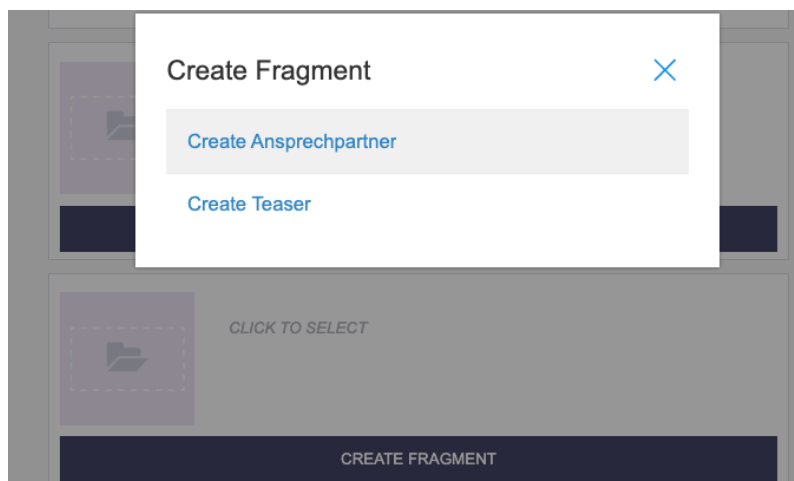
Example syntax:



```
<FS_INDEX name="fragments">
  <LANGINFOS>
    <LANGINFO lang="*" label="Fragments"/>
    <LANGINFO lang="DE" label="Fragmente"/>
  </LANGINFOS>
  <SOURCE name="FirstSpiritFragmentAccess/FSFACConnector">
    <PROJECT remote="fragmentproject"/>
    <CATEGORY uid="contact"/>
    <CATEGORY uid="teaser"/>
  </SOURCE>
</FS_INDEX>
```

The behavior regarding the CATEGORY tag is now as follows:

- **No** specification of CATEGORY: Only a selection of fragments from the project specified by the PROJECT tag is possible, no fragments can be created.
- Specification of **one** CATEGORY tag: Fragments of the specified category can be selected and created. Clicking on the button for creating new fragments opens the corresponding form.
- Specification of **more than one** CATEGORY tag: Fragments of the specified categories can be selected and created. Clicking on the button for creating new fragments opens a list of available categories:



The referenced fragments can be edited, too.





In projects in which FS_INDEX with DataAccessPlugin component *FirstSpiritFragmentAccess/FSFACConnector* and tag CATEGORY is already used, the configuration should be checked due to the new behavior: If more than one CATEGORY tag was specified, only a **selection** of fragments by editors was previously possible. Now editors can also **create** new fragments of the types specified by the CATEGORY tags.

8.33 FS_INDEX: "Create fragment" button now shows the relevant category 2019-12

The FS_INDEX input component not only allows fragments from other projects to be selected and referenced, it also enables new fragments to be created. The CATEGORY tag must be specified for this purpose.

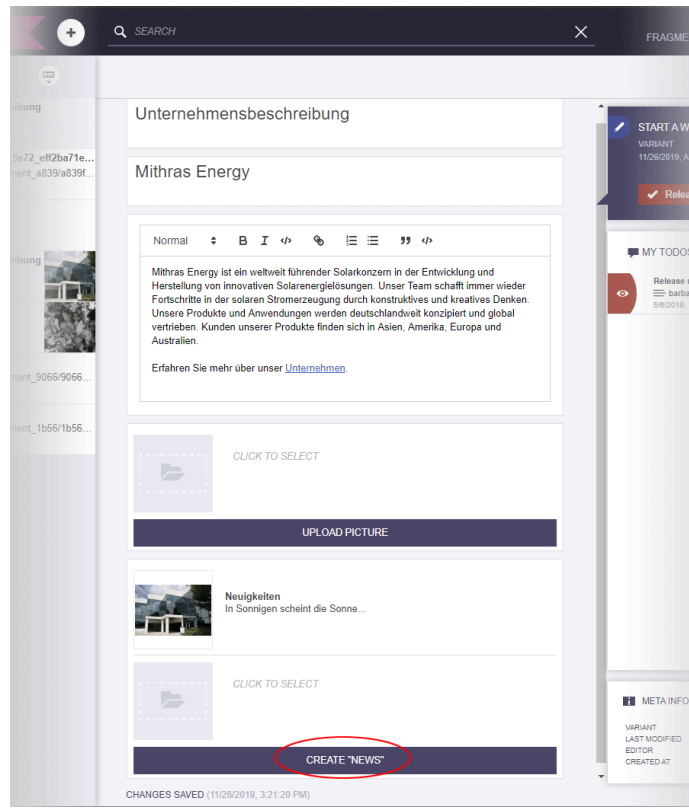
Example:

```
<FS_INDEX name="contact" useLanguages="no">
  <LANGINFOS>
    <LANGINFO lang="*" label="Contact"/>
    <LANGINFO lang="DE" label="Ansprechpartner"/>
  </LANGINFOS>
  <SOURCE name="FirstSpiritFragmentAccess/FSFACConnector">
    <PROJECT remote="fragments">
      <CATEGORY uid="news"/>
    </PROJECT>
  </SOURCE>
</FS_INDEX>
```

The value of the uid attribute is the reference name of the required page template (in the remote project). A button is displayed, which can be used to create the new fragments with the specified page template ("category"). (Precondition: only **one** CATEGORY may be configured.)

The button label now relates automatically to the category or the fragment type: instead of the previous label "CREATE FRAGMENT", the category is now named within the label, e.g., "CREATE 'NEWS'":

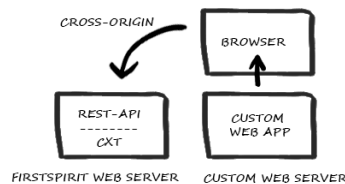




In this example, "NEWS" is the language-dependent display name of the corresponding page template.

8.34 Global CORS configuration for CXT MicroApps and for CXT REST calls 2019-02

The CXT platform's integration interface provides various functionality of the CXT world in the form of MicroApps and via CXT REST calls. This functionality may then be used in other environments, e.g. classic CRUD access to fragments and variants as well as from within (corporate) web apps which are not executed on the FirstSpirit web server (Cross-Origin Resource Sharing (CORS)).



Cross-Origin Resource Sharing (CORS)



If the caller (e.g. a custom web app) and the CXT platform are not located on the same web server (“same-origin”), but on different web servers (“cross-origin”), access from the browser of the external web app is denied by default (due to the Same-Origin Policy (SOP)). This restriction may be lifted for specific URLs.

`corsAllowedOrigins`: The parameter `corsAllowedOrigins` may be used to define a global CORS configuration for CXT MicroApps and for CXT REST calls. Possible values are:

- empty (no access allowed)
- * (all access allowed)
- comma-separated list of URLs (access for individual origins allowed)

The default value is the `FIRST_SPIRIT_URL`.

Detail of the `web.xml` (FragmentCreator web app):

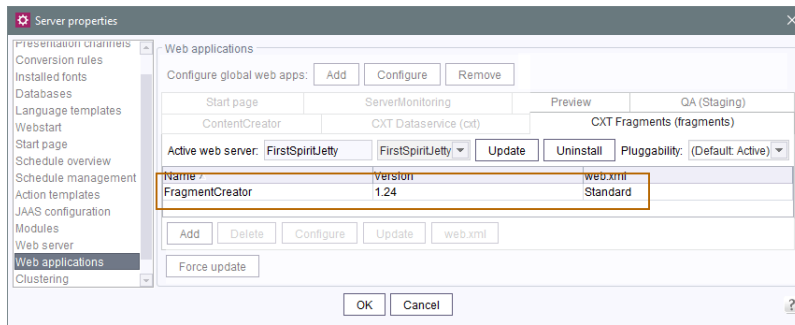
```
<context-param>
  <param-name>corsAllowedOrigins</param-name>
  <param-value>${FIRST_SPIRIT_URL}</param-value>
</context-param>
```

8.35 Configuring the start page 2019-11

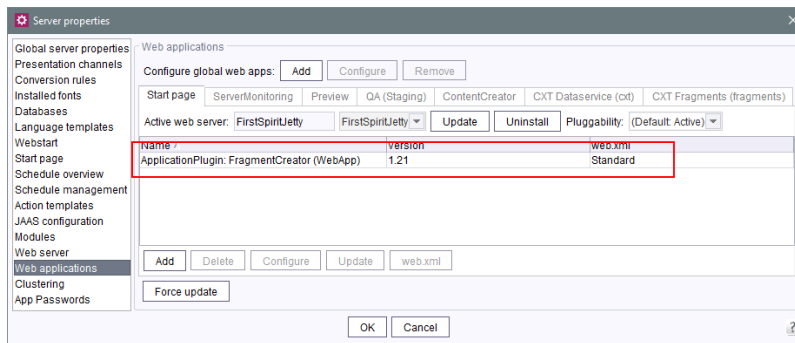
Access to FirstSpirit FragmentCreator is via the FirstSpirit start page. To enable FragmentCreator to be accessed via the corresponding icon and be called via the start page, this must be configured accordingly:

1. Install the “FirstSpirit CXT FragmentCreator” module
2. Create the global web app (e.g., `/fragments`)
3. Add / install / update the “FragmentCreator” web component there:





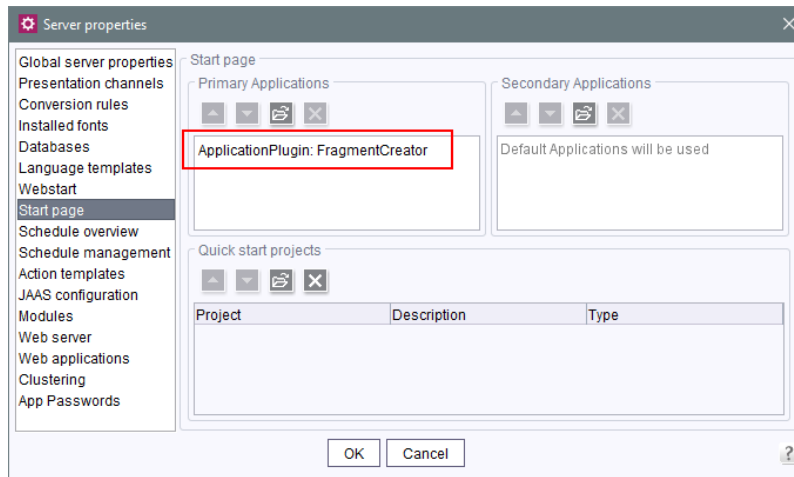
Previously, the “ApplicationPlugin: FragmentCreator (WebApp)” web component then had to be added to the “Start page”:



As of **FirstSpirit 2019-11**, this web component is added automatically as soon as the “FragmentCreator” web component has been installed or updated in the global web app (step 3). The dialog box in the ServerManager must be closed by clicking “OK” after step 3.

The ApplicationPlugin for FragmentCreator then has to be added in the “Start page” area, as was previously the case:





For more information, see Documentation for “FirstSpirit Content Experience Tools (CXT)”,

- “Installation / Modules / Installing modules / FragmentCreator” page
- “Installation / Modules / Access via the FirstSpirit start page” page

8.36 Configuration of the Content-Security-Policy header 2020-04

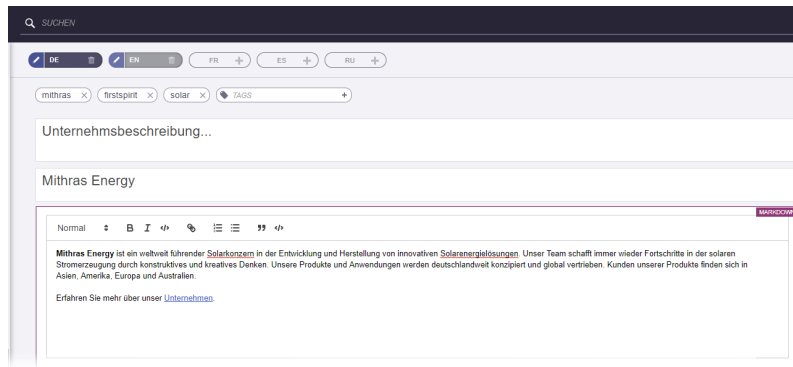
Using the configuration property `cxt.platform.microapps.csp-origins` allows for modifying the Content-Security-Policy header. This might be necessary when access to MicroApps should be allowed from different domains.

The default value is 'self'.

8.37 Markdown editor "Quill" ist now default 2019-07

The Markdown editor “Quill” (<https://quilljs.com>) introduced with FirstSpirit 2019-03 is now used by default for the input component FS_MARKDOWN and thus replaces “SimpleMDE” as the default:

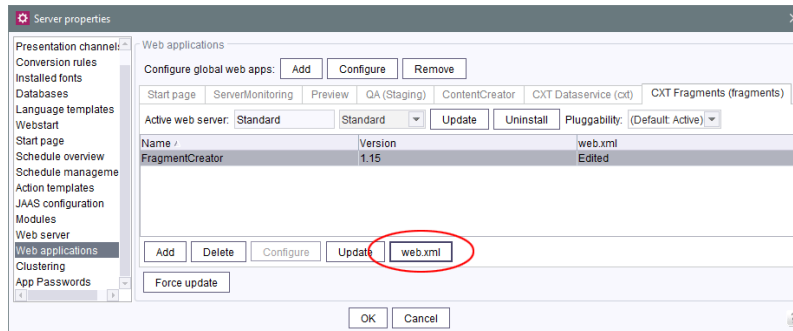




“Quill” offers more WYSIWYG comfort and thus a better user experience for the editor. The more technical “SimpleMDE” editor can still be used if required. An evaluation of other suitable editors is also planned.

Configuration

Which Markdown editor is to be used can be defined via the `web.xml` file of the WebApp component “FragmentCreator”, which is configured in the appropriate global WebApp for the FragmentCreator (“FirstSpirit ServerManager / Server properties / Web applications”):



As of the current release, the following code snippet is contained in the `web.xml` file by default:



```

<!--
  The markdown editor to be used in this FragmentCreator instance.
  Set to "simplemde" or "quill" to use respective editor. Set to "default"
  to use the default markdown editor.
-->
<context-param>
  <param-name>markdownEditorType</param-name>
  <param-value>default</param-value>
</context-param>

```

This means that the standard markdown editor is used (currently “Quill”).

If this section is missing in the relevant `web.xml` file in existing FirstSpirit installations, the standard markdown editor is now used, too.

If the value `quill` is specified, “Quill” will be used explicitly in case of a potential future system-side change of the `web.xml` file.

If “SimpleMDE” is to be used, the value `default` must be replaced by the value `simplemde`.

8.38 Markdown: Creating links using "DataAccessPlugins" 2020-03

Formatted texts are entered in the FragmentCreator using the input component `FS_MARKDOWN`.

Example syntax:

```

<FS_MARKDOWN name="text" useLanguages="no">
  <LANGINFOS>
    <LANGINFO lang="*" label="Content"/>
    <LANGINFO lang="DE" label="Inhalt"/>
  </LANGINFOS>
</FS_MARKDOWN>

```

Up to now, when using the markdown editor “Quill” (see file `web.xml`, parameter `markdownEditorType`, value: `quill` or empty), it was possible to link text in addition to formatting, using the icon



As of the current release, further referencing options can be made available via this icon. To do this, a corresponding *DataAccessPlugin* (DAP) must be specified, via which the references are made available in the project. This *DataAccessPlugin* must implement the interface `UrlSupporting` (FirstSpirit



Developer API, package `de.espirit.firstspirit.client.plugin.dataaccess.aspects`, also new with FirstSpirit 2020-03, see Chapter 5.2: “DAP: New aspect 'UrlSupporting' for URL generation”).

Currently, for example, the “Media Data Access Plugin” can be connected, which is included in the standard scope of delivery of the MicroApp Framework / FirstSpirit Content Experience Tools. With this plugin, images and files of other formats can be referenced in the Markdown Editor.

Example syntax FS_MARKDOWN

```
<FS_MARKDOWN name="text" useLanguages="no">
  <DATALINKSOURCES>
    <DATALINKSOURCE name="files" mode="file"
      plugin="FirstSpiritMediaAccess/Connector">
      <LANGINFOS>
        <LANGINFO lang="" label="Files"/>
        <LANGINFO lang="DE" label="Dateien"/>
      </LANGINFOS>
    </DATALINKSOURCE>
    <DATALINKSOURCE name="pictures" mode="picture"
      plugin="FirstSpiritMediaAccess/Connector">
      <LANGINFOS>
        <LANGINFO lang="" label="Pictures"/>
        <LANGINFO lang="DE" label="Bilder"/>
      </LANGINFOS>
    </DATALINKSOURCE>
  </DATALINKSOURCES>
  <LANGINFOS>
    <LANGINFO lang="" label="Content"/>
    <LANGINFO lang="DE" label="Inhalt"/>
  </LANGINFOS>
</FS_MARKDOWN>
```

Referencing in the Markdown Editor is enabled by specifying the tag

```
DATALINKSOURCES
```

Definition of the *DataAccessPlugin* to be used

Which *DataAccessPlugin* should be available for referencing in the respective Markdown component is determined by the mandatory tag




```
DATALINKSOURCE
```

The following mandatory attributes are required:

```
name  
plugin
```

`name` is a component-wide unique identifier for the reference type. You can use this identifier to access the value stored for the reference type in the output / in JSON.

Via the attribute `plugin` the desired *DataAccessPlugin*, for the “Media Data Access Plugin” for example

```
plugin="FirstSpiritMediaAccess/Connector"
```

You can also specify several different *DataAccessPlugins*.

Use the `label` attribute to implement a language-dependent label for the *DataAccessPlugin* in the list of referencing types to be selected in the markdown editor.

Configuration of the selection (via “Media Data Access Plugin”)

Using the optional attribute

```
mode
```

you can restrict when using the “Media Data Access Plugin” (analogous to the definition in FS_INDEX with “Media Data Access Plugin”) whether only images (`mode="picture"`) or only files of other formats (`mode="file"`) should be selectable. By default (without specifying `mode`) all element types can be selected as reference.

By default, when using the “Media Data Access Plugin”, a selection of references from the **entire** media management of the **local** project can be made.

The selection can be limited to special folders by specifying the tags `PROJECT` and `FOLDER`. The reference name of the desired folder is specified via the `uid` attribute, for example



```
<PROJECT>
  <FOLDER uid="contact"/>
</PROJECT>
```

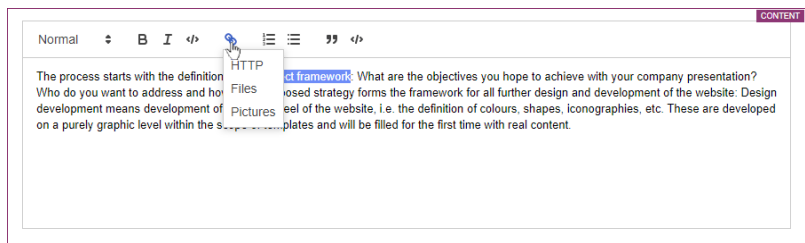
If media should be selected from a remote project, this can also be defined via the PROJECT tag. The mandatory parameter `remote` must be used to specify the symbolic project name of the remote project, for example

```
<PROJECT remote="media">
```

Example syntax:

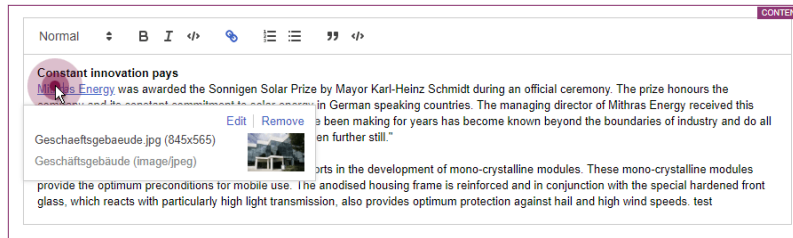
```
...
<DATALINKSOURCES>
  <DATALINKSOURCE name="pictures" mode="picture"
    plugin="FirstSpiritMediaAccess/Connector">
    <LANGINFOS>
      <LANGINFO lang="*" label="Pictures"/>
      <LANGINFO lang="DE" label="Bilder"/>
    </LANGINFOS>
    <PROJECT>
      <FOLDER uid="contact"/>
    </PROJECT>
  </DATALINKSOURCE>
</DATALINKSOURCES>
...
```

Appearance in FragmentCreator



Inserting a link





Inline view of an image referencing

Output / JSON

The JSON output of the Markdown Editor has been extended accordingly:

Attribute dataLinks: This attribute is included in JSON output whenever there is a reference in the Markdown component via *DataAccessPlugin*.

The link or reference is mapped using a special link schema that is used internally:

```
dap://{linkSource}/{objectId}
```

- `dap://`: URI schema/protocol
- `{linkSource}`: Identifier of the DAP configuration in the Markdown component (attribute name in the `DATALINKSOURCE` tag)
- `{objectId}`: Identifier of the DAP object selected by the editor

The values in curly brackets are URL-encoded. An example of a resolved version could look like this:

```
[link text](dap://pictures/id1234)
```

Where `[link text]` is the text in the Markdown component that is linked.

Attributes identifier, url, value: These attributes in the `dap` object come from the implementation of the *DataAccessPlugin* used:

- `identifier`: Identifier of the DAP object selected by the editor
- `url`: resolved URL of the DAP object selected by the editor



- value: JSON output that the *DataAccessPlugin* provides for the DAP object selected by the editor

Attributes `htmlExt`, `markdownExt`, `textExt`: If one of the DAP links contained in the Markdown Editor can be converted to an external URL due to the implementation of the *DataAccessPlugin* used, these attributes are created in addition to the attributes used for internal representation without the suffix `Ext`. In the case of media, an external URL can then be a URL under which the image can be viewed and/or downloaded, for example.

Example JSON output of a Markdown component:

```
{
  "html": "<p><a href=\"dap:\\\\linkSource\\id1234\">link text</a></p>\n",
  "markdown": "[link text](dap:\\\\linkSource\\id1234)",
  "text": "\"link text\" (dap:\\\\linkSource\\id1234)",
  "htmlExt": "<p><a href=\"#1234\">link text</a></p>\n",
  "markdownExt": "[link text](#1234)",
  "textExt": "\"link text\" (#1234)",
  "dataLinks": {
    "dap:\\\\linkSource\\id1234": {
      "identifier": "id1234",
      "url": "#1234",
      "value": {
        "store": "mediastore",
        "id": 1234
      }
    }
  }
}
```

Access in the template

The access to contents with resolved references can be done for example via the generated JSON:

```
$_CMS_VALUE(json(#this).get("markdown").get("value").get("htmlExt"))$
```

! For the markdown editor "SimpleMDE" no referencing via *DataAccessPlugin* is currently supported.



Further information

- [Markdown Editor](#) module
- Configuration of the input component [FS_MARKDOWN](#)
- General information about [JSON output](#)

8.39 Media DAP: Type-dependent upload of files 2020-04

Up to now only images could be uploaded in the FirstSpirit FragmentCreator via the FS_INDEX input component with Media DAP (`<SOURCE name="FirstSpiritMediaAccess/Connector">`). The current release now also supports the upload of files of other formats. In addition, the `mode` attribute in the `SOURCE` tag can be used to control which media type may be uploaded. As before, the filter also refers to the selection of media types:

- `PICTURE`: Only images can be uploaded and selected.
- `FILE`: Only non-image files can be uploaded and selected.
- `ANY` (default) All media (both images and files) can be uploaded and selected.

Example syntax:

```
<FS_INDEX name="files">
  <LANGINFOS>
    <LANGINFO lang="*" label="Files"/>
    <LANGINFO lang="DE" label="Dateien"/>
  </LANGINFOS>
  <SOURCE name="FirstSpiritMediaAccess/Connector" mode="file">
    <PROJECT remote="media"/>
  </SOURCE>
</FS_INDEX>
```

If media are dropped into the upload dialog that do not match the type specified by `mode`, a corresponding warning is displayed and these files are not uploaded to the project.

For further information see <https://docs.e-spirit.com/odfs/edocs/cxt/templates/access-media/index.html>.



8.40 MicroApps API: Creating special variants ("variant dimensions")

2019-12

With the current release, special variants can be created using the MicroApps API. The calls:

```
CreateFragment  
EditFragment
```

have been extended for this purpose:

The new `VariantCreation` action makes it possible to define the dimensions for which the variant is to be created.

All dimensions of the desired variant must be specified via `variantToCreate` using curly brackets, for example:

```
{ language: ["DE"], device: ["Mobile"], season: ["autumn"] }
```

It is also possible to specify the UUID of an existing variant that is to be used as a master copy via `source`. The new variant is then filled with the content of the variant defined via `source`.

Example:

```
... source: "4211cee7_f356_40e6_867a_c710c5720de8" ...
```

CreateFragment

A new fragment is created with the desired variant and this is shown as being already open in the MicroApp.

Example call:



```
let context = {
  projectId: 236,
  category: "teaser",
  command: "CreateFragment",
  variantCreation: {
    variantToCreate: { language: ["DE"], device: ["Mobile"], season: ["autumn"] },
    source: "4211cee7_f356_40e6_867a_c710c5720de8"
  }
};
CxtMicroApps.requestMicroApp("firstspirit-fragments-edit",context);
```

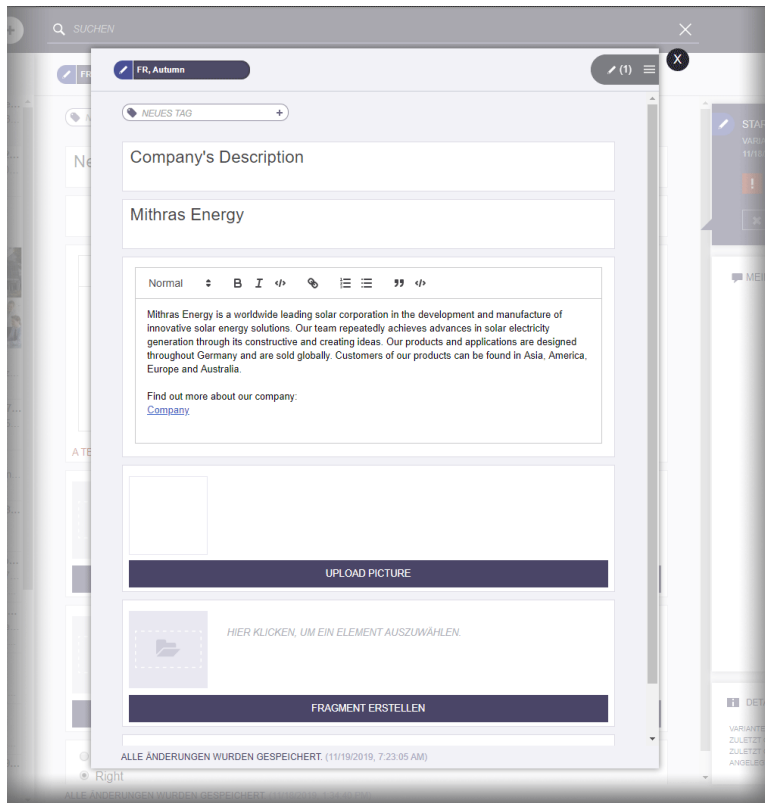
EditFragment

A variant is created in the defined dimensions for an existing fragment and this is shown as being already open in the MicroApp.

Example call:

```
let context = {
  projectId: 236,
  command: "EditFragment",
  fragmentId: "6baaf8a3_d04c_465e_acac_6c7d115b3147",
  variantCreation: {
    variantToCreate: { language: ["DE"], device: ["Mobile"], season: ["autumn"] }
  }
};
CxtMicroApps.requestMicroApp("firstspirit-fragments-edit",context);
```





If some dimensions were not specified or invalid values were defined, this is recorded accordingly in the web server log and neither a fragment nor a variant is created.

Error messages:

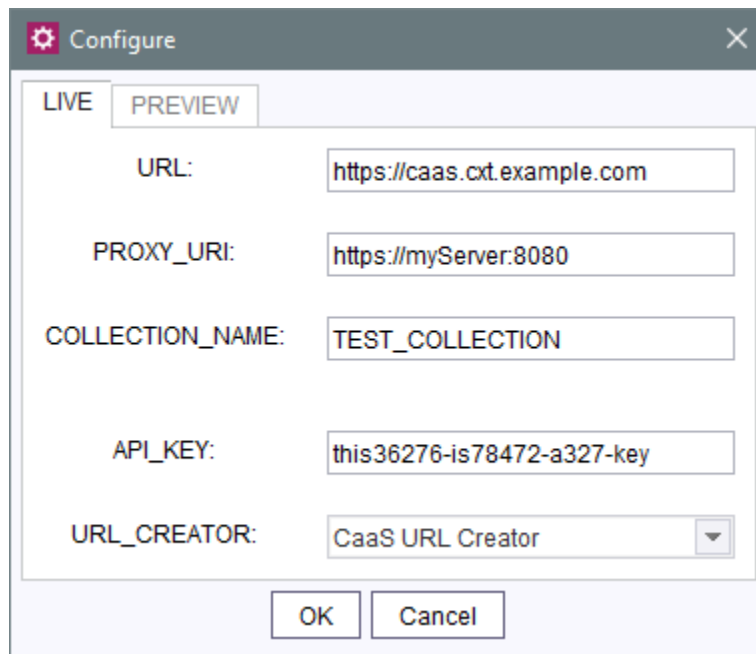
```
de.espirit.cxt.services.connectors.firstspirit.fragments.
    FragmentOperationException: Missing value for edition 'season'
de.espirit.cxt.services.connectors.firstspirit.fragments.
    FragmentOperationException: Invalid value for 'language': ES
```

8.41 "CaaS Integration" module: Specification of a proxy 2019-12

The “FirstSpirit CXT FragmentCreator – CaaS Integration” module can be used to deliver the content of a fragment project via the universal FirstSpirit CaaS interface and retrieve it from any front-end system (conventional websites, mobile apps, web shops, digital signage, social media, single-page applications, portals) by means of the pull strategy.



The configuration is carried out using the “CXT CaaS Integration Configuration” project component. In the latest FirstSpirit release, a proxy can now also be defined for establishing the CaaS connection. This can be set in the FirstSpirit ServerManager, under “Project settings” / “Project components” / “CXT CaaS Integration Configuration”, in the new field “PROXY_URI”:



The screenshot shows a 'Configure' dialog box with the following fields and values:

- URL: https://caas.cxt.example.com
- PROXY_URI: https://myServer:8080
- COLLECTION_NAME: TEST_COLLECTION
- API_KEY: this36276-is78472-a327-key
- URL_CREATOR: CaaS URL Creator

If the field is empty or if spaces are entered, no proxy will be used.

If a proxy is entered, this will be recorded in the log file of the FirstSpirit Server accordingly if the log level is *DEBUG*:

```
DEBUG 12.11.2019 11:35:30.270 {g-node=23943} (com.espirit.caas.adapter.processors.  
AsyncRequestToolkit): Proxy configuration: 'https://myServer:8080'
```

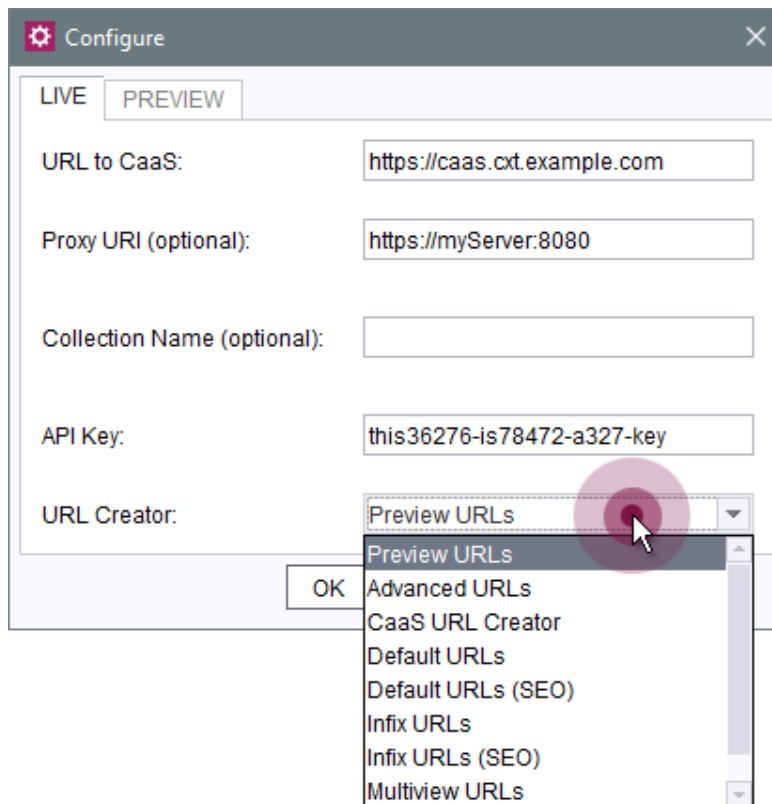
8.42 "CaaS Integration" module: Creating Preview URLs 2019-12

The contents of a fragment project can be delivered via the universal FirstSpirit CaaS interface via the module “FirstSpirit CXT FragmentCreator - CaaS Integration” and pulled from any front end (classic websites, mobile apps, web shops, digital signage, social media, single-page applications, portals) according to the pull principle.



If a fragment project is to make its content available via FirstSpirit CaaS, the project component “CXT CaaS Integration Configuration” must be configured accordingly.

As of the current release, the newly implemented URL Creator “Preview URLs” is used for generating URLs:



This will be used to generate URLs for the preview, for example for images.

When using the “Content as a Service” module, the “CaaS URL Creator” supplied with the module can usually be selected. This generates URLs that meet the special requirements for CaaS URLs. Alternatively, your own URL Creator can also be implemented and selected here.

Update information: Since FirstSpirit 2019-09, the URL Creator “Default URLs” was used as standard setting. When upgrading to FirstSpirit 2019-12, the setting should be checked and adapted if you want to continue using the URL Creator “Default URLs”.

For more information



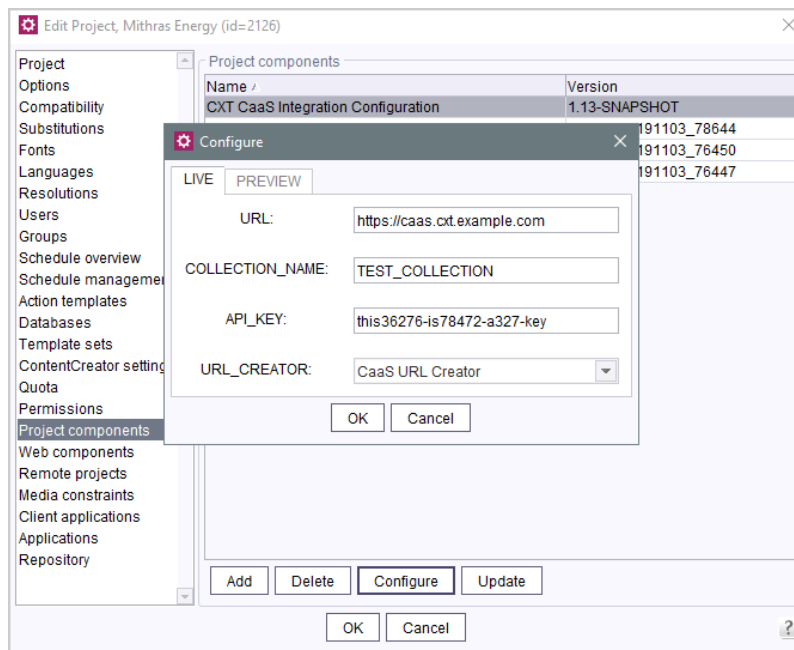
- about how to configure the “FirstSpirit CXT FragmentCreator - CaaS Integration” module: see Documentation for “FirstSpirit Content Experience Tools (CXT)”, “Projects / Configure CaaS”
- about how to configure the “Content as a Service” module: see [related documentation](#)
- about how to create your own URL Creator: see *FirstSpirit Online Documentation*, “Advanced topics / Generation / Advanced URLs”.

8.43 "CaaS Integration" module: Defining the name of the collection freely 2019-11

Data is stored in “FirstSpirit Content as a Service” (CaaS) in so-called “collections”. In the case of FirstSpirit Content Experience Tools, the data from a fragment project for which the “CaaS Integration” module is used for communication with FirstSpirit CaaS is transferred by default to a collection with the reference name of the page template of the respective fragment type. In this way fragments of a project are stored in different collections on the FirstSpirit CaaS.

If you want the fragments of a project to be stored in **one** collection – regardless of the fragment type – you can now define a name for the collection for each project as of the current release. This is done in the dialog for configuring the project component “CXT CaaS Integration Configuration”:





If you leave this field empty, the reference name of the page template of the respective fragment type will be used as before.

Note for existing installations: After updating the module, it may be necessary to restart the FirstSpirit server.

For more information

- about configuring the module “FirstSpirit CXT FragmentCreator - CaaS Integration” please see Documentation for “FirstSpirit Content Experience Tools (CXT)”, “Projects / Configure CaaS”
- about configuring the module “Content as a Service” please see [related documentation](#), especially Chapter “Saving the content in CaaS”

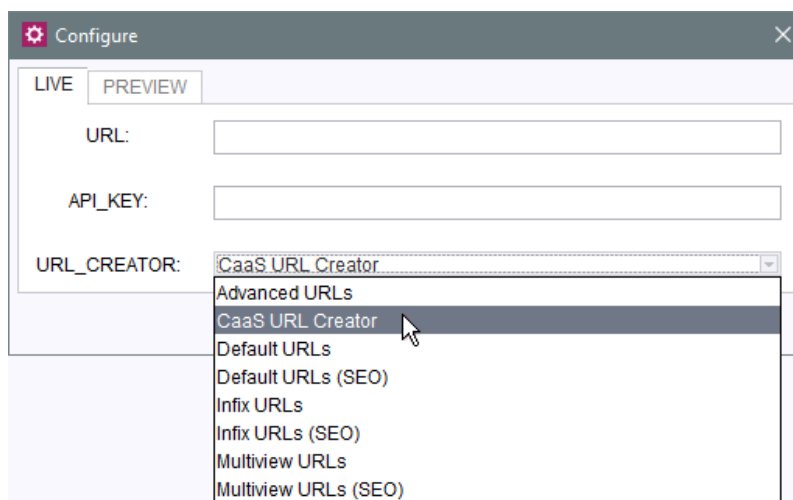
8.44 "CaaS Integration" module: generation of URLs 2019-09

The “FirstSpirit CXT FragmentCreator - CaaS Integration” module offers the functionality to pull content from arbitrary frontends such as mobile apps, webshops, digital signage, social media, single-page applications or plain websites, and to deliver the content of fragment projects via the universal FirstSpirit CaaS interface.



A fragment project that should provide its content via FirstSpirit CaaS must configure the URL to the respective CaaS server, as well as a related API key, in the “CXT CaaS Integration Configuration” project component (for both preview- and live-instances).

This release introduces an option to choose the desired URL creator to be used during generation while, in prior versions, preview URLs had been created. This allows media files to be accessible in CaaS independent from a FirstSpirit login or valid FirstSpirit sessions, making them usable in the current application (website, DigitalSign, Amazon Alexa, etc.). Prior to this release, the use of media has sometimes caused invalid URLs to be generated.



When using the FirstSpirit module “Content as a Service”, the provided “CaaS URL Creator” usually suits all needs by creating URLs that conform with the requirements of CaaS. However, custom URL creators may also be implemented and selected instead.

If a custom implementation is currently based on the preview URLs it needs to be adapted and must be accompanied with a suitable URL creator which must be selected as well.

As default behaviour, if no other configuration is made, all instances (preview and live) will use the URL creator “Default URLs”.

For more information concerning

- ... configuration of the “FirstSpirit CXT FragmentCreator - CaaS Integration” module, see Documentation for “FirstSpirit Content Experience Tools (CXT)”, “Projects / Configure CaaS”



- ... configuration of the “Content as a Service” module, see [related documentation](#)
- ... creating a custom URL creator, see *FirstSpirit Online Documentation*, “Advanced topics / Generation / Advanced URLs”.

8.45 Module "FirstSpirit Markdown Editor": Compatibility 2019-09

The module “FirstSpirit Markdown Editor” requires at least FirstSpirit 2019-08 from version 1.14.

8.46 Module "FirstSpirit Markdown Editor": Compatibility 2019-12

Incompatible changes were made to the relevant API as part of FirstSpirit's release of JSON support as of FirstSpirit 2019-12. As a result, the “FirstSpirit Markdown Editor” module requires at least FirstSpirit 2019-12 from Version 1.17.

8.47 Multi-tab and multi-frame capability 2019-05

In the current release, the FragmentCreator and the MicroApps it provides have been prepared for multi-tab and multi-frame capability: The editing of multiple projects in different browser tabs is now generally possible.

To do this, the URL now has to be extended to include the following parameters:

```
clientsession=_new&projectselect=true
```

Example:

```
http://myserver:8080/fragments/?language=de&clientsession=_new&projectselect=true
```

If a new browser tab is opened, currently, the same project as in the existing tab is initially selected. If the URL is extended to include the parameters specified above, the tab in question starts its own session and the project selection option is displayed. Different projects can then be displayed and edited in different tabs. Refreshing the browser tab (**F5**) refreshes the desired project and no longer switches to a different project.

Background: Tabs with the same `clientsession` parameter have the same settings and therefore also the same project ID. Tabs without a `clientsession` parameter or with the parameter `clientsession=0` also share the same setting. This setting is one of the client's default settings.



The “Edit fragment” and “Create fragment” MicroApps provided by the FragmentCreator (also see Documentation for “FirstSpirit Content Experience Tools (CXT)”, “Installation / Modules / Installing modules / Fragment DAP”) automatically receive their own settings which only apply within the MicroApp frame and only for one call. Certain settings, such as the preferred variants for fragment display, are saved for each project rather than for each tab session.

Control by means of URL parameters is to serve as a temporary workaround only and will in future be incorporated into the graphical interface.

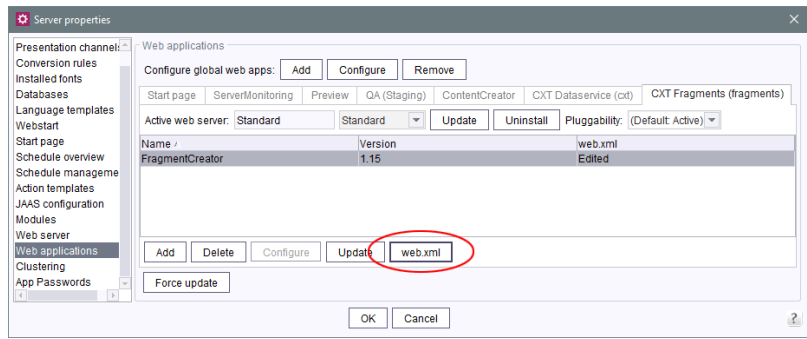
8.48 New mandatory parameter in file "web.xml": "externalBaseUrl"

2019-11

In the `web.xml` file of the “FragmentCreator” WebApp component configured in the corresponding global WebApp for FragmentCreator, the new parameter

```
externalBaseUrl
```

must be defined to ensure that the MicroApps continue to be available for editing fragments (“FirstSpirit ServerManager / Server properties / Web applications”):



The parameter expects the URL used to publicly access Fragment Creator.

The value is **not** pre-assigned. If it is not set, FragmentCreator (and accordingly its MicroApps) must be publicly accessible via the same address that has been entered in the `webServiceBaseUrl` parameter.

However, the URL defined via `webServiceBaseUrl` is generally only used for server-to-server communication.



If FragmentCreator can be publicly accessed via address `https://cms.example.com/fragments/`, for example, the following entry must be added to the `web.xml`.

```
<context-param>
  <param-name>externalBaseUrl</param-name>
  <param-value>https://cms.example.com/fragments/</param-value>
</context-param>
```

8.49 Optimization of authentication 2019-05

In the current release, session handling for FirstSpirit CXT has been improved. Previously, authentication would fail and issue a 401 error in certain cases if a refresh token was used.

In this context, two new, optional parameters have been introduced in the `web.xml` file of the “FragmentCreator” module:

- `accessTokenValiditySeconds`
Defines the validity period of an OAuth access token (in seconds).
Default value: 3600 (1 hour)
- `refreshTokenValiditySeconds`
Defines the validity period of an OAuth refresh token (in seconds).
Default value: 43200 (12 hours)

For more information, see Documentation for “FirstSpirit Content Experience Tools (CXT)”, chapter “Installation / Modules / Installing modules / FragmentCreator”.

8.50 Optimization of the standard workflows 2019-05

Workflows are used in FragmentCreator for releasing and deleting content (fragments and variants). In the current release, the functionality of the standard workflows has been optimized:

- Standard workflow “Request release” (reference name “request_release”): If the workflow is started on a variant, the complete parent chain is now also released so that the respective fragment is released too.



- Standard workflow “Request deletion” (reference name “delete_fragment_wf”): Fragments (represented by folders in the “Content” area) are now also deleted if an associated variant no longer exists. In addition, the folder that contains the content of the corresponding fragment type (“category”) is released (“root folder”).

The updated standard workflows are part of the master/blueprint project.

8.51 Optimizations for multi-user mode 2020-06

The editing area or MicroApps did not always show the current state of a variant after another user had made changes to the content, for example.

It is now only necessary to perform a manual update if another user is editing the content simultaneously. In this case, all the input elements of the variant (“form”) are locked for editing and the following message is output:

```
The changes can not be saved - the element was modified on server.
```

Clicking on

```
CONFLICTING CHANGES! Click here to reload.
```

updates the display; the variant can now be edited again.

Note: When FS_INDEX is in use, referenced fragments are **not** automatically updated.

8.52 PageRef Access Plugin (PageRefDAP): Referencing pages 2020-06

As of the current release, references to pages can now be created using the new *PageRef Access Plugin* module (PageRef DAP).

The references to pages selected by the user can be output as HTML links.

Provision and Installation

The corresponding module file (file name extension: *.fsm*) can be requested from Technical Support:

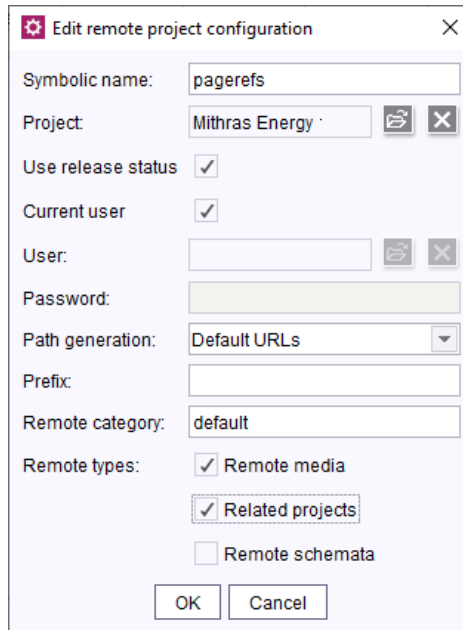
```
pagerefdap-[version].fsm
```



The module is installed using the FirstSpirit ServerManager, in the “Server properties / Modules” dialog using the “Install” button.



Remote configuration

To enable references to pages from other FirstSpirit projects, the desired project must be configured as a “Remote project” in the project properties (FirstSpirit ServerManager):





Edit remote project configuration

Symbolic name:


Project:  

Use release status

Current user

User:  

Password:

Path generation: 

Prefix:

Remote category:

Remote types: Remote media
 Related projects
 Remote schemata

Web component “PageRef DAP for ContentCreator”

The plugin can be used in ContentCreator using the Web component “PageRef DAP for ContentCreator”. To do this, the web component must be added to the relevant project in the “ContentCreator” area (“FirstSpirit ServerManager / Project properties / Web components”).

Use in projects

If the module has been installed, it can be addressed from the component for selecting references, “FS_INDEX”.

The editor can select one or more page references from the configured remote project(s).

Syntax example for FS_INDEX, tab “Form”:

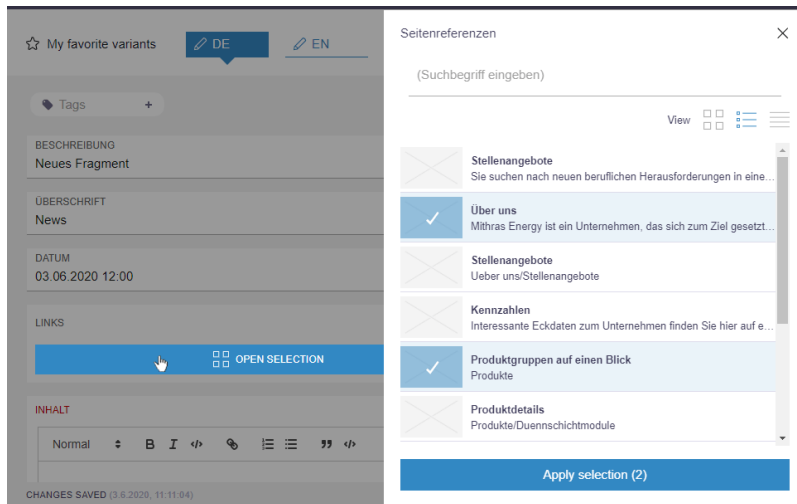


```
<FS_INDEX name="links">
  <LANGINFOS>
    <LANGINFO lang="*" label="Page referencing / links"/>
    <LANGINFO lang="DE" label="Seitenreferenzen / Links"/>
  </LANGINFOS>
  <SOURCE name="FirstSpiritPageRefAccess/PageRefConnector">
    <PROJECT remote="pagerefs">
      <FOLDER uid="products"/>
    </PROJECT>
  </SOURCE>
</FS_INDEX>
```

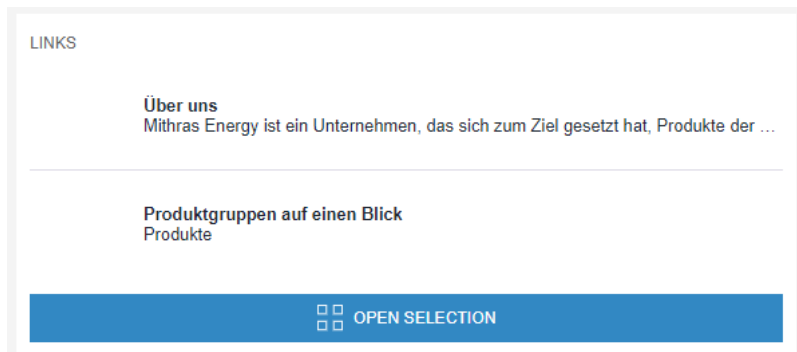
- **SOURCE:** This tag is used to specify the FirstSpirit module and the DataAccessPlugin component via the mandatory parameter `name`. In this case: "FirstSpiritPageRefAccess/PageRefConnector".
- **PROJECT:** This tag is used to specify the remote project from which references are to be made available. The symbolic project name of the remote project must be specified via the mandatory parameter `remote`.
- **FOLDER:** The selection can be restricted to folders of the referenced project by using the `FOLDER` tag. If several folders are to be taken into account, a `FOLDER` tag must be specified for each folder. The name of the folder in question is entered using the `uid` parameter (reference name).

If the configuration was made correctly, the editor will be able to select page references:



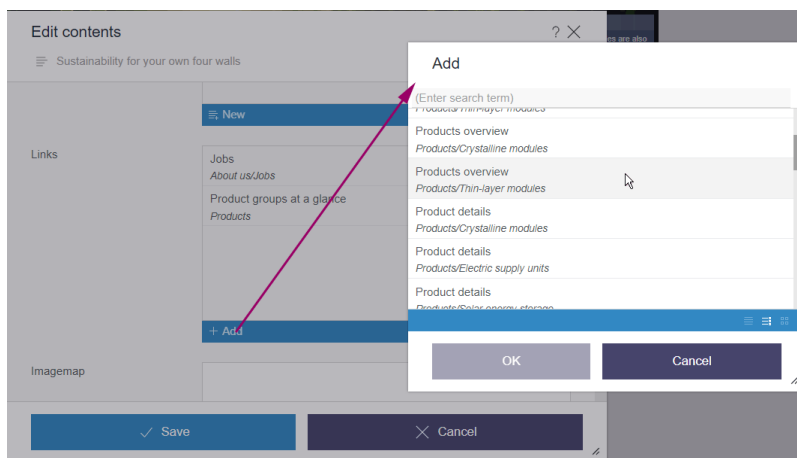


Selection



FS_INDEX with selected page references

Representation in ContentCreator:



Output in FirstSpirit projects

The page references selected by the editor can be output in a FirstSpirit project as follows:

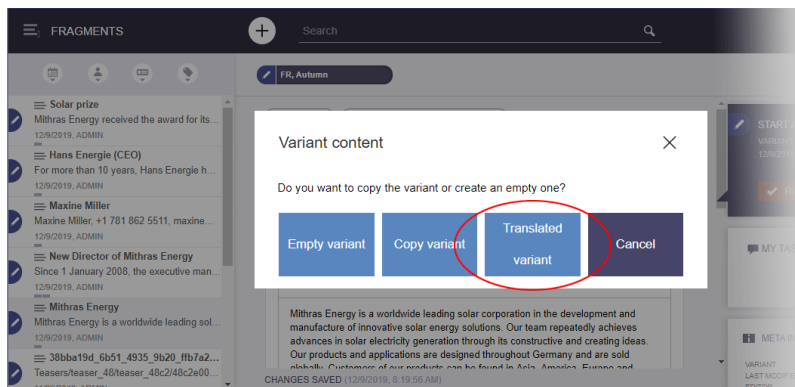
```

$CMS_FOR(pageref, links.values())$<br />
  <a href="$CMS_REF(pageref)$" $">
    $CMS_VALUE(pageref.uid)$ <br />
  </a>
$CMS_END_FOR$
    
```

8.53 Creating a variant with translated content 2019-12

Previously, it was only possible to create a variant by copying the variant currently selected or to create a variant without content (“empty”).

If a module that utilizes the TranslationPlugin (de.espirit.firstspirit.webedit.plugin.translation package, FirstSpirit Developer API) is used, an additional option is offered in the dialog with the current release: “Translated variant”).



If you click on this option, the desired variant will be created with content that has been translated with the help of the mechanisms of the module connected via the TranslationPlugin interface (translation plugin).

8.54 Preselecting a variant for editing ("documentId") 2019-02

When using the MicroApp “Edit fragment”, the favorited variant of a fragment will be opened for editing by default (*fragmentId*). As of the current release, it is possible to specify which variant should be shown initially. This is done by using the parameter *documentId*.



Example:

```
function setFCMicroApp(row, fragmentId, docId, index){
  const context = {
    dataAccessPlugin: "FirstSpiritFragmentAccess/FSFAConnector",
    documentId: docId,
    projectId: prjId
  }
}
```

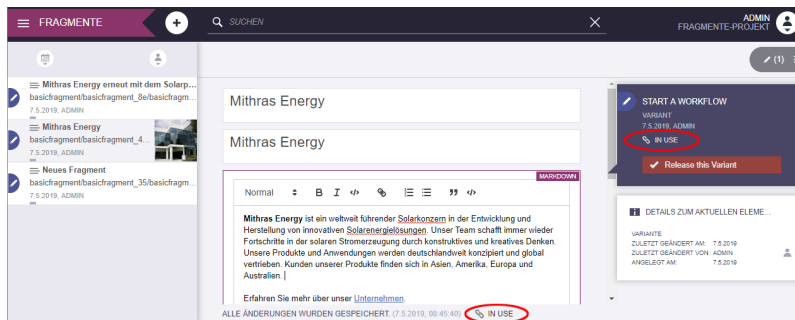
8.55 Visualizing references 2019-05

Dependencies between objects in FirstSpirit (or with objects outside FirstSpirit) are also designated as “references”.

In order to prevent inconsistencies, these references are tested before objects in a FirstSpirit project are deleted, for example. In addition, “dependent releases” can also be implemented via the references.

“FirstSpirit Content Experience Tools” (CXT) enable other fragments to be referenced with the aid of the “FirstSpirit Fragment DAP” module (`fragmentdap-[version].fsm`).

In the current release, FragmentCreator visualizes if a fragment has a reference to another fragment, specifically with the text “In use”, e.g.,



When a variant is deleted, a dialog box indicate that references to other fragments exist. If the variant is deleted or released despite the existence of references, the fragment being referenced should be tested with respect to the change.



8.56 Important: FragmentCreator requires manual adaptation of the "web.xml" file 2019-06

As of FirstSpirit 2019-06, the CXT MicroApps will register on the integrated Eureka server. This requires a password. It is stored in the `web.xml` file of the "FragmentCreator" module:

```
<context-param>
  <param-name>eurekaPassword</param-name>
  <param-value>${RANDOM_VALUE}</param-value>
</context-param>
```

Using this default configuration, the password is regenerated with each start.

Changing the value `${RANDOM_VALUE}` is only necessary if a fixed password is required to integrate external MicroApps.



No adjustments are required for new installations as of FirstSpirit 2019-06; for existing FirstSpirit installations the code snippet specified above must be added to the `web.xml` file of the module "FragmentCreator". Otherwise the module cannot be deployed and a 404 error occurs when the FragmentCreator is started.

8.57 Access to tags and IDs of variants 2019-07

The `Variant` interface, which can be used to determine information from variants, has been enhanced by the following methods:

- `getId()` (in Beanly syntax: `.id`): returns the ID of a variant
- `getTags()` (in Bean syntax: `.tags`): returns the tags of a variant as a `Collection`

Example:



```

$CMS_FOR(_fragments, fragments.values)$
$CMS_FOR(variant, _fragments.variants({:}))$
$CMS_VALUE("Title: " + variant.title)$<br />
$CMS_VALUE("Id: " + variant.id)$<br />
$CMS_VALUE("Tags: " + variant.tags)$<br />
$CMS_END_FOR$
$CMS_END_FOR$
    
```

where *fragments* is the identifier of the FS_INDEX component via which the fragments / variants are selected.

Exemplary output:

```

Title: Hans Energie (CEO)
Id. 98d06f9f_6f40_4f80_8084_9c0fe25b1cd8
Tags: [#ceo, #teaser]
    
```

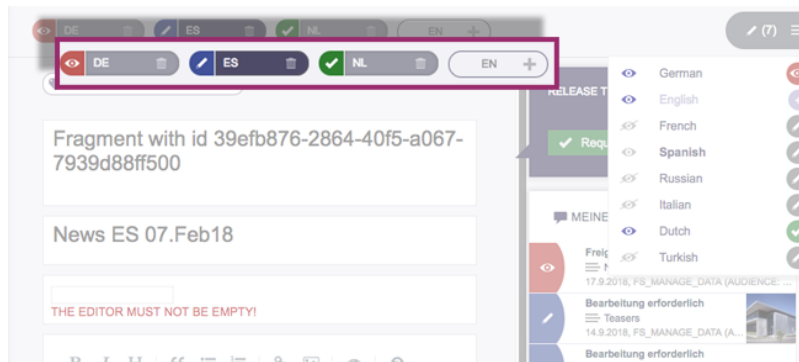
For more information please see Documentation for “FirstSpirit Content Experience Tools (CXT)”, “Templates / Defining fragments / Outputting content”.

9 FragmentCreator

9.1 Display of Variants in Favorites List 2018-11

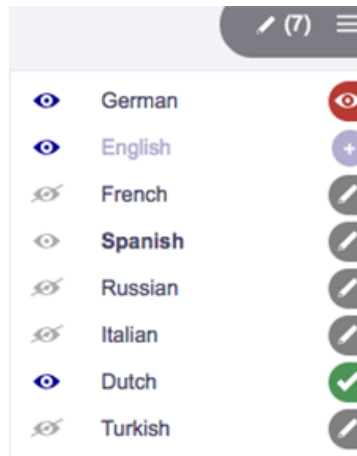
Every editor is able to mark some variants as favorites. The so-marked variants will be displayed above the selected fragment.

Display of variant favorites



Switching between these variants requires just one click. For each variant, its current status is also shown.

Selection of variants



When clicking the icon for variant selection, a list of all available variants of the current fragment is displayed. For each variant, the list shows the variant's status and if it is currently marked as a favorite.

Here, the editor can

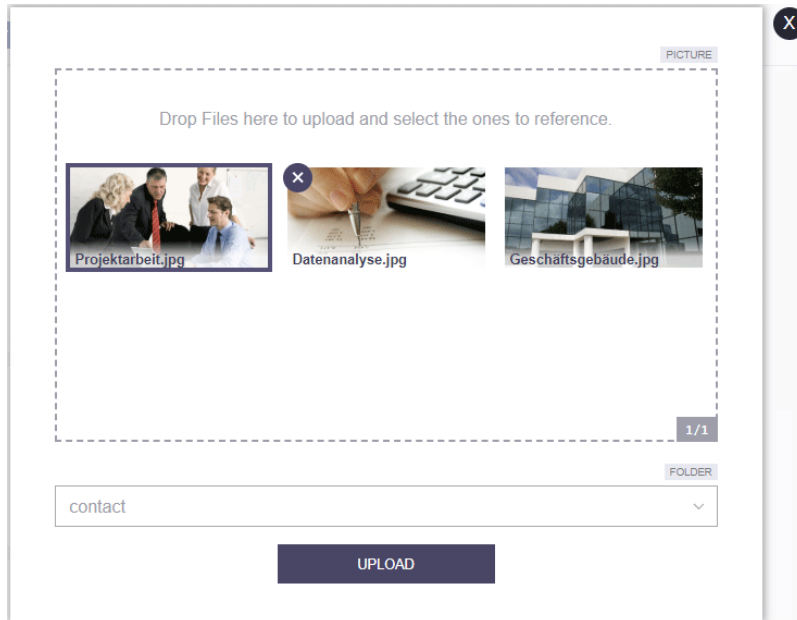
- select an existing variant for editing (clicking on the variant's name)
- add a variant to the favorites list (clicking on the grey eye icon “Not a favorite”)
- remove a variant from the favorites list (clicking on the blue eye icon “Favorite”)
- add another variant for the selected fragment (clicking on the plus icon “Create variant”)

9.2 Image upload 2019-09

Images can now be uploaded in FirstSpirit FragmentCreator via the input component FS_INDEX with Media DAP (<SOURCE name="FirstSpiritMediaAccess/Connector">).



Clicking the “UPLOAD PICTURE” button opens a window in which the desired image can be selected by drag-and-drop from the workstation computer (field “PICTURE”):



You can also select multiple images in this window.

By clicking on one or more images, you can select those that are to be referenced in the input component after uploading. The number of selectable images can be limited by the project developer.

Once all desired images have been selected, the upload can be started by clicking “UPLOAD”. With every click the images contained in the window are uploaded to the project.

The uploaded images are stored in the folder specified by the `FOLDER` tag of the relevant `FS_INDEX` input component. If the `FOLDER` tag is not defined, the images will be stored at the top level of the media store of the project which is specified by the `PROJECT` tag, attribute `remote`.

If more than one folder is defined, the user can select the desired folder from a drop-down list (field “FOLDER”).

If the project already contains an image with the same name as an image to be uploaded (“duplicate”), the UID of the image to be uploaded is made unique by automatically appending an underscore and a numbering, possibly creating a copy of an existing image.

The dialog can be exited via the X.



If the dialog is closed during the upload, the upload will be aborted. Images that have not yet been uploaded will then no longer be considered for the upload.

Currently, only uploading images, not files, is supported.

Restrictions configured for the project in the FirstSpirit ServerManager under “Project properties / Media restrictions” file size and the file name extension are taken into account (see [Online documentation for administrators](#)): size and file name extension of the image are already checked when the images are dragged and dropped into the window, whereas a MIME check (option “MIME probing has priority”) is only performed during upload.

This MicroApp can also be used without Media DAP module. To do this, simply pass the ID of the desired project (attribute *projectId*) and one or more folders (attribute *folders*, expects the reference name of the desired folder) to the MicroApp as context. As an alternative, the top level of the media store can be configured as the storage location: `folders: []`.

UIDs of the images (instead of MediaDap identifiers) will then be returned.

Example:

```
CxtMicroApps.requestMicroApp("firstspirit-media-upload-by-command",  
  {projectId: 202522, folders: ['logos', 'press']})
```

9.3 Starting FragmentCreator with parameterized URL 2019-09

FragmentCreator can be started by passing parameters via URL.

Currently, a special project can be started directly by specifying the project ID in the URL. The corresponding parameter is

```
project
```

Example URL:

```
localhost:8000/fragments?project=12345
```

9.4 Duplicating fragments 2019-04

With the new release, fragments can now be duplicated.



To do this, you can use the new icon in the flyout menu of the fragment in question in the fragment list:



Clicking on the icon directly creates a copy of the fragment with all variants. It can be edited directly.

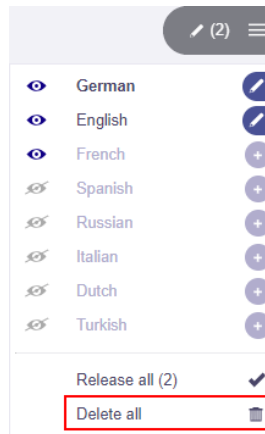
The previous icons in the flyout menu for “Request deletion” and “New Fragment” had no function and have been removed in this context.

Fragments are created using the

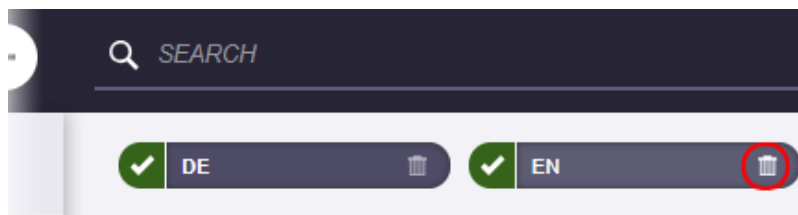


icon in the title bar.

You can delete fragments or variants using the “Delete all” function in the variant selection



or you can delete variants individually:



9.5 Editing fragments and variants from within ContentCreator 2018-12

Fragments and variants can now not just be referenced in ContentCreator, but also edited from within ContentCreator.

Previous behavior:

Via the “Fragment DAP” module, fragments (and variants) can be edited centrally in a fragment project and made available in various target projects (as reference). The fragments are not imported into the target projects, but referenced via the DAP access instead, meaning that physically they remain in the fragment project.

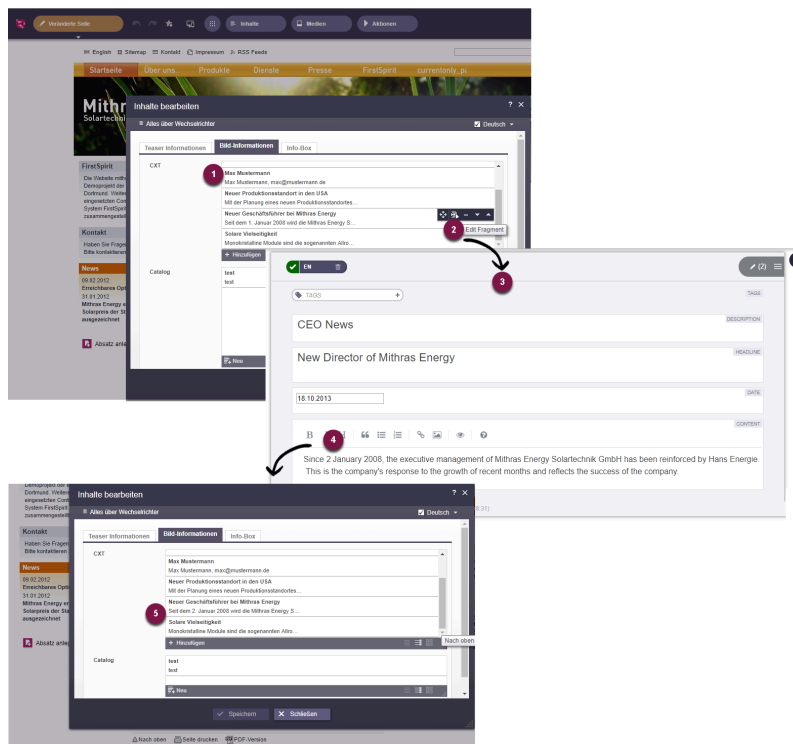
Advantages:

- no additional storage requirements for fragments used in multiple projects.
- simplified editing and management, as all content is stored in a central fragment project.

New functionality:

Fragments and variants can now also be edited from within ContentCreator. To achieve this, a properly configured `FS_INDEX` input component can be created in the project. This causes an “Edit Fragment” button to be displayed to the editor in ContentCreator at all referenced fragments. By clicking on the button, the form from the FragmentCreator is opened as a MicroApp directly within the ContentCreator and can be edited there. The editor can then close the form (FragmentCreator). All changes are directly viewable in the ContentCreator.





Initialize editing a fragment from within ContentCreator

Illustration:

- (1) Display of the referenced fragments or variants in the ContentCreator.
- (2) Insertion of the “Edit fragment” button during mouseover in the ContentCreator.
- (3) By clicking on the button, the form from the FragmentCreator opens as a MicroApp directly in the ContentCreator.
- (4) The contents of the fragment or variant can be edited. Changes are saved automatically.
- (5) The changes to the fragment or variant appear directly in the ContentCreator.

Outlook: The new **integration interface of the CXT** platform was used for this functionality. This interface provides individual functions from the CXT world in form of MicroApps which can then be used in other environments. The integration interface will be further developed in the future and can then be used, for example, to enable the processing of fragments in external applications (e.g. single-page web apps).

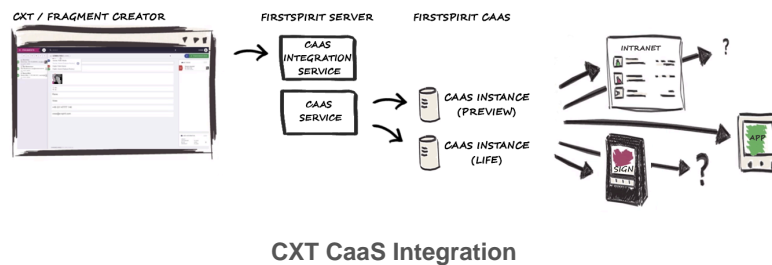


Configuration: To use the new functionality in the ContentCreator, you have to:

- Install the “Fragment DAP” module on the Server.
- Add the web component “Fragment DAP for ContentCreator” in the ServerManager under “Server Properties - Web Applications - ContentCreator”. This web application provides a configuration interface. The URL to the MicroApp must be configured here.

9.6 Delivery of fragments and variants via FirstSpirit CaaS (Content-as-a-Service) 2018-12

The module “CaaS Integration for CXT” enables delivery of a fragment project's content via the universal FirstSpirit CaaS interface so that it may be obtained by various frontends (classical web pages, mobile apps, web shops, digital signage, social media, single-page applications, portals) via pull principle.



CXT CaaS Integration

Benefits:

- The content (fragments and variants) can be reused without limit, requiring no additional implementation effort for a new output channel. The final rendering or the output channel is of no concern here. Once created, these fragments may be used in a wide range of scenarios.
- Content can be published flexibly, both on the corporate level as well as into third-party channels.

The module “CaaS Integration for CXT” contains the **service “CXT CaaS Integration Service”** which, in conjunction with the “**CaaS Service**”, facilitates event-based delivery of project contents. Configuration is done on the project level. If a fragment project is to offer its contents via FirstSpirit CaaS, the **project component “CXT CaaS Integration Configuration”** must be configured with the URL of the CaaS server and with the appropriate API key. Here, two separate CaaS instances are required, one for preview data and one for live data (see illustration).



Following this configuration, contents from the fragment project are output based on events:

- upon change: into one CaaS instance (preview)
- upon release: into another CaaS instance (live)

The exchange of fragments between FirstSpirit CXT and FirstSpirit CaaS is carried out using JSON (JavaScript Object Notation). The output channel of the project must be configured accordingly.

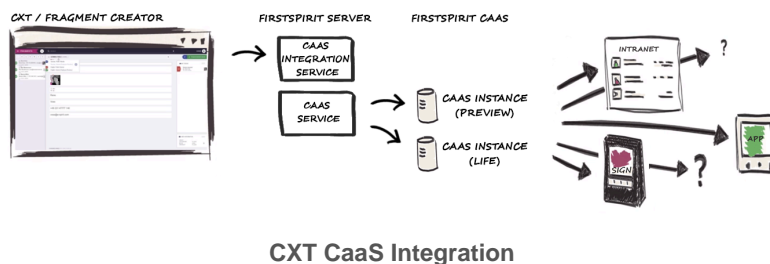
Example for output of fragments/variants in JSON:

```
{
  "fragmentUuid": "$CMS_VALUE(#global.page.parent.uid.replaceAll("_","-"))$",
  "documentUuid": "$CMS_VALUE(#global.page.uid.replaceAll("_","-"))$",
  "variation": $CMS_VALUE(#global.page.meta("variations").toJSON())$,
  "title": $CMS_VALUE(#global.page.meta("title").toJSON())$,
  "text": $CMS_VALUE(text.toHtml().toJSON())$,
  "url": "$CMS_VALUE(url)$"
}
```

For further information, see documentation “Content Experience Tools”.

9.7 Delivery of fragments and variants via FirstSpirit CaaS (Content-as-a-Service) (by schedule entry) 2019-01

The module “CaaS Integration for CXT” enables delivery of a fragment project's content via the universal FirstSpirit CaaS interface so that it may be obtained by various frontends (classical web pages, mobile apps, web shops, digital signage, social media, single-page applications, portals) via pull principle.



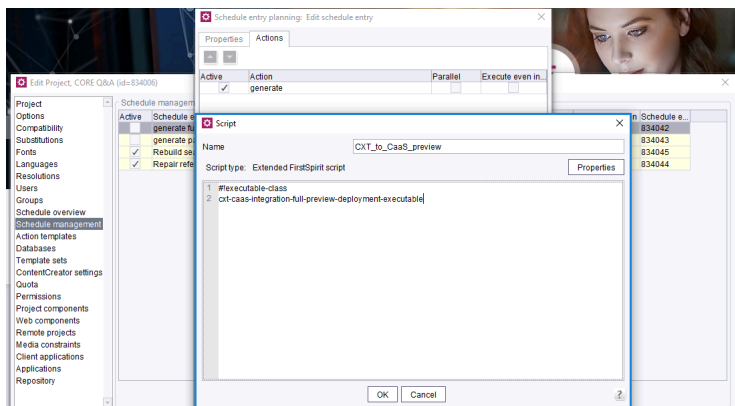
In addition to the event-based transfer of content from a fragment project (see “Delivery of fragments and variants via FirstSpirit CaaS (Content-as-a-Service)”), it is now also possible to publish the entire content of a fragment project (using a schedule entry script) directly via FirstSpirit CaaS.

Two executables are available for this (for deployment on the Live CaaS server and the Preview CaaS server):

- `cxt-caas-integration-full-live-deployment-executable`
(provides all released content)
- `cxt-caas-integration-full-preview-deployment-executable`
(provides all changed content)

The deployment into the two CaaS instances is executed using a schedule entry.

Configuration:



Configuration CaaS integration (schedule entry)

A new default schedule entry is created under “ServerManager” - “Project properties” - “Schedule management”. A new action is created within each job (“Actions” - “Add” - “Execute script”). The corresponding executables are added to these scripts (e.g. `cxt-caas-integration-full-preview-deployment-executable` for providing the project contents on the preview CaaS server).

When the schedule entry is executed, the project contents from the fragment project are made available for publishing on the configured CaaS server. The exchange of fragments between FirstSpirit CXT and FirstSpirit CaaS is carried out using JSON (JavaScript Object Notation). The output channel of the project must be configured accordingly.

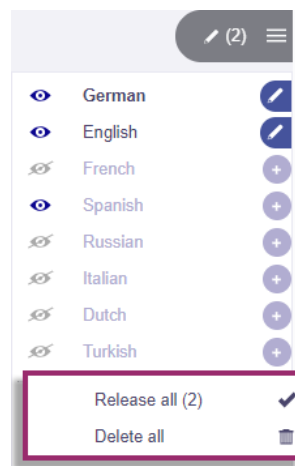


For further information, see documentation “Content Experience Tools”.

9.8 Releasing or deleting multiple variants of a fragment at the same time 2018-12

Editors are now given the option to request release or deletion of all suitable variants of a fragment at the same time.

The according workflows can be called via the variant selection icon of a fragment.



Below the list of all available variants of the current fragment, the list now includes options to call one of the two standard workflows, “Release” and “Delete”.

The following starting conditions are possible:

- All variants of a fragment should be released:
 - clicking **Release all** starts the release process for **all** variants.
- All changed variants of a fragment should be released:
 - clicking **Release changed** starts the release process for all **changed** variants.
- All variants of a fragment (and thus the fragment as a whole) should be deleted:
 - clicking **Delete all** starts the deletion process for **all** variants.



9.9 Global configuration option via a properties file 2019-08

After their installation, certain parameters can/must be configured:

- for CXT clients (“FragmentCreator” module) and
- for data access to external sources via a REST service (“FirstSpirit DAP Bridge” module)

New functionality:

A properties file can now be used in the classpath for configuration. This configuration overwrites all other properties (including the previous configuration via the `web.xml` file).

To do this, first create a config directory in the classpath and then create a file `/config/cxt-fragment-creator.properties`. When using a Tomcat, place the file in the directory `/${TOMCAT_HOME}/lib`. The required parameters can be configured within the file, e.g:

```
markdownEditorType=simplemde
```

Furthermore, values frequently used by the application (e.g. the `firstSpiritDataServiceBaseUrl`) are now managed via the `ApplicationConfiguration` class (package: `de.espirit.cxt.application.ApplicationConfiguration`), in order to provide type-safe access to the configuration.

Previous behaviour:

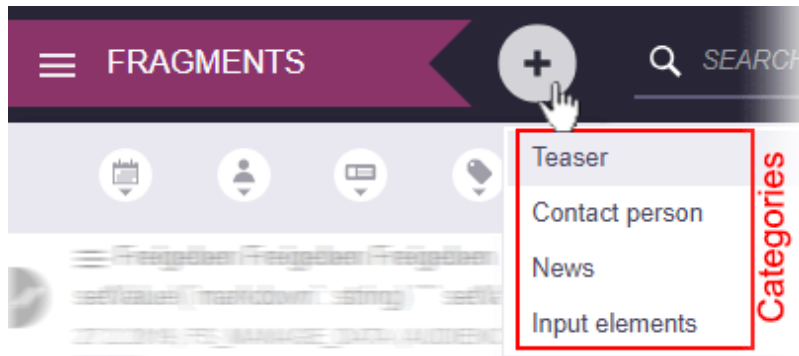
Previously, `FragmentCreator` could be configured primarily via the `web.xml` file (or common Spring Boot configuration).

9.10 Configuring categories 2019-03

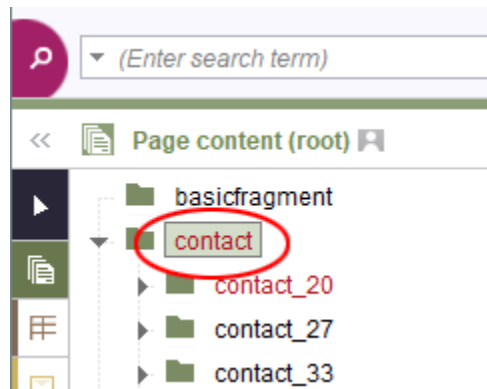
Fragments (and their variants) can have very different structures. For example, a press release requires different information than a product description

For this reason, each of these fragment types (also “Category”) is based on its own page template in the FirstSpirit template store. These can be selected when creating a fragment in `FragmentCreator`:





Fragments that are based on the same page template are combined in a folder in the “Page content” area of the respective FirstSpirit project. There is therefore a folder in the content management for each category, e.g.



Each of these folders must be created manually in the project via the FirstSpirit SiteArchitect. The folder must have the same reference name as the corresponding page template.

Only then does the category become visible in the menu shown above and in the search.

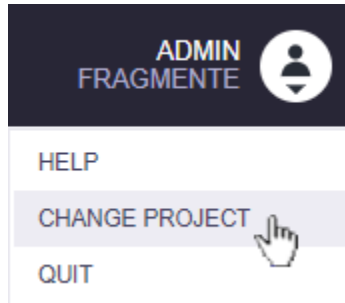
9.11 Multi-tab capability and switching to another project 2019-08

If you want to open and edit several fragment projects at the same time, this was previously only possible to a limited extent.

As of the new release, it is possible to open several projects in several tabs of a browser. The workaround described in the release notes for FirstSpirit 2019-05 of `clientsession=_new` to the URL (CXT-557) is no longer required.



Switching from one project to another project within a browser tab is possible with the new function “Change project” (in the user menu top right):



Click on this menu item to display the list of fragment projects available to the user, which can then be used to start the desired project.

9.12 Behaviour in multi-user operation, locking forms 2019-04

Variants cannot be edited by several editors at the same time.

If a variant was edited by an editor A while it is displayed to an editor B in the editing area, changes made by editor B may not be displayed directly.

In order to prevent data loss and to ensure that each editor always works with the latest version of the variant, all input elements of the variant are locked in the editing area (also known as “forms”) if changes have been made by another editor and the view has not yet been updated.

The following message is output:

```
The changes can not be saved - the element was modified on server.
```

Clicking on

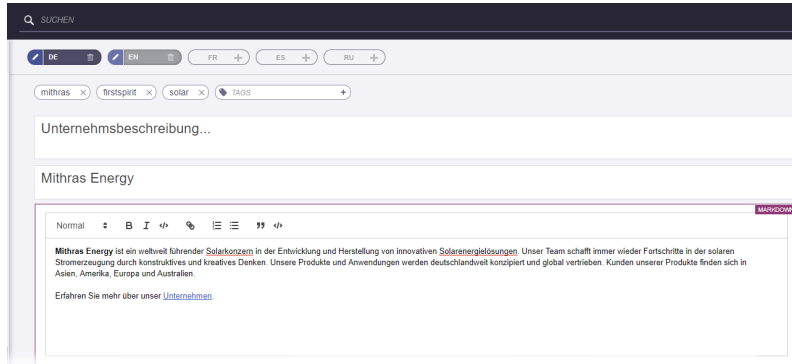
```
CONFLICTING CHANGES! Click here to reload.
```

updates the view and the variant can be edited again.



9.13 New markdown editor: "Quill" 2019-03

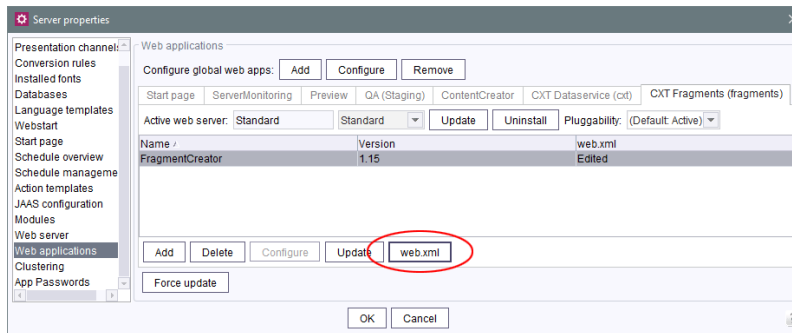
As an alternative to the markdown editor "SimpleMDE" (<https://simplemde.com>) so far used in FragmentCreator, "Quill" (<https://quilljs.com>) can now also be used optionally.



"Quill" offers more WYSIWYG convenience and thus a better user experience for the editor than "SimpleMDE", which is more technically oriented.

The "Quill" integration is currently in the EAP status ("Early Access-Programm"), but has already undergone intensive quality assurance. However, it should first be used on test systems and potential problems reported to e-Spirit promptly.

"Quill" can be activated by adding the following code snippet to the `web.xml` file of the WebApp "FragmentCreator", which is configured in the appropriate global WebApp for FragmentCreator ("FirstSpirit ServerManager / Server properties / Web applications"):



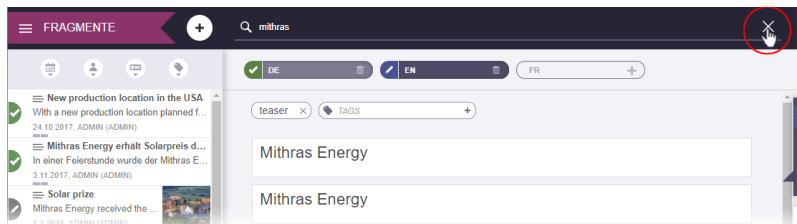
```
<!--
  The markdown editor to be used in this FragmentCreator instance.
  Set to "quill" to enable experimental Quill.js markdown editor.
-->
<context-param>
  <param-name>markdownEditorType</param-name>
  <param-value>default</param-value>
</context-param>
```

To use “Quill”, the value default must be replaced by quill.

9.14 Resetting the search 2019-04

You can carry out a full-text search for existing fragments/variants using the search field of the FirstSpirit FragmentCreator in the title bar.

With the latest release, the process of resetting the search has been simplified – this can now be done using the X icon:



Click to display all fragments/variants in the list again. Existing filter settings remain in place.

9.15 "FirstSpirit Media DAP" and "FirstSpirit Fragment DAP" module updates 2019-01

“FirstSpirit Content Experience Tools” (CXT) enables media (from specific FirstSpirit projects) as well as fragments from other projects to be referenced. The “FirstSpirit Media DAP” (mediadap-[version].fsm) or “FirstSpirit Fragment DAP” (fragmentdap-[version].fsm) modules are used for this purpose. Each module contains data access plug-ins (“DAP”).

With FirstSpirit 2018-12, new interfaces were created in the FirstSpirit Access API which can be used to identify references between objects in FirstSpirit (or to objects outside of FirstSpirit) (CORE-9722). With



FirstSpirit 2019-01, the “FirstSpirit Media DAP” and “FirstSpirit Fragment DAP” modules were converted to this new API to ensure sustainability and consistency.

If one or both of the modules have already been used in an earlier FirstSpirit release, it/they must be updated with the current release.

For more information, see Documentation for “FirstSpirit Content Experience Tools (CXT)”,

- “Installation / Installing modules (ServerManager) / Fragment DAP”
- “Installation / Installing modules (ServerManager) / Media DAP”

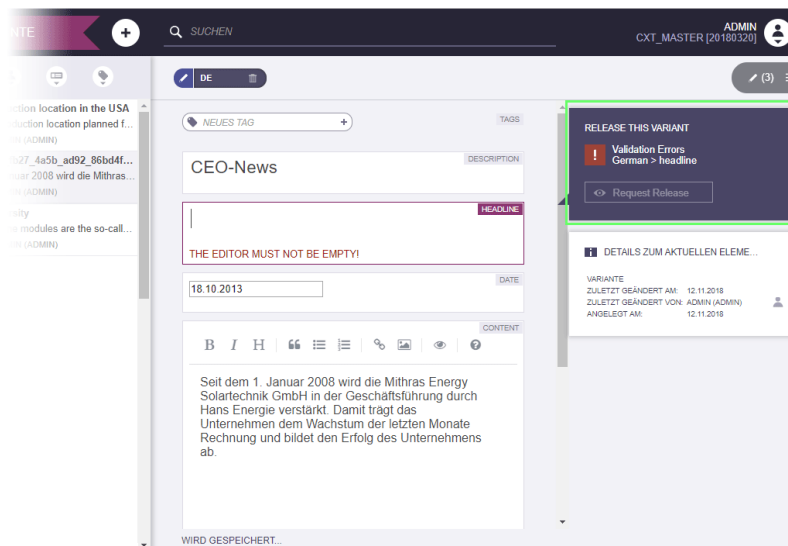
Note: The REMOTEPROJECT license is required to use the aforementioned modules.

9.16 Visualization of validation problems 2018-11

Depending on the project configuration, validation problems (rule violations, recommendations for filling out input components...) can be shown in FragmentCreator.

Validation problems can occur for example, if a required input component was not filled out, if more characters were entered in a text input component than allowed or if input was made that is faulty content-wise or formally.

If an input component is affected by validation problems is shown prominently in the right-hand area of FragmentCreator as of the current release – in addition to already existing borders:



The affected language/s and input components are listed in the new box.

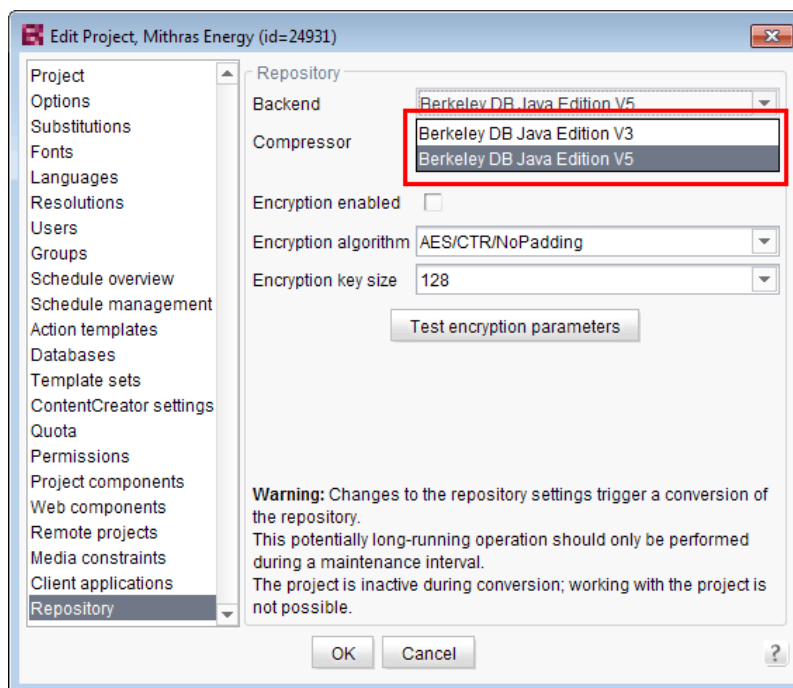
If there are validation problems for a variant, no workflow can be started or forwarded on this variant. When clicking on a action button, a corresponding error message appears.

10 Compatibility

10.1 Downgrade to FirstSpirit 5.1 when using Berkeley DB V5 5.2R3

It is possible – in principle – to downgrade from one FirstSpirit minor version to another (for example from FirstSpirit version 5.2 to FirstSpirit version 5.1), but this is **not an assured product property**. Use of Oracle Berkeley DB version 5 as a repository for content storage (“FirstSpirit ServerManager / Project Properties / Repository / Backend”) can lead to problems when downgrading from FirstSpirit version 5.2 to FirstSpirit 5.1.

In order to downgrade a FirstSpirit server--which has initially been installed with a FirstSpirit version lower than 5.2 and now uses FirstSpirit version 5.2 as well as Berkeley DB version 5--to FirstSpirit version 5.1, the repository of each project must be configured to use Berkeley DB version 3 before conducting the downgrade.



This only applies to servers which have initially been installed with a FirstSpirit version lower than 5.2. A downgrade of servers initially installed with FirstSpirit version 5.2 to a lower version is not possible.

For further information about selecting the desired Berkeley DB version, see *FirstSpirit Manual for Administrators*, chapter “Repository”.

10.2 New layer for Oracle Database 19c 2020-06

The available database layer for Oracle Database 11g/12c is, due to changes in database and driver, not compatible with Oracle Database 19c.

In order to establish FirstSpirit compatibility with Oracle Database 19c a new database layer (Oracle19cLayer) thus had to be implemented.

Generally, you can either simply use a new database layer, or you can update the existing database layer.

Use the new database layer:

In order to use the new database layer (Oracle19cLayer), you simply have to add it in the server properties (ServerManager) in the database section, and configure it according to your local requirements (see [Server properties / Databases](#))

Update existing database layer:

In order to update an Oracle Database 12c used with FirstSpirit to Oracle Database 19c, you can,

- export a FirstSpirit project, and import it as a new project with Oracle Database 19c or
- change database layers by pausing the server, updating the database and manually switching database layers.

Migrating from Oracle Database 11g/12c to 19c without changing the database the new features of Oracle Database 19c can not be used, and we thus do not advise doing so!

Warning! When updating an Oracle Database 12c to 19c you should follow the vendor guidelines.



Note: Oracle 19c support has already undergone extensive testing, but currently still is in “EAP” status (“Early Access Program”). Not all use cases and migration scenarios could be tested. Thus it is important that you extensively check your use cases in a test environment!



The EAP phase will be accompanied through the FirstSpirit Community (community.e-spirit.com). This way questions and problems can be dealt with in a timely manner.

Extensive documentation regarding the use of Oracle Database 19c with FirstSpirit will also be published in the Community soon (initially in German only). The recommendations contained in this documentation for the configuration of the Oracle database and the FirstSpirit server should always be adhered to.

Final release of the new layer is planned for Q3/2020.

11 Media

11.1 Controlling automatically generated images in projects 2019-09

In SiteArchitect and ContentCreator, media files of FirstSpirit projects (images, documents) are managed in the “Media” store. “Image”-type media can occur in different file types (such as JPEG or PNG) and resolutions (e.g. 72 dpi) in a project. Each image is stored as the file type and in the resolution it was originally uploaded with (resolution “Original”).

Some actions trigger an automatic generation of new image files, depending on the original image files, for example:

- generating a preview image
- creating new resolutions
- using an automatically generated resolution
- cropping an image in SiteArchitect

This generation process can now be controlled via parameters, in relation to file type and resolution. This way you can configure image compression rate for JPEGs to achieve increased image quality or reduced file size when generating images. In general:

- high compression = small files = low quality
- low compression = large files = high quality



Project configuration

The preferences can be edited with the custom `ImageWriterParams` project property.

! Custom project properties (`CUSTOM_PROPERTIES`) can exclusively be added via the FirstSpirit Access-API (using `setCustomProperties`) and can not be defined with the FirstSpirit ServerManager (see `Project` interface in package: `de.espirit.firstspirit.access.project`, FirstSpirit Access-API).

Beanshell example script - creating a new configuration:

```
project = context.getProject();
project.lock();
properties = new java.util.LinkedHashMap();
properties.put("thumbnail.jpg.compressionQuality", "0.75");
properties.put("default.jpg.compressionQuality", "0.75");
properties.put("resolution.HeaderPicture.jpg.compressionQuality", "0.95");
properties.put("resolution.HeaderPicture.png.compressionQuality", "0.95");
project.setCustomProperties("ImageWriteParam", properties);
project.save();
project.unlock();
```

All methods of the `ImageWriteParam` class can be configured (see <https://docs.oracle.com/en/java/javase/11/docs/api/java.desktop/javax.imageio/ImageWriteParam.html>). Since some methods depend on each other, parameters should be passed as a `LinkedHashMap` to which they were added in the desired sequence.

Configuration:

`resolution.<RESOLUTION_NAME>.<FILE_TYPE>.<SETTER_METHOD_NAME>`
(with the keyword `set` being optional)

Preview images use `thumbnail` instead of `resolution.<RESOLUTION_NAME>`, as depicted in the example above.

The default value for `compressionMode` is `MODE_EXPLICIT`, but other values can be if desired.

Overwriting an existing configuration with an empty configuration removes the existing configuration.



Beanshell example script - deleting an existing configuration:

```
project = context.getProject();
project.lock();
properties = new java.util.LinkedHashMap();
project.setCustomProperties("ImageWriteParam", properties);
project.save();
project.unlock();
```

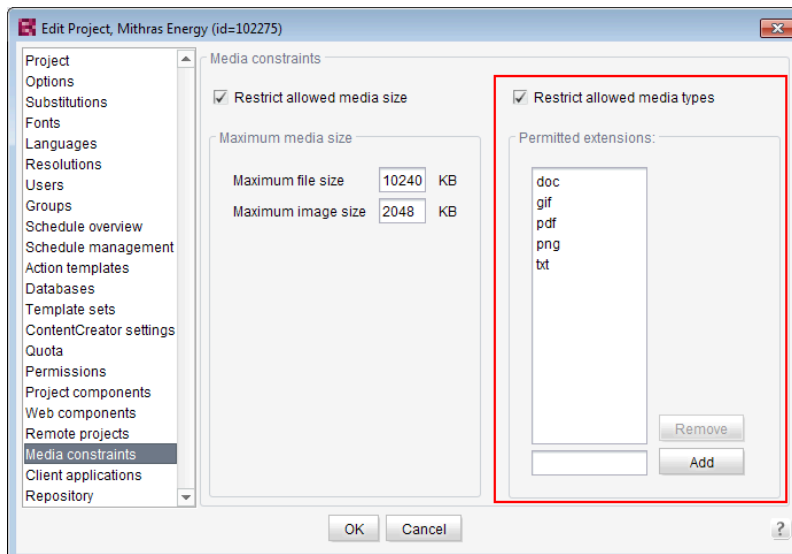
Use the following method to read the current configuration:

```
context.project.getCustomProperties("ImageWriteParam");
```

If no configuration is set, the return value will be <null>.

11.2 Optimized identification of file format of media uploaded via drag-and-drop 5.2R4

Upload of media into the Media store can be limited to certain file formats via the option “Restrict allowed media types” in project settings (“FirstSpirit ServerManager / Project settings / Media constraints”).



File format identification is done by both inspecting the file name extension and analyzing the file contents. This identification check has been optimized in FirstSpirit version 5.2R4.



Furthermore, when uploading media files into a project via drag-and-drop, a more differentiated error message will be shown if a file cannot be uploaded due to its file type, indicating whether the file type is not supported or not allowed.

For further information about this option, see

- *FirstSpirit Manual for Administrators*, chapter “Restrict allowed media types”

11.3 Recognition of file types when uploading media using drag-and-drop improved 5.2R6

Media from the workstation's local file system can be dragged directly into the Media Store of the FirstSpirit project by means of drag-and-drop. The file type is recognized automatically by FirstSpirit. Starting with the current FirstSpirit version this applies also for the following Mime types now:

- `.ascx` (file type in FirstSpirit: “text/plain”)
- `.jar` (file type in FirstSpirit: “application/zip”)
- `.xsd` (file type in FirstSpirit: “text/xml”)

11.4 Support for files with more than one dot character in their names

5.2R5

FirstSpirit now supports upload, saving and deployment of media which contain more than one dot in their file names.

This enables upload of files of type “.tar.gz”, for example. In the example “filename.tar.gz”, the part “gz” will be considered the file name extension, while “filename.tar” will be considered the file name of the medium. This also affects the search settings in SiteArchitect (limiting search results via facets): in search results filtered for file name extension, a file of type “.tar.gz” will be displayed associated with the file name extension “gz” (not “tar.gz”). This must also be considered when defining “Permitted extensions” on the “Media constraints” page of project settings in FirstSpirit ServerManager.

This new functionality is supported in ContentCreator and in SiteArchitect when uploading or creating files via media management functionality as well as via the input component FS_REFERENCE. Besides



files of type “.tar.gz”, use cases include files which carry version information in their names such as “Linux_4.6.4-1.debian.tar.xz”.

11.5 Support for the WebP image format (SiteArchitect) 2019-11

In the latest FirstSpirit release, FirstSpirit supports the upload of images in WebP format via SiteArchitect (via the context menu or via drag-and-drop) by automatically detecting the MIME type.

WebP is a modern image format for static or animated images. WebP offers improved compression, enables better performance when loading pages, faster downloads, and lower data consumption overall (compared with formats such as PNG and JPEG).

Following successful upload, the images are available in the project's [Media Store](#) as [Picture](#) type media.

Note: The upload of media (to the Media Store of a project) can be restricted to certain file formats using the “Restrict allowed media types” option. If restrictions have been defined for a project, the WebP format has to be added to the list of “Permitted extensions” (see [Restrict allowed media types](#)).



It is currently not possible to create new media in WebP format in ContentCreator.

Existing WebP format media (from the Media Store) can be used as follows in SiteArchitect and ContentCreator:

- It can be referenced (e.g., in an input component of type `FS_REFERENCE`)
- It can be cropped
- It can be shown in the preview

Images in WebP format can also be uploaded and referenced in FragmentCreator.

Animation is not supported when editing images in SiteArchitect, i.e. after cropping a WebP image in SiteArchitect, the animation effect is no longer present.





The WebP image format is not supported by all browsers.

11.6 Support for the SVG and WebP graphic formats 2019-12

In the latest FirstSpirit release, FirstSpirit supports the upload of images in SVG format with automatically identifying the MIME type.

In addition, it is now possible to upload images in WebP format in FirstSpirit ContentCreator (in FirstSpirit SiteArchitect, this has been supported since FirstSpirit 2019-11; see the relevant release notes for this).

SVG (Scalable Vector Graphics) is an XML-based vector graphic format. Unlike formats like PNG and JPG, SVG offers scalability without affecting the image quality, which is particularly advantageous for responsive content.

Following successful upload, the images are available in the project's **Media Store** as **Picture** type media.

Note: The upload of media (to the Media Store of a project) can be restricted to certain file formats using the “Restrict allowed media types” option. If restrictions have been defined for a project, the SVG or WebP format has to be added to the list of “Permitted extensions” (see **Restrict allowed media types**).

Previous behavior:

Following successful upload, SVG graphics and WebP images were previously created in the project's Media Store as **File** type media in ContentCreator. While this media could be used or referenced in FirstSpirit, functionalities such as image cropping or the preview image were not available.

Current behavior:

Following successful upload, SVG graphics and WebP images are created in the project's Media Store as **Picture** type media.

This media (of type **Picture**) can be used as follows in SiteArchitect and ContentCreator:

- It can be referenced (e.g., in an input component of type `FS_REFERENCE`).
- It can be cropped.



- It can be shown in the preview.

Images in these formats can also be uploaded and referenced in FragmentCreator.

Notes:

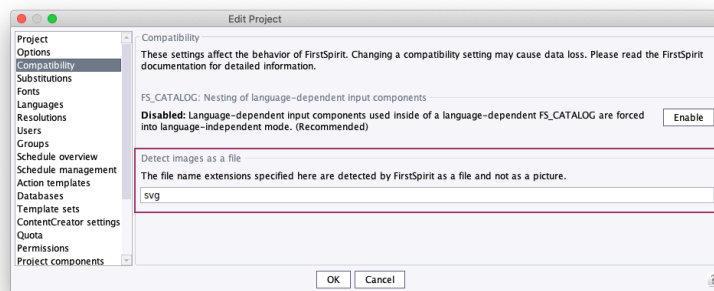
- Any animation effects are **not** retained when SVG or WebP graphics are cropped in FirstSpirit.
- Cropping and rendering of resolutions turn SVGs into bitmap graphics.

Migration information / compatibility mode “Detect images as file”:

For existing media, the type does not switch from **File** to **Picture** automatically:

When you update to the latest version of FirstSpirit, the assignment for existing media in the projects will remain for compatibility reasons.

For this, the compatibility setting “Detect images as a file” is automatically set for the SVG format for existing projects with the file extension “svg” (FirstSpirit ServerManager / Project settings / Compatibility):



Default settings for SVG graphics for existing projects

The following then applies to the FirstSpirit project:

- Existing SVG graphics are still managed as **File** type media in this project.
- Newly created SVG graphics are also identified as **File** type media in this project.

The compatibility setting remains empty for all new FirstSpirit projects (default setting). The following applies here:



- With newly created media, SVG graphics are now automatically identified as **Picture** type media and a preview image is calculated.



If the compatibility mode set automatically for SVG graphics is not required for a project, the configuration must be changed here manually.

WebP images are currently identified as **Picture** type media by default. If they are supposed to be managed as **File** type media, the file extension “webp” must be added to the “Detect images as a file” field. Additional file extensions can also be added if required. Separate multiple file extensions with commas.

12 Module Development, Scripts, API

12.1 "Isolated mode" is released 2019-02

The main goal of the “Isolated mode” of the FirstSpirit server is to give developers of modules greater freedom in selecting the libraries they use. Especially the potential conflicts with libraries supplied by the FirstSpirit core should be hereby minimised.

With the current release the “Isolated mode” is released.

- As of this release, **new** FirstSpirit servers should be installed using the installation archive `fs-install-[version].tar.gz`. When using this archive, the server is installed in “Isolated mode” by default. If modules are used, they should be Isolated-capable in order to ensure smooth operation.
- **Existing** FirstSpirit modules that have not yet been converted to “Isolated mode” are still executable.

If these contain a web component that uses libraries that are not available in the module, it may be necessary to use the **Compatibility module** until the module is migrated to “Isolated mode”. No other adjustments are necessary in the short term. In the medium term, however, all resources in modules should be adapted to the new conditions in order to benefit from the advantages of “Isolated mode”.

“Legacy mode” will be dropped in the medium term, all modules and servers should be converted by then. Before the “Legacy mode” is dropped, this will be announced at an early stage.



For more information please see [FirstSpirit Manual for Module Developers](#), Chapter “Isolated mode” (or on local FirstSpirit servers in the online help in the left-hand navigation bar under “Manual for Module Developers (Beta)”).

If you require assistance with the migration, please contact e-Spirit Technical Support. There you will also get access to the “FSM Dependency Checker” tool, which can be used to analyse internal and external dependencies of existing FirstSpirit modules.

12.2 Discontinuation ("Deprecation") of methods for the "Content2" interface 5.2R2

The following methods in the Content2 (FirstSpirit Access API, `de.espirit.firstspirit.access.store.contentstore` package) have been discontinued in FirstSpirit version 5.2R2 (“Deprecation”) and can be omitted in the next FirstSpirit major version (6.0).

- `delete(Entity entity)`
[Replacement: `StoreElement.delete()`]
Package `de.espirit.firstspirit.access.store`, Interface `StoreElement`
- `isLocked(Entity entity)`
[Replacement: `StoreElement.isLocked()`]
Package `de.espirit.firstspirit.access.store`, Interface `StoreElement`
- `isLockedOnServer(Entity entity, boolean allSessions)`
[Replacement: `StoreElement.isLockedOnServer(boolean)`]
Package `de.espirit.firstspirit.access.store`, Interface `StoreElement`
- `lock(Entity entity)`
[Replacement: `Dataset#setLock(true)`]
Package `de.espirit.firstspirit.access.store`, Interface `StoreElement`
- `release(Entity entity)`
[Replacement: `IDProvider.release()`]
Package `de.espirit.firstspirit.access.store`, Interface `IDProvider`



- `release(Entity entity, String comment)`
[Replacement: `IDProvider.release()`
Package `de.espirit.firstspirit.access.store`, Interface `IDProvider`]
- `unlock(Entity entity)`
[Replacement: `Dataset#setLock(false)`
Package `de.espirit.firstspirit.access.store`, Interface `StoreElement`]

Methods set to the “deprecated” state can still be used, but as they will be omitted in subsequent versions, this is not advisable. If methods, classes, and interfaces that are no longer supported or are set to deprecated are used in scripts and/or modules, entries are written to log files accordingly (e.g., server log, generation log, etc.). The corresponding log entries should be checked and the cause(s) remedied.

For more information and replacement options, see *FirstSpirit Access API*.

12.3 Deprecation: "Legacy mode" will be discontinued in the future

2019-06

Since the introduction of “Isolated mode” for the FirstSpirit server, modules can be developed in two different modes (“isolated” and “legacy”).

With the current release the “legacy mode” is deprecated. “Legacy mode” will be dropped in the medium term. All modules and servers should be converted by then. Before the “Legacy mode” will be dropped, this will be announced in the Release Notes at an early stage.

“Legacy mode” is replaced by “Isolated mode”. The main goal of the FirstSpirit server's “Isolated mode” is to give module developers greater freedom in selecting the libraries they use. Especially the potential conflicts with libraries supplied by the FirstSpirit core should be hereby minimised. **“Isolated mode” was released with FirstSpirit Release 2019-02.**

- As of this release, **new** FirstSpirit servers should be installed using the installation archive `fs-install-[version].tar.gz`. The installation archive `fs-install-[version].tar.gz` will also be released with the current release. When using this archive, the server is installed in “Isolated mode” by default. If modules are used, they should be Isolated-capable in order to ensure smooth operation.



- **Existing** FirstSpirit modules that have not yet been converted to “Isolated mode” are (still) executable. If these contain a web component that uses libraries that are not available in the module, it may be necessary to use the **Compatibility module** until the module is migrated to “Isolated mode”.

No other adjustments are necessary in the short term. In the medium term, however, all resources in modules should be adapted to the new conditions in order to benefit from the advantages of “Isolated mode”.

For more information please see **FirstSpirit Manual for Module Developers**, Chapter “Isolated mode” (or on local FirstSpirit servers in the online help in the left-hand navigation bar under “Manual for Module Developers (Beta) / Isolated mode”).

If you require assistance with the migration, please contact e-Spirit Technical Support. There you will also get access to the “FSM Dependency Checker” tool, which can be used to analyse internal and external dependencies of existing FirstSpirit modules.

12.4 Update of Web Applications 5.2R4

In its default configuration, a FirstSpirit server uses the integrated Jetty software as HTTP server and servlet engine. If Jetty is deactivated (`INTERNAL_SERVLET_ENGINE=0` in the file `fs-server.conf`), the local FirstSpirit web directory was not updated during an in-place update of the FirstSpirit server software. If this web directory was also used by another web server, this caused the software versions used by this web server to become outdated. As of FirstSpirit version 5.2R4, during every update of the FirstSpirit server software, the necessary roll-out of the web applications it contains will take place even if Jetty is deactivated.

Moreover, entries of web applications in the file `fs-webapp.xml` whose directories do not exist will be ignored during server start-up. This does not affect FirstSpirit's own web applications.

For further information, see *FirstSpirit Manual for Administrators*, chapters

- “Web server configuration (fs-webapp.xml)”
- “Web server”



12.5 General information 5.2R2

It is recommended for all FirstSpirit server updates to newly create all self-produced modules vis-a-vis the new FirstSpirit version, when upgrading to FirstSpirit version 5.2R2, particularly when using the *PreviewParameter* interface (*de.espirit.firstspirit.client.mpp* package). In addition to this, all the installed modules delivered by e-Spirit and all web applications should also always be updated.

12.6 Changes to GOM implementation class "GomButton" 5.2R14

In the GOM implementation class `GomButton`, the type of the attributes `onClick` and `onDrop` has been changed from `String` to `GomButtonScriptReference`. Programmatic uses of this class may require modifications to their source code in order to observe this type change.

12.7 Example modules for accessing web services via OData and SOAP converted to Isolated Mode. 2019-06

e-Spirit provides two example modules that contain `DataAccessPlugin` implementations for access to web services via the standardized protocols Open Data Protocol (OData) and Simple Object Access Protocol (SOAP). Each of these modules may be configured to access one or more web services of the specific type. The data from these web services is then made available in input components of type `FS_INDEX`.

The example modules were adapted as part of the conversion of the FirstSpirit modules to "Isolated mode":

- The **display name of the modules** (tag `<displayname>`) was supplemented by **the addition (I, L)**. This indicates that the respective module can be operated both on FirstSpirit servers that are already running in "Isolated mode" and on servers that are still running in "Legacy mode". The unique identifier / name of the modules (tag `name`) remains unchanged.
- The **build process** for both modules was switched from Apache Ant **to Gradle**. Together with the **FirstSpirit Module Gradle Plugin**, the Gradle build management tool supports the creation of FirstSpirit modules and simplifies the entire build process. Both Gradle and the Gradle plug-in are delivered in a current version together with the example modules. Documentation of the Gradle plug-in will follow soon.



General information on the modules can be found at: <https://docs.e-spirit.com/odfs/plugin-development/examples/modules-accessi/index.html>.

For special information on the build process see: <https://docs.e-spirit.com/odfs/plugin-development/examples/modules-accessi/compilation-ins/index.html>.

12.8 API extension for generating references (ReferenceConstructionAgent and ValueReferencesJournal) 2020-04

Essential FirstSpirit functions are based on a project's reference graph which is used to identify dependencies of objects within complex projects.

To generate references via the FirstSpirit Developer API, an agent of the type `ReferenceConstructionAgent` is required. A `ReferenceConstructionAgent` can then be used to generate instances of the type `ReferenceHolder`.

The `ReferenceConstructionAgent` (FirstSpirit Developer API, package `de.espirit.firstspirit.client.access.editor`) was expanded with the latest FirstSpirit release to include methods which enable references to be generated on the basis of meta information (via the unique identifier (UID) and `IDProvider.UidType` of a FirstSpirit object or via the global identifier (GID) for references to datasets). Previously, an instance of the type `IDProvider` was required in order to generate references.

New methods in the `ReferenceConstructionAgent`:

```
IDProviderReferenceHolder create(String uid, IDProvider.UidType uidType,...);
```

```
IDProviderReferenceHolder create(String schemaUid, String entityTypeName,...);
```

The `ValueReferencesJournal` interface (FirstSpirit Access API, package `de.espirit.firstspirit.client.plugin.dataaccess.aspects`) was also optimized at the same time. In the latest FirstSpirit release, methods that were specifically provided for adding defective references (broken references) are marked as “deprecated”. Instead, the interface has been expanded with new methods which can be used to add defective as well as regular references (e.g., in a `DataAccessProvider`). The desired object is simply transferred when adding the reference – the system will check by itself whether the target object is accessible or not and evaluate the reference accordingly.



The new method in the ValueReferencesJournal interface

```
addReferenceToElement(final String uid, final IDProvider.UidType uidType,...);
```

replaces the previous method, for example:

```
addBrokenReferenceToElement(String uid, IDProvider.UidType uidType,...);
```

12.9 API Extension: RenderingAgent - Generating FirstSpirit content via API 5.2R15

FirstSpirit content may be generated via the interface `RenderingAgent` (package: `de.espirit.firstspirit.agency`, FirstSpirit Developer API). This allows for control of individualized generation of specific dynamic content directly via the API.

Example:

```
import de.espirit.firstspirit.agency.RenderingAgent;
import de.espirit.firstspirit.access.store.IDProvider
IDProvider node = ..;
String content = context.requireSpecialist(RenderingAgent.TYPE).createRenderer(node)
    .templateSet("html")
    .language("EN_US")
    .preview()
    .render();
```

The example returns the generated content for the node passed to the specialist object.

Supported FirstSpirit object types:

- Page
- Section
- PageRef
- Dataset (including subclasses)



- parsed media

12.10 Reacting to page navigation events in ContentCreator 5.2R13

ContentCreator provides a JavaScript API which allows control of some aspects of the user interface and the preview. This API's `Common` object has been extended with the method `addPreviewElementListener(PreviewElementListener listener)`. The listener receives events pertaining to changes of the current preview element in ContentCreator. If a page navigation event is detected, the listeners' `onChanged(FSID)` function will be called. Depending on the current preview element, the FSID of the page reference or the FSID of the content projection will be passed as a parameter.

This API is accessed via the JavaScript object `top.WE_API`. The API can be used in preview HTML as well as in JavaScript-based actions (e.g. InlineEdit buttons or report actions). Additionally, the JavaScript API for ContentCreator can be used from within FirstSpirit scripts and executable classes by using a specialized operation (see *Template development / JavaScript APIs / ContentCreator (→FirstSpirit Online Documentation)*).

Example:

```
<script type="text/javascript">
  function handlePageReload(fsid) {
    if (fsid.getContentId() != -1) {
      // Page is based on a dataset
      console.log("This page is based on a dataset with contentID "
        + fsid.getContentId() + " and content2ID " + fsid.getContent2());
    } else {
      // Page is based on a "normal" Pageref
      console.log("This page has the pagerefID " + fsid.getPageref());
    }
  }
  // Register function "handlePageReload" as a page reload listener
  top.WE_API.Common.addPreviewElementListener(handlePageReload);
</script>
```



12.11 Schedules: Creating and configuring an archival schedule action via API (de.espirit.firstspirit.access.schedule.ProjectCleanupTask) 5.2R9

By using the schedule action “Archive old project states” (FirstSpirit ServerManager / Project properties / Schedule management / Add / Actions) it is possible to swap out files which are not longer required (automatically and regularly at a defined point in time), therefore increasing the performance of the FirstSpirit server.

Until now it was only possible to create and configure such a schedule using the graphical interface. With the current version of FirstSpirit, this can also be achieved by using the API. For this purpose the interface `ProjectCleanupTask` in the package `de.espirit.firstspirit.access.schedule` has been added (FirstSpirit Developer API).

12.12 Output format of function "previewId(..)" changed 2018-08

The output format of the generation function `previewId(..)` has been changed. We recommend to update the data stored in the Preview-CaaS with version FirstSpirit 2018-08.

12.13 Handling dependent modules 5.2R2

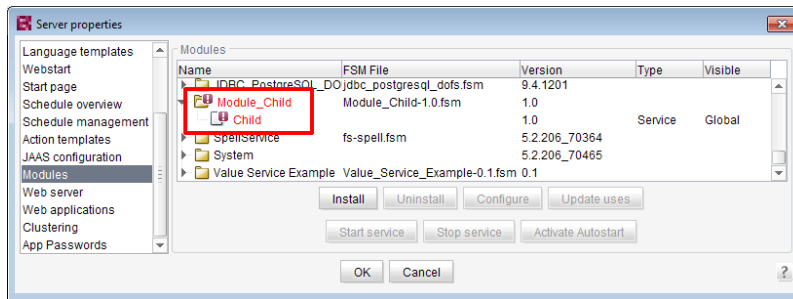
It is possible to define dependencies between FirstSpirit modules. This takes place using the entry

```
<dependencies>
  <depends>modulname</depends>
</dependencies>
```

in the `module.xml` file for the dependent module (“child”).

With FirstSpirit version 5.2R2, both those modules which contain a `<dependencies><depends>` specification (“child”), and those referenced by this specification (“parent”) are uninstalled from the FirstSpirit Server (“Uninstall” button) – even if the dependent module is no longer available on the server. “child” modules whose “Parent” module is no longer on the server are visualized in the FirstSpirit ServerManager (“Server properties / Modules”) with an appropriate icon:





A tool tip lists the names of the missing dependent modules.

It is possible to use the newly implemented `isActive` method (FirstSpirit Developer API, `ModuleAdminAgent` interface) in this context to check whether a module has missing references to other modules.

For more information, see

- *FirstSpirit Developer Manual for components (German only)*, chapters “Modul-Ereignisbehandlung” and “Der Modul-Deskriptor”
- *FirstSpirit Manual for Administrators*, chapter “Module”
- *FirstSpirit Developer API*, `ModuleAdminAgent` interface (`de.espirit.firstspirit.agency` package)

12.14 Examples for integration of external data sources using generic `DataAccessPlugins` 5.2R5

As of FirstSpirit version 5.2R5, source code packages are available that contain example modules for integration of external data sources in FirstSpirit using generic `DataAccessPlugins`. These modules allow integration of web services that use Open Data Protocol (OData) and Simple Object Access Protocol (SOAP), respectively, as data sources for `FS_INDEX` input components, i.e. such data sources become usable without creating own Java implementations.

Manuals for compilation, installation, configuration, and use of the modules are available in *FirstSpirit Online Documentation*, chapter “Plug-In Development / Examples / Modules: Accessing Web Services via OData/SOAP”.



12.15 ContentCreator JavaScript API "WE_API": FSID can now work with language dependency 2018-09

In the ContentCreator JavaScript API "WE_API", the FSID object was extended to include a project language (parameter `language`).

This FSID object is used by the WE_API to represent a FirstSpirit store element. For example, the JavaScript call

```
WE_API.Common.setPreviewElement({id: 74656, store: "sitestore", language: "DE"})
```

loads the structure element with ID 74656 and with the project language German in the preview. For this, the function `setPreviewElement` accepts an FSID parameter which is formatted as a JSON string.

The parameters supported by the FSID object are listed in the FirstSpirit API documentation: interface `FSID` in package `de.espirit.firstspirit.webedit.client.api` (FirstSpirit Developer API).

The new API can be used in *FirstSpirit Omnichannel Manager* (TPP), for example, to work with language-dependent objects.

12.16 ContentCreator: Modify view of the dialog "Manage media" (de.espirit.firstspirit.webedit.plugin.media) 5.2R7

By using the package `de.espirit.firstspirit.webedit.plugin.media` (FirstSpirit Developer API) it is possible to implement project-specific extensions for the dialog "Manage media" in the ContentCreator.

The new methods in the interface `MediaManagementContext`

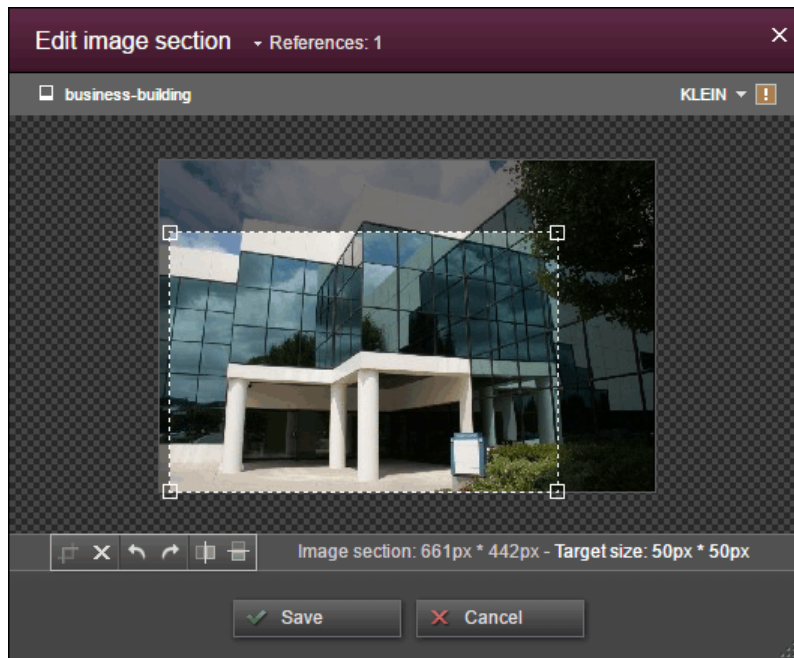
- `refresh()` it is possible to refresh the view of the dialog (e.g. when a new medium has been added)
- `show(MediaFolder folder)` it is possible to display a specific folder.



12.17 ContentCreator: Opening the "Edit image section" dialog via API

5.2R5

Image sections (crops) of media elements of type "Picture" may be edited in ContentCreator using a specialized dialog:



As of the current FirstSpirit version, this dialog may now be opened via the FirstSpirit Developer API:

```
de.espirit.firstspirit.webedit.server.CropDialogOperation
```

The parameter `media` passed to the method `setMedia(Media media)` specifies the media element which should be edited.

The parameter `resolutions` passed to the method `setResolutions(List<Resolution> resolutions)` contains resolutions of the image which should be available for editing in the dialog. If this list contains no resolutions or only resolutions which are unknown within the current project, all resolutions specified in the project, with the exception of the resolution "ORIGINAL", will be made editable. If the list contains several other resolutions along with "ORIGINAL", the resolution "ORIGINAL" will be ignored and not made available for editing.



The following example script (“cc_crop”) opens the image section dialog if an image is dropped onto an accordingly configured FS_BUTTON input component in the preview.

```
import de.espirit.firstspirit.agency.LanguageAgent;
import de.espirit.firstspirit.agency.OperationAgent;
import de.espirit.firstspirit.agency.ResolutionAgent;
import de.espirit.firstspirit.agency.TransferAgent;
import de.espirit.firstspirit.access.store.IDProvider;
import de.espirit.firstspirit.access.store.mediastore.Media;
import de.espirit.firstspirit.webedit.server.CropDialogOperation;
if (dropdata == null) {
    return false;
}
transferAgent = context.requireSpecialist(TransferAgent.TYPE);
elements = dropdata.get(transferAgent.getType(IDProvider.class));
if (elements == null || elements.isEmpty()) {
    return false;
}
media = elements.get(0);
if (media == null || !(media instanceof Media) ) {
    return false;
}
languageAgent = context.requireSpecialist(LanguageAgent.TYPE);
lang = null;
for (language : languageAgent.getLanguages().iterator()) {
    if ("EN".equals(language.getAbbreviation())) {
        lang = language;
    }
}
resolutionAgent = context.requireSpecialist(ResolutionAgent.TYPE);
resolutions = new ArrayList();
resolutions.add(resolutionAgent.getResolutionByName("Teaser"));
resolutions.add(resolutionAgent.getResolutionByName("HeaderPicture"));
operations = context.requireSpecialist(OperationAgent.TYPE);
operation = operations.getOperation(CropDialogOperation.TYPE);
operation.setMedia(media);
if (lang != null && media.isLanguageDependent()) {
    operation.setLanguage(lang);
}
operation.setResolutions(resolutions);
operation.perform();
```

Example configuration of the FS_BUTTON input component:



```

<FS_BUTTON
  name="pt_cropButton"
  hidden="yes"
  onDrop="script:cc_crop"
  style="firstspirit"
  useLanguages="no">
  <DROPTYPES>
    <TYPE value="picture"/>
  </DROPTYPES>
  <LANGINFOS>
    <LANGINFO lang="" label="Crop a Picture"/>
  </LANGINFOS>
</FS_BUTTON>

```

Example for HTML output:

```

<span$CMS_VALUE(fsbutton(editorName:"pt_cropButton"))$></span>

```

If a media element that is of type `File` or is an object of type `Picture` which does not contain image data is passed to the method `setMedia(Media media)`, according exceptions will be logged to the file `fs-server.log`, and the image section dialog will not be opened.

For further information about image section editing in ContentCreator, see *FirstSpirit Manual for Editors (ContentCreator)*, chapter “Editing a preview page / Media”, section “Edit image sections”.

12.18 ContentCreator: Detection of the user interface language ("Locale") selected by the current user 5.2R7

FirstSpirit supports a multi-language concept that pervades all aspects of FirstSpirit. This concept differentiates between:

- User interface language (also called “Locale”):** This language is selected via the combobox on the FirstSpirit Start Page. It specifies the language commonly used in the user interface, such as that of menu labels, dialog texts and content that is not maintained in a language-dependent fashion by editors and template developers in a project. Currently, FirstSpirit supports the user interface languages German, English, French, Spanish, Russian, Italian, and Dutch.



- **Project language:** Project developers specify in which languages editorial content may be entered (via “input components”). As a rule, this content will then be output on a web page in the various language variants of a page. A language selection control may be used to switch to another language of the web page. The project language may differ from the selected user interface language: FirstSpirit does not provide Portuguese as a user interface language, but Portuguese-language content can of course be maintained within FirstSpirit.
- **Editorial language:** An editorial language (also called “display language”) may be used by project developers to influence the display of input elements and other objects in ContentCreator. Such editorial languages are used for labels of input components, tool tips, and elements of a selection list (“combobox”), among others.

As of the current FirstSpirit version, it is possible to detect the user interface language of ContentCreator, selected by the current user, via the method `getLocale()` of the FirstSpirit Developer API interfaces

- `WebeditUiAgent` (package `de.espirit.firstspirit.webedit`):
`de.espirit.firstspirit.webedit.WebeditUiAgent.getLocale()`
- `Common` (package `de.espirit.firstspirit.webedit.client.api`):
`WE_API.Common.getLocale()`

For further information, see *Template development / JavaScript APIs / ContentCreator / Common Functionality* (→*FirstSpirit Online Documentation*).

12.19 ContentCreator: Extended configuration possibilities for information displays (WE_API) 5.2R15

FirstSpirit provides a JavaScript API (`WE_API`) which allows interaction with the user interface of ContentCreator. This API has been extended for information displays:

- `Common` (package `de.espirit.firstspirit.webedit.client.api`):
`WE_API.Common.showMessage(String title, String text)`

Already available: `void showMessage(String text)` displays a simple message box with an “OK” button which supports configuration of only the message box text. The message box will always be shown as an information message. The button configuration cannot be changed.



Newly available: the function `void showMessage(String title, String text)` supports configuration of the message box title in addition to configuration of the message box text.

Example:

```
<script type="text/javascript">
  top.WE_API.Common.showMessage("Important message:", "I am a sample message box.");
</script>
```

12.20 ContentCreator: Using dropdown menus via API 5.2R5

The newly-added interface `SelectOptionOperation` (FirstSpirit Developer API, package `de.espirit.firstspirit.webedit.server`) allows developers to use a lightweight dropdown menu for selection of a value within the ContentCreator preview, e.g.



In this example, the dropdown menu appears upon clicking an `FS_BUTTON` input component rendered in the preview (“Select an option”) and configured as follows:



```

<FS_BUTTON
  name="pt_selectOption"
  hidden="yes"
  onClick="script:cc_select_operation"
  style="firstspirit"
  useLanguages="no">
  <LANGINFOS>
    <LANGINFO lang="" label="Select an option"/>
    <LANGINFO lang="DE" label="Wählen Sie eine Option"/>
  </LANGINFOS>
</FS_BUTTON>

```

The dropdown menu allows selection among options 1 through 5. These options can be added to the dropdown using the method `SelectOptionOperation#addOption(String label, String value)`. Every single call to this method can add one item to the dropdown menu, where `String label` is the human-readable label shown in the menu and `String value` represents the internal value.

Example script (“cc_select_operation”):

```

import de.espirit.firstspirit.webedit.server.SelectOptionOperation;
import de.espirit.firstspirit.agency.OperationAgent;
import de.espirit.firstspirit.ui.operations.RequestOperation;
operations = context.requireSpecialist(OperationAgent.TYPE);
operation = operations.getOperation(SelectOptionOperation.TYPE);
operation.addOption("Option 1", "1");
operation.addOption("Option 2", "2");
operation.addOption("Option 3", "3");
operation.addOption("Option 4", "4");
operation.addOption("Option 5", "5");
selection = operation.perform();
if (selection != null) {
    request = operations.getOperation(RequestOperation.TYPE);
    request.perform("Your selection: " + selection);
}

```

Once the user selects an item in the dropdown list, this selection is then output in a dialog.

The `FS_BUTTON` can be rendered in the preview using the function `fsbutton(...)`:

```

<span$CMS_VALUE(fsbutton(editorName:"pt_selectOption"))$></span>

```

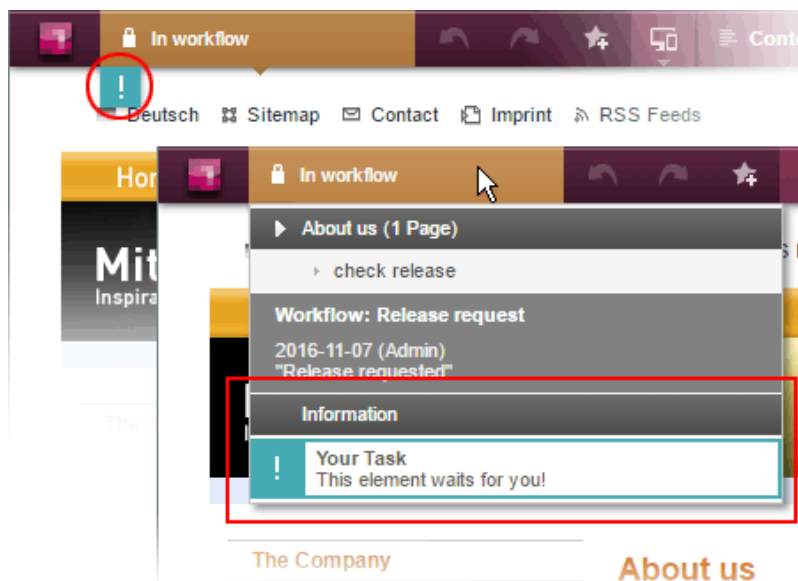


See also *Plug-In Development / ContentCreator Extensions / Interactive Features / Selection Lists* (→*FirstSpirit Online Documentation*).

12.21 ContentCreator: Displaying page-related status information prominently 5.2R6

At the left end of the ContentCreator toolbar, the page status display provides information about the status of the page currently shown in the preview and allows users to perform actions based on that status. For better organization, these actions are only made available in a flyout that is shown once the user hovers the mouse pointer over the page status display.

Page-related status information that is especially important for the editorial process may now be added via a new plugin type using the FirstSpirit API. This information will be displayed prominently in the ContentCreator user interface:



In this example, an entry is added to the status menu if the current page is in a workflow. Additionally, a prominent “!” icon will be displayed underneath the page status display if the user has been explicitly set as an editor in the workflow. This example is implemented in the “ContentCreator Examples”, available as a source code package in *FirstSpirit Online Documentation*, chapter “Plug-In Development / Examples”.

The basis for this plugin is the interface `WebeditStatusNotePlugin` (FirstSpirit Developer API, package `de.espirit.firstspirit.webedit.plugin.status`). Based on information about the



currently shown page, given by a `WebeditStatusNoteContext` object, the status note plugin delivers a list of `WebeditStatusNote` objects.

`WebeditStatusNote` objects can be created via a `WebeditStatusNoteBuilder` object that may be obtained by calling `WebeditStatusNoteContext#createNote`.

Using such a `WebeditStatusNoteBuilder` object, the following attributes of a `WebeditStatusNote` may be configured before creating the note object (example data is based on the above illustration):

- title (e.g. “Your Task”)
- text (e.g. “This element waits for you!”)
- icon (e.g. an exclamation mark)
- color (e.g. teal)
- related actions

In order to ensure a consistent design, the color must be chosen from a color palette given in the Enum `WebeditColor` (package `de.espirit.firstspirit.webedit`).

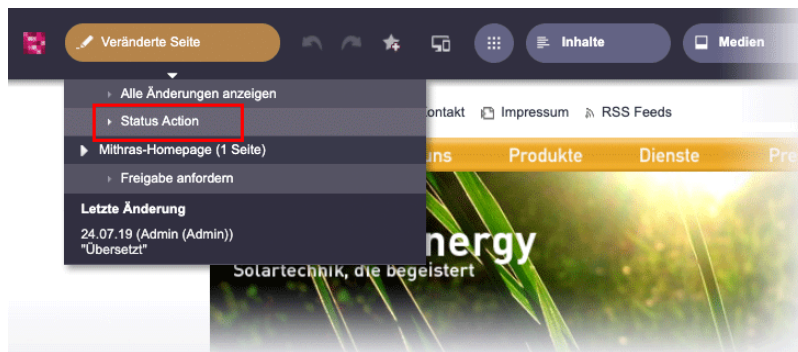
For further information, see *FirstSpirit Manual for Editors (ContentCreator)*, chapter “Menu functions / Page status”, and *Plug-In Development / ContentCreator Extensions / Interactive Features / Page-Based Notifications* (→*FirstSpirit Online Documentation*).

12.22 ContentCreator: Enhance status menu with client-side actions

2019-08

The context type `status` has been added to the ContentCreator JavaScript API / `WE_API` for client-side actions. This allows the “Page status” menu to be extended by own actions using the method `addItemPlugin` in the class `Common` (FirstSpirit Developer API, package `de.espirit.firstspirit.webedit.client.api`), for example





Code example:

```
WE_API.Common.addItemPlugin("status", function clientItemsPlugin(context, receiver) {
    var fsid = context.getProperty("fsid");
    var items = [];
    items.push(context.createItem(null, "Status Action", function clientItemPerformable() {
        // Perform action
        alert("User clicked on Custom Action. Current element: " + fsid.getId());
    }));
    receiver(items);
});
```

Adds a “Status Action” item to the Status menu and displays a dialog box with text when the menu item is clicked.

In addition, the “Display all changes” menu item is now also automatically hidden if an external web application is used for preview in ContentCreator (“FirstSpirit ServerManager / Project properties / ContentCreator settings / External Preview URL”), e.g. in “FirstSpirit Omnichannel Manager” scenarios. For technical reasons this menu item has no function there.

12.23 ContentCreator: Use of "setTitle" for a dialog's main title 5.2R7

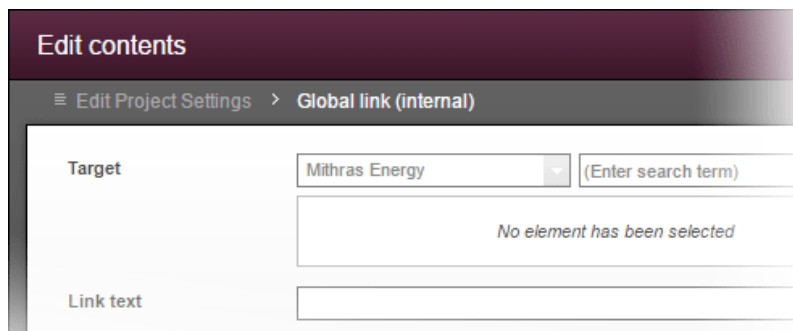
The `ShowFormDialogOperation` interface (package `de.espirit.firstspirit.ui.operations`, FirstSpirit Developer API) allows creation and configuration of project-specific dialogs for both SiteArchitect and ContentCreator.

In ContentCreator, the title text that may be set for such a dialog via the method `setTitle(String title)` is now also used for the dialog's main title (berry-colored background), e.g.





Previously, the title text was only used in the dialog's secondary labeling (grey background), and the main title text could not be influenced:



12.24 DAP: New aspect "UrlSupporting" for URL generation 2020-03

You can use the input component FS_INDEX to connect external components or modules that are to make data available to the input component. The data is made available using "DataAccessPlugins". This data can then be selected (that is, referenced) using FS_INDEX. Function and appearance of "DataAccessPlugins" depends to a great extent on the individual implementation of the plug-in. The implementation of a "DataAccessPlugin" uses the packages `de.espirit.firstspirit.client.plugin.dataaccess` and `de.espirit.firstspirit.client.plugin.dataaccess.aspects` of the FirstSpirit Developer API and others.

With the current release the package `de.espirit.firstspirit.client.plugin.dataaccess.aspects` has been extended by the aspect `UrlSupporting`.

This can be used to determine a URL string for an object that originates from a "DataAccessPlugin". For this purpose, an `UrlGenerationContext` is passed (new interface with this name in the same



package). Among other things, this context grants access to the URL creator (provider) to be used, the language and the status of the object (released or not released).

The JSON generation of the FS_INDEX input component and its entries was extended by an attribute `url` (if the DAP implements this aspect):

```
{
  "identifier": "...",
  "fsType": "...",
  "value": {...},
  "valueSchema": {...},
  "url": "..."
}
```

For a medium from the “Media Data Access Plugin” (Media DAP), the value could be

```
"/media/Solar_panel.png"
```

An exemplary use of the new aspect could look like this:

```
final UrlSupporting<T> urlSupporting = dapSession.getAspect(UrlSupporting.TYPE);
if (urlSupporting != null) {
    UrlGenerationContext context = UrlGenerationContext.builder().from
        (jsonOrGenerationContext).create();
    Optional<String> dapObjectUrl = urlSupporting.getUrl(context, dapObject);
}
```

Note: If an error occurs when generating the URL in the DAP (e.g. `java.lang.NullPointerException`), this is only recorded in the log as a warning and there will be no JSON output.

Example “Media Data Access Plugin” (Media DAP)

With FirstSpirit 2020-03, the new aspect has been incorporated into the “Media Data Access Plugin” (Media DAP) module, which is included in the standard scope of delivery of the MicroApp Framework / FirstSpirit Content Experience Tools. This plugin can be used to reference images and files of other formats in the Markdown Editor. See also Chapter 3.2: “Markdown: Creating links using 'DataAccessPlugins'”.



12.25 DataAccess plug-in: Implementing access control for data 2018-08

The FS_INDEX input component is used to integrate external components or modules that need to make data available to the input component. The data is made available via a “DataAccess plug-in”. This data can then be selected, i.e., referenced, with FS_INDEX. Both the function and appearance are highly dependent on the individual implementation of the plug-in. A “DataAccess plug-in” is implemented via the

- `de.espirit.firstspirit.client.plugin.dataaccess`
- `de.espirit.firstspirit.client.plugin.dataaccess.aspects`
- `de.espirit.firstspirit.client.plugin.dataaccess.aspects.transfer`

packages from the FirstSpirit Developer API.

With the latest FirstSpirit release, access control can be implemented for the data from the “DataAccess plug-in”. For example, if there is no connection to a service that is linked via the “DataAccess plug-in”, a corresponding message can be displayed for the editor. Similarly, an interactive dialog can be implemented to prompt the user to take action before the “DataAccess plug-in” and/or its data can be displayed and used, e.g., by entering login data.

The new

`DataAccessControlling`

(`de.espirit.firstspirit.client.plugin.dataaccess.aspects.DataAccessControlling` package) has been implemented for this purpose. It supports the following methods:

- `verifyAccess()`: Checks if access to the “DataAccess plug-in” data is possible. The result of the check (yes / no) is visualized through a status display containing a corresponding symbol and text that can be freely selected (in the example below: (1), “No access!” or (3), “Access granted”). If access is not granted, the content of the integrated plug-in is not displayed and cannot be selected. If access is granted, content from the plug-in can be displayed and selected.



- `requireAccess(context)`: Requires access to the data. Depending on the execution context (*context*, see below), interactive operations might also be possible (in the example below: dialog box (2)).
- `getAcquireAccessLabel()`: Provides a display text (“label”) for actions that trigger an access request. If the plug-in does not supply a corresponding display text, a default text is used (in the example below: (1), “Require access”).

The `requireAccess` method is called up wherever the “DataAccess plug-in” is accessed, e.g., when clicking on a corresponding report or when displaying or selecting data in an FS_INDEX input component.

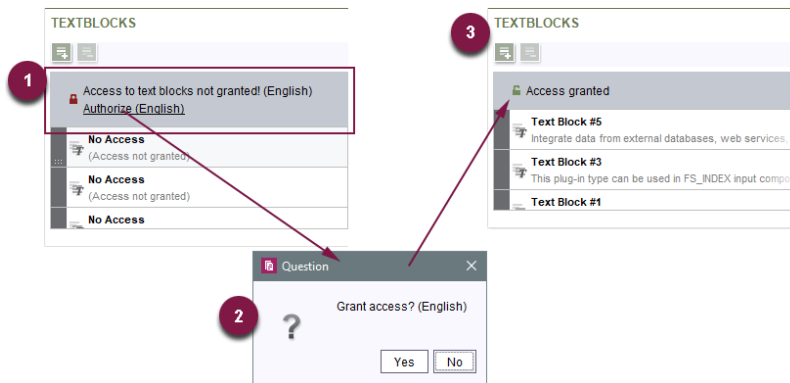
To facilitate a more detailed evaluation of the execution context, new environment values have also been introduced for the `BaseContext` interface (`de.espirit.firstspirit.access` package, FirstSpirit Developer API):

- `GENERATION`: Execution during generation
- `ARCHITECT`: Execution in SiteArchitect
- `MANAGER`: Execution in ServerManager
- `FORM`: Execution in an input component
- `REPORT`: Execution in a report

The `ARCHITECT` and `MANAGER` execution contexts, along with the `WEBEDIT` execution context that was available in earlier versions of FirstSpirit (ContentCreator) support interactive questioning of the user (dialog). Except that the execution context also contains `HEADLESS` as environment value.

New display options / functions have been added to the FS_INDEX input component and the report area for this purpose. They can be used if the `DataAccessControlling` aspect is implemented in the “DataAccess plug-in”, e.g.:





If access permission is granted, it is only valid for that particular context, e.g., only for the report or the input component. This should be taken into account when implementing the plug-in. If access control is required for displaying content in the preview, this must also be taken into account in the implementation of the plug-in itself.

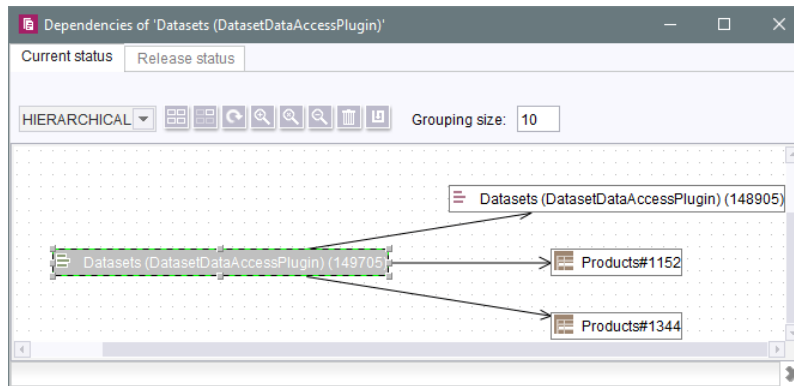
For more information, see *FirstSpirit Online Documentation*, “Plug-in development / Universal enhancements / Data access”.

12.26 Data Access Plugins (DAP): Advertising references 2018-12

By implementing “data access plugins” (“DAP”), external sources (e.g. web services) can be connected to an FS_INDEX input component. This way, data objects from such external sources can be referenced within the index component and thus used for content purposes. Some fundamental FirstSpirit functionality is based on such data access plugins, e.g. the “DatasetDataAccessPlugin” used for selection of datasets from data sources of a project. Data access plugins can also be used to implement customer- and project-specific functionality.

Dependencies between objects in FirstSpirit (or to objects external to FirstSpirit) are also called “references”. The datasets selected for inclusion in an FS_INDEX component by way of the DatasetDataAccessPlugin, for example, hold “inbound” references from the FS_INDEX component. Such dependencies are visualized in the “FirstSpirit reference graph” (Ctrl + R):





In order to avoid inconsistencies, these references are checked, for example, before objects are deleted from a FirstSpirit project. Furthermore, references may be used to carry out “dependent releases”. These functionalities are provided by the FirstSpirit reference manager.

As of the current release, developers can advertise outbound references of data access plugins and thus use the functionality of FirstSpirit's reference manager.

The `de.espirit.firstspirit.client.plugin.dataaccess.aspects` package provides the aspect interface

```
ReferencesReporting
```

This aspect may be used by the data access plugin to submit references.

References are divided into two categories, each of which requires a separate method:

- `reportValueReferences`
is used for references to values which are selected/saved by the editor within the data access plugin, e.g. FirstSpirit objects or external elements. In the case of the `DatasetDataAccessPlugin`, these are the datasets selected via `FS_INDEX`.
- `reportModelReferences`
is used for references to FirstSpirit objects which are used in the configuration of the data access plugin, e.g. FirstSpirit templates. In the case of the `DatasetDataAccessPlugin`, this may be the table template referenced via the tag `TEMPLATE`, for example.



The interface also serves as an adapter so that only the (empty) method which is required by the data access plugin needs to be implemented.

Interface `ValueReferencesJournal` (also in the package `de.espirit.firstspirit.client.plugin.dataaccess.aspects`)

This interface is provided to submit references to values. It offers several methods for different object types and also to indicate broken references. The objects which submit the references are indicated via a unique identifier.

Interface `ModelReferencesJournal` (also in the package `de.espirit.firstspirit.client.plugin.dataaccess.aspects`)

This interface is provided to submit references to FirstSpirit objects which are used in the configuration of the data access plugin, e.g. FirstSpirit templates or media.

The data access plugin `DatasetDataAccessPlugin` which is provided with FirstSpirit previously used non-public API to model references. As of the current release, this data access plugin was modified to use the new, public API. If existing customer-specific implementations also use non-public API related to this topic, they should be modified accordingly as soon as possible. This affects the following interfaces:

- `ValueReferencing`
- `ModelReferencing`

These interfaces have been marked deprecated as of FirstSpirit 2018-12 and will be removed in subsequent versions.

For further information, see also *FirstSpirit Online Documentation*, “Plug-In Development / Universal Extensions / Data Access”.

12.27 `de.espirit.firstspirit.access.Connection`: Exceptions are now part of the API 2019-08

The exceptions

```
de.espirit.firstspirit.access.InvalidSessionException
de.espirit.firstspirit.common.MaximumNumberOfSessionsExceededException
de.espirit.firstspirit.server.authentication.AuthenticationException
```



that can be returned when using `de.espirit.firstspirit.access.Connection` (FirstSpirit Access API), are now part of the FirstSpirit Access API.

12.28 `de.espirit.firstspirit.agency.RenderingAgent`: Recursive use possible

2019-06

FirstSpirit content can be generated via the `RenderingAgent` interface (package: `de.espirit.firstspirit.agency`, FirstSpirit Developer API). The interface enables a special generation for specific dynamic content to be controlled directly via the API.

As of the current release, the interface can now also be used recursively and up to a recursion depth of 9.

When using the `RenderingAgent` recursively, it is recommended to configure logging to the Application Engine (using `de.espirit.firstspirit.agency.RenderingAgent.Renderer.redirectTemplateLogToDefaultLog()`), for example as follows:

```
import de.espirit.firstspirit.agency.RenderingAgent;
mypage = context.getVariableValue("page");
renderingAgent = context.requireSpecialist(RenderingAgent.TYPE);
renderer = renderingAgent.createRenderer(mypage).redirectTemplateLogToDefaultLog().
    additionalContext("page", mypage).preview();
return renderer.render();
```

12.29 Repairing broken references (`rebuildReferences`) 5.2R7

Dependencies, also called “references”, exist between many FirstSpirit elements. These can be displayed via what is known as a “relation graph” (“Extras / Display dependencies” in the context menu or keyboard shortcut `Ctrl+R` on the required node in SiteArchitect). A distinction is made between “incoming” and “outgoing” references.

The `rebuildReferences(IDProvider)` method (FirstSpirit Developer API, interface `ProjectReferencesAgent`, `de.espirit.firstspirit.agency` package) can be used to repair “broken” references (which are restored or removed).

More inconsistencies (broken references) can now be repaired with the current FirstSpirit version than was possible in earlier FirstSpirit versions. If the references in question are “broken incoming” references, `rebuildReferences` may have to be called up for both the affected elements.



12.30 Dynamic filters - data access plugins are becoming more flexible

2018-11

The data access infrastructure of FirstSpirit allows module developers to integrate external data sources (e.g. web services) and FirstSpirit-internal data sources (e.g. FirstSpirit fragments) into FirstSpirit projects. Data from these sources can be provided via data access plugins in **FirstSpirit reports** and/or in **FS_INDEX** input components. The interface `DataStreamBuilder` in the package `de.espirit.firstspirit.client.plugin.dataaccess` (FirstSpirit Developer API) allows configuration of a set of data which is provided for use within FS_INDEX input components or reports. Filter parameters, which can be used by editors to filter the amount of data (e.g. via a combobox), may be implemented via the aspect `Filterable`.

For further information about the data stream builder, see *FirstSpirit Online Documentation*, chapter “Plug-In Development / Universal Extensions / Data Access / Data Stream / Builder”.

New functionality: Data access plugins can now react to changes to or selection of a filter parameter within a user session and influence the value sets of further (dependent) filter parameters. The new aspect `Updating` in the package `de.espirit.firstspirit.client.plugin.dataaccess.aspects` (FirstSpirit Developer API) enables triggering updates to the filter parameters of a data access plugin (“DAP”). If a filter parameter is changed (e.g. due to selection of a value in a combobox), this API is called with the current set of values of all parameters and returns a changed set of parameter definitions. The displayed selection fields will then be updated accordingly.

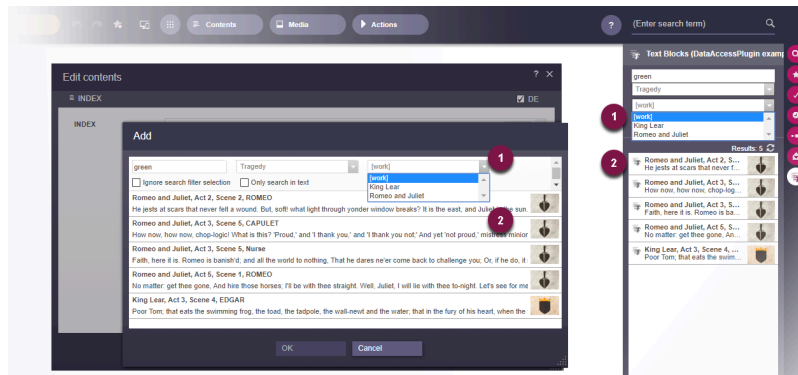
The new functionality is supported in SiteArchitect and ContentCreator.

Example: The TextBlocks example plugin of the “ContentCreator Examples” package was updated with FirstSpirit 2018-11 and now provides quotations from four Shakespeare works. The set of data (2) offered by the DAP can be filtered via two comboboxes (1) (see figure: form view in FS_INDEX on the left - report view on the right):

- [genre] (contains the values “comedy” and “tragedy”) and
- [work] (contains the works' names)



If the combobox “[genre]” is set to filter for “tragedies”, the set of values in the dependent combobox “[work]” is changed. Now, the combobox “[work]” only allows selection of the available “tragedies” but not of the “comedies”.



Example: Filtering/updating of the result set of a data access plugin

For further information about the TextBlocks example plugin, see *FirstSpirit Online Documentation*, chapter “Plug-In Development / Examples”.

Previous behavior: The value set of the filter parameters for a data access plugin was constant for the duration of the entire user session. That is, the filter parameters were initialized once during start-up of SiteArchitect or ContentCreator and kept by until the end of the session. A value set for filter parameters that is dependent upon the selection of another filter parameter (as shown in the example above) could not be realized in the past.

12.31 E-mail addresses with special characters in the domain part 5.2R6

During work with FirstSpirit, e-mail addresses may be entered in several contexts, e.g. in order to send FirstSpirit users notifications related to tasks, workflows, etc. As of the current FirstSpirit version, e-mail addresses with special characters in the domain part (“IDN domains”, RFC 3490) may be used, e.g. “info@müller.de”.

Related to this change, several modifications were made to the FirstSpirit Access API: The *public* fields as well as the constructor of the class `de.espirit.firstspirit.access.MailHeader` have been marked deprecated. As a replacement, `MailHeader#getBuilder()` provides a builder object that carries out the necessary conversions automatically.

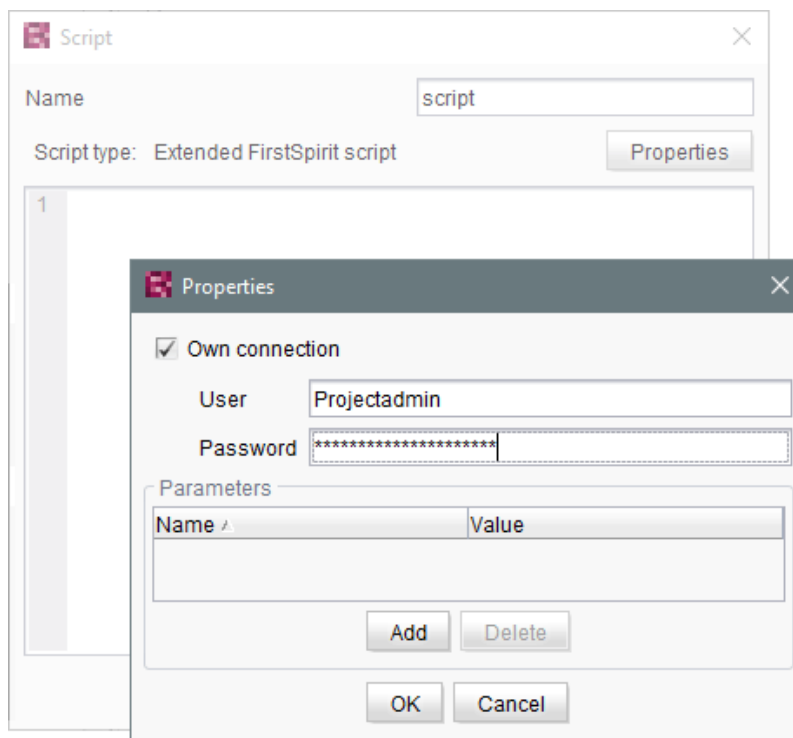


Methods set to the “deprecated” state can still be used, but as they will be omitted in subsequent versions, this is not advisable. If methods, classes, and interfaces that are no longer supported or are set to deprecated are used in scripts and/or modules, entries are written to log files accordingly (e.g., server log, generation log, etc.). The corresponding log entries should be checked and the cause(s) remedied.

12.32 Establishing connections via API in schedule task scripts 5.2R6

Scripts are an important means to easily and quickly implement custom functionality that is not included in FirstSpirit's standard functionality set. Scripts may be used in various contexts in FirstSpirit, e.g. in schedule tasks (“FirstSpirit ServerManager / Server or Project properties / Schedule management”, action “Execute script”). If a script should perform modifying operations on a project, a separate connection to the server must be used instead of the current session. For this, login information (user name, password) of the user that should be used for authentication against the server must be entered.

Until now, this configuration could only be done via GUI:



As of the current FirstSpirit version, such a separate connection can also be established via API (interface `ScriptTask`, package `de.espirit.firstspirit.access.schedule`, FirstSpirit Access API). For this, the interface was extended with the following methods:



- `getUseCustomConnection()`
- `setUseCustomConnection(String login, String password)`
- `getCustomConnectionLogin()`
- `setUseSystemConnection()`

For further information about schedule tasks, see *FirstSpirit Manual for Administrators*, chapter “Execute script”.

12.33 Getting the host name per API (interface "ServerInformationAgent")

5.2R10

The interface `ServerInformationAgent` (package `de.espirit.firstspirit.agency`) provides information on the FirstSpirit server.

With the new FirstSpirit version the method `getServerName()` was added to the interface. This method returns the FirstSpirit server's name. The return value is the symbolic hostname (parameter `SYMBOLIC_HOSTNAME` in `fs-server.conf`). If this parameter is not set the hostname is returned.

12.34 Identification of server mode (isolated vs. legacy) 5.2R7

The interface `ServerInformationAgent` (FirstSpirit Access API, package `de.espirit.firstspirit.agency`) provides version information about the FirstSpirit server. The `VersionInfo` object returned by the agent now provides information about the currently active server mode (“Legacy” or “Isolated”). This information may be obtained via the new method `getMode()`:

- **LEGACY:** The FirstSpirit server is running in legacy mode.
- **ISOLATED:** The FirstSpirit server is running in isolated mode.

For further information, see .



12.35 Extended functionality for FS_BUTTON scripts 5.2R18

An error has been fixed which could lead to incorrect evaluation of group and user information in ContentCreator forms which were opened using the interface `ShowFormDialogOperation` (package `de.espirit.firstspirit.ui.operations`, FirstSpirit Developer API).

In the course of this bugfix, the context object available to scripts which are called in SiteArchitect via the input component `FS_BUTTON` has been changed to the type `de.espirit.firstspirit.access.ClientScriptContext` (previously, the context object was of type `de.espirit.firstspirit.access.BaseContext`). In contrast to the old context type, this new type offers extended functionality.

For further information, see *FirstSpirit Online Documentation*, page [FS_BUTTON](#), parameters `onClick` and `onDrop`, variable `context`.

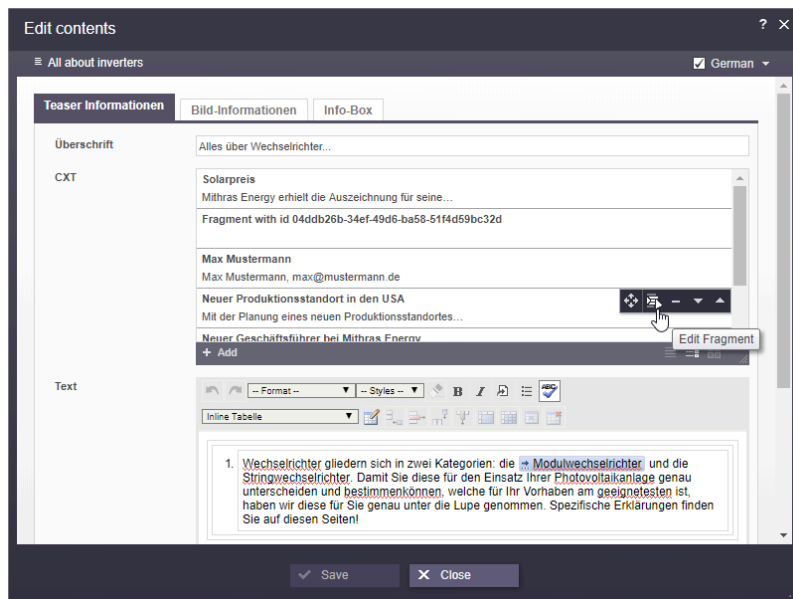
12.36 Extension of the ContentCreator-JavaScript-API / WE_API to enable client-side actions on FS_INDEX entries. 2018-11

Entries in a `FS_INDEX` input component can now be extended with client-side actions. Therefore the *Developer-API* (`de.espirit.firstspirit.webedit.client.api`) was extended by the following classes:

- `ClientItem`
- `ClientItemConstants`
- `ClientItemContext`
- `ClientItemPerformable`
- `ClientItemPlugin`

Additionally the Class `Common` has been expanded by the method `addItemPlugin`.





Example based on a FS_INDEX with fragments

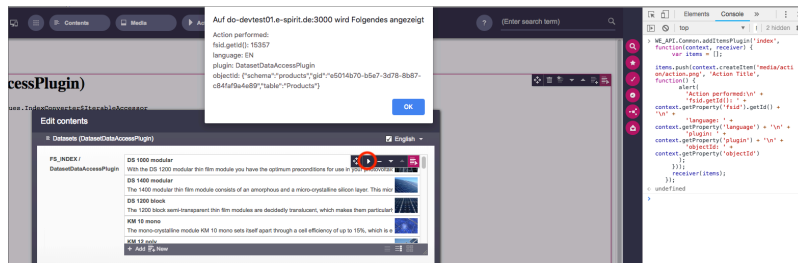
To complement previous capabilities it is now possible to add **client-side determined** actions to FS_INDEX entries via JavaScript.

Code example

To perform a simple test of the new API, the following code can be executed **once** in the JavaScript console after starting the ContentCreator. As a result, an additional button is displayed for FS_INDEX entries that displays an alert message.

```
WE_API.Common.addItemPlugin('index', function(context, receiver) {
  var items = [];
  items.push(context.createItem('media/action/action.png', 'Action Title',
    function() {
      alert(
        'Action performed:\n' +
        'fsid.getId(): ' + context.getProperty('fsid').getId() + '\n' +
        'language: ' + context.getProperty('language') + '\n' +
        'plugin: ' + context.getProperty('plugin') + '\n' +
        'objectId: ' + context.getProperty('objectId')
      );
    }
  ));
  receiver(items);
});
```





Code example alert message

For more information, see *FirstSpirit Online Documentation*, “Template development / JavaScript APIs / ContentCreator / Common Functionality”.

12.37 Extension of the FirstSpirit API by the "ExternalGroup" interface

2018-11

The FirstSpirit Access API was extended by the interface `ExternalGroup` (package: `de.espirit.firstspirit.access.project`) to provide functionality specific to external groups (for example from an *Active Directory*). The method `getExternalName` returns the name of the external group, while the method `setExternalName` allows setting the group name.



Setting the group name requires administration privileges at server or project level.

12.38 Extension of the interface "RenderingAgent" 5.2R18

The interface `RenderingAgent` (package `de.espirit.firstspirit.agency`, FirstSpirit Developer API) now also supports passing of FirstSpirit templates and thus the opportunity to render output channel source code as desired.

Until the current version of FirstSpirit, “RenderingAgent” already supported the following FirstSpirit object types (including subclasses):

- Page
- Section



- PageRef
- Dataset
- parsed Media

New as of the current version of FirstSpirit, `RenderingAgent` additionally supports passing of dynamic output channel source code (`java.lang.String`) and of FirstSpirit templates, e.g.:

- Page templates
- Link templates
- Render templates

Here, it is necessary that a page reference or a media element is passed via `linkRoot()`. The calculations of relative links are done within the context of this node.

Example 1:

```
import de.espirit.firstspirit.agency.StoreElementAgent;
import de.espirit.firstspirit.agency.RenderingAgent;
import de.espirit.firstspirit.access.store.sitestore.PageRef;
storeElementAgent = context.requireSpecialist(StoreElementAgent.TYPE);
renderingAgent = context.requireSpecialist(RenderingAgent.TYPE);
pageRef = storeElementAgent.loadStoreElement("mithras_home", PageRef.UID_TYPE, false);
return renderingAgent.createRenderer("<a href=\"\$CMS_REF(ss_product_overview)\$\">
    \$CMS_VALUE(linktext)\$</a>").linkRoot(pageRef).additionalContext("linktext",
    "Some text").urlFactory("Advanced URLs").render();
```

Example 2: Possible use case: obtaining the preview URL of a medium



```
PageRef pageRef = ...; // obtain current page ref (link source)
Media targetElement = ...; // obtain target medium (link target)
RenderingAgent renderingAgent = context.requireSpecialist(RenderingAgent.TYPE);
RenderingAgent.Renderer renderer = renderingAgent.createRenderer("$CMS_REF(target)$");
    // obtain a renderer that is configured with output channel code
String mediaUrl = renderer.linkRoot(pageRef)
    .additionalContext("target", targetElement)
    .preview()
    .render();
```

In this example, output channel code to generate the URL of a medium is passed to `RenderingAgent.createRenderer(String)`, which returns an object of type `RenderingAgent.Renderer`. This `Renderer` object is then used to specify the parameters of generation, e.g. to create the association between the `CMS_REF` parameter `target` and the store element `targetElement` via the method `additionalContext(String, ?)`. The call to the method `render()` returns the generated result.

Furthermore, with the new methods

```
skipProjectProperties()
evaluateProjectProperties(boolean)
```

it is possible to specify whether or not project settings (in FirstSpirit SiteArchitect under “Global settings”) should be considered during generation.

12.39 Interface "RenderingAgent" extended 2019-11

FirstSpirit content can be generated via the `RenderingAgent` interface (package: `de.espirit.firstspirit.agency`, FirstSpirit Developer API). This allows a separate generation for certain dynamic contents that can be controlled directly via the API.

With the current FirstSpirit version the method `linkRoot()` can now accept an object of type `PageRefFolder` (package `de.espirit.firstspirit.access.store.sitestore`). The calculations of relative links then take place in the context of this node.

Previously, only objects of type `PageRef` and `Media` could be passed to the method.



12.40 Extension of the interface "ScheduleStorage" 5.2R18

The interface `ScheduleStorage` (package `de.espirit.firstspirit.access.schedule`, FirstSpirit Access API) was extended with the method `createScheduleEntry(String name, Project project)`. This method allows direct creation of project-specific schedule entries. This method may be used with project administrator privileges.

For security reasons, the already existing method `createScheduleEntry(String)`, which may be used to create server-wide schedule entries, can now only be used with server administrator privileges.

To ensure that current uses of `createScheduleEntry(String)` to create project-specific schedule entries continue to work with project administrator privileges, the code must be modified accordingly.

Example “previously”:

```
import de.espirit.firstspirit.access.AdminService;
// Obtain a ScheduleStorage object from the AdminService.
scheduleStorage = context.getConnection().getService(AdminService.class)
    .getScheduleStorage();
// Create a ScheduleEntry object, name "test123".
scheduleEntry = scheduleStorage.createScheduleEntry("test123");
// Associate the ScheduleEntry object with the current project.
scheduleEntry.setProject(context.getProject());
// Set ScheduleEntry object to active, save and unlock the object.
scheduleEntry.setActive(true);
scheduleEntry.save();
scheduleEntry.unlock();
```

Example “now”:

```
import de.espirit.firstspirit.access.AdminService;
// Obtain a ScheduleStorage object from the AdminService.
scheduleStorage = context.getConnection().getService(AdminService.class)
    .getScheduleStorage();
// Create a ScheduleEntry object, name "test123", associated with the current project.
scheduleEntry = scheduleStorage.createScheduleEntry("test123", context.getProject());
// Set ScheduleEntry object to active, save and unlock the object.
scheduleEntry.setActive(true);
scheduleEntry.save();
scheduleEntry.unlock();
```



12.41 Expansion of functions for communication between client-side Single Page Application (SPA) and ContentCreator (TPP) 5.2R16

The `editorId()` function has been expanded to include the `details` parameter.

With the new `details` parameter, it is possible to overwrite the otherwise context-sensitive response of the `editorId()` function. As a result, you define for the client (SiteArchitect or ContentCreator) for which the `previewId` should be rendered.

Possible values for the `details` parameter are

- *JAVACLIENT*: The additional information for the SiteArchitect are always generated.
- *WEBEDIT*: The additional information for the ContentCreator are always generated.
- *SIMPLE*: Only information that is not dependent on the editors in FirstSpirit is written to the `editorId`. These data can be used to address the corresponding element in an external element.

A new function `previewId()` similar to the `editorId()` function has been introduced.

This function is a wrapper that can be used internally to call up the `editorId()` function with certain parameters that cannot be changed.

The function `previewId()` has just one optional parameter: `element`. This parameter can be used to transfer a FirstSpirit object or content area. Other parameters may not be used.

Agent for analyzing the return value

To analyze the return value from `previewId()` an agent has been implemented as part of the API (FirstSpirit Developer API). This agent can be used to determine the ID for the FirstSpirit element to be edited in a certain project language:

```
de.espirit.firstspirit.agency.PreviewIdAgent  
de.espirit.firstspirit.agency.PreviewIdAgentImpl
```

! The previous behavior of `editorId()` has not been changed. No changes to existing projects are needed.

For more information



- about the `editorId` function, see *FirstSpirit Online Documentation*, under “Template development / Template syntax / Functions / In instructions / editorId”
- about FirstSpirit Third Party Preview, see documentation for “FirstSpirit Content as a Service”.

12.42 External Synchronization / Content Transport: Selecting a database layer for import 5.2R5

The functionalities “FirstSpirit Content Transport” and “External Synchronization” allow export of FirstSpirit content from a source project and import of this content into a target project - if desired, on a regular schedule and automated. Among others, a goal of these functionalities is to enable reuse of content independent of projects and servers and to synchronize the content state between different projects. This synchronization can of course include database content as well. During import of a database schema using either of these functionalities, the new interface `LayerMapper` (FirstSpirit Developer API, package `de.espirit.firstspirit.transport`) allows selection of a database layer onto which the schema should be mapped. This enables mapping several schemata onto different layers.

FirstSpirit provides two example implementations:

- `LayerMapper.SchemaUidBasedLayerMapper` maps schema UID to target layer name.
- `LayerMapper.LayerNameBasedLayerMapper` maps source layer name to target layer name. This allows mapping of several schemata onto different layers.

(Not suitable for use with “External Synchronization”.)

Custom mappers can be implemented using the API.

The following classes and methods have been marked deprecated in the course of this new implementation:



- “External Synchronization”
 - `ImportOperation.DatabaseLayerMapper`

 - `ImportOperation.MapDatabaseLayerMapper`

 - `IDENTITY_LAYER_MAPPING`

- “Content Transport”:
 - `installFeature(FeatureFile featureFile, Map<String,String> layerMapping)`
(interface `FeatureInstallAgent`, Package `de.espirit.firstspirit.feature`)
has been replaced by: `installFeature(@NotNull FeatureFile featureFile, @Nullable LayerMapper layerMapper)`

Methods set to the “deprecated” state can still be used, but as they will be omitted in subsequent versions, this is not advisable. If methods, classes, and interfaces that are no longer supported or are set to deprecated are used in scripts and/or modules, entries are written to log files accordingly (e.g., server log, generation log, etc.). The corresponding log entries should be checked and the cause(s) remedied.

12.43 FirstSpirit ContentTransport: Obtaining information about imported content 2018-10

The functionality “FirstSpirit ContentTransport” enables transport of project contents from a source project into a target project. For this, the desired contents will be collected or gathered into so-called “features”.

The interface `FeatureInstallResult` (Package `de.espirit.firstspirit.feature`, FirstSpirit Developer API) may be used to obtain information specific to a completed feature installation. For the current release, this interface has been revised and now offers the following methods:

- `getCreatedElements()`: returns all elements which were newly created in the target project due to installation

- `getDeletedElements()`: returns all elements which were deleted in the target project due to installation



- `getLostAndFoundElements()`: returns all elements which were moved into the system folder “Lost & Found” in the target project due to installation
- `getMovedElements()`: returns all elements which were moved in the target project due to installation
- `getUpdatedElements()`: returns all elements which were modified in the target project due to installation

For each method call, the return value is a set of `BasicElementInfo` objects (`de.espirit.firstspirit.access.store.BasicElementInfo`, FirstSpirit Access API). Each of these contains ID, UID, store, and the revision. This information may be used e.g. to more easily conduct a release of contents which were changed during an import.

In this context, the previously available methods `getLostAndFoundStoreNodes()` and `getDeletedStoreNodes()` have been marked deprecated and may be removed in a future FirstSpirit release. The interface's new methods `getLostAndFoundElements()` and `getDeletedElements()`, respectively, should be used in their stead.

For further information, see Module documentation for “FirstSpirit CorporateContent”, chapter “ContentTransport”.

12.44 Read out FirstSpirit version name via API 2018-06

The name of a FirstSpirit version can now be read out via the API with the new `getReleaseName()` method in the `ServerInformationAgent` interface (`de.espirit.firstspirit.agency` package, FirstSpirit Access API).

For example:

```
import de.espirit.firstspirit.agency.ServerInformationAgent;
vers = context.requireSpecialist(ServerInformationAgent.TYPE);
vers.getServerVersion().getReleaseName();
```

The following is returned, for example:

```
2018-06
```



The technical version information can still be determined via `getFullVersionString()`; as before; for example:

```
vers.getServerVersion().getFullVersionString();
```

The following is then returned, for example:

```
5.2.2101.77500
```

12.45 Releasing elements via API 2018-06

The new interface `ReleaseOperation` in package `de.espirit.firstspirit.store.operations` (FirstSpirit Access API) makes it possible to release FirstSpirit elements via API on the server-side.

In contrast to `AccessUtil.release(...)` (Package `de.espirit.firstspirit.access`, FirstSpirit Access API) the new interface supports the release of multiple elements at once, as well as the release of datasets.

The following methods can be applied on the result:

- `releaseResult.isSuccessful()`
Returns `true`, when all affected elements could successfully be released, or `false`, when there were problems with (at least) one element.
(Note: When requesting release from an element that is already released nothing will be released, yet `true` will be returned).
- `releaseResult.getReleasedElements()`
Returns a list of all released elements. The list can contain more elements than the release had been requested for because it includes all elements that actually were released. When requesting release of a page reference the list can additionally include the page referred to, as well as the media used in it.
- `releaseResult.getReleaseFailedElements()`
Returns a list containing the elements that release had been requested for, but which could not be released.



- `releaseResult.getProblematicElements()`
 Returns a list containing the elements that prevented the release from succeeding.
 An `EnumMap<ReleaseProblem, Set<BasicInfo>>` (new as well, package `de.espirit.firstspirit.access.store`, FirstSpirit Access API) will be returned. With this you can detect the problem that prevented the release, e.g. if an element does not support release, or if a parent node is not released yet etc.

Example script for releasing an element via the `ReleaseOperation` interface:

```
import de.espirit.firstspirit.agency.OperationAgent;
import de.espirit.firstspirit.store.operations.ReleaseOperation;
import de.espirit.firstspirit.access.store.IDProvider;
elements = new ArrayList();
elements.add(context.getElement());
operationAgent = context.requireSpecialist(OperationAgent.TYPE);
releaseOp = operationAgent.getOperation(ReleaseOperation.TYPE);
releaseOp.releaseParentPath(true);
releaseOp.ensureAccessibility(true);
releaseOp.checkOnly(false);
releaseOp.withComment("The ReleaseOperation was used for this release");
releaseOp.dependentReleaseType(IDProvider.DependentReleaseType.
    DEPENDENT_RELEASE_NEW_AND_CHANGED);
releaseResult = releaseOp.perform(elements);
context.logInfo("isSuccessful: " + releaseResult.isSuccessful());
context.logInfo("*****");
context.logInfo("getReleasedElements: " + releaseResult.getReleasedElements());
context.logInfo("getReleaseFailedElements: " + releaseResult.getReleaseFailedElements());
context.logInfo("getProblematicElements: " + releaseResult.getProblematicElements());
```

Directly detecting the elements for a specific problem class is also possible, e.g.

```
if(releaseResult.getProblematicElements().get(ReleaseProblem.MISSING_PERMISSION).
    size() > 0)
context.logInfo("Release failed because of insufficient permissions for: "
    + releaseResult.getProblematicElements().get(ReleaseProblem.MISSING_PERMISSION));
```

The following enums for release preventing problems can be queried correspondently:

- `MISSING_PERMISSION`



- LOCK_FAILED
- RELEASE_FAILED
- RELEASE_UNSUPPORTED
- MISSING_START_NODE
- NEVER_RELEASED_START_NODE
- NEVER_RELEASED_PAGE
- INVALID_STARTNODE_PATH
- NEVER_RELEASED_DOCUMENTGROUP_ELEMENT
- NEVER_RELEASED_SOURCE_SECTION
- INCOMPLETE_PARENT_PATH
- VALIDATION_FAILED

(The FirstSpirit API documentation has not been updated yet. It will only be adjusted with the next release. But new interfaces / methods can already be used.)

Together with these API additions the following methods are “deprecated”, and may be removed from a future FirstSpirit version:



- **Interface AccessUtil:**
 - `release(IDProvider toRelease, boolean checkOnly)`
 - `release(IDProvider releaseStartNode, boolean checkOnly, boolean ensureAccessibility, boolean recursive, IDProvider.DependentReleaseType dependentType)`
 - `release(IDProvider releaseStartNode, boolean checkOnly, boolean ensureAccessibility, boolean recursive, IDProvider.DependentReleaseType dependentType, String comment)`
 - `release(IDProvider toRelease, boolean checkOnly, String comment)`

Where the above-mentioned methods are being used a switch to the new interfaces and methods is recommended.

12.46 FS_INDEX: Reading out data via the API has been simplified ("createSession") 2019-11

As previously announced, FirstSpirit support for the FS_LIST input component is scheduled to cease in January 2020. e-Spirit recommends that developers and end users transition to alternative FirstSpirit input components, such as FS_INDEX, in advance of this date.

To simplify the transition to FS_INDEX, the `createSession` method has been added to the `Index` interface (`de.espirit.firstspirit.client.access.editor.lists` package, FirstSpirit Developer API) in the latest FirstSpirit release.

To read out the data of an FS_INDEX component that uses the `DatasetDataAccessPlugin`, the `DataAccessSession` (`de.espirit.firstspirit.client.plugin.dataaccess` package) previously had to be generated using the API via `GomIndexSource` (`de.espirit.firstspirit.access.store.templatestore.gom.lists` package).

In the latest update, the `DataAccessSession` can now be created directly via the `FormField` of the FS_INDEX input component.

It is important to note that a new session is generated in each case if

```
<de.espirit.firstspirit.client.access.editor.lists.Index>.createSession(@NotNull
SpecialistsBroker broker)
```



is used.

The previous method continues to work and is also the recommended option if the session is required for a more global application (e.g., for data migration).

12.47 Function "previewId" was extended to support a parameter "entity"

2018-07

The template function `previewId` now accepts the parameter `entity`, like the function `editorId`:

```
"_previewId" : $CMS_VALUE(previewId(element: #global.node, entity:
#global.pageParams[0]).toJSON)$
```

This combination should be used in order to obtain distinct `previewId` values for the sub-pages for individual datasets. Without the parameter the `"_previewId"`s of all sub-pages would be equal.

12.48 Global module resources: Improved stability when resolving dependencies

2020-05

Module resources have a specific **scope**. This means that the corresponding jars and directories can either only be reached within the module (locally within the module) or server-wide (globally). **Global resources (scope="global")** are also available to other modules on the server. However, all classes are in a namespace and each class can therefore only exist once. It is for this reason that different versions of a class cannot be used.

Classloading and versioning of resources: If the same global resources are provided by several modules in different versions, only one of these global resources can be used by all modules. To prevent conflicts between different modules, the classes are – as far as possible – loaded via individual module Classloaders that are separated from each other. In the case of global resources, one of these classes is then made available via the combined, global Classloader.

If names are identical, an attempt is made to ascertain whether resources are **compatible** with one another. In order to do this, the unique identifier ("name") and the **version** of the resource supplied ("version") are required in the resource definition (`module.xml`) and it is necessary to specify the minimum compatible version ("minVersion") (optional) and the maximum compatible version ("maxVersion"), e.g.:




```
<web-resources>
  <resource name="..." version="4.4" minVersion="4.4" maxVersion="4.5.2">
    lib/httpclient-compatibility.jar
  </resource>
</web-resources>
```

Previous behavior

Previously, it was not possible to ensure that the latest version of a global resource was always used. Resources locally within a module were loaded via the relevant module Classloader and one of these resources was then made available via the combined global Classloader. Although this process ensured that the versions were compatible with the other modules (based on “name”, “maxVersion”, and “minVersion”), the latest version (i.e., the version with the highest version number) was not always used.

This behavior could cause problems when modules were updated; for example, because services that access these global resources no longer functioned with a different version.

New behavior

The latest FirstSpirit release ensures that in normal operation, the latest version of a global resource is always used (i.e., the version with the highest version number), even if these were previously loaded via various module Classloaders. If several modules provide the same version of a global resource, in this case, too, the global resource is always loaded from the same module. The compatibility of the versions with the other modules is still taken into account (based on “name”, “maxVersion”, and “minVersion”).

The following applies: If several modules provide the same global resource, and if the versions are compatible with each other, the version with the highest version number is always used.

This increases the stability when it comes to resolving dependencies after a module update. There is now a greater probability that modules containing global resources which are used by different services will remain functional after a module update. In isolated cases, however, restarting the FirstSpirit Server may still be necessary.

Additional documentation:

- [Module development \(versioning resources\)](#)
- [Module definition](#)



- **Module update**

12.49 Retrieving global system web apps 5.2R20

Global system web apps can now also be retrieved with the new method `getGlobalWebApps(boolean includeSystem)` in the interface `ModuleAdminAgent` (package `de.espirit.firstspirit.agency`, FirstSpirit Developer API).

12.50 Image Map: Setting Areas With Links Via API (Interface "ImageMapAgent") 5.2R21

By means of the input component `CMS_INPUT_IMAGEMAP`, links can be added at various locations over a selected image. Using the GUI, at first, a frame object is created for each link (in `SiteArchitect`: rectangle, circle, or polygon; in `ContentCreator`: rectangle only). Then, a link may be added to such a frame (also, "link-sensitive region", technically: "area").

Until now, the API only supported setting the image in the image map and adding links to areas. As of the current version of FirstSpirit, the API now also supports definition of areas and optional adding links on these areas via the new interface `ImageMapAgent` in the package `de.espirit.firstspirit.access.editor.value.imagemap` (FirstSpirit Access API).

Creating a frame requires use of a builder that is specific to each frame type (`CircleBuilder`, `RectangleBuilder`, `PolygonBuilder`), which may be obtained by calling the method `get*Builder()`, e.g.

```
getCircleBuilder()
```

Each builder requires specific parameters which are provided to it by calling specialized builder methods:

- `CircleBuilder` requires information about the x and y coordinates of the center point (`center(int x, int y)`) as well as the desired radius of the circle (`radius(int radius)`)
- `RectangleBuilder` requires information about the x and y coordinates of both the upper left and the lower right corners of the rectangle (`bounds(int left, int top, int right, int bottom)`)



- `PolygonBuilder` requires information about the x and y coordinates of each of the polygon's vertices (`add(int x, int y)`); the area's boundary is drawn along the vertices in the order in which they are added, whereas the first and last vertices added via the builder will automatically be connected

All builders support the method `link(Link link)` which may be used to assign a link object to the area that is being configured.

The builder pattern supports chained calls to a builder's methods, e.g.:

```
circleBuilder.center(151, 106).radius(102)
```

After configuring the builder with the desired parameters, the area is created using the method `build()`, e.g.:

```
circleBuilder.center(151, 106).radius(102).build();
```

Example: Configuring an image map with various areas using `ImageMapAgent` Obtaining an `ImageMapAgent` object

```
import de.espirit.firstspirit.access.editor.value.imagemap.ImageMapAgent;  
imageMapAgent = context.requireSpecialist(ImageMapAgent.TYPE);
```

Building an area object

The following code configures and builds a circular area, centered at (80, 80), with a radius of 70 pixels:

```
circleBuilder = imageMapAgent.getCircleBuilder();  
areaCircle = circleBuilder.center(80, 80).radius(70).build();
```

The following code configures and builds a rectangular area with a top-left vertex at (328, 258) and a bottom-right vertex at (573, 422):

```
rectangleBuilder = imageMapAgent.getRectangleBuilder();  
areaRectangle = rectangleBuilder.bounds(328,258,573,422).build();
```



The following code configures a polygonal area in the shape of a triangle (three vertices):

```
polygonBuilder = imageMapAgent.getPolygonBuilder();
polygonBuilder.add(30,660);
polygonBuilder.add(270,260);
polygonBuilder.add(30,260);
// In the following example, we'll use polygonBuilder to add a link to the area;
// polygonBuilder.build() will be called later.
```

Adding a link to an area object

Link data (choice of link template, link text, link target, etc.) is usually added to areas by editors, using the GUI. Via the API, such data may be defined using a link template that was obtained via the interface `StoreElementAgent` (package `de.espirit.firstspirit.agency`, FirstSpirit Developer API), e.g.:

```
storeElementAgent = context.requireSpecialist(StoreElementAgent.TYPE);
linkTemplate = storeElementAgent.loadStoreElement("link",IDProvider.UidType.
    TEMPLATESTORE_LINKTEMPLATE,false);
myLink = linkTemplate.createLink(null);
linkFormData = myLink.getFormData();
linkFormData.get(null,"text").set("e-Spirit Website");
linkFormData.get(null,"link").set("https://www.e-spirit.com");
myLink.setFormData(linkFormData);
```

- In line 2 of the above code example, the string "link" indicates the reference name of the desired link template.
- In lines 5 and 6, "text" indicates the link form's input component which should carry the link text, and "link" indicates the name of the input component which carries the link target (here, a URL).

This fully configured link object, `myLink`, may now be passed to the builder method `link(Link link)`:

```
// Continuing the polygonBuilder example from further above...
areaPolygon = polygonBuilder.link(myLink).build();
```

Adding areas to an imagemap input component



In order to add the configured areas to an imagemap input component's value of type `MappingMedium`, it is necessary to first obtain the imagemap's areas object. For an imagemap input component named `myImagemap` in the form data object `myFormData`, e.g.:

```
myImagemap = myFormData.get(null, "myImagemap").get();  
areas = myImagemap.getAreas();
```

The individual area objects that have been built above can be added to the areas object using the method `add(Area area)`, passing one `Area` object per call:

```
areas.add(areaCircle);  
areas.add(areaRectangle);  
areas.add(areaPolygon);
```

Lastly, the `areas` object (now containing at least the three area objects that were added above) is set on the `myImagemap` value object, and the updated `myImagemap` object is set in the fitting form field of the form data:

```
myImagemap.setAreas(areas);  
myFormData.get(null, "myImagemap").set(myImagemap);
```

For further information, see *FirstSpirit Online Documentation*

- [Template development / Forms / Input components / IMAGEMAP](#)
- [Template development / Template syntax / Data types / Area](#)
- [Template development / Template syntax / Data types / MappingMedium](#)

12.51 Individualizing the global FirstSpirit web applications 5.2R4

FirstSpirit builds on the concept of modular extensibility by customers and partners. This means that the FirstSpirit standard functions can be adjusted relatively easily to the specific requirements of the projects in question by means of individual, project-specific enhancements (such as input components, services, applications).



Previously, configurable instances of the FirstSpirit web applications that were local to the project had to be created for these individual enhancements. This is still possible.

With FirstSpirit version 5.2R4, however, it is also possible to adapt the global FirstSpirit web applications (fs5root, fs5preview, fs5webedit, etc.) individually, significantly reducing the amount of memory needed, particularly in a corporate environment with many projects. This feature could be released on request in FirstSpirit version 5.2R3 via the e-Spirit Technical Support, with FirstSpirit version 5.2R4 this functionality can be used by default without any need for activation by the e-Spirit Technical Support.

For further information please see *FirstSpirit Manual for Administrators*,

- Chapter “Individualizing the FirstSpirit web applications”
- Chapter “Web applications”

12.52 Individualizing the global FirstSpirit web applications (BETA!) 5.2R3

FirstSpirit builds on the concept of modular extensibility by customers and partners. This means that the FirstSpirit standard functions can be adjusted relatively easily to the specific requirements of the projects in question by means of individual, project-specific enhancements (such as input components, services, applications).

Previously (prior to FirstSpirit version 5.2R3), configurable instances of the FirstSpirit web applications that were local to the project had to be created for these individual enhancements. This is still possible in 5.2R3.

With FirstSpirit version 5.2R3, however, it is also possible to adapt the global FirstSpirit web applications (fs5root, fs5preview, fs5webedit, etc.) individually for the first time, significantly reducing the amount of memory needed, particularly in a corporate environment with many projects.

The following use case should illustrate the advantages of the new strategy:

An individual report (and/or an EasyEdit action, JSP tag lib, executable, etc.) is to be added to the ContentCreator. The necessary classes are defined in a module in a web app component and the module is installed on the FirstSpirit Server.



ContentCreator as local project instance: A ContentCreator instance that is local to the project is then created for each project that is to use the new functionality (report, JSP tags, etc.) and the application is configured with the web app component (from the module) (add, configure, deploy).

Aside from the amount of work involved, one ContentCreator instance for n projects also means that n instances of the application are stored on the front-end side, which can potentially take up a lot of memory on the front-end server.

New functionality – ContentCreator as global, individualized web application: By contrast, the new functionality can be used to add individual web app components directly to the global web application. To do this, the desired web app component is simply added and deployed via the FirstSpirit ServerManager in the “Server Properties / Web applications” area. The added enhancements are now available to all projects on the server (for which no local project ContentCreator instance has been configured). If, for example, a JSP tag lib has been provided via the web app component, the corresponding tags can then be used in all projects. It is no longer necessary to create instances that are local to the project. Instead of n instances, only one instance now needs to be stored on the front-end side.



This functionality is currently still in the beta stage and should not be used in live environments. It can be released on request in FirstSpirit version 5.2R3 via the e-Spirit Technical Support.

Further prerequisites:

Scope: The introduction of the new functionality has also changed the scope of the components. Previously, web applications only had “local web” visibility, i.e., after installing the module, they had to be added to the desired web areas in the projects and were then available in the relevant project.

A second, server-wide scope has now been added to this existing scope. The `scopes` attribute, which can be used within the module declaration, has been added for this purpose. Possible values:

```
<web-app scopes="global">
```

```
<web-app scopes="project">
```

```
<web-app scopes="global, project">
```

If a new web application is added via the ServerManager in the “Server Properties / Web applications” area, only components with the `global` scope can be assigned to this application. Conversely, only



web components with the `project` scope can be assigned to a project (in the “Project Properties / Web components” area).

For developers, web app components differ according to their scope with regard to the information available via the “SpecialistsBroker”. Web applications that are local to a project have a “WebEnvironment” which inherits from the “ProjectEnvironment” and they receive (via the `#getBroker` method) a (project-specific) instance of the type `SpecialistsBroker`.

For global web applications, the “WebEnvironment” returns a project-independent instance of the type `SpecialistsBroker` when `#getBroker` is called, and therefore returns “null” when `#getProject` is called.

```
<module>
  ...
  <components>
    ...
    <web-app scopes="global">
      ...
    </web-app>
  </components>
</module>
```

Configuration: The configuration options of the web components also need to be looked at in more detail according to the scope. Previously, a configuration for a web application was always local to a project, i.e., special values could be entered in the relevant configuration GUI for each individual project. For a global web application, the initial configuration can only take place at a global level. However, it is also possible to carry out an additional configuration that is local to a project for global web app components, e.g., via an additional project application which is also part of the module.




```
<module>
  ...
  <components>
    ...
    <web-app scopes="global">
      ...
      <configurable> MyGlobalAppConfigPanel </configurable>
    </web-app>

    <project-app>
      ...
      <configurable> MyProjectAppConfigPanel </configurable>
    </project-app>
    ...
  </components>
</module>
```

For more information on developing and configuring web applications, see also

- *FirstSpirit Manual for Administrators*, chapter “Web applications”
- *FirstSpirit Developer Manual for components (German only)*

12.53 Interface "DatasetProvider": Creating a new dataset 5.2R19

The new method `createDataset()` in the interface `DatasetProvider` (package `de.espirit.firstspirit.access.store.contentstore`, FirstSpirit Access API) a new dataset can now be directly created within a data source (interface `Content2`) as well as in a database (interface `Tabletemplate`). Until now, a detour via a corresponding entity was necessary.

12.54 Interface "Executable" (package "de.espirit.firstspirit.access.script") improved 5.2R13

The signature of the method `execute` in the interface `Executable` (package `de.espirit.firstspirit.access.script`, FirstSpirit Access-API) no longer uses `ExecutionException` (`de.espirit.firstspirit.access.script.ExecutionException`) and is therefore easier to implement.



12.55 Interface "ModuleAdminAgent": Extended methods for installing/ updating/deploying 2019-07

The interface `ModuleAdminAgent` (package `de.espirit.firstspirit.agency`, FirstSpirit Developer API) has been extended with the current FirstSpirit release:

- `install(stream, updateUsages, deployWebApps)`:
Installs a module or updates it when it is already on the FirstSpirit server.
The new parameter **deployWebApps** can be used to define whether dependent web and / or project components should be rolled out (`true`) or not (`false`).
 - The existing method `install(stream, updateUsages)` delegates its call to the new method `install(stream, updateUsages, updateUsages)`
- `installWebApp(moduleName, webAppComponent, webAppId, deploy)`:
Installs a web / project component to a web application or updates it, and deploys it to the web server if the value of `deploy` is set to `true`.
 - The existing method `installWebapp(moduleName, webAppComponent, webAppId)` delegates its call to the new method `installWebApp(moduleName, webAppComponent, webAppId, true)`
- `deployWebApps(webAppIds)`:
Deploys a set of web applications on the relevant web servers.

Sample syntax for the method `install`:

```
import de.espirit.firstspirit.agency.UserServiceDelegatingSpecialistsBroker;  
import de.espirit.firstspirit.agency.*;  
moduleAdminAgent = context.requireSpecialist(ModuleAdminAgent.TYPE);  
file = new File("path/to/module.fsm");  
stream = new FileInputStream(file);  
moduleAdminAgent.install(stream, true, true);
```

Note: The corresponding API documentation (see e.g. *Online Documentation for FirstSpirit (ODFS)*, "Template development / FirstSpirit API / API documentation") will be published with the next release of FirstSpirit, however, the new functionality may already be used as of the current FirstSpirit release.



12.56 Interface "ModuleAdminAgent": New methods for registration and configuration of web servers 2018-09

Extended the interface `ModuleAdminAgent` (package `de.espirit.firstspirit.agency`, FirstSpirit Developer API), which is used for programmatic administration of modules, by adding methods for registration and configuration of web servers.

- `registerWebServer`: creates a web server
- `unregisterWebServer`: deletes the specified web server including the directories generated for it under `<FirstSpiritROOT>/conf/webserver/`
- `getWebServerConfiguration`: returns the configuration directory `<FirstSpiritROOT>/conf/webserver/` into which the specified web server was rolled out

Execution of these methods requires server administrator privileges.

12.57 The "NewSectionOperation" interface takes over the function of "NewSectionExecutable" 2018-08

The `de.espirit.firstspirit.webedit.server.executables.NewSectionExecutable` class can be used to create new sections in the preview area of FirstSpirit ContentCreator in conjunction with the `FS_BUTTON` input component.

With the latest FirstSpirit release, the function has been moved to the public API in the `NewSectionOperation` interface (`de.espirit.firstspirit.webedit.server` package, FirstSpirit Developer API), and is no longer linked to use with `FS_BUTTON`.

See also *FirstSpirit Online Documentation*, "Template development / ContentCreator / Functional scope", "Creating a section ('NewSection')".

12.58 Interface "NewSectionOperation": New method "preselectedLanguage" 2018-08

The interface `NewSectionOperation` (Package `de.espirit.firstspirit.webedit.server`, FirstSpirit Developer-API) has been extended with the method `preselectedLanguage`. By using the new method it is now possible to preselect a project language for editing language-dependent editorial



content. When opening a form, the preconfigured language can be displayed directly to the editor for editing.

If no language preselection is defined, the current preview language is still displayed for editing.

If a language is specified, that is unconfigured in the project (i.e. is invalid), an error message is displayed.

12.59 Interface "PasswordAgent": encrypt passwords through the API

5.2R19

FirstSpirit version 5.2R16 already introduced optionally encrypted passwords in FirstSpirit configuration files (see *FirstSpirit Manual for Administrators*, chapter "FirstSpirit Server configuration / Configuration files (FirstSpirit Server) / FirstSpirit Server (fs-server.conf) / Password encryption". Now a new API is introduced to provide this capability to module developers (to encrypt module passwords).

The API can be accessed through an agent `de.espirit.firstspirit.agency.PasswordAgent` (FirstSpirit Developer API).

12.60 "ShowFormDialogOperation" interface, new method

"setPreselectedLanguage" 2018-08

In the `ShowFormDialogOperation` interface (`de.espirit.firstspirit.ui.operations` package, FirstSpirit Developer API), the new `setPreselectedLanguage` method now makes it possible to set the preselected language for a multilingual dialog.

See also *FirstSpirit Online Documentation*, "Plug-in development / Development and allocation / Use of FirstSpirit APIs / Dialogs, forms, and rulesets".

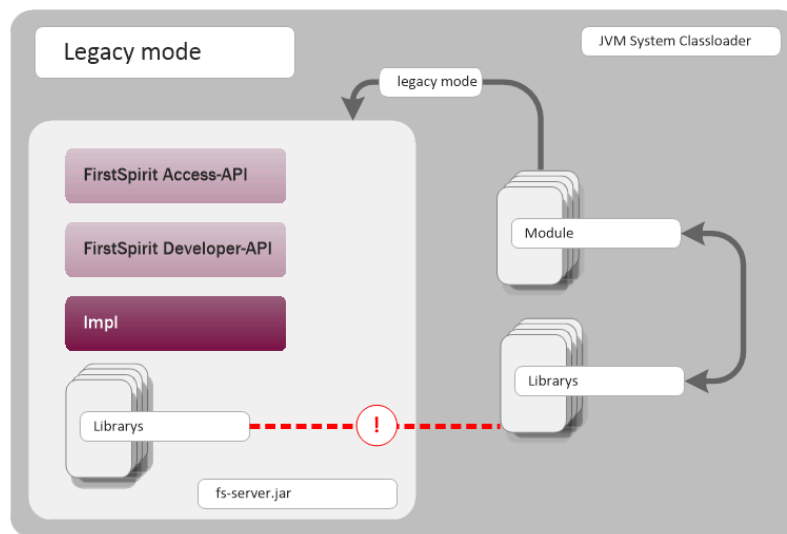
12.61 Isolated mode (BETA) - Realignment of module development 5.2R6

FirstSpirit extensions are implemented using Java. The integration of an external implementation into the FirstSpirit server and FirstSpirit client applications (FirstSpirit SiteArchitect, FirstSpirit ServerManager, ...) is done via the FirstSpirit APIs (Access API and Developer API). These provide access to FirstSpirit-internal information, services, and functionality.



During run-time, the file `fs-server.jar` (or `fs-client.jar`) is in the class path. Besides the FirstSpirit APIs, the file `fs-server.jar` also contains internal FirstSpirit classes and various libraries (see diagram below).

Module development (previous behavior): Until now, all contents of the file `fs-server.jar` are started in the Java VM. This means that the VM class loader has access to not only the official FirstSpirit interfaces but also the internal classes and libraries contained in the JAR file (see diagram):



Module development (previous behavior)

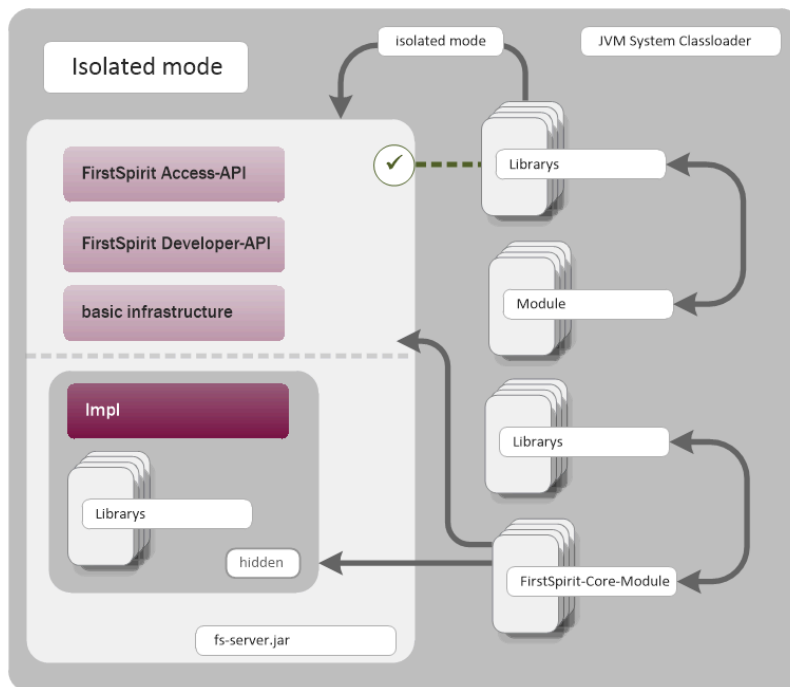
Known disadvantages are:

- The libraries contained in the file `fs-server.jar` (e.g. Log4J; Apache Commons) lead to global dependencies. Conflicts may arise e.g. when the FirstSpirit server uses a library and a module developer attempts to use the same library in a different (newer) version. A module-local replacement of specific libraries is currently not possible.
- The libraries contained in the file `fs-server.jar` are not guaranteed product components and thus do not adhere to an orderly change management (as opposed to the FirstSpirit APIs). The version of a library that is included in `fs-server.jar` depends upon the FirstSpirit version in use. This implies that conflicts may also arise during upgrade and downgrade of a FirstSpirit server. If the version of a library is changed on the server, incompatibilities with already installed modules that use the same library may arise.



- Further potential for conflict arises from uncontrolled use of internal implementation classes that are also contained within `fs-server.jar`. Because these are accessible in the JVM class loader hierarchy, they can inofficially be used by module implementations. At face value, this is a convenient workaround if a method is not available in the official APIs, but these internal classes are of course not covered by stability guarantees and may be changed at any time.

Module development in “isolated mode” (future behavior): In “isolated mode”, the FirstSpirit APIs continue to be included in `fs-server.jar` (`fs-isolated-server.jar`). Thus, all methods and interfaces of the API are visible to the class loader and may be used for module development (see diagram below). In order to establish connections and carry out further essential functionality, a minimal infrastructure in the form of internal classes is required (“basic infrastructure”, see diagram). These internal infrastructure classes, too, are visible to the class loader. In isolated mode, all further internal classes (“Impl”) and the libraries previously included in `fs-server.jar` are no longer contained in the class loader hierarchy. These contents will be relocated to a hidden area (in a directory within the JAR file) and can no longer be located by the class loader (“hidden” area, see diagram). Thus, conflicts can no longer arise if a module uses a library that is already contained in `fs-server.jar` in a different version. However, conflicts with other modules that attempt to use different versions of the same library may still arise if these libraries are included with a global scope.



Module development (future behavior)



Goals and advantages of isolated mode:

- greater freedom in the selection of libraries to be used
- extensive avoidance of global dependencies to other product components
- overall, module development becomes more secure and more stable
- improved module maintenance
- reduced migration efforts when upgrading or downgrading a FirstSpirit server

Timeline: Introduction of isolated mode (subject to change): As of the current FirstSpirit version, operation of the server in isolated mode is optional. Configuring the server to operate in isolated mode is easy but requires deliberate action. In order to ensure compatibility with existing modules, the previous behavior (“legacy mode”) continues to be supported and is the standard behavior throughout the entire 5.2 version line. This means that modules that were designed to rely upon internal libraries can continue to be used. This does not require adjustments.

With FirstSpirit 6.0, “isolated mode” will be used as the new standard behavior. The previous behavior will be deprecated as of FirstSpirit 6.0.

Complete documentation about the realignment of module development: (*FirstSpirit Developer Manual for components (German only)*, accessible from “FirstSpirit Online Documentation” (ODFS) via the navigation menu in the left sidebar.)

12.62 JSON function: Improved support for FS_REFERENCE 2020-05

In the latest FirstSpirit release, the JSON function also supports referenced objects of the input component FS_REFERENCE.

No new version of the JSON output format will be published for this change; the changes will be made in the **current format version 1.1**.



Overview of changes in format version 1.1

The input component FS_REFERENCE is used to record any reference. The type of referenced object is not predetermined: References to media (images and files), page references, folders, sections on the current page, and many other objects can be defined.

Using the JSON function, the referenced FirstSpirit objects of the input component FS_REFERENCE can now be transferred to a JSON object structure (previously the referenced objects were not rendered). In this process, the object itself is not rendered; the function only renders the data that is required for referencing.

Example: An input component of type FS_REFERENCE refers, via the `sections="only"` mode, to the sections on the current page.

The output of the page reference (or the page) in format 1.1 therefore contains the new area "section": which holds data on the referenced sections ("`fsType`": "Section")

```
"st_reference_pageref": {
  "fsType": "FS_REFERENCE",
  "name": "st_reference_pageref",
  "value": {
    "fsType": "PageRef",
    "name": "test",
    "identifier": "c88bc52c-aab9-4f66-870c-1354ca73fcb1",
    "uid": "test",
    "uidType": "SITESTORE_LEAF",
    "url": "http://www.myurl.de/external_sync_DE/test.json",
    "section": {
      "fsType": "Section",
      "name": "cms_input_text",
      "displayName": "CMS_INPUT_TEXT",
      "identifier": "c56cbc16-e70d-426d-af0f-16de05578922"
    }
  }
}
```

Additional documentation:

- [JSON configuration \(ServerManager\)](#)



- JSON output (templates)
- FS_REFERENCE input component

Notes on the format version

The format version can be explicitly configured via the JSON settings:

```
$CMS_SET(#global.json.formatVersion, "1.1")$
```

If an unchanged JSON output is required outside the framework of FirstSpirit updates, the format version should be explicitly set in the project settings under Global Settings.

If the format version is not explicitly set, the latest JSON format version (1.1) will always be used.

12.63 Obtaining the most recent login date of a user via API 5.2R16

The package `de.espirit.firstspirit.agency` (FirstSpirit Developer API) contains a new interface, `UserStatisticsAgent`. The newly-implemented method `getLastLoginAsDate(long)` in this interface may be used to obtain the date on which a user with a given ID most recently logged on to the FirstSpirit server. Due to reasons relating to data privacy, the time component of this information will always be set to 0000h (12 a.m.).

12.64 License: retrieve license expiration date and number of CaaS slots

2018-07

The operation of the FirstSpirit-module “Content as a Service” (CaaS) requires a specific license. The license attribute `license.CAAS_SLOTS` specifies the maximum number of CaaS slots that may be defined. In case `license.CAAS_SLOTS` is 0, the maximum number of CaaS slots is unlimited.

With the latest FirstSpirit release, the `LicenseService`, package `de.espirit.firstspirit.license` (FirstSpirit developer API), was extended by the methods

- `getCaasSlots();` and
- `getLicenseExpirationDate();`



The new API methods allow access to the maximum number of CaaS slots and the license expiration date (attribute `license.EXPDATE`).

Code example:

```
import de.espirit.firstspirit.access.ServicesBroker;
import de.espirit.firstspirit.license.LicenseService;
ls = context.requireSpecialist(ServicesBroker.TYPE).getService(LicenseService.class);
ls.getCaasSlots();
ls.getLicenseExpirationDate();
```

Further information can be found in the documentation of the CaaS module “FirstSpirit Content as a Service”.

12.65 Deleting Elements 5.2R18

The new interface `DeleteOperation` in the package `de.espirit.firstspirit.store.operations` (FirstSpirit Developer API) may be used to carry out server-side deletion of FirstSpirit elements.

In the course of this work, the following methods of the class `AccessUtil` (package `de.espirit.firstspirit.access`, FirstSpirit Access API) have been deprecated and can be omitted in subsequent versions:

```
AccessUtil#delete(IDProvider, boolean)
AccessUtil#delete(Collection, boolean)
```

In contrast to `AccessUtil`, the new interface also supports deletion of datasets.

Example script for the deletion of a single element:

```
import de.espirit.firstspirit.agency.OperationAgent;
import de.espirit.firstspirit.store.operations.DeleteOperation;
storeElement = context.getElement();
operationAgent = context.requireSpecialist(OperationAgent.TYPE);
deleteOperation = operationAgent.getOperation(DeleteOperation.TYPE);
deleteResult = deleteOperation.perform(storeElement);
```



12.66 Making media language-dependent or language-independent via API

5.2R16

In FirstSpirit SiteArchitect, media may be converted between being language-dependent and language-independent via the context menu item “Extras / Make medium language-(in)dependent”.

Using the methods

- `makeLanguageDependent`
- `makeLanguageIndependent`

of the interface `Media` (package `de.espirit.firstspirit.access.store.mediastore`, FirstSpirit Access API), this conversion may now be carried out via the API as well. Thus, this functionality can now be offered on a project-specific basis in `ContentCreator`.

The call to the method `makeLanguageDependent` may specify several languages to which the currently language-independent medium's content and description will be copied.

12.67 Method `save()` observes the option "Server locks in content store"

5.2R2

The project properties in `ServerManager` offer the option "Server locks in content store" (`ServerManager / Project / Properties / Options`). If this option is activated, data sources can only be edited by one user exclusively; other users cannot modify datasets in that data source concurrently.

Attempts to save a `Dataset` object via the API method `save()` without a preceding lock operation via the method `lock(true)` will cause

- saving to fail with an error message (in the form of “`java.lang.IllegalStateException: dataset 321 not locked`”) if this option is **active**,
- a warning (in the form of “`WARN 05.10.2015 15:14:59.001 (de.espirit.firstspirit.store.access.contentstore.DatasetImpl): dataset 321 not locked. please make sure the dataset is locked prior to saving.`”) to be logged to the file `fs-server.log` if the option is **not active**. In this case, saving is possible.

For further information about the option “Server locks in content store”, see



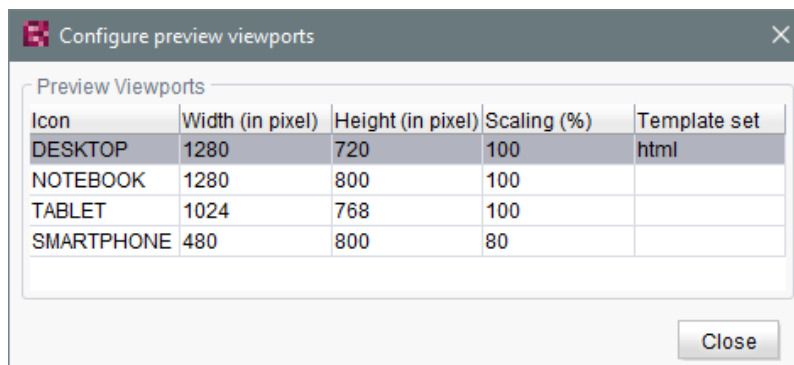
- *FirstSpirit Manual for Administrators*, Chapter “Options”
- *Documentation for FirstSpirit SiteArchitect*, Chapter “Procedure in multi-user operation”

12.68 Methods for determining the absolute path to the schedule entry directory 5.2R2

Using the new `getFolderPath` method in the `JobAgent` interface (FirstSpirit Developer API, Package `de.espirit.firstspirit.scheduling.agency`), it is now possible to access the absolute path to the entry directory.

12.69 Multi Perspective Preview: Creating and configuring viewports via API 5.2R6

With the functionality “Multi Perspective Preview” (MPP), FirstSpirit supports editors in controlling how web page content is displayed and navigated in display sizes of various output devices and in optimizing layouts and images for specific output devices. Each output device may be represented by a so-called viewport. Thus far, viewports of a project were defined and configured via project settings in FirstSpirit ServerManager (“Options / Configure preview viewports”):



Icon	Width (in pixel)	Height (in pixel)	Scaling (%)	Template set
DESKTOP	1280	720	100	html
NOTEBOOK	1280	800	100	
TABLET	1024	768	100	
SMARTPHONE	480	800	80	

As of the current FirstSpirit version, such viewports can now be created, modified, and deleted via API. The package `de.espirit.firstspirit.access.project.mpp` (FirstSpirit Developer API) contains the following interfaces:

- Interface `MPPViewport` (represents a viewport)
- Interface `MPPViewport.Builder` (creates a viewport)



- Enum `MPPViewport.IconType` (icon type for a viewport)
- Interface `MPPViewportAgent`
- Interface `MPPViewports` (query viewports defined for a project and create/delete a viewport)

Note: When configuring multiple viewports, care should be taken that no two identical viewports (with identical values) are defined, and negative values should not be used.

For further information, see *Template development / JavaScript APIs / Multi Perspective Preview* (→*FirstSpirit Online Documentation*) and *FirstSpirit SiteArchitect / FirstSpirit AppCenter / Integrated preview / Multi Perspective Preview* (→*Documentation FirstSpirit SiteArchitect*).

12.70 Recalculation of references for individual elements via `ProjectReferencesAgent` 5.2R3

If a project contains broken references, the project-level schedule activity “Repair references” may be used to recalculate references within the project. This task operates on the entire project and may take a long time to complete, depending on the project’s size.

FirstSpirit version 5.2R3 introduces a new agent, `ProjectReferencesAgent` (FirstSpirit Developer API, package `de.espirit.firstspirit.agency`), which enables recalculation of references for individual elements using the method `rebuildReferences(IDProvider)`. The agent also provides a means to trigger recalculation of all references in the project via API (method `rebuildReferences()`).

12.71 New API method `<user>.getExternalGroups()` 2019-06

The new method `<user>.getExternalGroups()` (FirstSpirit Developer API, package `de.espirit.firstspirit.access`, interface `User`) returns a list of `ExternalGroup` objects.

The `ExternalGroup` objects returned by this new method have the status Read-Only.

12.72 "WE_API" has new events 5.2R20

With the current FirstSpirit version you can, using the “WE_API”, register for events that are fired when creating a new page, or when changing the navigation within the current session. This allows for web-



apps editing a FirstSpirit project via FirstSpirit Third Party Preview (TPP) to jump to the newly created page, or to update their navigation.

The new listener can be registered like this, on the JavaScript console:

```
top.WE_API.Common.addNavigationChangeListener(function(fsid) {  
  console.log("navigationChanged: " + (fsid ? fsid.getStoreType() + ":" + fsid.getId() :  
    "all"));  
});
```

Furthermore, using the WE_API, you can now register for events that are fired when a workflow is being processed. This was also added to extend the Third Party Preview (TPP). But the listener can be used independently as well.

The listener can be registered as follows:

```
top.WE_API.Common.addWorkflowTransitionListener(function(){  
  console.log("WorkflowTransition:\n"  
  + "getWorkflowTarget: " + (workflowInfo.getWorkflowTarget() ?  
    workflowInfo.getWorkflowTarget().getId() : "-") + "\n"  
  + "isDeleted: " + workflowInfo.isDeleted() + "\n"  
  + "isReleased: " + workflowInfo.isReleased() + "\n"  
  + "isFirstTransition: " + workflowInfo.isFirstTransition() + "\n"  
  + "getTransitionId: " + workflowInfo.getTransitionId() + "\n"  
  + "getWorkflowId: " + workflowInfo.getWorkflowId() + "\n"  
  + "isEndState: " + workflowInfo.isEndState() + "\n");  
})
```

12.73 New functions in "WE-API" 5.2R20

With the TPP API's new `setPreviewElement` WebApps can now set the ContentCreator's PreviewElement, thus allowing users to work with the toolbar (workflows etc.), just as they know it from "classic" FirstSpirit projects.

The new function `addPreviewRequestHandler` makes it possible for WebApps to react appropriately when an editor clicks on a page or section in the report area.



12.74 New interfaces and methods for implementing personal schedule actions 5.2R3

FirstSpirit schedule entry planning enables time-controlled execution of actions (“tasks”) at server/project level. Associated actions can be combined in one schedule. From FirstSpirit version 5.2R3 onward, the following FirstSpirit Developer API interfaces and methods enable the implementation of further functions for self-implemented actions, which can be used to access and further process information from other actions, for example:

- **Generating interface** (`de.espirit.firstspirit.scheduling.aspects` package):
This interface is used to identify a generation schedule and, for example, to query the status of the schedule and the number of generated pages.
- **GenerationAgent interface**
(`de.espirit.firstspirit.scheduling.agency` package):
This interface is used specifically to respond to generation schedules.
- **getAspect method**
(`ScheduleTaskControl` interface, `de.espirit.firstspirit.scheduling` package):
Provides aspects of the current schedule.
- **configureGenerateTask(@NotNull ScheduleTaskControl control) method**
(`DeltaGeneration.ChangeSet` interface, `de.espirit.firstspirit.access.schedule` package):
Configures a control object.

For more information, see also *FirstSpirit Online Documentation*, “Plug-In Development / Server Plug-Ins / Schedule Tasks”.

12.75 New Interfaces to Open Version Comparison and Merge Dialogs

5.2R3

FirstSpirit version 5.2R3 introduces new interfaces (both in the package `de.espirit.firstspirit.ui.operations`, FirstSpirit Developer-API) to support comparison and merge functionality, respectively, for revisions:

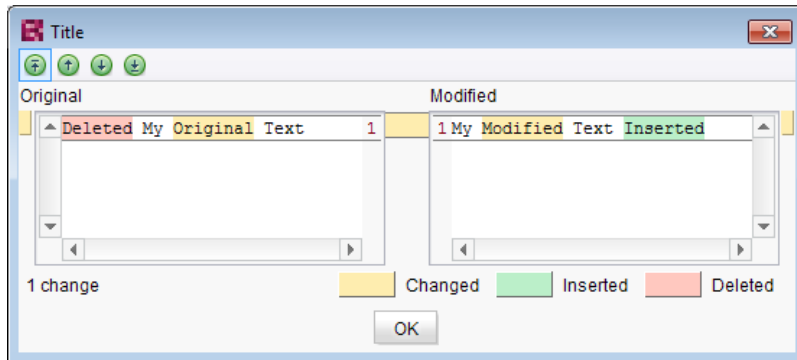
- `OpenComparisonDialogOperation`



- OpenMergeDialogOperation

Example for OpenComparisonDialogOperation:

```
import de.espirit.firstspirit.agency.OperationAgent;  
import de.espirit.firstspirit.ui.operations.OpenComparisonDialogOperation;  
import java.io.StringReader;  
operationAgent = context.requiresSpecialist(OperationAgent.TYPE);  
operation = operationAgent.getOperation(OpenComparisonDialogOperation.TYPE);  
operation.setDialogTitle("Title");  
operation.setOriginalHeader("Original");  
operation.setModifiedHeader("Modified");  
originalText = "Deleted My Original Text";  
modifiedText = "My Modified Text Inserted";  
operation.perform(originalText, modifiedText);  
return 0;
```



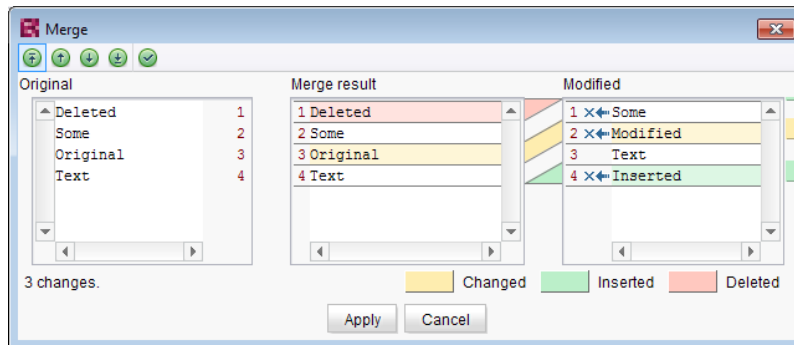
Comparison (OpenComparisonDialogOperation)

Example for OpenMergeDialogOperation:




```
import de.espirit.firstspirit.agency.OperationAgent;
import de.espirit.firstspirit.ui.operations.OpenMergeDialogOperation;
import java.io.StringReader;

operationAgent = context.requireSpecialist(OperationAgent.TYPE);
operation = operationAgent.getOperation(OpenMergeDialogOperation.TYPE);
operation.setDialogTitle("Title");
operation.setOriginalHeader("Original");
operation.setModifiedHeader("Modified");
originalText = "Deleted\nSome\nOriginal\nText";
modifiedText = "Some\nModified\nText\nInserted";
resultingText = operation.perform(originalText, modifiedText);
print("Merge result = '" + resultingText + "'");
return 0;
```



Merge (OpenMergeDialogOperation)

12.76 New method "getServiceConfig" in interface "ModuleAdminAgent"

5.2R12

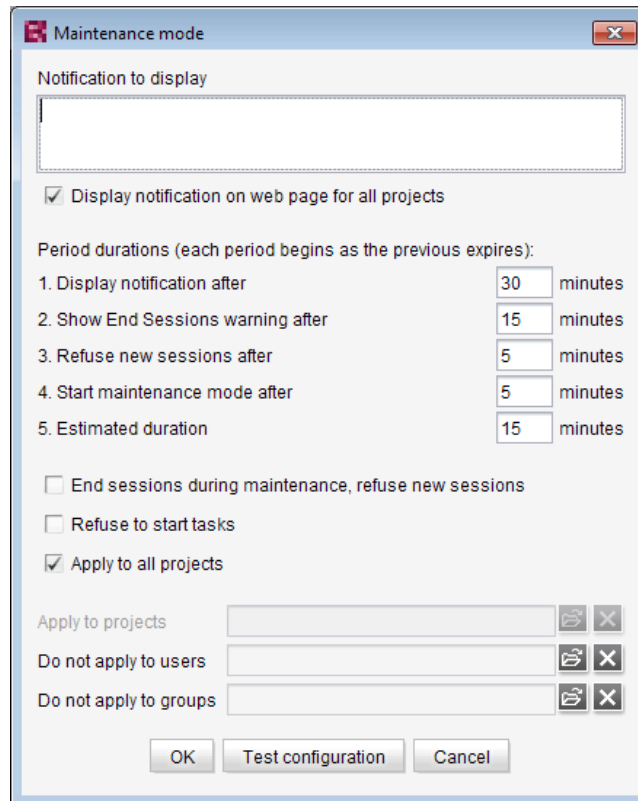
The new method `getServiceConfig` of the interface `ModuleAdminAgent` (package `de.espirit.firstspirit.agency`, FirstSpirit Developer API) provides access to the directory containing the configuration files of a service of a module (analogous to `getProjectAppConfig` and `getWebAppConfig`). This requires server administrator privileges.

12.77 New Method for Cancelling Maintenance Mode 5.2R3

FirstSpirit supports a maintenance mode which may be used to shut down the server at a pre-planned time in order to perform updates or other system maintenance. Depending on configuration, users may be prohibited from logging onto the FirstSpirit server or opening specific projects, while currently logged on users will receive a notification that the FirstSpirit server is about to be shut down. Maintenance mode



is controlled by a schedule task (ServerManager / Server / Properties / Schedule Management / Action “Maintenance mode”). In this task, the duration of maintenance mode may also be specified (option “Estimated duration”).



Configuration of a maintenance mode task

The new method `boolean stopMaintenance(long scheduleEntryId)` (FirstSpirit Access API, Package `de.espirit.firstspirit.access`, Interface `AdminService`) may be used to cancel maintenance mode via the API, e.g. if the maintenance tasks have been completed sooner than planned (and specified in the schedule task's “Maintenance mode” action).

The ID of the schedule task that was used to start maintenance mode must be provided using the parameter `scheduleEntryId`. The method returns `true` if maintenance mode was cancelled successfully.

For further information about configuring maintenance mode, see *FirstSpirit Manual for Administrators*, chapter “Maintenance mode”.



12.78 New agent "ServerConfigurationAgent" for configuring the server

2018-07

The configuration of a FirstSpirit server could have been accessed using the interface `ServerConfiguration` in the package `de.espirit.firstspirit.access` (FirstSpirit Access API) so far. This interface could be used for reading out values like the socket port, and partially to set values as well.

As of FirstSpirit 2018-07 a dedicated agent has been introduced, which will assume this task largely: `ServerConfigurationAgent` in the package `de.espirit.firstspirit.agency` (FirstSpirit Access API). The new interface provides access to values of the server configuration in a type safe manner, using the methods `getServerProperty` and `setServerProperty`. For example, durations are handled as instances of `java.time.Duration`.

A list of all accessible server properties can be found in the class `ServerProperties` in the package `de.espirit.firstspirit.server.configuration`.

In addition, the `ServerConfigurationAgent` provides access to the previous `ServerConfiguration` further on.

12.79 New Aspect "FormReferenceContaining" (provide a form element's model reference) 2020-03

The (entered) values of FirstSpirit input components can contain references to other objects (so-called "value references").

An input component of type `FS_INDEX` (with `DatasetDataAccessPlugin`), for example, holds references to all datasets that are referenced via this input component.

Aside from these value references an input component can hold further references regarding the input component's GOM representation (FirstSpirit GUI Object Model (GOM)) (so-called "model references"). For an input component of type `FS_INDEX` (with `DatasetDataAccessPlugin`), for example, this is the reference to the desired table template (that is defined in the `TEMPLATE` tag under the template's form tab).

An input component developer can now provide the form element's (e.g. input component's) model references via the aspect `FormReferenceContaining`, with the method



`List<Reference> collectFormReferences(F formElement)` (FirstSpirit Developer API, package `de.espirit.firstspirit.client.access.editor`).

The value references of a form element can be provided, with the aspect `ReferenceContaining<T>` (FirstSpirit Developer API, package `de.espirit.firstspirit.client.access.editor`), just like before.

12.80 New API interface "ConnectionExtractor" allows access to the connection of the logged-in user 5.2R16

The new interface `ConnectionExtractor` (package `de.espirit.firstspirit.web`, FirstSpirit Developer API) offers access to the connection of the logged-in user (within the FirstSpirit web applications (ContentCreator, Preview, Staging)) via the method `extractConnectionFromRequest(HttpServletRequest)`.

The connection may be used to simplify the communication (e.g. passing of parameters) between FirstSpirit and a third-party application (e.g. integration of third-party content or, in general, in servlet and filter environments).

12.81 New API interface "ProjectMembersAgent" provides information about users and groups 5.2R15

The new FirstSpirit Developer API interface `de.espirit.firstspirit.agency.ProjectMembersAgent` now provides access to information about users and groups of a project, e.g.

- Method `getGroups`: returns all groups of the current project
- Method `getUsers`: returns all users of the current project
- Method `getUserByLogin`: returns the user associated with a given login name
- Method `getGroupByName`: returns the group associated with a given group name
- Method `getUserGroups`: returns the group the specified user belongs to



In the course of this improvement, the existing interface `GroupsAgent` of the same package, which provides similar functionality, has been marked *deprecated* and will be removed in May 2018.

If methods, classes, and interfaces that are no longer supported or are set to deprecated are used in scripts and/or modules, entries are written to log files accordingly (e.g., server log, generation log, etc.). The corresponding log entries should be checked and the cause(s) remedied.

Methods set to the “deprecated” state can still be used, but as they will be omitted in subsequent versions, this is not advisable.

12.82 New Interface "PreviewUrlAgent" for creating preview URLs 2019-01

While preview URLs for page references could previously be created using the `Previewable` interface (Package `de.espirit.firstspirit.access.store`, FirstSpirit Access API), the current release now also allows this to be realized for media. The new interface `PreviewUrlAgent` (FirstSpirit Developer API, Package `de.espirit.firstspirit.agency`) was implemented for this purpose. It can be used to create preview URLs for media as well as for page references.

The agent can be called as follows:

```
import de.espirit.firstspirit.agency.PreviewUrlAgent;
pua = context.requireSpecialist(PreviewUrlAgent.TYPE);
cpb = pua.getContentProducerBuilder();
mb = pua.getMediaBuilder();
cpb.getUrl(<Pageref>);
mb.getUrl(<Media>);
```

`<Pageref>` and `<Media>` are the concerned FirstSpirit objects.

Use

- `MediaPreviewUrlBuilder` for creating URLs for FirstSpirit media of the type *File* or *Picture*
- `ContentProducerURLBuilder` for creating URL for FirstSpirit objects of the type *PageRef*, *Page* and *Documentgroup*

You can switch to another language using `language(<language>)`.



Use `forWebedit()` and `fullQualified()` to configure the builder to create ContentCreator or Fully Qualified links.

Example:

```
mb.language(<Language>).forWebedit().fullQualified().getUrl(<Media>);
```

Note: When using remote links, corresponding “jump” URLs will be created.

In the context of this API enhancement, `de.espirit.firstspirit.access.store.Previewable` was deprecated.

Methods set to the “deprecated” state can still be used, but as they will be omitted in subsequent versions, this is not advisable.

If methods, classes, and interfaces that are no longer supported or are set to deprecated are used in scripts and/or modules, entries are written to log files accordingly (e.g., server log, generation log, etc.). The corresponding log entries should be checked and the cause(s) remedied.

Note: The corresponding API documentation (see e.g. *Online Documentation for FirstSpirit (ODFS)*, “Template development / FirstSpirit API / API documentation”) will be published with the next release of FirstSpirit, however, the new functionality may already be used as of the current FirstSpirit release.

12.83 New interface "ScheduleTaskAgent" for task creation 2019-09

FirstSpirit’s task scheduling allows to combine multiple related actions into a single task and execute it on schedule. These tasks can be created for projects or server-wide.

Certain actions (such as “script execution” or “maintenance mode”) and tasks (such as “server update”) are integrated by default with FirstSpirit. To support project requirements, FirstSpirit further allows the specification of custom tasks via the FirstSpirit API.

With FirstSpirit 2019-09, the `ScheduleTaskAgent` interface is added to the `de.espirit.firstspirit.agency` package in the FirstSpirit Developer API.

The `ScheduleTaskAgent` interface allows to retrieve an object of type `ScheduleTaskFactory` for implementations of `ScheduleTaskApplication` (package: `de.espirit.firstspirit.scheduling`). This `ScheduleTaskFactory` provides functionality to create and edit tasks, which previously was only possible using the `ServerManager`.



12.84 Creating a pop-up dialog as a warning message 2020-05

Pop-up dialogs created using the interface `RequestOperation` (FirstSpirit Developer-API, Package `de.espirit.firstspirit.ui.operations`) can now also be created as warning messages via Enum `RequestOperation.Kind` (FirstSpirit Developer-API, Package `de.espirit.firstspirit.ui.operations`):

Example:

```
import de.espirit.firstspirit.agency.OperationAgent;
import de.espirit.firstspirit.ui.operations.RequestOperation;
import de.espirit.firstspirit.ui.operations.RequestOperation.Kind;
opAgent = context.requireSpecialist(OperationAgent.TYPE);
if (opAgent != null) {
    RequestOperation requestOp = opAgent.getOperation(RequestOperation.TYPE);
    requestOp.setKind(Kind.WARN);
    requestOp.setTitle("Whoa, there!");
    requestOp.perform("Once you delete this content, there's no getting it back.
        Make sure you want to do this!");
} else {
    context.logInfo("...");
}
```

Possible types (`RequestOperation.Kind`):

- WARN (new)
- INFO
- QUESTION
- ERROR

In `SiteArchitect` and `ServerManager`, WARNING-type pop-up dialogs are displayed with an exclamation mark, and INFO-type pop-up dialogs are displayed with an “i” symbol.

In `ContentCreator`, there is no visual difference between WARNING-type and INFO-type pop-up dialogs. Both types are displayed in exactly the same way with an exclamation mark.



12.85 Check for duplicate resources 2018-12

Classes and other resources are defined in FirstSpirit modules and in their components in `<resource>` entries. These reference a Jar file or a directory. These resource entries can carry information about version and “scope” (e.g. available server-wide or limited to the module) of the resource.

Duplicate resources for the same scope (i.e. web or project/server) are not permitted.

As of the current release, FirstSpirit prevents the use of duplicate resources, i.e. Jar files in identical or different versions, within the same scope. Attempts to install a module with duplicate resources will be aborted with an error message. This prevents possible subsequent erroneous behavior during use of the modules.

For further information, see “FirstSpirit Entwicklerhandbuch für Komponenten (Beta)”, “FirstSpirit Modul-Grundkonzeption / Modul-Bestandteile / Ressourcen” (German only).

12.86 RenderingAgent supports remote links 5.2R16

The interface `RenderingAgent` (package `de.espirit.firstspirit.agency`, FirstSpirit Developer API) supports remote links as well as of the current FirstSpirit version.

12.87 RenderingAgent: Take information from higher-level contexts into account 2018-07

FirstSpirit content can be generated via the `RenderingAgent` interface (package: `de.espirit.firstspirit.agency`, FirstSpirit Developer API). The interface enables a special generation for specific dynamic content to be controlled directly via the API.

The *STRICT* render mode, which is called up via `.strict()`, has been added to the latest FirstSpirit release. In this mode, information from higher-level contexts is also taken into account. For example, a variable that has been defined in a page template and modified in preceding sections can now be output in a section with the correct content.

Similarly, the `pageRef` context has been added in the `RenderingAgent.Renderer` interface. This context enables a page reference to be transferred as a context so that, for example, metadata defined in it can also be read out and used.

Example:




```

import de.espirit.firstspirit.agency.RenderingAgent;
import de.espirit.firstspirit.access.store.*;
import de.espirit.firstspirit.agency.StoreElementAgent;
storeElementAgent = context.requestSpecialist(StoreElementAgent.TYPE);
pageref = ...; // z. B. storeElementAgent.loadStoreElement("...",IDProvider.UidType.
    SITESTORE_LEAF,false);
section = ...; // z. B. context.getElement(); beim Aufruf als Kontextmenü-Skript
renderingAgent = context.requestSpecialist(RenderingAgent.TYPE);
renderer = renderingAgent.createRenderer(section).context(pageref);
renderedSectionContent = renderer.strict().getResult().getContent();

```

Note: If variables are modified in a different context (e.g., in a section with `$_CMS_SET(#global.context("PAGE")["counter"], counter+1)`, the *counter* variable in the context of the page), the following *WARN* message is output when the content is rendered via the *RenderingAgent*:

```

WARN <timestamp> (de.espirit.firstspirit.agency.RenderingAgent): context mutation
detected in STRICT mode, setting of variable 'counter' in context PAGE

```

For more information on contexts in FirstSpirit, see also *FirstSpirit Online Documentation*, “Template development / Variables / Contexts”.

12.88 Modifying FeatureDescriptor objects stored server-side via API

5.2R12

With newly-created API means, it is now possible to modify *FeatureDescriptor* objects stored server-side and to save them again. A typical use case is storing a *FeatureDescriptor* with a current revision (method `createFeatureBuilder` of the interface *FeatureAgent*, package `de.espirit.firstspirit.feature`, FirstSpirit Developer API).

12.89 SnippetAgent: API access to snippet evaluation 2018-07

The newly created API functionality *SnippetAgent* (package `de.espirit.firstspirit.access.store.templatestore`, FirstSpirit Access API) allows now getting a context-related access to the snippet evaluation of a FirstSpirit element.

In addition, an appropriate icon for a FirstSpirit element can be determined.



Methods:

- `getTypeIcon` returns an appropriate icon for the given element depending on the execution context of the agent.
- `getSnippetProvider()` returns an appropriate `SnippetProvider` for the given element.
 - `getSnippetProvider(IDProvider)` - with default fallback
 - `getSnippetProvider(IDProvider, FallbackSettings)` - the parameter `FallbackSettings` defines the fallback behavior
- `fallback()` returns a new fallback object with default behavior.

The fallback object determines if and how the individual parts of the snippets (*Header*/ "Label", *Extract*) are to be resolved if the result of the snippet evaluation is empty. The default behavior is:

- *Header*: Returns the display name of the element.
- *Extract*: Returns the path to the element.

Using the methods `headerNone` and `extractNone` you can turn off the fallback behavior for the respective properties.

For more information on snippets see also *FirstSpirit Online Documentation* "Template development / Snippets".

12.90 Saving Elements 5.2R18

Saving of store elements and datasets can now be triggered programmatically via the API using the new interface `SaveOperation` (package `de.espirit.firstspirit.store.operations`, FirstSpirit Access API).

Unlike save actions triggered via the graphical user interfaces, saving an element or dataset via `SaveOperation` may be carried out even if the object to be saved contains erroneous or invalid data, e.g. due to a rule infraction (method `setValidationEnabled(false)`).

The method `setRecursionEnabled` may be used to specify that child elements should also be saved.



Furthermore, the method `setComment` may be used to add a custom comment which will be shown in version history.

12.91 Using an "indexField" to get search suggestions 2018-07

Previously, the `getSuggestions` method in the `SearchService` interface (FirstSpirit Access API, `de.espirit.firstspirit.access.search` package) supported an option to request search suggestions for language-dependent content. Search suggestions for language-independent content is now supported, too, if you do not specify a specific language object (`null`).

With the latest FirstSpirit release, an additional `getSuggestions` method has been introduced which permits the name of an `indexField` (used by the "Apache Lucene" search engine) to be specified in addition:

```
getSuggestions(long projectId, String indexField, String word, Language language);
```

`indexField` expects the name of the field in the Lucene index as a value.

12.92 SwingGadget Development: New Class "SwingFormViewMode"

5.2R9

A `SwingGadget` is the graphical representation of an input component in the FirstSpirit SiteArchitect. `SwingGadgets` are implemented in Java and contain graphical interface elements ("Swing") like buttons and input components as well as functional aspects like saving values. Furthermore user interactions and changes are evaluated by `SwingGadgets` and transferred to the visual representation of the component. Classes and methods required for implementing `SwingGadgets` can be found in the package `de.espirit.firstspirit.ui.gadgets.swing` (FirstSpirit Developer-API).

With the current version of FirstSpirit this package has been extended by the class `SwingFormViewMode`. Previously this class was available in the non-public API. Making it accessible was necessary because the class `AbstractValueHoldingSwingGadget` existing in the same package `de.espirit.firstspirit.ui.gadgets.swing` contains a method using `SwingFormViewMode` as a return type.

Compiling against the `fs-api.jar` resulted in the error



```
The type de.espirit.firstspirit.ui.gadgets.swing.SwingFormViewMode cannot be resolved.  
It is indirectly referenced from required .class files
```

This error message no longer happens with the current version of FirstSpirit, the affected class is now part of the JAR file.

For more information regarding the implementation of SwingGadgets please see also *Plug-In Development / Universal Extensions / Input Components / SiteArchitect* (→*FirstSpirit Online Documentation*).

12.93 UrlAgent: Read Access to SEO/Short URLs of a Project 2018-06

Newly created API functionality allows read access to a list of all SEO and short URLs defined in a project, namely by using the methods `getSEOURls()` and `getShortUrls()` of the interface `UrlAgent` (package `de.espirit.firstspirit.agency`, FirstSpirit Developer API).

12.94 Changed Behavior for Data Stream Builder Implementations With Aspect “Filterable” 5.2R2

The interface `DataStreamBuilder` in the package `de.espirit.firstspirit.client.plugin.dataaccess` (FirstSpirit Developer API) allows configuration of a set of data which may be used in `FS_INDEX` or made available via reports. Using the aspect `Filterable`, developers may define a list of parameters which will be shown in the user interfaces of `FS_INDEX` element selection dialogs and reports so that users may specify filters in order to limit the data returned by the data stream. If the “Filterable” aspect of a Data Access Plug-In defines more than one parameter with the same name, only the first provided parameter with that name will be used.

For more information about the `DataStreamBuilder` interface, see *FirstSpirit Online Documentation*, Chapter “Plug-In Development / Universal Extensions / Data Access / Data Stream / Builder”.

12.95 Improved detection of identical or compatible module resources 5.2R6

The use of identical resources (e.g. a library) in various product components (e.g. FirstSpirit server, additional modules) frequently causes conflicts in practical application. Example: If, for example, FirstSpirit internally uses “SLF4J”, version 1.6.1 for logging within a web application, a conflict arises



if a module developer attempts to use another version of “SLF4J” for a customer-specific module implementation. Likewise, such a conflict may arise in global module resources: these are accessible with a server-wide scope and may thus also cause conflicts with other modules. The current FirstSpirit version enables detection of identical or compatible resources used in various product components. This requires several data:

Assignment of unique identifiers for resources: If a library is added to a module as a resource, the component descriptor must contain a unique name for the resource. It is recommended that names are not just unique but follow a set syntax (following the Maven schema) in order to enable identification of identical or compatible resources, e.g.:

```
<web-resources>
  <resource name="org.slf4j:slf4j-api" version="1.6.4">lib/slf4j-api-1.6.4.jar
</resource>
</web-resources>
```

The name (following the Maven schema) begins with a “groupId” (here: `org.slf4j`), followed by an “artifactID” (here: `slf4j-api`), separated by a colon. The “groupId” is a grouping identifier (similar to a Java package name) and serves as a unique identifier of the producer. It usually is the reversed domain name used by the producer. The “artifactID” is the resource's name (see [Maven conventions](#)).

Version information for resources: When resources with identical names are used, FirstSpirit attempts to detect if these resources are compatible with each other. Alongside the unique identifier (“name”), this also requires information about the version of the delivered resource (“version”) and can optionally include information about the minimum compatible version (“minVersion”) and the maximum compatible version (“maxVersion”):

```
<web-resources>
  <resource name="org.slf4j:slf4j-api" version="1.6.4"
    minVersion="1.6.1" maxVersion="1.7.2">
    lib/slf4j-api-1.6.4.jar
  </resource>
</web-resources>
```

For “maxVersion”, the definition `minVersion="1.6.1" maxVersion="1.9.9"` is allowable as long as the library remains stable within a minor version line (even though this version of the library does not yet exist at the time the module is generated).



If several different versions of a library are added to FirstSpirit, this information can be used to identify the best applicable version of the resource.

Rules:

- If several mentions of a resource with the same unique identifier omit version information (“version”), the resources are deemed incompatible with each other.
- If several mentions of a resource with the same unique identifier but different versions (“version”) omit “minVersion” and “maxVersion”, the resources are deemed compatible. The latest version of the resource will be used.
- If several mentions of a resource with the same unique identifier but different versions (“version”) do carry compatibility information (“minVersion” and “maxVersion”), the latest version of the resource which is compatible with all modules will be used.
- ■ If “minVersion” is omitted, the compatibility range does not have a lower boundary (“0” to “maxVersion”).
- ■ If “maxVersion” is omitted, the compatibility range does not have an upper boundary (“minVersion” to infinity).

12.96 Improved detection of duplicate resources in modules 2019-02

Modules with identical web resource definitions (tag `<resource>`) but different scopes (attribute `scope`) will no longer be reported as incompatible. In the past, an error message was displayed, e.g.: “The application 'xyz' could not be installed because of a resource conflict: ...”

Note: It is meaningless to specify a scope for web resources because they are always available within the web application.

12.97 Improved configuration options for user-specific URLs (AdvancedUrlCreator) 2020-05

FirstSpirit provides API interfaces and a reference implementation (“Advanced URL Creator”) in order to integrate user-specific path strategies for URL generation in FirstSpirit. All configuration parameters (including the standard parameters evaluated by FirstSpirit as well as user-defined parameters) must



either be defined via a schedule script that is executed before the actual generation schedule or via the configuration settings in the `module.xml` file.

The FirstSpirit framework evaluates some predefined standard parameters directly. These include:

- `useWelcomeFileNames` (for configuring start page references)
- `stripWelcomeFileNames` (removes the extension `/index.*` from the Advanced URL)

For more standard parameters, see the FirstSpirit manual: [Standard configuration parameters](#).

The following applies to all parameters: The capitalization of parameters is not relevant, i.e., `useWelcomeFileNames`, `USEWELCOMEFILENAMES`, or `usewelcomefilenames` are all valid designations for the same parameter.

The parameters “`useWelcomeFileNames`” and “`stripWelcomeFileNames`”, which are used for the configuration of user-specific path strategies for URL generation, offer new configuration options in the latest FirstSpirit release.

Change relating to the parameter “`useWelcomeFileNames`”

The “`useWelcomeFileNames`” parameter can be used to configure start page references.

```
context.setProperty("#urlCreatorSettings",  
Collections.singletonMap("usewelcomefilenames", "true"));
```

Previous behavior:

Possible values:

- `true` or `yes` or value not set (default value)
- `false` or `no`

`true` or `yes` (default value): If the parameter is passed with the value “`true`” (default value), the file name `index.*` is always provided for page references which are marked as the start page of a folder in the Site Store when an Advanced URL is generated (regardless of the display name or the file name from the properties dialog).



In standard URL generation mode,

```
../en/startpage/mithras_home.html
```

becomes the following in advanced mode with “useWelcomeFileNames” (true):

```
../Startpage/index.html
```

For page references which are not marked as start pages, on the other hand, the display name continues to be used when the Advanced URL is generated.

`false` or `no`: If the parameter is passed with the value “false”, regardless of whether a page reference is a start page or not, the URLs are generated based on the display name of the page reference (with the blank space being replaced by a “-” character):

```
../Startpage/Mithras-Homepage.html
```

New behavior:

Possible values:

- `true` or `yes` or value not set (default value): Only the first HTML template set uses Welcomefilenames.
- `false` or `no`: No Welcomefilenames are used.
- `all`: All HTML template sets use Welcomefilenames. (This type of configuration can lead to identical URLs, see (*)).
- Comma-separated list of template sets: All listed channels use Welcomefilenames. (This type of configuration can lead to identical URLs, see (*)).

`true` or `yes`: If the parameter is passed with the value “true” (default value), the file name `index.*` is provided for page references which are marked as the start page of a folder in the Site Store when an Advanced URL is generated (regardless of the display name or the file name from the properties dialog) – but this only applies to the first HTML template set (e.g., “html”), whereas for all other template sets



(e.g., “php”) the URLs are still generated based on the display name for the page reference (with the blank space being replaced by a “-” character).

```
../Startpage/index.html
```

`false` or `no`: If the parameter is passed with the value “false”, regardless of whether a page reference is a start page or not, the URLs are generated based on the display name of the page reference (with the blank space being replaced by a “-” character):

```
../Startpage/Mithras-Homepage.html
```

`all`: If the parameter is passed with the value “all”, the file name `index.*` is provided for page references which are marked as the start page of a folder in the Site Store when an Advanced URL is generated (regardless of the display name or the file name from the properties dialog) – for all HTML template sets contained in the project. (This type of configuration can lead to identical URLs, see (*)).

List of template sets: If a list of template sets is passed to the parameter, the file name `index.*` is provided for page references which are marked as the start page of a folder in the Site Store when an Advanced URL is generated (regardless of the display name or the file name from the properties dialog) – for all HTML template sets that are included in the list. The name of the template set is given here (“template set name”: see FirstSpirit product manual under [Template sets for a project](#)). (This type of configuration can lead to identical URLs, see (*)).



(*) With a configuration that uses `Welcomefilenames` for all or multiple template sets, a folder can contain several `index.*` files (e.g., “/index.html” and “/index.php”). If the `/index.*` extensions are then also removed via `stripWelcomeFileNames`, this will result in identical URLs. It is strongly advised not to use this type of configuration.

Change relating to the parameter “stripWelcomeFileNames”

The “stripWelcomeFileNames” parameter is only relevant if the URL path strategy used also uses the “useWelcomeFileNames” configuration parameter.



The “stripWelcomeFileNames” parameter can be used to remove the “/index*” extension added by “useWelcomeFileNames” from the Advanced URL (but not from the file name under which the page is stored in the file system).

```
factorySettings = new HashMap();
factorySettings.put("usewelcomefilenames", "true");
factorySettings.put("stripwelcomefilenames", "true");
context.setProperty("#urlCreatorSettings", factorySettings);
```

Previous behavior:

Possible values:

- true or yes or value not set (default value)
- false or no

If the parameters “useWelcomeFileNames” and “stripWelcomeFileNames” are passed with the value “true” (default value), the display name of the start page is removed from the Advanced URL for page references which are marked as the start page of a folder in the Site Store.

In standard URL generation mode,

```
../en/startpage/mithras_home.html
```

becomes the following (in the file system) in advanced mode with “useWelcomeFileNames” and “stripWelcomeFileNames”:

```
../Startpage/index.html
```

and the Advanced URL becomes:

```
../Startpage
```

As a result, although the start page of the “Startpage” folder is created in the file system with the extension “/index.*”, it can (if the web server has been configured accordingly) be called via the “/Startpage/” URL.



If the project contains more than one template set, “stripWelcomeFileNames” only removes “index.{master extension}”. “Master extension” is the file extension from the first template set (usually “html”).

If the “stripWelcomeFileNames” parameter is passed with the value “false”, the extension “/index.*” is retained for all start page references both in the file system and in the Advanced URL.

New behavior:

Possible values:

- `true` or `yes` or value not set (default value): “/index.*” (usually “/index.html”) is shortened.
- `false` or `no`: URL is not shortened
- List of extensions: All listed extensions (e.g., “/index.html” and “/index.php”) are shortened.

`true` or `yes`: If the “stripWelcomeFileNames” parameter is passed with the value “true” (default value), the start page of the “Startpage” folder is created in the file system with the extension “/index.*”, but can (if the web server has been configured accordingly) be called via the “/Startpage/” URL.

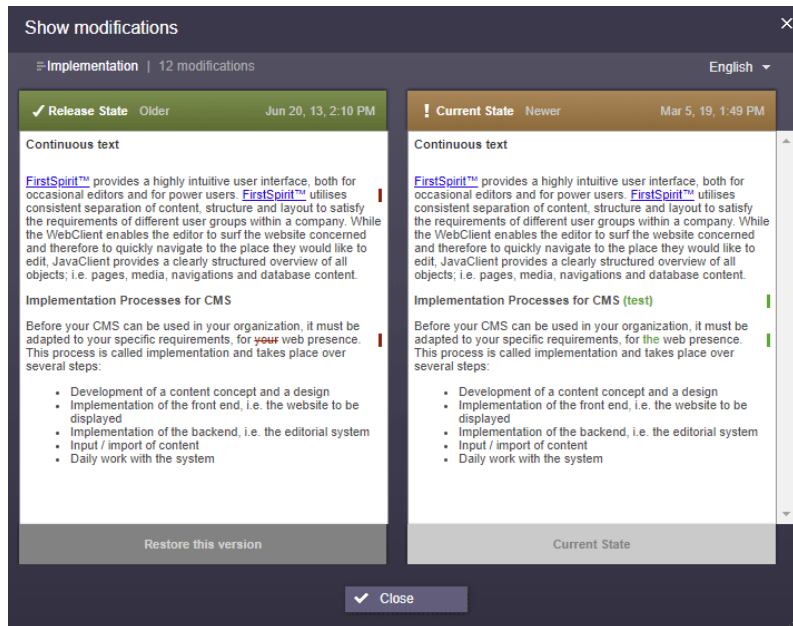
`false` or `no`: If the “stripWelcomeFileNames” parameter is passed with the value “false”, the extension “/index.*” is retained for all start page references both in the file system and in the Advanced URL.

List of extensions: If a list of extensions is passed to the parameter, the extension “/index.*” is shortened for page references which are marked as the start page of a folder in the Site Store when an Advanced URL is generated and, with the right web server configuration, can be called via the relevant URL (in a similar way to the behavior with the value “true”). The names of the extensions are given here (“Target file extension:” see FirstSpirit product manual under [Template sets for a project](#)).

12.98 Version comparison via API (ContentCreator) 2019-03

In ContentCreator via “Display all changes” / “Display differences” it is possible to open a dialog in the page status in which all content to which changes have been made since the last release is displayed:





With the new ComparisonDialogOperation interface (de.espirit.firstspirit.webedit.server package, FirstSpirit Developer API), this dialog can now also be opened with an API and then used in other applications (e.g., “FirstSpirit Omnichannel Manager” or “TPP”).

Example code:



```
import de.espirit.firstspirit.webedit.server.ComparisonDialogOperation;
import de.espirit.firstspirit.agency.OperationAgent;
import de.espirit.firstspirit.agency.StoreAgent;
import de.espirit.firstspirit.access.store.Store;
import de.espirit.firstspirit.access.store.pagestore.Page;
storeAgent = context.requireSpecialist(StoreAgent.TYPE);
pagestore = storeAgent.getStore(Store.Type.PAGESTORE);
element = pagestore.getStoreElement("mithras_home", Page.UID_TYPE);
operations = context.requireSpecialist(OperationAgent.TYPE);
operation = operations.getOperation(ComparisonDialogOperation.TYPE);
// (Optional) Base revision, by default the given elements revision
//operation.baseRevision(Revision);
// (Optional) Revision to compare to, by default the previous release revision
//operation.compareToRevision(Revision);
// (Optional) Languages to show in the dialog, by default all persistency languages
//operation.languages(List<Language>);
// Perform operation for the given element
operation.perform(element);
```

12.99 Use of new Java API for date calculation 2018-07

Cessation of support for Java 7 has enabled some applications of the outdated Java class `java.util.Date` to be adapted to a more modern Java API (`java.time`) in the FirstSpirit Developer API.

The changes affect the following interfaces:

- `UserStatisticsAgent` (`de.espirit.firstspirit.agency` package)
The previous method `getLastLoginAsDate(long userId);` (return value: `Date`) has been replaced by the new method `getLastLogin(long userId);` (return value: `Optional<LocalDate>`).
- `MaintenanceModeInfo` (`de.espirit.firstspirit.server` package)
The previous methods `remainingDurationOfCurrentStageInMillis();` and `getStartingTimeOfStageAsDate(@NotNull MaintenanceStage stage);` have been replaced by the new methods `remainingDurationOfCurrentStage();` and `getStartingTimeOfStage(@NotNull MaintenanceStage stage);`.

In this context, the `getLastLoginAsDate(long userId);`, `remainingDurationOfCurrentStageInMillis();` and



`getStartingTimeOfStageAsDate(@NotNull MaintenanceStage stage);` methods have been discontinued (“deprecation”) and can be omitted from subsequent versions of FirstSpirit.

12.100 Triggering a preview update via API (SiteArchitect and ContentCreator) 5.2R7

In order to make changes to data visible in the preview (SiteArchitect and ContentCreator), an update of the preview must be triggered. Generally, this happens automatically upon saving forms, sections, pages, datasets, etc.

As of the current FirstSpirit version, it is also possible to trigger a preview update via API for actions and changes that do not affect content-relevant data (e.g. changes made from within a workflow). In the past, preview updates could already be triggered in ContentCreator via `WE_API.Preview.reload()`.

In both SiteArchitect and ContentCreator, an update of the preview may now be triggered via the newly-implemented interface `PreviewOperation` (package `de.espirit.firstspirit.ui.operations`, FirstSpirit Developer API).

- The method `perform()` triggers a reload of the currently displayed preview.
- Using the method `setElement(IDProvider element)`, an ID of an element may be supplied for which the preview should be updated (page reference, page, section, dataset, medium, etc.). If the supplied element cannot be displayed in the preview, an error message indicating this will be output (“The element 'xyz' cannot be displayed in the preview.”).

Sample script to trigger a preview update for a page reference (ID 866948):



```
import de.espirit.firstspirit.agency.OperationAgent;
import de.espirit.firstspirit.ui.operations.PreviewOperation;
import de.espirit.firstspirit.agency.StoreAgent;
import de.espirit.firstspirit.access.store.Store;
// -- fetch element from site store
storeAgt = context.requireSpecialist(StoreAgent.TYPE);
sitestore = storeAgt.getStore(Store.Type.SITESTORE);
element = sitestore.getStoreElement(866948);
print(element);
// -- load and perform preview operation with element
operationAgt = context.requireSpecialist(OperationAgent.TYPE);
operation = operationAgt.getOperation(PreviewOperation.TYPE);
operation.setElement(element);
operation.perform();
```

12.101 Preview URLs for media from remote projects 2019-03

Preview URLs for media and page references can be implemented via the `PreviewUrlAgent` interface (FirstSpirit Developer API, Package `de.espirit.firstspirit.agency`).

With the current release, this is now also possible for media from remote projects.

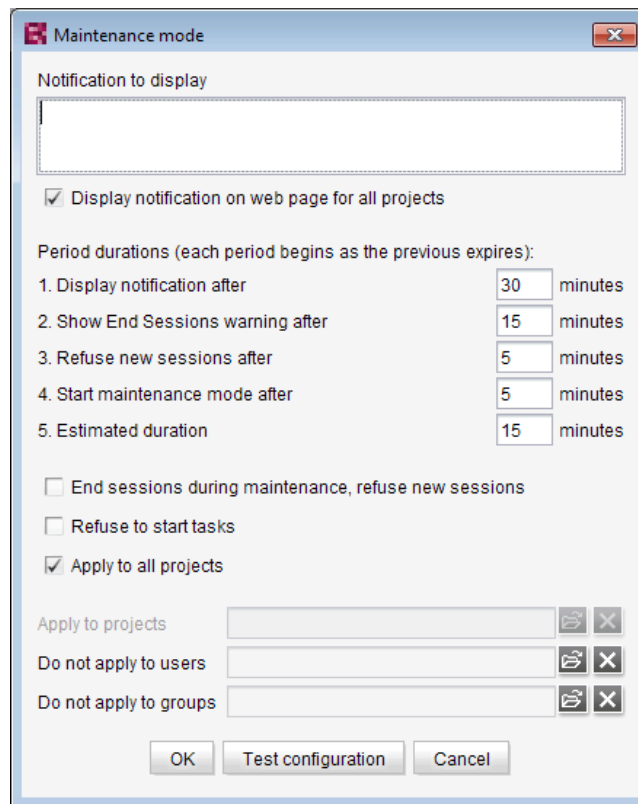
New API was created for this purpose:

- Package `de.espirit.firstspirit.access` (FirstSpirit Access API), Interface `UrlCreatorProvider`: method `getUrlCreatorProvider`
- Package `de.espirit.firstspirit.agency` (FirstSpirit Developer API), Interface `PreviewUrlAgent`: method `pageParams`
- Package `de.espirit.firstspirit.generate` (FirstSpirit Developer API):
 - Interface `UrlFactoryContext`
 - Interface `UrlFactory`: method `setUp`
 - Interface `UrlCreatorSpecification`: method `createUrlFactory`



12.102 Creating maintenance mode schedule tasks via API 5.2R6

FirstSpirit offers maintenance mode functionality which allows shutting down the server in an orderly fashion at a predetermined time in order to perform upgrades, repairs, or other maintenance tasks. Depending on the configuration, before and/or during the maintenance period, users will not be allowed to log on to the server or to selected projects, users currently logged in will be notified that the server will be shut down, etc. Until now, this functionality could only be set using the GUI (ServerManager / Server / Properties / Schedule management / Action “Maintenance mode”):



Configuration of a maintenance mode action

As of the current FirstSpirit version, maintenance mode schedule entry actions can now be created via API. The new interface `MaintenanceModeTask` (FirstSpirit Developer API, package `de.espirit.firstspirit.access.schedule`) allows creation and configuration of such a schedule entry action analogous to configuration via the GUI.

Moreover, you can use the new interface `MaintenanceModeInfo` to query via API if a maintenance mode schedule is already running on the server. The new interface `MaintenanceModeAgent` has been created for terminating running maintenance mode schedules. Server administrator permission



is required for this. In return, the method `stopMaintenance(long)` (FirstSpirit Access API, package `de.espirit.firstspirit.access`, interface `AdminService`) has been discontinued (“Deprecation”) and can be omitted in a following FirstSpirit major version.

For further information about the maintenance mode schedule entry action, see *FirstSpirit Manual for Administrators*, chapter “FirstSpirit ServerManager / Schedule entry planning / Server-based actions / Maintenance mode”.

13 Modules (general)

13.1 Distribution of FirstSpirit web applications as modules (.fsm) 5.2R4

The global web applications included in FirstSpirit (`fs5root`, `fs5preview`, `fs5webedit`, ...) are now provided as FirstSpirit modules (FSM files) - previously, these were provided as Zip files. This change supports a unified distribution mechanism and requires no manual configuration of a FirstSpirit server and/or FirstSpirit projects.

13.2 Distribution of the FirstSpirit web applications as modules (.fsm)

5.2R6

FirstSpirit version 5.2R3 implemented a new roll-out behavior for the FirstSpirit web applications: while the global web applications (`fs5root`, `fs5preview`, `fs5webedit`,...) have previously been distributed in the form of ZIP files, they are since distributed in the form of FirstSpirit modules (FSM files).

After a transition period, the previously used ZIP files have been permanently removed from the file `fs-server.jar` as of the current FirstSpirit version. This leads to a significant decrease in the file size of `fs-server.jar`.

13.3 Library dependencies added in FirstSpirit web applications 5.2R6

Missing library dependencies have been added for all internal FirstSpirit web applications. The relevant `.jar` files have been added to the individual modules.

When updating the FirstSpirit Server, updating the following modules is recommended (assuming they are already installed):

- FirstSpirit Basic Search (“`fs-search.fsm`”)



- FirstSpirit Dynamic Database Access (“fs-integration.fsm”)
- FirstSpirit Security (“fs-security.fsm”)

14 Modules: Content Transport

14.1 Moving datasets and changing the explicit/implicit state of elements

5.2R20

The functionality “FirstSpirit ContentTransport” enables transport of project contents from a source project into a target project. For this, the desired contents will be collected or gathered into so-called “features”.

If folders have previously been added explicitly to a feature, the current child tree (i.e. all child elements at the time of export) was taken into account for each export. Therefore, if new child elements have been added to the folder since the feature was first created, these child elements will be included in the subsequent exports. For example, if child elements have been removed from the folder since the feature was first created, they will be missing in subsequent exports. In FirstSpirit version 5.2R20 and later, this rule is now also possible for datasets and data sources.

The following options for data sources can be selected:

- **Add Content Source:**
Only the selected data source (without datasets) is added to the feature (corresponding to the previous “Add to Content Transport feature” for data sources).
To include datasets in a transport, one of the following two options should be selected.
- **Add all displayed datasets (explicitly):**
The datasets currently displayed in the workspace are added to the feature (corresponding to the previous “Add all displayed datasets to feature” on data sources or “Add to Content Transport feature” on datasets). Datasets of the data source that are not displayed in the overview due to filtering, searches, etc., are not taken into account. In addition, no datasets are taken into account that are added to or deleted from the selected data source at a later point in time. If you want the current status of the datasets of the selected data source to be taken



into account for future exports, select the option “Add all datasets (automatically via Content Source)”.

If you want to include not only the datasets in a transport, but also the data source, you can add it to the feature in the tree structure using the context menu option “Add Content Source” or activate the option “Content Source is part of the feature” in the “Included objects” section.

- **Add all datasets (automatically via Content Source)**

This adds all datasets of the data source to the feature. This also takes into account datasets that are not displayed in the overview due to filtering, searches, etc. During each transport, all datasets are exported that are contained in the data source at the time, including datasets that are created in the data source after the feature is created.

If you want to include not only the datasets in a transport, but also the data source, you can add it to the feature in the tree structure using the context menu option “Add Content Source” or activate the option “Content Source is part of feature” in the “Included objects” section.

Other functions:

- The “Add Content store folder” function adds all data sources contained in the folder to the feature (without datasets, similar to “Add Content Source”).
- The “Add Dataset” function adds only the selected dataset to the feature (similar to “Add all displayed datasets (explicitly)”).

The state of objects already added to the feature can be checked and modified in the “Included objects” area and in the workspace.

Included objects

In the “Included objects” area, the state is displayed as follows:

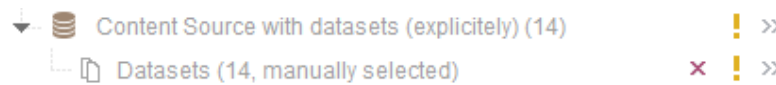
Add Content Source:



The name of the data source is displayed in normal text. The number of datasets taken into account is (0). You can check and modify the implicit/explicit state if necessary by right-clicking (see below). Alternatively, the state can also be checked in the workspace and modified if necessary.

Add all displayed datasets (explicitly):





The data source is not part of the feature. Only the datasets contained at the time the feature was initially created are taken into account during transport. The number of datasets taken into account, in addition to the “manually selected” note, is displayed in brackets after the name of the data source and in a dataset node under the data source.

You can check and modify the implicit/explicit state if necessary by right-clicking (see below).

If the data source is also to be included in transport, it can be added to the feature in the tree structure using the context menu entry “Add Content Source” or by activating the option “Content Source is part of feature” in the “Included objects” area. The display is then as follows:



Add all datasets (automatically via Content Source):



The data source is not part of the feature. All the datasets contained in the data source at the respective time are taken into account during transport. The number of datasets taken into account, in addition to the “automatically via Content Source” note, is displayed in brackets after the name of the data source and in a dataset node under the data source.

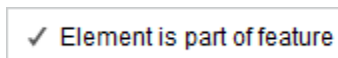
You can check and modify the implicit/explicit state if necessary by right-clicking (see below).

If the data source is also to be included in transport, it can be added to the feature in the tree structure using the context menu entry “Add Content Source” or by activating the option “Content Source is part of feature” in the “Included objects” area. The display is then as follows:



Implicit/explicit state

The state of an object as implicitly or explicitly added element can now be checked and modified for all object types simply by right-clicking on the desired element under “Included objects” (“implicit/explicit state”):



Active / box ticked: The object was explicitly added. The object can be removed from the feature by clicking on the tooltip (corresponds to the “x” icon). Elements with this state are also identified by a “briefcase” icon.

Element is part of feature

Active / box not ticked: The object has been implicitly added as the parent element. The object can be explicitly added to the feature by clicking on the tooltip. All child elements are also added automatically.

Element is part of feature

Inactive / box ticked: The object was implicitly added as a child element. The implicit/explicit state for these elements can only be modified from the parent node.

For data sources with datasets, the following additional options can be selected (right-click on the dataset node):

- **Automatically add all datasets of the content data source to the feature:** If this option is active (ticked), all the datasets contained in the data source at the respective time are taken into account during transport. If this option is inactive (not ticked), only the datasets contained at the time the feature was first created are taken into account during transport. If required, the option can be activated or deactivated by clicking on it.
- **Remove all datasets:** By clicking on the tooltip, all datasets including the data source can be removed from the feature (corresponds to the “x” icon).

As part of an effort to standardize context menus, the new layer in the context menu for adding objects to a feature in the tree view is now also valid for all other object types (old: “Add to Content Transport feature”; new: “Add Content Transport / Add <object type>”).

15 Modules: Corporate Content

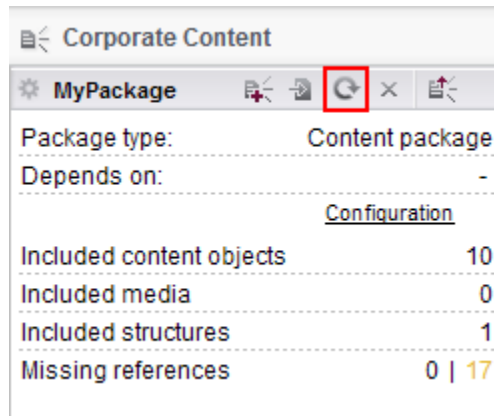
15.1 Refresh package display 5.2R4

The functionality “FirstSpirit Corporate Content” allows the automated distribution of templates and content among various projects on a server, such that content can be reused comfortably across FirstSpirit projects.



A package with its contents and properties can be shown in the area “Corporate Content” in “Multisite Management”.

Using the new icon (from FirstSpirit version 5.2.312) in the icon bar, the display of the current package can be refreshed:



FirstSpirit Corporate Content: Refresh package display

This may be necessary e.g. if an element contained within the package was afterwards modified to include a reference.

For further information, see Module documentation for “FirstSpirit CorporateContent”, chapter “Corporate Content (package store)”.

15.2 Editing multiple packages 5.2R4

The functionality “FirstSpirit Corporate Content” allows automatic distribution of content between different projects on a server.

Creation and maintenance of packages can be carried out via the link “Create or edit a package” or the icon



in the area “Corporate Content” in FirstSpirit SiteArchitect.

Previously, if a package was already opened for editing, the message “You are already editing package [package name]”. Please close this package first.” When creating a new package, this message was



displayed only after configuration of the package via the dialog “Create package” took place, and the new package was created regardless of this notification.

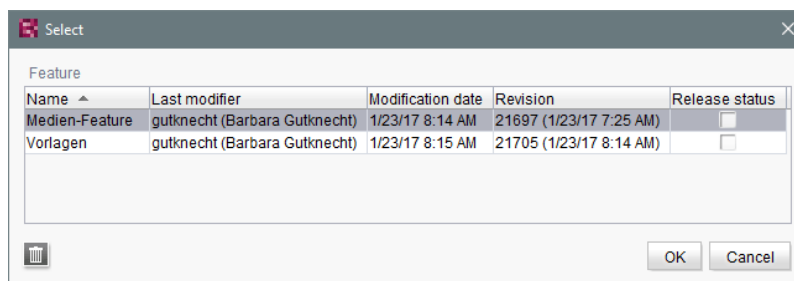
As of FirstSpirit version 5.2R4, this message will no longer be displayed. Instead, the newly created or loaded project will be displayed. If another package was loaded already, any modifications to that package will be saved automatically before the newly created or loaded package is displayed.

For further information, see *Documentation for FirstSpirit Corporate Content*, chapter “Creating or loading a package”.

15.3 ContentTransport: Archival of deleted feature collections 5.2R7

The functionality “FirstSpirit ContentTransport” enables transport of project contents from a source project into a target project. The desired contents are bundled or collected into so-called “features”.

Features in the dialog “Create or load a feature” / “Load feature from server” / “Choose”

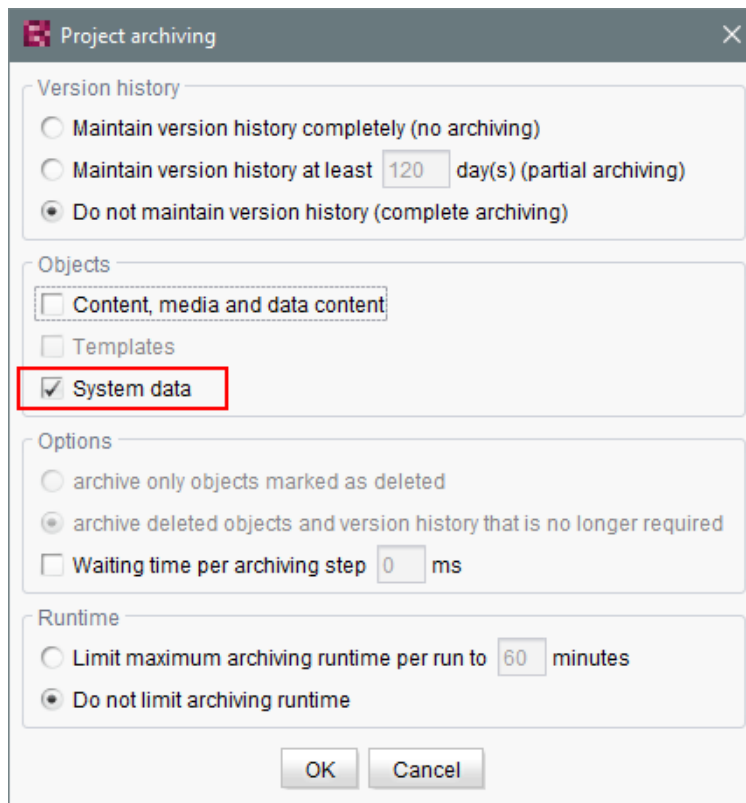


may be deleted from the server using the “Delete” icon:



As of the current FirstSpirit version, these deleted features may be archived and thus removed from the FirstSpirit repository via the schedule action “Archive old project states”. To do so, activate the option “System data” in the schedule action:





The most recent revision will not be deleted.

For further information, see

- Module documentation for “FirstSpirit CorporateContent”, chapter “Creating or loading a feature”
- *FirstSpirit Manual for Administrators*, chapter “Archive old project states”

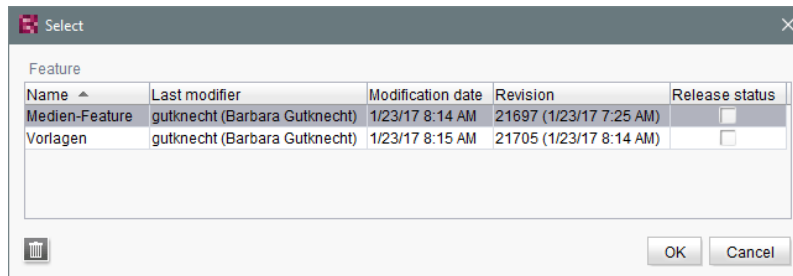
15.4 ContentTransport: Deleting feature collections 5.2R7

The functionality “FirstSpirit ContentTransport” enables transport of project contents from a source project into a target project. The desired content is collected into so-called “Features”. Via the button “Save feature”



such a feature may be stored on the server.

In order to simplify the selection of a feature, the “Select” dialog (reached via “Create or load a feature / Load feature from server”) has been improved:



The dialog now allows sorting by column and provides detailed information about a feature in a tool-tip.

Furthermore, in order to improve readability of the feature list, features that were once stored on the server but are no longer needed may now be deleted from the server. Via the button “Delete”



the selected feature or features may be deleted following a confirmation request. Selection of multiple features is possible.

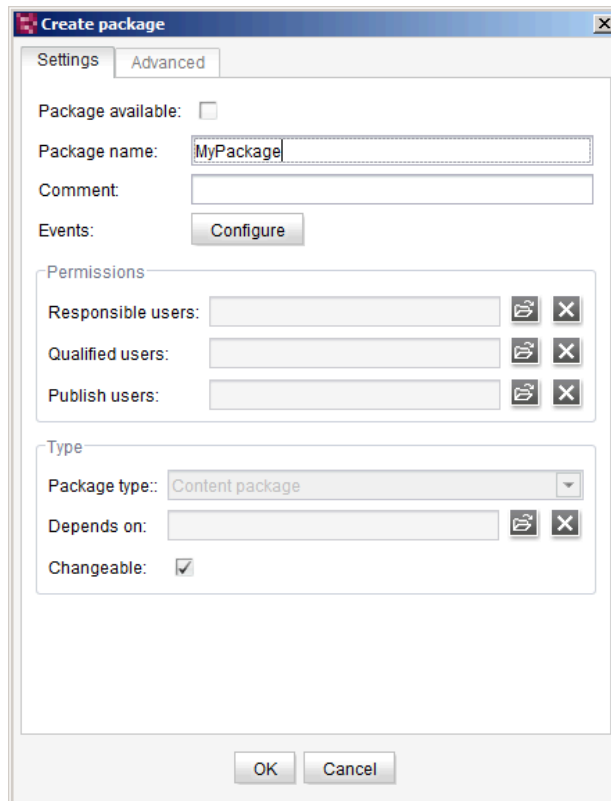
Deletion of feature collections is final and cannot be undone.

For further information, see Module documentation for “FirstSpirit CorporateContent”, chapter “Content Transport / Creating or loading a feature”.

15.5 Removal of write permissions in subscribing projects ("Changeable") 5.2R15

For packages, it is possible to specify whether they should be “changeable” or not in the dialogs “Create package” and “Edit package properties”:

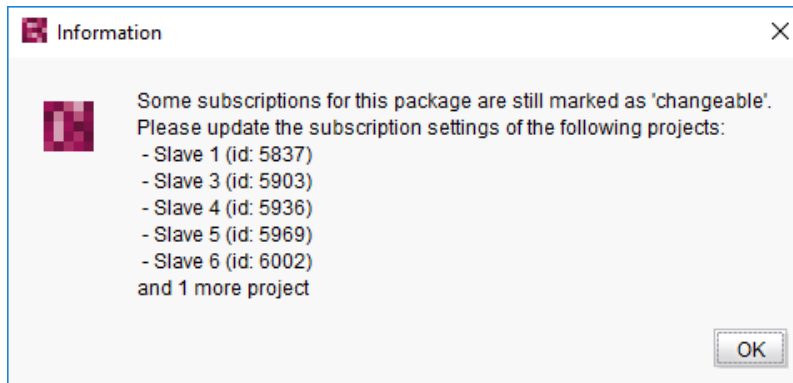




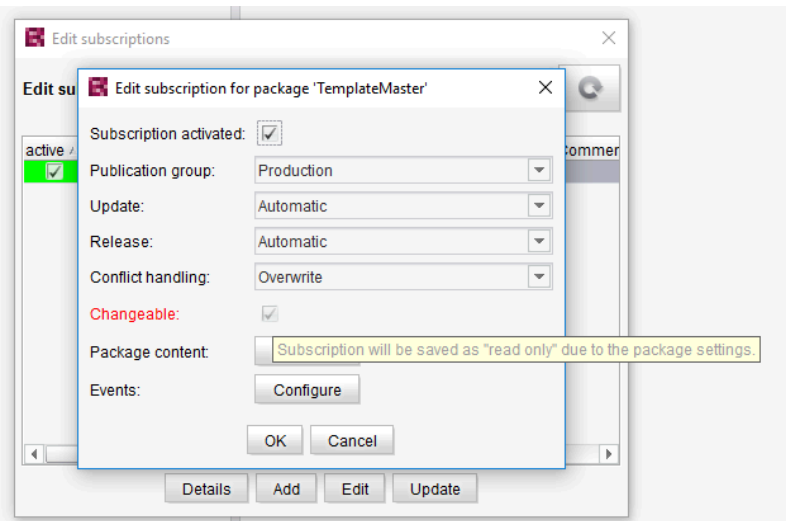
If the checkbox “Changeable” is checked, the target projects are granted write permissions on the imported objects. If the checkbox is not checked, the imported objects may be viewed and used in the target projects, but they cannot be modified.

If the checkbox' checkmark is removed in the **master (or source) project** (removing write permissions), this setting must be carried over manually into the subscribing projects. In order to more quickly identify the affected projects, these will now be displayed in a dialog when deactivating the option in the master project:





In this case, the checkbox “Changeable” is now deactivated in the subscribing projects, i.e. the checkbox' checked state cannot be modified:



The tooltip associated with the checkbox indicates that the currently stored setting (package is changeable) does not comply with the package setting in the master project (package is not changeable); this may be confirmed by closing the dialog via “OK”, thereby storing the package subscription as not changeable. The package's objects can then no longer be edited in the target project.

For further information, see Module documentation for “FirstSpirit CorporateContent”, chapters

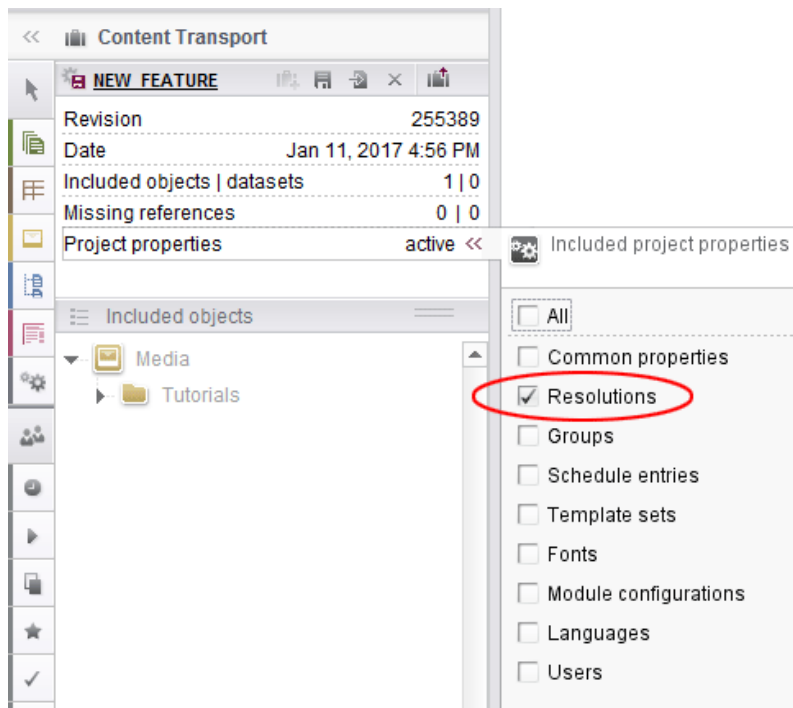
- “Creating a package – Settings tab”
- “Creating a subscription for a package”



15.6 Multisite Management: Export of image resolutions 5.2R7

The multisite management functionalities “FirstSpirit ContentTransport” and “External Synchronization” enable transport of project contents as well as of project properties, e.g. languages, resolutions, etc.

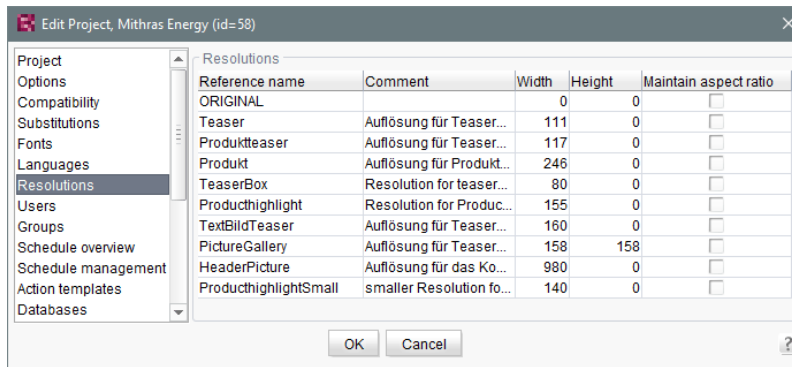
If resolutions are transported from a source project into a target project using ContentTransport or External Synchronization, e.g.



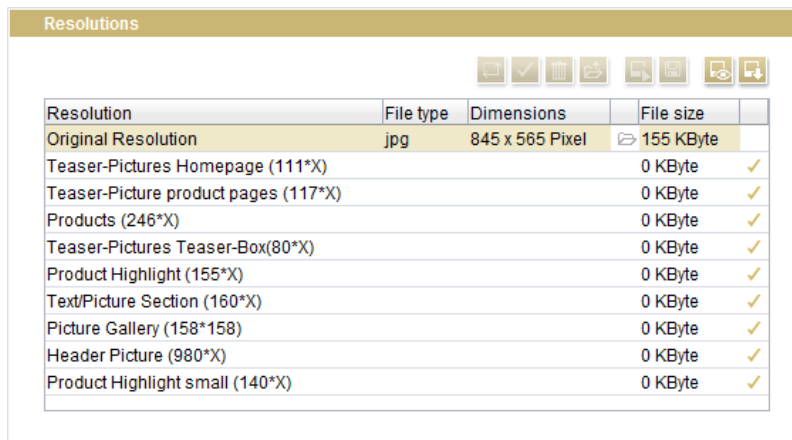
the order of resolutions in the target project now matches their order in the source project.

Display in ServerManager, area “Resolutions”:





Display in the Media store of SiteArchitect:



Previously, resolutions were ordered by reference name after export/import.

In order to apply the new behavior, a new export must be made.

For further information, see

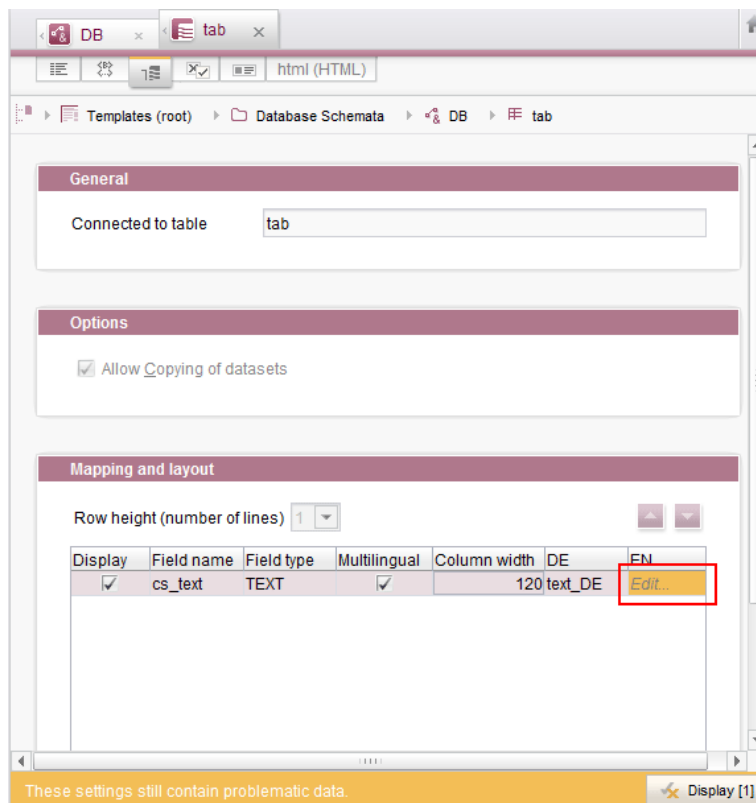
- Module documentation for “FirstSpirit CorporateContent”
- *FirstSpirit Manual for Administrators*, chapter “Resolutions”



15.7 Multisite Management: Transport of table templates into projects with different language counts 5.2R7

The multisite management functionalities “FirstSpirit ContentTransport” and “External Synchronization” enable transport of project contents and project properties from a source project into a target project.

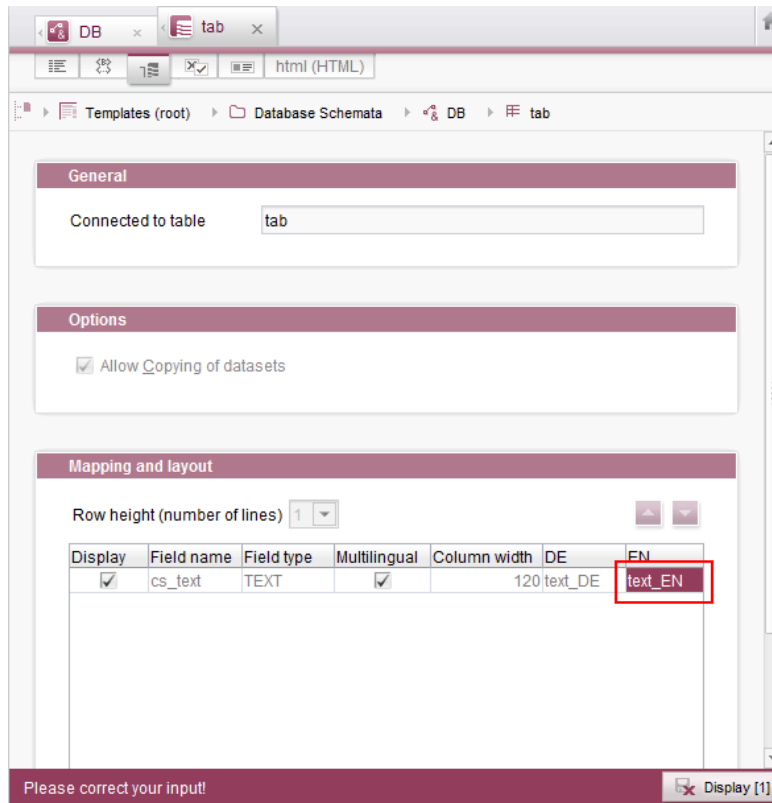
If a table template is transported from a source project into a target project which is configured with a different set of languages, the columns of languages that are not present in the source will be removed in the target project. Until now, this also caused removal of the mapping for these additional, non-present languages in the target project, e.g.



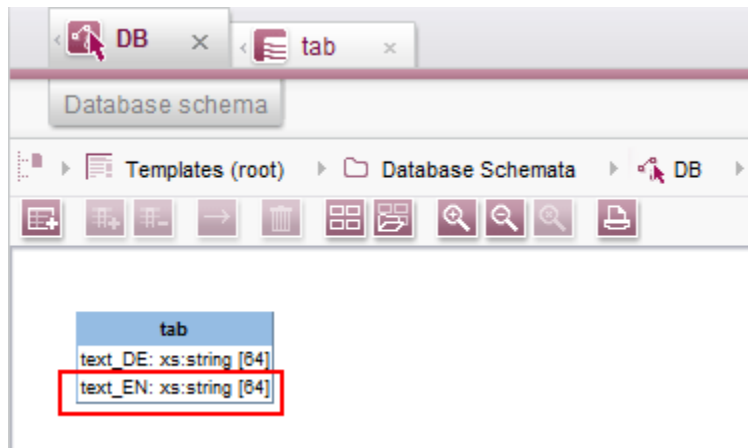
In this case, the mapping had to be adjusted manually if the missing language column was added to the database schema in the target project.

As of the current FirstSpirit version, the mapping will be preserved. In the “Mapping” tab, the missing language column will be visualized with a red highlight after import into the target project:





In order to restore the mapping, it is now sufficient to create the missing language column anew in the database schema, e.g.:

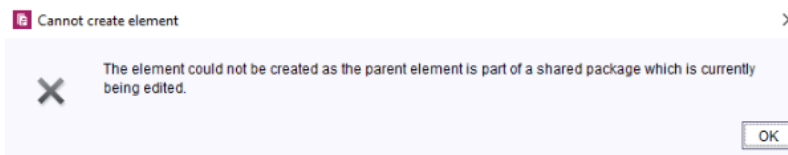


The mapping will then be adjusted automatically.



15.8 Behavioral change for CorporateContent packages currently being edited within SiteArchitect 2018-12

Editing a CorporateContent package by other users while it is being edited by an administrator could lead to problems. The functionality was improved within SiteArchitect with FirstSpirit 2018-12. If a CorporateContent package on the master server is edited by an administrator, no further packet-changing actions can be performed by other users. An error message is displayed instead:



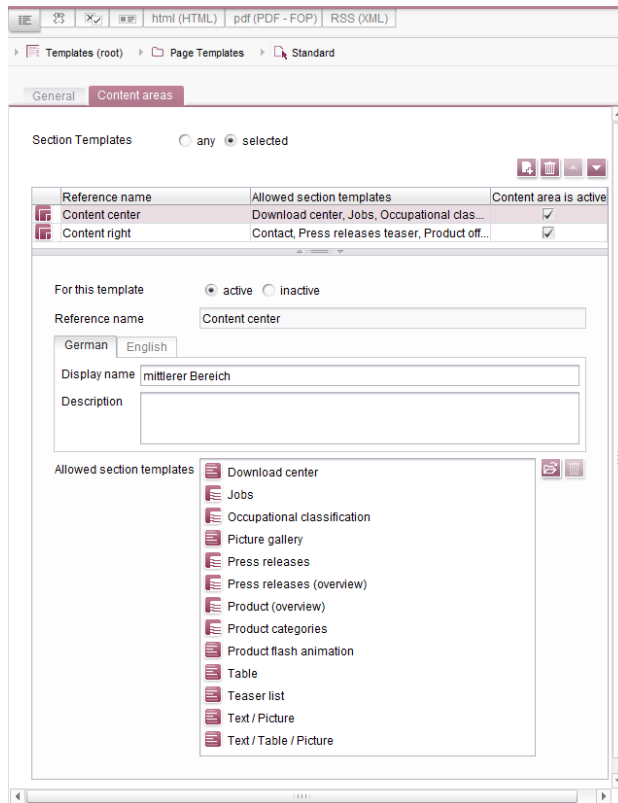
Error message

! The behavioral change only applies to actions within SiteArchitect.

15.9 Allowed section templates are now only "optionally" required during an import process 5.2R13

Restrictions can be defined for page templates (for each content area) with regard to the allowed section templates ("Properties / Content areas" tab, "selected" option, "Allowed section templates" area):





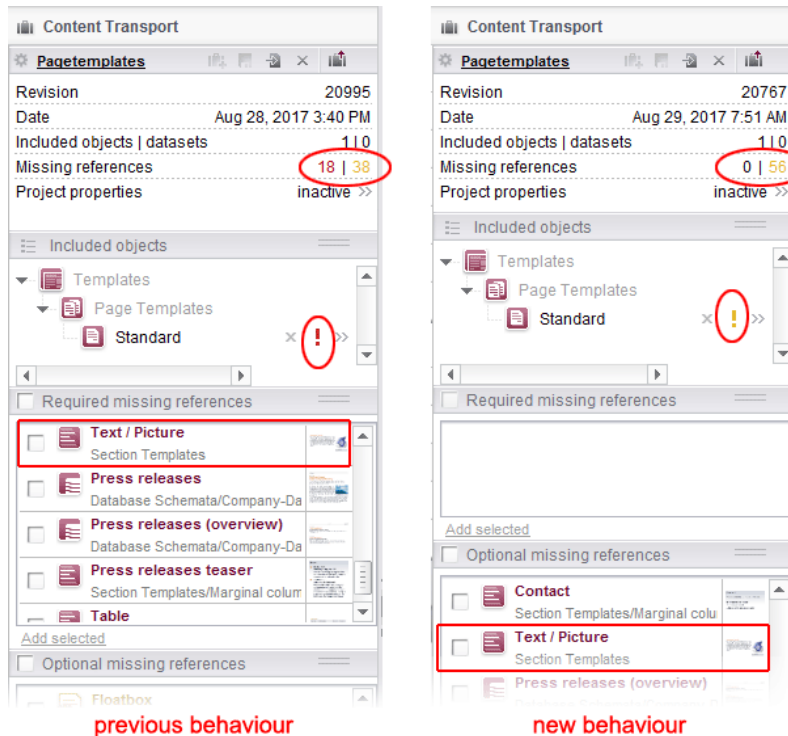
The dependencies between page template and section template(s) when using “FirstSpirit Content Transport” were previously classified as “required”. This meant, for example, that all of the allowed section templates belonging to a specific page template had to be imported at the same time as the page template. If the respective templates were missing in the target project, it was not possible to carry out the import. This prompted the following error message:

```
ERROR 10.02.2016 09:53:49.958 (de.espirit.firstspirit.impl.access.ScriptContextImpl):
Could not Install feature.
de.espirit.firstspirit.store.access.feature.FeatureInstallException: Error installing
feature. Broken id reference (id=57371, projectId=8, uid='home',
type=SectionTemplateImpl)
```

In the current FirstSpirit version, such dependencies between page template and allowed section templates are now classified as “optional”: It is possible to carry out an import even if the target project does not contain the dependent templates. In this case, the non-resolvable dependencies are removed from the page template in the target project, i.e., the configured allowed section templates in the page template if the section templates are missing in the target project.



Use the “Required missing references” or “Optional missing references” area to view the missing dependencies for a FirstSpirit object:



16 Modules: Corporate Media

16.1 Limiting selections from remote projects to objects with a release state 5.2R4

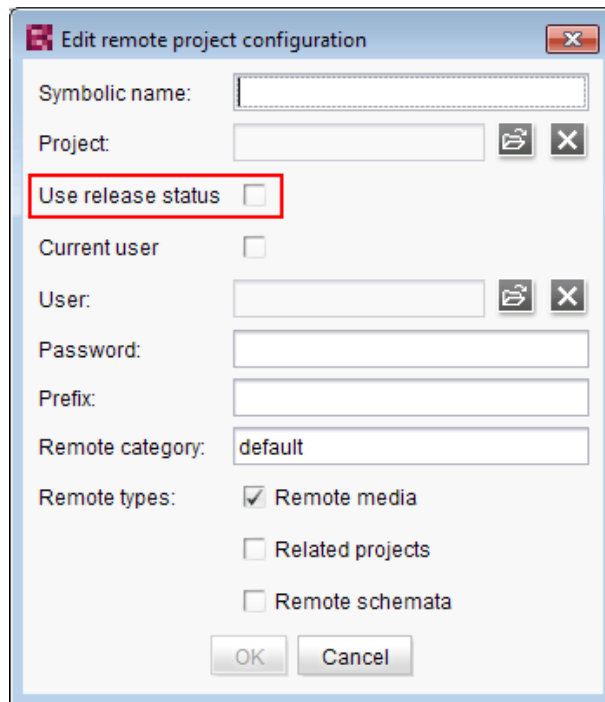
The functionality “FirstSpirit Corporate Media” enables access of elements between different projects on the same FirstSpirit server. In particular, a project (a “target project”) may reference elements stored in another project (a “remote project”), such that objects (e.g. media) that are stored in a central project may be used in many different projects. In this case, the target projects only reference the objects, which remain stored in the remote project.

Referencing objects in remote projects is primarily carried out using the input component FS_REFERENCE. Here, the type of the referenced object is irrelevant: references can be made to media (images and files), page references (Site Structure store), as well as to elements of any other store,



including folders. In general, the selection dialog always shows selectable objects in their current state. When a project is generated, only the release states of objects will be included in generation.

From FirstSpirit version 5.2R4, the remote project configuration can be set to only allow selection of objects that have been released at some time. This setting can be configured in FirstSpirit ServerManager, “Project properties / Remote projects”.



If the option “Use release state” is **activated**, the selection dialog will only show objects which have been released at least once. If such an object has been modified after the most recent release, the selection dialog and the preview will show the object in its current state, generation will, however, use the data of the object's most recent release state.

If the option is **deactivated**, the selection dialog will also show objects which have never been released. During generation, this may lead to invalid references and error messages in the generation log that will indicate such invalid references. Using the parameter `autoReleaseAfterUpload` in association with `upload, media`, which are uploaded via the input component `FS_REFERENCE`, can automatically be released, e.g.



```
<FS_REFERENCE name="st_reference" upload="yes">
  <LANGINFOS>
    <LANGINFO lang="" label="Remote project"/>
  </LANGINFOS>
  <PROJECTS>
    <REMOTE name="remote" autoReleaseAfterUpload="yes"/>
  </PROJECTS>
</FS_REFERENCE>
```

For further information, see

- *FirstSpirit Manual for Administrators*, chapter “Remote projects”
- *FirstSpirit Online Documentation*, “Template development / Forms / Input components / REFERENCE”
- *Documentation for FirstSpirit Corporate Media*
- *Documentation for FirstSpirit SiteArchitect*, chapter “Reference selection (FS_REFERENCE)”
- *FirstSpirit Manual for Editors (ContentCreator)*, “Editing the preview page / Standard input elements / Reference selection (FS_REFERENCE)”

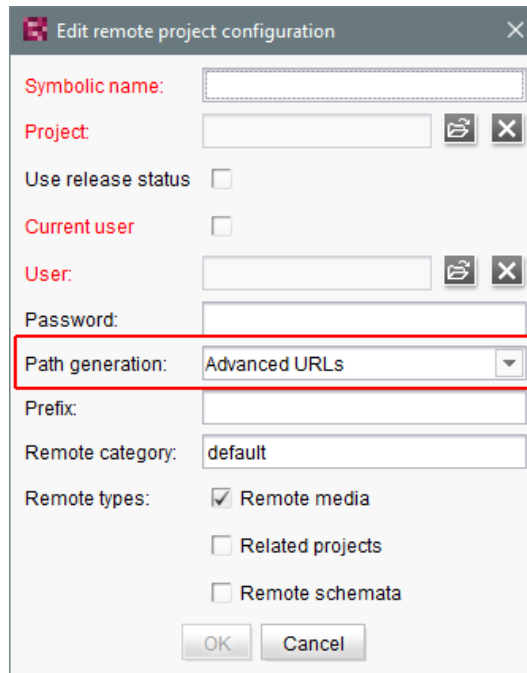
16.2 Specifying URL creation method for remote projects 5.2R10

FirstSpirit enables access from one project (called “target”, “master”, or “local project”) to other projects (called “remote projects”) which are present on the same FirstSpirit server. This allows objects (e.g. media) which are managed in a centralized project to be used in various projects. In the target projects, such objects are only referenced and remain stored in the remote project.

Previously, if some other method of path generation (“URL creator”) than “Default URLs” should be used for the remote project, this had to be carried out via a script or a module. If a URL creator was not explicitly set for a remote project via script or module, the URL creator “Default URLs” was used implicitly.

As of the current FirstSpirit version, it is now possible to specify the desired URL creator for a remote project in the remote configuration settings of the master project in ServerManager, using the option “Path generation” (“ServerManager / Project properties / Remote projects / Add” or “Edit”):





The screenshot shows a dialog box titled "Edit remote project configuration". It contains several fields and checkboxes:

- Symbolic name: [text input]
- Project: [text input] with a refresh icon and a close icon (X)
- Use release status:
- Current user:
- User: [text input] with a refresh icon and a close icon (X)
- Password: [text input]
- Path generation: [dropdown menu] with "Advanced URLs" selected and highlighted by a red box.
- Prefix: [text input]
- Remote category: [text input] with "default" selected.
- Remote types: Remote media, Related projects, Remote schemata

At the bottom, there are "OK" and "Cancel" buttons.

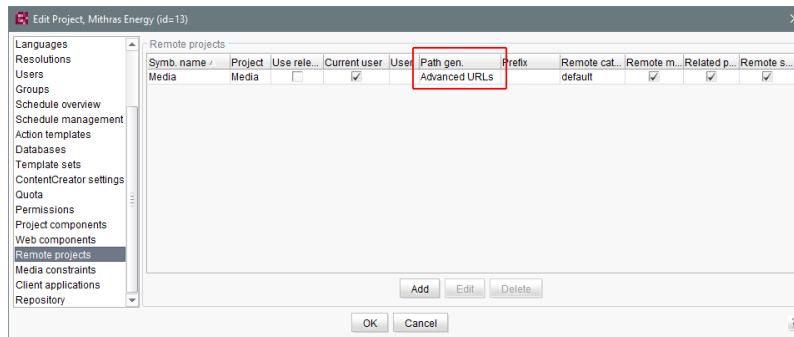
This option's combo box includes a list of all available URL creators. If the selected entry is “Advanced URLs”, references from the master project to this remote project will be generated using this URL creation method.

By default, the method “Default URLs” will be used. If a different URL creator was already selected for a remote project prior to an update to the current FirstSpirit version, this selection will be preserved and accordingly displayed in the combo box.

Within the scope of this feature, the validation behavior of this dialog was also optimized: if not all mandatory fields contain values, the button “OK” is inactive, preventing saving the configuration. Missing values will be indicated by red type. The display “Not available” indicates that the selected URL creator is not available on the server, and the name of the missing URL creator is displayed as well; this may occur if the module providing this URL creator has been uninstalled.

The selected URL creator will also be displayed in the overview “Remote projects” (project properties):





For further information, see

- *FirstSpirit Manual for Administrators*,
 - chapter “Remote projects”
 - chapter “Execute generation”
- *FirstSpirit Online Documentation*,
 - “Advanced topics / Remote access”
 - “Advanced topics / Generation”
- Module documentation for “FirstSpirit CorporateMedia”

17 Modules: FOP

17.1 Specify Standard Image Resolution 5.2R4

Apache FOP (“Formatting Objects Processor”) allows output of FirstSpirit content in PDF format. The support for Apache FOP in FirstSpirit is realized via a module: *fs-fop.fsm*.

Some image manipulation programs (e.g. Adobe Photoshop) do not specify “dpi” (dots per inch) settings in image files and potentially save files at a resolution of 96 dpi. By default, Apache FOP assumes a resolution of 72 dpi if the image file does not contain explicit resolution information (see also: <http://xmlgraphics.apache.org/fop/0.95/embedding.html>). This discrepancy can cause undesired rescaling of images which do not contain resolution information such that these images appear blurry.

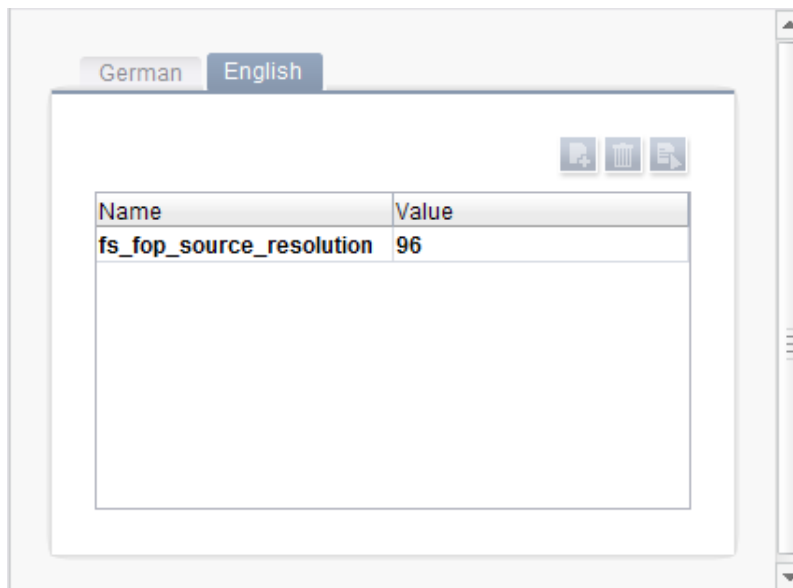
As of FirstSpirit version 5.2R4, the structure variable (“Site Structure store / Menu level / Variables”)



```
fs_fop_source_resolution
```

specifies the default image resolution for Apache FOP:

- If the variable is not explicitly set, an image resolution of 72 dpi will be used.
- In order to explicitly set a different default resolution (e.g. 96 dpi), the desired menu level must contain a variable, named as shown above, with the desired value, e.g.



For further information about the definition and evaluation of structure variables, see *FirstSpirit Online Documentation*, "Template development / Variables / Definition and output / in menu levels".

18 Modules: OfficeConnect

18.1 Pasting as plain text with Ctrl+Shift+V 5.2R11

When using the FirstSpirit module "OfficeConnect", contents from the clipboard can now be pasted as plain text - without formatting, links, images, etc. - via the keyboard shortcut **Ctrl + Shift + V**. The ruleset selection dialog will not be shown; the text will be pasted directly at the desired position in the DOM editor.

In this context, the error message "No compatible format found in clipboard!" which was previously displayed when using **Ctrl + Shift + V** has been removed.



For further information, see Module documentation for *FirstSpirit OfficeConnect*.

19 Modules: Security

19.1 Improved Problem Recognition When Accessing an Access Control Database 5.2R20

When publishing via the FirstSpirit publication servlet (module: “FirstSpirit Security”), an error message is now output if the target side attempts to communicate with an unusable access control database. (This error may appear after conversion of the access control database to the Berkeley DB 7 format, for example.) Use of this change requires an update of the module “FirstSpirit Security” in the web application on the target side.

20 Repository

20.1 Berkeley DB 7: Optimizations 5.2R20

Berkeley DB 7 now checks for sufficient available storage space. By default, if available storage space is below a threshold of 512 MebiBytes (approx. 536 MB), further write operations in the Berkeley database are no longer possible. Error message:

```
Disk usage is not within je.maxDisk or je.freeDisk limits and write operations
are prohibited.
```

Note: The storage space Berkeley DB 7 checks for is independent of the setting for monitoring of available storage space which may be configured via FirstSpirit ServerManager (“Server / Properties / Global server properties / Directories for disk space check”).

For further information, see *FirstSpirit Manual for Administrators*, “FirstSpirit ServerManager / Project properties / Repository”.

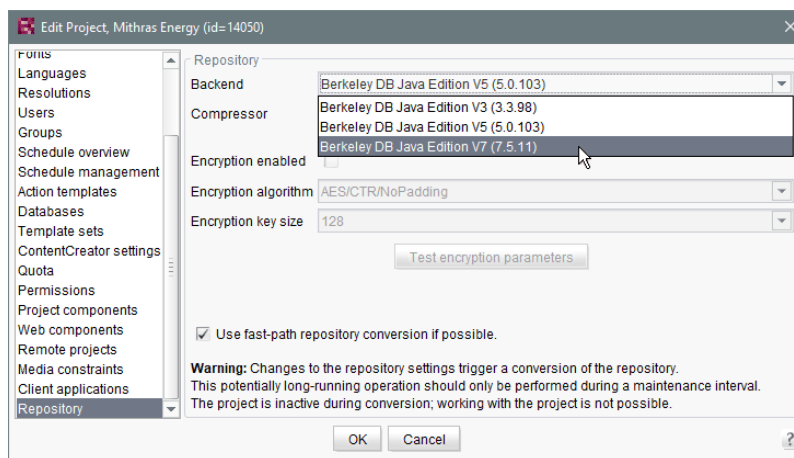
20.2 Oracle Berkeley DB 7 (EAP) 5.2R18

Oracle Berkeley DB is used as standard in FirstSpirit as a repository for saving content data, until now, in versions 3 and 5. In order to benefit from performance advantages, to remain at the forefront of technical development, and last but not least, for security reasons, plans are in place to update the



internal Berkeley DB to version 7 in the near future. For more information please see also Chapter “Oracle Berkeley DB 7”.

Individual project repositories can be converted to version 7 as of the current FirstSpirit version. The related function can be found in FirstSpirit ServerManager under “Project properties – Repository”, option “Backend”:



This function can be used to gather experience on the conversion process and is currently in beta test stage. Should problems unexpectedly be encountered when using Berkeley 7, these should be reported to e-Spirit immediately to enable them to be resolved before the official release of Berkeley 7. Using Berkeley 7 requires at least Oracle Java 8.

Version 5 is the default for new and imported projects. It is planned for the medium-term only to support Oracle Berkeley DB 7.

- Migration **from version 5 to version 7** generally takes just a few seconds if the option “Use fast-path repository conversion if possible” has been activated.
- When switching **from version 3 to version 7**, converting to version 5 first is recommended, with activated “Use fast-path repository conversion if possible” option, too.
A direct switch from 3 to 7 can be completed; however, accelerated conversion is then not possible (“Use fast-path repository conversion if possible” option).
- **Conversion back** to an older Berkeley version is also possible but takes much longer and requires additional disk space.



When the user confirms the selection with “OK”, the system starts to convert the data using the desired settings. The relevant project is deactivated during the process.

To prevent any data loss, anyone using the project should log off first. Changes to the repository settings can take some time and should only be performed during a maintenance interval. We recommend you create a data backup before starting a repository conversion. Use of the new Berkeley version 7 was subject to extensive systematic quality assurance checks; however, as this is a significant version upgrade and it concerns a third-party product, this version should be tried out on a test system before being launched on production systems.

Berkeley version 7 is, like the other Berkeley DB variants, implemented in form of a system module: `fs-berkeleydb7.fsm`.

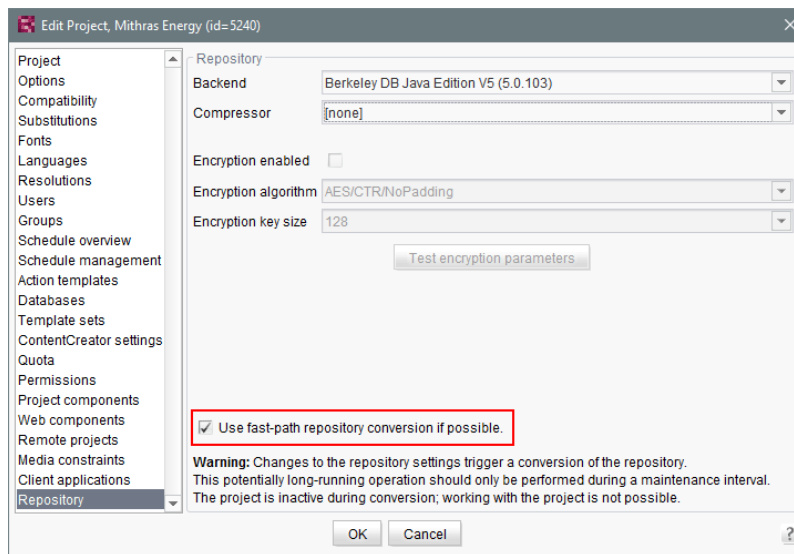
For more information please see Chapter “Oracle Berkeley DB 7” and *FirstSpirit Manual for Administrators*, Chapter “FirstSpirit ServerManager / Project properties/ Repository”.

20.3 Faster migration from Oracle Berkeley DB 3 to 5 5.2R16

FirstSpirit is using Oracle Berkeley DB version 3 and 5 to hold its content data. Both versions can be used simultaneously on the same FirstSpirit server, in different projects. A migration from one version to the other can be triggered through a drop down list (option “Backend” in the FirstSpirit ServerManager under “Project properties – Repository”).

Previously data conversion could, depending on the size of the project, potentially take several hours. In the current FirstSpirit version conversions from version 3 to version 5 can be performed faster. The new conversion method is activated via the checkbox “Use fast-path repository conversion if possible”:





The checkbox is active by default. Faster conversions are only possible when the conversion path is Berkeley Version 3 to 5 and none of the other options in the panel (compression, encryption) are changed.

For further information see *FirstSpirit Manual for Administrators*, Chapter “FirstSpirit ServerManager / Project properties / Repository”.

20.4 Improved archiving function 2020-02

Pictures/media can exist in various resolutions in the project. If necessary, the system automatically creates image data in the correct resolution, when a medium is being requested in a certain resolution for the first time. Such image data (for one resolution) is saved on the server in an image cache (MEDIA_STORE_CACHED_PICTURES).

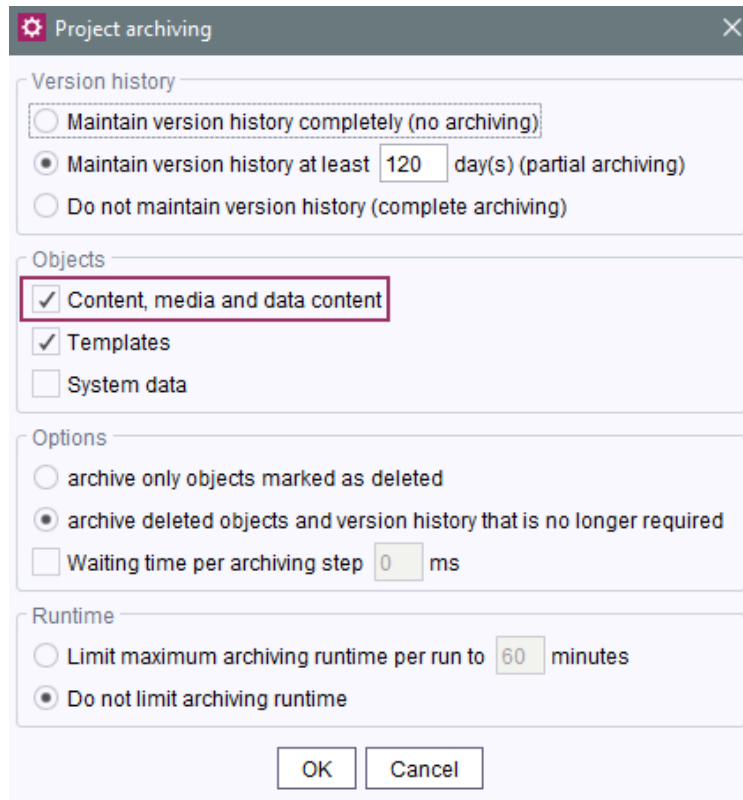
This method speeds up generation times, as generating large numbers of media in many different resolutions is very time-consuming. However, the image cache increases the project's data volume. Up to now, it has only been possible to remove automatically calculated resolutions from the project's data inventory again via a project export (by deactivating the “Export automatically calculated image resolutions” option).

This method has been improved in the latest FirstSpirit release. Using project archiving (the “Archive old project states” schedule), all calculated media/pictures whose resolutions are no longer available in



the project can now be removed from the image cache. These resolutions were previously removed via “Project properties” – “Resolutions” – “Delete”.

To use project archiving, the “Content, media, and data content” option must be activated under “Objects”:



ServerManager – Project-based schedule entries – Project archiving

During archiving, the automatically calculated resolutions that are no longer required are subsequently removed from the project and are no longer carried over to the archive file.

The automatically calculated resolutions that are no longer required are removed regardless of the additional settings in place for the project archiving process (e.g., for “Version history” and “Options”).

Advantages:

- The project size is reduced.
- Loading times are reduced.



- The FirstSpirit Server's overall performance is improved.

For more documentation, see:

- [Archive old project states](#)

21 Security

21.1 Apache Tomcat AJP: Vulnerability (Ghostcat) 2020-03

A Chinese security company has discovered a vulnerability in the binary communication protocol Apache JServ Protocol (AJP) used by Tomcat. This vulnerability has been named “Ghostcat” and is referenced as [CVE-2020-1938](#).

The following Tomcat version series, which have been recommended by e-Spirit to date, are also demonstrably affected:

- Apache Tomcat 8.x before version 8.5.51 and
- Apache Tomcat 9.x before version 9.0.31

! The vulnerability is classified as critical. e-Spirit therefore recommends a prompt update to a secure Tomcat version (8.5.51 or 9.0.31 see below). Furthermore, we recommend checking the AJP Connector configuration in each installation and adjusting it if necessary, as the AJP Connector was activated by default in the `server.xml` configuration file before the above-mentioned versions.

In the meantime, Apache Tomcat versions 8.5.51 and 9.0.31 have been released, which are considered secure and fix the underlying configuration problem in the default configuration.

With these versions, the default behavior of the AJP Connector has changed:

- By default, the AJP Connector only listens to the loopback address (previously all).
- Additionally, a secret must now be specified for the connection. (If required, the secret obligation can also be altered) by the parameter `secretRequired`.



Please consult the Apache Tomcat migration guide for the necessary adjustments:

- for [version 8.5](#) or
- for [version 9.0](#)

Further information can also be found in the Ghostcat notes of the individual Linux distributions, e.g. for RHEL: access.redhat.com/solutions/4851251

21.2 Behavior of the HTTP header "X-Frame-Options" is now configurable for the FirstSpirit web applications fs5root and fs5webmon 5.2R12

Support for the HTTP header "X-Frame-Options": The behavior of the HTTP header "X-Frame-Options" is now configurable for the FirstSpirit web applications `fs5root` (start page and SiteArchitect) and `fs5webmon` (ServerMonitoring). It can be controlled via the parameter `frameOptionsHeader` in the configuration file `fs-server.conf`:

```
#####
# X-Frame-Options header to control frame embedding
# of FirstSpirit fs5root or fs5webmon webapplication
#####
# X-Frame-Options header value
# - DENY do not allow embedding in a frame
# - SAMEORIGIN only allow embedding in a frame from a page of the same origin
# - ALLOW_ALL do not limit embedding / do not set X-Frame-Options header
frameOptionsHeader=SAMEORIGIN
```

Possible values:

- DENY prohibits embedding of the web applications into a frame
- SAMEORIGIN prohibits embedding of the web applications into a frame which is not located on the same host (default value)
- ALLOW_ALL allows embedding of the web applications into a frame





The new parameter changes the previous default behavior. If embedding of the FirstSpirit web applications (or LiveEdit) into frames of another host should be allowed or if such embedding should generally be prohibited, the configuration parameter must now be set to the appropriate value.

21.3 Java Vulnerability (Serialization/Deserialization) 5.2R3

Java applications which use or include the Java libraries

- “Common Collections” (Apache)
- “Groovy”
- “Spring Framework”

may pose a potential security risk: a vulnerability in these libraries enables an attacker to execute code on a server without prior authentication. Further libraries affected by this vulnerability are currently not known.

The FirstSpirit core software itself is not affected by this security threat as it does not use any of the aforementioned libraries.

However, several FirstSpirit Modules used or use at least one of the affected libraries and thus may have been or may be used as vectors for malicious attacks against FirstSpirit.

Furthermore, third-party FirstSpirit Modules may be affected.

FirstSpirit version 5.2R3 includes a bugfix which provides extensive protection against known and unknown attacks which exploit this vulnerability. This fix also protects potentially vulnerable modules (server-side only!). An update to this FirstSpirit version increases the general security of FirstSpirit, e.g. when FirstSpirit is deployed in an unprotected environment.

Several of the aforementioned modules have already received specific bugfixes to protect against this vulnerability.

For further information, see the related posting in the [FirstSpirit-Community](#).

Please direct questions about this subject to e-Spirit Technical Support.

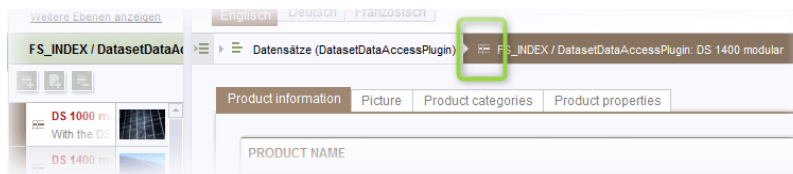
For further information about the vulnerability, see www.foxglovesecurity.com.



22 SiteArchitect

22.1 "de.espirit.firstspirit.agency.SnippetAgent#getTypeIcon" Uses Restyled icons 2018-09

In the course of FirstSpirit's design rebrush, the method `getTypeIcon` of the interface `SnippetAgent` (package `de.espirit.firstspirit.agency`, FirstSpirit Access API) now uses restyled, more modern type icons in FirstSpirit SiteArchitect. These icons are also used e.g. for the breadcrumb display of the input component `FS_INDEX` with "DatasetDataAccessPlugin":



22.2 Creating a section reference via context menu or keyboard shortcut

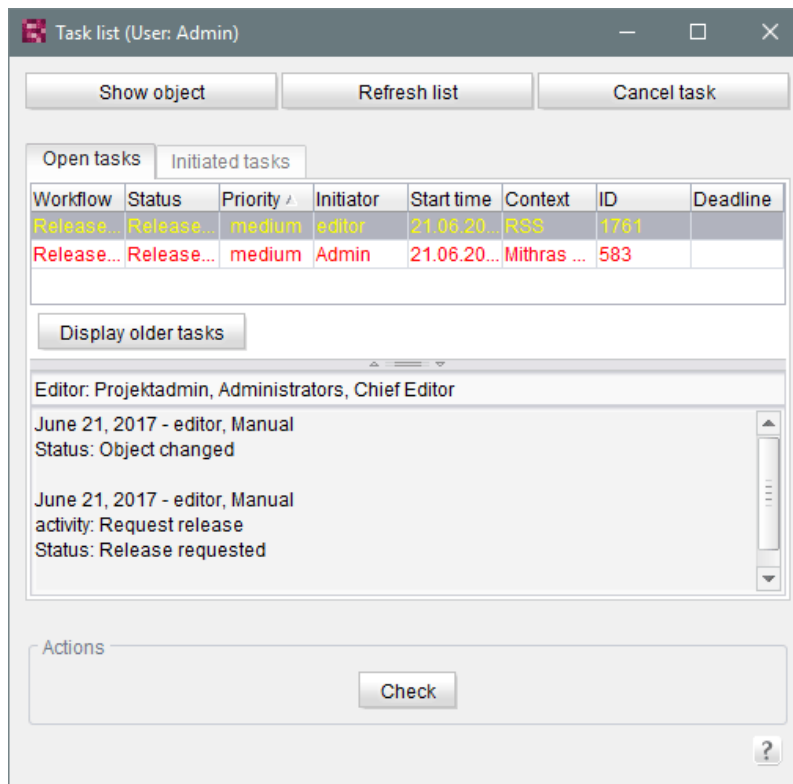
5.2R8

A section reference can now also be created via the context menu entry "Paste as section reference" or via the keyboard shortcut `Ctrl + Alt + V`.

22.3 Workflows / Task list: Aborting workflows now requires project administrator privileges 5.2R10

The task list in FirstSpirit SiteArchitect manages all tasks created in FirstSpirit, also called "workflows":





The button “Close task” may be used to close a task and thereby abort the associated workflow. This may become necessary if a task has become invalid (e.g. by deleting the object on which the workflow is active). Until now, this action was available to all users. As of the current FirstSpirit version, this action now requires at least project administrator privileges due to security considerations because aborting workflows, especially on referenced objects, can potentially lead to undefined states. If the current user does not have sufficient privileges to close a task, the button is inactive.

In this context, the button's label has been changed from “Close task” to “Cancel task”.

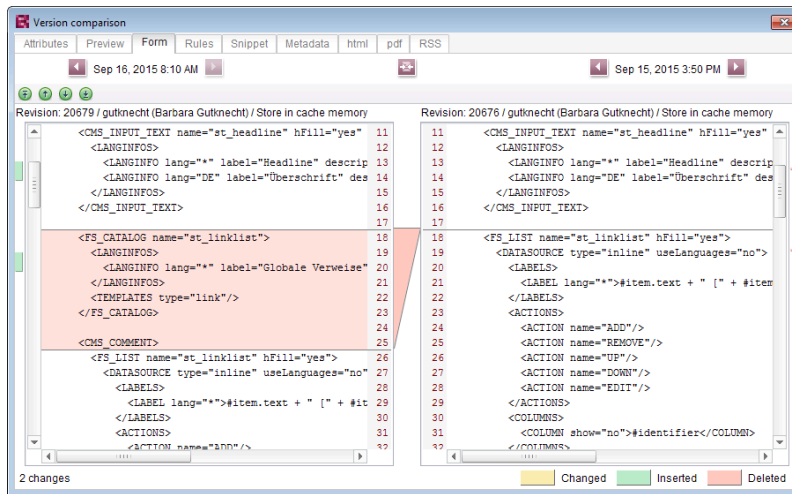
For further information, see *Documentation for FirstSpirit SiteArchitect*, chapter “Task list”.

22.4 Selection of revisions for merge 5.2R4

All project data in a FirstSpirit project possess a revision history that may be used to trace changes of data over time. Based upon this historical data, changes made to two revisions of the same object may be compared using a difference visualization. To do so, two of an object's revisions that should be compared are selected in the “Version history” dialog (Ctrl + H or context menu entry “Version history”),



and a click on the “Compare” button will display a difference visualization of the two revisions, named “Version comparison”. In this “Version comparison” dialog, data of the two compared revisions may be merged:



Functionality "Merge" in version comparison

Until now, the “Merge” functionality (in “Version comparison” dialogs, e.g. the button



for template elements) was available on almost all tabs (depending on the specific element type: “Attributes”, “Child list”, “Metadata”, “Variables”, “Form”, “Rules”, “Snippets”, template sets). A merge could potentially be used to modify system information (tabs “Attributes”, “Child list”). In order to prevent modification of such system information, FirstSpirit version 5.2R4 and later versions restrict availability of merge functionality as follows:

- **Tab “Child list”:** merge functionality is **not available**
- **Tab “Attributes”:** merge functionality is **only available to server and super administrators**

Thus, a user possessing the appropriate privileges will continue to be able to modify attributes of an element.

For further information, see *FirstSpirit Online Documentation*, page “Templates (basics) / Basics / Functions via context menus / Version history / Compare”.



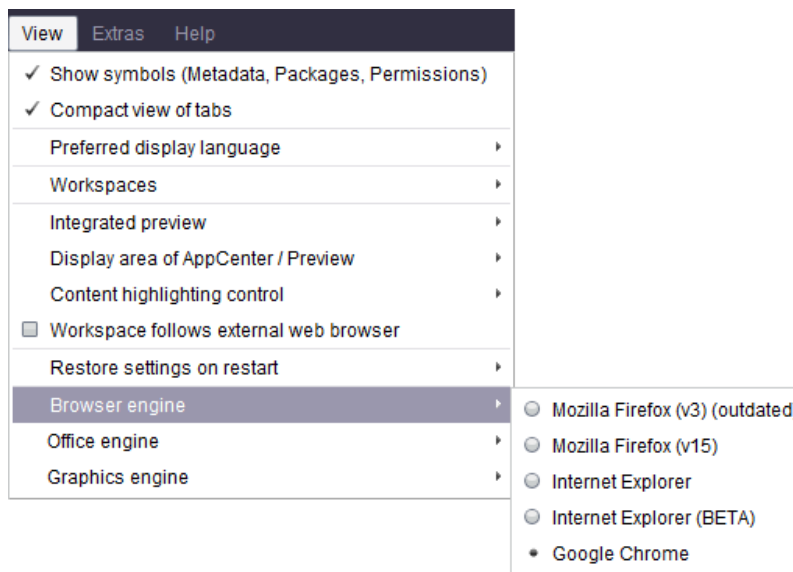
22.5 Changed label for the function "Preview" 2018-09

In all languages, the labels for the context menu and toolbar functions “Preview” and “Preview errors” have been changed to “Display preview” and “Display preview errors”, respectively.

22.6 Browser integration: "Internet Explorer" 5.2R21

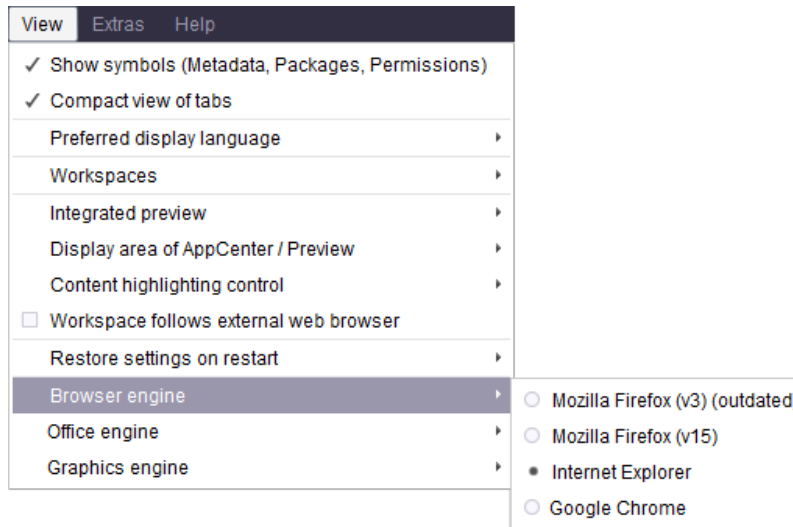
With the current version of FirstSpirit, the discontinued “Internet Explorer” variant for the “integrated preview” in FirstSpirit SiteArchitect is no longer supported. The current BETA version “Internet Explorer (BETA)” is being released to replace it. The corresponding menu entry has been changed to “Internet Explorer” and the “Internet Explorer (BETA)” menu item has been removed from SiteArchitect.

Up to and including FirstSpirit version 5.2R20:



From FirstSpirit version 5.2R21:





22.7 Display of titles in forms 2018-07





The new FirstSpirit graphical user interface design has been used capital letters for titles in forms in SiteArchitect since FirstSpirit version 5.2R19 (March 2018, parameter `label`).

As of the current release, this display was improved.

22.8 Display of Default Values in Data Sources 5.2R5

FirstSpirit's Data Sources store is used to store and manage well-structured content, e.g. press releases, product catalogs, and address lists. The data is displayed in a tabular view:



ID	G...	Product name	Product description	Picture	Picture description	Product type
4160	<input checked="" type="checkbox"/>	[Master copy] 150W Modular Inverter / 12V Mini	The 150W modular inverter / 12V mini is mounted on the solar module. The small voltage range makes this safe and there are less...		150W Modular Inverter / 12V Mini	[Inverter]
2050	<input type="checkbox"/>	Connector	This solar connector has been designed for use in extreme environmental situations and to satisfy the demand for lighter, more...		Connector	[Accesso...
2048	<input type="checkbox"/>	Frame	The number of roof anchors is important for the stability of this frame; it enables use on pitched roofs of 20 to 60 degrees in virtually...		Frame	[Accesso...
1989	<input type="checkbox"/>	Adapter	With this adapter you can easily and flexibly connect up to 10 solar collectors with each other. The distance between the individual...		Adapter	[Accesso...

If a template for a dataset defines an input component with a default value and a dataset based on this template does not override this value (i.e. an editor has not entered a value into this input component for that dataset), the detailed dataset view will show a pink frame around this input component:

Product name

German English

Data sources (root) > Products > Products > Product name

Product information | Picture | Product categories | Product properties | Product offers | Contact

Product name

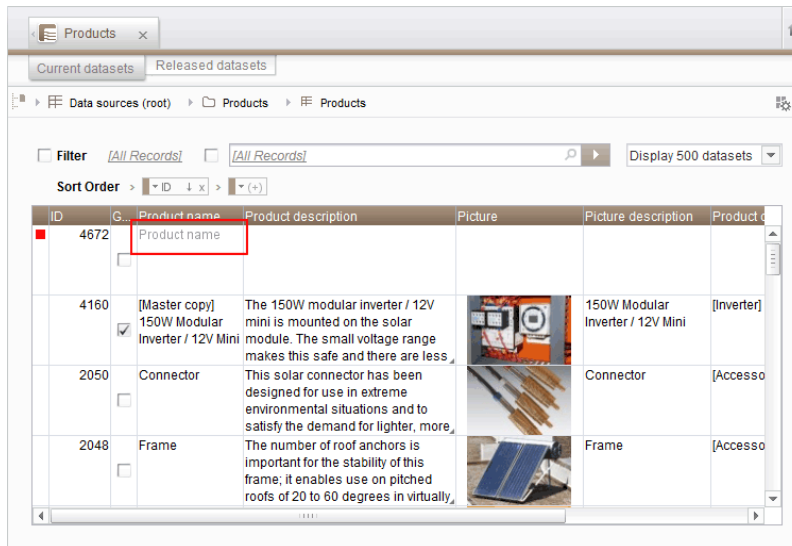
Product name

Product description

Product description rich text editor

In the tabular view, such default values used by a dataset will now be shown in a semi-transparent fashion:





Previously, default values were not shown.

For further information, see

- *Documentation for FirstSpirit SiteArchitect*, chapters
 - “Data Store / Editing area of a data source (overview)”
 - “General operation / Default values”
- *FirstSpirit Online Documentation*, chapter
 - “Template development / Forms / Default values”

22.9 Drag-and-drop support for CMS_INPUT_DOMTABLE 5.2R5

A central interaction pattern in ContentCreator and SiteArchitect is the affordance for simple data exchange via drag-and-drop, e.g. from a report or a (Windows) desktop into a FirstSpirit input component.

As of FirstSpirit version 5.2R5, the input component CMS_INPUT_DOMTABLE in SiteArchitect now also supports drop functionality. Now, objects of type *Text*, e.g. text from a word processing program such as Microsoft Word, may be inserted into CMS_INPUT_DOMTABLE using drag-and-drop.



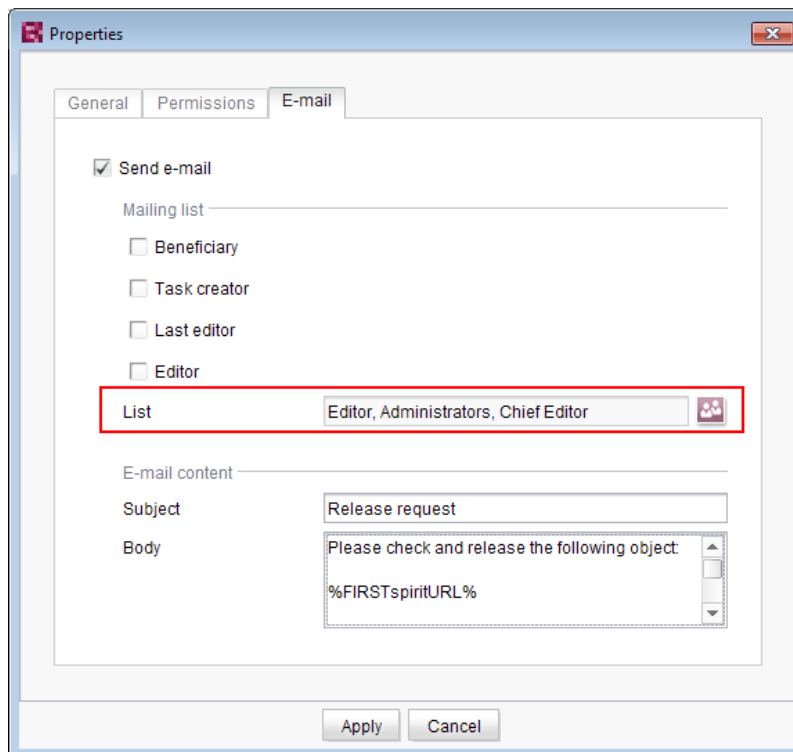
When using the module “FirstSpirit OfficeConnect”, content from Microsoft Office documents may be inserted into an accordingly configured DOM input component using the keyboard shortcut **Ctrl+V**. Previously, this was only possible via the Import button.

For further information, see

- *FirstSpirit Online Documentation*, “Template development / Forms / Drag-and-drop”
- Module documentation for *FirstSpirit OfficeConnect*

22.10 Configuring e-mail messaging in workflows 5.2R2

In FirstSpirit, lists of users and / or groups can be defined for activities and transitions in a workflow. Messages are then sent to these users and / or groups via e-mail when the corresponding workflow step is completed. The “List” field is used for this purpose:



Changes to the design of FirstSpirit SiteArchitect resulted in these lists not being included in some versions of FirstSpirit version series 5.2 and 5.1. This error has been fixed in version FirstSpirit™ 2020-06: If at least one user or group is selected in this field, an e-mail is sent to the selected recipient(s).





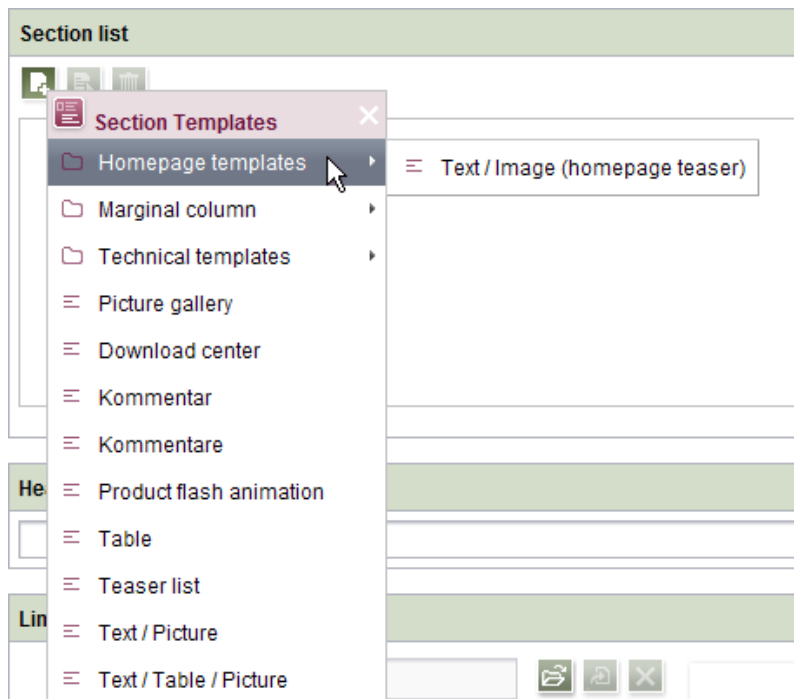
Migration information: If this function was used to define a list in an earlier version of FirstSpirit version series 5.2 or 5.1 (5.2R1, 5.1R1, 5.1R2, 5.1R3, 5.1R4), this list must be redefined following an update to the latest version (FirstSpirit™ 2020-06) so that this error fix is applied and e-mails are sent to the users or groups in the defined list.

For more information about configuring workflows, see *FirstSpirit Online Documentation*, “Templates (Basics) / Composition of templates / Workflows”.

22.11 Simplified Creation of Entries in FS_CATALOG 5.2R4

The input component FS_CATALOG allows creation of lists with sections or links such that editors may maintain several sections or links, respectively, within a single input component.

In SiteArchitect, if more than one section or link template were available, selection of a template for a new entry was done via a dialog. In FirstSpirit version 5.2R3, selection of a template for a new entry is now done via a pop-up menu (analogous to FS_LIST, `<PARAM name="select-ui">list</PARAM>`) from which the desired template may be selected:



If the FS_CATALOG input component is not configured to limit the set of allowed templates (i.e. no `TEMPLATE` tags are defined within the `TEMPLATES` tag in the component's configuration) or if more than 21 allowed templates are defined, the template selection pop-up will also display a partial folder hierarchy of the Templates store, such that all folders between the Templates store root and individual, allowed templates are shown. The pop-up menu may be closed by either clicking on its title bar or the "Close" icon or by pressing `ESC`.

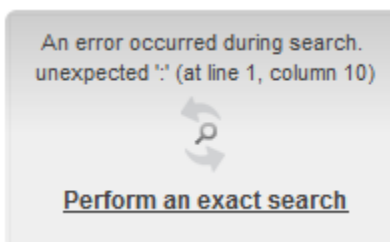
If the FS_CATALOG input component is configured to allow only one template (i.e. only one `TEMPLATE` tag is defined within the `TEMPLATES` tag in the component's configuration), the template selection pop-up will not appear, and the new entry will automatically be created using this template.

For further information about FS_CATALOG, see

- *FirstSpirit Online Documentation*, "Template development / Forms / Input components / CATALOG"
- *Documentation for FirstSpirit SiteArchitect*, chapter "Catalog (FS_CATALOG)"

22.12 Repeating a search after erroneous input 5.2R8

If the search string used for a full-text search contains a special character that cannot be used in search, an error message will be displayed in the search results pane.

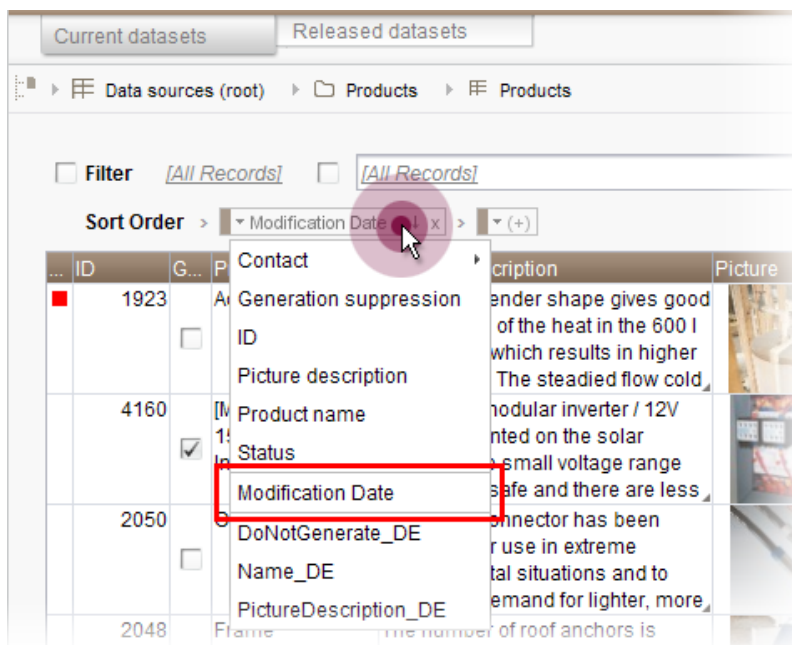


This error message now provides an opportunity to repeat the search by clicking **Perform an exact search**. In this repeat search, quotation marks will be placed around the search string, and an exact search will be performed.

22.13 Extended Filter and Sorting Functionality for Datasets 5.2R3

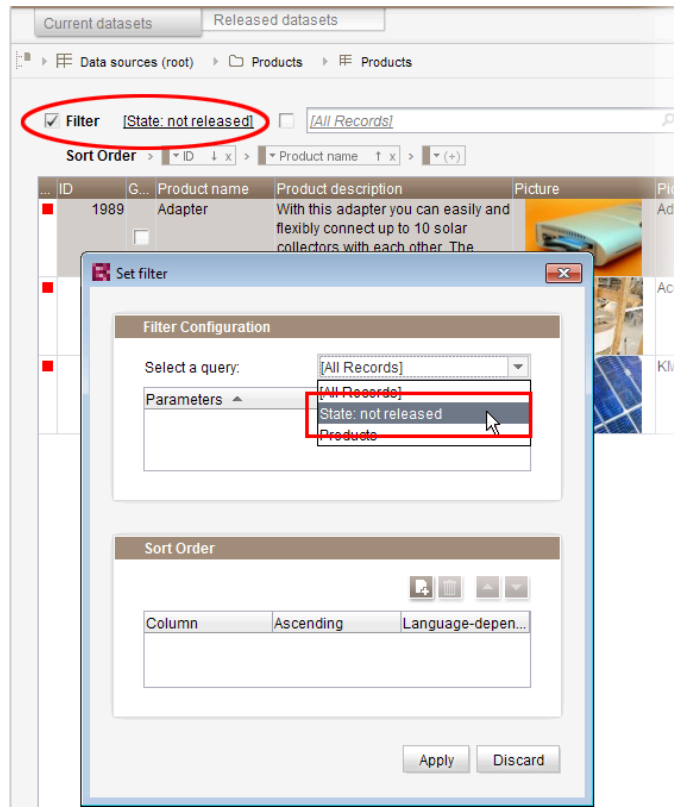
The Data Sources store is used to create and maintain strongly structured content, i.e. datasets. In the tabular overview of a data source, the existing datasets are displayed in two tabs that contain current and released datasets. This tabular overview supports filtering and sorting to customize the view.

In FirstSpirit version 5.2R3, **current datasets** can also be sorted by the time of modification such that the most recently edited datasets can be shown at the top of the list. This sorting can be enabled by using the new sort criterion “Modification Date”:



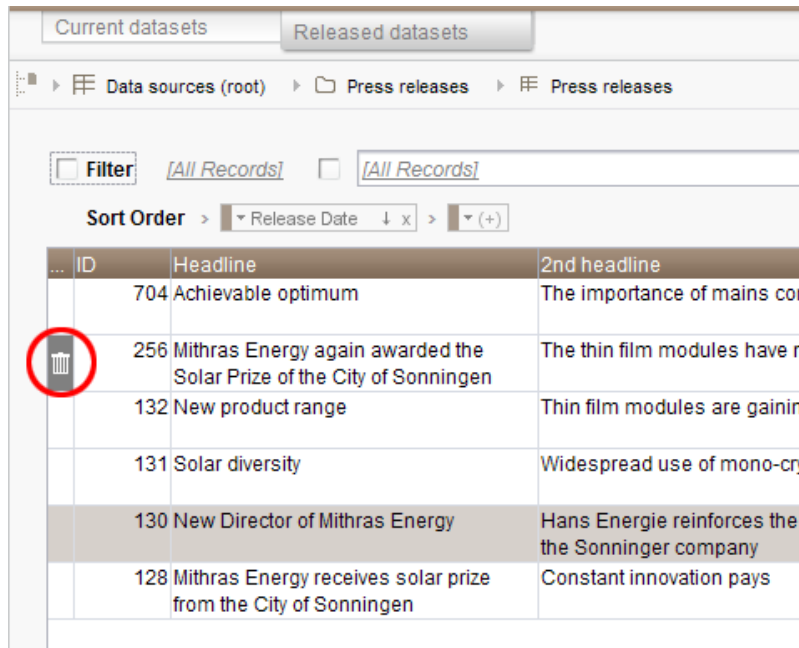
As before, the leftmost column in the tabular view may be used to sort datasets by workflow state. The tabular view may be configured to display only datasets which are not released by using the new filter “State: not released”:





If a dataset should be **deleted** completely from a data source, it must be deleted in both the current and the released state. Datasets which have been deleted in the current state but are still present in the tab “Released datasets” (and potentially should be deleted there as well) are now marked with a paper bin icon:





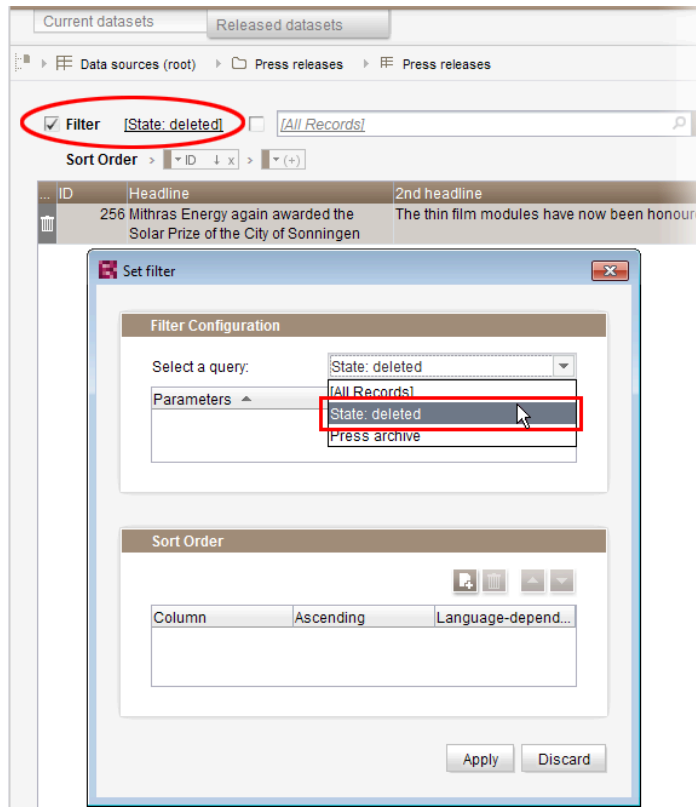
The screenshot shows a web interface with two tabs: "Current datasets" and "Released datasets". Below the tabs is a breadcrumb trail: "Data sources (root) > Press releases > Press releases". There are two filter buttons, both labeled "[All Records]". A "Sort Order" dropdown is set to "Release Date" with a "x" icon and a "+" icon. Below this is a table with three columns: "ID", "Headline", and "2nd headline". The table contains several rows of data. A trash can icon in the first column of the second row (ID 256) is circled in red.

ID	Headline	2nd headline
704	Achievable optimum	The importance of mains con
256	Mithras Energy again awarded the Solar Prize of the City of Sonningen	The thin film modules have n
132	New product range	Thin film modules are gaining
131	Solar diversity	Widespread use of mono-cry:
130	New Director of Mithras Energy	Hans Energie reinforces the e the Sonninger company
128	Mithras Energy receives solar prize from the City of Sonningen	Constant innovation pays

This icon may be used to delete the associated dataset in its released state.

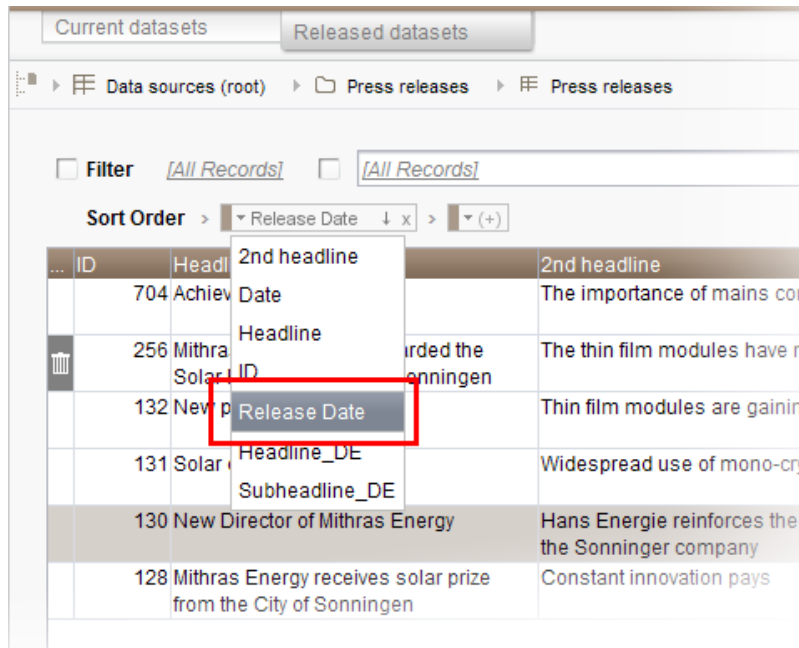
In order to more quickly identify datasets which have been deleted in current state but are still present in a released state, the "Released datasets" table may be configured to display only such datasets by using the new filter "State: deleted":





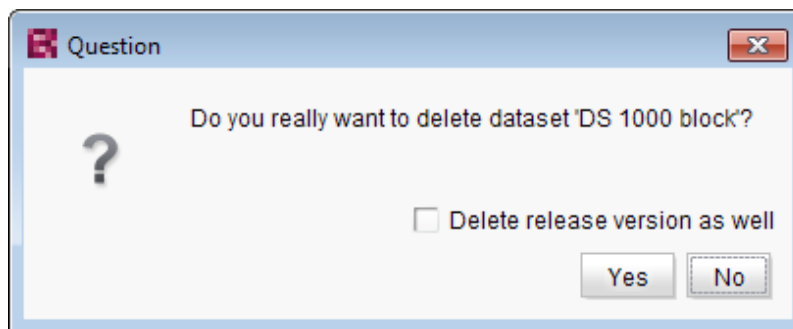
In order to sort released datasets by date of most recent release, use the newly-introduced sort criterion “Release Date”:





Sorting via the leftmost column in the “Released datasets” table is no longer possible.

Furthermore, datasets which are being deleted in the tab “Current datasets” may now be deleted from the “Released datasets” tab at the same time. This may be accomplished by checking the checkbox “Delete release version as well” in the confirmation dialog which is shown as a dataset is deleted:



For further information, see

- *Documentation for FirstSpirit SiteArchitect*, chapter “Data Store”
- *FirstSpirit Online Documentation*, “Templates (basics) / Composition of templates / Database schemata”



22.14 FS_DATASET / FS_INDEX: Working with newly created datasets has been optimized 2018-07

Input components FS_DATASET and FS_INDEX (with `DatasetDataAccessPlugin`) can be used, for example, to create new datasets in a data source.

Even if editing datasets is completely deactivated for the corresponding input component (for FS_DATASET: `allowEdit="no"`, for FS_INDEX via the definition of a suitable rule), with the latest FirstSpirit release, new datasets created in this way can now be initially filled with content in FirstSpirit SiteArchitect.

Further editing of the dataset is possible in the Data Store.

Previously it was not possible to maintain newly created datasets if the editing of datasets had been deactivated for the input component.

For more information, see *FirstSpirit Online Documentation*,

- “Template development / Forms / Input components / DATASET”
- “Template development / Forms / Input components / INDEX”

22.15 FS_INDEX: Reuse of tabs in the details view 5.2R5

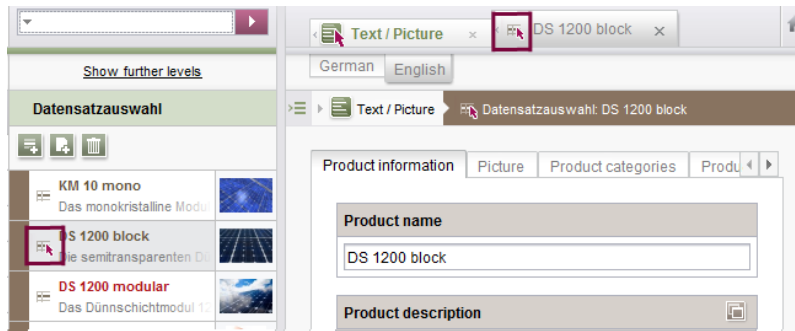
In FirstSpirit version 5.2R5, the user interface of the details view of the input component FS_INDEX has been optimized: the tabs in the details view will now be reused and visualize an active edit mode.

The details view is always started when a new entry is added to the index or an index entry is edited. Instead of the usual tree view in the left pane of the SiteArchitect window, an overview of the index' entries is displayed. In the editorial area, a new tab will be opened that shows the selected index entry. If another entry is selected in the index overview of the details view, this tab will be reused.

Edit mode is only automatically activated when adding a new index entry. If an existing entry should be modified, edit mode must be activated manually.

If edit mode is active, the same rules in tab handling apply as do to serial editing of datasets: when switching from one entry to another, changes to the first entry will be saved after a confirmation dialog is answered accordingly, the next entry will then be displayed in the same tab and will be in edit mode as well.



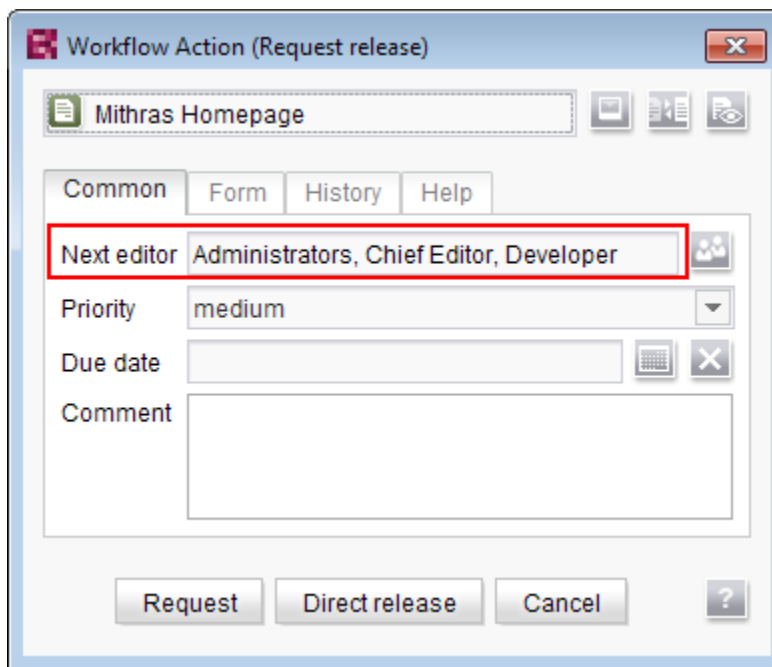


Active edit mode will be visualized using a red arrow icon on the tab of the entry that is being edited.

22.16 'Group exclusion' function for transitions in workflows 5.2R3

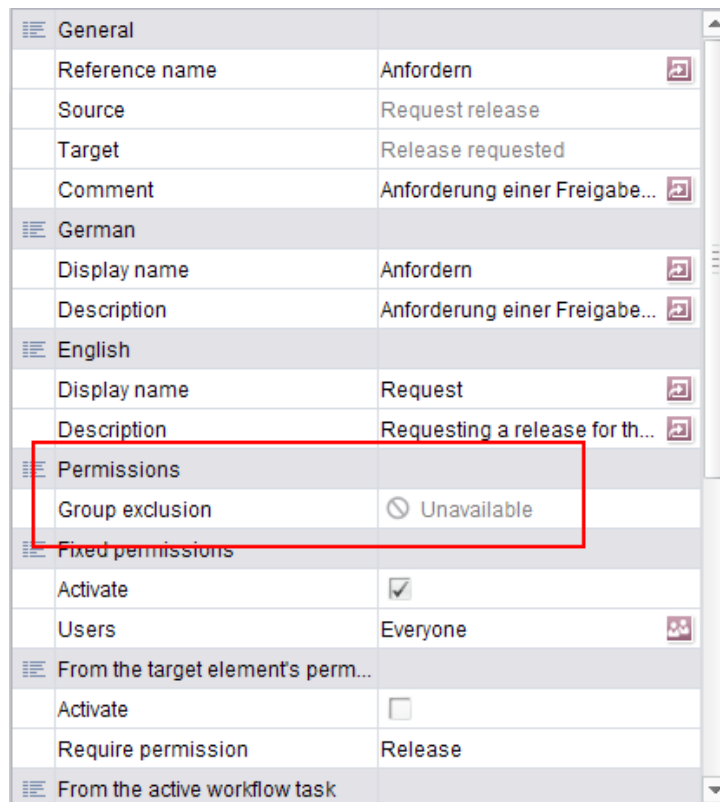
A workflow is a sequence of tasks that is completed according to a fixed, predefined structure. In FirstSpirit, this consists of statuses, activities, and transitions, whereby transitions form the link between activities and statuses. Due date deadlines and groups of authorized individuals can be defined in FirstSpirit for the respective tasks. Authorizations are defined for transitions.

The “Group exclusion” field for a transition (“Permissions” tab) is used to select groups which are not to be preselected as “Next editor” in the workflow dialog:



If the user does not explicitly select these groups in the workflow dialog, they will not receive an e-mail message either.

It is only possible to define such a group exclusion for transitions which indicate an activity. From FirstSpirit version 5.2R3 onward, this definition is now also prevented in the GUI for transitions which indicate a status:

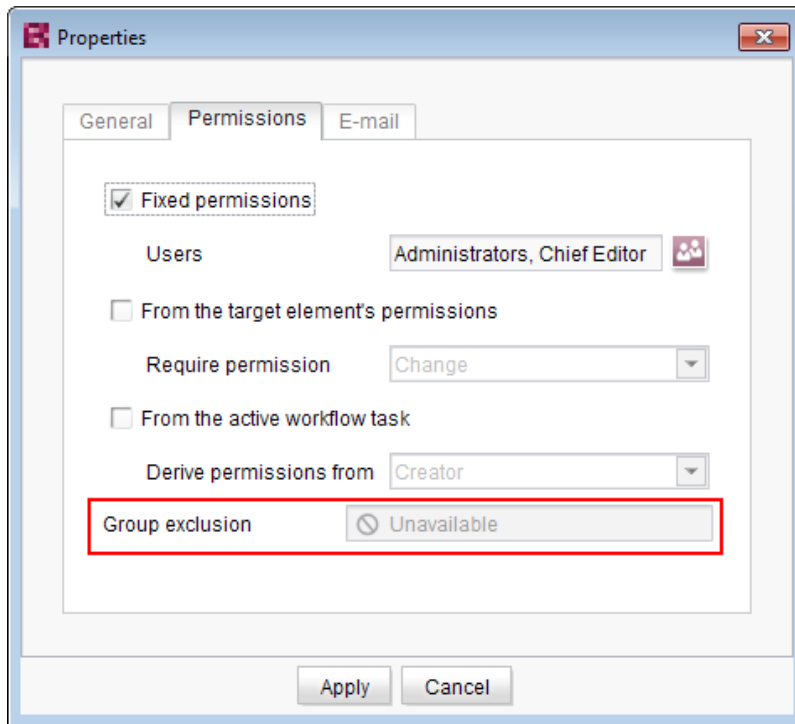


General	
Reference name	Anfordern
Source	Request release
Target	Release requested
Comment	Anforderung einer Freigabe...
German	
Display name	Anfordern
Description	Anforderung einer Freigabe...
English	
Display name	Request
Description	Requesting a release for th...
Permissions	
Group exclusion	<input type="radio"/> Unavailable
Fixed permissions	
Activate	<input checked="" type="checkbox"/>
Users	Everyone
From the target element's perm...	
Activate	<input type="checkbox"/>
Require permission	Release
From the active workflow task	

In the properties table

and

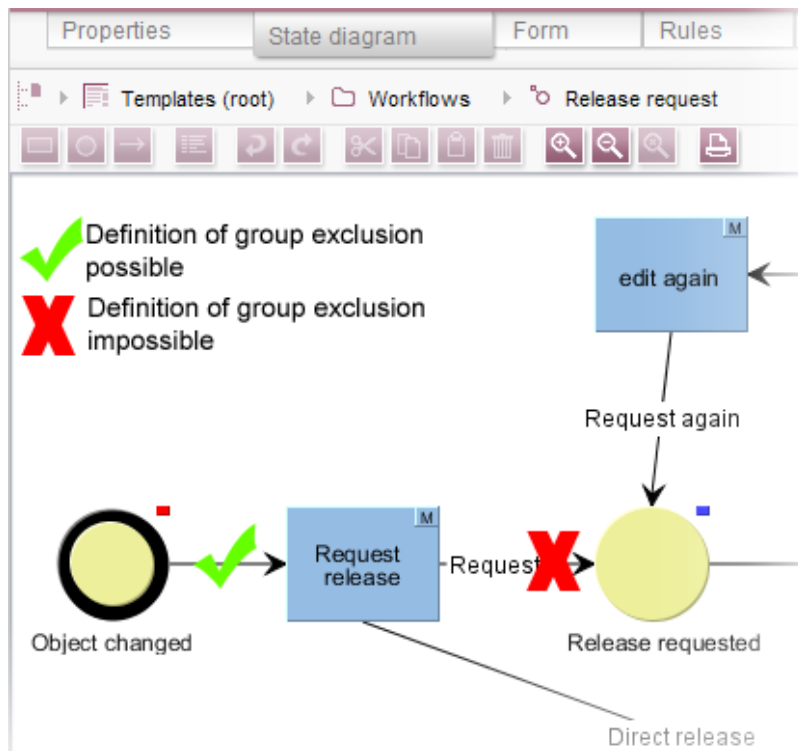




In the dialog

The group(s) that is/are not to appear automatically as “Next editor” in the workflow dialog must be specified for the transition which indicates the previous activity in the workflow:





For more information, see also *FirstSpirit Online Documentation*, “Templates (basics) / Composition of templates / Workflows / State diagram tab / Properties of a transition”.

22.17 Integrated preview: Updated third-party software 5.2R7

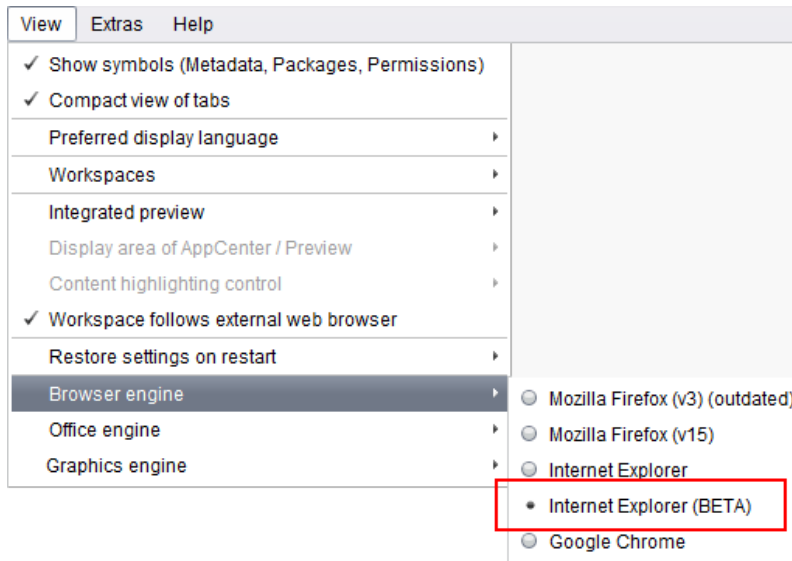
The integrated preview in FirstSpirit SiteArchitect (menu entries “View / Integrated preview” and “View / Browser engine”) is based upon third-party software:

The browser engine “JxBrowser”, used to integrate “Google Chrome”, has been updated from version 4.9.5 to version 6.12.

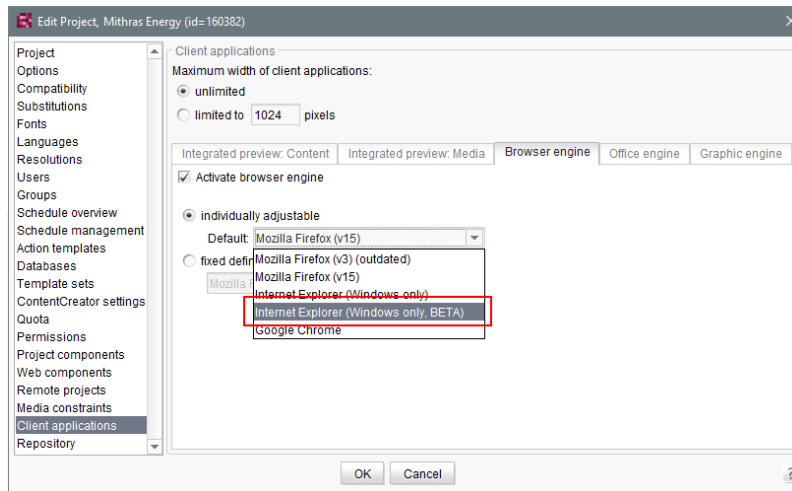
In order to integrate “Internet Explorer”, another browser engine has been implemented (“JExplorer”, version 3.4) which is intended to ensure better stability when using Internet Explorer for integrated preview. However, use of this browser engine is not yet officially released and is currently in a BETA phase.

In SiteArchitect, this browser engine may be selected via the menu entry “View / Browser engine / Internet Explorer (BETA)”:





In project properties (“FirstSpirit ServerManager / Project properties / Client applications”, tab “Browser engine”), project developers may define if this browser engine should be preselected or fixed for users of this project, e.g.



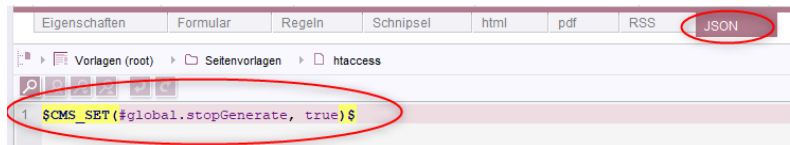
For further information, see

- *FirstSpirit SiteArchitect / The menu bar / View (→Documentation FirstSpirit SiteArchitect)*
- *FirstSpirit Manual for Administrators, chapter “Browser engine”*



22.18 JSON: new behavior when validating JSON content 2019-11

The call `$CMS_SET(#global.stopGenerate, true)$` in the template set of a page template can be used to prevent generation for this template. This may be useful if, for example, a PDF or JSON version of a document is not required.



JSON template set – stopGenerate

In the latest FirstSpirit release, a problem affecting the use of the JSON validator in conjunction with the call of `$CMS_SET(#global.stopGenerate, true)$` has been resolved.

Previous behavior when validating JSON content:

- an empty JSON document is not valid

The call `$CMS_SET(#global.stopGenerate, true)$` for an otherwise empty JSON output therefore resulted in the following generation error:

```
INFO (...): generating page reference 'htaccess' (id=87736, JSON, DE)
ERROR (...): INVALID JSON: unexpected EOF
INFO (...): generate of page (id=87736) stopped
```

Current behavior when validating JSON content:

- an empty JSON document is valid

As a result of the change:

- an empty JSON output containing the call `$CMS_SET(#global.stopGenerate, true)$` will no longer generate an error.
- a JSON output that first writes JSON content and calls `$CMS_SET(#global.stopGenerate, true)$` later on will only produce generation errors



if the source text that has previously been generated is not a valid JSON at the time `$_CMS_SET(#global.stopGenerate, true)$` is called.

Example of valid JSON output:

```
$_CMS_SET(#global.stopGenerate, true)$
```

and

```
{ } $_CMS_SET(#global.stopGenerate, true)$
```

Example of invalid JSON output:

```
{  
$_CMS_SET(#global.stopGenerate, true)$  
}
```

22.19 JSON: Optimized output format 2019-05

FirstSpirit offers JSON validation to support template development. See also *FirstSpirit Manual for Administrators*, “FirstSpirit ServerManager / JSON Support”.

The output format has been optimized as of the current release: If there is no explicit configuration, JSON is now output in the most compact form possible (without line breaks and indentations).

The behavior can be influenced using the parameter

```
#global.json.PrettyPrinting
```

A “readable” format can be obtained by calling

```
$_CMS_SET(#global.json.PrettyPrinting, true)$
```

in the template on the JSON output tab.



Tip: If you check JSON frequently in the preview, you can use `$CMS_SET(#global.json.PrettyPrinting, #global.preview)$` to define the output format to be readable in the preview and space-saving during generation.

22.20 JSON: Improved validation 2019-02

The new JSON validator no longer aborts at the first error, but outputs the complete generated JSON document. Errors are clearly marked at the corresponding positions in the output, e.g.

```
"hidden":false,"newRow":true,"text":"<h3> <----- INVALID JSON: expected ', ' or '}'  
- got '>'
```

For more information please see *FirstSpirit Manual for Administrators*, “FirstSpirit ServerManager / Support for JSON”.

22.21 Context menu functionality and horizontal toolbar 5.2R5

In FirstSpirit SiteArchitect, the context menus for store tree items have been modified such that context menu entries are now always shown in a consistent order. Furthermore, the drop-down menus associated with the “Preview” and “New” buttons in the horizontal toolbar have been expanded:



The icon for showing the buttons of the horizontal toolbar which are faded out because of lack of column width can be found now at the right-hand edge of each column:



For further information, see *Documentation for FirstSpirit SiteArchitect*,

- “FirstSpirit SiteArchitect / The horizontal toolbar”



- “FirstSpirit SiteArchitect / The horizontal toolbar / Preview”
- “FirstSpirit SiteArchitect / The horizontal toolbar / New”

22.22 List view at folder level in the Media Store 5.2R13

As of the current FirstSpirit version, you can now select a list view in addition to the previously available Thumbnail view for the “Overview” tab at folder level in the Media Store. Use the **Customize layout** icon in the top right-hand corner to switch between the two views. The selected view applies to all folders in the Media Store and is also used for the respective user in other projects on the server.

List view

Name	Date modified	Kind	Size
Download documents	Feb 24, 2015 3:55:56 PM	Folder	
Back end	Jul 28, 2011 10:37:44 AM	jpg (image/jpeg)	13.41 KB
Compilation	Jul 29, 2009 1:43:47 PM	jpg	10.46 KB
Concept and design	Jul 28, 2011 10:37:44 AM	jpg (image/jpeg)	7.51 KB
Extension	Jul 29, 2009 1:43:47 PM	jpg	10.8 KB
FirstSpirit	Jul 28, 2011 10:37:44 AM	jpg (image/jpeg)	5.27 KB
Front end	Jul 28, 2011 10:37:44 AM	jpg (image/jpeg)	8.73 KB

The list view contains columns for the preview icon, display name, change date, file type, and file size.

The width of the individual columns can be adjusted by dragging the column border with the mouse.

Click on a column heading to display the media sorted according to the values in the relevant column.

22.23 Logging the Integrated Preview (Browser Engines) 5.2R10

Logging supports FirstSpirit developers and administrators when it comes to identifying and rectifying errors. Logging takes place at different points in FirstSpirit, e.g., log messages relating to actions on



the server are retained in the `fs-server.log` file, log messages relating to schedules in the `fs-schedule.*.log` file, etc.

With the current FirstSpirit version, log messages for the browser engine used for the integrated preview are now also retained, namely in the SiteArchitect log files `.firstspirit*/logs/SiteArchitect*.log`. This can be opened via the “Show log file in File Manager” entry in the “Help” menu in the local file directory or displayed in a separate window via the “View log” menu item.

Logging depends on the log level set in the relevant client. This can be adjusted via the `-DLogLevel` (e.g., `-DLogLevel=DEBUG`) parameter in the connection settings (“Start page / Connection settings / Optional parameters”) or the “Extended logging” entry in the “Extras” menu. The default log level is `INFO`.

22.24 New functionality for FS_CATALOG and FS_INDEX 2018-10

As of the current FirstSpirit release, the input components `FS_CATALOG` and `FS_INDEX` have been extended with new functionality in FirstSpirit SiteArchitect which enables more comfortable work with these components:

FS_INDEX

The order of entries in an `FS_INDEX` component could previously only be modified via drag-and-drop. Now, the order can also be changed via newly-implemented buttons:



FS_CATALOG

The order of entries in an `FS_CATALOG` component could previously only be modified via drag-and-drop. Now, the order can also be changed via newly-implemented buttons:



Furthermore, existing entries can also be copied or duplicated via their respective context menu entries or keyboard shortcuts.

This function can be deactivated via an according rule (analogous to the creation of new entries), e.g.



```
<RULES>
  <RULE when="ONLOCK">
    <WITH>
      <FALSE/>
    </WITH>
    <DO>
      <PROPERTY name="NEW" source="fs_catalog"/>
    </DO>
  </RULE>
</RULES>
```

The function “Cut” can now also be executed via the new context menu or keyboard shortcut.

For further information, see

- *FirstSpirit Online Documentation*, “Template development / Forms / Input components / CATALOG” and “Template development / Forms / Input components / INDEX”
- *Documentation for FirstSpirit SiteArchitect*, “Input forms / Catalog” and “Input forms / Index”

22.25 Optimized keyboard control for consideration of pages and sections in generation 5.2R4

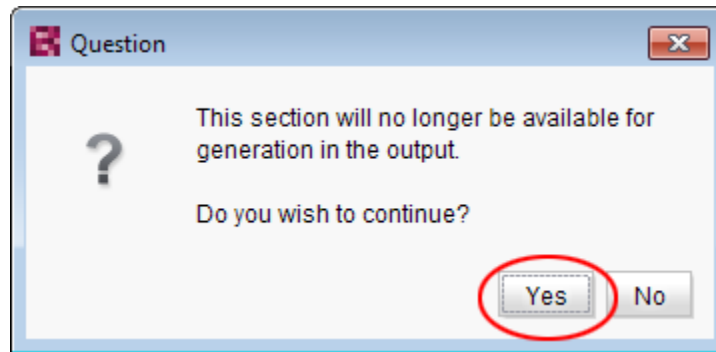
In the Page Content store, pages and sections can be configured with the following options:

- (Pages) “Page is completely translated to this language”: Depending on project settings, the page's specific project language version for which this option is set will be generated or not.
- (Sections) “include this section in the output”: During generation, the section's specific project language version for which this option is set will be rendered on the page or not.

These settings can be changed for a specific project language by toggling the checkbox on that language's tab in the workspace area of an element that is in edit mode.

The confirmation dialog which appears after toggling such a checkbox (e.g. “This section will no longer be available for generation in the output. Do you wish to continue?”) used to use “No” as its default answer. In order to support a more efficient editorial process, starting with FirstSpirit version 5.2R4, this dialog's default answer will be “Yes”.





With this change, the confirmation dialog can generally be confirmed by pressing either `Enter` or `Space` on the keyboard.

For further information about these functionalities, see *Documentation for FirstSpirit SiteArchitect*,

- chapter “Settings at page level”
- chapter “Settings at section level”

22.26 Optimizing code completion in templates 5.2R2

Code completion allows FirstSpirit templates to be programmed more quickly, while the lists of suggestions offer a simple source of reference. This can be found in FirstSpirit templates on the

- Form
- Rules and
- Output

tabs.

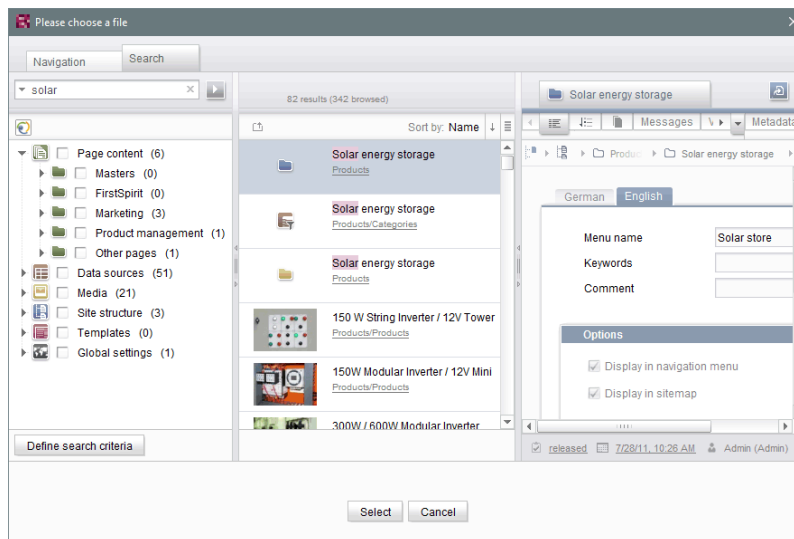
The code completion function has been expanded in FirstSpirit version 5.2R2. Now, for example, the output tabs even show identifiers for the input components defined on the form tab, as well as methods which can be applied to the values returned by the input components. These can be inserted at the insert mark. The lists of suggestions can also be filtered by simply entering the necessary search text.

For more information, see the *FirstSpirit Online Documentation*, “Interesting tips / Input assistance”.



22.27 Optimization of selection dialog 5.2R5

In SiteArchitect, the selection dialog offers navigation and search functionality which enable quick location of objects which should be referenced, e.g. images or files from the Media store or page references from the Site Structure store (e.g. input components FS_REFERENCE, FS_LIST, FS_DATASET). The dialog only displays objects which may be selected, based on the constraints set by the input component.



Selection dialog of FS_REFERENCE (SiteArchitect)

In FirstSpirit version 5.2R5, the search interaction pattern in this dialog has been optimized:

- By default, the selection dialog will now search **all stores / folders of all projects** which are allowed, based on the constraints set by the input component (e.g. FS_REFERENCE: tag SOURCES / FOLDER, FS_DATASET: tag SOURCES / CONTENT). Previously, search only considered projects / stores / partial trees which were selected by the user in the tree of the tab “Navigation”. In order to limit search to certain projects / stores / partial trees, users may now toggle checkboxes in the tab “Search” accordingly.
- If search is started from the tab “Navigation”, any existing search limitations set in the tab “Search” will be **reset**. In the tab “Search”, checkboxes will thus no longer be set automatically.
- The display of the **suggestion list** below the search field has been improved.



For further information

- about the selection dialog, see *Documentation for FirstSpirit SiteArchitect*, chapter “Selection dialogs”,
- about specific input components, see *FirstSpirit Online Documentation*.

22.28 Code completion optimizations 5.2R7

Code completion is available on the “Form” and “Rules” tabs, as well as on the template set tabs.

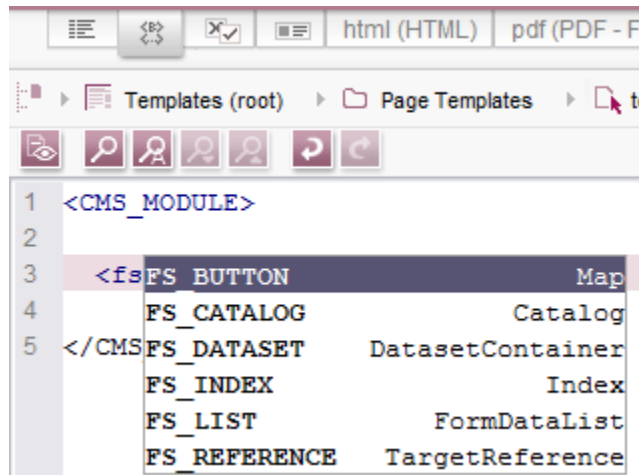
The **Ctrl + Space** key combination opens a window of the available tags, parameters, and, if applicable, values.

- On the “Form” tab, code completion can be used to insert input components together with their minimum configuration and all available parameters and associated values.
- On the “Rules” tab, all available tags and parameters can be shown and inserted, according to their hierarchy.
- On the template set tabs, all available instructions in their corresponding syntax, identifiers of input components defined on the “Form” tab, and methods can be inserted.

Some optimizations have been made to the “Form” and “Rules” tabs for the purpose of code completion in the latest FirstSpirit version:

Whereas in the past, the suggestions shown for tag and parameter names were **case-sensitive**, now case is irrelevant for code completion. For example, if the text `<ES` has already been entered on the “Form” tab, pressing **Ctrl + Space** will show the following suggestions:





<FS must have been entered previously.

Instead of tags which code completion would close with />, now open tags are generated, which make it easy to generate and work with internal tags.

Example **before 5.2R7**:

```
<FS_INDEX ...>
...
  <SOURCE name="" />
</FS_INDEX>
```

Example **with 5.2R7 or higher**:

```
<FS_INDEX ...>
...
  <SOURCE name="">
  </SOURCE>
</FS_INDEX>
```

Once saved, <SOURCE name="..."> ... </SOURCE> is truncated to <SOURCE name="..." /> again.



Furthermore, code completion can now be used to finish the **closing tags** of an element too, if completion is required for such a tag (i.e., one that starts with `</`). The next superordinate opening tag is always closed during this process.

For more information, see *Advanced topics / Input assistance* (→*FirstSpirit Online Documentation*).

22.29 Jumping to References in Template Code 5.2R9

In addition to functions for software-supported completion of template code, the current version of FirstSpirit also provides means for switching to elements referenced in the code (other templates, FirstSpirit objects) and form definitions (“GOM”) conveniently with a single click.

When the mouse cursor is hovered over the respective code expression, **Ctrl** displays information (name, object type, preview, path) regarding the referenced element in a tooltip.

Using **Ctrl + KCLICK** allows for jumping to the referenced element directly.

This new functionality is available for the following template tabs:




- **Tab “Form”**

Reference to referenced templates and other FirstSpirit objects


Example: **CMS_INPUT_DOM** – Limit to link templates using the tag *LINKEDITORS*

```
<CMS_INPUT_DOM name="pt_intro" hFill="yes" ...>
  <FORMATS>
    <TEMPLATE name="p"/>
  </FORMATS>
  <LANGINFOS>
    <LANGINFO lang="*" label="Introduction" ...>
  </LANGINFOS>
  <LINKEDITORS>
    <LINKEDITOR name="textlinkexternal"/>
    <LINKEDITOR name="textlinkinternal"/>
  </LINKEDITORS>
</CMS_INPUT_DOM>
```



Example: **FS_DATASET** – Limit to a data source using the tag *SOURCES*


```
<FS_DATASET name="st_contact" allowDelete="...">
  <LANGINFOS>
    <LANGINFO lang="*" label="Contact" desc="...">
  </LANGINFOS>
  <SOURCES>
    <CONTENT name="contacts"/>
  </SOURCES>
</FS_DATASET>
```



- **Tab “Rules”**

Reference to form definitions in the tab “Form” of the template, attribute “source”:

```
<RULES>
  <RULE>
    <WITH>
      <NOT>
        <LESS_THAN>
          <PROPERTY name="VALUE" source="st_rows"/>
          <NUMBER>1</NUMBER>
        </LESS_THAN>
      </NOT>
    </WITH>
    <DO>
      <VALIDATION scope="SAVE">
        <PROPERTY name="VALID" source="st_rows"/>
        <MESSAGE lang="*" text="The value may not be less than 1."/>
        <MESSAGE lang="DE" text="Der Wert darf nicht unter 1 sein."/>
      </VALIDATION>
    </DO>
  </RULE>
```



■ **Output Channels Tab**

Reference to form definitions in the tab “Form” of the template:

```

--$</h3>
<div class="clearfix te
  st_linklist (FS_LIST)
  --$CMS_IF (!isWebEdit)$>--
  --$CMS_VALUE (editorId (editorName: "st_linklist")) $>--
  --$CMS_END_IF$>--
--$>

```

and referenced FirstSpirit objects

Example: referenced medium

```

$-- Footer --$
<div class="footer">
  <ul>
    <li>$--
      --$<a href="#top"$CMS_VALUE (editorId (element:#glo
        --$--
      --$</a>$--
    --$</li>
    <li>$--
      --$<a href="#top" onclick="self.print ();return fa
        --$--

```

Example: referenced GCA object

```

$-- logo --$
$CMS_IF (!ps_homepage_header_text_content.isEmpty) $>--
  --$<a href="$CMS_IF (!ps_homelink.isEmpty) $>--
    --$CMS_REF (ps_homelink) $>--
  --$CMS_ELSE$>--
  --$# $>--
  --$CMS_END_IF$> title="$CMS_VALUE (#global.gca ("homepage")) $>--
  --$<span class="logoContent">$--
    --$$--

```

Example: referenced template

```

$CMS_VALUE (pt_heac
$CMS_IF (
  $>
$CMS_END_IF$
$CMS_RENDER (template: "tooltip",
  infoLayer:pt_infoLayer,
  infoLink:pt_infoLink,
  infoPicture:pt_infoPicture,
  infoHeadline:pt_infoHeadline)$

```



22.30 Search syntax: Masking special characters by using backslashes (\)

2019-02

In SiteArchitect, it is now possible to use special characters in search words of full-text search which are of special meaning in FSQL.

Through the use of a backslash (\), a special character can be used as a normal search character. For example, this allows exclusion of a period from interpretation as a name space delimiter.

A search for a search word without quotation marks thus corresponds to a search with quotation marks, it will however be interpreted as a partial word search.

Example:

2 possible search results:

- abc.def.ghi
- abc.def.xyz

The number of returned search results depends upon the search query used:

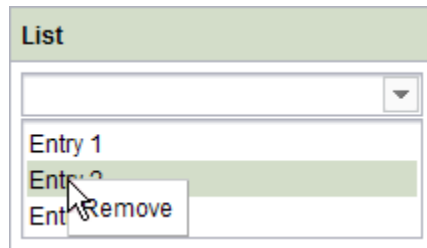
Search query	Number of results	Search procedure
abc	2 hits	Finds everything which contains abc
"abc.def"	0 hits	Searches for the exact sequence abc.def
abc\.def	2 hits	The period is used as a normal search character - finds everything which contains abc.def

22.31 Optimized keyboard control of CMS_INPUT_LIST 5.2R4

Using the multiple selection component CMS_INPUT_LIST, a user can select from a set of values specified by project developers.

Until now, selected entries could only be removed from the list via the context menu:





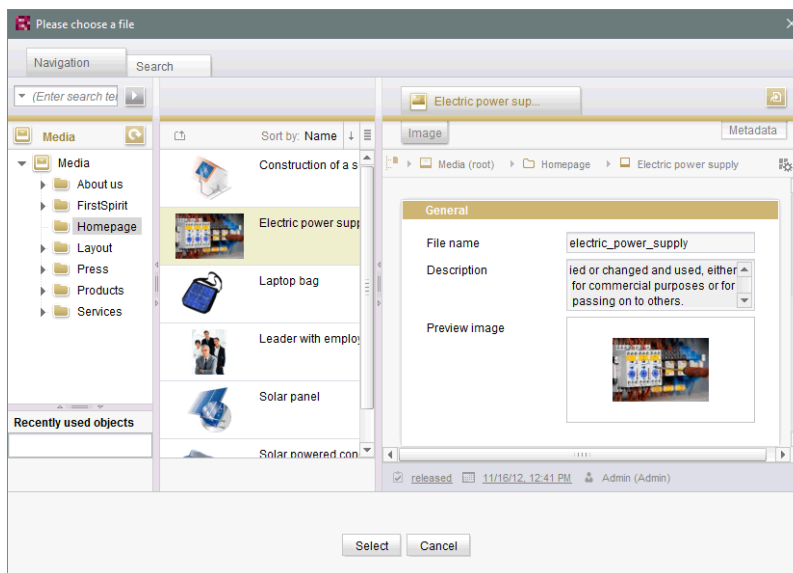
As of FirstSpirit 5.2R4, entries can now be removed using the keyboard shortcut **Del**.

For further information about CMS_INPUT_LIST, see

- *Documentation for FirstSpirit SiteArchitect*, chapter “Multiple selection list (CMS_INPUT_LIST)”
- *FirstSpirit Online Documentation*, “Template development / Forms / Input components / LIST”

22.32 Revised selection dialog and opening new workspaces **5.2R4**

The selection dialogs in SiteArchitect (for example input components FS_REFERENCE, FS_DATASET) offer navigation and search options for quickly locating the objects that are to be referenced, e.g., images and files from the media store or page references from the site store.



With FirstSpirit version 5.2R4, the selected object can now be opened in a new workspace via the





icon. The notification “The element 'xyz' has been opened in a new workspace.” is displayed. Moreover, new workspaces are now opened on the right of the current workspace for better orientation, especially when working with a large number of workspaces (for example icons



and functions “Display in new workspace”, “Extras / View Template”, “View current / View release”). Previously, new workspaces were always opened on the far right (in last position).

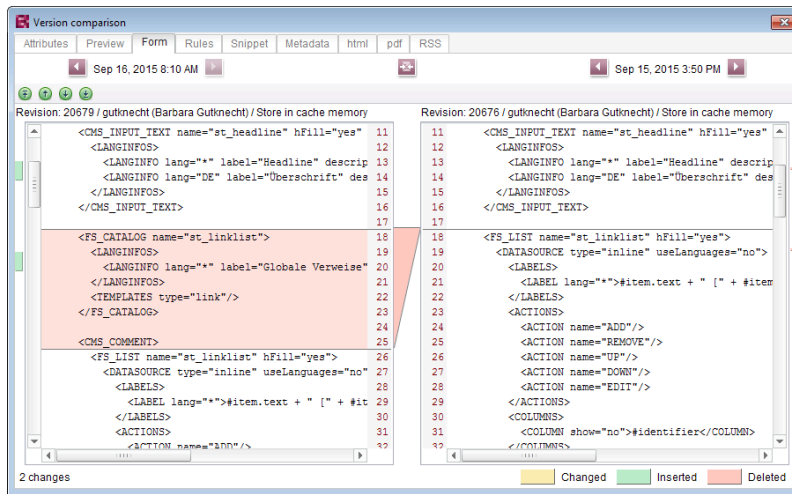
For more information please refer to *Documentation for FirstSpirit SiteArchitect*, Chapter “Selection dialogs”.

22.33 Revised version comparison 5.2R2

All project data in a FirstSpirit project has a version history, which documents how the data has been changed over time. Changes can generally be displayed by visualizing the differences between the revisions. To do this, two revisions can be selected for comparison with each other within the version history (**Ctrl+H** or “Version history” context menu function).

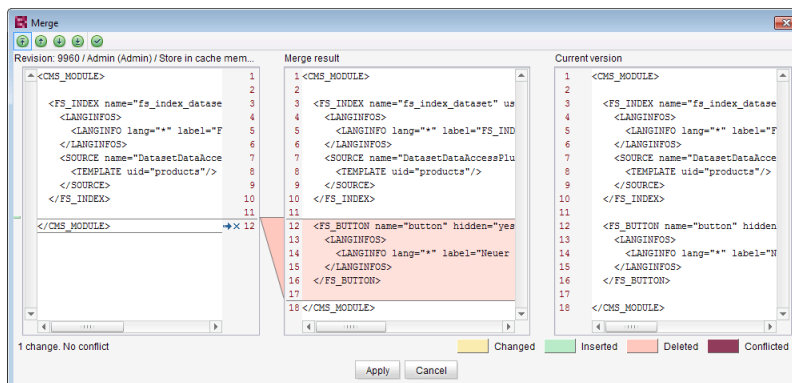
The corresponding dialog has been updated in FirstSpirit version 5.2R2 (with the exception of: Version comparison to (global) pages, (global) sections, datasets):





Version comparison of templates

The dialog now also allows you to “merge” the selected versions, e.g.,



Merging changes from several revisions

For more information, see *FirstSpirit Online Documentation*,

- “Templates (Basics) / Basics / Functions via context menus / Version history / Compare”
- “Templates (Basics) / Basics / Functions via context menus / Version history / Merge”



22.34 Translation help: improved interaction when adopting contents

2018-09

The translation help dialog (menu “Extras / Translation help”) can be used to copy existing contents of one page to another language and to use that as a basis for translation. The button “Adopt contents” can be used to copy contents from an input component in the source language to the same input component in the target language.



Button: “Adopt contents” (translation help)

Previous behavior

The button “Adopt contents” was shown for both language-dependent and language-neutral (language-independent) input components while edit mode was active. However, adoption of contents from a source language to a target language was only possible for language-dependent input components. (Language-neutral components only have one content value each which is the same for every language.)

New behavior

The button “Adopt contents” will only be shown for language-dependent input components while edit mode is active.

For input components with nested content (e.g. FS_LIST or FS_CATALOG), behavior will differ depending on the language-dependency constellation:

- **Case 1:** The outer input component is language-independent (button “Adopt contents” will not be shown), while the inner input components are language-dependent (button “Adopt contents” will be shown). The contents of the inner input components can be adopted to the target language.
- **Case 2:** The outer input component is language-dependent (button “Adopt contents” will be shown). The contents of the outer input component can be adopted to the target language. As part of this process, language-neutral contents of inner input components will be adopted as well. (Adoption of language-dependent contents of inner input components is not supported.)



22.35 Templates: Better marking for input components in deprecated state

2019-12

Input components set to the “deprecated” state are now marked separately within the form (GOM definition). The opening and closing tag of the input component is crossed out in the form.

```
<FS_LIST name="FS_LIST_INLINE">  
  <DATASOURCE type="inline" useLanguages="no">  
    <ACTIONS>  
      <ACTION name="EDIT"/>  
    </ACTIONS>  
  </DATASOURCE>  
</FS_LIST>
```

Representation of input components in deprecated status

22.36 Templates: Optimizing the schema display in the schema editor

2019-12

A database schema defines which data is saved in a database and in what form, as well as the relationship between this data. Using the schema editor in FirstSpirit SiteArchitect (Templates – Database schemata – Database schema), it is possible to model database tables with the associated (language-dependent or language-independent) columns.

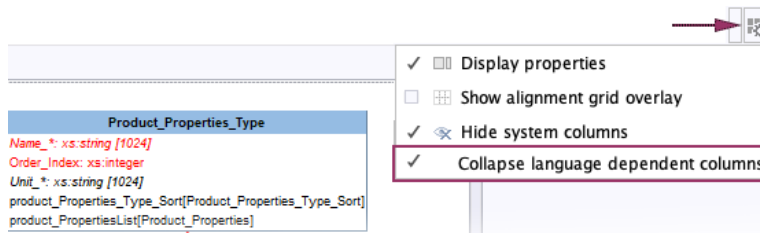
Previous behavior:

All columns for the selected table are listed in both the schema editor and the Properties view. This display becomes quickly unclear, particularly with projects with many project languages (and many database tables) and could not be adjusted so far.

New behavior:

It is now possible to adjust the view in the editor via the “Customize layout” icon in the top right (in Templates – Database schemata – Database schema – Schema editor).

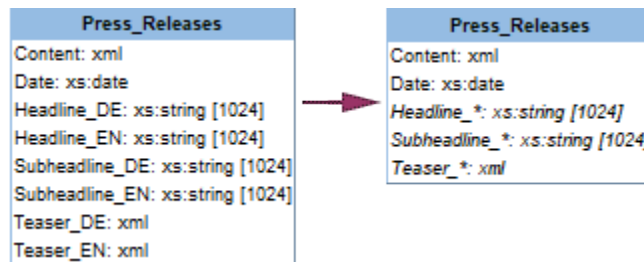




Setting: Collapse language-dependent columns (templates / schema editor)

If the “Collapse language-dependent columns” setting is activated (default: not activated), the following will occur in the schema editor and the Properties view:

- all language-dependent table columns will be collapsed into one entry (if a language-dependent column is available for all project languages).
If there is not a language-dependent column for all project languages, e.g., just for DE and not for EN, this column will not be collapsed. This prevents the setting from hiding the lack of language-dependent columns.
- “*” will be used in the collapsed display instead of the language code (e.g., “EN”).
- collapsed columns will be shown in italics.



Displaying language-dependent columns: Default (left) and collapsed (right)

! This setting is not saved permanently and is only retained for the duration of the current user session.

Additional documentation

- on the schema editor: see docs.e-spirit.com



23 SiteArchitect / ContentCreator

23.1 Workflow: Changing the order of transitions on an activity 2020-05

A workflow is a sequence of tasks that is completed according to a fixed, predefined structure. In FirstSpirit, this is made up of state, activities, and transitions. Transitions form the link between activities and states.

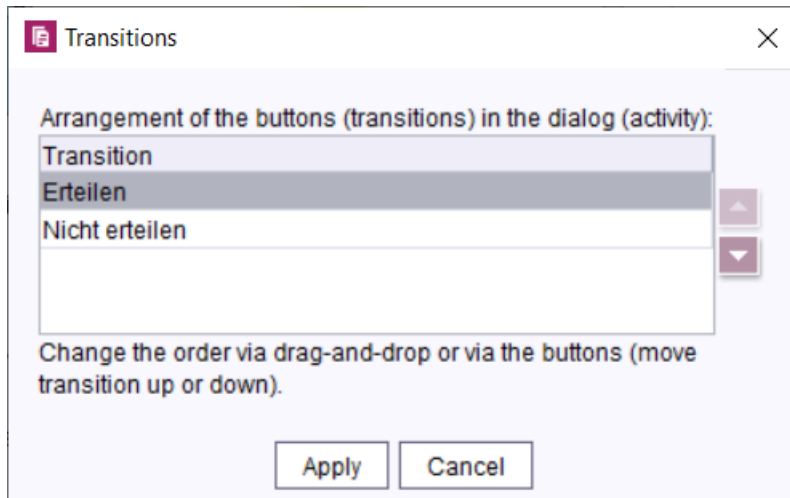
Project-specific workflows can be created using a graphical editor in FirstSpirit SiteArchitect (“Templates” / “Workflows”). Instances of these workflows can then be started in context on each element in a FirstSpirit project (SiteArchitect: context menu in the tree view / “Workflow” and in ContentCreator via the element state) or, if there is no context, using the FirstSpirit menu bar (“Tasks” / “Workflow” or in ContentCreator via “Actions”). Every instance of a workflow has to run according to the rules set in the workflow. For each activity, a dialog opens that offers the editor the option to advance the workflow by choosing a transition (via a button in the dialog).

In the latest FirstSpirit release, the order for displaying the transitions on an activity in a workflow can be configured.

The configuration is managed on the workflow in FirstSpirit SiteArchitect (“Templates” / “Workflows”) in the “State diagram” tab. If a manual activity is selected in the graphical editor, the new property “Transitions” will appear in the Properties view (right) under “General”. This will show all outgoing transitions for the selected activity. The transitions can be opened in a separate window via the

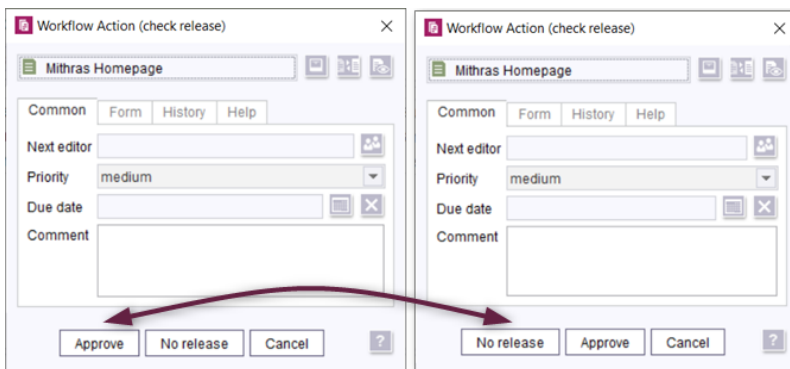


icon that appears after the property. The order of the transitions can be changed in this view using drag-and-drop or the buttons on the right-hand side of the window (Move up / Move down).



Changing the order of outgoing transitions

The changed order affects the display of buttons in the dialog.



Changed order of transitions in dialog

Further information:

- [Configuring workflows \(templates\)](#)
- [Workflows in SiteArchitect](#)
- [Workflows in ContentCreator](#)
- [Workflows in FragmentCreator](#)



23.2 The Mithras Energy demo project is no longer available 2020-06

With the current FirstSpirit release the Mithras Energy demo project for ContentCreator and SiteArchitect is no longer available and will no longer be distributed with FirstSpirit (as announced with FirstSpirit 2020-02).

e-Spirit replaces the demo project with the contemporary **FirstSpirit Experience Accelerator** (see [FirstSpirit Experience Accelerator documentation](#)).

The FirstSpirit Experience Accelerator is a new, important building block in the FirstSpirit ecosystem. It contains reference implementations for important content modules (including Shoppable Image and Video, Touchpoint Editing, Teaser Carousel, and Banner) and can be used as a quick entry into a new FirstSpirit project. The objective of the FirstSpirit Experience Accelerator is a faster product launch in the enterprise and eCommerce environment.

23.3 Dynamic forms: New property "CONTAINERTYPE" 5.2R6

Input components may be used in multiple contexts: in sections, list components such as FS_CATALOG, datasets, and pages. As of the current FirstSpirit version, the property `CONTAINERTYPE` allows identification of the object type. Depending on the surrounding object type, the input component may, for example, be shown or hidden (or set to be read-only).

Towards this end, the expression `<PROPERTY source='#global' name='CONTAINERTYPE' />` may be used in the value determination block of a rule's definition (or for the definition of a precondition). It returns the identifier of the container type, where the return value matches the type's name (in uppercase letters). The following types are currently supported:

- FS_CATALOG
- FS_LIST
- CMS_INPUT_DOM
- CMS_INPUT_DOMTABLE
- CMS_INPUT_LINK
- CMS_INPUT_IMAGE_MAP



- BODY
- NONE

For further information, see *Template development / Rules / Form properties <PROPERTY/> / Property CONTAINERTYPE* (→*FirstSpirit Online Documentation*).

23.4 Optimized Search 5.2R18

During indexing for search, FirstSpirit historically did not add English-language “stop words” (short words which appear often in a language but seldomly indicate relevant information about the contents of a document) to the index, e.g.

- “a”
- “and”
- “are”
- “is”
- “the”
- “was”
- “with”
- ...

For example, in the demo project “Mithras Energy”, a search for “the future” previously resulted in an empty search results list because the word “the” of that phrase was not in the search index. As of the current version of FirstSpirit, such stop words will no longer be handled specially but added to the search index as well; in the demo project “Mithras Energy”, a search for “the future” will now return the English-language start page of that project (text: “Solar energy is the energy of the future, ...”) as a search result.

Due to this change, the size of the search index of a project will increase slightly, and more search results will be shown accordingly.

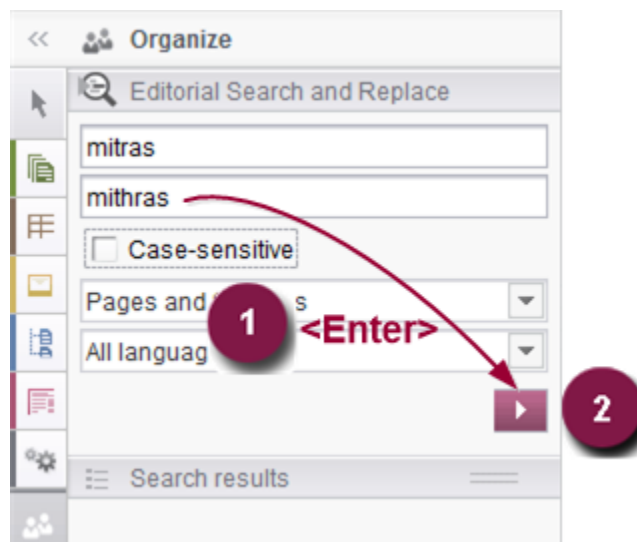


This change will not have automatic effects on search results; the different indexing behavior will only be shown after modifying respective content, which causes the associated element to be reindexed individually. Thus, the words or character sequences listed above can be found during a search in existing FirstSpirit projects only once a given FirstSpirit element (page, section, dataset, etc.) was changed and saved. Alternatively, it is possible to reindex the entire project or parts of a project via a schedule task or the API. Such a reindexing process creates higher CPU and memory loads, however, and should only be carried out during a maintenance period.

23.5 Reports: Handling has been improved 5.2R6

In FirstSpirit, reports are an important and project-specifically customizable means of making content from any source available to editors in a project. Reports allow a structured display of data that can - depending upon a report's implementation - be searched, filtered, and used for editorial work (by way of drag-and-drop and buttons).

Actions that can be started using a button on reports in FirstSpirit SiteArchitect (e.g. starting a search) can now be easily triggered by pressing Enter (1):



Furthermore, an arrow is used now for the button instead of the display name of the respective report (2).

For further information, see e.g. *Plug-In Development / Universal Extensions / Data Access / Use for Reporting* (→*FirstSpirit Online Documentation*).



Furthermore, user guidance has been improved when using customer specific reports in ContentCreator (interface `StaticItemsProviding`, package `de.espirit.firstspirit.client.plugin.dataaccess.aspects`, FirstSpirit Developer API).

23.6 Snippets: Outputting Metadata 5.2R18

Contents from metadata which are defined explicitly on a given element may now be output in snippet definitions using the new system object `#meta`. This object is available when metadata are defined on the element for which the snippet is being generated. Output of individual input components from metadata is done via

```
#meta.IDENTIFIER
```

For further information, see *FirstSpirit Online Documentation*, “Template development / Template syntax / System objects / #meta”.

Also, in the course of this work, an error was remediated: when metadata were output via API, it was possible that the language-dependent preset value was mistakenly output instead of the language-independent fallback value.

23.7 Rebrush for FirstSpirit graphical user interfaces 5.2R19

As part of the revision of the design of the graphic user interface of FirstSpirit, which began in FirstSpirit version 5.2R17, improvements and further optimizations were made with the current FirstSpirit version. For example, the titles of input components (parameter `label`) are now displayed in capital letters in the SiteArchitect for better clarity in forms. If default values are defined for an input component, this is visualized by the addition of “(Default value)” in the title.

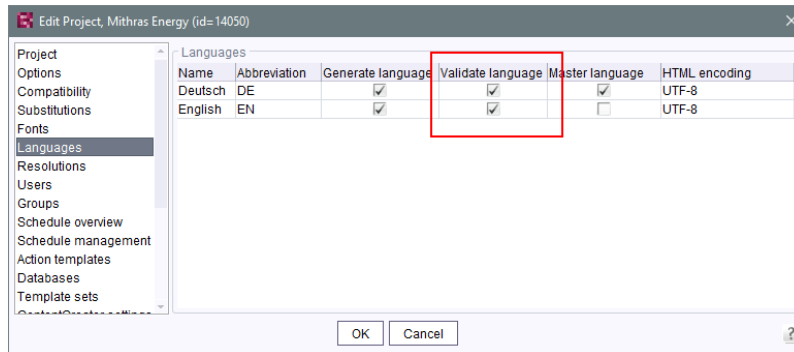
23.8 Different Validation Behavior for Different Languages 5.2R19

FirstSpirit SiteArchitect and ContentCreator notify the user of invalid content in input components. This invalid content may be due to infractions of rules that were specified by a template developer, an empty input component for which the attribute `allowEmpty="no"` is specified, or invalid references (such as use of a FirstSpirit object, e.g. a media element or a page reference, which has been deleted in the meantime). If an input component in the page, section, or dataset being edited is missing content or contains invalid content, it either cannot be saved (`scope="SAVE"`) and/or cannot be released



(scope="RELEASE"), or a notification message specified by a template developer will be shown (scope="INFO").

As of the current version of FirstSpirit, this validation may be deactivated for one or several project languages via the option "Validate language" found in the properties of the project in question (FirstSpirit ServerManager / project properties / page "Languages"):



By default, the option is active for each project language, i.e. contents in that language will be validated in the associated project. If the option is deactivated for a language, contents in that language will no longer be validated. A page, section, or dataset can thus be saved and/or released although (valid) content does not exist in every language. This enables implementation of different validation behaviors for different languages.

If the option is reactivated, contents that do not adhere to the rules must first be modified in order to release or save the element.

Using the API, this option may be activated or deactivated via the method `setIgnoreValidation()` of the interface `Language` (package `de.espirit.firstspirit.access`, FirstSpirit Access API).

Note: This change also introduces modifications to internal classes. This can result in problems when establishing connections if the FirstSpirit Server is running a version $\geq 5.2R19$ and another component (e.g., Tomcat web server) is still running a version $< 5.2R19$. In this case, the counterpart (in this case Tomcat with web apps) must be updated.

For further information, see

- *Documentation for FirstSpirit SiteArchitect*, "General operation / Invalid entries" and "FirstSpirit SiteArchitect / The menu bar / Search"



- *FirstSpirit Manual for Editors (ContentCreator)*, “Editing a preview page / Working with dialogs / Editing window / Rule violations”
- *FirstSpirit Manual for Administrators*, “FirstSpirit ServerManager / Project properties / Languages”
- *FirstSpirit Online Documentation*, “Template development / Rules”

23.9 Access to FS_INDEX value set 5.2R2

FS_INDEX input components save references to data objects (such as those from external web services) using identifiers in string format. These identifiers are provided by the data-access plug-in, which is assigned to the index component in the form definition of a template. To access the actual data in an index entry, the session object for the data-access plug-in must be queried in order to obtain and further process a suitable data object using a string identifier.

For access to the value set of an FS_INDEX input component within presentation channel definitions, an `IndexAccessor` object type is returned, which not only offers access to the saved string identifiers, but also provides a list of the data objects which are relevant to the identifiers and have been resolved by the data-access plug-in.

In FirstSpirit version 5.2R2 and higher, an `IndexAccessor` type object is also returned in snippet definitions in the case of access to the value set for an FS_INDEX input component.

For more information on:

- Working with FS_INDEX, see *FirstSpirit Online Documentation*, “Template development / Forms / Input components / INDEX”
- The `IndexAccessor` data type, see *FirstSpirit Online Documentation*, “Template development / Template syntax / Data types / IndexAccessor”
- The definition of snippets, see *FirstSpirit Online Documentation*, “Template development / Snippets”.



24 SiteArchitect / ServerManager

24.1 "JExplorer" browser engine withdrawn (Integrated preview for content) 2018-11

The integrated preview in FirstSpirit SiteArchitect (menu entries "View / Integrated preview" and "View / Browser engine") is based upon third-party software. The discontinuation of "JExplorer" as browser engine for the use of "Internet Explorer" has been announced with FirstSpirit 2018-07 (July 2018), and, as of FirstSpirit 2018-11, this browser engine has now been removed from FirstSpirit as planned. The menu item "Internet Explorer" has been removed in both FirstSpirit SiteArchitect ("View / Browser engine" menu) and ServerManager ("Project / Properties / Client applications / Browser engine"). Where "Internet Explorer" had been set in projects or in project properties, the "Google Chrome" browser engine will now be used automatically instead.

This is because the externally developed library, which is the basis for the browser engine, will no longer be developed / updated in the near future and has been officially discontinued by the manufacturer.

As an alternative, Google Chrome can be used further on for internal previews or, of course, every other browser for external previews (for example by deactivating the option "View / Integrated preview/ use for content" or by right-clicking on the preview icon or click with pressed Ctrl key).

For more information, see

- *Documentation for FirstSpirit SiteArchitect*, "FirstSpirit SiteArchitect / Menu bar / View / Browser engine"
- *FirstSpirit Manual for Administrators*, "FirstSpirit ServerManager / Project properties / Client applications / Browser engine"

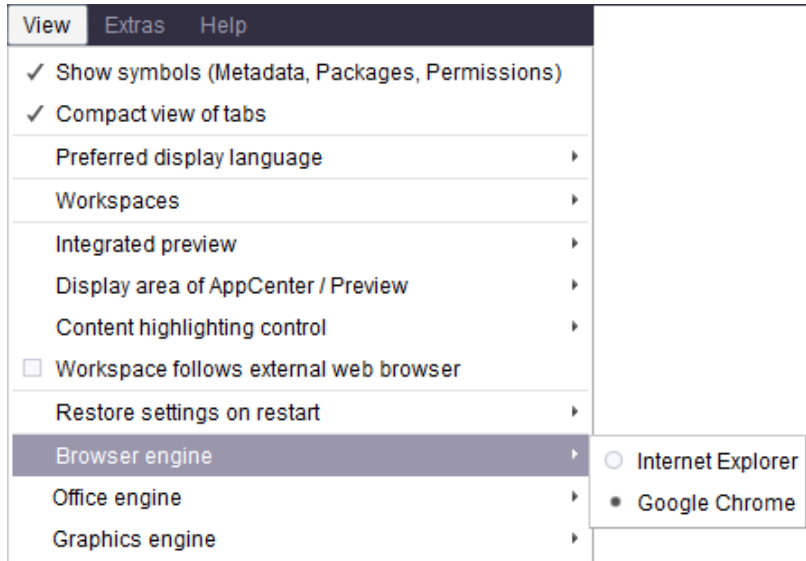
24.2 "Mozilla Firefox" browser engine withdrawn 2018-08

Special software is used for the "integrated preview" function in FirstSpirit SiteArchitect; this is integrated in SiteArchitect and is based on the browser being used in each case.

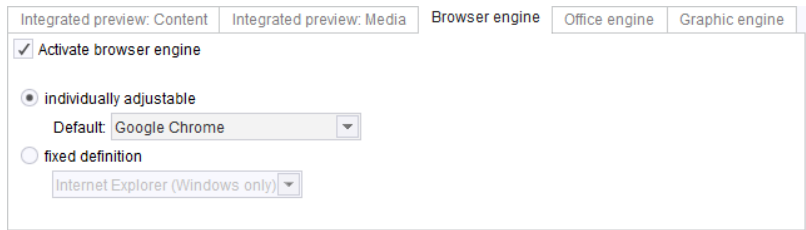
The Mozilla Firefox versions currently used in FirstSpirit do not support Java 9 and higher. With the latest FirstSpirit release, Mozilla Firefox has therefore been withdrawn as the browser engine for the integrated preview as planned. The menu items affected by this, "Mozilla Firefox (v3) (outdated)" and



“Mozilla Firefox (v15)” in FirstSpirit SiteArchitect (“View / Browser engine” menu) and ServerManager (“Project / Properties / Client applications / Browser engine”), have been removed:



FirstSpirit SiteArchitect



FirstSpirit ServerManager

Where Mozilla Firefox had been set in projects or in project properties, the “Google Chrome” browser engine will now be used automatically instead.

For more information, see

- *Documentation for FirstSpirit SiteArchitect*, “FirstSpirit SiteArchitect / Menu bar / View / Browser engine”
- *FirstSpirit Manual for Administrators*, “FirstSpirit ServerManager / Project properties / Client applications / Browser engine”



24.3 Client Logging 5.2R7

Logging enables FirstSpirit developers and administrators to identify and correct issues. It happens at various places of FirstSpirit, e.g. log messages for actions on the server will be stored in the file `fs-server.log`, log messages for schedules in the file `fs-schedule.*.log` et cetera.

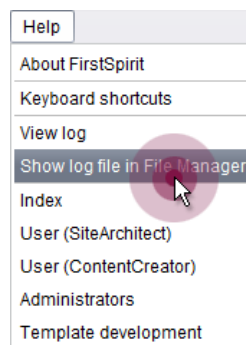
As of the current FirstSpirit version, log messages of SiteArchitect and ServerManager will be stored separately for each started client in a file in the user home directory of the respective user's client workstation in addition to the file `fs-clients.log` (in the directory `log` in the base directory of the FirstSpirit server, only used for exceptions).

- SiteArchitect: `.firstspirit*/logs/SiteArchitect*.log`
- ServerManager: `.firstspirit*/logs/ServerManager*.log`

The filename contains the client name (e.g. SiteArchitect or ServerManager) and a timestamp of the point of time when the client has been started, e.g.

```
SiteArchitect-2017-02-28T13-55-40.067.log
```

Log messages generated by SiteArchitect and ServerManager are therefore now better suited to be sent or uploaded. In order to indicate which log file belongs to which client, the menu “Help” can be used to identify it. The menu entry “Show log file in File Manager”

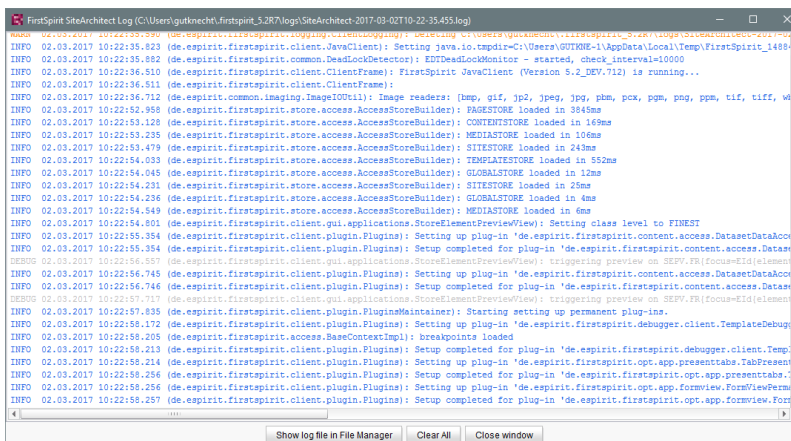


opens the local storage directory. The file with the current logging will be selected. The timestamp as part of the file name helps to identify the log messages of previously closed clients in the storage directory.



Log files will be stored up to a total number of 100 files or until all files have reached a combined size of 100 MB. If one of those limits is reached, the oldest log files will be deleted one by one.

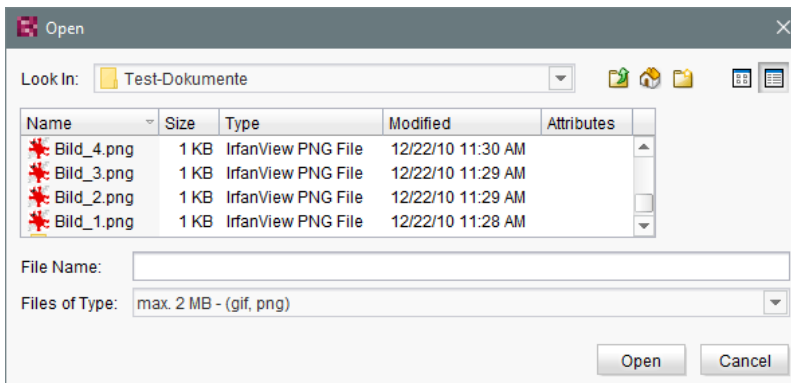
With the menu entry “View log” in the menu “Help” it is possible to display the current logging in a separate window:



Log messages are displayed in different colors for each log level in order to improve clarity. By using the button “Clear All” it is possible to clear the log window. This does not affect the contents of the log file.

24.4 Speeding up file selection from directory structure of the client workstation 5.2R6

The file selection dialog allows selection of a desired file from the directory structure of the client workstation for upload to FirstSpirit SiteArchitect (e.g. Media store) or ServerManager (e.g. project import).



From the current FirstSpirit version onwards, the parameter

```
-DSynthetica.extendedFileChooser.sortEnabled=false
```

can be set in the connection or web start settings in order to deactivate the file selection dialog's sort functionality (column headers in the view mode “Details”). This can speed up work with the file selection dialog when the user needs to navigate among different directories of the client workstation's file system. If this parameter is set, an according entry will be logged to the log file `fs-server.log`:

```
INFO 26.09.2016 16:13:08.923 (de.espirit.common.gui.LookAndFeelUtil): disabled  
sorting in file chooser'
```

Alternatively, files can also be uploaded into the Media store of FirstSpirit SiteArchitect using

- drag-and-drop and
- the “Media Import Wizard” (“Extras” menu).

For further information, see

- *FirstSpirit Manual for Administrators*,
 - chapter “Configuring connection settings” (section “Optional parameters”)
 - chapter “Server properties / Start page”
- *Media Store / Creating media* (→*Documentation FirstSpirit SiteArchitect*)
- *Media Store / Media Import Wizard* (→*Documentation FirstSpirit SiteArchitect*)
- *General operation / Drag-and-drop functions* (→*Documentation FirstSpirit SiteArchitect*)



24.5 Cessation of availability of operating system-specific third-party applications in AppCenter 2018-09

Some of FirstSpirit's functionality is based upon third-party software. Not all vendors of such third-party software have ensured that their software is compatible with Java 9 and above. Thus, functionality based upon such third-party software will no longer be available if FirstSpirit is run under Java 9+.

As of the current FirstSpirit release, the operating system-specific third-party applications in FirstSpirit SiteArchitect's AppCenter that were announced in FirstSpirit version 5.2R19 (March 2018) to be discontinued are, as planned, no longer available: office integration and image editing functionality via the integrated applications "PicMonkey" and "Pixlr". The associated menu entries and configuration options were removed:

- FirstSpirit SiteArchitect, menus
 - "View / Office engine"
 - "View / Graphic engine / Simple image editing (PicMonkey)"
 - "View / Graphic engine / Enhanced image editing (Pixlr)"
- FirstSpirit ServerManager
 - "Project properties / Client applications", tab "Office engine"
 - "Project properties / Client applications", tab "Graphic engine", options "Simple image editing (PicMonkey)" and "Enhanced image editing (Pixlr)"

24.6 FirstSpirit Launcher: using the proxy settings of the operating system 2019-11

In the latest FirstSpirit release, the FirstSpirit Launcher supports the use of proxy operating system settings.

Supported proxy setting types in Windows and macOS:

- automatic proxy configuration via a PAC script
- manual proxy configuration



Configuration: Proxy settings are not taken into account in the default configuration. To use the proxy settings, the `java.net.useSystemProxies=true` parameter must be set in the connection settings (see [Configuring connection settings](#)).

Once the parameter (`java.net.useSystemProxies=true`) has been set, the proxies set in the operating system (including a configured PAC script where necessary) are evaluated and forwarded to the FirstSpirit Launcher.

If the proxy is deactivated, the default configuration is applied (direct connection without proxy).

Java 11 or later must be used for this to be supported.

24.7 GUI changes for the Integrated Preview in SiteArchitect 2019-04

The option to select different browser or graphics engines has been removed. In the project settings, the administrator can only specify whether or not an editor should have access to the Integrated Preview for content and/or media.

Changes in FirstSpirit ServerManager

The administrator can define in the project settings under “Client applications”, which view options should be available to a SiteArchitect editor.

Integrated Preview tab: Content

Activate option for integrated preview for content:

If this option is **enabled** (default setting), the menu function “View” / “Integrated Preview - use for content” can be selected in SiteArchitect for the active project, which means that editors can select individually whether or not they want to work with the integrated preview or not.

If this option is **disabled**, the menu function “View” / “Integrated Preview - use for content” is not available in SiteArchitect for this project.

Integrated Preview tab: Media

Activate option for integrated preview for media:

If this option is **enabled** (default setting), the menu function “View” / “Integrated Preview - use for media” can be selected in SiteArchitect for the active project, which means that editors can select individually whether they want to work with the integrated preview or not.



If this option is **disabled**, the menu function “View” / “Integrated Preview - use for content” is not available in SiteArchitect for this project.

Activate advanced media editing:

If the option “Integrated Preview for Media” is **enabled** (default setting), the option “Activate advanced media editing” can be enabled additionally (default setting). Activating this option allows editors to edit media displayed in Integrated Preview using the “Advanced Image Editing” function.

If this option is **disabled**, “Advanced Image Editing for Media” is not available in Integrated Preview.

Changes in FirstSpirit SiteArchitect

In the “View” menu the options for using the Integrated Preview have been changed. The editor can only select whether or not to use the Integrated Preview for content and/or media.

- Integrated Preview
 - use for content
If this option is enabled, the Integrated Preview is used for objects from the Page Store and the Site Store.
 - use for media
If this option is enabled, the Integrated Preview is used for media. Depending on the project properties configuration, Advanced Image Editing is also available in the Integrated Preview.

24.8 Configuration of the FirstSpirit start page 5.2R19

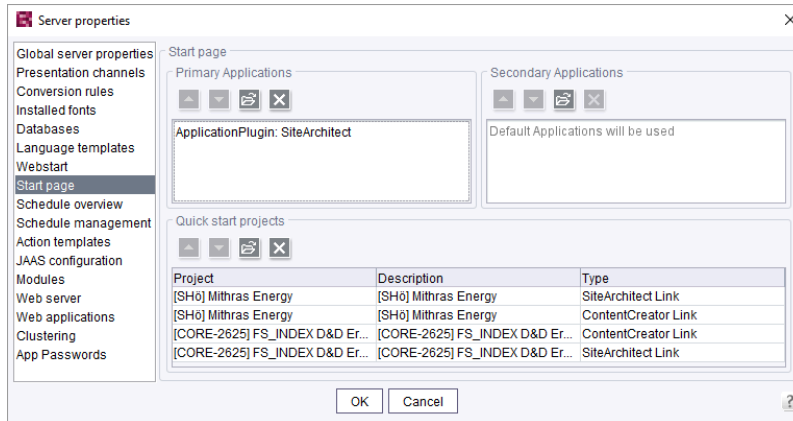
There are now additional setting options for the FirstSpirit start page. Applications can be shown or hidden via groups / permissions on the start page. These settings include:

- Configuration of the start page: primary / secondary applications
- Configuration of the visibility of standard applications
- Connection settings: show standard applications (only visible for server administrators)
- Project specific configuration (restrictions) of permitted applications

ServerManager / Server properties / Start page



For further customization of the FirstSpirit start page, it is now possible to configure the primary and secondary applications on the start page in addition to configuring quick start entries.



Primary Applications: Here you can configure the upper row with the large white icons for the area “Start applications” on the start page. If no application is selected for this row, the standard applications are displayed..

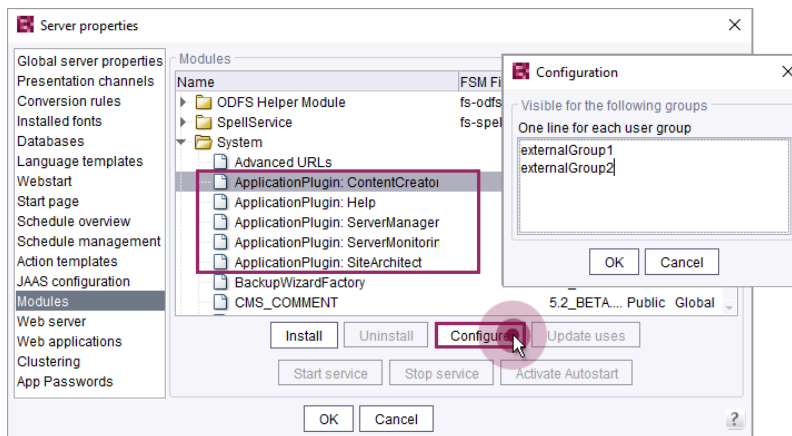
Secondary Applications: Here you can configure the lower row with the small black icons for the area “Start applications” on the start page. If no application is selected for this row, the standard applications are displayed.

The following applies to both areas: You can add your own applications. As soon as an application has been selected for the list, all (other) standard applications (if desired) must be listed individually.

ServerManager / Server properties / Modules

Via the module / component configuration the visibility of the standard applications for different groups can now be configured.





Here you can enter names of external groups whose users can see the applications. The names of the groups are to be defined like in the fs-server.conf properties "externalServerAdminGroup" and "externalLauncherGroup". If the group is empty, all users can see the corresponding application.

For more information on “External groups”, confer to *FirstSpirit Manual for Administrators*, “FirstSpirit ServerManager / Project properties / Groups”.

Connection Settings

For the server administrator, an additional option has been added to the connection settings..

CONNECTION SETTINGS

Use FirstSpirit Launcher
 Show default applications
 Use settings
 Mode:
 Use HTTPS protocol
 Host:

This option is given to the server administrator for security purposes, if he/she has blocked himself/herself access due to an unfavourable configuration. If the **Show default applications** option is active, only the standard applications in the previous configuration of their visibility are displayed.

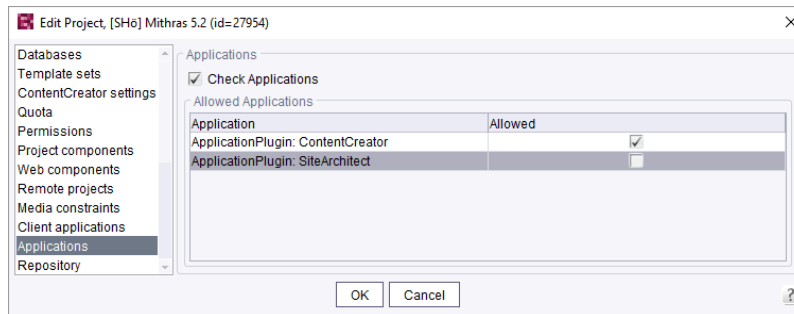
This option does not affect the configuration of the visibility of standard applications.

For example, the server administrator cannot see an application even when the option is active, if it was excluded from visibility by a group definition.



ServerManager / Project properties / Applications

The settings made in the server properties can be restricted by configuring the allowed applications in a project-specific way.



The configuration affects

- the project selection dialog;
- the quickstart entries;
- the list of recently opened projects.

24.9 Configurable directory for log messages 5.2R10

Log messages of ServerManager and SiteArchitect will be stored separately for each started client. The storage location of the log messages on the user's client workstation is now configurable. The directory can be configured using the parameter `CLIENT_HOME_DIR` or one of the operating-system specific parameters (e. g. `CLIENT_HOME_DIR_WINDOWS`) in the file `fs-server.conf` or via the connection settings.

Order of evaluation:

- First, the operating-system specific path details are evaluated, which are set in the connection settings (e.g. `CLIENT_HOME_DIR_WINDOWS`).
- Then the path information set in the connection settings using the parameter `CLIENT_HOME_DIR` are evaluated.



- Then the operating system-specific path details defined in `fs-server.conf` are evaluated (e.g. `CLIENT_HOME_DIR_WINDOWS`).
- Then the path information set in the `fs-server.conf` file using the parameter `CLIENT_HOME_DIR` are evaluated.
- If the parameter is neither set in the connection settings nor in `fs-server.conf`, the operating system-specific user home directory is used by default.

The information, which can be set server-wide for all users using `fs-server.conf`, can therefore be overwritten on a user-specific basis.

If a directory is given to which the respective user does not have any access permissions, a corresponding exception is logged.

For more information please see also *FirstSpirit Manual for Administrators*, Chapter “Roll-out process (workstation computer)”.

24.10 Module "FirstSpirit Launcher JRE": Replacement of Oracle Java by AdoptJDK 2019-06

The FirstSpirit Desktop Apps (FirstSpirit SiteArchitect and ServerManager) are started and updated (“Rollout”) via the FirstSpirit Launcher.

The “FirstSpirit Launcher JRE” module enables customers and partners to easily switch between different Java versions for operating the FirstSpirit Desktop Apps.

Release notes for FirstSpirit 2019-05 and 2018-07 already outlined the plan to become more independent of Oracle as a provider of Java versions. Since April 2019 Oracle no longer provides public JDKs. With the current release, after an evaluation and test phase, the last included Oracle Java version was now replaced by an alternative version of AdoptJDK:

- up to now: Oracle Java 8u181
- as of FirstSpirit 2019-06: AdoptOpenJDK 8u212

This means that Oracle Java is no longer used for the FirstSpirit Launcher.



Note: Java version 8 has the status “Outdated”, as this version is no longer recommended for operating FirstSpirit and should only be used in cases of incompatibilities of customer-specific integrations with Java versions greater than 8.

For more information please see documentation about the module “FirstSpirit Launcher JRE”, see “FirstSpirit Launcher JRE” on page *FirstSpirit Online Documentation*, [Documentation / For administrators](#).

24.11 Module FirstSpirit Launcher JRE: New in the standard scope of delivery and java version update 2019-05

The FirstSpirit desktop apps (FirstSpirit SiteArchitect and ServerManager) are started and updated (rolled out) via the **FirstSpirit Launcher**.

The “**FirstSpirit Launcher JRE**” module enables customers and partners to easily switch between different Java versions for the operation of Java-based applications. The desired Java version can be selected server-wide for Microsoft Windows and macOS separately.

For documentation on the “FirstSpirit Launcher JRE” module see “FirstSpirit Launcher JRE” under *FirstSpirit Online Documentation*, [Documentation / For administrators](#).

The included Java versions have been updated with the current release: In addition to the version delivered with the FirstSpirit Launcher, AdoptOpenJDK 11.0.3 (“Default”), the following Java variants are currently available:

- AdoptOpenJDK 12.0.1
- Oracle Java 8u181 (Outdated)

As of FirstSpirit 2019-05, the module is included in the FirstSpirit standard scope of delivery.

The module can be downloaded from <http://www.e-spirit.de/download/firstspirit/>. A valid login can be requested from Technical Support (<https://help.e-spirit.com>).

The module can be updated (manually or automatically) **using the FirstSpirit update service**. Updating to the latest version of FirstSpirit also updates all modules (that can be obtained via the update service):



- For documentation on updating modules manually, see: [Updates](#) (Documentation for Administrators)
- For documentation on updating modules automatically, see: [Automatic update via the update service](#) (Documentation for Administrators)

24.12 "FirstSpirit Launcher JRE" module: update to Java versions 2019-10

The FirstSpirit desktop apps (FirstSpirit SiteArchitect and ServerManager) are started and updated (“roll-out”) via the FirstSpirit Launcher.

The “FirstSpirit Launcher JRE” module enables customers and partners to easily switch between different Java versions to operate the FirstSpirit desktop apps.

The Java versions included in the “FirstSpirit Launcher JRE” module were updated in the latest FirstSpirit release:

In addition to the version supplied with the FirstSpirit Launcher, **AdoptOpenJDK 11.0.4 (default)**, the following Java variants are currently available:

- AdoptOpenJDK 13 (new)
- AdoptOpenJDK 8u222 (outdated)

AdoptOpenJDK 12.0.2 was removed from the “FirstSpirit Launcher JRE” module.

For documentation on the “FirstSpirit Launcher JRE” module, see the [corresponding manual](#).

24.13 "FirstSpirit Launcher JRE" module: update to Java versions 2019-12

The FirstSpirit desktop apps (FirstSpirit SiteArchitect and ServerManager) are started and updated (“roll-out”) via the FirstSpirit Launcher.

The “FirstSpirit Launcher JRE” module enables customers and partners to easily switch between different Java versions to operate the FirstSpirit desktop apps.

The Java versions included in the “FirstSpirit Launcher JRE” module were updated in the latest FirstSpirit release:



In addition to the version supplied with the FirstSpirit Launcher, **AdoptOpenJDK 11.0.5 (default)**, the following Java variants are currently available:

- AdoptOpenJDK 13.0.1
- AdoptOpenJDK 8u232 (outdated)

For more information, see the documentation for the [FirstSpirit Launcher JRE module](#).

24.14 "FirstSpirit Launcher JRE" module: update to Java versions 2020-06

The Java versions included in the “FirstSpirit Launcher JRE” module were updated in the latest FirstSpirit release:

In addition to the version supplied with the FirstSpirit Launcher, **AdoptOpenJDK 11.0.7+10.2 (default)**, the following Java variant is currently available:

- AdoptOpenJDK 14.0.1+7.1

For documentation on the “FirstSpirit Launcher JRE” module, see the [corresponding manual](#).

24.15 Connection settings: Optional parameter

"connectionValidationMillis" 2019-07

In the connection settings, the optional parameter `connectionValidationMillis` can be used to define after which inactivity time in milliseconds the connection to SiteArchitect and ServerManager is to be checked before it is used again. Default value is *5000* (= 5 seconds).

Setting this parameter can make sense when you encounter frequent connection losses.

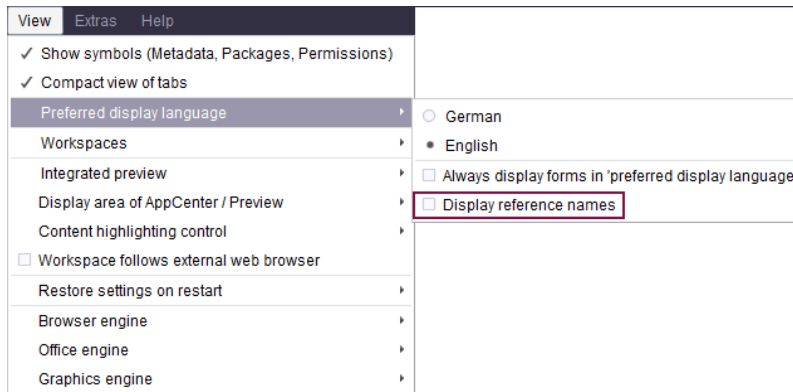
24.16 Use of display names 5.2R21

Many parts of the FirstSpirit interface are flexible and can be adapted to meet the needs of a specific project and its users: Language-specific labels for the tree view, as well as form fields, tool tips, etc., can be entered in the editing area via what is called the “editorial language” (also known as the “display language”, if the project administrator has configured this setting accordingly for the project). In SiteArchitect, any editor can select the language in which text should be displayed in the “View – Preferred display language” menu. If required, the technical names of the objects can also be shown.



The language display has now been optimized through more stringent use of stored display names and thus standardized.

As part of this optimization measure, the “View/Preferred display language/Display reference names in tree” menu item has been renamed “View/Preferred display language/Display reference names”:

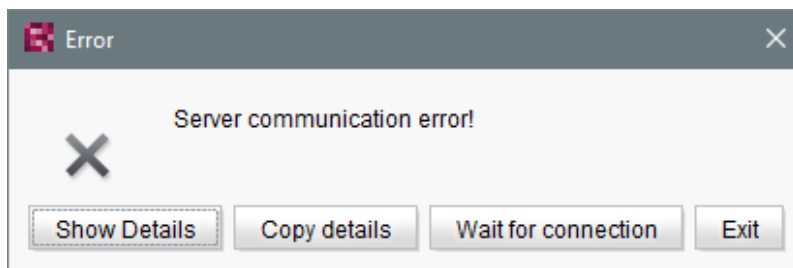


because this function is linked not only to the tree view but also, for example, to the editing area.

24.17 Reconnecting after Communication Errors 5.2R5

If a communication error occurred between SiteArchitect or ServerManager and the FirstSpirit server, clients previously needed to be exited manually and restarted after communication with the server was reestablished.

As of FirstSpirit version 5.2R5, active client sessions will no longer be automatically ended in this case. If a communication error occurs, the following dialog will be displayed:



- Clicking “Exit” will close the client.



- Clicking “Wait for connection” will allow a user to continue to work with SiteArchitect or ServerManager if the connection can be reestablished within 1 minute. The dialog will then close automatically.
- If the user does not click on either button, the message “Server connection re-established” will be displayed if the connection can be reestablished within 1 minute. Clicking on “OK” will close the dialog, and the user can continue to use the client.

If the connection cannot be reestablished within one minute, the message “Server connection closed” will be displayed, and the client must be closed by clicking “Exit”.

24.18 Certificate update FirstSpirit Launcher 2019-08

The FirstSpirit Launcher is digitally signed. Thanks to the signature, the customer knows where the application comes from and that it was not manipulated during the transfer (from the manufacturer to the recipient).

In the current FirstSpirit version, the certificate of the FirstSpirit Launcher is updated. The new certificate is valid until 2021-08-23.

25 Search

25.1 Weighting of Contents in Input Components 5.2R3

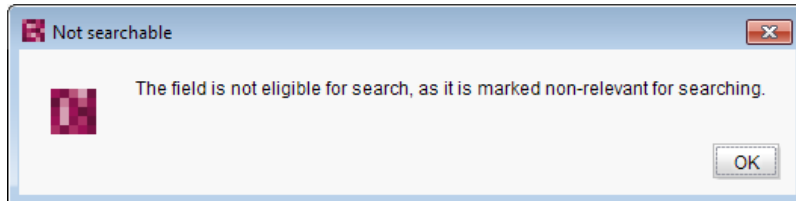
Weighting of content in search results may be specified per input component using the attribute `searchRelevancy` within the GOM XML tag of an input component (SiteArchitect: global search, search in data sources | ContentCreator: search in report area). For example, using this parameter, template developers may specify that elements which contain a search term in a headline input component should be displayed more prominently in search results than elements which only contain the search term in a body text input component. Additionally, individual input components may be configured so that their contents be ignored during indexing, which may increase indexing performance.

Input components may be configured with the following attributes in order to specify how their contents are handled during indexing:

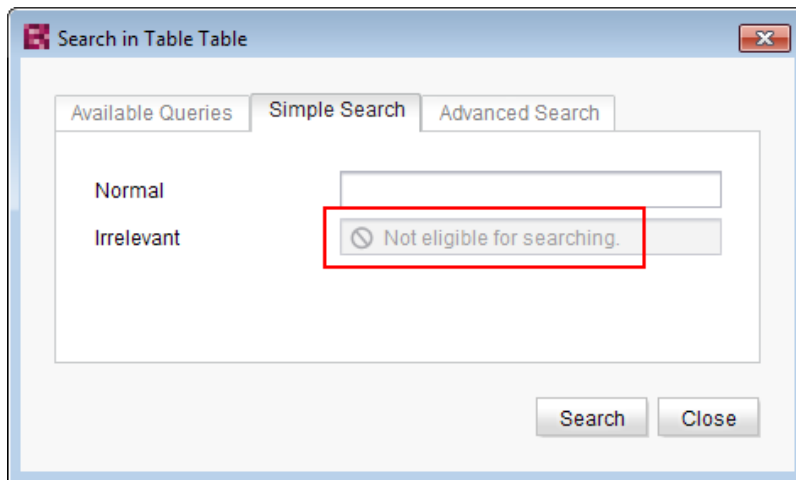
- `searchRelevancy="none"`: The content of an input component that is configured with this search relevancy value **will not be indexed**. Pages, sections, and datasets which contain input components configured with this search relevancy value will not appear in search results if the



search term only appears in the contents of these non-indexed input components. Searching for contents of such input components using drag-and-drop will yield no results (message “The field is not eligible for search, as it is marked non-relevant for searching.”). In data sources, such fields are also marked accordingly in the Simple Search user interface (“Not eligible for searching.”):



and



- `searchRelevancy="default"`: The input component's content **will be indexed with default weight**. This is the standard setting for input components.
- `searchRelevancy="high"`: The content of an input component which is configured with this search relevancy value **will be indexed with a higher weight** and thus displayed more prominently in search results (exception: search for datasets). This means that if a search term appears in both an element with an input component configured for high search relevancy and an element with an input component configured for default search relevancy, the element which contains the search term in a high-relevancy input component will be shown in a higher position in search results.

If the attribute is not specified for an input component, the component's content will be indexed with a default weight (`searchRelevancy="default"`).



For nested input components (FS_CATALOG, FS_INDEX, FS_LIST, CMS_INPUT_IMAGE_MAP, CMS_INPUT_LINK--also CMS_INPUT_DOM and CMS_INPUT_DOMTABLE with one restriction, see below), input components of inner entries (which are based on other templates) will be indexed as follows:

computed searchRelevancy of input component of inner entry		searchRelevancy input component in template of inner entry		
		High	Default	None
searchRelevancy outer input component	High	High	High	None
	Default	High	Default	None
	None	None	None	None

- **Outer input component is configured with searchRelevancy="none":**
 - **Inner entries will not be indexed** regardless of the searchRelevancy settings of input components in the templates used for inner entries.

- **Outer input component is configured with searchRelevancy="default":**
 - In inner entries, contents of input components with searchRelevancy="none" **will not be indexed.**
 - In inner entries, contents of input components with searchRelevancy="default" **will be indexed with normal weight.**
 - In inner entries, contents of input components with searchRelevancy="high" **will be indexed with higher weight.**

- **Outer input component is configured with searchRelevancy="high":**
 - In inner entries, contents of input components with searchRelevancy="none" **will not be indexed.**
 - In inner entries, contents of input components with searchRelevancy="default" and searchRelevancy="high" **will be indexed with higher weight.**

In general, **links in values of input components CMS_INPUT_DOM and CMS_INPUT_DOMTABLE** are indexed according to the searchRelevancy settings associated with single input components in link forms. However, the link text of a link (the input component which is selected in the link template's "Link text" option) will be indexed with the weighting of the CMS_INPUT_DOM or CMS_INPUT_DOMTABLE component.



Note: “Header fields” of snippets (tab “Snippet” in templates) are also indexed. If an input component is configured with a weighting “none” (`searchRelevancy="none"`) but its value is included in the template's snippet header field, searching for the input component's value will cause the associated element to appear in search results.

Changing the weighting setting of an input component in a template does not immediately affect the indexed data of existing elements based upon that template, and search results will continue to reflect the old weighting until elements based upon that template are modified and saved (at which time they will be reindexed in the background). Alternatively, the entire project or parts thereof may be reindexed via a schedule task or the FirstSpirit APIs, which does not require elements to be changed. However, reindexing large numbers of elements is memory and CPU-intensive and should only be performed during a planned maintenance period!

For further information, see

- *Documentation for FirstSpirit SiteArchitect*, chapter “The global search” etc.
- *FirstSpirit Manual for Editors (ContentCreator)*, chapter “Search function in the report area” etc.
- *FirstSpirit Manual for Administrators*, chapter “Rebuild search index”
- *FirstSpirit Developer API*, interface `GomSearchRelevancy`
(package `de.espirit.firstspirit.access.store.templatestore.gom`)
- *FirstSpirit Access API*, interface `SearchService`
(package `de.espirit.firstspirit.access.search`)
- *FirstSpirit Developer API*, interface `QueryAgent`
(package `de.espirit.firstspirit.agency`)

25.2 Controlling indexing of referenced datasets 5.2R12

When creating, editing, or deleting FirstSpirit elements (e.g. pages, sections, media), the contents and data of such elements are written into or removed from the index, respectively, so that elements can be found more quickly using search functionality. This indexing process also includes referenced elements. The number of references that have to be considered influences the duration of an indexing process. Especially datasets that reference further datasets in other tables can cause indexing of

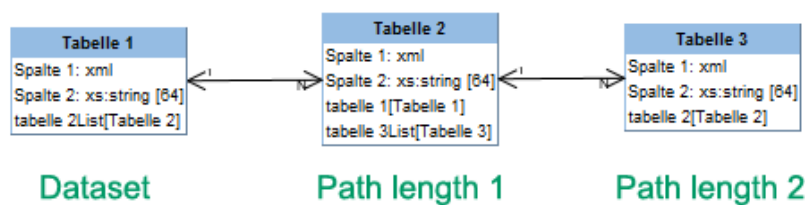


all referenced elements to run long due to the resulting complex data structures. Until now, the parameter `indexing.maxNoOfAssociations` (configuration file `fs-server.conf`) could be used to limit indexing of referencing datasets: when a defined limit of indexed elements was reached, indexing was aborted, and further elements were not written into the index. As of the current version of FirstSpirit, this parameter will no longer be evaluated and has been replaced with a new parameter, `indexing.relationshipPathLengthToFollow`, which allows better control of indexing.

As of the current FirstSpirit version, indexing of datasets that are referenced via

- FS_DATASET
- FS_INDEX (used for dataset selection via `DatasetDataAccessPlugin`)
- FS_LIST (type DATABASE)

may be configured such that the path length will be considered. For a dataset which references other datasets, this controls whether the contents of only this “origin” dataset should be indexed or the contents of this dataset and of the datasets it references should be indexed. If contents of referenced datasets should be indexed as well, the parameter allows specification of the path length to which references should be considered. For example, a path length 2 means that, in addition to the contents of the “origin” dataset, the contents of datasets referenced by this “origin” dataset as well as the contents of datasets referenced by these datasets will be indexed:



The path length can be set for the input components mentioned above via the parameter `indexing.relationshipPathLengthToFollow` in the configuration file `fs-server.conf`. By default, a path length “1” is assumed such that, for the input components mentioned above, datasets and the datasets they immediately reference are indexed. If no referenced datasets should be indexed, the parameter's value must be set to “0”, e.g.

```
indexing.relationshipPathLengthToFollow=0
```



Other path lengths may be specified by setting the desired value. This configuration is applied server-wide for all projects.



Datasets which are stored in the same table will not be indexed.



The indexing behavior illustrated here only applies to the input components mentioned above. For other input components which may reference datasets via `CMS_INCLUDE_OPTIONS`, contents of referenced datasets will not be indexed, but the ID of the referenced dataset, the label (tag `LABELS`), and the key (tag `KEY`) will be added to the index.

The indexing behavior illustrated here also applies to referenced datasets in pages and sections. The page or section in which the dataset-referencing input component is located is considered to be path length "0". With `indexing.relationshipPathLengthToFollow=0`, only the contents of the page or the section would be indexed. In order to also index contents of the referenced dataset, `indexing.relationshipPathLengthToFollow` must be set to a value of "1".

On a project/component level, the parameter `indexTreatment` may be used to manually extend the path length specified by `indexing.relationshipPathLengthToFollow` across certain tables, thereby practically increasing the value of the parameter `indexing.relationshipPathLengthToFollow` for individual input components. If `indexTreatment="follow"` is set, datasets which are referenced by the input component in question will be indexed along with the origin dataset. If the parameter is not set, `indexTreatment="default"` is assumed, and referenced datasets will be indexed according to the configuration of `indexing.relationshipPathLengthToFollow`. The parameter `indexTreatment` can thus only be used to extend indexing to a longer path length, but not to limit indexing.

If the path length should be extended via `indexTreatment="follow"` across several tables, `indexTreatment="follow"` must be set for the relevant input component in each table along the desired path. If `indexTreatment="follow"` is not set in a table template (this corresponds to `indexTreatment="default"`), indexing will stop.



! Contents in input components for which the parameter `searchRelevancy="none"` is set will not be indexed, regardless of the configuration of `indexing.relationshipPathLengthToFollow` and/or `indexTreatment`.

! Because the new parameters `indexing.relationshipPathLengthToFollow` and `indexTreatment` allow for more precise configuration of the indexing behavior for referenced datasets, the parameter `indexing.maxNoOfAssociations` will no longer be evaluated as of the current FirstSpirit version. In existing configurations, `indexing.maxNoOfAssociations` must be replaced with the new parameters in a suitable fashion. If `indexing.maxNoOfAssociations` was set to "0" or "1" in existing projects, `indexing.relationshipPathLengthToFollow` should be set to "0" after an update to the current version of FirstSpirit in order to ensure comparable behavior. Regardless of setting these new parameters, the set of search results may be different between the current FirstSpirit version and previous FirstSpirit versions, depending on the database schema.

Setting or modifying these parameters in retrospect will not have automatic effects on search results; the different indexing behavior will only be shown after modifying respective content. Alternatively, it is possible to reindex the entire project or parts of a project via a schedule task or the API. Such a reindexing process creates higher CPU and memory loads, however, and should only be carried out during a maintenance period!

In the context of these changes, the FirstSpirit API was extended. Use of the API is only relevant for development of project-specific input components.

The interface `ValueIndexer` (FirstSpirit Developer API, package `de.espirit.firstspirit.access.editor`) was extended with the following methods:

- `appendFormData(FormData formData, Language language, boolean followAssociations)`: This method is used to add content of form data (provided by the `formData` object) for a given language (`language` object) to the index. If `followAssociations` is set to `true`, dataset references contained in the form data will be followed.



- *appendAssociate*(Associate associate, Language language, boolean followAssociations): This method allows adding data of an associated element in the given language to the index. If `followAssociations` is set to `true`, dataset references will be followed. If the method *associate*(Entity) is used, the method *appendAssociate*() will not have any effect if it is used for the same element.

Furthermore, the following interfaces were added to the package `de.espirit.firstspirit.access.editor`:

- *Associate*: Offers an abstract description of associated elements which may be referenced from form data.
- *GomIndexTreatment*: Provides the parameter `indexTreatment` for customer-specific input components.

For further information, see

- *FirstSpirit Manual for Administrators*, “FirstSpirit Server configuration / Configuration files (FirstSpirit Server) / FirstSpirit Server configuration (fs-server.conf) / Server”, parameter `indexing.relationshipPathLengthToFollow`
- *FirstSpirit Online Documentation*, parameter `indexTreatment` for input components at “Template development / Forms / Input components”
- *FirstSpirit Online Documentation*, “Plug-In Development / Universal Extensions / Input Components / GOM Form Element”

25.3 New parameter "indexing.extendedDatasetKeys" for influencing the indexing of content at server level (for datasets) 2019-06

The parameter `indexing.extendedDatasetKeys` (fs-server.conf) can be used to adjust the format of the search index when using external databases.

If `indexing.extendedDatasetKeys=true` is set, the format of the search index is changed so that datasets from different tables with the same primary key can be found via the search.



The default value is `indexing.extendedDatasetKeys=false`. With this setting, only one of these datasets is found when using external databases.



After changing the parameter, the search index must be recalculated for all projects that use external databases (see [Recalculating the search index](#)). Otherwise, the old versions can still be found when changes are made to datasets.

25.4 Project-specific configuration of indexing for referenced datasets

5.2R15

When creating, editing, or deleting FirstSpirit elements (e.g. pages, sections, media), the contents and data of such elements are written into or removed from the index, respectively, so that elements can be found more quickly using search functionality. This indexing process also includes referenced elements. The number of references that have to be considered influences the duration of an indexing process. Especially datasets that reference further datasets in other tables can cause indexing of all referenced elements to run long due to the resulting complex data structures.

For this reason, it is possible to limit indexing of referencing datasets.

Already available (server-wide configuration): The path length for indexing of referencing datasets may be limited server-wide using the parameter `indexing.relationshipPathLengthToFollow` (specified in the configuration file `fs-server.conf`). This setting applies to indexing of datasets that are referenced via

- FS_DATASET
- FS_INDEX (used for dataset selection via `DatasetDataAccessPlugin`)
- FS_LIST (type DATABASE)

By default, a path length “1” is assumed such that, for the input components mentioned above, datasets and the datasets they immediately reference are indexed. If no referenced datasets should be indexed, the parameter's value must be set to “0”, e.g.

```
indexing.relationshipPathLengthToFollow=0
```



Other path lengths may be specified by setting the desired value. This configuration is applied server-wide for all projects.

Newly available (project-specific configuration): As of the current version of FirstSpirit, it is now possible to overwrite the parameter `indexing.relationshipPathLengthToFollow` on a project-specific level using the new interface `SearchIndexAgent` (package `de.espirit.firstspirit.agency`, FirstSpirit Developer API).

The iteration depth may now be adjusted, e.g. via script:

```
import de.espirit.firstspirit.agency.SearchIndexAgent;
sia = context.requestSpecialist(SearchIndexAgent.TYPE);
sia.setPathLengthToFollow(2);
```

If there is no project-specific configuration set, the server-side parameter will be evaluated.

26 System

26.1 Updating Apache FOP 5.2R14

Apache FOP (“Formatting Objects Processor”) enables, for example, FirstSpirit content to be output in PDF format. A module is used to provide support for Apache FOP in FirstSpirit: *fs-fop.fsm*.

In the current version of FirstSpirit, the version of the Apache FOP used internally was updated from 1.1 to 2.2.

26.2 Update of libraries 5.2R16

With the current FirstSpirit version, the following, internally used libraries have been updated:

- **Synthetica** (Library for the graphical user interface)
Update to version 2.3.30
- **ASM** (Library for analyzing and modifying Java bytecode)
Update to version 6.0



26.3 Updated internally used software 2019-09

With the current FirstSpirit release, the following, internally used software has been updated:

- **Java** (JRE which is used to operate the FirstSpirit Launcher)
Update from AdoptOpenJDK 11.0.3 to AdoptOpenJDK 11.0.4

26.4 Updated internally used software 2019-08

With FirstSpirit 2019-08, the following, internally used software has been updated:

- **Java**
 - The JRE, which is used by default to operate FirstSpirit SiteArchitect and ServerManager, has been updated from version 11.0.3 to version 11.0.4.
This is the Java version recommended by e-Spirit. When using the “FirstSpirit Launcher JRE” module, this corresponds to the “Default” configuration option.
 - Java versions contained in the “FirstSpirit Launcher JRE” module have been updated: AdoptOpenJDK 12.0.1 to version 12.0.2, AdoptOpenJDK 8u212 to version 8u222 (“Outdated”).
- **Install4j** (used for the FirstSpirit Launcher)
Update from version 7.0.4 to version 8.0.1
- **JxBrowser** (Chrome browser engine for displaying the integrated preview in FirstSpirit SiteArchitect)
Update to version 6.24. This corrected an issue which could occur when using iFrames.

For information about updates of the module “FirstSpirit Launcher JRE” please see [respective documentation](#).

26.5 Update of internally used software 2019-12

With the current FirstSpirit release, the following, internally used software has been updated:

- **Java** (JRE which is used to operate the FirstSpirit Launcher)
Update from AdoptOpenJDK 11.0.4 to AdoptOpenJDK 11.0.5



- **Spring Boot** (used for FirstSpirit Content Experience Tools (CXT))
Update from version 2.1.7 to version 2.2.1
- **Eclipse Jetty** (contained in the module `fs-jetty.fsm` / “FirstSpirit Jetty Service”)
Update from version 9.4.21 to version 9.4.23



As before, use of Eclipse Jetty for production purposes is not recommended!

26.6 Updates to integrated third-party software 2020-03

The following internal software has been updated in the latest FirstSpirit release:

Java

The JRE, which is used as standard to run FirstSpirit SiteArchitect and ServerManager, was updated from **version 11.0.5** to **version 11.0.6**.

This is the Java version recommended by e-Spirit. When using the “FirstSpirit Launcher JRE” module, this is the “Default” configuration point.

The Java versions in the “FirstSpirit Launcher JRE” module were updated: AdoptOpenJDK 13.0.1 to version 13.0.2, AdoptOpenJDK 8u232 to version 8u242 (“outdated”).

Install4j (used for FirstSpirit Launcher)

Updated from **version 8.0.2** to **version 8.0.4**.

ASM (library for analyzing and modifying Java byte code)

Updated from **version 7.2** to **version 7.3.1**.

Apache FOP (Formatting Objects Processor)

Via the module `fs-fop.fsm` (for the output of FirstSpirit content in PDF format).

Updated from **version 2.2** to **version 2.4**.



Pack200 removed (jar packing tool)

The Pack200 compression of jar files transferred from the server to the user's computer when the FirstSpirit desktop applications are launched was expanded in preparation for upcoming Java14 support. If the FirstSpirit desktop applications are still started via Java Web Start, the uncompressed jars are now transferred. (The Java Web Start function is still present in Oracle Java 8 but has been removed in Oracle Java 11. OpenJDK does not offer a comparable technology).

Java Service Wrapper (configuration and monitoring of FirstSpirit Java VM)

Updated from **version 3.5.39** to **version 3.5.42**.

Note: When the FirstSpirit server is updated (auto-update, in-place upgrade), the Java Service Wrapper files are not automatically updated. The Java Service Wrapper can be updated via the tar gzip update archive (file fs-update-5.2.*.tar.gz) as described in the FirstSpirit installation instructions.

Additional documentation:

- on [Java Service Wrapper \(manual for administrators\)](#)
- on [Updating the Java Service Wrapper \(installation instructions\)](#)

26.7 Update of internally used software 2020-04

As of the current release, the following internally used software has been updated:

Java (JRE which is used to operate the FirstSpirit Launcher)

The Java versions included in the “FirstSpirit Launcher JRE” module (see “FirstSpirit Launcher JRE” [documentation](#)) were updated in the latest FirstSpirit release. In addition to the version supplied with the FirstSpirit Launcher, AdoptOpenJDK 11.0.6 (default), the following Java variants are currently available:

- AdoptOpenJDK 14 (new)
- AdoptOpenJDK 8u242 (outdated)

AdoptOpenJDK 13.0.2 was removed from the FirstSpirit Launcher JRE module.





After updating the module, it may be necessary to restart the ServerManager to perform the appropriate configuration.

Spring Boot (used for MicroApp Framework)

Update from version 2.2.2 to version 2.2.5

Spring Cloud Hoxton (used for MicroApp Framework)

Update from version Hoxton.SR1 to version Hoxton.SR3

Eclipse Jetty (contained in the module `fs-jetty.fsm` / “FirstSpirit Jetty Service”)

Update from version 9.4.23 to version 9.4.27



As before, use of Eclipse Jetty for production purposes is not recommended!

26.8 Updates to integrated third-party software 2020-05

The following internal software has been updated in the latest FirstSpirit release:

ASM (library for analyzing and modifying Java byte code)

Updated from **version 7.3.1** to **version 8.0.1**.

26.9 Update of internally used software 2020-06

As of the current release, the following internally used software has been updated:

Eclipse Jetty (contained in the module `fs-jetty.fsm` / “FirstSpirit Jetty Service”)

Update from version 9.4.27 to version 9.4.28



As before, use of Eclipse Jetty for production purposes is not recommended!

Library `com.fasterxml.jackson.core:jackson-databind`



(contained in the DataAccessPlugin implementation example module for accessing web services using the standardized Open Data Protocol (OData))

Update from version 2.4.2 to version 2.11.0

For general information on the module see: <https://docs.e-spirit.com/> (Examples)

26.10 Update of internally used software 2020-02

As of the current release, the following internally used software has been updated:

- **Spring Boot** (used for MicroApp Framework)
Update from version 2.2.1 to version 2.2.2

26.11 Update of internally used software 2018-12

With the current FirstSpirit release, the following, internally used software has been updated:

- **ASM** (Library for analyzing and modifying Java bytecode)
Update from version 6.2 to 7.0 (official Java 11 support)
- **Eclipse Jetty** (contained in the module `fs-jetty.fsm` / “FirstSpirit Jetty Service”)
Update to version 9.4.14

! As before, use of Eclipse Jetty for production purposes is not recommended!

26.12 Update of internally used software 2019-05

With the current FirstSpirit release, the following, internally used software has been updated:

- **ASM** (Library for analyzing and modifying Java bytecode)
Update from version 7.0 to 7.1
- **Java** (included in FirstSpirit Launcher)
Update from Oracle Java 8u181 to AdoptOpenJDK 11.0.3



26.13 Update of internally used software 2019-06

With the current FirstSpirit release, the following, internally used software has been updated:

Apache Derby (integrated database)

Update from version 10.12.1.1 to 10.14.1.0

! Note about Apache Derby:

As before, use of Apache Derby for production purposes is not recommended!

Use of Derby databases prohibits in-place **downgrades** to previous FirstSpirit versions. Error message after downgrade:

```
ERROR XSLAN: Database at [path] has an incompatible format with the
current version of the software. The database was created by or upgraded
by version 10.14.
```

Workaround: Export with FirstSpirit 2019-06 and import into a FirstSpirit server running FirstSpirit 2019-05.

Eclipse Jetty (contained in the module `fs-jetty.fsm` / “FirstSpirit Jetty Service”)

Update from version 9.4.14 to version 9.4.18

! Note about Eclipse Jetty:

As before, use of Eclipse Jetty for production purposes is not recommended!

Java Service Wrapper (configuration and monitoring of the FirstSpirit Java VM)

Update from version 3.5.36 to version 3.5.39

! Note about Java Service Wrapper:

When the FirstSpirit Server is updated (auto update, in-place upgrade), the Java Service Wrapper's files are **not** refreshed automatically.



The Java Service Wrapper should be updated in line with the following chapters in the *FirstSpirit Installation Instructions*:

- Updating via a tar archive (for Unix) *
- Updating via the installation program (for Microsoft Windows) or via
- the tar. gzip update archive (File `fs-update-5.2.*.tar.gz`) (see also “Release of tar.gz archives for installing and updating the FirstSpirit Server”).

* When an existing FirstSpirit Server is updated via the “tar” archive (“*.tgz” file) on Unix systems, therefore, the files with extension `.a` must be deleted from the `~/server/lib` and `~/server/lib-isolated` directories following a manual update.

26.14 Update of internally used software 2019-07

With the current FirstSpirit release, the following, internally used software has been updated:

- **Eclipse Jetty** (contained in the module `fs-jetty.fsm` / “FirstSpirit Jetty Service”) Update from version 9.4.18 to version 9.4.19

! As before, use of Eclipse Jetty for production purposes is not recommended!

26.15 Update of internally used software 2019-11

With the current FirstSpirit release, the following, internally used software has been updated:

- **ASM** (Library for analyzing and modifying Java bytecode) Update from version 7.1 to 7.2
- **Eclipse Jetty** (contained in the module `fs-jetty.fsm` / “FirstSpirit Jetty Service”) Update from version 9.4.19 to version 9.4.21





As before, use of Eclipse Jetty for production purposes is not recommended!

26.16 FirstSpirit server: New control files for Windows and Linux 2020-03

Java and the Java Service Wrapper are prerequisites for operating a FirstSpirit server. The Java Service Wrapper and corresponding control files are provided by e-Spirit via:

- the installation archive (for new installations) or
- the update archive (for existing installations)

Both archives can be downloaded (for access data, please contact [Technical Support](#)).

The control files for Windows and Linux operating systems, which are included in both archives, have been enhanced by two new control files, with the current FirstSpirit release.

The new control files support a range of functions that were not available in the previous control files (including `install` under Linux). The scope of functions of the new control files can be called via the integrated help (Usage, Command syntax, Commands) in the command line, for example via the call `fs-server` (under Linux):

```
test@fs_example:~$ fs-server
Usage: /home/fs_example/firstspirit/bin/fs-server [ console | start | stop | restart |
condrestart | status | install | installstart | remove | dump ]
Commands:
  console      Launch in the current console.
  start        Start in the background as a daemon process.
  stop         Stop if running as a daemon or in another console.
  restart      Stop if running and then start.
  condrestart   Restart only if already running.
  status       Query the current status.
  install      Install to start automatically when system boots.
  installstart Install and start running as a daemon process.
  remove       Uninstall.
  dump         Request a Java thread dump if running.
```



This new development's result can be tested as part of an Early Access Program (EAP) starting with FirstSpirit 2020-03. An early, constructive feedback helps us to identify problems faster and more easily, thus allowing us to add missing functionality. For feedback please consult our Technical Support (for partners) or your designated Account Manager (for customers).



Since these new control files are still in the EAP phase, we do not recommend using them in production environments.

Control files in the installation archive or in the update archive:

- new: fs-server (for Linux)
- new: fs-server.bat (for Windows)
- fs5 (for Linux)
- fs5.cmd (for Windows)

Prerequisite for using the new control files:

An update of the Tanuki Java Service Wrapper to version 3.5.42 is necessary.

Further documentation:

- [Updating the FirstSpirit backend](#)
- [Installing via install archive](#)
- [Controlling the FirstSpirit Server in Unix operating systems](#)
- [Controlling the FirstSpirit Server in Windows operating systems](#)

26.17 Updated third-party software 5.2R18

The browser engine “JxBrowser”, used to integrate “Google Chrome”, has been updated to version 6.18.



26.18 Integrated Software 5.2R4

With FirstSpirit 5.2R4, the following, internally used software has been updated:

- **Java Runtime Environment** (“JRE”, included in FirstSpirit Launcher)
Update from version 1.8.0_31 to 1.8.0_92
- **ASM** (Library for analyzing and modifying Java bytecode)
Update from version 3.1 to 5.1
(improved interoperability between modules, which are developed for Java 8, and FirstSpirit)
- **Apache Derby** (integrated database for testing purposes)
Update from version 10.11.1.1 to 10.12.1.1



As before, use for production purposes is not recommended!



Note: Use of Derby databases prohibits in-place **downgrades** to FirstSpirit version 5.2R3 or older. Error message after downgrade:

```
ERROR XSLAN: Database at [path] has an incompatible format with the
current version of the software. The database was created by or upgraded
by version 10.12.
```

Workaround: Export with FirstSpirit version 5.2R4 and import into a FirstSpirit server running version 5.2R3.

- **Eclipse Jetty** (integrated web server)
Update from version 9.2.9 to 9.2.15
Furthermore, security improvements have been undertaken concerning the default configuration.



As before, use for production purposes is not recommended!



26.19 Integrated Software 5.2R3

The integrated Chrome browser engine “JxBrowser” has been updated to version 4.9.5.

26.20 Integrated Software 5.2R12

With the current FirstSpirit version, the following, internally used software has been updated:

- **Java Development Kit** (“JDK”, included in FirstSpirit Launcher)
Update from version 1.8.0_121 to 1.8.0_131

26.21 Integrated software 5.2R14

Updated the integrated Chrome browser engine “JxBrowser” to version 6.15.

26.22 Integrated Software 5.2R19

With the current FirstSpirit version, the following, internally used software has been updated:

- **Java Development Kit** (“JDK”, included in FirstSpirit Launcher)
Update from version 8u131 to 8u161

26.23 Integrated Software 5.2R20

With the current FirstSpirit version, the following, internally used software has been updated:

- **Google Web Toolkit** (“GWT”, used for ContentCreator)
Update from version 2.7 to 2.8.2
- **Beanshell**
Update to version 2.1.9
- **Eclipse Jetty** (contained in the module `fs-jetty.fsm`)
Update from version 9.4.8 to 9.4.9
- **ASM** (Library for analyzing and modifying Java bytecode)
Update to version 6.1



26.24 Integrated Software 2018-06

With the current FirstSpirit version, the following, internally used software has been updated:

- **Java Advanced Imaging Image I/O Tools** (“JAI”, library for displaying and scaling images in FirstSpirit SiteArchitect)
Update to version 1.4.0

26.25 Integrated software 2018-08

The following internal software has been updated in the latest FirstSpirit version:

- **ASM** (library for analyzing and modifying Java byte code)
Updated from version 6.1 to 6.2
- **Java Service Wrapper** (configuration of server start and FirstSpirit Server Java system)
Updated to version 3.5.35

! When the FirstSpirit Server is updated (auto update, in-place upgrade), the files of the Java Service Wrapper are **not** refreshed automatically. When an existing FirstSpirit Server is updated via the “tar” archive (“*.tgz” file) on Unix systems, therefore, the files with extension `.a` must be deleted from the `~/server/lib` and `~/server/lib-isolated` directories following a manual update.

26.26 Integrated Software 5.2R21

With the current FirstSpirit version, the following, internally used software has been updated:

- **Java Development Kit** (“JDK”, included in FirstSpirit Launcher)
Update from version 8u161 to 8u171

26.27 Integrated Software 2018-07

With FirstSpirit release 2018-07, the following, internally used software has been updated:

- **Eclipse Jetty** (contained in the module `fs-jetty.fsm`)
update from version Version 9.4.9 to 9.4.11





As before, use of Eclipse Jetty for production purposes is not recommended!

26.28 Integrated Software 2018-09

With the current FirstSpirit version, the following, internally used software has been updated:

- **Oracle Java** (included in FirstSpirit Launcher)
Update from version 8u171 to 8u181

26.29 Integrated Software 2018-11

With the current FirstSpirit version, the following, internally used software has been updated:

- **JxBrowser** (Chrome browser engine for displaying the integrated preview in FirstSpirit SiteArchitect)
Update to version 6.21
The engine now uses “Chromium” in the version 64.0.3282.24. In addition, a 64bit version of the chromium browser is now used on 64bit systems.
- **Google Guava**
Update to version 27.0-jre



After the update of Google Guava the FSDevTools have to be updated in case these are used. A new version of the FSDevTools (Release 2.2.692) will be released at the same time as FirstSpirit 2018-11. This can be downloaded from <https://github.com/e-Spirit/FSDevTools/releases>.

26.30 New JDKs for use with the FirstSpirit Server 2019-05

From the latest release of FirstSpirit, the **recommended Java version (reference)** for use with the FirstSpirit Server is changing to:

- **OpenJDK 11** (in the current version) (previously: Oracle JDK 8u181)

In addition, **OpenJDK 12** has been included in the list of **compatible JDKs**.



Discontinuation of Java 8: Support for Java 8 will cease in the future.

e-Spirit supports the following from the latest release of FirstSpirit:

- For OpenJDK: the current, released Java version as well as the latest LTS (long-term support) variant.
- For Oracle Java: only the latest LTS variant.

This applies to both the FirstSpirit Server and the FirstSpirit desktop applications.

A complete list of the supported Java versions for the FirstSpirit Server can be found in [Technical requirements and recommendations \(Documentation for administrators\)](#).

! **Note on the transition from Java 8 to Java 11:** Before operating Java 11 on a production system, compatibility of all integrated modules and implementations with Java 11 must be tested on a test system.

The configuration of the Tanuki Java Service Wrapper should also be tested: The parameters `-XX:SurvivorRatio=1` and `-XX:+NeverTenure` should no longer be used (see the following chapter).

The use of the OpenJDK distribution AdoptOpenJDK is recommended (HotSpot JVM): AdoptOpenJDK provides up-to-date OpenJDK binaries for various platforms (including macOS, Linux, Windows) for download. For information on AdoptOpenJDK, see <https://adoptopenjdk.net>

Why OpenJDK? To reduce dependency on Oracle's Java development and also so that longer-term plans can be made for the benefit of our customers, e-Spirit will increase its focus on the use of OpenJDK. We plan to test the latest OpenJDK versions regularly for use with FirstSpirit, release them, and also designate them as reference versions.

26.31 Signing with SHA-256 5.2R7

Previously, FirstSpirit JAR files were signed using SHA-1. Oracle is planning to cease support of SHA-1 in the JDK version lines 6, 7, and 8 in April 2017 (see <https://www.java.com/en/jre-jdk-cryptoroadmap.html>).

Due to this reason, as of the current FirstSpirit version, signing is now carried out using SHA-256.



Starting in April 2017, if an existing FirstSpirit installation should be used with a newer Java version which no longer supports SHA-1, an update to the current FirstSpirit version is required as well in order to continue using FirstSpirit with Oracle JDKs.

For further information, see [FirstSpirit Community](#).

If you have further questions about this topic, please contact e-Spirit's Technical Support team via <https://help.e-spirit.com>.

26.32 Version comparison under macOS and update of JIDE libraries

2019-06

Fixed a bug that could cause problems when using version comparison with macOS when using Java versions greater than 8.

In this context, JIDE libraries used by FirstSpirit were also updated from version 3.6.9 to 3.7.6.

26.33 Using Java 9 (EAP) 5.2R18

As of FirstSpirit version 5.2R18, support for Java 9 (for FirstSpirit Server and Clients) will be part of the early access program (“EAP”, see Chapters “FirstSpirit product update 2018”, and “Oracle Java”). Using existing FirstSpirit installations with Java 9 will require slight changes to configuration files in the file system:

1. First, perform an inplace upgrade of the desired FirstSpirit server (see *FirstSpirit Installation instruction*, Chapter “Via a tar archive”). In this way, the start script will be updated automatically (`fs5` for Linux).
2. Replace the file `fs-wrapper.conf` (or for servers running in “isolated mode” the file `fs-wrapper.isolated.conf`) in the FirstSpirit subdirectory `~\conf` by the content of the file `fs-wrapper.conf.default.txt` (or by the content of the file `fs-wrapper.isolated.conf.default.txt`) in the subdirectory `~\conf\conf-all` and adopt individual changes which you have made in the file `fs-wrapper.conf`.



3. Copy the files

`fs-wrapper-j1.include.conf.default.txt`

`fs-wrapper-j2.include.conf.default.txt`

from the subdirectory `~\conf\conf-all` to `~\conf`, rename them to

`fs-wrapper-j1.include.conf`

`fs-wrapper-j2.include.conf`

and adopt the GC and storage parameters to the individual requirements of the FirstSpirit server.

FirstSpirit can also be used with Java 9 as a Windows Service. If you wish to do this, please contact Technical Support for assistance.

New installations do not require a change of the above mentioned files.

Due to the extended security checks in Java 9, the use of this Java version will lead to slowdown, especially during client start-up and during the first execution of functionality that is dynamically downloaded by the client.

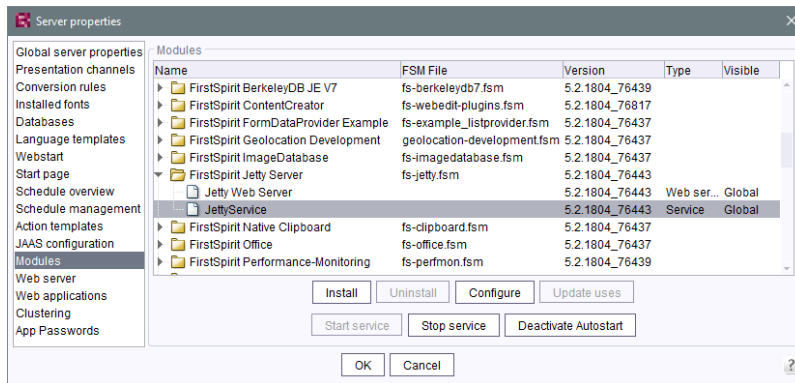
If Java 9 is being used, a corresponding message is logged when the Server is started.

26.34 Using Jetty as a module (EAP) 5.2R18

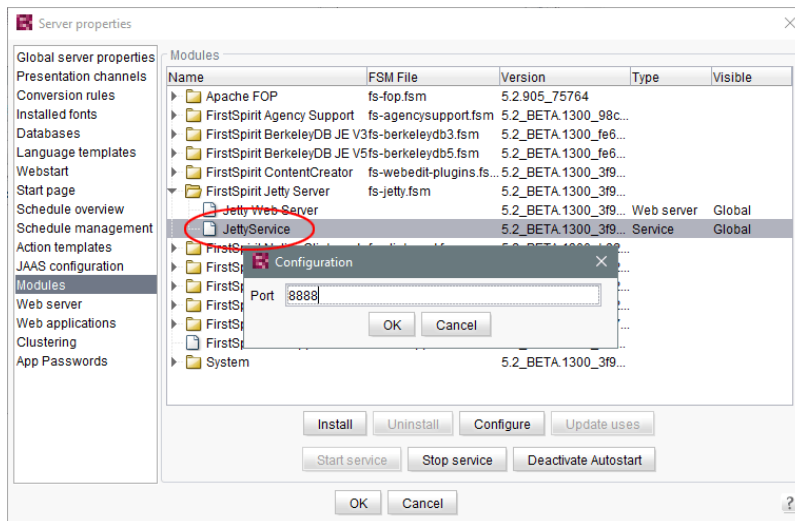
As of FirstSpirit version 5.2R18 the module `fs-jetty.fsm` can also be used with FirstSpirit servers that are not operated in “isolated mode” but in “legacy mode”. For usage in “legacy mode” it is part of the early access program (“EAP”). This module bases on the most recent version: 9.4. However, this version is not compatible with Java 7 and requires at least Java 8.

In order to use Jetty as a module, the module `fs-jetty.fsm` has to be installed on the FirstSpirit server and the corresponding service “JettyService” has to be started in the server properties of the ServerManager:



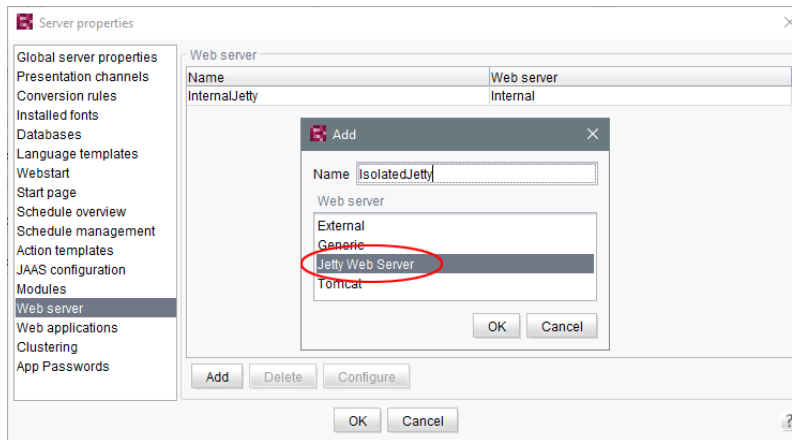


Here it is also possible to configure the favored port (changing the port requires a restart of the service):

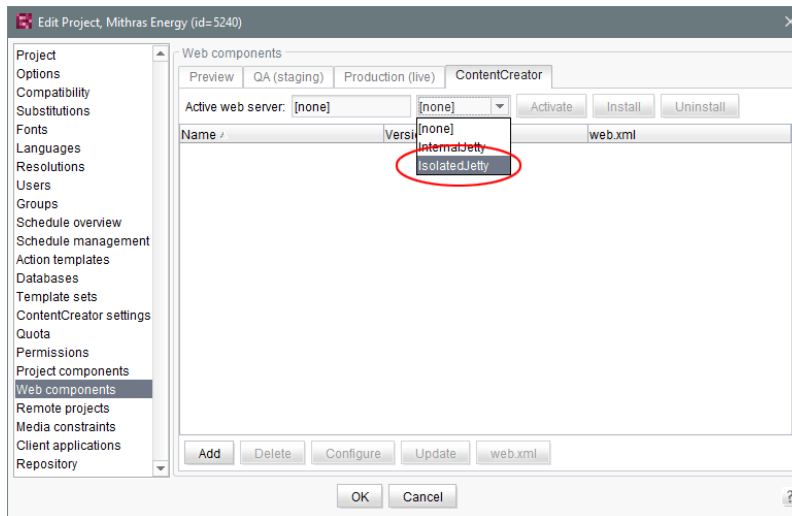


A new web server of the type “Jetty Web Server” may be added using “Webserver” in the server properties (e.g. with the name “IsolatedJetty”):





The web server may now be selected in the project properties under “Web components”:



! Both the earlier implementation “InternalJetty” and the new implementation as a module run within the same JavaVM as the FirstSpirit server. This configuration is not suitable for production operation and should only be used for tests. For more complex configuration requirements (e.g. adjustment of memory size, timeouts, number of threads per deployed application, ...), use of an external web server (e.g. Tomcat) is recommended.



26.35 Wrapper configuration: The parameter `-Xmn` should no longer be used from Java 9 onward

2019-06

The value given at `-Xmn` defines the area of the Java Heap which is used for temporary Java objects. The parameter `-Xmn` should no longer be used from Java 9 onward, as it has negative effects on the Garbage Collection G1 (Garbage-First).

See also “General Recommendations for G1”: <https://docs.oracle.com/javase/9/gctuning/garbage-first-garbage-collector-tuning.htm>

This configuration is defined accordingly for all servers which are newly installed, from the current FirstSpirit version onwards. Existing installations should be adapted manually.

26.36 Wrapper configuration: The parameters `-XX:SurvivorRatio=1` and `-XX:+NeverTenure` should no longer be used from Java 9 onward

2019-05

The Tanuki Java Service Wrapper envelops the FirstSpirit Java virtual machine (VM). The Java VM can be started and terminated using the wrapper. The start parameters of the Java VM are configured using a corresponding configuration file for the wrapper (`fs-wrapper.conf` or `fs-wrapper-isolated.conf`).

The parameters `-XX:SurvivorRatio=1` and `-XX:+NeverTenure` should no longer be used from Java 9 onward, as they have negative effects on the system's overall performance.

Provided a current version of the Tanuki Java Service Wrapper (3.5.36 or later) is used, the parameters can be configured as follows:

```
wrapper.java.additional.#=-XX:SurvivorRatio=1
wrapper.java.additional.#.java_version.max=8
wrapper.java.additional.#=-XX:+NeverTenure
wrapper.java.additional.#.java_version.max=8
```

This transfer of parameters to the Java VM subject to the (Java) version ensures that the parameters are used for Java version 8 and ignored from Java version 9 onward.



This configuration is defined accordingly for all servers which are installed from the latest version of FirstSpirit. Existing installations should be adapted manually.

27 Template Wizard

27.1 Detecting and merging changes 5.2R2

The FirstSpirit Template Wizard offers tools for detecting changes to the source object and then merging this changed content with content which has already been edited and imported.

This involves differentiating between three sources:

- Local root directory
- Import project
- FirstSpirit project

Changes can be made:

- between the local root directory and the import project
- between the import project and FirstSpirit project

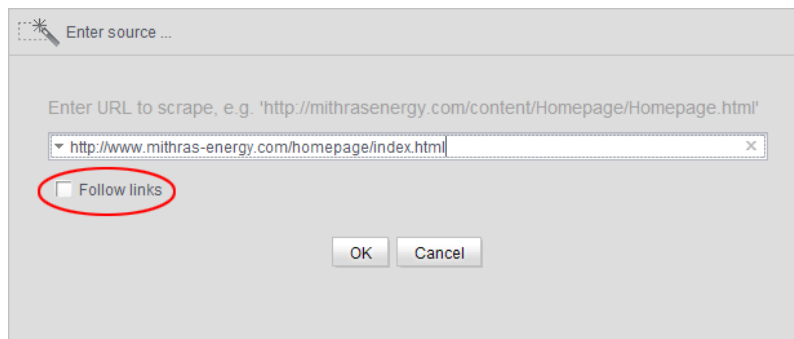
For more information, see *FirstSpirit Online Documentation*, “Template development / Template Wizard / Detecting changes”.

27.2 Activate/deactivate crawling 5.2R2

The FirstSpirit Template Wizard allows you to load HTML content into a project. An external URL can be specified as a source for this.

The new “Follow links” checkbox can now be used to configure “Crawling” (“Select URL” function).





- If the checkbox is **not checked**, then crawling is restricted to the HTML structure transferred here. In this case, only the transferred HTML structure is analyzed and added to the import project. Other URLs referenced within the HTML structure are not analyzed. This is the default setting.
- If the checkbox is **checked**, all URLs referenced in the transferred HTML structure are analyzed and added to the import project. If these URLs then in turn reference other URLs, they too are analyzed, etc. In this case, you must ensure that the nesting depth is not too deep, as the import process can potentially take a long time if there are a large number of URLs.

For more information on working with the FirstSpirit Template Wizard, see *FirstSpirit Online Documentation*, “Template development / Template Wizard”.

27.3 Protection against simultaneous project editing 5.2R2

The FirstSpirit Template Wizard infrastructure partially automates the process of transferring HTML mockups to FirstSpirit. It provides functions which can analyze the HTML templates supplied, identify referenced images and files in HTML content, and import all required content into FirstSpirit.

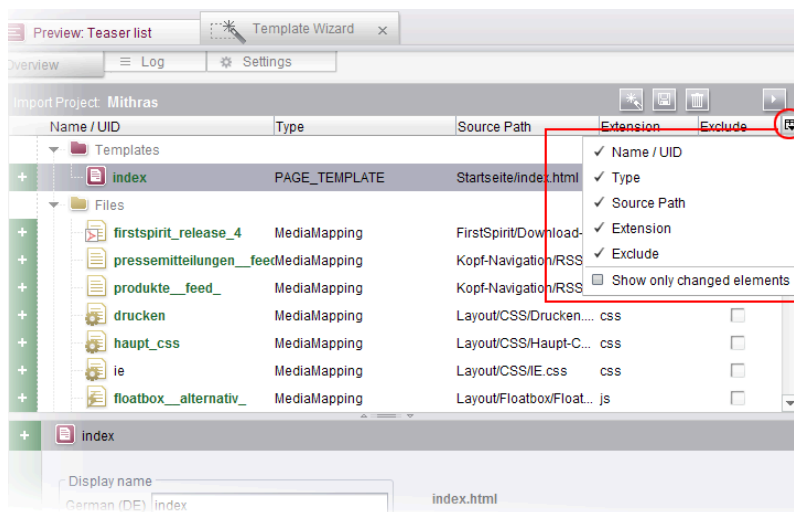
In FirstSpirit version 5.2R2 and higher, FirstSpirit ensures that import projects can only be edited by one user at a time. If the selected import project is already open in the Template Wizard and being used by another FirstSpirit template developer, the message “Agency Project is already locked by [...]”. In this case, the project cannot be loaded until the other user closes it in the Template Wizard.

For more information on working with the FirstSpirit Template Wizard, see *FirstSpirit Online Documentation*, “Template development / Template Wizard”.



27.4 Configure overview 5.2R2

The “Overview” tab shows all the content that has been imported into the Template Wizard to date. They are displayed in table format with the name, source path, file name, etc. This view can be configured by clicking the icon at the right-hand edge of the table header:



This can be used to determine which columns are shown or hidden.

If the “Show only changed elements” checkbox is activated, then only elements that have changed compared to the last status imported are displayed in the overview (inserted as new, changed in the design deliverable, deleted in the design deliverable, etc.).

For more information, see *FirstSpirit Online Documentation*, “Template development / Template Wizard / Overview”.

28 Template development

28.1 Workflows: More configuration options for context-based information in e-mails 2020-05

In e-mails sent by workflows, special placeholders may be used that are automatically replaced by the system based on the context. For example, this can be used to include a link to preview the page on which the workflow is active or to provide a wide range of other information in the e-mail.



The placeholders can be configured based on the properties of an activity or a transition in the “E-mail” tab (“Template store”/“Workflows”/“State diagram”). When a transition or an activity is switched, e-mails containing the relevant information are then sent automatically.

In the current FirstSpirit release, the following options have been added to the placeholders:

- `%DATE_TIME%` = due date (when set) with time. The format is localized, e.g., in the English version: “February 25, 1986 at 11:04:37 AM CET”.
- `%HISTORY_SHORT%` = History of the workflow instance showing only the last three entries in ascending order (e.g., entry: 8, 9, 10).
- `%HISTORY_LAST%` = History of the workflow instance showing only the last entry (e.g., entry: 10).
- `%HISTORY_DESC%` = History of the workflow instance showing all entries in descending order (e.g., entry: 10, 9, 8, 7, 6, 5, 4, 3, 2, 1).
- `%HISTORY_SHORT_DESC%` = History of the workflow instance showing only the last three entries in descending order (e.g., entry: 10, 9, 8).
- `%LAST_USER_FULLNAME%` = The last editor; the full name of the person is displayed (if this is not known, the login name is shown).
- `%NEXT_USER_FULLNAME%` = The names of the persons permitted to edit the workflow at the next stage. The full names are displayed (if these are not known, the login names are shown).

All previous placeholders are still supported:

- `%FIRSTspiritURL%` = HTTP connection mode (standard mode; master language)
- `%FIRSTspiritSOCKETURL%` = SOCKET connection mode (master language)
- `%PAGESTORE_PREVIEW_URL%` = Preview URL for a page from the Page Store (master language)
- `%SITESTORE_PREVIEW_URL%` = Preview URL for a page reference from the Site Store (master language)



- `%WF_NAME%` = Name of the workflow
- `%CREATOR%` = The name of the person who created the workflow. The full name is displayed (if this is not known, the login name is shown).
- `%LAST_USER%` = The name of the person who last edited the workflow. The login name is shown.
- `%LAST_COMMENT%` = Last comment
- `%NEXT_USER%` = The names of the persons permitted to edit the workflow at the next stage. The login names are shown.
- `%PRIORITY%` = Priority
- `%DATE%` = Due date (only if set)
- `%HISTORY%` = History of the workflow instance showing all entries in ascending order (e.g., entry: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10).
- `%WEBeditURL%` = WebEdit link to the preview of the page (master language)

Additional documentation:

- [Workflows/Properties of an activity/E-mail tab](#)
- [Workflows/Properties of a transition/E-mail tab](#)

28.2 Extended output options for snippets 2020-03

At many points in the FirstSpirit clients the presentation of objects (pages, sections, datasets, media, etc.) can be influenced, for example in search result lists, reports, selection dialogs, etc. The so-called “Snippets” are used for this. The configuration is done on the “Snippet” tab of the respective template, for media on the “Snippet” tab of the metadata template selected for the project.

As of the current release, the output options for snippets have been extended. For example, the display name or the UID of the desired element can be output. For this purpose, you can now use the variable



```
#item
```

in the fields “Label” and “Extract” on the “Snippet” tab.

It returns the respective tree element. Object-specific methods from the interface `IDProvider` (FirstSpirit Access API, package `de.espirit.firstspirit.access.store`) can in turn be applied to this.

Examples

```
#item.getDisplayName(#language)
```

Outputs the display name of the respective object in the respective language.

```
#item.Uid
```

Outputs the UID of the respective object.

Example

```
#item.getDisplayName(#language)  
"[UID: " + " " + italic(#item.getUid) + "]"
```

For **datasets**, the use of `#item.getDisplayName()` is not allowed, as this will output the snippet itself. Instead, the default value for the snippet will be displayed (data source name and ID of the dataset, separated by a # character. For example, the GID of a dataset can be specified using

```
#item.getEntity().getGid()
```

Furthermore, `#item` is not available in the data type **Card**.

For **media** (snippets of the Metadata Template) the following variables are additionally available:

- *#medium*: provides information on the medium in XML format (**PICTURE** or **FILE**)
- *#mediumtype*: identifies whether the medium is an image or a file (**PICTURE** or **FILE**)
- *#extension*: identifies the file extension



- *#filename*: identifies the file name
- *#filesize*: determines the file size in bytes
- *#mimetype*: identifies the MIME type
- *#resolution*: determines the dimensions of the image in pixels (only for PICTURE)

Example

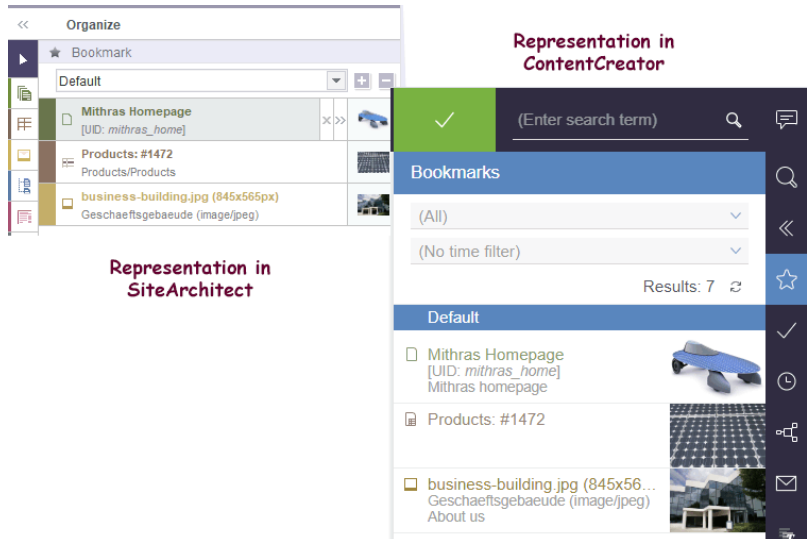
Label:

```
#filename + "." + #extension + if(#mediumtype == "Picture", "(" + #resolution + "px)", "")
```

Extract:

```
#item.displayName(#item.project.masterLanguage) + "(" + #mimetype + ")"
```

Gives as title the file name with file extension and the resolution of the selected medium, as text extract the display name and the MIME type.



! In exceptional cases, for example when creating objects, #item is not available and a warning of the type `java.lang.UnsupportedOperationException` or `java.lang.RuntimeException` will be logged (“Expression failed”). This should be taken into account during template development.

For further information about snippets please see *FirstSpirit Online Documentation*, <https://docs.e-spirit.com/odfs/template-develo/snippets/index.html>.

29 Deprecations

For e-Spirit, an important goal in software development is to avoid introducing incompatibilities and migration expenditures related to updating from one FirstSpirit release to the next as much as possible or to compensate for these within the software. FirstSpirit updates should generally be deployable with little effort or able to be carried out in a fully automated fashion.

However - not least in order to ensure maintainability and to future-proof the software - e-Spirit cannot fully avoid replacing existing functionality with new mechanisms. In the future, functionality that will be removed from the software will be listed in this section, including the date at which time the functionality will be removed.

Functionality	Deprecated as of	Will be removed/ Was removed as of
Input component FS_LIST	5.2R3	January 2020
Input component CMS_INPUT_CONTENTAREALIST	5.2R3	
Input component CMS_INPUT_CONTENTLIST	5.2R3	
Input component CMS_INPUT_FILE	5.2R3	
Input component CMS_INPUT_LINKLIST	5.2R3	
Input component CMS_INPUT_OBJECTCHOOSER	5.2R3	
Input component CMS_INPUT_PAGEREF	5.2R3	
Input component CMS_INPUT_PICTURE	5.2R3	
Input component CMS_INPUT_TABLIST	5.2R3	
Oracle Java 7 Support	5.2R15	2018-06



Functionality	Deprecated as of	Will be removed/ Was removed as of
FirstSpirit Developer API: de.espirit.firstspirit.agency.GroupsAgent	5.2R15	
Integrated preview for content (Mozilla Firefox, v3 and v15)	5.2R18	2018-08
Integrated preview for content (Internet Explorer old)	5.2R18	5.2R21
Integrated Jetty	5.2R18	2018-08
FirstSpirit Access API: delete (de.espirit.firstspirit.access.AccessUtil)	5.2R18	
Operating system-specific third-party applications in the AppCenter of the FirstSpirit SiteArchitect (exception: browser Integration)	5.2R19	2018-09
Oracle Berkeley DB 5 Support	5.2R21	2018-11
Oracle Berkeley DB 3 Support	5.2R21	2018-11
Windows installation program	2018-06	June 2020
FirstSpirit Access API: release (de.espirit.firstspirit.access.AccessUtil)	2018-06	
FirstSpirit Developer API: getLastLoginAsDate (de.espirit.firstspirit.agency.UserStatisticsAgent)	2018-07	
FirstSpirit Developer API: remainingDurationOfCurrentStageInMillis (de.espirit.firstspirit.server.MaintenanceModelInfo)	2018-07	
FirstSpirit Developer API: getStartingTimeOfStageAsDate (de.espirit.firstspirit.server.MaintenanceModelInfo)	2018-07	
FirstSpirit Launcher (old)	2018-07	2018-11
Browser Engine "Internet Explorer"	2018-07	2018-11
FirstSpirit Access API: getSelectedWebserverConfiguration (de.espirit.firstspirit.access.serverConfiguration)	2018-10	



Functionality	Deprecated as of	Will be removed/ Was removed as of
FirstSpirit Access API: setSelectedWebserverConfiguration (de.espirit.firstspirit.access.serverConfiguration)	2018-10	
FirstSpirit Access API: getSelectedWebServer (de.espirit.firstspirit.access.project.Project)	2018-10	
FirstSpirit Access API: setSelectedWebServer (de.espirit.firstspirit.access.project.Project)	2018-10	
FirstSpirit Developer API: getLostAndFoundStoreNodes(); (de.espirit.firstspirit.feature.FeatureInstallResult)	2018-10	
FirstSpirit Developer API: getDeletedStoreNodes(); (de.espirit.firstspirit.feature.FeatureInstallResult)	2018-10	
FirstSpirit Access API: de.espirit.firstspirit.access.store.Previewable	2019-01	
Java 8 support for FirstSpirit	2019-05	June 2020
WebSphere Application Server support for FirstSpirit	2019-05	
Solaris support for FirstSpirit	2019-06	2019-10
AIX support for FirstSpirit	2019-06	2019-10
Legacy mode for the FirstSpirit server and module development	2019-06	
PostgreSQL 8.4 support for FirstSpirit	2019-08	2019-08
Java Web Start support for FirstSpirit	2019-10	June 2020
FirstSpirit ContentCreator (old design / old technology)	2019-11	July 2020
Mithras Energy demo project	2020-02	June 2020
Support for Microsoft Internet Explorer for FirstSpirit Web Apps	2020-05	July 2020



30 Overview

ID	Description	Categories	Version
CORE-26	<p>The default value for the <code>sendAccepted</code> parameter when using the Kerberos login module has been changed.</p> <p>Further information can be found in chapter "Administration / Modules: Log in via Kerberos ticket "KerberosLoginModule")".</p>	FirstSpirit Administrator, Modules	5.2R2
CORE-31	A meaningful error message is now displayed when trying to delete the source section of a section reference.	ContentCreator, Editor	5.2R2
CORE-35	<p>In "FirstSpirit ContentTransport", import and export of project properties require at least project administrator privileges, import of server properties requires server administrator privileges.</p> <p>Attempting to create a feature as a standard user without the privilege levels indicated above could lead to erroneous behavior.</p>	Content Transport, Security	5.2R3
CORE-63	The description was not always included for the resolution under the project properties.	FirstSpirit Administrator, ServerManager	5.2R2
CORE-65	The language switching behavior for the input component FS_CATALOG has been optimized.	Input Components, SiteArchitect	5.2R3
CORE-66	After importing a project with historic schedule task data, the history was not taken into account during server shutdown, causing the task history to be unavailable once the server was started again.	FirstSpirit Administrator, Project export / import, ServerManager, Tasks	5.2R2
CORE-72	Optimized behavior when cropping media elements of type Picture multiple times in a row.	Media Store, Services, SiteArchitect	5.2R2
CORE-73	In the input component FS_INDEX, clicking on an invalid reference in the snippet view may have resulted in a malfunction.	Input Components, SiteArchitect	5.2R3



ID	Description	Categories	Version
CORE-74	The template set for preview viewports has been taken into more careful consideration in the “Multi Perspective Preview” function.	Multi Perspective Preview, SiteArchitect	5.2R2
CORE-75	Media type and size restrictions have been taken into more careful consideration in the selection dialog when uploading media.	Media Store, SiteArchitect	5.2R2
CORE-82	When copying a dataset in a data source where a workflow was in progress, the workflow status was erroneously transferred.	Content Store, SiteArchitect, Workflow	5.2R2
CORE-84	In the schema editor, the XML file of the database schema will now be correctly updated when deleting relations.	Developer, Template Development	5.2R2
CORE-87	The process of preselecting the referenced dataset in the selection dialog of the FS_DATASET input component has been improved.	Content Store, Input Components, SiteArchitect	5.2R2
CORE-88	The way version comments for datasets are handled has been optimized.	Content Store, SiteArchitect, Version history	5.2R3
CORE-89	After installation, the option to use the launcher was not activated in the connection settings.	Launcher	5.2R2
CORE-91	Navigation in the server/project properties using the arrow keys (or “cursor keys”) has been optimized.	FirstSpirit Administrator, ServerManager, Tasks	5.2R2
CORE-92	The full-text search has been improved with regard to longer search texts.	Search, SiteArchitect	5.2R3
CORE-100	Revised the set of privileges required to modify menu order.	Permissions, Site Store, SiteArchitect	5.2R2
CORE-101	In ContentCreator, optimized performance when selecting media or page references in the input component FS_REFERENCE.	ContentCreator, Input Components, Performance	5.2R4
CORE-102	Optimized the selection view in the selection dialog (tab “Selection”) for the input component FS_LIST.	Input Components, SiteArchitect	5.2R4



ID	Description	Categories	Version
CORE-114	Optimized "Select project" page of the Template Wizard's project creation/loading dialog.	SiteArchitect, Template Development, Template Wizard	5.2R2
CORE-118	Optimized visualization of elements which are included in a CorporateContent package.	Corporate Content, SiteArchitect	5.2R4
CORE-122	In a workflow, performing a release after a state change triggered via a script in an automatic activity could lead to erroneous behavior.	SiteArchitect, Workflow	5.2R2
CORE-123	Within the FS_LIST (PAGE type) input component, an empty check (EMPTY property) has been optimized for rules.	Dynamic Forms, SiteArchitect	5.2R2
CORE-124	Optimized error handling when starting a workflow which contains an error state.	SiteArchitect, Workflow	5.2R2
CORE-132	The process of reading out the FS_INDEX input component into table templates has been optimized.	ContentCreator, Developer, SiteArchitect, Template Development	5.2R2
CORE-136	Uploading a media file which failed media restriction checks could lead to erroneous behavior.	Media Store, SiteArchitect	5.2R2
CORE-137	When double clicking the resolution of an image in the Media store of SiteArchitect, the corresponding image preview will now be displayed again.	Media Store, SiteArchitect	5.2R2
CORE-138	Optimized generation of details flyouts for report entries.	ContentCreator	5.2R2
CORE-143	Optimized version comparison for subforms.	SiteArchitect	5.2R2
CORE-144	The group/user combo box is now sorted alphabetically in the dialog for configuring the workflow permissions.	Developer, Permissions, Workflow	5.2R2
CORE-145	Optimized clearing of inline formatting in the rich text editor (input component CMS_INPUT_DOM).	ContentCreator, Input Components	5.2R2



ID	Description	Categories	Version
CORE-146	The process of displaying rule violations in subforms (e.g., a link form in the CMS_INPUT_LINK input component) has been optimized.	Dynamic Forms, Input Components, SiteArchitect	5.2R2
CORE-147	After closing a ServerManager dialog when using a Mac OS X operating system, the main window was not always in focus.	Server Administrator, ServerManager	5.2R2
CORE-150	Methods for determining the absolute path to the schedule entry directory Further information can be found in chapter “Module Development, Scripts, API: Methods for determining the absolute path to the schedule entry directory”.	Developer, FirstSpirit API, Generation	5.2R2
CORE-151	In order to comfortably perform updates of modules which include project or web application components, ServerManager provides the button “Update uses” under “Server / Properties / Modules”. Erroneously, not all changes were regarded after updating a module and updating uses of module components.	Modules, ServerManager	5.2R3
CORE-153	The content of input components can be checked in rules with a regular expression (matches). The regular expression can be used to check whether the editor has included at least one character which is not the equivalent of a whitespace character (blank space, tab space, etc.). A problem could occur during a check of this type if the editor had never made changes to an input component.	Dynamic Forms, SiteArchitect	5.2R2
CORE-158	Performance improvements in the area SiteArchitect.	SiteArchitect	5.2R3
CORE-160	It is now possible to restrict the use of action templates. Further information can be found in chapter “Administration: Setting restrictions on the use of action templates”.	FirstSpirit Administrator, Server Administrator, ServerManager, Tasks	2018-06



ID	Description	Categories	Version
CORE-163 CORE-204	Improved support of input components FS_CATALOG and FS_INDEX in subforms.	Input Components, SiteArchitect	5.2R2
CORE-164	Modules with required missing references to other modules are now visualized appropriately in FirstSpirit ServerManager and can be uninstalled from the FirstSpirit Server without leaving any traces. Further information can be found in chapter “Module Development, Scripts, API: Handling dependent modules”.	FirstSpirit Administrator, Module development, ServerManager	5.2R2
CORE-170	Improved performance in aspects of external synchronization.	External synchronization, SiteArchitect	5.2R2
CORE-171	In “External Synchronization”, improved handling of invalid form elements and erroneous rule definitions.	External synchronization	5.2R4
CORE-178	Logging of the ContentCreator may have resulted in a malfunction when using the “FirstSpirit DynamicPersonalization” module.	ContentCreator, Modules	5.2R2
CORE-179 CORE-111	The FirstSpirit Launcher functions have been improved.	Launcher, SiteArchitect	5.2R2
CORE-181	Importing a project export, which has been created with FirstSpirit version 5.0R4 or lower, may have resulted in a malfunction in URLs for individual datasets.	FirstSpirit Administrator, Project export / import	5.2R2
CORE-186	Optimized interaction pattern when executing workflows with automatic actions on multiple objects.	SiteArchitect, Workflow	5.2R7
CORE-187	FirstSpirit version 5.2R3 introduces the new interfaces <code>OpenComparisonDialogOperation</code> and <code>OpenMergeDialogOperation</code> (both in the package <code>de.espirit.firstspirit.ui.operations</code> , FirstSpirit Developer-API). Further information can be found in chapter “Module Development, Scripts, API: New Interfaces to Open Version Comparison and Merge Dialogs”.	Developer, FirstSpirit API, SiteArchitect	5.2R3



ID	Description	Categories	Version
CORE-189	The display for the design elements (CMS_LABEL or CMS_GROUP), which is controlled by rules, has been improved.	ContentCreator, Dynamic Forms, Input Components	5.2R2
CORE-191	Optimized output of nested levels in FS_INDEX input components.	Developer, SiteArchitect, Template Development	5.2R2
CORE-192	In the CMS_INPUT_IMAGE_MAP input component, the display of remote media has been optimized.	ContentCreator, Input Components	5.2R2
CORE-194	The sending of an e-mail to a list of users or user groups has been improved in a workflow. Further information can be found in chapter "SiteArchitect: Configuring e-mail messaging in workflows".	Developer, SiteArchitect, Workflow	5.2R2
CORE-197	Deleting an entry with a rule violation in the FS_CATALOG input component, may have resulted in a malfunction.	Dynamic Forms, Input Components, SiteArchitect	5.2R2
CORE-202	When populating an FS_INDEX input component via drag and drop from a report, restrictions imposed by the rule property "ADD" were not taken into account.	Dynamic Forms, Input Components, SiteArchitect	5.2R2
CORE-203	The process of updating the detail page of a content projection in the integrated preview when editing a dataset has been optimized.	Content Store, Preview, SiteArchitect	5.2R2
CORE-208	When creating language-dependent media via drag-and-drop from another language, the file was erroneously not transferred from the source language.	Media Store, SiteArchitect	5.2R2
CORE-212	The process of generating content from an FS_INDEX input component in a nested structure has been improved.	Developer, Generation, Input Components	5.2R2
CORE-213	Improved display of mappings in table templates for projects with many languages.	Developer, SiteArchitect, Table templates, Template Development	5.2R2



ID	Description	Categories	Version
CORE-214	Optimized rendering of the input components FS_CATALOG and FS_INDEX.	SiteArchitect	5.2R16
CORE-215	Optimized editing of metadata on the root node of the Site Structure store.	ContentCreator, Site Store	5.2R3
CORE-219	Capitalization is no longer taken into consideration when performing global searches in the “Search in templates” system filter.	Search, SiteArchitect	5.2R2
CORE-220	In “Content Transport” functionality, installing a feature could lead to erroneous behavior if the feature contained the project property “Schedule entries”, wherein one of the schedule entries referenced an action template.	Content Transport	5.2R3
CORE-221	In “Content Transport” functionality, optimized interaction pattern for assembly of features that should only contain project properties.	Content Transport	5.2R3
CORE-229	The <i>getHeight()</i> method from the “MappingMedium” interface (Access API, <i>de.espirit.firstspirit.access.editor.value</i> package) has been optimized.	Developer, SiteArchitect, Template Development	5.2R2
CORE-230	Improvements have been made to date selection in the CMS_INPUT_DATE input component.	ContentCreator	2018-07
CORE-232	Optimized output of inherited variable values of a menu level in the Site Structure store.	Site Store, SiteArchitect	5.2R2
CORE-238	Disabling the “Delete” icon for the input component FS_LIST (no <code><ACTION name="REMOVE" /></code> defined) was erroneously not observed in ContentCreator.	ContentCreator, Input Components	5.2R5
CORE-243	Links without link text in the CMS_INPUT_DOM input component may have resulted in a malfunction within the indexing process.	FirstSpirit Administrator, Indexing, Input Components	5.2R2
CORE-244	The FS_LIST (DATABASE type) input component was liable to malfunctions when using language-independent input components in the internal form in conjunction with rules.	Dynamic Forms, Input Components, SiteArchitect	5.2R2



ID	Description	Categories	Version
CORE-245	<p>In rare cases, specific configurations of FS_REFERENCE could lead to erroneous behavior in ContentCreator: in such cases, not all elements eligible for selection were displayed.</p> <p>Further information can be found in chapter “ContentCreator: Filter in FS_REFERENCE via <SOURCES>”.</p>	ContentCreator, Developer, Input Components	5.2R3
CORE-253	In very rare instances, the defined rules (“Dynamic forms” functionality) were erroneously not taken into account in a data source.	Content Store, Dynamic Forms, SiteArchitect	5.2R3
CORE-260	For a project, several remote projects can be configured that all have the same remote category. In an error case (e.g. if a remote project was deleted), the error message now mentions the symbolic name of the project in question when saving the remote configuration of an input component (e.g. FS_REFERENCE, tag <CATEGORY>).	Remote access, SiteArchitect	5.2R12
CORE-264	An external group may be used on a FirstSpirit server in order to assign server administrator privileges to this group (user settings, attribute “Server Administrator”). Furthermore, it is possible to prohibit the server administrator (user “Admin”) to perform editorial activities in a project (i.e. to open a project). Erroneously, this prohibition was also applied to users with server administrator privileges.	Corporate Content, Editor, Permissions, Server Administrator, SiteArchitect	5.2R3
CORE-275	In the input component CMS_INPUT_DOMTABLE (enableImport=“yes” option), inserting content from Microsoft Excel may have resulted in a malfunction.	Clipboard, Input Components, SiteArchitect	5.2R3
CORE-278	Improved performance of importing media with many resolutions.	Content Transport	5.2R4
CORE-281	Optimized interaction pattern when cancelling a workflow.	ContentCreator	5.2R6
CORE-289	The ability for several users to edit a dataset in parallel has been optimized.	Content Store, SiteArchitect	5.2R2



ID	Description	Categories	Version
CORE-297	<p>It is only possible to define a group exclusion in workflows for transitions which point to an activity. From FirstSpirit version 5.2R3 onward, this definition is now also prevented in the GUI for transitions which point to a status.</p> <p>Further information can be found in chapter "SiteArchitect: 'Group exclusion' function for transitions in workflows".</p>	Developer, Permissions, SiteArchitect, Workflow	5.2R3
CORE-299	In ContentCreator, adding new media to a folder could lead to erroneous behavior if the project's master language was not configured to be used as an editorial language.	ContentCreator, Media Store	5.2R5
CORE-300	Optimized scrolling and loading of entries in reports (data access plug-ins).	Reports, SiteArchitect	5.2R3
CORE-301	Reloading the entries in the selection dialog in the FS_INDEX input component has been optimized.	Input Components, SiteArchitect	5.2R3
CORE-305	Optimized output of nested input component FS_INDEX in snippets.	Corporate Content, Input Components, SiteArchitect, Template Development	5.2R3
CORE-316	Starting a workflow on a dataset could cause the dataset to lose focus.	Content Store, Workflow	5.2R3
CORE-317	Creating a new dataset by copying data from an existing dataset could lead to erroneous behavior if the form contained the input component CMS_INPUT_DOM.	Content Store, ContentCreator, Input Components	5.2R2
CORE-325	When executing the method <code>delete(IDProvider, boolean)</code> (FirstSpirit Access API, package <code>de.espirit.firstspirit.access</code> , class <code>AccessUtil</code>) on a dataset, the data source was deleted erroneously. Now, an error message is generated which states that a dataset cannot be deleted using the method above.	Content Store, Developer	5.2R3
CORE-326	When importing media using "Template Wizard" functionality, the option "Parse file" will now only be activated for files of types "css" and "js".	Media Store, Template Wizard	5.2R3



ID	Description	Categories	Version
CORE-328	Optimizations related to TLS encryption.	Security	5.2R3
CORE-331	Optimized consideration of edit mode when moving sections.	SiteArchitect	5.2R18
CORE-336	In rules, improved evaluation of the property <code>FOCUS</code> when using the input components <code>CMS_INPUT_TOGGLE (type=radio)</code> and <code>CMS_INPUT_RADIOBUTTON</code> .	Dynamic Forms, Input Components	2018-11
CORE-339	Optimized indexing of datasets when using external data sources.	Indexing	2018-07
CORE-342	In the case of older Mac OS X versions (e.g., 10.7), the internal check of the operating system version in SiteArchitect may have resulted in a malfunction.	SiteArchitect	5.2R3
CORE-345	Optimized validation hints in forms of inner entries of the input component <code>FS_CATALOG</code> .	Dynamic Forms, Input Components, SiteArchitect	5.2R2
CORE-346	In the input component <code>FS_CATALOG</code> , clicking the button “New” (and selecting the desired template, if necessary) now opens the form associated with the new entry so that the editor may directly input the desired content. Further information can be found in chapter “ContentCreator: <code>FS_CATALOG</code> : New Entry Form Is Opened Immediately”.	ContentCreator, Editor, Input Components	5.2R19
CORE-347	For the input component <code>FS_CATALOG</code> , the behavior when creating a new entry and then canceling editing without saving changes has been optimized.	Input Components, SiteArchitect	5.2R3
CORE-348	Creation of duplicate log directories will now be prevented.	FirstSpirit Administrator	5.2R3
CORE-353	Optimized editing of contents of the input component <code>CMS_INPUT_DOM</code> within <code>FS_LIST</code> using <code>InEdit</code> functionality.	ContentCreator	5.2R19
CORE-355	The search performance in customer-specific reports (“ReportPlugin”) has been optimized.	ContentCreator, Reports	5.2R3



ID	Description	Categories	Version
CORE-359	In the “Edit image section” dialog in ContentCreator, rotating or flipping an image section were erroneously not recognized as changes.	ContentCreator, Media Store	5.2R5
CORE-365	Restoring a deleted dataset with the input component FS_LIST (DATABASE type) may have failed with an error message.	Input Components, SiteArchitect	5.2R4
CORE-367	Optimized display of the bookmark drop-down list which is accessible via the bookmark button in the horizontal toolbar of SiteArchitect.	Bookmarks, SiteArchitect	5.2R3
CORE-384	In the “Extras” menu item, evaluation of the “Show preview errors” setting has been improved.	Preview, SiteArchitect	5.2R5
CORE-404	In a data source, an already released dataset was erroneously displayed as not released after starting a workflow.	Content Store, SiteArchitect, Workflow	5.2R2
CORE-414	In rare cases some selection dialogues were rendered incorrectly.	SiteArchitect	5.2R19
CORE-417	The page status display, reached via the ContentCreator toolbar, erroneously displayed the most recent editor and the most recent release date of the page reference, not of the page element.	ContentCreator	5.2R5
CORE-423	Drag-and-drop of a medium from the Media Store into the local filesystem could lead to erroneous behavior. The launcher has to be updated in order to apply this fix.	Launcher, SiteArchitect	5.2R9
CORE-424	Under certain conditions, errors could occur when using the search for ID in the status row of the data source overview.	Content Store, Search, SiteArchitect	2018-07



ID	Description	Categories	Version
CORE-426	In SiteArchitect, the selection dialog offers navigation and search functionality which enable quick location of objects which are to be referenced, e.g. images or files from the Media store or page references from the Site Structure store (e.g. input components FS_REFERENCE, FS_LIST, FS_DATASET). In FirstSpirit version 5.2R5, the search interaction pattern in this dialog has been optimized. Further information can be found in chapter “SiteArchitect: Optimization of selection dialog”.	Editor, Search, SiteArchitect	5.2R5
CORE-427	Support for section templates with long names has been improved.	ContentCreator	2018-07
CORE-429 CORE-9178 CORE-9179	For the “FirstSpirit Template Wizard”, “FirstSpirit Template Debugger”, and “FirstSpirit Template Inspection”, permissions can now be granted so that these tools can now only be accessed by certain user groups. Further information can be found in chapter “Administration: Permissions for FirstSpirit modules (Template Wizard, Template Debugger, Template Inspection)”.	Developer, FirstSpirit Administrator, Permissions, ServerManager, SiteArchitect, Template Debugger, Template Wizard	5.2R2
CORE-430	In very rare cases, erroneous behavior could occur during project export.	Project export / import	5.2R4
CORE-432	In the input component FS_LIST (type INLINE), optimized editing an entry in a separate window.	Input Components, SiteArchitect	5.2R6
CORE-439	The validation behavior for the input component FS_LIST (type DATABASE) operating in “Mediamode” has been optimized.	ContentCreator, Dynamic Forms	5.2R6
CORE-443	When renaming a project with an existing remote connection, the remote configuration can now be adjusted automatically. Further information can be found in chapter “Administration: Renaming Projects With Remote Connection”.	FirstSpirit Administrator, Modules, Remote access, ServerManager	2018-09
CORE-445	The assignment of feature names has been optimized.	Content Transport	2018-08



ID	Description	Categories	Version
CORE-446	Editing a restored section may have resulted in a malfunction.	ContentCreator	5.2R3
CORE-449	When adding folders to the Media store using drag-and-drop, the folders' display names will now automatically be set.	Media Store, SiteArchitect	5.2R4
CORE-455	Under certain conditions (a node has been moved and modified at the same time in the source project), nodes were not updated correctly in the target project.	Content Transport, SiteArchitect	5.2R3
CORE-461	Restoring revisions resulted in a malfunction on pages if the child list had been changed by means of a previous restoration process.	Page Store, SiteArchitect	5.2R3
CORE-463	Improved visualization of changes in version comparison.	SiteArchitect, Version history	5.2R7
CORE-466	Optimized performance when adding elements to CorporateContent packages.	Corporate Content, FirstSpirit Administrator, ServerManager	5.2R3
CORE-467	Resource limit settings (<i>ulimit</i>) now remain unchanged when the FirstSpirit server is started.	FirstSpirit Administrator	5.2R4
CORE-468	Dynamic forms now allow canceling of rules evaluation related to complex, long-running rulesets.	Dynamic Forms, SiteArchitect	5.2R2
CORE-476	The global search functionality supports drag and drop of input components onto the search field. For an FS_DATASET input component referencing a certain dataset, search results now include elements which also reference that dataset.	Input Components, Search, SiteArchitect	5.2R3
CORE-484	The process of updating the preview has been improved.	ContentCreator, Preview	5.2R3
CORE-487 CORE-1700	In the input component CMS_INPUT_COMBOBOX, input of custom values (parameter <i>editable</i> ="yes") could lead to erroneous behavior.	Input Components	5.2R4



ID	Description	Categories	Version
CORE-490	The way encrypted/protected PDF files are handled has been improved.	Indexing, Search, Security	5.2R3
CORE-493	The response time when editing images in projects with many image resolutions has been improved.	Media Store, SiteArchitect	5.2R3
CORE-494	In the input component FS_LIST (DATABASE type), the referenced dataset was erroneously marked as changed when an entry was added.	Input Components, SiteArchitect	5.2R3
CORE-497	Erroneous behavior could occur during execution of workflow scripts.	ContentCreator, Workflow	5.2R3
CORE-500	Simplified creation of new entries in FS_CATALOG in SiteArchitect. Further information can be found in chapter "SiteArchitect: Simplified Creation of Entries in FS_CATALOG".	Editor, Input Components	5.2R4
CORE-513	In ContentCreator, the height of the input component "Link-Sensitive Graphic" (CMS_INPUT_IMAGE_MAP) can now be adjusted. Further information can be found in chapter "ContentCreator: Stepless Resizing of the Input Component "Link-Sensitive Graphic" (CMS_INPUT_IMAGE_MAP)".	ContentCreator, Editor, Input Components	5.2R3
CORE-514	Using a schema generated from an Oracle database could result in incorrect queries.	Database	2018-07
CORE-515	Optimized behavior when releasing a node which has been restored.	SiteArchitect, Workflow	5.2R3
CORE-520	With newly-created API means, it is now possible to modify FeatureDescriptor objects stored server-side and to save them again. Further information can be found in chapter "Module Development, Scripts, API: Modifying FeatureDescriptor objects stored server-side via API".	Content Transport, FirstSpirit API	5.2R12



ID	Description	Categories	Version
CORE-521	In rare cases, searching for datasets in projects which use project archiving may have resulted in an error.	Archiving, FirstSpirit Administrator, Search	5.2R3
CORE-525	In templates, optimized display of editable tables in the "Properties" tab (e.g., page templates / tab "Properties" / tab "General" / table "File extension").	SiteArchitect, Template Development, Template Store	5.2R3
CORE-541	From FirstSpirit version 5.2R3 onward, individual web app components can now also be added to global web apps (BETA!). Further information can be found in chapter "Module Development, Scripts, API: Individualizing the global FirstSpirit web applications (BETA!)".	Developer, Module development, ServerManager	5.2R3
CORE-542	When creating a new page, the option "Hide in selection list" for the page template used was erroneously not taken into account.	ContentCreator, Template Store	5.2R3
CORE-543	Optimized thumbnail display during search in the selection dialog of the input component FS_INDEX.	Input Components, SiteArchitect	5.2R4
CORE-549 CORE-939 CORE-2053	In FirstSpirit version 5.2R4, updated internally used software. Further information can be found in chapter "System: Integrated Software".	Database, Integrated software, Launcher, Security, Server Administrator	5.2R4
CORE-551	An error could occur when editing links in the input component CMS_INPUT_DOMTABLE.	SiteArchitect	2019-05
CORE-557	The interface <code>MediaManagementContext</code> in the package <code>de.espirit.firstspirit.webedit.plugin.media</code> (FirstSpirit Developer API) has been extended with new methods. Further information can be found in chapter "Module Development, Scripts, API: ContentCreator: Modify view of the dialog "Manage media" (<code>de.espirit.firstspirit.webedit.plugin.media</code>)".	ContentCreator, Developer, FirstSpirit API, Media Store	5.2R7



ID	Description	Categories	Version
CORE-562	Improved stability of project repository conversion.	Database, FirstSpirit Administrator, ServerManager	5.2R4
CORE-563	Saving of store elements and datasets can now be triggered programmatically via the API using the new interface <code>SaveOperation</code> (package <code>de.espirit.firstspirit.store.operations</code> , FirstSpirit Access API). Further information can be found in chapter “Module Development, Scripts, API: Saving Elements”.	Developer, FirstSpirit API	5.2R18
CORE-577	Canceling a workflow in ContentCreator immediately after starting it could lead to erroneous behavior.	ContentCreator, Workflow	5.2R3
CORE-583	Improved interaction pattern related to translation help functionality. The button “Adopt contents” will now only be shown for language-dependent input components. (Language-neutral components only have one content value each which is the same for every language.) Further information can be found in chapter “SiteArchitect: Translation help: improved interaction when adopting contents”.	Input Components, SiteArchitect	2018-09
CORE-585	Improved the process of populating an FS_REFERENCE input component via drag and drop using a medium from the FirstSpirit clipboard.	Clipboard, Input Components, SiteArchitect	5.2R4
CORE-598 CORE-598	In the language-independent input components FS_CATALOG and FS_LIST (INLINE type), the input components of sections are now highlighted again when checking for TRANSLATED within a rule (“dynamic forms” functionality).	ContentCreator, Dynamic Forms, Input Components	5.2R3
CORE-608	In rare cases, the parameter <code>wrapper.pidfile</code> , set in the configuration file “fs-wrapper.conf”, was not considered in Linux environments.	Server Administrator	5.2R4



ID	Description	Categories	Version
CORE-609	In the input component FS_REFERENCE with a filter for data sources (<FILTER> tag with the element type CONTENT2), opening the selection dialog could lead to erroneous behavior.	Input Components, SiteArchitect	5.2R3
CORE-612	Weighting of content in search results may be specified per input component using the parameter <code>searchRelevancy</code> . Further information can be found in chapter “Search: Weighting of Contents in Input Components”.	ContentCreator, Developer, Indexing, Input Components, Search, SiteArchitect, Table templates, Template Development, Template Store	5.2R3
CORE-624	Added an icon for refreshing package display. Further information can be found in chapter “Modules: Corporate Content: Refresh package display”.	Corporate Content	5.2R4
CORE-630	Optimized interaction pattern when restoring a dataset which referenced other datasets.	Content Store, SiteArchitect	2018-11
CORE-634	Improved indexing of files with file name extensions “html”, “json”, and “php”.	Indexing, Search	5.2R4
CORE-636	Erroneous behavior could arise when using language-dependent images in the input component CMS_INPUT_IMAGE_MAP within metadata.	Input Components	2018-10
CORE-646	Optimized clean-up of technical sessions which were established via remote projects.	Server Administrator	5.2R3
CORE-647	The new interface <code>DeleteOperation</code> in the package <code>de.espirit.firstspirit.store.operations</code> (FirstSpirit Developer API) may be used to carry out server-side deletion of FirstSpirit elements and datasets. Further information can be found in chapter “Module Development, Scripts, API: Deleting Elements”.	Developer, FirstSpirit API	5.2R18



ID	Description	Categories	Version
CORE-651	In FirstSpirit version 5.2R2 and higher, proxy authentication based on Kerberos/SPNEGO or NTLM is supported through HTTP. Further information can be found in chapter “Administration: Proxy authentication via Kerberos/SPNEGO or NTLM”.	FirstSpirit Administrator, Security	5.2R2
CORE-658	Concurrent editing of a dataset by multiple users / in multiple clients could lead to erroneous behavior.	Content Store, SiteArchitect	5.2R3
CORE-660	Performance improvements in the area SiteArchitect / ServerManager.	ServerManager, SiteArchitect	5.2R2
CORE-668	For page references, optimized display of changes in the version history.	SiteArchitect, Version history	5.2R5
CORE-669	In the input component FS_INDEX, the creation of a new dataset has been improved.	Input Components	5.2R20
CORE-670	Deleting a dataset which contains a reference to itself could lead to erroneous behavior.	Content Store, SiteArchitect	5.2R3
CORE-681	Optimized the user interface of the details view of the input component FS_INDEX: the tabs in the details view will now be reused and visualize an active edit mode. Further information can be found in chapter “SiteArchitect: FS_INDEX: Reuse of tabs in the details view”.	SiteArchitect	5.2R5
CORE-682	In rare cases, modifications were not handled properly in nested FS_LIST input components (type DATABASE).	Input Components, SiteArchitect	5.2R3
CORE-683	Updated the integrated Chrome browser engine “JxBrowser” to version 4.9.5. Further information can be found in chapter “System: Integrated Software”.	Preview, SiteArchitect	5.2R3
CORE-686	Exporting a database schema including its current data could lead to erroneous behavior.	Content Store, SiteArchitect, Template Store	5.2R3



ID	Description	Categories	Version
CORE-687	When transporting project properties via external synchronization (using the API), updates were occasionally not recognized.	Developer, External synchronization, FirstSpirit API	5.2R3
CORE-688	Recalculation of references is now supported for individual elements using the new API object <code>ProjectReferencesAgent</code> . Further information can be found in chapter “Module Development, Scripts, API: Recalculation of references for individual elements via <code>ProjectReferencesAgent</code> ”.	Developer, FirstSpirit API	5.2R3
CORE-689	In rare cases, selecting a remote object may have resulted in a malfunction.	ContentCreator, Input Components	5.2R3
CORE-692 CORE-794	Performing edits in image galleries (input component FS_LIST, type DATABASE with the tag <code><MEDIAMODE></code>) could lead to erroneous behavior.	ContentCreator, Input Components	5.2R3
CORE-696	In the case of the input component FS_CATALOG, the revalidation process when modifying the options “Include this section in the output” (property INCLUDED) or “Page is completely translated to this language” (property TRANSLATED) in subforms has been optimized.	Dynamic Forms, Input Components, SiteArchitect	5.2R3
CORE-697	In the case of the input components FS_CATALOG, FS_LIST (INLINE type), and CMS_INPUT_IMAGE_MAP, the revalidation process when modifying the options “Display or hide section” (property INCLUDED) or “Page is completely translated to this language” (property TRANSLATED) in subforms has been optimized.	ContentCreator, Dynamic Forms, Input Components	5.2R3
CORE-703	FirstSpirit version 5.2R3 enables sending e-mails via SMTP using authenticated connections. Authentication is configured in the configuration file <code>fs-server.conf</code> . Further information can be found in chapter “Administration: SMTP Authentication”.	FirstSpirit Administrator, Security, ServerManager	5.2R3



ID	Description	Categories	Version
CORE-712	<p>The “Merge” functionality in some tabs of the “Version comparison” dialog is now no longer available or only available with appropriate user privileges.</p> <p>Further information can be found in chapter “SiteArchitect: Selection of revisions for merge”.</p>	Developer, SiteArchitect, Template Development, Version history	5.2R4
CORE-718	<p>The filter and sorting functionality for datasets has been extended in SiteArchitect. Not released datasets in the tab “Current datasets” and deleted datasets in the tab “Released datasets” can now be identified more quickly.</p> <p>Further information can be found in chapter “SiteArchitect: Extended Filter and Sorting Functionality for Datasets”.</p>	Content Store, Editor, SiteArchitect, Table templates	5.2R3
CORE-719	<p>The newly-introduced parameter <code>preview.externalDeliveryForwardHttpHeaders</code> (<code>fs-server.conf</code>) defines if, and which, HTTP header fields will be forwarded to the external web server, which is specified by the parameter <code>preview.externalDeliveryURL</code>.</p> <p>Further information can be found in chapter “Administration: Forwarding of HTTP Header Information to an External Preview URL”.</p>	FirstSpirit Administrator, ServerManager	5.2R3
CORE-739	In certain cases, the output of <code>CMS_INPUT_PERMISSION</code> values in templates may have resulted in a malfunction.	Input Components, SiteArchitect	5.2R3
CORE-742	<p>Package <code>de.espirit.firstspirit.ui.gadgets.swing</code> (FirstSpirit Developer-API) extended by the class <code>SwingFormViewMode</code>.</p> <p>Further information can be found in chapter “Module Development, Scripts, API: SwingGadget Development: New Class “SwingFormViewMode””.</p>	Developer, FirstSpirit API, Input Components, Module development, SiteArchitect	5.2R9
CORE-743	Deleting a new dataset which had never been saved may have resulted in a malfunction.	Content Store, SiteArchitect	5.2R3



ID	Description	Categories	Version
CORE-753	Media restrictions: Improved identification of file format of media uploaded via drag-and-drop. Further information can be found in chapter “Media: Optimized identification of file format of media uploaded via drag-and-drop”.	ContentCreator, Developer, Editor, Media Store, ServerManager, SiteArchitect	5.2R4
CORE-760	Using the new method <code>stopMaintenance</code> (FirstSpirit Access API, <code>de.espirit.firstspirit.access.AdminService</code>), maintenance mode may be cancelled via the API. Further information can be found in chapter “Module Development, Scripts, API: New Method for Cancelling Maintenance Mode”.	FirstSpirit API, FirstSpirit Administrator	5.2R3
CORE-767	Improved search in log files in ServerMonitoring.	Search, ServerMonitoring	5.2R5
CORE-768	FirstSpirit-Version 5.2R3 includes a bugfix which provides extensive protection against a Java vulnerability in connection with serialization/deserialization. Further information can be found in chapter “Security: Java Vulnerability (Serialization/Deserialization)”.	FirstSpirit Administrator, Module development, Modules, Security	5.2R3
CORE-773	Optimized display of recently used objects from remote projects for input components that use selection dialogs for selection of references (FS_REFERENCE, CMS_INPUT_IMAGE_MAP, links...).	SiteArchitect	5.2R8
CORE-778	In translation help, improved adoption of content within entries of FS_CATALOG input components.	Input Components, SiteArchitect	5.2R4
CORE-780	Longer periods of inactivity could lead to erroneous behavior when requesting the FirstSpirit start page.	Webstart	5.2R5
CORE-802	In very rare cases, when using server-side release after move operations, already released objects could not be found.	Release	5.2R4



ID	Description	Categories	Version
CORE-807	Starting a FirstSpirit server could lead to erroneous behavior if the user's home directory could not be written to.	FirstSpirit Administrator	5.2R3
CORE-811	If a web server has been configured incorrectly, the installation of a web application on the server is now prevented.	FirstSpirit Administrator, ServerManager	5.2R3
CORE-824	When using the module "FirstSpirit Security", the FirstSpirit Access Control Database was not created correctly in the web application directory when deploying the WAR file on an external web server (e.g., Tomcat 7).	Developer, FirstSpirit Administrator, Modules	5.2R3
CORE-825	During creation of a new package version, erroneous behavior could occur.	Corporate Content	5.2R6
CORE-826	When using an IBM DB2 database, modifying foreign key relationships could lead to erroneous behavior.	Content Store, Database	5.2R3
CORE-830	If certain prerequisites were met, erroneous behavior could occur when creating a table template after integrating an external database.	Database, Table templates	5.2R4
CORE-833	Improvements in the area Template Wizard.	Template Wizard	5.2R4
CORE-835	Improved output of input component FS_INDEX in metadata.	Corporate Content, Input Components, SiteArchitect, Template Development	5.2R3
CORE-842	The storage behavior for archiving system files ("Archive old project states" schedule) has been optimized.	Archiving	5.2R3
CORE-857	In FirstSpirit version 5.2R3, a number of new interfaces and methods for implementing personal schedule actions have been included in the FirstSpirit Developer API. Further information can be found in chapter "Module Development, Scripts, API: New interfaces and methods for implementing personal schedule actions".	Developer, FirstSpirit API, Generation, Tasks	5.2R3



ID	Description	Categories	Version
CORE-865 CORE-876 CORE-883	<p>FirstSpirit version 5.2R3 features several optimizations related to use of the FirstSpirit Launcher. This includes security improvements (use via HTTPS, use of cookies, consideration of permissions).</p> <p>Further information can be found in chapter “Administration: Optimizations related to use of the FirstSpirit Launcher”.</p>	FirstSpirit Administrator, Launcher, Security, Server Administrator, Webstart	5.2R3
CORE-885	<p>From the current version of FirstSpirit onwards, the use of language-dependent input components within a language-dependent FS_CATALOG input component will be disallowed by default.</p> <p>Further information can be found in chapter “Input components: FS_CATALOG: Nesting of language-dependent input components”.</p>	ContentCreator, Developer, Editor, FirstSpirit API, FirstSpirit Administrator, Input Components, ServerManager, SiteArchitect	5.2R5
CORE-886	Improved performance when saving project settings (“SiteArchitect / Global settings”) with large amounts of data.	Global settings	5.2R4
CORE-892	<p>As of the current FirstSpirit version, the software used internally for integrated preview has been updated.</p> <p>Further information can be found in chapter “SiteArchitect: Integrated preview: Updated third-party software”.</p>	Integrated software, Preview, SiteArchitect	5.2R7
CORE-897	Changing a dataset using a workflow and a workflow script could lead to erroneous behavior.	Content Store, SiteArchitect, Workflow	5.2R3
CORE-906	<p>The current FirstSpirit version provides MBeans in the JMX console entry “ConnectionPool” which allow visualization and control of database connections.</p> <p>Further information can be found in chapter “Administration: MBeans for visualization and control of database connections (“ConnectionPool”)”.</p>	Database, FirstSpirit Administrator	5.2R5
CORE-914	Improved search in data sources.	ContentCreator, Search, SiteArchitect	5.2R4



ID	Description	Categories	Version
CORE-915	Improved consideration of access privileges on page templates.	ContentCreator, Permissions	5.2R4
CORE-916	In the input component FS_LIST (type DATABASE), selection of datasets could lead to erroneous behavior if an associated query (tag QUERY) used the wildcard %lang% for language-dependent content for a column.	Content Store, SiteArchitect	5.2R4
CORE-917	Optimized evaluation of a parameter from a page reference that is passed to a database query.	Database	5.2R6
CORE-918	After installation of a feature in a target project, in rare cases, the order of sections within an updated page could be changed.	Content Transport, Page Store	5.2R3
CORE-924	As of the current FirstSpirit version, e-mail addresses with special characters in the domain part ("IDN domains", RFC 3490) may be used, e.g. "info@müller.de". Related to this change, several modifications were made to the FirstSpirit Access API. Further information can be found in chapter "Module Development, Scripts, API: E-mail addresses with special characters in the domain part".	FirstSpirit API, Server Administrator	5.2R6
CORE-944	You can use the method <code>getModifiedProjectProperties()</code> of the interface <code>ImportOperation.Result</code> (FirstSpirit Developer API, package <code>de.espirit.firstspirit.store.access.nexport.c</code> which has been introduced with FirstSpirit version 5.2R4, to identify if and which type of project settings were imported (for example template sets). Further information can be found in chapter "External Synchronization: New method "getModifiedProjectProperties" returns imported project properties".	External synchronization	5.2R4



ID	Description	Categories	Version
CORE-945	<p>Deletion of objects in one project will now be correctly regarded during an import into other projects. This also affects “FirstSpirit ContentTransport”.</p> <p>Further information can be found in chapter “External Synchronization: Import: Deletion of objects”.</p>	Content Transport, External synchronization	5.2R14
CORE-946	<p>When using the functionality “External Synchronization”, the preview page of a template was erroneously not considered after import.</p>	External synchronization	5.2R4
CORE-951	<p>Improved handling of folders with identical names in the External Synchronization user interface.</p>	External synchronization, SiteArchitect	5.2R3
CORE-953	<p>In external synchronization, optimized content of the file <code>Info.txt</code> for media.</p> <p>This file no longer contains resolution information, which is part of global project properties.</p>	External synchronization	5.2R4
CORE-962	<p>Deprecated the methods <code>addStartNode(IDProvider)</code> and <code>removeStartNode(IDProvider)</code> in the interface <code>Package</code> (FirstSpirit Access API, package <code>de.espirit.firstspirit.access.packagepool</code>).</p> <p>These methods may be removed from the Access API with the next major FirstSpirit version (6.0).</p> <p>Nodes may be added to and removed from a “Package” object (supplied as a parameter) by using the methods <code>addToPackage(Package)</code> and <code>removeFromPackage(Package)</code>, respectively, of the interface <code>PackagePoolItem</code> (FirstSpirit Access API, package <code>de.espirit.firstspirit.access.store</code>). All objects which may be added to a Corporate Content package implement this interface.</p>	Corporate Content, Developer, FirstSpirit API	5.2R3



ID	Description	Categories	Version
CORE-965	In ContentCreator forms, depending on the browser, display of an input component which references a data source that contains many datasets may be slow. As of FirstSpirit 5.2R4, the display is thus limited to 100 entries. Further information can be found in chapter “ContentCreator: Improved performance when displaying datasets in input components”.	Content Store, ContentCreator, Developer, Editor, Input Components, Template Development	5.2R4
CORE-970 CORE-1813	Improved import behavior in External Synchronization used via API.	External synchronization	5.2R4
CORE-981	Pressing Ctrl and hovering the mouse cursor over template code now visualizes referenced FirstSpirit elements while Ctrl + KCLICK jumps to the referenced element. Further information can be found in chapter “SiteArchitect: Jumping to References in Template Code”.	Developer, Template Development, Template Store	5.2R9
CORE-982	Some optimizations have been made to the “Form” and “Rules” tabs for the purpose of code completion in the latest FirstSpirit version. Further information can be found in chapter “SiteArchitect: Code completion optimizations”.	Developer, Dynamic Forms, SiteArchitect, Template Development, Template Store	5.2R7
CORE-994	Improved thumbnail display for media in Media store folders.	Media Store, SiteArchitect	5.2R5
CORE-996 CORE-3520	Improved refreshing the preview after making changes in subforms.	ContentCreator	5.2R6
CORE-999	When clicking on an unfiltered data source the internal preview erroneously was not updated.	SiteArchitect	2018-07
CORE-1008	Improved user interface when creating multiple thread dumps (menu entry “FirstSpirit / Monitoring / Threads”) in FirstSpirit ServerMonitoring.	ServerMonitoring	5.2R3
CORE-1015	In external synchronization, media were erroneously not updated during import.	External synchronization	5.2R4



ID	Description	Categories	Version
CORE-1020	Corrected standard release workflow.	Workflow	5.2R4
CORE-1021	Security improvements related to server-side script execution.	Security, Server Administrator	2018-09
CORE-1024	Editing referenced datasets in nested FS_LIST (type DATABASE) input components could lead to erroneous behavior.	Input Components, SiteArchitect	5.2R4
CORE-1054	<p>The selection dialog (for example at FS_REFERENCE and FS_DATASET) has got a new icon. This can be used for opening the selected object in a new workspace. Additionally, the position of opening working spaces has been optimized.</p> <p>Further information can be found in chapter “SiteArchitect: Revised selection dialog and opening new workspaces”.</p>	Editor, SiteArchitect	5.2R4
CORE-1075	Erroneous behavior could occur during start-up of web applications if Websphere was used as an application server.	FirstSpirit Administrator	5.2R6
CORE-1081	Optimized selection dialog of the input component FS_LIST (type DATABASE).	Input Components, SiteArchitect	5.2R4
CORE-1082	<p>The newly created API functionality <code>SnippetAgent</code> (package <code>de.espirit.firstspirit.access.store.templates</code>; FirstSpirit Access API) allows now getting a context-related access to the snippet evaluation of a FirstSpirit element.</p> <p>Further information can be found in chapter “Module Development, Scripts, API: SnippetAgent: API access to snippet evaluation”.</p>	Developer, FirstSpirit API, Snippets, Template Development	2018-07



ID	Description	Categories	Version
CORE-1084	<p>FirstSpirit now supports upload, saving, and deployment of media which contain more than one dot in their file names, e.g. files of type “.tar.gz” or files which carry version information in their names such as “Linux_4.6.4-1.debian.tar.xz”.</p> <p>Further information can be found in chapter “Media: Support for files with more than one dot character in their names”.</p>	ContentCreator, Editor, Input Components, Media Store, Search, SiteArchitect	5.2R5
CORE-1093	<p>As of FirstSpirit version 5.2R5, source code packages are available that contain example modules for integration of external data sources in FirstSpirit using generic DataAccessPlugins.</p> <p>Further information can be found in chapter “Module Development, Scripts, API: Examples for integration of external data sources using generic DataAccessPlugins”.</p>	Developer, FirstSpirit API, Module development	5.2R5
CORE-1103	<p>In the input component CMS_INPUT_RADIOBUTTON, the set of available options may be limited by using a rule.</p> <p>Erroneous behavior could occur if the current value of such an input component was not available in the current set of available options.</p>	Dynamic Forms, Input Components, SiteArchitect	5.2R5
CORE-1108	The import logging contextual information are enhanced and should be more meaningful if the project export does contain erroneous metadata.	FirstSpirit Administrator, Project export / import	5.2R4
CORE-1110	Project exports were erroneously not considered during clean-up of the backup directory.	Backup	5.2R7
CORE-1112	<p>Improved editing of multiple packages.</p> <p>Further information can be found in chapter “Modules: Corporate Content: Editing multiple packages”.</p>	Corporate Content, Developer, Modules, SiteArchitect	5.2R4
CORE-1121	Optimized search.	ContentCreator, Search	5.2R4



ID	Description	Categories	Version
CORE-1122	Optimized generation of preview URL using the method <code>getPreviewUrl(Language, TemplateSet, boolean, int, Map<?,?>)</code> of the interface <code>Previewable</code> (FirstSpirit Access API, package <code>de.espirit.firstspirit.access.store</code>).	ContentCreator, FirstSpirit API	5.2R3
CORE-1125	Input components may be used in multiple contexts: in sections, list components such as FS_CATALOG, datasets, and pages. As of the current FirstSpirit version, the property <code>CONTAINERTYPE</code> allows identification of the object type. Depending on the surrounding object type, the input component may, for example, be shown or hidden (or set to be read-only). Further information can be found in chapter "SiteArchitect / ContentCreator: Dynamic forms: New property "CONTAINERTYPE"".	Developer, Dynamic Forms	5.2R6
CORE-1126	Evaluating the release state of a dataset has been optimized for the detailed view display.	Content Store, SiteArchitect	5.2R6
CORE-1128	Toggling the options "Page is completely translated for this language" and "Generate this section in the output" on and off for pages and sections, respectively, now uses simplified keyboard controls. Further information can be found in chapter "SiteArchitect: Optimized keyboard control for consideration of pages and sections in generation".	Editor, Generation, Page Store, SiteArchitect	5.2R4
CORE-1147	Optimized positioning of the pop-up selection dialog for input components <code>FS_LIST</code> (type <code>DATABASE</code>) that use a query (tag <code>QUERY</code>).	Input Components, SiteArchitect	5.2R4
CORE-1167	As of FirstSpirit version 5.2, Oracle JDK 1.6 has been removed from maintenance. The file <code>FIRSTspirit.jnlp</code> has been adjusted accordingly.	Server Administrator, Webstart	5.2R3
CORE-1169	In external synchronization (used via API), occasionally, not all objects in a folder structure were properly included in an export into the external file system.	External synchronization	5.2R4



ID	Description	Categories	Version
CORE-1203	In ContentCreator, programmatic redirects could erroneously no longer be implemented.	ContentCreator	5.2R4
CORE-1211 CORE-1198 CORE-3454	Handling of reports has been improved. Further information can be found in chapter "SiteArchitect / ContentCreator: Reports: Handling has been improved".	ContentCreator, Editor, Reports, SiteArchitect	5.2R6
CORE-1218	In the current version of FirstSpirit, the version of the Apache FOP used internally was updated from 1.1 to 2.2. Further information can be found in chapter "System: Updating Apache FOP".	Integrated software	5.2R14
CORE-1220	During use of ContentCreator, a problem related to the user session could arise.	ContentCreator	5.2R4
CORE-1254 CORE-1444	You can now perform web-based updates of your FirstSpirit server/s by simply selecting the desired FirstSpirit version in ServerMonitoring. Further information can be found in chapter "Administration: Server updates using "pull" method".	FirstSpirit Administrator, License, Server Administrator, ServerMonitoring	5.2R5
CORE-1256 CORE-1343	During use of FirstSpirit ContentCreator, increased file handle usage could occur.	ContentCreator, FirstSpirit Administrator	5.2R4
CORE-1262	Creating a query may have failed after creating a database schema from an external Oracle database with a BLOB column.	Database	5.2R7
CORE-1263	In rare cases, display issues with the Difference icon in modified areas could occur in the Difference view (page status, "Display all changes").	ContentCreator, Version history	5.2R4
CORE-1267	In the external synchronization user interface, improved status display for objects that will be imported.	External synchronization	5.2R4
CORE-1269	Optimized search in data sources.	Content Store, Search, SiteArchitect	5.2R3



ID	Description	Categories	Version
CORE-1273	<p>Due to different handling of Berkeley DB V5 (“FirstSpirit ServerManager / Project Properties / Repository / Backend”) in FirstSpirit versions 5.1 and 5.2, the repository of each project must first be configured to use Berkeley DB V3 before a downgrade from FirstSpirit version 5.2 to version 5.1 can be conducted.</p> <p>Further information can be found in chapter “Compatibility: Downgrade to FirstSpirit 5.1 when using Berkeley DB V5”.</p>	FirstSpirit Administrator, ServerManager	5.2R3
CORE-1276 CORE-1447	<p>In order to support the new FirstSpirit Health Center functionality, the protocol for FirstSpirit web applications was modified and is now incompatible to that of previous versions. As in any upgrade and downgrade procedure, it is necessary to ensure that the FirstSpirit web applications are compatible with the FirstSpirit server software's version.</p> <p>Further information can be found in chapter “Administration: Modified protocol for FirstSpirit web applications”.</p>	FirstSpirit Administrator, Module development, ServerManager	5.2R4
CORE-1282	<p>Optimized selection of the “Next editor” of a workflow in ContentCreator (using the magnifying glass or “Show more entries...”).</p> <p>Further information can be found in chapter “ContentCreator: Selection dialog for next editor(s) of a workflow”.</p>	ContentCreator, Editor, Workflow	5.2R4
CORE-1290	<p>Dynamic forms in combination with preset and fallback values: The (partial) prepopulation of form fields with preset and fallback values via the dialog “Edit form defaults” in the Templates store is now possible again. Rule violations which would normally prevent saving a form (e.g. because a mandatory field in the form is empty) will be shown in the dialog “Edit form defaults” but will no longer prevent saving the form in this dialog.</p>	Developer, Dynamic Forms, Input Components, SiteArchitect, Template Development, Template Store	5.2R4
CORE-1291	<p>Erroneous behavior could occur during feature installation if the database schema in the target project contained more attributes than that in the source project.</p>	Content Transport	5.2R4



ID	Description	Categories	Version
CORE-1293	Saving the inner form of an FS_DATASET input component could lead to erroneous behavior.	Content Store, Input Components, SiteArchitect	5.2R4
CORE-1299	Optimized interaction pattern when installing or creating a feature.	Content Transport	5.2R6
CORE-1310	In rare cases, switching among tabs in the editorial workspace could lead to erroneous behavior.	SiteArchitect	5.2R12
CORE-1320	When starting workflows via the status bar or the context menu, the available workflows will now be sorted using the same ordering.	SiteArchitect, Workflow	5.2R5
CORE-1325	The function “Show usages” on an element could lead to errors when the referenced objects came from a remote project and the user had no rights in that project.	Permissions, SiteArchitect	5.2R4
CORE-1327	In the project properties of FirstSpirit ServerManager, a setting is now available that defines if selection from remote projects should be limited to objects which have been released at least once. Further information can be found in chapter “Modules: Corporate Media: Limiting selections from remote projects to objects with a release state”.	ContentCreator, Corporate Content, FirstSpirit Administrator, Page Store, ServerManager, SiteArchitect	5.2R4
CORE-1336	Optimized message board for display of long messages.	SiteArchitect	5.2R4
CORE-1339	When starting SiteArchitect using a URL without a domain, the cookies listed in the parameter “clientCookieNames” were erroneously not considered by the integrated Chrome browser.	Preview, SiteArchitect	5.2R4
CORE-1346	After deinstallation of the FOP module, the presentation channel was erroneously deleted on the server.	Modules, ServerManager	5.2R4
CORE-1370	Improved performance when using FirstSpirit in HTTP connection mode.	ServerManager, SiteArchitect	5.2R4
CORE-1381	Populating the input component CMS_INPUT_TEXT via drag-and-drop from the input component CMS_INPUT_DOM has been improved.	Input Components, SiteArchitect	5.2R10



ID	Description	Categories	Version
CORE-1383 CORE-2637 CORE-2671 CORE-2694 CORE-2756	<p>Extended interaction pattern of FS_INDEX with drag-and-drop functionality: FS_INDEX can now be selected as a drop editor in section, link, and table templates. Furthermore, users may now add and replace entries of compatible data types (e.g. from a report) to/in index components in forms using drag-and-drop.</p> <p>Further information can be found in chapter “Input components: FS_INDEX: Editorial functionality using drag-and-drop”.</p>	ContentCreator, Developer, Editor, Input Components, SiteArchitect, Template Development	5.2R5
CORE-1389	An active server backup mode didn't respect the project registries.	Backup, FirstSpirit Administrator	5.2R4
CORE-1394	Optimized positioning of pop-up dialogs displayed via scripts.	SiteArchitect	5.2R4
CORE-1396	<p>Workflows on media and media folder elements can now be advanced in the report area under “Tasks”.</p> <p>Further information can be found in chapter “ContentCreator: Workflows on media and media folder elements”.</p>	ContentCreator, Media Store, Workflow	5.2R7
CORE-1402	When adopting changes via translation help, erroneous behavior could occur.	SiteArchitect	5.2R4
CORE-1403	The most recently selected dataset was not marked when switching from the brief overview to the overview of a data source.	SiteArchitect	2018-06
CORE-1418	Optimized detection of modifications in the input component CMS_INPUT_PERMISSION.	Input Components	5.2R4
CORE-1419	Optimized calculation of privileges when editing metadata in ContentCreator.	ContentCreator, Permissions	5.2R4
CORE-1421	Improved display behavior of the dialog “Manage media” in ContentCreator (menu entry “Media / Manage media”) after deleting an empty folder.	ContentCreator, Media Store	5.2R4



ID	Description	Categories	Version
CORE-1422	In the Media store, the action “Delete” was erroneously available on a media element which was already in a workflow.	ContentCreator, Media Store, Workflow	5.2R4
CORE-1425	In rare cases, erroneous behavior could occur in the preview.	ContentCreator, Preview, SiteArchitect	5.2R5
CORE-1440	Due to optimizations of distribution mechanisms, the global web applications included in FirstSpirit (fs5root, fs5preview, fs5webedit, ...) are now provided as FirstSpirit modules (FSM files). Further information can be found in chapter “Modules (general): Distribution of FirstSpirit web applications as modules (.fsm)”.	FirstSpirit Administrator, Modules, Server Administrator, ServerManager	5.2R4
CORE-1441	Performance improvements in the Media store related to managing folders which contain many Media elements.	Media Store, SiteArchitect	5.2R4
CORE-1444 CORE-1243 CORE-1250 CORE-1596 CORE-2332	There is a new start page in FirstSpirit ServerMonitoring. This page visualizes clearly the hardware and software status of your local FirstSpirit Server as well as of all FirstSpirit Servers which can be reached on the network. Further information can be found in chapter “Administration: The new FirstSpirit Health Center”.	FirstSpirit Administrator, License, ServerMonitoring, Sessions, Webstart	5.2R4
CORE-1452 CORE-2561	In FirstSpirit SiteArchitect, the context menus for store tree items as well as some buttons in the horizontal toolbar have been modified. Further information can be found in chapter “SiteArchitect: Context menu functionality and horizontal toolbar”.	Developer, Editor, SiteArchitect	5.2R5
CORE-1453	Improved propagation of rule infractions in the input component FS_LIST (type PAGE).	Dynamic Forms, Input Components	5.2R5



ID	Description	Categories	Version
CORE-1458	<p>Allowed section templates are now only “optionally” required during an import process.</p> <p>Further information can be found in chapter “Modules: Corporate Content: Allowed section templates are now only “optionally” required during an import process”.</p>	Content Transport	5.2R13
CORE-1460	During publication using FTP via a proxy server, erroneous behavior could occur.	FirstSpirit Administrator	5.2R4
CORE-1463	Optimized validation behavior related to language-independent input components.	Dynamic Forms, Input Components, SiteArchitect	5.2R4
CORE-1468	Relating to the input component FS_DATASET, if a filtered data source is used with <code>selectorMode="list"</code> , the filter will now be observed in the dataset view in the selection list.	Content Store, Editor, Input Components	5.2R5
CORE-1476	The “Open in separate window” action of the input component FS_LIST has been optimized.	Input Components, SiteArchitect	5.2R6
CORE-1478	Erroneous behavior could occur in data source overviews when displaying media for which the user did not possess read permissions.	Content Store, SiteArchitect	5.2R6
CORE-1480	Improved evaluation of parameters passed in connection settings when starting the FirstSpirit Launcher.	Launcher	5.2R7
CORE-1483	<p>When exporting elements via External Synchronization using the FirstSpirit Developer API, the new method <code>setExportRelease(boolean)</code> in the interface <code>ExportOperation</code> (package <code>de.espirit.firstspirit.store.access.nexport.c</code>) can be used to specify whether the release or the current state of selected elements should be exported.</p> <p>Further information can be found in chapter “External Synchronization: New method "setExportRelease" to specify whether the release or the current state of elements should be exported”.</p>	External synchronization	5.2R4



ID	Description	Categories	Version
CORE-1484	In ContentCreator, use of the methods <code>getBrokerByProjectName(String)</code> and <code>getBrokerByProjectId(long)</code> in the interface <code>BrokerAgent</code> (Developer API, package <code>de.espirit.firstspirit.agency</code>) could lead to erroneous behavior.	ContentCreator, Developer, FirstSpirit API	5.2R4
CORE-1494	In the detailed view of version history, language tabs will now be shown in the same order as on pages in the Page Content store.	SiteArchitect, Version history	5.2R4
CORE-1501	From FirstSpirit version 5.2R4 onward, individual web app components can now also be added to global web apps. Further information can be found in chapter “Module Development, Scripts, API: Individualizing the global FirstSpirit web applications”.	Developer, Module development, ServerManager	5.2R4
CORE-1514	After externally editing a medium, display in the integrated preview could lead to erroneous behavior.	Media Store, Preview, SiteArchitect	5.2R4
CORE-1517	Where rule definitions are concerned, error handling of incorrect entries inside the <code><SCHEDULE></code> tag has been optimized.	Dynamic Forms	5.2R8
CORE-1519 CORE-1674	Improved communication with the preview servlet.	Preview	5.2R4
CORE-1520	When using Oracle databases, using very long column names for N:M foreign key relationships could cause an error.	Database	5.2R5
CORE-1525	When indexing individual datasets via script from within a schedule task using the method <code>rebuildSearchIndex(IDProvider element)</code> of the interface <code>ProjectStorage</code> (Access API, package <code>de.espirit.firstspirit.access.admin</code>), occasionally, individual datasets were not correctly indexed.	FirstSpirit API, Server Administrator, Tasks	5.2R4
CORE-1537	Corrected version information of the system modules “FirstSpirit ContentCreator” and “FirstSpirit Webapplications”.	Modules	5.2R4



ID	Description	Categories	Version
CORE-1539	When using Oracle databases, archiving datasets could cause erroneous behavior.	Archiving	5.2R7
CORE-1541	Improved display of ContentCreator splash screen.	ContentCreator	5.2R4
CORE-1554	<p>The newly-added interface <code>SelectOptionOperation</code> (FirstSpirit Developer API) allows developers to use a lightweight dropdown menu for selection of a value within the ContentCreator preview.</p> <p>Further information can be found in chapter “Module Development, Scripts, API: ContentCreator: Using dropdown menus via API”.</p>	ContentCreator, Developer, FirstSpirit API	5.2R5
CORE-1555	<p>The “Edit image section” dialog in ContentCreator can now be opened via API.</p> <p>Further information can be found in chapter “Module Development, Scripts, API: ContentCreator: Opening the “Edit image section” dialog via API”.</p>	ContentCreator, Developer, FirstSpirit API	5.2R5
CORE-1578	Improved handling of URL parameters in internal preview.	Preview, SiteArchitect	5.2R4
CORE-1584	Improved performance when selecting a next editor in a workflow dialog.	ContentCreator	5.2R6
CORE-1594	In the functionality “FirstSpirit CorporateContent”, optimized update behavior of content in entries of the input component <code>FS_LIST</code> (type <code>INLINE</code>).	Corporate Content	5.2R4
CORE-1615	Improved display of input components within the design element <code>CMS_GROUP</code> .	Input Components, SiteArchitect	5.2R5
CORE-1620	<p>As of the current FirstSpirit version, the URL creation method for remote projects can also be specified in the remote project configuration of the target project.</p> <p>Further information can be found in chapter “Modules: Corporate Media: Specifying URL creation method for remote projects”.</p>	Advanced URL, FirstSpirit Administrator, Generation, Modules, Remote access, ServerManager	5.2R10



ID	Description	Categories	Version
CORE-1641	Improved performance of dataset selection via the input component FS_DATASET.	Input Components, SiteArchitect	5.2R4
CORE-1644 CORE-1662	During transport with “External Synchronization” (via API), metadata information (created, updated) will now also be considered.	External synchronization	5.2R4
CORE-1649	Editing media elements in the Media store could lead to erroneous behavior.	Editor, Media Store	5.2R5
CORE-1654	In rare cases the output of normalized content from CMS_INPUT_DOM was incorrect.	Developer	5.2R19
CORE-1655	During exports via external synchronization, elements below the root node will now also be considered so that deleted elements will now also be removed in the external file system.	External synchronization	5.2R4
CORE-1658	Information about elements that need to be deleted will now be considered during transport via “External Synchronization” (using the API).	External synchronization	5.2R4
CORE-1663	Optimized consideration of included project properties during transport using “External Synchronization” (via API).	External synchronization	5.2R4
CORE-1664	Optimized calculation of modified status in external synchronization.	External synchronization	5.2R4
CORE-1665	When using external synchronization via API, root folders (“Root”; e.g. in the Media or Page Content store) were not deleted if they were no longer included in the next export's set of elements.	External synchronization	5.2R4
CORE-1666	In FirstSpirit ServerManager, a web server of type “Generic” could erroneously not be installed in the “Web applications” settings of server or project properties.	ServerManager	5.2R4
CORE-1669	Optimized display of entries of FS_CATALOG input components in the “Translation help” dialog.	ContentCreator	5.2R4



ID	Description	Categories	Version
CORE-1670	<p>Installation of a module with a too large <code>module.xml</code> file could lead to erroneous behavior.</p> <p>As of FirstSpirit 5.2R4, an error message such as <code>Unable to read module descriptor 'XYZ'</code>. Please verify that the file is readable and does not exceed the maximum size of 1048576 bytes. will be output.</p>	Modules	5.2R4
CORE-1677	Optimized drag-and-drop behavior of data from a report onto an <code>FS_INDEX</code> input component.	ContentCreator, Input Components	5.2R4
CORE-1682	Improved interaction pattern of creating a new dataset.	Content Store, SiteArchitect	5.2R4
CORE-1685	In ContentCreator, erroneous behavior could occur after deleting a folder in the “Manage media” dialog.	ContentCreator, Media Store	5.2R4
CORE-1686	Improved display refresh behavior in the “Manage media” dialog after creating a new folder.	ContentCreator, Media Store	5.2R4
CORE-1702	In external synchronization, improved status calculation after external modification of media content.	External synchronization	5.2R4
CORE-1703	<p>As of the current FirstSpirit release, rule evaluation can be deactivated during generation of the FirstSpirit ContentCreator preview.</p> <p>Further information can be found in chapter “ContentCreator: Deactivating rule evaluation during generation of the ContentCreator preview”.</p>	ContentCreator, Developer, Dynamic Forms, FirstSpirit API, Template Development	2018-09
CORE-1717	When using the module “OfficeConnect”, copy-and-paste operations from a browser or an Excel sheet would also transfer meta information into the input component <code>CMS_INPUT_DOM</code> .	Editor, Input Components, SiteArchitect	5.2R7
CORE-1719	When using the operating system Mac OS, external images which were copied via <code>cmd + C</code> were erroneously not displayed in the FirstSpirit clipboard.	Clipboard, SiteArchitect	5.2R6



ID	Description	Categories	Version
CORE-1720 CORE-1750	Security improvement related to the FirstSpirit start page.	Security	5.2R4
CORE-1738	By using the newly implemented parameter <code>log4j.logger.org.apache.http.impl.execchain.I</code> in the file <code>fs-logging.conf</code> it is possible to suppress unwanted “NoRouteToHostException”. Further information can be found in chapter “Administration: Logging in “fs-server.log” (NoRouteToHostException)”.	FirstSpirit Administrator	5.2R7
CORE-1741	In “External Synchronization”, the file <code>Import.txt</code> in the root export directory did not clearly identify the associated project.	External synchronization	5.2R4
CORE-1742	Exporting a project could lead to erroneous behavior.	Project export / import	5.2R4
CORE-1748	Improved change status calculation for objects when external synchronization is run after normal project export/import.	External synchronization	5.2R4
CORE-1751 CORE-2597	In the input component <code>CMS_INPUT_DOM</code> , the parameter <code>enableImport</code> activates use of the functionality provided by the module “FirstSpirit OfficeConnect”. Optimized import into FirstSpirit of images that were resized within an Office document.	Modules, SiteArchitect	5.2R5
CORE-1755	During project import, a backup of the file “fs-database.conf” is now created when a new database layer is selected.	FirstSpirit Administrator	5.2R5
CORE-1766	Erroneous behavior related to nested input components <code>FS_LIST</code> (type <code>INLINE</code>) could occur if the outer input component was used within a dataset form.	Input Components	5.2R5
CORE-1767	In the version history, it was possible in rare cases that the display of the contents of the columns “Editor” and “Comment” was swapped.	SiteArchitect, Version history	5.2R8
CORE-1769	Optimized evaluation of privileges for thumbnail images in the selection dialog when creating pages or sections.	SiteArchitect	5.2R5
CORE-1782	Optimized memory usage of servlet engine.	ContentCreator	5.2R4



ID	Description	Categories	Version
CORE-1786	Improved evaluation of permissions when editing inherited metadata.	Permissions, SiteArchitect	5.2R6
CORE-1788	Improved display of changes in the “Project History” report.	ContentCreator, Reports, Version history	5.2R5
CORE-1798	Improved removal of entries in CMS_INPUT_LIST input components using the <code>Del</code> key. Further information can be found in chapter “SiteArchitect: Optimized keyboard control of CMS_INPUT_LIST”.	Input Components, SiteArchitect	5.2R4
CORE-1812	The external synchronisation did not take changes to page references into account.	External synchronization	5.2R4
CORE-1817	In a deeply nested FS_LIST (DATABASE type) adding an entry might have displayed an empty view for the new sub form.	Input Components, SiteArchitect	5.2R4
CORE-1824 CORE-1821	The method <code>setIgnoreEntities(boolean ignore)</code> of the interface <code>ImportOperation</code> (FirstSpirit Developer API, package <code>de.espirit.firstspirit.store.access.nexport.c</code>) replaces the method <code>setCreateEntities</code> , which has been deprecated as of FirstSpirit version 5.2R4. The new method controls whether existing entities should be imported into the FirstSpirit project. Further information can be found in chapter “External Synchronization: New method “setIgnoreEntities” replaces “setCreateEntities””.	External synchronization	5.2R4
CORE-1828	Automatic population of a data source using a script could lead to erroneous behavior.	Content Store, Modules	5.2R4
CORE-1834	Optimized memory usage when switching between many languages while editing a page.	SiteArchitect	5.2R4
CORE-1835	In the FirstSpirit schema editor, creating a 1:N relationship to the same table has been optimized.	Database, Developer	5.2R6



ID	Description	Categories	Version
CORE-1837 CORE-2124	Improved performance when loading forms in projects with many project languages.	SiteArchitect	5.2R4
CORE-1895	Erroneous behavior could arise in the preview of a page reference when outputting the system object <code>#this</code> .	Developer	2018-11
CORE-1905	The standard image resolution for the FOP presentation channel can now be specified using the structure variable <code>fs_fop_source_resolution</code> . Further information can be found in chapter “Modules: FOP: Specify Standard Image Resolution”.	Developer, FirstSpirit Administrator, Media Store, Modules	5.2R4
CORE-1925	Improved media file selection dialog.	ContentCreator	2018-11
CORE-1936	A request-release workflow that releases via the end state only, not defining an error state, will now be closed when releasing an object failed.	Workflow	5.2R4
CORE-1948	Improved the sorting possibilities in combination with full text search in the data source overview view.	Content Store, SiteArchitect	5.2R4
CORE-1954	Optimized evaluation of privileges when setting a temporary filter on a data source.	Content Store, Permissions	5.2R5
CORE-1977	Improved display of correction hints when form validation (rules) fails.	Dynamic Forms, SiteArchitect	5.2R4
CORE-1978	Beginning with Oracle JDK 1.8, the interface <code>ProcessAgent</code> (FirstSpirit Developer API, package <code>de.espirit.firstspirit.agency</code>) will use standard JDK functionality to start external processes server-side.	Developer	5.2R5
CORE-1981	Improvements in external synchronization for nested input components.	External synchronization	5.2R5
CORE-2001	Modifications of mutable form values during the generation process now only have local effects and therefore do not affect the results of other channels.	Generation	5.2R5
CORE-2004	If the schedules “Repair References” and “Rebuild Index” had been configured for interactive execution, by mistake authorized persons were not able to execute them.	SiteArchitect, Tasks	5.2R4



ID	Description	Categories	Version
CORE-2007	When moving the mouse pointer within a report, an unnecessary amount of log output was generated.	SiteArchitect	5.2R19
CORE-2012	When searching within a data source, sometimes, datasets were not found by a user due to specific access right settings.	Content Store, Permissions, Search	5.2R4
CORE-2016	Displaying the node properties via the keyboard shortcut <code>Alt + P</code> could lead to erroneous behavior.	SiteArchitect	5.2R5
CORE-2020	Optimized release of child elements.	Release, SiteArchitect	5.2R5
CORE-2025	In rare cases, erroneous behavior could occur when opening the selection dialog in the input component <code>FS_REFERENCE</code> .	Input Components, SiteArchitect	5.2R7
CORE-2041	Automatic population of a data source using a script could lead to erroneous behavior.	Content Store, Developer	5.2R5
CORE-2046	Log messages generated by SiteArchitect and ServerManager will now be stored in separate files on the client workstation of the respective user. Additionally, the current logging may be observed in a separate log window. Further information can be found in chapter “SiteArchitect / ServerManager: Client Logging”.	Developer, SiteArchitect, Webstart	5.2R7
CORE-2055	The display of the change status of pages when using a ValueService to make changes has been improved.	SiteArchitect	2018-08
CORE-2061	Improved validation behavior related to nested <code>FS_LIST</code> input components in projects with many languages.	Input Components, SiteArchitect	5.2R5
CORE-2071	The new parameter <code>preview.enableTemporalPreviewCache</code> (in the configuration file <code>fs-server.conf</code>) may be used to affect caching for preview pages. Further information can be found in chapter “Administration: Caching of preview files”.	FirstSpirit Administrator, Preview	5.2R7



ID	Description	Categories	Version
CORE-2079	In the external synchronization process content for languages not included in the source project were skipped during the import into the target project.	External synchronization	5.2R4
CORE-2083 CORE-505 CORE-2119	A number of additions have been made to the “Snippet” area with FirstSpirit version 5.2R4. Further information can be found in chapter “Input components: Extended snippet access for FS_INDEX and FS_CATALOG”.	ContentCreator, Developer, Input Components, SiteArchitect, Snippets, Template Development	5.2R4
CORE-2089	Switching between projects (Menu “Project / Switch Projects”) sometimes failed.	SiteArchitect	5.2R4
CORE-2099	While saving a page for which the user has no right to edit the metadata, it could lead to errors.	Permissions, SiteArchitect	5.2R4
CORE-2108	In rare cases, using the browser engine “Google Chrome” for internal preview could lead to erroneous behavior.	Preview, SiteArchitect	5.2R5
CORE-2112	Improved certificate evaluation in the integrated preview when it uses Mozilla Firefox as browser engine.	Preview, Security	5.2R5
CORE-2121	In rare cases the function “Display all changes” displayed no result.	ContentCreator	5.2R4
CORE-2134	The workflow for deleting elements did not respect the display logic script.	Workflow	5.2R4
CORE-2161	Optimized caching for remote projects in the action context.	Developer, FirstSpirit Administrator	5.2R6
CORE-2166	For the language-independent input component FS_LIST (DATABASE type), when switching between languages, newly added entries were not handled properly.	Input Components, SiteArchitect	5.2R4
CORE-2171	Optimized list formatting in the input component CMS_INPUT_DOM.	ContentCreator	5.2R7
CORE-2180	Optimizations for the number of open file handles.	Performance	5.2R5



ID	Description	Categories	Version
CORE-2182	<p>Web applications will now be updated automatically during every FirstSpirit server update.</p> <p>Further information can be found in chapter “Module Development, Scripts, API: Update of Web Applications”.</p>	Developer, Module development, Modules, ServerManager	5.2R4
CORE-2206	<p>Improved client resilience to brief interruptions in communication with the server.</p> <p>Further information can be found in chapter “SiteArchitect / ServerManager: Reconnecting after Communication Errors”.</p>	ServerManager, SiteArchitect	5.2R5
CORE-2222	<p>When populating the input component FS_INDEX via drag-and-drop from a report in ContentCreator, restrictions of the rule property “ADD” were not considered.</p>	ContentCreator, Dynamic Forms, Input Components	5.2R5
CORE-2234	<p>During generation, erroneous behavior could occur when outputting remote media with identical display names.</p>	Generation	5.2R6
CORE-2242	<p>As of the current FirstSpirit version, viewports of the functionality “Multi Perspective Preview” (MPP) can now be created, modified, and deleted via API.</p> <p>Further information can be found in chapter “Module Development, Scripts, API: Multi Perspective Preview: Creating and configuring viewports via API”.</p>	Developer, FirstSpirit API, Multi Perspective Preview	5.2R6
CORE-2247	<p>Duplicate conversion when using <code>.convert</code> and <code>.convert2</code> in FS_LIST will now be suppressed.</p> <p>Further information can be found in chapter “Input components: Methods “.convert” and “.convert2” in FS_LIST”.</p>	Developer, Input Components, Template Development, Template Store	5.2R4



ID	Description	Categories	Version
CORE-2249	<p>In SiteArchitect and ContentCreator, an update of the preview may be triggered via the newly-implemented interface <code>PreviewOperation</code> (package <code>de.espirit.firstspirit.ui.operations</code>, FirstSpirit Developer API).</p> <p>Further information can be found in chapter “Module Development, Scripts, API: Triggering a preview update via API (SiteArchitect and ContentCreator)”.</p>	ContentCreator, FirstSpirit API, SiteArchitect	5.2R7
CORE-2259	<p>The content of FirstSpirit JAR files is signed with a certificate. In the current FirstSpirit version, the content is signed with a new certificate that is valid until 2018-06-13 (13 June 2018).</p> <p>Further information can be found in chapter “General: Code signing certificate updated”.</p>	Webstart	5.2R5
CORE-2269	<p>When using the functionality “External Synchronization”, the method <code>setDatabaseLayerMapper(ImportOperation.DatabaseLayerMapper)</code> of the interface <code>ImportOperation</code> (FirstSpirit API, package <code>de.espirit.firstspirit.store.access.nexport.core</code>) will now use the correct database layer.</p>	External synchronization	5.2R5
CORE-2270	After changing a dataset a delta generation may have shown a failure.	Delta generation	5.2R4
CORE-2272	In the task list, tasks were erroneously visible to a user who did not have rights to process these tasks.	Permissions, SiteArchitect	5.2R6
CORE-2285	In rare cases, the display of the “Edit image section” icon on media in the section area was erroneous.	ContentCreator	5.2R8
CORE-2303	<p>The GUI of the “External Synchronization” will be omitted with FirstSpirit 5.2R4.</p> <p>Further information can be found in chapter “External Synchronization: GUI will be omitted”.</p>	Developer, External synchronization, FirstSpirit API, FirstSpirit Administrator, SiteArchitect	5.2R4



ID	Description	Categories	Version
CORE-2312	Errors occurred when displaying deleted elements in the project history report.	ContentCreator	5.2R20
CORE-2314	In the Media store and in media selection dialogs, erroneous behavior could occur while loading miniature previews of image resolutions.	Media Store, SiteArchitect	5.2R5
CORE-2315	Optimized translation help in ContentCreator. Note: In ContentCreator, translation help is an optional feature that is only available if the project is configured to use it, i.e., a project-specific solution that opens translation help was implemented.	ContentCreator	5.2R5
CORE-2327	Improved display of the status bar in the editorial workspace.	SiteArchitect	5.2R5
CORE-2338	To provide better clarity, language tabs won't be shown anymore in FS_CATALOG components that allow selecting link templates (<TEMPLATES type="link">). Further information can be found in chapter "Input components: FS_CATALOG: Representing language independent content (link lists)".	Input Components	5.2R16
CORE-2340	When the internal Jetty engine was used as servlet engine, an error message could be written to the log files during server shutdown.	Server Administrator	5.2R5
CORE-2344	Due to refactoring measures, entries were removed from the file <code>fs-webapp.xml</code> . This change only affects new installations. For existing FirstSpirit installations, this change may be carried out manually by the FirstSpirit administrator if so desired. Further information can be found in chapter "Administration: Refactoring of the file <code>fs-webapp.xml</code> (web server "Jetty")".	FirstSpirit Administrator	5.2R12
CORE-2359	The evaluation and display of changes within the version comparison was improved for the FS_CATALOG input component.	ContentCreator, SiteArchitect, Version history	5.2R10



ID	Description	Categories	Version
CORE-2361	Improved editing of the input component FS_CATALOG in subforms.	Editor, Input Components, SiteArchitect	5.2R5
CORE-2365	Optimized form updates when using rules to display or hide input components.	Dynamic Forms, SiteArchitect	5.2R7
CORE-2369	<p>With the current FirstSpirit version, additional data sources with all datasets that are contained in the data source at the time of an export can now be exported. You can also check and modify the “implicit/explicit state” for a feature element under “Included objects”.</p> <p>Further information can be found in chapter “Modules: Content Transport: Moving datasets and changing the explicit/implicit state of elements”.</p>	Content Store, Content Transport	5.2R20
CORE-2372	Erroneous behavior could arise when using the sorted feature list when creating a feature collection via the schedule task action “Content Transport”.	Content Transport	2018-10
CORE-2374	Optimized the process of uploading media files via the “Media Import Wizard”.	Media Store, SiteArchitect	5.2R5
CORE-2385	If a duplicated conversion of entities using <code>.convert</code> or <code>.convert2</code> has been prevented, a warn message will now be added to the generation log.	Developer, Template Development	5.2R7
CORE-2386	<p>As of the current FirstSpirit version, it is possible to detect the user interface language of ContentCreator that was selected by the current user.</p> <p>Further information can be found in chapter “Module Development, Scripts, API: ContentCreator: Detection of the user interface language (“Locale”) selected by the current user”.</p>	ContentCreator, Developer, FirstSpirit API	5.2R7



ID	Description	Categories	Version
CORE-2387	<p>When uploading a media file into the Media store using the dialog “Create medium”, the file selection dialog defaults to the directory “Documents” within the local user directory.</p> <p>During further file upload actions, the file selection dialog will start in the most recently selected directory.</p>	Media Store	5.2R5
CORE-2388 CORE-2547	<p>As of the current FirstSpirit version, maintenance mode schedule entry actions can now be created via API and running maintenance modes schedules can be terminated via API.</p> <p>Further information can be found in chapter “Module Development, Scripts, API: Creating maintenance mode schedule tasks via API”.</p>	FirstSpirit API, Module development, Tasks	5.2R6
CORE-2389	Improved visualization of rule infractions in nested FS_CATALOG input components.	Dynamic Forms, SiteArchitect	5.2R5
CORE-2397	Improved media import via Media Import Wizard.	Media Store	5.2R5
CORE-2412	Improved configuration and evaluation of parameters when several web applications are used.	Server Administrator	5.2R5
CORE-2418	Improved file selection dialog of the input component FS_REFERENCE.	Editor, Input Components, SiteArchitect	5.2R5
CORE-2421	Stability improvement related to SiteArchitect.	SiteArchitect	5.2R5
CORE-2422	In the method <code>disconnect()</code> of the interface <code>Connection</code> (FirstSpirit Access API, package <code>de.espirit.firstspirit.access</code>), improved the disconnection procedure.	Developer	5.2R5
CORE-2435	Starting a FirstSpirit server could lead to erroneous behavior if the user's home directory could not be written to.	FirstSpirit Administrator	5.2R5
CORE-2440	Under special circumstances, displaying the Health Center in FirstSpirit ServerMonitoring could lead to erroneous behavior.	Health Center	5.2R5



ID	Description	Categories	Version
CORE-2445	When creating a feature via a schedule task, erroneous behavior could arise if an element that is included in the feature collection has been deleted from the project in the meantime.	Content Transport	2018-06
CORE-2455	<p>Changed standard configuration: The preset values of the optional parameters <code>servletSessionCookieName</code> and <code>servletSessionCookieName.ROOT</code> in the file <code>fs-server.conf</code> were changed. For all new installations of FirstSpirit, a FirstSpirit-specific session cookie name will be used for all web applications and the root application.</p> <p>Further information can be found in chapter “Administration: Changed standard configuration of session cookies for new installations”.</p>	FirstSpirit Administrator, Server Administrator, Sessions	5.2R5
CORE-2456	In rare cases, an additional instance of the ContentCreator user interface could be shown nested within another instance of the user interface.	ContentCreator	5.2R5
CORE-2459	Optimized FirstSpirit access control database.	Database	5.2R6
CORE-2464	<p>Entering text into the input component <code>CMS_INPUT_DOMTABLE</code> is now also possible via drag-and-drop and, when using the module “FirstSpirit OfficeConnect”, via <code>Ctrl+V</code>.</p> <p>Further information can be found in chapter “SiteArchitect: Drag-and-drop support for <code>CMS_INPUT_DOMTABLE</code>”.</p>	Editor, Input Components, Modules, SiteArchitect	5.2R5
CORE-2475	The FirstSpirit license contains information about the maximum allowable number of open sessions. The evaluation of this parameter and the interaction pattern related to exceeding the licensed maximum number of open sessions has been optimized.	License, Sessions	5.2R5
CORE-2481	Improved use of keyboard shortcuts.	SiteArchitect	5.2R5



ID	Description	Categories	Version
CORE-2505	<p>If the search string contains an unsupported special character, the search may be repeated as an exact search by clicking Perform an exact search.</p> <p>Further information can be found in chapter “SiteArchitect: Repeating a search after erroneous input”.</p>	Search, SiteArchitect	5.2R8
CORE-2516	Optimized evaluation of connection mode in local connection settings.	FirstSpirit Administrator	5.2R20
CORE-2521	In metadata, referencing an element which has never been released could lead to unexpected results during generation.	SiteArchitect	5.2R5
CORE-2534	The export process of external synchronization to an existing folder may have led to a failure.	External synchronization	5.2R5
CORE-2535	Improved keyboard-based selection of entries in the input component CMS_INPUT_LIST.	Input Components	5.2R5
CORE-2539	Improved localization of the rich-text editor (input component CMS_INPUT_DOM).	ContentCreator	5.2R21
CORE-2551	<p>The new property <code>PRESET</code> may be used to determine if the user is currently editing in the dialog “Edit form defaults”.</p> <p>Further information can be found in chapter “Input components: Dynamic Forms: New Property “PRESET””.</p>	Developer, Dynamic Forms	5.2R17
CORE-2552	Optimized interaction pattern in Media Management when the user does not have <code>CAN_SEE</code> privileges.	ContentCreator	5.2R8
CORE-2562	When creating a new page in ContentCreator, dot characters (‘.’) in the display name were erroneously preserved in the reference name.	ContentCreator	5.2R5
CORE-2566	In the input component <code>FS_INDEX</code> , creating a new dataset could lead to erroneous behavior.	ContentCreator, Input Components	5.2R5
CORE-2574	Improved search for dataset ID.	Content Store, Search	5.2R5
CORE-2575	Calling methods of module classes in FS templates may have led to a failure.	Developer, Template Development	5.2R5



ID	Description	Categories	Version
CORE-2585	<p>The behavior of id#187753 (see release notes to FirstSpirit version 5.2.421) showed unwanted effects in script executions and therefore it must be activated explicitly from this build on. Please ask our technical support for guidance.</p> <p>If the behavior is activated scripts may be adapted to the potential change of the data type of the input component CMS_INPUT_TEXT from type <code>String</code> to <code>CharSequence</code>.</p>	Developer, Input Components, Template Development	5.2R5
CORE-2592	Security improvements in the module “FirstSpirit BasicSearch”.	Modules, Security	5.2R5
CORE-2599	Use of certain data types in an Oracle database could lead to erroneous behavior related to sorting in data sources.	Content Store, Database, Editor, SiteArchitect	5.2R7
CORE-2613	Optimized initial display of the suggestion list in the search field of global search and search in the selection dialog of the input component FS_REFERENCE.	Search, SiteArchitect	5.2R5
CORE-2621	When generating in some cases the project properties “substitution medium” and “substitution page” have not been respected.	Generation	5.2R5
CORE-2640	When using the input component CMS_INPUT_DATE in metadata, performing a search within metadata could erroneously cause the input component to be displayed in single-lined mode (parameter <code>singleLine</code>) in the metadata form.	Input Components, Search	5.2R5
CORE-2641	<p>Optimized the dialog “Select” for features which were stored on the server via the button “Save feature”. It is now possible to delete a stored feature.</p> <p>Further information can be found in chapter “Modules: Corporate Content: ContentTransport: Deleting feature collections”.</p>	Content Transport	5.2R7



ID	Description	Categories	Version
CORE-2646	When using the functionality “External Synchronization”, importing objects with forms which reference elements that are not yet available in the project could lead to erroneous behavior.	External synchronization	5.2R5
CORE-2647	Optimized display of thumbnails in the brief overview of data sources.	Content Store, Snippets	5.2R5
CORE-2654	Improved notifications of upload hooks when they are used to create media.	Media Store	5.2R19
CORE-2661	In ContentCreator, searching in Help could lead to erroneous behavior.	ContentCreator, Search	5.2R5
CORE-2669	In the input component FS_DATASET with mode="dialog", saving after switching between languages could lead to erroneous behavior.	Input Components, SiteArchitect	5.2R7
CORE-2686	Improved SiteArchitect performance.	Performance, SiteArchitect	5.2R5
CORE-2690	Modified log output for the report “Project History” when starting ContentCreator.	ContentCreator	5.2R7
CORE-2691	Improved display of forms when switching between language tabs.	SiteArchitect	5.2R5
CORE-2695	Improved display of media folders, taking into consideration configured permissions.	Media Store, Permissions, SiteArchitect	5.2R5
CORE-2696	Sporadically, erroneous behavior could occur in the preview while working with ContentCreator.	ContentCreator, Preview	5.2R5
CORE-2698	As of the current FirstSpirit version, a project-specific actions menu can be offered to editors who use ContentCreator. Further information can be found in chapter “ContentCreator: Project-specific action menu”.	ContentCreator, Developer, Editor	5.2R6
CORE-2712	Improved evaluation of privileges on a data source when creating a new dataset via the input component FS_DATASET.	Input Components, Permissions	5.2R5



ID	Description	Categories	Version
CORE-2714	Importing a page via “External Synchronization” could lead to erroneous abortion of the import process if the page template used was not present before. Now, the page will not be imported, and the error will be added to <code>ImportOperation.Result</code> .	External synchronization	5.2R5
CORE-2721	Improved evaluation of rules in child forms of the input components <code>FS_LIST</code> and <code>FS_CATALOG</code> .	Dynamic Forms, SiteArchitect	5.2R5
CORE-2769	Optimized revalidation in forms when using the form properties <code>SIZE</code> , <code>LENGTH</code> , <code>ENTRY</code> , and the comparison expression <code>CONTAINS</code> .	Dynamic Forms	5.2R5
CORE-2770	In the input component <code>CMS_INPUT_DOM</code> with inline tables, erroneous behavior could occur if no table format templates were defined in the project.	ContentCreator, Input Components	5.2R5
CORE-2781	<p><code>ProjectReferencesAgent.rebuildReferences()</code> now repairs more broken references.</p> <p>Further information can be found in chapter “Module Development, Scripts, API: Repairing broken references (<code>rebuildReferences</code>)”.</p>	FirstSpirit API	5.2R7
CORE-2785	<p>In the data source overview, default values will now be displayed in semi-transparent fashion.</p> <p>Further information can be found in chapter “SiteArchitect: Display of Default Values in Data Sources”.</p>	Content Store, SiteArchitect	5.2R5
CORE-2811	<p>Optimized evaluation of rules when using the property <code>SECTION</code> for the input component <code>FS_REFERENCE</code>.</p> <p>This property may be used to check if a section is selected.</p>	Dynamic Forms, Input Components, SiteArchitect	5.2R5



ID	Description	Categories	Version
CORE-2818	<p>Publishing a package with nodes that were deleted or archived in the source project could cause an error message to be logged.</p> <p>The message will now be logged with the log level “TRACE” such that it no longer appears as an error (log level “ERROR”).</p>	Corporate Content	5.2R5
CORE-2820	<p>The configuration file “fs-server.conf” now allows optional configuration of specific values for session cookies. The new attributes can define values for domain, path, and the secure flag of the session cookie.</p> <p>Further information can be found in chapter “Administration: Configuration of session cookies (fs-server.conf)”.</p>	FirstSpirit Administrator, Launcher, Server Administrator, ServerManager, Sessions, Webstart	5.2R5
CORE-2831	<p>Corrected access to form fields during generation (FirstSpirit Access API, package <code>de.espirit.firstspirit.forms</code>, interface <code>FormData</code>, method <code>get(Language, String)</code>).</p>	Generation	5.2R5
CORE-2840	<p>During import of a database schema using the functionalities “FirstSpirit Content Transport” or “External Synchronization”, the new interface <code>LayerMapper</code> (FirstSpirit Developer API, package <code>de.espirit.firstspirit.transport</code>) allows selection of a database layer onto which the schema should be mapped.</p> <p>Further information can be found in chapter “Module Development, Scripts, API: External Synchronization / Content Transport: Selecting a database layer for import”.</p>	Content Transport, Database, Developer, External synchronization, FirstSpirit API	5.2R5
CORE-2847	<p>If multiple users requested the preview of a page and the calculation took long, this could have led to erroneous behavior.</p>	Preview, SiteArchitect	5.2R9
CORE-2849	<p>Drag-and-drop of media between projects could lead to erroneous behavior.</p>	Media Store, SiteArchitect	5.2R5



ID	Description	Categories	Version
CORE-2870	In the input component FS_LIST (type PAGE), optimized rules evaluation relating to deleted sections.	Dynamic Forms, Input Components, SiteArchitect	5.2R6
CORE-2874	SiteArchitect performance improvements.	Editor, SiteArchitect	5.2R5
CORE-2875	Previously, during an import via “FirstSpirit CorporateContent”, nodes in the tree structure were in some cases set to display the metadata icon even though “FirstSpirit CorporateContent” does not transport metadata. This was corrected in the current FirstSpirit version: now, the metadata icon will no longer be set at all after importing via “FirstSpirit CorporateContent”.	Corporate Content	5.2R8
CORE-2880	As of the current FirstSpirit version, connections for schedule task scripts can also be established via API (interface <code>ScriptTask</code> , package <code>de.espirit.firstspirit.access.schedule</code> , FirstSpirit Access API). Further information can be found in chapter “Module Development, Scripts, API: Establishing connections via API in schedule task scripts”.	Developer, FirstSpirit API, Tasks	5.2R6
CORE-2886	After deleting user groups in the project properties (“FirstSpirit ServerManager / Project / Properties / Groups / Remove group”) related information on nodes with defined permissions in SiteArchitect were erroneously not updated.	FirstSpirit Administrator, Permissions	5.2R6
CORE-2914	The configuration of a new feature package can again be tested in the schedule action “Content Transport” (ServerManager / Project / Properties / Schedule management / Add / Default schedule / Actions / Add / Content Transport / Test configuration).	Content Transport, ServerManager	5.2R5



ID	Description	Categories	Version
CORE-2923	<p>A section reference can now also be created via the context menu entry “Paste as section reference” or via the keyboard shortcut <code>Ctrl + Alt + V</code>.</p> <p>Further information can be found in chapter “SiteArchitect: Creating a section reference via context menu or keyboard shortcut”.</p>	Editor, SiteArchitect	5.2R8
CORE-2931	<p>So called “Pluggability” features (Java Servlet Specification 3.0) can be disabled starting with the current FirstSpirit version.</p> <p>Further information can be found in chapter “Administration: Apache Tomcat / Java Servlet Specification 3.0: Disabling Pluggability features”.</p>	FirstSpirit Administrator, ServerManager	5.2R7
CORE-2935	<p>It is possible to restrict the choice of data sources for the input component FS_DATASET by using the tag <code><CONTENT></code>.</p> <p>The configured data sources are now better respected in the selection dialog.</p>	SiteArchitect	5.2R9
CORE-2941	<p>In association with a Tomcat web server, authentication via the FirstSpirit start page could lead to erroneous behavior if a password contained special characters.</p>	FirstSpirit home page, Server Administrator	5.2R5
CORE-2945	<p>Optimized rule evaluation during emptiness check (property EMPTY).</p>	Dynamic Forms	5.2R5
CORE-2950	<p>Optimized display of the start page in Google Chrome when using automatic login.</p>	FirstSpirit home page	5.2R5
CORE-2954	<p>Improved logging of web applications running on Tomcat web server.</p>	FirstSpirit Administrator	5.2R5



ID	Description	Categories	Version
CORE-2985	<p>In the module “FirstSpirit Security”, the parameter <code>profilname.dir</code> in the file “<code>crcTransfer.ini</code>” may be used to configure the web application.</p> <p>If the parameter was given a value which included a trailing slash (<code>.../</code>) in the path string, erroneous behavior could occur.</p> <p>Now, it is possible to use a path that includes a trailing slash character.</p>	Modules	5.2R5
CORE-2993	For the input component FS_CATALOG, improved the input dialog and drag-and-dropp of media from the AppCenter.	Editor, Input Components, SiteArchitect	5.2R5
CORE-2999	When using Apache Tomcat version 8.0.36, instead of displaying the specifically requested dataset on a content projection page, the first dataset of this content projection may have been displayed.	ContentCreator, Editor, Preview	5.2R5
CORE-3001	In SiteArchitect running on Mac OS X, erroneous use of the system clipboard could occur.	Clipboard, SiteArchitect	5.2R5
CORE-3020	Optimized display of the “Task list” menu icon.	SiteArchitect	5.2R5
CORE-3042	Optimized automatic roll-out of web applications during server start-up.	Server Administrator	5.2R5
CORE-3052	Optimized determination of release state of restored folders.	Release	5.2R5
CORE-3055	In rare cases, erroneous behavior could arise when creating features.	Content Transport	5.2R20
CORE-3066	Improved behavior of a release workflow, specific to situations in which the element to be released contains invalid references (e.g. in an FS_REFERENCE input component).	Release, SiteArchitect, Workflow	5.2R5
CORE-3067	In very rare cases, using the input component FS_CATALOG could lead to erroneous behavior.	Input Components, SiteArchitect	5.2R5



ID	Description	Categories	Version
CORE-3068	Importing content packages into projects which define languages that were not defined in the source project could lead to erroneous behavior in input components that are grouped with the design element CMS_GROUP.	Corporate Content, Input Components	5.2R5
CORE-3074	During configuration of a database schema, renaming columns with N:M foreign key relationships could lead to erroneous behavior.	Database	5.2R5
CORE-3085	Optimized determination of the target element of dataset selection in a data source for the following actions: <ul style="list-style-type: none"> ▪ “Version history” (Ctrl + H) ▪ “Extras / Show usages” (Ctrl + U) ▪ “Extras / Display dependencies” (Ctrl + R) 	Content Store, SiteArchitect	5.2R6
CORE-3100	Optimized setting values via rules in ContentCreator.	ContentCreator, Dynamic Forms	5.2R6
CORE-3110	Optimized display of data source contents in the selection dialog of the input component FS_LIST (type DATABASE).	ContentCreator	5.2R5
CORE-3111	Realignment of module development: As of the current FirstSpirit version, modules can for the first time be developed with isolated resources. This new functionality allows module developers greater freedom in the selection of libraries to be used. Global dependencies to other product components are mostly avoided. Further information can be found in chapter “Module Development, Scripts, API: Isolated mode (BETA) - Realignment of module development”.	Developer, Module development, Modules	5.2R6
CORE-3114	In the input component CMS_INPUT_DOM with active spell check, erroneous behavior could occur.	ContentCreator	5.2R7
CORE-3117	Optimized spell check for the input components CMS_INPUT_DOM and CMS_INPUT_DOMTABLE.	ContentCreator, SiteArchitect	5.2R5



ID	Description	Categories	Version
CORE-3119	Optimized handling of rule infractions in ContentCreator.	ContentCreator, Dynamic Forms	5.2R5
CORE-3136	With the current FirstSpirit release, the display of database tables can be collapsed in the schema editor for language-dependent columns. The simplified display ensures better legibility, particularly in projects with many project languages (and many database tables). Further information can be found in chapter "SiteArchitect: Templates: Optimizing the schema display in the schema editor".	Database, Developer, SiteArchitect, Template Store	2019-12
CORE-3137 CORE-541 CORE-908	FirstSpirit version 5.2R3 implemented a new roll-out behavior for the FirstSpirit web applications. The previously used ZIP files have now been removed from the file <code>fs-server.jar</code> . This leads to a significant decrease in the file size of <code>fs-server.jar</code> . Further information can be found in chapter "Modules (general): Distribution of the FirstSpirit web applications as modules (.fsm)".	FirstSpirit Administrator, Modules, ServerManager	5.2R6
CORE-3182	The file names of backup copies of <code>fs-server.jar</code> files, created during server updates via FirstSpirit ServerMonitoring, will now be formed using <code>_jar</code> instead of <code>.jar</code> . Further information can be found in chapter "Administration: Server Update: File name change for backup copies of files".	Server Administrator	5.2R6
CORE-3184	Using the input component FS_LIST (type DATABASE) within metadata could lead to erroneous behavior.	Input Components, SiteArchitect	5.2R5
CORE-3202	In rare cases, use of the FirstSpirit Launcher could lead to erroneous behavior.	Launcher	5.2R5
CORE-3203 CORE-3200	Security improvements in ServerManager.	Security, ServerManager	5.2R5



ID	Description	Categories	Version
CORE-3220	In the input component CMS_INPUT_DATE, input via keyboard could cause erroneous behavior.	ContentCreator	5.2R7
CORE-3230	The taking into account of the user setting for the preferred display language has been optimized.	SiteArchitect	2018-08
CORE-3239	In a workflow, users that have server administrator privileges could erroneously not be selected as next editors.	SiteArchitect, Workflow	5.2R5
CORE-3246	The new plugin type <code>WebeditStatusNotePlugin</code> may be used to prominently display page-related status information in ContentCreator. Further information can be found in chapter “Module Development, Scripts, API: ContentCreator: Displaying page-related status information prominently”.	ContentCreator, Developer, Editor, FirstSpirit API	5.2R6
CORE-3247	In the input component FS_INDEX, erroneous behavior could occur when cancelling edit mode on a newly created entry.	Input Components, SiteArchitect	5.2R6
CORE-3249	Using “Translation Help” functionality could lead to erroneous behavior.	SiteArchitect	5.2R5
CORE-3273	Using several web components can potentially cause conflicts between identical resources. Optimized conflict identification and conflict resolution.	FirstSpirit Administrator, Modules	5.2R6
CORE-3278	In rare cases, erroneous behavior could occur during media import.	Media Store, SiteArchitect	5.2R6
CORE-3282	For the input component FS_DATASET, optimized rule evaluation when creating a new dataset.	Dynamic Forms, Input Components, SiteArchitect	5.2R5
CORE-3290	Optimized use of JSP Includes for inclusion of HTML or JSP content in a FirstSpirit page.	ContentCreator, Preview	5.2R5
CORE-3292	When creating a format template, after inputting a reference name, the label of the field “Reference name” was erroneously still shown in red type.	SiteArchitect, Template Store	5.2R6



ID	Description	Categories	Version
CORE-3293	<p>On a <i>FormData</i> object, the method <code>get(Language, String)</code> allows access to the <i>FormField</i>.</p> <p>The output of the following (simplified) syntax, which allows access to the content of a <i>FormField</i> in the language currently being rendered, has been corrected:</p> <pre>\$CMS_VALUE(IDENTIFIER.formData[" IDENTIFIER2 "</pre> <p>Alternatively, either of the following syntaxes will yield the same result:</p> <pre>\$CMS_VALUE(IDENTIFIER.formData.IDENTIFIER2)\$ \$CMS_VALUE(IDENTIFIER.formData.get(" IDENTIFIER2 "</pre>	Developer	5.2R5
CORE-3296	Optimized deletion of link templates that are still referenced.	Template Development	5.2R17
CORE-3304	<p>Stability when accessing FirstSpirit web applications on external web servers has been improved.</p> <p>Further information can be found in chapter “Administration: Starting process: Improved stability when accessing FirstSpirit web applications on external web servers”.</p>	FirstSpirit Administrator, ServerManager	5.2R6
CORE-3312	<p>Via “FirstSpirit ServerManager / Project properties / Template sets / Delete”, you can now delete template sets for a project. This action cannot be undone.</p> <p>Further information can be found in chapter “Administration: ServerManager: Deleting template sets”.</p>	FirstSpirit Administrator, ServerManager, Template Store	2020-03
CORE-3318	Saving several times during editing in “Translation Help” could lead to erroneous behavior.	Editor, SiteArchitect	5.2R5
CORE-3330	In rare cases, releasing a page reference could lead to erroneous behavior.	Release, SiteArchitect	5.2R6



ID	Description	Categories	Version
CORE-3347	<p>A new <code>-D</code> parameter can speed up work with the file selection dialog (FirstSpirit SiteArchitect and FirstSpirit ServerManager).</p> <p>Further information can be found in chapter “SiteArchitect / ServerManager: Speeding up file selection from directory structure of the client workstation”.</p>	Editor, FirstSpirit Administrator, FirstSpirit home page, Media Store, Performance, ServerManager, SiteArchitect	5.2R6
CORE-3354	When copying sections, the original order was erroneously not observed.	Page Store, SiteArchitect	5.2R7
CORE-3356	Erroneous behavior could occur when using the functionality “LiveEdit”.	ContentCreator	5.2R7
CORE-3371	Using WebSphere as an application server may have resulted in malfunctions when logging in on the FirstSpirit start page.	FirstSpirit home page	5.2R6
CORE-3372 CORE-3374 CORE-3392	<p>Missing library dependencies have been added for the FirstSpirit web application from the “fs-integration.fsm”, “fs-search.fsm” and “fs-security.fsm” modules. Updating these modules is recommended.</p> <p>Further information can be found in chapter “Modules (general): Library dependencies added in FirstSpirit web applications”.</p>	Module development, Modules	5.2R6
CORE-3384	Improved loading performance of SiteArchitect after project selection.	SiteArchitect	5.2R6
CORE-3393	<p>As of the current FirstSpirit version, the new interface <code>ConnectionExtractor</code> (package <code>de.espirit.firstspirit.web</code>, FirstSpirit Developer API) is available.</p> <p>Further information can be found in chapter “Module Development, Scripts, API: New API interface “ConnectionExtractor” allows access to the connection of the logged-in user”.</p>	Developer, FirstSpirit API	5.2R16



ID	Description	Categories	Version
CORE-3409	The display has been improved when comparing versions of metadata.	SiteArchitect	5.2R7
CORE-3416	In SiteArchitect, improved consideration of the template set that is configured for a preview viewport (functionality “Multi Perspective Preview”).	Multi Perspective Preview, SiteArchitect	5.2R6
CORE-3417	Uninstalling a defective module may have failed.	ServerManager	5.2R7
CORE-3418	Erroneous behavior could occur when creating images using the method <code>getImageFromIcon(Icon)</code> (interface <code>ImageAgent</code> , package <code>de.espirit.firstspirit.agency</code>).	FirstSpirit API	5.2R6
CORE-3422	The method <code>checkAndThrow()</code> , part of the interface <code>ServerActionHandle</code> (FirstSpirit Access-API, Package <code>de.espirit.firstspirit.access</code>), has been optimized.	Developer, FirstSpirit API	5.2R6
CORE-3424	Optimized logging for project components during server start-up.	Isolated mode	5.2R7
CORE-3426	As of the current FirstSpirit version, the start-up process is considered to be finished before web application updates are performed. Further information can be found in chapter “Administration: Start-up process: FirstSpirit server starts up independently of web application updates”.	FirstSpirit Administrator	5.2R6
CORE-3428	In form, rule, and output channel editors of templates, using the action “Undo” (<code>Ctrl + Z</code>) could lead to erroneous behavior.	Developer, SiteArchitect, Template Store	5.2R6
CORE-3431	Optimized copying of content into the FirstSpirit clipboard via the keyboard shortcut <code>Ctrl + C</code> .	Clipboard, SiteArchitect	5.2R6
CORE-3436	The performance has been optimized for the Mac OS X operating system when adding elements to the tree with drag-and-drop.	SiteArchitect	5.2R6



ID	Description	Categories	Version
CORE-3452	The recognition of file types when uploading media using drag-and-drop has been improved. Further information can be found in chapter “Media: Recognition of file types when uploading media using drag-and-drop improved”.	Editor, Media Store	5.2R6
CORE-3456	For a user with server administrator privileges, “Administrator mode” was erroneously initially active in SiteArchitect (menu: “Project / Administrator mode”).	Server Administrator, SiteArchitect	5.2R6
CORE-3461	Improvements have been made to the display in the dialog for renaming objects in projects with many different languages.	SiteArchitect	2018-07
CORE-3464	Generating output of data sets from a content source using the function <code>contentSelect</code> did not work correctly in some cases.	Generation	5.2R6
CORE-3466	FirstSpirit Server performance improvements in the “Send message” area (ServerManager: menu “Extras / Send message”).	Performance, Server Administrator	5.2R6
CORE-3475	Corrected information about libraries in system web app components.	Isolated mode	5.2R7
CORE-3479	To improve traceability, improvements have been made to logging the server update schedule in the current FirstSpirit version. Further information can be found in chapter “Administration: Server update: Improved schedule logging”.	FirstSpirit Administrator, Tasks	5.2R6
CORE-3481	On the FirstSpirit start page, the user will now be notified about a failed login (invalid user name or password) with the message “Login to the server 'XYZ' failed!”	FirstSpirit home page	5.2R10
CORE-3482	Optimized modification detection of a page when adding a section via copy-and-paste.	SiteArchitect	5.2R6
CORE-3493	Improvements in the area “Content Transport”.	Content Transport	5.2R6



ID	Description	Categories	Version
CORE-3495	Optimized the action “Undo” (Ctrl + Z) in form, rule, and output channel editors.	Developer, SiteArchitect, Template Store	5.2R6
CORE-3505	Improved detection of identical or compatible module resources using unique identifiers (following the Maven schema) and the properties “version”, “minVersion”, and “maxVersion”. Further information can be found in chapter “Module Development, Scripts, API: Improved detection of identical or compatible module resources”.	Developer, Module development, Modules	5.2R6
CORE-3508	The way in which the FirstSpirit administrator user is handled in the case of special configurations has been improved.	FirstSpirit Administrator	5.2R10
CORE-3519	When editing content, clicking in the integrated preview could lead to erroneous behavior of keyboard control.	SiteArchitect	5.2R8
CORE-3529	As of the current version of FirstSpirit, the FirstSpirit server will recognize if web applications on a Tomcat running on a dedicated host are not up-to-date and will trigger an update. Further information can be found in chapter “Administration: Web server Apache Tomcat: Automatic update of web applications”.	Developer, FirstSpirit Administrator	5.2R6
CORE-3535	The behavior when changing the language or focus in the FS_CATALOG input component has been optimized.	Input Components	5.2R6
CORE-3542	For newly-created sections, toggling the option “Include this section in the output” was erroneously not observed during rule evaluation if the page was already in edit mode.	Dynamic Forms	5.2R7
CORE-3547	When installing the Launcher, problems could arise if multiple users used the same computer.	Launcher	5.2R12
CORE-3548	Cleanup of the repository files during archiving has been improved.	Archiving, FirstSpirit Administrator	5.2R6
CORE-3549	File pointer management for socket connections has been improved.	Server Administrator	5.2R6



ID	Description	Categories	Version
CORE-3550	Generation may have resulted in a malfunction.	Generation	5.2R6
CORE-3562	When the available software versions cannot be loaded, due to the update service not being available, the user is now shown a suitable error message.	ServerMonitoring	2018-07
CORE-3563	Evaluation of the project property “Languages can be hidden” (“FirstSpirit ServerManager / Project / Properties / Options”) in SiteArchitect has been improved.	ServerManager, SiteArchitect	5.2R6
CORE-3564	Optimized stop/restart process of web applications when using Apache Tomcat 8 as web server.	FirstSpirit Administrator	5.2R6
CORE-3572	In rare cases, accessing the repository may have resulted in malfunctions.	FirstSpirit Administrator, ServerManager	5.2R6
CORE-3574	Updating icons and label of MenuItemsPlugin (Interface <code>JavaClientEditorialToolbarItemsPlugin</code> , Package <code>de.espirit.firstspirit.client.plugin</code>) has been improved.	SiteArchitect	5.2R6
CORE-3577	Erroneous behavior could occur during start-up of FirstSpirit SiteArchitect if Websphere was used as an application server.	FirstSpirit Administrator	5.2R6
CORE-3580	Recognition of file patterns in the context of archiving has been improved.	Archiving	5.2R6
CORE-3581	After changing and creating another version of a content package, the found dependency was erroneously logged as WARN instead of INFO.	Corporate Content	5.2R20
CORE-3583	The <code>getService(Class<T>)</code> method of the <code>ServicesBroker</code> interface (FirstSPirit Access API, Package <code>de.espirit.firstspirit.access</code>) has been optimized.	FirstSpirit API, Performance	5.2R6
CORE-3591	Rolling out a package in the target project may have resulted in a malfunction.	Corporate Content	5.2R6



ID	Description	Categories	Version
CORE-3605	Improved safeguard from erroneous path configurations for global web applications in the file <code>fs-server.conf</code> (parameters <code>WEB_DIR</code> , <code>WEBAPP_ROOT_PATH</code> , <code>WEBAPP_WEBEDIT5_PATH</code> , <code>WEBAPP_WEBMON_PATH</code> , <code>WEBAPP_STAGING_PATH</code> , and <code>WEBAPP_PREVIEW_PATH</code>).	FirstSpirit Administrator	5.2R6
CORE-3608	While using or updating the FOP module, erroneous behavior could occur.	FirstSpirit Administrator, Modules, ServerManager	5.2R6
CORE-3611	Optimized rule evaluation for option-based input components (e.g. <code>CMS_INPUT_COMBOBOX</code>) whose values are sourced from a database.	ContentCreator, Dynamic Forms	5.2R7
CORE-3623	Optimized memory usage in ContentCreator.	ContentCreator	5.2R6
CORE-3635	When using a nested <code>FS_CATALOG</code> input component, erroneous display could occur in the edit/"snippet" view.	Input Components, SiteArchitect	5.2R7
CORE-3636	After updating a module via server properties in ServerManager, the version of a web application associated with that module will now be displayed correctly in project properties.	Isolated mode	5.2R7
CORE-3642	Under certain circumstances, nesting of the input component <code>FS_CATALOG</code> could lead to erroneous behavior.	SiteArchitect	5.2R12
CORE-3644	The report sidebar is now resizable. Further information can be found in chapter "ContentCreator: Dynamically resizable report sidebar".	ContentCreator, Reports	5.2R8
CORE-3645	Optimized observation of activated editorial languages in forms.	ContentCreator	5.2R6
CORE-3675	Erroneous behavior could occur when populating input components located in sub-forms via drag-and-drop.	Input Components, SiteArchitect	5.2R6



ID	Description	Categories	Version
CORE-3681	When using multiple monitors, the position of SiteArchitect was erroneously not considered when displaying confirmation dialogs.	SiteArchitect	5.2R7
CORE-3682	Erroneous behavior could occur when restarting the server via ServerMonitoring.	FirstSpirit Administrator	5.2R6
CORE-3686	Improved observation of restrictions in the input component FS_REFERENCE when multiple remote connections to the own project are used.	Input Components, SiteArchitect	5.2R7
CORE-3688	Improved preview of the selected datasets when using “Multi Perspective Preview” (MPP).	Multi Perspective Preview, SiteArchitect	5.2R6
CORE-3689	In very rare cases, using code completion in the form could cause erroneous behavior.	Template Development	5.2R7
CORE-3690	Undesired notifications may have been shown to a user on pages for which he/she only had the permission “Visible”.	Permissions, SiteArchitect	5.2R6
CORE-3703	In the selection dialog, optimized loading behavior of the preview image.	SiteArchitect	5.2R7
CORE-3704	Optimized layout of tree node labels in the input component CMS_INPUT_PERMISSION.	ContentCreator	5.2R6
CORE-3710	Improved rule-based control for editing entries of the input components FS_CATALOG and FS_INDEX.	Input Components, SiteArchitect	5.2R6
CORE-3713	Improved focus behavior when scrolling or making selections in the input component CMS_INPUT_DOM.	Input Components, SiteArchitect	5.2R6
CORE-3719	The process of cropping images has been improved.	Media Store, SiteArchitect	5.2R10



ID	Description	Categories	Version
CORE-3730	<p>For improved consistency, the title text that may be set for a dialog via the method <code>setTitle(String title)</code> of the interface <code>ShowFormDialogOperation</code> (package <code>de.espirit.firstspirit.ui.operations</code>, FirstSpirit Developer API) is now also used for the dialog's main title.</p> <p>Further information can be found in chapter "Module Development, Scripts, API: ContentCreator: Use of "setTitle" for a dialog's main title".</p>	ContentCreator, FirstSpirit API	5.2R7
CORE-3732	Optimized display of long link texts in the input component <code>CMS_INPUT_LINK</code> .	ContentCreator	5.2R21
CORE-3742	When previewing entries of the input component <code>FS_INDEX</code> , the "Refresh" button in the main toolbar was erroneously deactivated.	SiteArchitect	5.2R19
CORE-3745	Erroneous behavior could occur when displaying the input component <code>FS_LIST</code> (type <code>DATABASE</code>) in a dataset form.	Input Components, SiteArchitect	5.2R6
CORE-3751	Optimized detection of incompatible module resources.	Isolated mode	5.2R7
CORE-3753	Deregistering a cluster slave server from the cluster master server via <code>ServerManager</code> could temporarily lead to the deregistered slave server no longer restarting automatically.	Server Administrator, ServerManager	5.2R7
CORE-3763	Synchronization issues could arise in language-independent input components while editing the form in multiple languages.	Input Components, SiteArchitect	5.2R6
CORE-3768	Improved performance when editing data sources.	Content Store, Performance, SiteArchitect	5.2R6
CORE-3788	Synchronizing between workspace and the preview area after saving changes in forms has been optimized.	Preview, SiteArchitect, Template Store	5.2R6
CORE-3789	Highlighting of entries of a report when moving the mouse pointer over an element has been improved.	Reports, SiteArchitect	5.2R6
CORE-3792	Improved display logic for workflows in the status bar.	SiteArchitect, Workflow	5.2R7



ID	Description	Categories	Version
CORE-3793	Inserting and filling new lines in CMS_INPUT_DOMTABLE input component has been improved.	ContentCreator, Input Components	5.2R6
CORE-3794	Erroneous behavior could occur when creating a database schema from an external database.	Database, SiteArchitect	5.2R6
CORE-3795	During archiving, inbound references are now also considered.	Archiving	5.2R7
CORE-3796	Optimized loading of action groups of MenuItemsPlugin (interface <code>JavaClientEditorialToolbarItemsPlugin</code> , package <code>de.espirit.firstspirit.client.plugin</code>).	SiteArchitect	5.2R7
CORE-3797	Modified logging during FirstSpirit server start-up for the case that web applications are running on an external Tomcat.	FirstSpirit Administrator	5.2R7
CORE-3812	When creating a database schema from an external database, problems in accessing foreign key columns could occur.	Database	5.2R7
CORE-3816 CORE-3951	Optimized performance when editing datasets that are displayed within the form of an input component FS_LIST (type DATABASE).	Content Store, Performance, SiteArchitect	5.2R6
CORE-3822	During an export, the folder "Lost & Found" will no longer be exported. This behavior may be controlled via a new API method. Further information can be found in chapter "External Synchronization: Export: Folder "Lost & Found" will no longer be exported".	External synchronization	5.2R14
CORE-3840	Erroneous behavior could occur when using the methods <code>hasGui()</code> and <code>getGui(Frame)</code> of the interface <code>Configuration</code> (FirstSpirit Developer API, package <code>de.espirit.firstspirit.module</code>).	Developer, Modules	5.2R7



ID	Description	Categories	Version
CORE-3848	<p>Aborting workflows from within the task list now requires at least project administrator privileges.</p> <p>Further information can be found in chapter “SiteArchitect: Workflows / Task list: Aborting workflows now requires project administrator privileges”.</p>	Permissions, SiteArchitect, Workflow	5.2R10
CORE-3851	Optimized performance of loading data sources with datasets which contain an input component of type FS_INDEX.	Performance, SiteArchitect	5.2R7
CORE-3854	Improved rules evaluation in the input component CMS_INPUT_LINK.	Dynamic Forms, SiteArchitect	5.2R7
CORE-3855	Improved focus behavior when scrolling or making selections in the input component CMS_INPUT_DOMTABLE.	Input Components, SiteArchitect	5.2R6
CORE-3869	You can suppress the media preview in the project properties in the ServerManager. This setting is now correctly evaluated in the SiteArchitect.	Preview, SiteArchitect	5.2R13
CORE-3871	<p>A confirmation dialog now warns a user if an element is about to be deleted which is still bookmarked as a master copy.</p> <p>Further information can be found in chapter “ContentCreator: Deletion of bookmarks and master copies”.</p>	Bookmarks, ContentCreator, Editor	5.2R7
CORE-3882	Optimized performance of loading the data source overview with datasets whose forms contain an FS_INDEX input component with many referenced datasets.	Content Store, Input Components, SiteArchitect	5.2R7
CORE-3884	In order to rename objects in the tree, the function key F2 may be used as an alternative to the function key F9 .	SiteArchitect	5.2R6
CORE-3886	<p>As of the current FirstSpirit version, Microsoft SQL Server, version 2016, is officially supported for use with FirstSpirit as a database server running on Windows servers.</p> <p>Further information can be found in chapter “General: Databases: Support for Microsoft SQL Server 2016 and data type "ntext””.</p>	Database	5.2R10



ID	Description	Categories	Version
CORE-3888	<p>As of the current FirstSpirit version, MariaDB is officially supported for use with FirstSpirit.</p> <p>Further information can be found in chapter “General: Datenbases: Support for MariaDB”.</p>	Database	5.2R12
CORE-3890	<p>The interface <code>Executable</code> has been improved.</p> <p>Further information can be found in chapter “Module Development, Scripts, API: Interface "Executable" (package "de.espirit.firstspirit.access.script") improved”.</p>	Developer, FirstSpirit API	5.2R13
CORE-3891	<p>Improved stability of connections between SiteArchitect and server.</p>	SiteArchitect	5.2R6
CORE-3897	<p>Caching of DNS entries can now optionally be configured via the parameter <code>networkaddress.cache.ttl</code> in the file <code>fs-server.conf</code>.</p> <p>Further information can be found in chapter “Administration: Configuration of JVM time-to-live (TTL) for DNS name look-ups”.</p>	Server Administrator	2018-11
CORE-3898	<p>If an <code>FS_INDEX</code> input component does not contain any entries, the new method <code>.isEmpty()</code> returns <code>true</code>.</p> <p>Further information can be found in chapter “Input components: <code>FS_INDEX</code>: Emptiness check with <code>.isEmpty()</code>”.</p>	Input Components, Template Development	5.2R7
CORE-3900	<p>The language display has now been optimized through more stringent use of stored display names.</p> <p>Further information can be found in chapter “SiteArchitect / ServerManager: Use of display names”.</p>	Languages, ServerManager, SiteArchitect	5.2R21
CORE-3910	<p>Improved the display of web components in project properties.</p>	ServerManager	5.2R7



ID	Description	Categories	Version
CORE-3911	When using the FirstSpirit module “OfficeConnect”, contents from the clipboard can now be pasted as plain text - without formatting, links, images, etc. - via the keyboard shortcut Ctrl + Shift + V . Further information can be found in chapter “Modules: OfficeConnect: Pasting as plain text with Ctrl+Shift+V”.	Clipboard, Editor, Modules, SiteArchitect	5.2R11
CORE-3913 CORE-3914	Optimized performance when selecting objects in the tree.	Performance, SiteArchitect	5.2R6
CORE-3917	When the browser Mozilla Firefox was used, inputting text following a link in a table cell could cause erroneous behavior.	ContentCreator	5.2R18
CORE-3918	In the input component CMS_INPUT_DOM, corrected copying of links between different languages.	ContentCreator	5.2R7
CORE-3919	Improved evaluation of settings for browser, office, and graphics engine.	SiteArchitect	5.2R6
CORE-3920	Optimized notification about rule infractions related to subforms of the input component FS_LIST.	Dynamic Forms, SiteArchitect	5.2R7
CORE-3922	When adding a table template to a feature, the schema node was erroneously not considered a required reference. This could lead to erroneous behavior when installing the feature.	Content Transport	5.2R8
CORE-3934	Optimized display of messages in SiteArchitect which are sent from within ServerMonitoring (“FirstSpirit / Message”).	SiteArchitect	2018-12
CORE-3942	Improved user experience when searching in a data source.	Content Store, SiteArchitect	2018-07



ID	Description	Categories	Version
CORE-3949	<p>The <code>VersionInfo</code> object returned by the interface <code>ServerInformationAgent</code> (FirstSpirit Access API, package <code>de.espirit.firstspirit.agency</code>) now provides information about the currently active server mode (“Legacy” or “Isolated”).</p> <p>Further information can be found in chapter “Module Development, Scripts, API: Identification of server mode (isolated vs. legacy)”.</p>	Developer, FirstSpirit API, Isolated mode, Module development	5.2R7
CORE-3950	<p>Optimized the order of (image) resolutions which are transported from a source project into a target project using FirstSpirit ContentTransport or External Synchronization.</p> <p>Further information can be found in chapter “Modules: Corporate Content: Multisite Management: Export of image resolutions”.</p>	Content Transport, External synchronization	5.2R7
CORE-3954	In external synchronization, unnecessary updates are now avoided during import.	External synchronization	5.2R7
CORE-3963	Enhanced logging in the module “FirstSpirit DynamicPersonalization”.	Modules	5.2R7
CORE-3983	Identical resources have been consolidated when using more than one project-specific web component.	Modules, Server Administrator	5.2R7
CORE-3990	Improved consideration of authorized users during mail dispatch in workflows.	Workflow	5.2R7
CORE-3993	In the overview of the input component <code>FS_LIST</code> (type <code>DATABASE</code>), erroneous behavior could occur in the display of columns mapped to N:M foreign key relationships.	Input Components, SiteArchitect	5.2R6
CORE-3996	<p>From the current FirstSpirit version onwards, an internal web server URL may be configured for web server.</p> <p>Further information can be found in chapter “Administration: Updating web applications on external web servers”.</p>	FirstSpirit Administrator, ServerManager	5.2R7



ID	Description	Categories	Version
CORE-4005	<p>The new method <code>getServerName()</code> (Interface <code>ServerInformationAgent</code>, FirstSpirit Access-API) returns the server's hostname.</p> <p>Further information can be found in chapter "Module Development, Scripts, API: Getting the host name per API (interface "ServerInformationAgent")".</p>	FirstSpirit API	5.2R10
CORE-4007	Improved stability in integrated preview when using the browser engine "Internet Explorer".	Preview, SiteArchitect	5.2R7
CORE-4011	Optimized indexing performance.	SiteArchitect	5.2R8
CORE-4013	Optimized status detection for the menu entry "View" / "Display area of AppCenter / Preview".	SiteArchitect	5.2R7
CORE-4020	Login-related security improvements on the start page.	FirstSpirit home page, Security	2018-06
CORE-4032	<p>New interface <code>ProjectCleanupTask</code> in the package <code>de.espirit.firstspirit.access.schedule</code> (FirstSpirit Developer API) allows for creating and configuring archival schedule actions.</p> <p>Further information can be found in chapter "Module Development, Scripts, API: Schedules: Creating and configuring an archival schedule action via API (<code>de.espirit.firstspirit.access.schedule.ProjectCleanupTask</code>)".</p>	Advanced URL, Archiving, Developer, FirstSpirit API, Tasks	5.2R9
CORE-4049	Optimized performance of saving datasets whose forms contain an FS_LIST input component (type DATABASE) with many referenced datasets.	SiteArchitect	5.2R7
CORE-4050	Corrected the return value of the statement <code>§CMS_REF(...)</code> when using the optional parameter <code>abs:2</code> .	Developer, Template Development	5.2R7
CORE-4061	The update process of global web applications when updating the FirstSpirit server has been improved.	Server Administrator	5.2R7



ID	Description	Categories	Version
CORE-4062	During import, certain specific circumstances could lead to elements in the external file system being mistakenly deleted if, previously, local changes were made in the target project that differed from the exported state.	External synchronization	5.2R7
CORE-4063	Performance improvements related to the Page Content store when saving a page with many sections.	SiteArchitect	5.2R7
CORE-4064	A defective display of the menu bar in ContentCreator could occur after deleting a table template in SiteArchitect	ContentCreator	5.2R7
CORE-4070	In very rare cases, using the input component FS_INDEX within a language-dependent FS_CATALOG input component could cause erroneous behavior.	ContentCreator	5.2R7
CORE-4072	Improved identification of invalid references in the input component FS_LIST (type DATABASE).	Input Components, SiteArchitect	5.2R7
CORE-4080	Improved display of the results of a query in the query template.	SiteArchitect, Template Store	5.2R7
CORE-4092	In certain circumstances, switching between languages in the workspace area could lead to erroneous behavior.	SiteArchitect	5.2R7
CORE-4103	In rare cases, setting focus on an object could lead to an erroneous state of action buttons.	SiteArchitect	5.2R7
CORE-4104	<p>Elements in the FS_INDEX input element (e.g., datasets) can now be edited language-dependently in edit mode in FirstSpirit ContentCreator.</p> <p>Further information can be found in chapter “ContentCreator: FS_INDEX: Language can now be changed in the internal elements”.</p>	ContentCreator, Database, Editor, Input Components, Languages	2018-07
CORE-4108	Optimized performance of calculating the page preview with many database-based input components of type CMS_INPUT_COMBOBOX.	Performance, Preview	5.2R7
CORE-4111	Improved cluster generation on slave servers.	Generation	5.2R12



ID	Description	Categories	Version
CORE-4128	In image galleries (input component FS_LIST, type DATABASE with <MEDIAMODE> tag), a manually created sort order of entries was erroneously not observed.	Input Components, SiteArchitect	5.2R7
CORE-4148	Optimized search for datasets in the selection dialog of the input component FS_LIST.	Input Components	5.2R8
CORE-4150	<p>As of the current FirstSpirit version, user interface elements in ContentCreator (e.g. menus “Contents”, “Media”, and “Actions”; menu entries; input components; and report parameters) are identified in HTML.</p> <p>Further information can be found in chapter “ContentCreator: Identification of user interface elements”.</p>	ContentCreator, Developer, FirstSpirit API	5.2R7
CORE-4163	<p>Optimized transport of table templates into a target project with a different language set.</p> <p>Further information can be found in chapter “Modules: Corporate Content: Multisite Management: Transport of table templates into projects with different language counts”.</p>	Content Transport, SiteArchitect, Table templates	5.2R7
CORE-4168	In SiteArchitect running on macOS, use of the input component FS_LIST could lead to limited operability of SiteArchitect.	Input Components, SiteArchitect	5.2R7
CORE-4171	If a table template lacked definition of a preview page, refreshing the page could lead to an erroneous display in the preview.	ContentCreator	5.2R8



ID	Description	Categories	Version
<p>CORE-4172</p> <p>CORE-3865</p> <p>CORE-3901</p> <p>CORE-4308</p>	<p>In the course of export format readjustment, an export will now only create one directory named <code>.FirstSpirit</code> instead of creating several directories of that name. Furthermore, the contents of the files <code>Info.txt</code> and <code>Files.txt</code>, which also contain internal meta information, have been changed, and the files have been renamed to <code>FS_Info.txt</code> and <code>FS_Files.txt</code>, respectively. In this context, the format of the file <code>Entities.xml</code>, which contains contents of datasets, has been changed as well.</p> <p>Further information can be found in chapter “External Synchronization: General changes to the data format”.</p>	<p>External synchronization</p>	<p>5.2R14</p>
<p>CORE-4173</p>	<p>In addition to providing information about files which were created in, deleted from, or updated in the file system during an export, the interface <code>ExportOperation.Result</code> now includes newly implemented methods which provide information about moved files as well as other information (FirstSpirit Developer API, package <code>de.espirit.firstspirit.store.access.nexport.c</code> interface <code>ExportOperation.Result</code>).</p> <p>Further information can be found in chapter “External Synchronization: Export: Additional information about exported files (interface "ExportOperation.Result")”.</p>	<p>External synchronization</p>	<p>5.2R14</p>
<p>CORE-4189</p>	<p>The detection of CSS mapping files (<code>*.css.map</code>) during an upload with drag and drop has been improved.</p>	<p>Media Store, SiteArchitect</p>	<p>5.2R7</p>
<p>CORE-4191</p>	<p>When editing content using the “InEdit” function in the <code>CMS_INPUT_RADIOBUTTON</code> input component (single selection from a displayed list), the options could be displayed incorrectly.</p>	<p>ContentCreator</p>	<p>5.2R13</p>
<p>CORE-4199</p>	<p>Optimized default contents of a rule definition after creation of a new template.</p> <p>The editor now initially contains opening and closing <code><RULES></code> tags.</p>	<p>Dynamic Forms, Template Development</p>	<p>5.2R7</p>



ID	Description	Categories	Version
CORE-4208	Deleted features may now be removed from the FirstSpirit repository via an archival schedule action. Further information can be found in chapter “Modules: Corporate Content: ContentTransport: Archival of deleted feature collections”.	Content Transport	5.2R7
CORE-4221	In rare cases, the tag “style” could be stored multiple times when saving format templates.	Developer	5.2R7
CORE-4228	As of the current FirstSpirit version, signing of FirstSpirit JAR files is carried out using SHA-256. Further information can be found in chapter “System: Signing with SHA-256”.	FirstSpirit Administrator	5.2R7
CORE-4230	Corrected version information about standard components of the system module.	Server Administrator	5.2R7
CORE-4247	Improved Java compatibility during FirstSpirit installation on Linux.	FirstSpirit Administrator	5.2R7
CORE-4248	In “Online Documentation for FirstSpirit” (ODFS), improved display of the version information “Available since” for API methods of data types.	Developer	5.2R7
CORE-4257	Optimized highlighting and editing of values in the input component FS_INDEX.	ContentCreator	5.2R7
CORE-4259	Improved error message when uploading images with unmet criteria.	FirstSpirit API	5.2R7
CORE-4261	When using external logic in dynamic forms, setting a value in the input component CMS_INPUT_TEXT could cause erroneous behavior.	Dynamic Forms, Template Development	5.2R7
CORE-4262	Improvements related to the Template Wizard.	Template Wizard	5.2R7
CORE-4265	Optimized detection of invalid references in the input component FS_REFERENCE.	SiteArchitect	5.2R8



ID	Description	Categories	Version
CORE-4275	Optimized the method <code>reload(Element)</code> (JavaScript API, JavaScript object: <code>top.WE_API.Preview</code>), which is used to update part of a document.	ContentCreator	5.2R7
CORE-4280	Erroneous behavior could occur when the “pluggability” feature (Java Servlet Specification 3.0) was deactivated.	FirstSpirit Administrator	5.2R7
CORE-4289	In the input component <code>CMS_INPUT_DOMTABLE</code> , saving links could lead to erroneous behavior.	ContentCreator	5.2R7
CORE-4292	Optimized detection of duplicate module resources.	Isolated mode	5.2R8
CORE-4307	Optimized detection of invalid references in the input component <code>FS_REFERENCE</code> .	ContentCreator	5.2R8
CORE-4314	Improved detection of rule infractions for links within the input components <code>CMS_INPUT_LINK</code> , <code>CMS_INPUT_IMAGE</code> , and <code>CMS_INPUT_DOM</code> .	Dynamic Forms, SiteArchitect	5.2R8
CORE-4315	During a metadata search, malfunctions could occur when entering search terms.	Search, SiteArchitect	5.2R8
CORE-4317	Improved initialization of the class loader in SiteArchitect.	Isolated mode	5.2R7
CORE-4320	Improved display of keyboard shortcuts in tool tips.	SiteArchitect	5.2R7
CORE-4328	The version history for datasets has been optimized.	Content Store, SiteArchitect, Version history	5.2R8
CORE-4338	In non-Webstart environments (Launcher), the menu entry “Switch Projects” was erroneously active.	SiteArchitect	5.2R7
CORE-4340	During generation an erroneous display could happen rarely when using the Tomcat web server.	ContentCreator	5.2R7
CORE-4388	Optimized copying of content into the FirstSpirit clipboard via the keyboard shortcut <code>Ctrl + C</code> .	Clipboard, SiteArchitect	5.2R10
CORE-4395	Modifying the input component <code>FS_LIST</code> via a script during generation could lead to erroneous behavior.	Generation	5.2R15
CORE-4411	Improved identification of <code>*.msg</code> files (e-mails in Microsoft Outlook) when uploading files via drag-and-drop.	Media Store, SiteArchitect	5.2R8



ID	Description	Categories	Version
CORE-4415	Restoring revisions resulted in a malfunction on pages if the child list had been changed by means of a previous restoration process.	SiteArchitect	5.2R9
CORE-4426	The CMS_INPUT_DOMTABLE input component has been optimized to take into account the <code>columnChange</code> parameter in the context menu.	SiteArchitect	2019-01
CORE-4432	In rare cases, after changing the repository type from “Berkley DB Java Edition V5” to “Berkley DB Java Edition V3”, the conversion process may use more disk space than normal.	FirstSpirit Administrator, Repository	5.2R8
CORE-4455	Improved performance of client logging.	ServerManager, SiteArchitect	5.2R8
CORE-4466	When a feature with a data source is imported into a project, in which an invalid layer was defined, a corresponding error message is now shown.	Content Transport	2018-07
CORE-4473	Client logging has been optimized for the ServerManager.	ServerManager	5.2R13
CORE-4489	<p>During an import into a target project, implicitly exported objects will now only be created in the target project if they are not present there and will no longer be updated if they are already present in the target project.</p> <p>Further information can be found in chapter “External Synchronization: Export: Explicitly and implicitly selected objects”.</p>	External synchronization	5.2R14
CORE-4494	Invocation of the context menu item “Corporate Content / Rebind original” on a format template could cause erroneous behavior.	Corporate Content, FirstSpirit Administrator, SiteArchitect, Template Store	5.2R7
CORE-4519	When editing media elements with the file name extension “config”, saving the element erroneously led to the extension being changed.	Media Store, SiteArchitect	5.2R7



ID	Description	Categories	Version
CORE-4520	For new installations of FirstSpirit, the Jetty option “ForwardedRequestCustomizer” for evaluating information regarding reverse proxies will now be set by default.	Server Administrator	5.2R7
CORE-4534	File extensions can now be assigned to a desired MIME type using the new <code>mime.types.additional</code> parameter in the <code>fs-server.conf</code> configuration file. Further information can be found in chapter “Administration: Media: Assigning File Extensions to MIME Types”.	FirstSpirit Administrator, Media Store	5.2R10
CORE-4541	With certain specific configurations, in rare cases, erroneous behavior could occur when updating the subscription in the target project.	Corporate Content	5.2R10
CORE-4543	In rare cases, erroneous behavior could occur when iterating through the objects of the interface <code>Index</code> (FirstSpirit Developer API, package <code>de.espirit.firstspirit.client.access.editor.</code>	Developer, FirstSpirit API	5.2R7
CORE-4551	The detection of changes while renaming the display name of an element in the edit mode has been improved.	SiteArchitect	5.2R13
CORE-4555	If meta files are missing (empty directory structures), an error message will be output if an export or an import is attempted, and the export/import will be prevented. If <code>deleteObsoleteFiles</code> is set to “true”, an export will only log a warning. Further information can be found in chapter “External Synchronization: Detection of empty directory structures (missing meta files)”.	External synchronization	5.2R14
CORE-4569	Changes to the name of a server-wide action template is now taken into account during use for references within project schedules.	ServerManager	5.2R14
CORE-4573	Erroneous behavior could occur when editing a language-dependent input component <code>FS_CATALOG</code> within a language-dependent input component <code>FS_LIST</code> (type <code>DATABASE</code>).	ContentCreator	5.2R7



ID	Description	Categories	Version
CORE-4575	In the input component FS_INDEX, dynamically populating a parameter in a query using rules could lead to erroneous behavior.	Dynamic Forms, SiteArchitect	5.2R8
CORE-4577	As of the current FirstSpirit version, it is possible to more precisely control indexing of referenced datasets. Further information can be found in chapter "Search: Controlling indexing of referenced datasets".	Content Store, Developer, FirstSpirit API, Indexing, Input Components, Performance, Search	5.2R12
CORE-4621	During generation of Advanced URLs, erroneous behavior could occur if a structure folder had a display name that contained a special character.	Generation	5.2R8
CORE-4637	In the input component CMS_INPUT_DOM, improved pasting of Word content from the clipboard.	ContentCreator	5.2R8
CORE-4644	Optimized persistence of fixed workspaces.	SiteArchitect	5.2R8
CORE-4653	Changed the default value of the method <code>setDeleteObsoleteFiles(boolean enable)</code> of the interface <code>ExportOperation</code> (FirstSpirit Developer API, package <code>de.espirit.firstspirit.store.access.nexport.c</code>) from <code>false</code> to <code>true</code> and implemented additional log output. Further information can be found in chapter "External Synchronization: Deletion of obsolete files and additional logging".	Developer, External synchronization, FirstSpirit API	5.2R7
CORE-4659	Erroneous behavior could arise after deleting an entry of the input component FS_CATALOG.	SiteArchitect	5.2R19
CORE-4663	When using the browser engine "Google Chrome" in the integrated preview, downloading a video in mp4 format could lead to erroneous behavior.	SiteArchitect	5.2R8



ID	Description	Categories	Version
CORE-4667	<p>The method <code>getProblems</code> of the <code>ImportOperation.Result</code> interface (FirstSpirit Developer API, <code>de.espirit.firstspirit.store.access.nexport.c</code>) can be used to output problems that occurred during an import.</p> <p>If, during the process of distributed development, two developers create new elements with the same “UID”, the GID (“Global ID”) of the element will be updated</p> <p>So far, this update has had the log level “Warning” and was part of the log output of <code>getProblems</code>. The log level was changed to “Info” with the current FirstSpirit version. For this reason, this log message will no more appear in <code>getProblems</code> of the result (<code>ImportOperation.Result</code>).</p>	Developer, External synchronization	5.2R7
CORE-4676	Erroneous behavior could occur when editing links in an input component <code>CMS_INPUT_DOM</code> which is contained within the form of an <code>FS_LIST</code> entry.	SiteArchitect	5.2R7
CORE-4681	The validation of language independent input components was improved.	ContentCreator, SiteArchitect	5.2R10
CORE-4698	Improvements of the LiveEdit functionality.	ContentCreator	5.2R19
CORE-4699	In rare cases, erroneous behavior could occur when loading the project.	SiteArchitect	5.2R8
CORE-4705	Improved display of available resolutions in the input component <code>CMS_INPUT_IMAGE_MAP</code> .	ContentCreator	5.2R8
CORE-4712	Generation on a cluster node could lead to erroneous behavior.	FirstSpirit Administrator, Generation	5.2R9
CORE-4717	<p>Use the Customize layout icon in the top right-hand corner to switch between the “Thumbnail” and “List view” views.</p> <p>Further information can be found in chapter “SiteArchitect: List view at folder level in the Media Store”.</p>	Editor, Media Store, SiteArchitect	5.2R13



ID	Description	Categories	Version
CORE-4726	The libraries of the “FirstSpirit BasicSearch” module have been updated.	FirstSpirit Administrator, Modules	5.2R9
CORE-4733	Improved performance of searches for invalid references.	Performance	5.2R17
CORE-4734	In the functionality “External Synchronization”, exporting unmodified entities erroneously led to the associated metadata files being written anew.	External synchronization	5.2R7
CORE-4743	The cropping function for alternative pictures of a specific resolution was improved.	Media Store, SiteArchitect	5.2R9
CORE-4763	<p>When importing datasets, it is now possible to distinguish between newly created and modified datasets by using the newly implemented method <code>getUpdatedEntities()</code> in the interface <code>ImportOperation.Result</code>.</p> <p>Further information can be found in chapter “External Synchronization: Import: Identification of new and modified datasets using API (interface "ImportOperation.Result")”.</p>	External synchronization	5.2R14
CORE-4780	In external synchronization, optimized the import of form default values.	External synchronization	5.2R8
CORE-4782	The display of rule violations has been improved.	ContentCreator, Dynamic Forms	5.2R9
CORE-4786	Closing a dialog that was defined via the interface <code>ShowFormDialogOperation</code> (package <code>de.espirit.firstspirit.ui.operations</code> , FirstSpirit Developer API) erroneously led to the entire page being refreshed.	ContentCreator	5.2R8
CORE-4790	Selecting a link in the integrated preview now reliably opens up the desired presentation channel.	SiteArchitect	5.2R19
CORE-4798	Respecting formatted contents in the input components <code>CMS_INPUT_DOM</code> and <code>CMS_INPUT_DOMTABLE</code> was optimized.	Input Components, SiteArchitect	5.2R9



ID	Description	Categories	Version
CORE-4824	Using the “Google Chrome” browser within the integrated preview could lead to erroneous behavior after having changed the font size within the operating system.	Preview, SiteArchitect	5.2R9
CORE-4831	Some users experienced errors in ContentCreator sessions. The handling of <code>editorId</code> attributes is now improved.	ContentCreator	5.2R10
CORE-4834	Improvements related to signing of FirstSpirit JAR files.	FirstSpirit Administrator	5.2R8
CORE-4835	The selection of data sets has been optimized for the input component <code>FS_DATASET</code> .	ContentCreator	5.2R9
CORE-4840	Default values were erroneously not taken into account when importing with external synchronization.	External synchronization	5.2R8
CORE-4841	As of the current version of FirstSpirit, English-language stop words will be added to the search index during indexing. Further information can be found in chapter “SiteArchitect / ContentCreator: Optimized Search”.	Editor, Search, SiteArchitect	5.2R18
CORE-4853	The current logging may be displayed in a separate window using the menu entry “View Log” in the menu “Help”. Searching in the log messages has been improved.	ServerManager, SiteArchitect	5.2R9
CORE-4856	Erroneous behavior could occur while editing datasets.	SiteArchitect	5.2R10
CORE-4859	Erroneous behavior could arise during creation of portal entry points (FirstSpirit module “SAP Business Package for FirstSpirit”).	Modules	5.2R20
CORE-4860	If only parts of the Page Content or Site Structure stores were exported from a source project, this erroneously led to these parts always being imported anew in the target project.	External synchronization	5.2R8
CORE-4863	Optimized evaluation of the option “Extended logging” (menu “Extras”).	SiteArchitect	5.2R8



ID	Description	Categories	Version
CORE-4870	The parameters <code>jdbc.POOLMIN</code> and <code>jdbc.POOLMAX</code> can be used to specify values in the JDBC configuration of databases which define the number of available database connections reserved for each pool. The establishment and release of these connections was optimized.	FirstSpirit Administrator	5.2R9
CORE-4873	In repeat imports, elements that are both in a released state and unchanged in the target project were erroneously imported anew.	External synchronization	5.2R8
CORE-4882	The storage location of log messages for ServerManager and SiteArchitect can now be configured - server-wide for all users via the <code>fs-server.conf</code> using the parameter <code>CLIENT_HOME_DIR</code> or one of the operating-system specific parameters (e. g. <code>CLIENT_HOME_DIR_WINDOWS</code>) or user-specific via the corresponding parameters in the connection settings. Further information can be found in chapter "SiteArchitect / ServerManager: Configurable directory for log messages".	FirstSpirit Administrator, Server Administrator, ServerManager, SiteArchitect	5.2R10
CORE-4887	Improved evaluation of rules in child forms of the input components <code>FS_LIST</code> .	Dynamic Forms, SiteArchitect	5.2R11
CORE-4888 CORE-5268	In rare cases, pop-up dialogs were opened in the background when using the operating system macOS.	SiteArchitect	5.2R10
CORE-4893	Improved logging when rolling out packages.	Corporate Content	5.2R12
CORE-4910	In the current FirstSpirit version, updated internally used software (JDK in FirstSpirit Launcher). Further information can be found in chapter "System: Integrated Software".	Integrated software	5.2R12
CORE-4925	Editing a form using EasyEdit could lead to erroneous behavior.	ContentCreator	5.2R9
CORE-4935	Improved user interaction pattern of creating a dataset.	Content Store, ContentCreator	5.2R12



ID	Description	Categories	Version
CORE-4938	Improved display of errors of type “FATAL” in ServerMonitoring.	ServerMonitoring	5.2R12
CORE-4947	Improved update process for global web applications.	FirstSpirit Administrator, Modules	5.2R12
CORE-4948	Improved deployment of custom global web applications.	Server Administrator	5.2R12
CORE-4985	With special configurations, problems with the sort order for entries could arise in the FS_LIST input component.	Input Components, SiteArchitect	5.2R10
CORE-4989	<p>The content of FirstSpirit JAR files is signed with a certificate. In the current FirstSpirit version, the content is signed with a new certificate that is valid until 2019-07-24 (24 July 2019).</p> <p>Further information can be found in chapter “General: Code signing certificate updated”.</p>	Webstart	5.2R9
CORE-5021	Displaying the change date of datasets in the overview and sorting by the date of the latest change have been improved.	SiteArchitect	5.2R13
CORE-5059	In “Health Center” (ServerMonitoring), checking for the update status of a FirstSpirit server could under certain preconditions lead to erroneous behavior.	Health Center	5.2R15
CORE-5060	For pop-up dialogues created via the RequestOperation interface (FirstSpirit Developer-API, Package de.espirit.firstspirit.ui.operations) the scrolling behavior was improved.	ContentCreator	5.2R10
CORE-5062	Optimized creation of features that include datasets in projects which do not work with releases (“autorelease mode”).	Content Transport	5.2R10
CORE-5064	<p>With the current FirstSpirit version, log messages for the browser engine used for the integrated preview are now also retained under <code>.firstspirit*/logs/SiteArchitect*.log</code>.</p> <p>Further information can be found in chapter “SiteArchitect: Logging the Integrated Preview (Browser Engines)”.</p>	SiteArchitect	5.2R10



ID	Description	Categories	Version
CORE-5072	Improved management of technical user sessions.	Sessions	5.2R12
CORE-5077	Starting with the current FirstSpirit version, the documentation of the FirstSpirit API is published additionally in separate Jar files. Further information can be found in chapter “General: Publication of FirstSpirit Javadoc via separate Jar files”.	Developer, FirstSpirit API	5.2R9
CORE-5081	When releasing datasets with N:M relationships, erroneous behavior could occur.	SiteArchitect	5.2R10
CORE-5089	During every start of SiteArchitect or ServerManager, all <code>.firstspirit_*</code> directories in which no files were changed over the last 30 days will now be deleted. Further information can be found in chapter “Administration: Automatic deletion of files from local user directories”.	Editor, FirstSpirit Administrator, ServerManager, SiteArchitect	5.2R15
CORE-5090	As of the current version of FirstSpirit, media constraints may be based upon either file name extensions or MIME type detection. Further information can be found in chapter “Administration: Media Constraints: MIME Type Detection”.	FirstSpirit Administrator, Media Constraints, ServerManager	5.2R17
CORE-5106	The process of setting up the Launcher has been improved.	Launcher	5.2R10
CORE-5117	Temporal facets of search will now be evaluated correctly again.	ContentCreator, Search	5.2R12
CORE-5134	Improved consideration of breakpoints in the template debugger.	Developer, SiteArchitect	2018-11
CORE-5135 CORE-8414 CORE-11405	In the latest FirstSpirit release, FirstSpirit supports the upload of images in SVG format with automatically identifying the MIME type. Further information can be found in chapter “Media: Support for the SVG and WebP graphic formats”.	ContentCreator, Editor, FragmentCreator, Media, Media Store, SiteArchitect	2019-12



ID	Description	Categories	Version
CORE-5140	“External Synchronization” no longer updates/modifies database schemata for which the options “Read-only” and “No schema sync” are set.	External synchronization	5.2R14
CORE-5147	Optimized roll-out behavior of project-local web applications.	Server Administrator	5.2R17
CORE-5148	Under certain conditions, reports were erroneously displayed as inactive.	ContentCreator	5.2R10
CORE-5156	During an import, dependencies will now be checked and the import will be aborted if this import would cause required missing dependencies in the target project. Further information can be found in chapter “External Synchronization: Import: Abort in case of required but missing objects”.	External synchronization	5.2R14
CORE-5157	When transferring changes between projects with different language sets, using default values could erroneously lead to manually set values not being preserved.	Corporate Content	5.2R12
CORE-5158	Inserting formatted text when using the module “OfficeConnect” has been improved.	Modules	5.2R10
CORE-5175	The method <code>installFeature(FeatureFile, LayerMapper)</code> , part of the interface <code>FeatureInstallAgent</code> (FirstSpirit Developer-API, Package <code>de.espirit.firstspirit.feature</code>), has been optimized.	Content Transport, External synchronization, FirstSpirit API	5.2R11
CORE-5182	From within a script, dialogs may be opened and forms may be displayed and modified using the FirstSpirit API. In this context, erroneous behavior could arise when setting values for the input component <code>FS_REFERENCE</code> .	Developer, SiteArchitect	5.2R12



ID	Description	Categories	Version
CORE-5194	<p>In the GOM implementation class <code>GomButton</code>, the type of the attributes <code>onClick</code> and <code>onDrop</code> has been changed from <code>String</code> to <code>GomButtonScriptReference</code>. Programmatic uses of this class may require modifications to their source code in order to observe this type change.</p> <p>Further information can be found in chapter “Module Development, Scripts, API: Changes to GOM implementation class “GomButton””.</p>	Developer, FirstSpirit API, Input Components	5.2R14
CORE-5212	<p>On the operating system Microsoft Windows, the parameter <code>WEBAPP_STAGING_PATH</code> in the file <code>fs-server.conf</code> no longer distinguishes between uppercase and lowercase characters in the path value.</p>	FirstSpirit Administrator	5.2R12
CORE-5219	<p>As of the current version of FirstSpirit, the order in which datasets are displayed in and output by <code>FS_INDEX</code> components which are based on foreign key relationships can now be set by an editor.</p> <p>Further information can be found in chapter “Input components: <code>FS_INDEX</code>: Manually Sorting Datasets”.</p>	ContentCreator, Database, Input Components, SiteArchitect, Template Development	5.2R17
CORE-5223	<p>As part of the refactoring for the module development in the so-called “Isolated mode” the integrated web server Jetty has been implemented as a module.</p> <p>Further information can be found in chapter “Administration: Isolated mode: Jetty web server is now also available as a module”.</p>	FirstSpirit Administrator, Integrated software, Isolated mode, Modules	5.2R13
CORE-5225	<p>Improved behavior of the attribute <code>regex</code> of the <code><MATCHES/></code> tag in rules (functionality “Dynamic Forms”).</p>	Developer, Dynamic Forms, Template Development	5.2R12
CORE-5226	<p>Improved installation process for features that contain datasets.</p>	Content Transport	5.2R12
CORE-5229	<p>The detection of the file to be imported has been optimized when using the Import project function.</p>	FirstSpirit Administrator, Project export / import	5.2R13



ID	Description	Categories	Version
CORE-5240	If a filtered data source is used in conjunction with an FS_DATASET input component and selectorMode="list", this filter will now also be used for dataset searches in the selection dialog.	Input Components, Search, SiteArchitect	5.2R12
CORE-5244	Improved performance of preview calculation.	Preview	5.2R11
CORE-5247	Improved display of values of the input component CMS_INPUT_PERMISSION in metadata forms.	ContentCreator	5.2R10
CORE-5254	Editing document groups may have resulted in a malfunction.	Site Store, SiteArchitect	2018-08
CORE-5262	The performance when saving forms with many database references has been improved.	SiteArchitect	5.2R11
CORE-5265	The evaluation of the configuration for the integrated preview has been improved.	SiteArchitect	5.2R14
CORE-5267	Optimized display of inherited metadata.	ContentCreator	2018-07
CORE-5270	In rare cases, erroneous behavior could occur when displaying the reference graph of a root node.	SiteArchitect	5.2R11
CORE-5273	In very rare cases, erroneous behavior could occur in Template Wizard.	Template Wizard	5.2R12
CORE-5274	Improved performance of storing and writing revision data.	Performance, Repository	5.2R12
CORE-5280	The logging has been improved when a rule ("dynamic forms") is erroneous.	Dynamic Forms	5.2R13
CORE-5281	In the input component CMS_INPUT_NUMBER, erroneous input will now trigger display of an error message.	SiteArchitect	5.2R16
CORE-5328	The current FirstSpirit version now archives revisions and tags whose tag name ends with the , such as revisions and tags created automatically during generation or other Scheduler entries. Further information can be found in chapter "Administration: Archiving: Tagged revisions are now partly taken into account".	Archiving, FirstSpirit API, FirstSpirit Administrator	5.2R13



ID	Description	Categories	Version
CORE-5342	In very rare cases, it was possible that not all external references were observed during archiving.	Archiving	5.2R12
CORE-5360	Performance improvements related to use of the input component CMS_INPUT_COMBOBOX.	Input Components, SiteArchitect	5.2R11
CORE-5385	When restoring an old dataset version, 1:N relationships were erroneously not regarded.	Content Store	5.2R15
CORE-5398	Optimized roll-out of web applications during start-up of the FirstSpirit server.	FirstSpirit Administrator	5.2R15
CORE-5426	When using cluster generation, an error could arise if user-specific services were used.	Generation, Modules, Services	5.2R12
CORE-5427	Improved deletion of elements for which edit mode is activated.	SiteArchitect	5.2R14
CORE-5433	Improved observation of own values in the input component CMS_INPUT_COMBOBOX (attribute <code>editable</code>).	Input Components, SiteArchitect	5.2R12
CORE-5445	<p>Identification of objects now uses GIDs (“global IDs”) instead of UIDs. This allows for better matching of objects from a source project to objects in a target project and thus more stable behavior when exporting and importing objects via the functionality “External Synchronization”.</p> <p>Further information can be found in chapter “External Synchronization: External Synchronization: More stable identification of objects (using GIDs)”.</p>	Developer, External synchronization	5.2R12
CORE-5478	By implementing Data Access Plug-Ins, external sources can be integrated into FS_INDEX input components. The snippet display for referenced objects has been optimized.	ContentCreator	5.2R12
CORE-5488	Improved cookie behavior as regards the internal preview.	SiteArchitect	2018-08
CORE-5489	Improved evaluation of rules within the input component FS_LIST (type DATABASE).	Dynamic Forms, SiteArchitect	5.2R12
CORE-5496	In “Multi Perspective Preview” (MPP), optimized the layout of the integrated preview.	Multi Perspective Preview, SiteArchitect	5.2R15



ID	Description	Categories	Version
CORE-5498	Optimized log messages of the browser engines used for internal preview.	SiteArchitect	5.2R12
CORE-5499	Generation on a cluster node could lead to erroneous behavior.	FirstSpirit Administrator, Generation	5.2R12
CORE-5513	<p>Passwords in FirstSpirit configuration files can now be encrypted.</p> <p>Further information can be found in chapter “Administration: Encryption of passwords in FirstSpirit configuration files”.</p>	FirstSpirit Administrator, Security	5.2R16
CORE-5514	In very rare cases, not all values were copied when creating a copy of a dataset.	ContentCreator	5.2R12
CORE-5533	<p>The behavior of the HTTP header “X-Frame-Options” is now configurable for the FirstSpirit web applications <code>fs5root</code> (start page and SiteArchitect) and <code>fs5webmon</code> (ServerMonitoring). It can be controlled via the parameter <code>frameOptionsHeader</code> in the configuration file <code>fs-server.conf</code>. The new parameter changes the previous default behavior. If embedding of the FirstSpirit web applications (or LiveEdit) into frames of another host should be allowed or if such embedding should generally be prohibited, the configuration parameter must now be set to the appropriate value.</p> <p>Further information can be found in chapter “Security: Behavior of the HTTP header “X-Frame-Options” is now configurable for the FirstSpirit web applications <code>fs5root</code> and <code>fs5webmon</code>”.</p>	FirstSpirit Administrator, FirstSpirit home page, Security, Server Administrator, ServerMonitoring	5.2R12
CORE-5548	Improved performance related to media uploads.	ContentCreator, SiteArchitect	5.2R12
CORE-5550	When deleting elements using project-specific workflows, the database write protection was incorrectly not taken into account.	Database, Workflow	5.2R13



ID	Description	Categories	Version
CORE-5551	In rare cases, erroneous behavior could occur when using ContentCreator in Apache Tomcat.	ContentCreator	5.2R12
CORE-5556	In very rare cases, erroneous behavior could arise during identification of the page template upon which the Project Settings page is based.	Global settings	5.2R12
CORE-5560	Creating a media folder in the Media Store has been improved.	ContentCreator	5.2R13
CORE-5588	Improved performance related to the use of many ACL databases.	Performance	5.2R12
CORE-5601	In rare cases, erroneous behavior could occur when opening the selection dialog of the input component FS_INDEX.	Input Components, SiteArchitect	5.2R13
CORE-5605	Improved start-up of Launcher with proxy settings.	Launcher, SiteArchitect	5.2R12
CORE-5633	In SiteArchitect, using the keyboard shortcut <code>Ctrl+Shift+F2</code> in the input components <code>CMS_INPUT_DOM</code> and <code>CMS_INPUT_DOMTABLE</code> will cause the contents of the input component to be written to the SiteArchitect client log with log level "info" (see menu item "Help / View log").	Input Components, SiteArchitect	5.2R18
CORE-5656	New method <code>getServiceConfig</code> in interface <code>ModuleAdminAgent</code> . Further information can be found in chapter "Module Development, Scripts, API: New method "getServiceConfig" in interface "ModuleAdminAgent".	Developer, FirstSpirit API, Module development	5.2R12
CORE-5681	Malfunctions may have occurred when changing the project description in the project properties.	ServerManager	5.2R14



ID	Description	Categories	Version
CORE-5686	<p>If an external web application is to be used for the preview in FirstSpirit (a Single Page Application, “SPA”, for example), the respective URL can be entered into the “External Preview URL” text field in the FirstSpirit ServerManager under “Project / Properties / ContentCreator settings”.</p> <p>Further information can be found in chapter “Administration: Using preview applications in the ContentCreator (TPP)”.</p>	ContentCreator, FirstSpirit Administrator, Preview	5.2R16
CORE-5687	<p>As of the current FirstSpirit version, it is possible to react via API to page navigation events in ContentCreator.</p> <p>Further information can be found in chapter “Module Development, Scripts, API: Reacting to page navigation events in ContentCreator”.</p>	ContentCreator, Developer, FirstSpirit API	5.2R13
CORE-5688	Security improvements related to generation.	Generation	5.2R15
CORE-5692	When archiving a project, contents of databases that were marked “read-only” were erroneously archived as well.	Archiving, Database, Tasks	5.2R12
CORE-5699	When browsing the “Deleted objects” dialog, malfunctions could occur if a project has been archived beforehand.	Archiving, SiteArchitect	5.2R13
CORE-5700	Remote project configurations have been optimized to take account of deactivated projects.	Remote access	5.2R13
CORE-5704	In rare cases, erroneous behavior could occur while editing scripts.	SiteArchitect, Template Development	5.2R12
CORE-5723	In the input component FS_INDEX, improved the consideration of parameters from external data access plugins during auto-completion.	Template Development	5.2R19
CORE-5725	While editing list entries in the input components FS_CATALOG or FS_LIST, erroneous behavior could occur when using drag-and-drop from a report.	ContentCreator, Reports	5.2R13
CORE-5734	Improved behavior related to duplicate elements in a target project.	Corporate Content	2018-10



ID	Description	Categories	Version
CORE-5742	Optimized loading of customer specific functions, which can be integrated via the FirstSpirit API (interface <code>JavaClientContextPluginsMenuItemsPlugin</code> , package <code>de.espirit.firstspirit.client.plugin</code>), using the context menu entry "Plug-ins".	SiteArchitect	2018-07
CORE-5744	Not maintaining language-dependent media for all languages could lead to malfunctions during the generation process.	Generation	5.2R13
CORE-5747	The server configuration layout has been improved.	ServerMonitoring	5.2R13
CORE-5750	As of the current version of FirstSpirit, the new interface <code>SearchIndexAgent</code> (package <code>de.espirit.firstspirit.agency</code> , FirstSpirit Developer API) allows project-specific configuration of indexing depth of referenced datasets. Further information can be found in chapter "Search: Project-specific configuration of indexing for referenced datasets".	Content Store, Developer, FirstSpirit API, Indexing, Input Components, Performance, Search	5.2R15
CORE-5753	Logging after a successful project export was improved.	Project export / import	2018-06
CORE-5757	It is now not possible to import a project with a template set which is missing on the destination server. The import will fail. Further information can be found in chapter "Administration: Importing a project with missing presentation channel".	Project export / import	5.2R13
CORE-5758	In rare cases, erroneous behavior could arise in global search.	SiteArchitect	2018-09
CORE-5774	When creating a new dataset in a data source the consideration of the edit mode while saving has been improved.	SiteArchitect	5.2R13
CORE-5779	In the CMS_INPUT_DOM input component, formatting when adding tables has been improved.	ContentCreator	2018-08



ID	Description	Categories	Version
CORE-5784	<p>The behavior when creating new datasets in FS_DATASET and FS_INDEX with <code>DatasetDataAccessPlugin</code> has been improved.</p> <p>Further information can be found in chapter “SiteArchitect: FS_DATASET / FS_INDEX: Working with newly created datasets has been optimized”.</p>	Database, Developer, Input Components, SiteArchitect	2018-07
CORE-5785	<p>As of the current FirstSpirit release, the IDs given in the release notes' issue tables reference a new, internally used tool.</p> <p>Further information can be found in chapter “General: IDs in FirstSpirit release notes”.</p>	Developer, Editor, FirstSpirit Administrator	2018-10
CORE-5792	In “External Synchronization”, optimized observation of structure variables.	External synchronization	5.2R14
CORE-5816	Corrected a bug that could cause a <code>java.lang.StackOverflowError</code> in rare cases when using the <code>toJSON()</code> function in the output channel.	Developer, Support for JSON, Template Development	2020-04
CORE-5825	Optimized evaluation of invalid references when saving datasets.	SiteArchitect	5.2R14
CORE-5828	In rules (templates), auto-completion mistakenly did not work at locations following a multi-line XML comment.	Template Development	5.2R17
CORE-5829	Synchronizing group definitions which may be transported within the project properties has been improved.	External synchronization	5.2R13



ID	Description	Categories	Version
CORE-5854	<p>To identify a FirstSpirit element in a certain project language, a new function <code>previewId()</code> similar to the <code>editorId()</code> function has been introduced. The <code>editorId()</code> function has also been expanded to include an additional <code>details</code> parameter.</p> <p>An agent has been implemented as part of the API to analyze the return value.</p> <p>Further information can be found in chapter “Module Development, Scripts, API: Expansion of functions for communication between client-side Single Page Application (SPA) and ContentCreator (TPP)”.</p>	ContentCreator, Developer, FirstSpirit API, Module development, Preview, Template Development	5.2R16
CORE-5856	Multiple reflexive configurations for remote projects in a project could lead to erroneous behavior in the selection dialog of the input component <code>FS_REFERENCE</code> .	SiteArchitect	5.2R13
CORE-5858	The persistence of web components used in global web applications (<code>fs5root</code> , <code>fs5preview</code> , <code>fs5staging</code> , <code>fs5webedit</code>) after a server start has been improved.	FirstSpirit Administrator	5.2R13
CORE-5900	<p>The current FirstSpirit version does not transmit information about layers used by the project anymore.</p> <p>Further information can be found in chapter “External Synchronization / Content Transport: Export of database schema information has been modified”.</p>	Content Transport, External synchronization	5.2R13
CORE-5901	Optimized consideration of invalid references during reference recalculation.	Content Store, FirstSpirit Administrator	5.2R17
CORE-5902	The rule evaluation in combination with the time of execution <code>ONSAVE</code> for the input component <code>FS_LIST</code> (Type <code>SERVICE</code>) has been optimized for ContentCreator.	ContentCreator, Dynamic Forms	5.2R13
CORE-5912	When using Microsoft Internet Explorer, using special characters in the input component <code>CMS_INPUT_DOM</code> could cause erroneous behavior.	ContentCreator	2018-09



ID	Description	Categories	Version
CORE-5917	Refreshing preview images in templates has been optimized for External Synchronization.	External synchronization	5.2R13
CORE-5918	Optimized synchronization of edit status between different views of the same dataset.	Content Store, SiteArchitect	5.2R14
CORE-5928	Selecting a different template for a page (context menu "Extras / Select another template") has been improved.	SiteArchitect	5.2R13
CORE-5935	Under Microsoft Windows, when using the Google Chrome browser engine, the required files were rolled out into a wrong user directory.	Preview	5.2R20
CORE-5941	With certain constellations of move, release, and delete actions, importing a previously deleted element anew could lead to erroneous behavior.	External synchronization	5.2R15
CORE-5948	Improved use of images in snippets in conjunction with user privileges.	SiteArchitect	5.2R18
CORE-5951	Deactivating the package property "Changeable" in a master project (removing write permissions) will now also be visualized in subscribing projects. Further information can be found in chapter "Modules: Corporate Content: Removal of write permissions in subscribing projects ("Changeable")".	Corporate Content	5.2R15
CORE-5977	Optimized the method <code>getFile(Language)</code> of the interface <code>Media</code> (package <code>de.espirit.firstspirit.access.store.mediastore</code> FirstSpirit Access API).	FirstSpirit API	2018-09
CORE-5978	The new FirstSpirit Developer API interface <code>de.espirit.firstspirit.agency.ProjectMembersAgent</code> now provides access to information about users and groups of a project. Further information can be found in chapter "Module Development, Scripts, API: New API interface "ProjectMembersAgent" provides information about users and groups".	Developer, FirstSpirit API	5.2R15



ID	Description	Categories	Version
CORE-5982	The display of search results containing quoted HTML code was optimized.	ContentCreator	5.2R19
CORE-6000	When trying to import a new schema into a project without specifying a suitable layer mapping, an error message is output. Additionally, the import will now also be aborted at the correct time.	External synchronization	5.2R14
CORE-6007	Optimized consideration of filters when using the global search.	Search, SiteArchitect	2018-07
CORE-6009	Recalculation of references has been optimized for slower systems.	FirstSpirit Administrator	5.2R16
CORE-6010	When adding elements from a report to the FS_INDEX input component using drag-and-drop, compatibility detection has been optimized.	ContentCreator, Editor, FirstSpirit Content Experience Tools (CXT)	2019-05
CORE-6011	In rare cases, it was possible that the reference name of a node was not released after that node was deleted and the delete operation was released.	Release, SiteArchitect	5.2R15
CORE-6014	Optimized uploading of files of type <code>.json</code> .	SiteArchitect	5.2R14
CORE-6018	The display of controls has been optimized for use with Google Chrome browser in version 61 and higher.	ContentCreator	5.2R13
CORE-6019	In rare cases, erroneous behavior could arise during calculation of the page status.	ContentCreator	2018-09
CORE-6035	Optimized observance of validation errors when releasing a FirstSpirit element using the option "Check only - do not release".	Dynamic Forms, Release	5.2R15
CORE-6039	Optimized consideration of privileges which are defined on the data source when editing datasets in the input component FS_LIST (type DATABASE).	ContentCreator	5.2R17
CORE-6042	When creating a new page via the dialog "Create new page", the name of the page can be added and edited only in the name area but not in the navigation area.	ContentCreator	5.2R15



ID	Description	Categories	Version
CORE-6080	When using Drag & Drop to replace media contents (.css files), erroneous behavior could occur.	Media Store	5.2R21
CORE-6082	When using “isolated mode”, subsequent changes to URLs in “URL Settings” were mistakenly not observed.	SiteArchitect	5.2R15
CORE-6104	New interface <code>UserStatisticsAgent</code> in the package <code>de.espirit.firstspirit.agency</code> (FirstSpirit Developer API). Further information can be found in chapter “Module Development, Scripts, API: Obtaining the most recent login date of a user via API”.	FirstSpirit API	5.2R16
CORE-6107	Using the default URL mode when generating, file name extensions were not taken into account for the building of unique file names.	Generation	5.2R21
CORE-6114	Optimized storage handling during project archival. Further information can be found in chapter “Administration: Project archiving: Abort archival due to insufficient available storage space”.	Archiving	5.2R15
CORE-6118	As of the current FirstSpirit version, FirstSpirit SiteArchitect requires at least 1024MB of free main memory, as opposed to the previously required 768MB. Further information can be found in chapter “General: Main memory requirements for FirstSpirit SiteArchitect”.	FirstSpirit Administrator, Server Administrator	5.2R15
CORE-6125	When running on the operating system macOS High Sierra (macOS version 10.13), erroneous behavior could occur during use of the integrated preview. An update of the integrated Chrome browser engine “JxBrowser” to version 6.15 corrected this issue. Further information can be found in chapter “System: Integrated software”.	Preview, SiteArchitect	5.2R14



ID	Description	Categories	Version
CORE-6136	When copying objects from a package in the destination project errors could occur, when the subscription was not marked as “changeable”.	Corporate Content	5.2R19
CORE-6139	Optimization for mass data requests on datasets.	Database, Performance	5.2R16
CORE-6152	In very rare cases, SiteArchitect could be displayed in an erroneous fashion.	SiteArchitect	5.2R15
CORE-6162	Erroneous behavior could arise when deleting a folder in the Page Templates section of the Templates store.	SiteArchitect	5.2R18
CORE-6166	While displaying objects included in a feature, erroneous behavior could occur.	Content Transport	5.2R16
CORE-6170	The browser engine “JxBrowser”, used to integrate “Google Chrome”, has been updated to version 6.18. This corrected an issue which could occur during use of “Multi Perspective Preview” (MPP). Further information can be found in chapter “System: Updated third-party software”.	Editor, Integrated software, Multi Perspective Preview, SiteArchitect	5.2R18
CORE-6175	Contents from metadata which are defined explicitly on a given element may now be output in snippet definitions using the new system object <i>#meta</i> . Further information can be found in chapter “SiteArchitect / ContentCreator: Snippets: Outputting Metadata”.	Developer, Snippets	5.2R18
CORE-6176	Improvements of the module “FirstSpirit BasicSearch”.	Isolated mode	5.2R16



ID	Description	Categories	Version
CORE-6196	<p>As of the current FirstSpirit version, FirstSpirit provides a new option related to project generation. In the generation schedule action, the option “Generate release version” now allows specification of whether the action should generate the release version (checkbox marked; default setting) or the current state (checkbox unmarked) of the project.</p> <p>Further information can be found in chapter “Administration: Schedule management, action “Execute generation”: New setting - Generate release version or current state”.</p>	FirstSpirit Administrator, Generation, Release, ServerManager, Tasks	5.2R15
CORE-6202	Optimized rendering of the input component CMS_INPUT_PERMISSION.	ContentCreator	5.2R16
CORE-6220	In proprietary modules, circular dependencies will now be identified in a timely fashion and logged accordingly. Circular references remain unsupported.	Developer	5.2R15
CORE-6225	Optimized connection establishment to the cluster slave node after a restart of the cluster master server.	Clustering	5.2R16
CORE-6228	Clustering: In the current version of FirstSpirit, problems were resolved that could arise during activation of cluster nodes, especially following an update of the master server.	Clustering, Server Administrator, ServerManager	5.2R16
CORE-6242 CORE-4608 CORE-6553	<p>As of FirstSpirit version 5.2R18, support for Java 9 (for FirstSpirit Server and Clients) will be part of the early access program.</p> <p>Further information can be found in chapter “System: Using Java 9 (EAP)”.</p>	FirstSpirit Administrator	5.2R18
CORE-6251	<p>FS_INDEX: multiple selection possible in selection dialog</p> <p>Further information can be found in chapter “ContentCreator: FS_INDEX: multiple selection possible in selection dialog”.</p>	ContentCreator	5.2R20



ID	Description	Categories	Version
CORE-6268	<p>FirstSpirit content can be generated via the <code>RenderingAgent</code> interface (package: <code>de.espirit.firstspirit.agency</code>, FirstSpirit Developer API). The interface enables a special generation for specific dynamic content to be controlled directly via the API. The <code>STRICT</code> render mode has been added to the latest FirstSpirit release.</p> <p>Further information can be found in chapter “Module Development, Scripts, API: <code>RenderingAgent</code>: Take information from higher-level contexts into account”.</p>	Developer, FirstSpirit API	2018-07
CORE-6314	In “External Synchronization”, optimized observance of references to elements without UID.	External synchronization	5.2R15
CORE-6337	<p>Optimized display of inner, multi-language forms in <code>FS_LIST</code>, <code>FS_INDEX</code>, and <code>FS_CATALOG</code>.</p> <p>Further information can be found in chapter “Input components: <code>FS_LIST</code>, <code>FS_INDEX</code>, <code>FS_CATALOG</code>: Optimization of Multi-Language Display”.</p>	Editor, Languages, SiteArchitect	5.2R19
CORE-6349	When moving several elements via drag-and-drop in the input component <code>FS_LIST</code> , the sort order was erroneously not observed.	SiteArchitect	5.2R15
CORE-6357	When the server was restarted, global customer-specific web applications were erroneously always rolled out anew.	ServerManager	5.2R16
CORE-6359	Optimized status display when updating a dataset using the functionality “ContentTransport”.	Content Transport	5.2R16
CORE-6361	<p>In (database) tables that had a self-referencing M:N relation (upon itself), the attributes were switched. In this case, queries returned erroneous results. For newly-created database schemata, this error was fixed.</p> <p>Further information can be found in chapter “General: Query: Erroneous query results related to self-referencing M:N relations”.</p>	Database, Input Components, Table templates, Template Store	2018-09



ID	Description	Categories	Version
CORE-6364	Optimized behavior when canceling an archival task.	Archiving	5.2R16
CORE-6367	When using Google Chrome as a browser engine for the integrated preview, opening selection dialogs could seldomly lead to erroneous behavior.	SiteArchitect	5.2R15
CORE-6375	Optimized roll-out of web applications during restart of the FirstSpirit server.	Server Administrator	5.2R16
CORE-6380	Improved performance of image media creation during feature installation.	Content Transport, Media Store	5.2R16
CORE-6386	The current FirstSpirit version provides new MBeans. Further information can be found in chapter “Administration: New MBeans”.	FirstSpirit Administrator	5.2R15
CORE-6399	As of the current FirstSpirit version, the configuration possibilities for information displays in ContentCreator have been extended: <code>WE_API.Common.showMessage(String title, String text)</code> Further information can be found in chapter “Module Development, Scripts, API: ContentCreator: Extended configuration possibilities for information displays (WE_API)”.	ContentCreator, Developer, FirstSpirit API	5.2R15
CORE-6415	As of the current FirstSpirit version, media may be converted between being language-dependent and language-independent via the API. Further information can be found in chapter “Module Development, Scripts, API: Making media language-dependent or language-independent via API”.	FirstSpirit API, Media Store	5.2R16
CORE-6416	Improved refreshing of detail views (content projection page).	ContentCreator	5.2R19



ID	Description	Categories	Version
CORE-6424	<p>The new interface <code>RenderingAgent</code> (package <code>de.espirit.firstspirit.agency</code>, FirstSpirit Developer API) is available as of the current FirstSpirit version.</p> <p>Further information can be found in chapter “Module Development, Scripts, API: API Extension: <code>RenderingAgent</code> - Generating FirstSpirit content via API”.</p>	Developer, FirstSpirit API, Module development	5.2R15
CORE-6440	<p>As of the current version of FirstSpirit, custom project properties (“custom properties”) may now be synchronized using “FirstSpirit External Synchronization”.</p> <p>Further information can be found in chapter “External Synchronization: Consideration of Custom Properties in External Synchronization”.</p>	External synchronization, FirstSpirit API	5.2R17
CORE-6447	<p>In the input component <code>CMS_INPUT_IMAGE_MAP</code>, certain conditions could lead to used images not being considered in the reference graph.</p>	Input Components	5.2R15
CORE-6463	<p>Optimized error handling for missing table templates of data sources.</p>	ContentCreator	5.2R16
CORE-6485	<p>When using the method <code>urlFactory(String)</code> of the interface <code>RenderingAgent.Renderer</code> (FirstSpirit Developer API, package <code>de.espirit.firstspirit.agency</code>), erroneous behavior could occur.</p>	Developer	5.2R16
CORE-6497	<p>With the current FirstSpirit version repository conversions from Oracle Berkeley DB version 3 to version 5 are executed faster.</p> <p>Further information can be found in chapter “Repository: Faster migration from Oracle Berkeley DB 3 to 5”.</p>	FirstSpirit Administrator, Integrated software, Performance, Repository, Server Administrator, ServerManager	5.2R16



ID	Description	Categories	Version
CORE-6504	In the current FirstSpirit version, updated internally used software. Further information can be found in chapter “System: Update of libraries”.	SiteArchitect	5.2R16
CORE-6511	Optimized consideration of start node information when updating a package that is changeable in the target project.	Corporate Content	2018-09
CORE-6519	Improved reconnection with the cluster slave server after restart of the cluster master server.	Clustering, Isolated mode	2018-09
CORE-6526	The display of user sessions in FirstSpirit ServerMonitoring was intermittently erroneous due to incorrectly stored graph data. Further information can be found in chapter “Administration: FirstSpirit ServerMonitoring: Display of user sessions”.	ServerMonitoring	5.2R16
CORE-6527	Optimized check for new FirstSpirit versions in the Health Center of FirstSpirit ServerMonitoring.	Health Center	5.2R18
CORE-6579	Newly created API functionality allows read access to a list of all SEO and short URLs defined in a project (interface <code>UrlAgent</code> , package <code>de.espirit.firstspirit.agency</code> , FirstSpirit Developer API). Further information can be found in chapter “Module Development, Scripts, API: UrlAgent: Read Access to SEO/ Short URLs of a Project”.	Advanced URL, Developer, FirstSpirit API, Generation	2018-06
CORE-6589	Improved error message when trying to install a module without name.	FirstSpirit Administrator, ServerManager	2018-07
CORE-6597	In order to allow better problem analysis on workflows, logging was extended.	Workflow	5.2R18
CORE-6612	Optimized consideration of erroneous revision metadata during archiving.	Archiving, Backup	5.2R18



ID	Description	Categories	Version
CORE-6619	Different validation behavior for different languages. Further information can be found in chapter “SiteArchitect / ContentCreator: Different Validation Behavior for Different Languages”.	Developer, Dynamic Forms, Editor, FirstSpirit API, Languages, ServerManager	5.2R19
CORE-6622	Misconfiguration of the Permission Service could lead to erroneous behavior.	Server Administrator	5.2R16
CORE-6630	In rare cases, referencing media in the FS_REFERENCE input component could lead to malfunctions.	SiteArchitect	2018-08
CORE-6635	The interface <code>RenderingAgent</code> (package <code>de.espirit.firstspirit.agency</code> , FirstSpirit Developer API) supports remote links as well as of the current FirstSpirit version. Further information can be found in chapter “Module Development, Scripts, API: RenderingAgent supports remote links”.	Developer, FirstSpirit API, Module development	5.2R16
CORE-6643	Improved e-mail dispatch.	SiteArchitect, Workflow	5.2R17
CORE-6645	The new interface <code>ReleaseOperation</code> in package <code>de.espirit.firstspirit.store.operations</code> (FirstSpirit Access API) makes it possible to release FirstSpirit elements via API on the server-side. The new interface also supports the release of multiple elements at once, as well as the release of datasets. Further information can be found in chapter “Module Development, Scripts, API: Releasing elements via API”.	Database, Developer, FirstSpirit API, Release	2018-06
CORE-6647	Integrity checking of Jar files on FirstSpirit startup was improved.	Server Administrator	5.2R19
CORE-6662	Erroneous behavior could arise when displaying customer-specific filter parameters in the FS_INDEX selection dialog.	ContentCreator	5.2R21



ID	Description	Categories	Version
CORE-6667	Related to the functionality “Multi Perspective Preview” (MPP), improved scrolling behavior in the preview.	ContentCreator	5.2R18
CORE-6669	Performance improvements related to the integrated preview when using Google Chrome as browser engine.	Performance, SiteArchitect	5.2R17
CORE-6671	Under macOS, windows were in rare cases not opened in the foreground.	ServerManager, SiteArchitect	5.2R17
CORE-6679	Optimized method <code>getStartNodes()</code> of the interface <code>GenerateTask</code> (FirstSpirit Access API, package <code>de.espirit.firstspirit.access.schedule</code>).	Developer, FirstSpirit API	5.2R17
CORE-6697	Global system web apps can now also be retrieved with the new method <code>getGlobalWebApps(boolean includeSystem)</code> in the interface <code>ModuleAdminAgent</code> (package <code>de.espirit.firstspirit.agency</code> , FirstSpirit Developer API). Further information can be found in chapter “Module Development, Scripts, API: Retrieving global system web apps”.	Developer, FirstSpirit API, Module development	5.2R20
CORE-6698	Improved status display for released pages.	ContentCreator	5.2R19
CORE-6703	Erroneous behavior could occur in the display of customer-specific action buttons in the toolbar.	SiteArchitect	5.2R17
CORE-6704	Erroneous behavior could arise when changing action settings while the associated server schedule task was running.	ServerManager	5.2R19
CORE-6712	Optimized rule evaluation when using <code>CMS_GROUP</code> in subforms.	Dynamic Forms, SiteArchitect	2018-09
CORE-6719	Oracle Berkeley DB 7 can be used for project repositories as of the current FirstSpirit version. Further information can be found in chapter “Repository: Oracle Berkeley DB 7 (EAP)”.	Repository	5.2R18



ID	Description	Categories	Version
CORE-6726	During import, duplicate style node definitions in a format template will now be removed.	Content Transport	5.2R21
CORE-6727	In rare cases, when restoring deleted objects, the dialog was not displayed.	SiteArchitect	5.2R17
CORE-6742	When using OpenJDK 8, erroneous behavior could arise during roll-out of web applications.	Server Administrator	5.2R17
CORE-6744	In the FirstSpirit ContentTransport Storage app, the dialog for configuration of the file system path can now be resized manually such that long paths, too, can be shown completely.	Content Transport, ServerManager	5.2R21
CORE-6790	Optimized permissions evaluation when viewing a section reference.	SiteArchitect	2018-11
CORE-6792	Security improvements in FirstSpirit ServerManager.	Security	5.2R17
CORE-6793	Security improvements in the Media Store in ContentCreator.	Security	5.2R17
CORE-6794	Security improvements for the search functionality in ContentCreator.	Security	5.2R17
CORE-6795	Security improvements in FirstSpirit ServerMonitoring.	Security	5.2R17
CORE-6796	Security improvements in FirstSpirit ServerMonitoring.	Security	5.2R17
CORE-6801	Erroneous behavior could arise when opening forms which are defined in schedule tasks.	Isolated mode	5.2R20
CORE-6806	Changes regarding the class <code>AccessControlDb</code> (package <code>de.espirit.firstspirit.acl.db</code>). Please see Chapter 3.	Developer, FirstSpirit API, Modules	5.2R17
CORE-6819	Under macOS, windows were in rare cases not opened in the foreground.	ServerManager, SiteArchitect	5.2R18
CORE-6827	Improved updating of web applications.	FirstSpirit Administrator	2018-07
CORE-6829	In the database-linked input component <code>CMS_INPUT_CHECKBOX</code> , optimized display of checked values.	SiteArchitect	5.2R18



ID	Description	Categories	Version
CORE-6831	Optimized the compatibility module.	Isolated mode	5.2R17
CORE-6843	Erroneous behavior could arise when streams were used in a service.	Module development	5.2R19
CORE-6844	Optimized method <code>install(InputStream, boolean)</code> of the interface <code>ModuleAdminAgent</code> (FirstSpirit Developer API, package <code>de.espirit.firstspirit.agency</code>).	Developer, FirstSpirit API	5.2R17
CORE-6848	Optimized consideration of FirstSpirit build number in the file <code>Project.xml</code> in order to improve mergeability.	External synchronization	5.2R18
CORE-6849	During export, unmapped IDs will now be logged with a warning.	External synchronization	5.2R18
CORE-6851	Intermittently, references between the API documentations for FirstSpirit Access API and FirstSpirit Developer API were not rendered correctly.	Developer, FirstSpirit API	5.2R17
CORE-6868	Improved error detection.	Isolated mode	2018-09
CORE-6878	For image maps (<code>CMS_INPUT_IMAGE_MAP</code>), areas with links can now be set via API as well (interface <code>ImageMapAgent</code>). Further information can be found in chapter “Module Development, Scripts, API: Image Map: Setting Areas With Links Via API (Interface “ImageMapAgent”)”.	Developer, FirstSpirit API, Input Components	5.2R21
CORE-6894	The latest version of FirstSpirit provides a conversion tool (currently still the Early Access Program (“EAP”)) that can be used for the simple conversion of all data stored in Berkeley DBs on existing FirstSpirit servers to Berkeley DB 7 format by entering just a few commands in the command line (“project repositories” and “internal repositories”). Further information can be found in chapter “Administration: Conversion of the Oracle Berkeley DB (EAP)”.	FirstSpirit Administrator, Integrated software, Repository	5.2R19
CORE-6903	Related to the functionality “FirstSpirit ContentTransport”, a meaningful error message will now be displayed if elements of the Templates store cannot be added to the feature.	Content Transport	5.2R18



ID	Description	Categories	Version
CORE-6920	Optimized editing of the configuration file for server start options (<code>fs-wrapper.conf</code>) via <code>ServerMonitoring</code> .	Isolated mode	5.2R18
CORE-6937	Performance optimizations related to loading database-based content.	Performance	5.2R18
CORE-6945	Optimized method <code>getOperation(OperationType<P>)</code> in interface <code>OperationAgent</code> (FirstSpirit Developer API, package <code>de.espirit.firstspirit.agency</code>).	FirstSpirit API	5.2R18
CORE-6946	<p>An error has been fixed which could lead to incorrect evaluation of group and user information in <code>ContentCreator</code> forms which were opened using the interface <code>ShowFormDialogOperation</code> (package <code>de.espirit.firstspirit.ui.operations</code>, FirstSpirit Developer API).</p> <p>Further information can be found in chapter “Module Development, Scripts, API: Extended functionality for <code>FS_BUTTON</code> scripts”.</p>	Developer, FirstSpirit API	5.2R18
CORE-6951 CORE-6956	<p>As of the current version of FirstSpirit, the interface <code>RenderingAgent</code> (package <code>de.espirit.firstspirit.agency</code>, FirstSpirit Developer API) also supports passing of FirstSpirit templates and thus the opportunity to render output channel source code as desired. Furthermore, you can now determine whether or not project settings (in FirstSpirit <code>SiteArchitect</code> under “Global settings”) should be considered during generation.</p> <p>Further information can be found in chapter “Module Development, Scripts, API: Extension of the interface “<code>RenderingAgent</code>””.</p>	FirstSpirit API	5.2R18
CORE-6954	In some rare cases, URLs created with the <code>RenderingAgent</code> for media from the same project and from remote projects were not correct.	Generation, Template Development	5.2R19



ID	Description	Categories	Version
CORE-6955	Erroneous behavior could occur when using the ContentCreator JavaScript API in combination with the RenderingAgent and the fsbutton(...) function.	ContentCreator, FirstSpirit API, Template Development	5.2R19
CORE-6973	Erroneous behavior could arise when displaying related elements.	ContentCreator	5.2R18
CORE-6978	In rare cases, display of the “favicon” of the FirstSpirit start page was erroneous.	FirstSpirit home page	5.2R18
CORE-6980 CORE-7032	As of FirstSpirit version 5.2R18 the module <code>fs-jetty.fsm</code> can also be used with FirstSpirit servers that are not operated in “isolated mode” but in “legacy mode”. Further information can be found in chapter “System: Using Jetty as a module (EAP)”.	FirstSpirit Administrator, Integrated software, Modules, ServerManager	5.2R18
CORE-6982 CORE-6331	Improved visualization of modified sections.	ContentCreator	5.2R18
CORE-6984	The updating of web applications was improved.	FirstSpirit Administrator	2018-07
CORE-6987	Improved performance when starting the FirstSpirit server in Isolated mode.	Isolated mode	2018-08
CORE-6988	The interface <code>ScheduleStorage</code> (package <code>de.espirit.firstspirit.access.schedule</code> , FirstSpirit Access API) was extended with the method <code>createScheduleEntry(String name, Project project)</code> , and the privilege evaluation for creation of schedule entries via the method <code>createScheduleEntry(String)</code> was improved. Further information can be found in chapter “Module Development, Scripts, API: Extension of the interface “ScheduleStorage””.	FirstSpirit API, FirstSpirit Administrator	5.2R18



ID	Description	Categories	Version
CORE-6991	<p>It is now also possible to use the CMS_INPUT_IMAGE_MAP input component for uploading media using drag-and-drop.</p> <p>Further information can be found in chapter “Input components: CMS_INPUT_IMAGE_MAP can obtain an additional "upload" attribute”.</p>	ContentCreator, Developer, Editor, Input Components, Media Store, SiteArchitect	5.2R21
CORE-6994	Optimized installation of FirstSpirit servers in <i>Isolated mode</i> (“RISO”) on Linux operating systems as the <code>root</code> user.	Isolated mode, Server Administrator	5.2R18
CORE-6996	In rare cases, erroneous behavior could arise when editing contents of an FS_LIST (type DATABASE) input component.	SiteArchitect	5.2R18
CORE-6997	Optimized display of the page status which can be visualized using the plugin <code>WebeditStatusNotePlugin</code> .	ContentCreator	5.2R18
CORE-7002	When generating pages in a ContentCreator context via the interface <code>RenderingAgent</code> (package <code>de.espirit.firstspirit.agency</code> , FirstSpirit Developer API), subsessions will now be considered.	Developer, FirstSpirit API	5.2R18
CORE-7016	<p>The FirstSpirit server allows creation of several LDAP configurations (so-called “sections”). Each section contains at least one entry for an LDAP server which provisions LDAP data. If a server fails or takes too long to answer (>30 seconds), timeouts (of the LDAP connection and of login to the root web application) may arise. The time span after which a timeout occurs may now be increased via the parameters <code>web.login.timeout</code> and <code>LDAP.TIMEOUT</code> (default value: 30).</p> <p>Further information can be found in chapter “Administration: New Configuration Opportunity for Timeouts in LDAP Sections and for Login to the Root Web Application (<code>fs-server.conf</code>)”.</p>	FirstSpirit Administrator, ServerManager	5.2R20
CORE-7023	Erroneous behavior could arise when releasing a page reference via a workflow while edit mode was active on the associated page.	SiteArchitect	2018-10



ID	Description	Categories	Version
CORE-7032 CORE-6980	Eliminated problems when using the internal Jetty	FirstSpirit Administrator, Integrated software	5.2R18
CORE-7036 CORE-6825 CORE-7037 CORE-7245	Rebrush for FirstSpirit graphical user interfaces: improvements and optimizations. Further information can be found in chapter “SiteArchitect / ContentCreator: Rebrush for FirstSpirit graphical user interfaces”.	ContentCreator, FirstSpirit home page, SiteArchitect	5.2R19
CORE-7056	For files whose MIME type cannot be recognized (e. g. files with the file extension “rfa” or “oft”), the file extension “doc” was mistakenly used. In the FirstSpirit configuration file “fs-server.conf”, corresponding MIME types can be defined for certain file types (e. g. “mime.types.additional=application/octet-stream:rfa; application/octet-stream:oft”), in case automatic detection is not possible. Temporarily, this information was not correctly taken into account when importing into the media management system.	Generation	5.2R19
CORE-7066	Optimized schedule management. Further information can be found in chapter “Administration: Optimization in Schedule Management”.	FirstSpirit Administrator, ServerManager, Tasks	5.2R18
CORE-7067	New API for password encryption Further information can be found in chapter “Module Development, Scripts, API: Interface “PasswordAgent”: encrypt passwords through the API”.	FirstSpirit API, FirstSpirit Administrator, Security	5.2R19
CORE-7069	Optimized interpretation of configuration files of “PermissionService” (module “Permission”).	Modules	5.2R20
CORE-7070	Optimized parameters for garbage collector logging of FirstSpirit server.	Developer	5.2R18
CORE-7081	Erroneous behavior could arise when opening module configuration dialogs.	FirstSpirit Administrator, ServerManager	5.2R18



ID	Description	Categories	Version
CORE-7088	When deleting sections no new version (entry in the version history) was created, erroneously.	ContentCreator	5.2R19
CORE-7091	There are now additional setting options for the FirstSpirit start page. Applications can be shown or hidden via groups / permissions on the start page. Further information can be found in chapter "SiteArchitect / ServerManager: Configuration of the FirstSpirit start page".	FirstSpirit Administrator, FirstSpirit home page, Server Administrator, ServerManager	5.2R19
CORE-7101	Erroneous behavior could arise when recursively calling the method <code>render()</code> of the interface <code>RenderingAgent.Renderer</code> (package <code>de.espirit.firstspirit.agency</code> , FirstSpirit Developer API).	Developer	5.2R18
CORE-7105	Improved initialization of remote logging for web applications when using an external Jetty web server or the Jetty module.	Server Administrator	5.2R19
CORE-7113	When using Microsoft Internet Explorer 11, displaying EasyEdit buttons could have been erroneous.	ContentCreator	5.2R19
CORE-7120	After installing web applications or web components, web servers will now be activated automatically. Further information can be found in chapter "Administration: Web server configuration: web servers will now be activated automatically".	FirstSpirit Administrator, ServerManager, Web server	2018-09
CORE-7148	New method <code>createDataset()</code> in the interface <code>DatasetProvider</code> (package <code>de.espirit.firstspirit.access.store.contents</code> , FirstSpirit Access API) Further information can be found in chapter "Module Development, Scripts, API: Interface "DatasetProvider": Creating a new dataset".	Content Store, Developer, FirstSpirit API	5.2R19
CORE-7152	Optimized consideration of changes in connection settings.	FirstSpirit home page	5.2R18
CORE-7153	Optimized display of action names in the keyboard shortcut list (menu: "Help / Keyboard shortcuts").	SiteArchitect	5.2R18



ID	Description	Categories	Version
CORE-7166	<p>The module providing the web server “Eclipse Jetty” (currently in the Early Access Program (“EAP”)) now supports encrypted connections via HTTPS. Configuration of the required keystore is done by using the configuration dialog of the module in ServerManager.</p> <p>Further information can be found in chapter “Administration / Modules: HTTPS Support for the Module “Eclipse Jetty” (EAP)”.</p>	FirstSpirit Administrator, Modules	5.2R19
CORE-7184	Deletion of the search index (~firstspirit\data\projects\project_123\index) when executing the schedule “Rebuild search index” has been modified.	FirstSpirit Administrator, ServerManager, Tasks	5.2R19
CORE-7186	<p>Expansion of the log file to include audit functions.</p> <p>Further information can be found in chapter “Administration: Expansion of the log file to include audit logging”.</p>	Server Administrator, ServerManager, ServerMonitoring	2018-08
CORE-7188	<p>The editing of nested data in content projections has been improved.</p> <p>Moreover, when creating list entries in FS_CATALOG, FS_INDEX or FS_LIST (with type DATABASE or INLINE) via so called “NewListEntryExecutables”, see also <i>FirstSpirit Online Documentation</i>, “Template development / ContentCreator / Functional scope”), the corresponding preview page will be refreshed (instead of showing the preview page which is defined for the related table template).</p>	ContentCreator	5.2R19
CORE-7214	Optimized evaluation of restrictions when searching in the selection dialog of an input component (e.g. FS_REFERENCE).	ContentCreator	5.2R19



ID	Description	Categories	Version
CORE-7219	For new actions, the option “Execute even in case of error” is turned off by default. Further information can be found in chapter “Administration: Schedule Tasks: Option “Execute even in case of error” is turned off by default”.	FirstSpirit Administrator, ServerManager, Tasks	5.2R19
CORE-7231	The display of the FirstSpirit startpage in Microsoft Internet Explorer 10 has been improved.	FirstSpirit home page	5.2R19
CORE-7237	Adjusted cluster configuration (files <code>fs-wrapper.slave.conf</code> and <code>fs-wrapper.isolated.slave.conf</code>) for Java 9.	Clustering, FirstSpirit Administrator	5.2R19
CORE-7244	The display in Microsoft Internet Explorer 10 has been improved.	ContentCreator	5.2R19
CORE-7246	Erroneous behavior could arise when inputting a time into the input component CMS_INPUT_DATE if the FirstSpirit server was configured with a different time zone than that of the client in which the time input was carried out.	ContentCreator	5.2R20
CORE-7251	Under rare circumstances a rule violation was erroneously displayed in the FS_CATALOG input component.	Dynamic Forms, Input Components	5.2R21
CORE-7265	An error could occur in the ContentCreator when using the module “FirstSpirit Security”.	FirstSpirit Administrator, Modules	5.2R19
CORE-7300	Improved behavior related to updating modules in web applications.	FirstSpirit Administrator, Isolated mode	2018-11
CORE-7303	The installation of local feature files has been improved.	Content Transport	5.2R20
CORE-7334	Fixed a problem with the possible use of illegal filenames in the repository back-end under Windows.	FirstSpirit Administrator, Repository	5.2R19
CORE-7348	The use of SEO URLs in conjunction with parallel generation actions has been improved.	Tasks	5.2R20



ID	Description	Categories	Version
CORE-7366	When using the ACL database, erroneous behavior could arise in rare cases during a generation when the according generation task was aborted via FirstSpirit ServerMonitoring.	FirstSpirit Administrator, Generation	2018-10
CORE-7368	With the latest FirstSpirit release, the parameters of the wrapper files <code>fs-wrapper-j#.include.conf</code> can – like the default wrapper file <code>fs-wrapper.conf</code> – also be edited via FirstSpirit ServerMonitoring. Further information can be found in chapter “Administration: Java-version-specific wrapper files can be edited via ServerMonitoring”.	FirstSpirit Administrator, Server Administrator, ServerMonitoring	2018-07
CORE-7369	When using the Jetty module, the handling of web applications was optimized when restarting the server.	Server Administrator	5.2R20
CORE-7381 CORE-7644 CORE-7656	Various improvements have been made to the conversion tool provided with FirstSpirit version 5.2R19. This tool can be used for the simple conversion of all data stored in Berkeley DBs on existing FirstSpirit servers to Berkeley DB 7 format by entering just a few commands in the command line, and it is still in “EAP” state (early access program). Further information can be found in chapter “Administration: Conversion of the Oracle Berkeley DB (EAP)”.	FirstSpirit Administrator, Integrated software, Repository	5.2R20
CORE-7388	User principals were not correctly regarded when using multiple login modules in sequence.	FirstSpirit Administrator	5.2R20
CORE-7389	Performance improvement when loading pages with a high number of nested input components in projects with multiple languages.	SiteArchitect	2018-07
CORE-7399	In the current FirstSpirit version, updated internally used software. Further information can be found in chapter “System: Integrated Software”.	Integrated software	5.2R19



ID	Description	Categories	Version
CORE-7407 CORE-7423 CORE-7433 CORE-7570	In the current FirstSpirit version, updated internally used software. Further information can be found in chapter "System: Integrated Software".	Integrated software	5.2R20
CORE-7408	Optimized adoption via API of values in the input component FS_CATALOG between projects with different language sets.	SiteArchitect	5.2R20
CORE-7409	Optimized refresh of the integrated preview when switching between languages while editing inner entries of the input component FS_CATALOG.	Preview, SiteArchitect	5.2R20
CORE-7422	In the current FirstSpirit version, updated internally used software. Further information can be found in chapter "System: Integrated Software".	Integrated software, Media Store, SiteArchitect	2018-06
CORE-7432	Elements of the <code>WebeditStatusNotePlugin</code> may have been displayed incorrectly when activating Multi Perspective Preview (MPP).	ContentCreator	5.2R19
CORE-7454	The option "All permissions" for modules is better accounted for.	Isolated mode	5.2R19
CORE-7469	New TPP-API functions improve ContentCreator integration of TPP WebApps. Further information can be found in chapter "Module Development, Scripts, API: New functions in "WE-API"".	Developer, FirstSpirit API, Module development, Modules	5.2R20
CORE-7470 CORE-7623	Berkeley DB 7 now checks for sufficient available storage space and prohibits further write operations if storage space is insufficient. Further information can be found in chapter "Repository: Berkeley DB 7: Optimizations".	Integrated software, Repository, Security	5.2R20
CORE-7491	In ContentCreator, erroneous behavior could arise in the display of preview images in editing dialogs.	Isolated mode	5.2R20



ID	Description	Categories	Version
CORE-7517	The identification of the java version which is used by FirstSpirit was optimized.	Integrated software	5.2R20
CORE-7520	<p>With the current FirstSpirit version you can, using the “WE_API”, register for events that are fired when creating a new page, when changing the navigation, or when using workflows within the current session.</p> <p>Further information can be found in chapter “Module Development, Scripts, API: “WE_API” has new events”.</p>	Developer, FirstSpirit API, Module development, Modules	5.2R20
CORE-7528	Design touch-ups and optimizations related to SiteArchitect.	SiteArchitect	5.2R20
CORE-7532 CORE-7381	<p>When publishing via the FirstSpirit publication servlet (module: “FirstSpirit Security”), an error message is now output if the target side attempts to communicate with an unusable access control database. Use of this change requires an update of the module “FirstSpirit Security” in the web application on the target side.</p> <p>Further information can be found in chapter “Modules: Security: Improved Problem Recognition When Accessing an Access Control Database”.</p>	Modules, Security, Server Administrator, ServerManager	5.2R20
CORE-7563	Berkeley DB Java Edition V7 is now used automatically as default for new and imported projects. (The <i>FirstSpirit Manual for Administrators</i> has not yet been updated at the relevant location: it still assumes that version 5 is used by default (Chapter “FirstSpirit ServerManager / Project properties / Repository”). The text segment will be adapted as of the next publication.)	FirstSpirit Administrator, Repository	5.2R21
CORE-7572	In cluster operations, improved use of write-protected mounted directories.	Clustering	5.2R20
CORE-7595	<p>In partial generation, selection of start nodes now uses the current state of the project.</p> <p>Further information can be found in chapter “Administration: Action “Execute generation”: Selection of start nodes for partial generation”.</p>	FirstSpirit Administrator, Generation, ServerManager	2018-09



ID	Description	Categories	Version
CORE-7601	The module <code>fs-jetty.fsm</code> is available as system module as of the current FirstSpirit version. Further information can be found in chapter "Administration: Web server "Jetty" is now system module".	FirstSpirit Administrator, Integrated software, Modules, Server Administrator, ServerManager	5.2R20
CORE-7611	With the new <code>webedit.sendScriptCauseToClient</code> switch in <code>fs-server.conf</code> , debugging can be extended specifically on development servers in FirstSpirit ContentCreator. Further information can be found in chapter "Administration: Extending debugging in FirstSpirit ContentCreator".	ContentCreator, Omnichannel Manager / Third Party Preview, Server Administrator	2018-07
CORE-7613 CORE-8439	Internal software has been updated in the latest FirstSpirit version. Further information can be found in chapter "System: Integrated software".	Integrated software	2018-08
CORE-7614	Optimized behavior of the input component <code>CMS_INPUT_DOM</code> when working with links.	ContentCreator	2018-09
CORE-7615	Erroneous behavior could arise during project export and import.	Project export / import	5.2R20
CORE-7622	Erroneous behavior could arise when uploading images with Exif data that contained special characters.	Media Store, SiteArchitect	2018-09
CORE-7656	Further optimizations have been made to the "BerkeleyUtil" (<code>BerkeleyUtil.jar</code>) conversion tool in the latest FirstSpirit version. Further information can be found in chapter "Administration: Further optimizations to "BerkeleyUtil"".	FirstSpirit Administrator, Integrated software	5.2R21
CORE-7660	Erroneous behavior could arise during output of nested data in content projections via <code>"\$CMS_VALUE(_dataset.formData)\$"</code> .	Developer	5.2R20



ID	Description	Categories	Version
CORE-7668	Improved display of titles in forms in FirstSpirit SiteArchitect. Further information can be found in chapter "SiteArchitect: Display of titles in forms".	Developer, Editor, Input Components, SiteArchitect, Template Development	2018-07
CORE-7669	In the preview, erroneous behavior could arise due to links pointing at IDs within the current document ().	Preview, SiteArchitect	2018-06
CORE-7670	Optimized consideration of preferred display language in workflow forms.	SiteArchitect, Workflow	5.2R20
CORE-7678	In e-mails sent by workflows, special placeholders may be used that are automatically replaced by the system based on the context. In the current FirstSpirit release, these placeholders have been expanded to include further configuration options. Further information can be found in chapter "Template development: Workflows: More configuration options for context-based information in e-mails".	Developer, FirstSpirit Administrator, Release, Workflow	2020-05
CORE-7679	Erroneous behavior could arise when jumping to a template (within a CMS_RENDER statement) via Ctrl + LEFT CLICK .	Developer	5.2R20
CORE-7691	When installing a feature erroneous behavior could occur under certain circumstances.	Content Transport, External synchronization	5.2R21
CORE-7702	Under Microsoft Windows the rendering of the Khmer language (Cambodian) in input components was improved.	SiteArchitect	2018-07
CORE-7703	Optimized permission management in the interface ModuleAdminAgent (FirstSpirit Developer API, package de.espirit.firstspirit.agency).	FirstSpirit API, Permissions	5.2R20
CORE-7721	The input components FS_CATALOG and FS_INDEX have been extended with new functionality. Further information can be found in chapter "SiteArchitect: New functionality for FS_CATALOG and FS_INDEX".	Editor, Input Components, SiteArchitect	2018-10



ID	Description	Categories	Version
CORE-7724	Optimized error handling for syntactically incorrect regular expressions (e.g. when searching within an output channel).	Developer	5.2R20
CORE-7725	Improved synchronisation when contents are deleted from CMS_INPUT_LINK input components in the source project.	Corporate Content	2018-06
CORE-7727	Under rare circumstances erroneous behavior could occur when executing the project schedule "Repair references".	Tasks	5.2R21
CORE-7739	The input component CMS_INPUT_DOMTABLE could show a misbehaviour when opening the cell properties.	ContentCreator	2018-08
CORE-7751	Project re-import after repeated project exports was improved.	Archiving	5.2R21
CORE-7756	When Del was pressed in a text field in the integrated preview, the page was deleted by mistake.	SiteArchitect	2019-01
CORE-7758	The processing of access rights when displaying an FS_LIST input component (type PAGE) was improved.	SiteArchitect	2018-07
CORE-7778	Erroneous behavior could occur when creating of deactivating template sets.	ServerManager	2018-07
CORE-7805	The name of a FirstSpirit version can now be read out via the API with the new <code>getReleaseName();</code> method in the <code>ServerInformationAgent</code> interface (<code>de.espirit.firstspirit.agency</code> package, FirstSpirit Access API). Further information can be found in chapter "Module Development, Scripts, API: Read out FirstSpirit version name via API".	Developer, FirstSpirit API	2018-06
CORE-7820	Optimized several system messages in the language "German".	ContentCreator, SiteArchitect	5.2R21
CORE-7824	Improved internal date format in reports.	Java	5.2R21
CORE-7826	Improved updating of web applications on the server "Jetty Web Server" (system module).	FirstSpirit Administrator	2018-07
CORE-7829	Cleanup of the repository files during archiving has been improved.	Archiving	2018-06



ID	Description	Categories	Version
CORE-7830	When using the “JettyService” erroneous behavior could occur on FirstSpirit server shutdown.	FirstSpirit Administrator, Services	5.2R21
CORE-7836	The updating of web apps when using the Jetty module was improved.	Modules	5.2R21
CORE-7841	With the current version of FirstSpirit, the discontinued “Internet Explorer” variant for the “integrated preview” in FirstSpirit SiteArchitect is no longer supported. The current BETA version “Internet Explorer (BETA)” is being released to replace it. The menu entry has been changed to “Internet Explorer” and the “Internet Explorer (BETA)” menu item has been removed from SiteArchitect. Further information can be found in chapter “SiteArchitect: Browser integration: “Internet Explorer””.	Integrated software, SiteArchitect	5.2R21
CORE-7869	Security improvements in FirstSpirit ServerMonitoring.	Security	5.2R21
CORE-7878	As of the current release of FirstSpirit, when creating new projects, the default setting for use of the integrated database “Apache Derby” has been changed to “off” (inactive). Further information can be found in chapter “Administration: Database Handling: Internal Derby database will no longer be used by default in newly created projects”.	Database, Developer, FirstSpirit Administrator, Server Administrator, ServerManager	2018-06
CORE-7879	Optimized visualization of selected values in the database-driven input component CMS_INPUT_CHECKBOX.	ContentCreator	2018-06
CORE-7882	When importing a feature an error could occur, when a database schema in the source project and a special element in the destination project had the same ID.	Content Transport	5.2R21
CORE-7883	Improved performance when loading contents from nested form elements (FS_CATALOG, FS_LIST).	ContentCreator	5.2R21



ID	Description	Categories	Version
CORE-7919	<p>For existing FirstSpirit installations that use Oracle Java 9 or higher, the wrapper file containing the start parameters for Java 9 and higher (file <code>fs-wrapper-j2.include.conf</code> by default) should be modified manually.</p> <p>Further information can be found in chapter “Administration: “Attach log files:” in schedules where e-mail is sent”.</p>	FirstSpirit Administrator, Java, Tasks	5.2R21
CORE-7927	<p>In the current FirstSpirit version, updated internally used software.</p> <p>Further information can be found in chapter “System: Integrated Software”.</p>	Integrated software, Launcher	5.2R21
CORE-7928	<p>Berkeley version 7 is now the default for new FirstSpirit installations.</p> <p>Further information can be found in chapter “Administration: Berkeley: Default for new FirstSpirit installations is now version 7”.</p>	FirstSpirit Administrator, Integrated software, Repository	2018-06
CORE-7932	<p><code>NewSectionExecutable</code> is now supported for use with Global Content.</p> <p>Further information can be found in chapter “ContentCreator: “NewSectionExecutable”: Support for Global Content”.</p>	ContentCreator, Developer, Editor, FirstSpirit API, Template Development	2018-06
CORE-7936	Erroneous behaviour could occur when restoring pages.	Java	2018-06
CORE-7950	Editing queries may have resulted in a malfunction when adding a new column.	SiteArchitect	2018-08
CORE-7952	Performance improvements related to the loading of datasets.	Performance, SiteArchitect	2018-07
CORE-7957	When using CRC deployment (module “FirstSpirit Security”) errors could occur.	Modules	5.2R21
CORE-7958	The display of errors in the preview (Context menu “Extras / Show preview errors”) has been optimized.	SiteArchitect	2018-08



ID	Description	Categories	Version
CORE-7960 CORE-1296 CORE-7961	With the latest FirstSpirit release, access control can be implemented for the data from the “DataAccess plug-in”. Further information can be found in chapter “Module Development, Scripts, API: DataAccess plug-in: Implementing access control for data”.	ContentCreator, Data Access Plug-In, Developer, Editor, Input Components, Module development, SiteArchitect	2018-08
CORE-7972	New users were being incorrectly prevented from using a project in ContentCreator despite having been assigned sufficient permissions.	ContentCreator	2018-07
CORE-7985 CORE-7982	Security improvements in access control.	Security	5.2R21
CORE-7992	Optimized handling of module resources.	Isolated mode	2018-09
CORE-7996	ContentCreator dialogues were not always closing as expected, when using FirstSpirit Third Party Preview (TPP).	ContentCreator	5.2R21
CORE-8003	The “Legal notices” for the licence and for third party software used in FirstSpirit were improved.	FirstSpirit home page	5.2R21
CORE-8006	Security improvements related to user management.	FirstSpirit Administrator, Security	2018-06
CORE-8015	Improved validation behavior related to nested CMS_INPUT_IMAGE_MAP input components in projects with many languages.	SiteArchitect	2018-06
CORE-8021	Display of the project icon has been corrected in the project properties dialogue.	ServerManager	5.2R21
CORE-8023	When calling PermissionService from a schedule entry (e.g. <code>permServ=context.getConnection().getService()</code>) erroneous behavior could occur.	FirstSpirit Administrator	2018-07



ID	Description	Categories	Version
CORE-8049	<p>When using an external application server (Apache Tomcat, Jetty-Modul, ...), where FirstSpirit web applications are automatically installed as WAR files, updating FirstSpirit (e.g. to version 2018-06) can cause problems.</p> <p>Further information can be found in chapter “Administration: Possible problems when updating FirstSpirit with external application servers”.</p>	FirstSpirit Administrator	2018-06
CORE-8054	<p>The content of FirstSpirit JAR files is signed with a certificate. In the current FirstSpirit version, the content is signed with a new certificate that is valid until 2020-07-22 (22 July 2020).</p> <p>Further information can be found in chapter “General: Code signing certificate updated”.</p>	Webstart	2018-06
CORE-8055	Optimized evaluation of lock status subsequent to editing inner entries in the input components FS_LIST and FS_CATALOG via InEdit.	ContentCreator	2018-06
CORE-8060	Security improvements related to redirects by FirstSpirit.	Security, Server Administrator	2018-06
CORE-8073	Improvements related to class loading.	Isolated mode	2018-06
CORE-8076 CORE-7892 CORE-7894	<p>In the course of introducing the new release naming scheme, the display of version information in FirstSpirit has been extended.</p> <p>Further information can be found in chapter “General: Display of Version Information”.</p>	ContentCreator	2018-06



ID	Description	Categories	Version
CORE-8077	<p>The new <code>NewSectionOperation</code> interface (de.espirit.firstspirit.webedit.server package, FirstSpirit Developer API) takes over the function of the internal Java class <code>de.espirit.firstspirit.webedit.server.executable</code>.</p> <p>Further information can be found in chapter "Module Development, Scripts, API: The "NewSectionOperation" interface takes over the function of "NewSectionExecutable"".</p>	ContentCreator, Developer, FirstSpirit API	2018-08
CORE-8101	<p>Fragments and variants can now not just be referenced in ContentCreator, but also edited from within ContentCreator.</p> <p>Further information can be found in chapter "FragmentCreator: Editing fragments and variants from within ContentCreator".</p>	ContentCreator, FragmentCreator	2018-12
CORE-8107	<p>When the slave server is using a Berkeley DB version different from its master server, for its backend, the slave server now quits.</p>	Clustering	2018-07
CORE-8115	<p>In rare cases, erroneous behavior could arise during login of users whose login data is imported via LDAP.</p>	Security	2018-06
CORE-8133	<p>In global search, improved searching for date information in metadata.</p>	SiteArchitect	2018-09
CORE-8140	<p>Saving information on the order of entries in the input component <code>FS_INDEX</code> was improved.</p>	SiteArchitect	2018-06
CORE-8148	<p>The latest FirstSprit release, allows further attributes of the FirstSpirit license to be accessed via the developer API.</p> <p>Further information can be found in chapter "Module Development, Scripts, API: License: retrieve license expiration date and number of CaaS slots".</p>	FirstSpirit API, FirstSpirit Administrator, License	2018-07
CORE-8160	<p>Improved consideration of tabs (<code>CMS_GROUP</code>) which are hidden due to a rule.</p>	ContentCreator	2018-09



ID	Description	Categories	Version
CORE-8173	<p>Cessation of support for Java 7 has enabled applications of the outdated Java class <code>java.util.Date</code> to be replaced by a more modern Java API in the FirstSpirit Developer API.</p> <p>Further information can be found in chapter “Module Development, Scripts, API: Use of new Java API for date calculation”.</p>	Developer, FirstSpirit API	2018-07
CORE-8175	When dragging a picture from the Clipboard, which was opened in a separate windows, onto an FS_REFERENCE input component, the following dialogue could appear in the background.	SiteArchitect	2018-07
CORE-8213	In very rare cases a root node folder (<code>Root</code> ; e.g. in the Media store or Site structure) erroneously was displayed in the list of invalid references.	SiteArchitect	2018-07
CORE-8224	With special configurations, the FirstSpirit start page was incorrectly not being called up after exiting ContentCreator.	ContentCreator	2018-07
CORE-8227	The evaluation of <code>previewId()</code> return values for datasets using <code>PreviewIdAgent</code> (FirstSpirit Developer API) was improved.	Developer	2018-06
CORE-8231	<p>With the latest FirstSpirit release, a new version of the FirstSpirit Launcher will be available (EAP), which will replace the previous Launcher in a subsequent release.</p> <p>Further information can be found in chapter “Administration: New FirstSpirit Launcher”.</p>	FirstSpirit Administrator, Java, Launcher, ServerManager, SiteArchitect, Webstart	2018-08
CORE-8235	Erroneous behavior could arise when setting metadata while using the browser Mozilla Firefox.	ContentCreator	2018-10



ID	Description	Categories	Version
CORE-8280	<p>The FirstSpirit Access API was extended by the interface <code>ExternalGroup</code> (package: <code>de.espirit.firstspirit.access.project</code>). This enables getting and setting of the name of an external group.</p> <p>Further information can be found in chapter “Module Development, Scripts, API: Extension of the FirstSpirit API by the "ExternalGroup" interface”.</p>	FirstSpirit API	2018-11
CORE-8283	When navigating between datasets, which could be displayed in different data sources, erroneous tab switching behavior could occur.	SiteArchitect	2018-07
CORE-8331	<p>With the latest FirstSpirit release, a maximum width and height of 18,918 pixels can be defined for resolutions.</p> <p>Further information can be found in chapter “Administration: Resolutions: Maximum width and height have been increased (18,918 pixels)”.</p>	Developer, FirstSpirit Administrator, Media Store, ServerManager	2018-07
CORE-8332	<p>With the current release of FirstSpirit, personal data of deleted users can be made anonymous.</p> <p>Further information can be found in chapter “Administration: Anonymization of personal data of deleted users”.</p>	FirstSpirit Administrator, Security	2018-07
CORE-8336	<p>With the latest FirstSpirit release an additional <code>getSuggestions</code> method has been introduced which permits the name of an <code>indexField</code> (used by the “Apache Lucene” search engine) to be specified in addition.</p> <p>Further information can be found in chapter “Module Development, Scripts, API: Using an "indexField" to get search suggestions”.</p>	Developer, FirstSpirit API, Search	2018-07



ID	Description	Categories	Version
CORE-8338	<p>New agent <code>ServerConfigurationAgent</code> for configuring the server via API.</p> <p>Further information can be found in chapter "Module Development, Scripts, API: New agent "ServerConfigurationAgent" for configuring the server".</p>	Developer, FirstSpirit API	2018-07
CORE-8344	For the conversion of language-independent media into language-dependent media, the display of the languages that are available for selection has been optimized.	Media Store, SiteArchitect	2018-07
CORE-8365	<p>A new FirstSpirit login module with "single sign-on" (SSO) support via SAML 2.0 has been developed and is currently in the EAP phase.</p> <p>Further information can be found in chapter "Administration / Modules: New FirstSpirit login module with SSO via SAML 2.0 (EAP)".</p>	Modules, Server Administrator	2018-12
CORE-8372	Upon installing a FirstSpirit server on Linux operating systems, an error could occur during the initial start of the server.	FirstSpirit Administrator	2018-07
CORE-8376	The title of the login page has been corrected on the browser tab.	FirstSpirit home page	2018-07
CORE-8379	<p>In the latest FirstSpirit release, an error affecting the conversion of Berkeley DBs with the "BerkeleyUtil" conversion tool when using the <code>--convert-server</code> option has been resolved.</p> <p>Further information can be found in chapter "Administration: "BerkeleyUtil" conversion tool: Function of the "--convert-server" option has been corrected".</p>	FirstSpirit Administrator, Repository	2018-07



ID	Description	Categories	Version
CORE-8387	<p>Via the new aspect <code>Updating</code> in the package <code>de.espirit.firstspirit.client.plugin.dataaccess</code> (FirstSpirit Developer API), data access plugins can now react to changes to or selection of a filter parameter within a user session and influence the value sets of further (dependent) filter parameters.</p> <p>Further information can be found in chapter “Module Development, Scripts, API: Dynamic filters - data access plugins are becoming more flexible”.</p>	ContentCreator, Data Access Plug-In, Developer, Input Components, Module development, SiteArchitect	2018-11
CORE-8414	<p>In the latest FirstSpirit release, FirstSpirit supports the upload of images in WebP format via SiteArchitect (via the context menu or via drag-and-drop) by automatically detecting the MIME type.</p> <p>Further information can be found in chapter “Media: Support for the WebP image format (SiteArchitect)”.</p>	Editor, FragmentCreator, Media, Media Constraints, Media Store, SiteArchitect	2019-11
CORE-8426	<p>When creating sections, the suggested reference name has incorrectly not been included.</p>	SiteArchitect	2018-07
CORE-8427	<p>Maintaining the input component <code>CMS_INPUT_PERMISSION</code> within a subform could lead to erroneous behavior.</p>	Input Components, SiteArchitect	2018-07
CORE-8431	<p>The standard recognition of 32 and 64 bit systems has been deactivated (Java Wrapper, <code>fs-wrapper.*.conf</code>).</p> <p>Further information can be found in chapter “General: Java Wrapper (<code>fs-wrapper.*.conf</code>): Standard recognition of 32 and 64 bit systems has been deactivated”.</p>	FirstSpirit Administrator	2018-07
CORE-8454	<p>Using the interface <code>RenderingAgent</code> (package <code>de.espirit.firstspirit.agency</code>, FirstSpirit Developer API) could lead to erroneous behavior when outputting structure variables.</p>	Developer, FirstSpirit API	2018-07
CORE-8459	<p>Testing the connection configuration after having configured a database could lead to erroneous behavior.</p>	Database, ServerManager	2018-07



ID	Description	Categories	Version
CORE-8469 CORE-8379 CORE-8482 CORE-8514	Optimizations related to FirstSpirit Oracle Berkeley DB.	FirstSpirit Administrator, Repository	2018-07
CORE-8470 CORE-8963	Improved behavior related to concurrent updates of subscriptions.	Corporate Content	2018-09
CORE-8473	In FirstSpirit release 2018-07, updated internally used software. Further information can be found in chapter "System: Integrated Software".	Integrated software, Modules	2018-07
CORE-8489 CORE-8492	The latest release provides new options for configuring web servers that can be used in production. Further information can be found in chapter "Administration: FirstSpirit web server configuration (inc. Jetty)".	FirstSpirit Administrator, ServerManager	2018-08
CORE-8493	<i>FSDevTools</i> version 2.1.659 or higher is needed to use "FirstSpirit External Synchronization". Further information can be found in chapter "External Synchronization: Update of "FSDevTools"".	Developer, External synchronization	2018-08
CORE-8509	While an administrator edits a CorporateContent package on the master server, no package-changing actions can be performed by any other user within SiteArchitect. Further information can be found in chapter "Modules: Corporate Content: Behavioral change for CorporateContent packages currently being edited within SiteArchitect".	Corporate Content, SiteArchitect	2018-12
CORE-8516	Displaying forms with CMS_GROUP elements that have been hidden using a rule could lead to malfunctions when using Oracle Java 10.	Java	2018-08
CORE-8519 CORE-5784	Improved behavior when creating new datasets in the input component FS_DATASET.	ContentCreator	2018-09



ID	Description	Categories	Version
CORE-8521	Adding a new language to a project could lead to erroneous behavior.	Languages, ServerManager	2018-08
CORE-8523	Using the integrated data edit function in the AppCenter area to edit files has been optimized.	SiteArchitect	2018-08
CORE-8525	<p>If problems arise while converting the database, the original data will not be deleted from the FirstSpirit server anymore.</p> <p>Further information can be found in chapter “Administration: Conversion tool "BerkeleyUtil": In the event of an error, the original data is saved in a backup folder.”.</p>	FirstSpirit Administrator, Integrated software, Repository	2018-07
CORE-8534	During generation of a page from the Page Content store via the <code>RenderingAgent</code> (package <code>de.espirit.firstspirit.agency</code> , FirstSpirit Developer API), erroneous behavior could arise if the page contained a data source-based section.	Developer, FirstSpirit API	2018-09
CORE-8535	<p>The location for storing JAR files (“JAR cache”) has been moved to the directory <code>\${cmsroot}/work/storage/jars</code> of the FirstSpirit server.</p> <p>Further information can be found in chapter “Administration: Changed location for the JAR cache ”.</p>	FirstSpirit Administrator	2018-08
CORE-8544	<p>The template function <code>previewId</code> now accepts the parameter <code>entity</code>, like the function <code>editorId</code>.</p> <p>Further information can be found in chapter “Module Development, Scripts, API: Function "previewId" was extended to support a parameter "entity"”.</p>	Developer, FirstSpirit API	2018-07
CORE-8550	Malfunctions could occur when using the <code>ShowFormDialogOperation</code> interface (package <code>de.espirit.firstspirit.ui.operations</code> , FirstSpirit Developer API) .	FirstSpirit API	2018-08
CORE-8558	Erroneous behavior could arise when uploading media via drag and drop.	SiteArchitect	2018-09



ID	Description	Categories	Version
CORE-8588	On changed pages, the menu entry “Display all changes” was not always displayed correctly.	ContentCreator	2018-09
CORE-8590	A new, valid license is required to use the FragmentCreator.	FragmentCreator, License	2018-09
CORE-8614 CORE-7919 CORE-8438	In existing installations, the entry <code>--add-modules=java.activation</code> must be removed manually from the <code>fs-wrapper-j2.include.conf</code> wrapper file in the <code><FirstSpiritROOT>/conf</code> subdirectory. Further information can be found in chapter “Administration: Modifications in the Java environment (wrapper configuration)”.	Isolated mode	2018-09
CORE-8616	Identification of entries of an FS_CATALOG (“cards”) using a unique ID. Further information can be found in chapter “Input components: FS_CATALOG: Identification of entries (“cards”)”.	Developer, FirstSpirit API, Input Components	2018-12
CORE-8623	Improved workflow support related to erroneous input.	FragmentCreator	2018-11
CORE-8626	Optimized the error message that indicates validation problems while importing a feature.	Content Transport	2018-09
CORE-8628	Corrected the behavior of renaming navigation entries such that, when the Store Mapping type “Synchronous site- and page-store” is used, only entries can be renamed for which the user has the necessary “Change” permission in both stores.	ContentCreator	2018-09
CORE-8629	The process of refreshing input components after changing the language dependency has been improved.	Input Components, SiteArchitect	2018-08
CORE-8648	Changed label for the context menu and toolbar function “Preview” to “Display preview”. Further information can be found in chapter “SiteArchitect: Changed label for the function “Preview””.	SiteArchitect	2018-09



ID	Description	Categories	Version
CORE-8650	<p>In the ShowFormDialogOperation interface (de.espirit.firstspirit.ui.operations package, FirstSpirit Developer API), the new setPreselectedLanguage method now makes it possible to set the preselected language for a multilingual dialog.</p> <p>Further information can be found in chapter “Module Development, Scripts, API: “ShowFormDialogOperation” interface, new method “setPreselectedLanguage””.</p>	FirstSpirit API, Languages, Omnichannel Manager / Third Party Preview	2018-08
CORE-8654	<p>In the ContentCreator JavaScript API “WE_API”, the FSID object was extended to include a project language (parameter language).</p> <p>Further information can be found in chapter “Module Development, Scripts, API: ContentCreator JavaScript API “WE_API”: FSID can now work with language dependency”.</p>	FirstSpirit API, Languages, Omnichannel Manager / Third Party Preview	2018-09
CORE-8657	<p>The interface NewSectionOperation (Package de.espirit.firstspirit.webedit.server, FirstSpirit Developer-API) has been extended with the method preselectedLanguage. By using the new method it is now possible to preselect a project language for editing language-dependent editorial content.</p> <p>Further information can be found in chapter “Module Development, Scripts, API: Interface “NewSectionOperation”: New method “preselectedLanguage””.</p>	FirstSpirit API, Languages, Omnichannel Manager / Third Party Preview	2018-08
CORE-8661	<p>In the current FirstSpirit version, updated internally used software.</p> <p>Further information can be found in chapter “System: Integrated Software”.</p>	Integrated software, Launcher, SiteArchitect	2018-09



ID	Description	Categories	Version
CORE-8662	<p>With the latest FirstSpirit release, Mozilla Firefox has been withdrawn as the browser engine for the integrated preview as planned.</p> <p>Further information can be found in chapter “SiteArchitect / ServerManager: “Mozilla Firefox” browser engine withdrawn”.</p>	Editor, FirstSpirit Administrator, Integrated software, Java, Preview, ServerManager, SiteArchitect	2018-08
CORE-8663	Improved performance during feature creation.	Content Transport	2018-10
CORE-8680	Improved clean-up of user sessions when closing the browser tab.	ContentCreator	2018-09
CORE-8702	<p>Extended the input component FS_CATALOG by “Duplicate” functionality.</p> <p>Further information can be found in chapter “Input components: Duplicating entries in the input component FS_CATALOG”.</p>	ContentCreator, Input Components	2018-09
CORE-8710	<p>In the course of FirstSpirit's design rebrush, the method <code>getTypeIcon</code> of the interface <code>SnippetAgent</code> (package <code>de.espirit.firstspirit.agency</code>, FirstSpirit Access API) now uses restyled, more modern type icons in FirstSpirit SiteArchitect.</p> <p>Further information can be found in chapter “SiteArchitect: “de.espirit.firstspirit.agency.SnippetAgent#getTypeIcon” Uses Restyled icons”.</p>	Data Access Plug-In, Module development, SiteArchitect	2018-09
CORE-8721	Optimized use of the interface <code>ScheduleTask</code> (package <code>de.espirit.firstspirit.access.schedule</code> , FirstSpirit Access API) in FirstSpirit server in isolated mode.	Developer, Isolated mode	2018-09
CORE-8723	The display of media names in Media Store has been optimized.	ContentCreator	2018-08
CORE-8724	Requesting a preview in an external web browser when integrated preview is enabled could lead to erroneous behavior.	Editor, Preview, SiteArchitect	2018-09
CORE-8736	Improved behavior of move operations involving sections.	SiteArchitect	2018-09



ID	Description	Categories	Version
CORE-8745	<p>Extended the interface <code>ModuleAdminAgent</code> (package <code>de.espirit.firstspirit.agency</code>, FirstSpirit Developer API) by adding methods for registration and configuration of web servers.</p> <p>Further information can be found in chapter “Module Development, Scripts, API: Interface “ModuleAdminAgent”: New methods for registration and configuration of web servers”.</p>	Developer, FirstSpirit API, FirstSpirit Administrator, Module development, Web server	2018-09
CORE-8749	<p>Automatically generated image files can now be configured in relation to their resolution and file type with the project property <code>ImageWriterParams</code>. This allows, for example, to set a compression rate for JPEGs to achieve a better image quality or reduced file size.</p> <p>Further information can be found in chapter “Media: Controlling automatically generated images in projects”.</p>	Developer, Media Store	2019-09
CORE-8756	<p>In addition to using the context menu, the order of the project languages (“FirstSpirit ServerManager / Project / Properties / Languages”) can now also be changed by using the mouse pointer (drag-and-drop).</p> <p>Further information can be found in chapter “Administration: Change the order of the project languages by drag-and-drop”.</p>	FirstSpirit Administrator, Languages, ServerManager	2020-02
CORE-8759	<p>In rare cases, erroneous behavior could arise during start-up of the FirstSpirit server.</p>	Isolated mode	2018-11
CORE-8768	<p>In workflows, improved mail sending to defined groups.</p>	SiteArchitect, Workflow	2018-12
CORE-8770	<p>In rare cases, the temporary FirstSpirit folder was cleared away during SiteArchitect use. This could lead to erroneous behavior.</p>	SiteArchitect	2019-02
CORE-8794	<p>Improved behavior of language-dependent media when some project languages are set to be invisible.</p>	SiteArchitect	2018-09



ID	Description	Categories	Version
CORE-8803	In rare cases, erroneous behavior could arise if an input component CMS_INPUT_DOM used a format template for paragraph formatting that set a <div> or a .	ContentCreator	2018-09
CORE-8811	The output format of the generation function <code>previewId(..)</code> has been changed. We recommend to update the data stored in the Preview-CaaS with version FirstSpirit 2018-08. Further information can be found in chapter "Module Development, Scripts, API: Output format of function "previewId(..)" changed".	Omnichannel Manager / Third Party Preview	2018-08
CORE-8820	Security improvements related to redirects by FirstSpirit.	Security, Server Administrator	2018-09
CORE-8822	Erroneously, the preview was always updated when using the operation <code>CropDialogOperation</code> (package <code>de.espirit.firstspirit.webedit.server</code> , FirstSpirit Developer API).	ContentCreator, Developer, FirstSpirit API	2018-09
CORE-8823	Optimized rule evaluation in translation help.	Dynamic Forms, SiteArchitect	2018-09
CORE-8825	When using Microsoft Internet Explorer 11, erroneous behavior could arise when resizing the window.	ContentCreator	2018-09
CORE-8828	In FirstSpirit ContentCreator, when displaying a button to edit metadata of a page reference (via <code>...editorId(..., meta:true)...</code>), the icon that allows moving the menu entry was erroneously displayed as well. This behavior has been corrected.	ContentCreator, Developer, Metadata, Template Development	2018-09
CORE-8837	In very rare cases, after project archival, intermittent erroneous behavior could arise in data sources due to an outdated cache.	Archiving, FirstSpirit Administrator	2018-09
CORE-8849	Optimized saving changes made to project components.	FirstSpirit Administrator	2018-09



ID	Description	Categories	Version
CORE-8852	<p>The module “CaaS Integration for CXT” enables delivery of a fragment project's content via the universal FirstSpirit CaaS interface.</p> <p>Further information can be found in chapter “FragmentCreator: Delivery of fragments and variants via FirstSpirit CaaS (Content-as-a-Service)”.</p>	FragmentCreator, Modules	2018-12
CORE-8853	<p>The module “CaaS Integration for CXT” enables deployment of a fragment project's content (via a schedule entry script) on the universal FirstSpirit CaaS interface.</p> <p>Further information can be found in chapter “FragmentCreator: Delivery of fragments and variants via FirstSpirit CaaS (Content-as-a-Service) (by schedule entry)”.</p>	FragmentCreator, Modules, Tasks	2019-01
CORE-8868	Improved use of the Aggregating Web Server under Java 11.	Java, Web server	2018-09
CORE-8874	Optimized editing of texts with links in the input component CMS_INPUT_DOM when Microsoft Internet Explorer 11 or Microsoft Edge are used.	ContentCreator	2018-09
CORE-8875	Security improvements related to template code execution.	Security, Template Development	2018-09
CORE-8883	<p>During start-up of a FirstSpirit server, information about the current runlevel is now provided which may be used to react to, for example via API.</p> <p>Further information can be found in chapter “Administration: Obtaining the status of a FirstSpirit server during start-up”.</p>	Developer, FirstSpirit API	2018-12
CORE-8907	Erroneous behavior could arise when illegal characters were used in the host name in the configuration file <code>fs-server.conf</code> .	FirstSpirit Administrator	2018-09



ID	Description	Categories	Version
CORE-8911	As of the current release, it is now possible to include language-dependent links in e-mails that are sent by workflows. Further information can be found in chapter “Administration: Workflows: Variables for language-dependent URLs in e-mails”.	Developer, FirstSpirit Administrator, Release, Workflow	2018-10
CORE-8914 CORE-8915	The FirstSpirit Launcher has been improved. Further information can be found in chapter “Administration: Improvements of the FirstSpirit Launcher”.	Launcher	2018-09
CORE-8925	Extended the interface <code>FeatureInstallResult</code> (Package <code>de.espirit.firstspirit.feature</code> , FirstSpirit Developer API). Further information can be found in chapter “Module Development, Scripts, API: FirstSpirit ContentTransport: Obtaining information about imported content”.	Content Transport, Developer, FirstSpirit API	2018-10
CORE-8934	If one or more web applications are configured to run on the “InternalJetty” of a FirstSpirit server, the start page of the FirstSpirit server will show a warning to users with the administrator role. Further information can be found in chapter “Administration: Usage of the “InternalJetty” web server”.	FirstSpirit Administrator, Web server	2018-10
CORE-8942 CORE-9055	In the current FirstSpirit version, updated internally used software. Further information can be found in chapter “System: Integrated Software”.	Integrated software, Preview, SiteArchitect	2018-11
CORE-8949	Stability improvements related to FirstSpirit Launcher	Launcher	2018-09
CORE-8959	Improved setting and editing of SEO URLs on menu levels.	SiteArchitect	2018-09
CORE-8968	Optimized consideration of aborted sessions when editing data sources with server lock.	Content Store	2018-11



ID	Description	Categories	Version
CORE-8986	Optimized clean-up of technical sessions.	FirstSpirit Administrator	2018-11
CORE-8995	As of the current FirstSpirit release, the operating system-specific third-party applications in FirstSpirit SiteArchitect's AppCenter that were announced in FirstSpirit version 5.2R19 (March 2018) to be discontinued are, as planned, no longer available. Further information can be found in chapter "SiteArchitect / ServerManager: Cessation of availability of operating system-specific third-party applications in AppCenter".	Editor, FirstSpirit Administrator, Integrated software, Java, Media Store, ServerManager, SiteArchitect	2018-09
CORE-9009	The display of the package properties in the "Element selection" dialog has been corrected (<code>missing resource key</code>).	Corporate Content, Developer, SiteArchitect	2019-10
CORE-9013	When using the access control to data of "DataAccess-Plugins", erroneous behavior could occur during the search.	ContentCreator, Data Access Plug-In, SiteArchitect	2018-09
CORE-9016	In very rare cases, erroneous behavior could arise during use of <code>#global.stopGenerate</code> .	Developer, Generation	2018-09
CORE-9019	Improvements related to display of the navigation menu when creating a new page.	ContentCreator	2018-09
CORE-9021	Improved consideration of directories referenced via symlink when using BerkeleyUtil.	FirstSpirit Administrator	2018-09
CORE-9022	Variants can be marked as favorites and displayed in a favorites list. Further information can be found in chapter "FragmentCreator: Display of Variants in Favorites List".	FragmentCreator	2018-11
CORE-9024	In conjunction with the parameter <code>editorId</code> , erroneous behavior could arise during output of dataset contents using <code>\$CMS_VALUE(dataset.getFormData())\$</code> .	Preview	2018-09
CORE-9040	Erroneous behavior could arise in the display of usages of a section template in a form that was called via a script.	ContentCreator	2018-10



ID	Description	Categories	Version
CORE-9059	When using multiple monitors, it was possible that dialogs were opened at unexpected positions.	SiteArchitect	2018-09
CORE-9062	As of the current release, new FirstSpirit installations use the web server "FirstSpirit Jetty Server" as standard. Further information can be found in chapter "Administration: Web server configuration: new FirstSpirit installations use the web server "FirstSpirit Jetty Server"".	FirstSpirit Administrator, Web server	2018-09
CORE-9072	Increased error tolerance related to configuration of the parameter <code>listConfig</code> for the input components <code>CMS_INPUT_DOM</code> and <code>CMS_INPUT_DOMTABLE</code> .	Developer, Input Components	2018-10
CORE-9074	In rare cases, erroneous behavior could arise during assembly of web resources.	FirstSpirit Administrator	2018-10
CORE-9086	It is now possible to release or delete multiple variants of a fragment at the same time. Further information can be found in chapter "FragmentCreator: Releasing or deleting multiple variants of a fragment at the same time".	FragmentCreator	2018-12
CORE-9100	Optimized roll-out of web applications when moving the start page to another web server.	FirstSpirit Administrator, ServerManager	2018-10
CORE-9108	If a project is exported with a revision limit, the correct date of the revision used is now issued in the log again.	FirstSpirit Administrator, Project export / import	2019-04
CORE-9117	Improved installation of a FirstSpirit server in isolated mode on Linux.	Isolated mode, Server Administrator	2018-12



ID	Description	Categories	Version
CORE-9118 CORE-11029	<p>Exceptions that can be returned when using <code>de.espirit.firstspirit.access.Connection</code> are now part of the API.</p> <p>Further information can be found in chapter “Module Development, Scripts, API: <code>de.espirit.firstspirit.access.Connection</code>: Exceptions are now part of the API”.</p>	Developer, FirstSpirit API	2019-08
CORE-9135	Improved operating behavior of FirstSpirit Jetty Web Server on Microsoft Windows.	FirstSpirit Administrator, Web server	2018-09
CORE-9136	Saving the configuration of an FS_CATALOG input component without a <code><TEMPLATES></code> tag caused display of a Java exception. Now, a concise error message that indicates the missing tag will be displayed.	Input Components, SiteArchitect, Template Development	5.2R3
CORE-9137	After removing an entry from an index (input component FS_INDEX), switching to another project language of the form and then saving the form could lead to erroneous behavior.	ContentCreator, Input Components	5.2R2
CORE-9138	Optimized rule evaluation (functionality “Dynamic Forms”) for languages of a form that haven’t been displayed yet.	Dynamic Forms, SiteArchitect	5.2R2
CORE-9139	In an integrated preview using Internet Explorer as browser, opening external links in a separate window could lead to erroneous behavior.	Preview, SiteArchitect	5.2R2
CORE-9140	In the input component FS_LIST (type INLINE), optimized copy and paste operations of entries between lists via the context menu.	Input Components, SiteArchitect	5.2R2
CORE-9141	<p>If the “Filterable” aspect of a Data Access Plug-In defines more than one parameter with the same name, only the first provided parameter with that name will now be used.</p> <p>Further information can be found in chapter “Module Development, Scripts, API: Changed Behavior for Data Stream Builder Implementations With Aspect “Filterable””.</p>	Developer, FirstSpirit API, Template Development	5.2R2



ID	Description	Categories	Version
CORE-9142	<p>Via the API, Dataset objects can now only be saved (method <code>save()</code>) if they are locked (e.g. method <code>lock(true)</code>) or the option “Server locks in content store” (ServerManager / Project / Properties / Options) is deactivated.</p> <p>Further information can be found in chapter “Module Development, Scripts, API: Method <code>save()</code> observes the option “Server locks in content store””.</p>	Developer, FirstSpirit API, Template Development	5.2R2
CORE-9143	Optimized updating the value of an FS_DATASET input component when multiple users perform edits in parallel.	Input Components, SiteArchitect	5.2R2
CORE-9144	In ServerMonitoring and ServerManager, the default text for messages (functionality “Send message”) is now identical.	Server Administrator, ServerManager, ServerMonitoring	5.2R2
CORE-9145	Navigating to an HTML anchor element after refreshing the preview could lead to erroneous behavior.	ContentCreator, Preview	5.2R2
CORE-9146	<p>Implemented measures to improve security in FirstSpirit ServerMonitoring as well as in FirstSpirit web applications.</p> <p>Further information can be found in chapter “Administration: Security improvements in FirstSpirit ServerMonitoring and web applications”.</p>	FirstSpirit Administrator, ServerMonitoring	5.2R2
CORE-9147	<p>Template Wizard: New functionality for detecting and merging differences between content which has already been edited and imported.</p> <p>Further information can be found in chapter “Template Wizard: Detecting and merging changes”.</p>	Developer, Template Development, Template Wizard	5.2R2
CORE-9148	The table view when editing datasets has been optimized.	Content Store, SiteArchitect	5.2R2
CORE-9149	A meaningful error message is now displayed if a section is supposed to be created on a single page in ContentCreator via drag-and-drop, but another user has just edited it.	ContentCreator	5.2R2
CORE-9150	The browser integration for modules has been improved.	Modules, Preview, SiteArchitect	5.2R2



ID	Description	Categories	Version
CORE-9151	<p>The FS_INDEX input component has been expanded to allow access to the value set.</p> <p>Further information can be found in chapter “SiteArchitect / ContentCreator: Access to FS_INDEX value set”.</p>	ContentCreator, Developer, SiteArchitect, Template Development	5.2R2
CORE-9152	<p>New FirstSpirit login facility via the HTTP request header (“RequestHeaderLoginModule”)</p> <p>Further information can be found in chapter “Administration: Log in via the HTTP request header (“RequestHeaderLoginModule”)”.</p>	FirstSpirit Administrator	5.2R2
CORE-9153	<p>The performance of the “external synchronization” function has been optimized when adding elements via the user interface.</p> <p>Further information can be found in chapter “External Synchronization: Optimized performance”.</p>	Developer, External synchronization, SiteArchitect, Template Development	5.2R2
CORE-9154	<p>The “Overview” tab view in the Template Wizard can now be configured.</p> <p>Further information can be found in chapter “Template Wizard: Configure overview”.</p>	Developer, Template Development, Template Wizard	5.2R2
CORE-9155	<p>The new “Follow links” checkbox can be used to configure “Crawling” for the “Template Wizard” function.</p> <p>Further information can be found in chapter “Template Wizard: Activate/deactivate crawling”.</p>	Developer, Template Development, Template Wizard	5.2R2
CORE-9156	<p>The process of scaling the thumbnails in the detail and symbol display modes (<code>viewMode="DETAILS"</code> and <code>viewMode="SYMBOLS"</code>) in the FS_INDEX input component has been improved.</p>	ContentCreator, Input Components, SiteArchitect	5.2R2
CORE-9157	<p>In the case of using the <code>ref()</code> function on a nonexistent folder, the generation process now involves recording missing references as information (“INFO” log level) rather than errors (“ERROR” log level).</p>	FirstSpirit Administrator, Generation	5.2R2



ID	Description	Categories	Version
CORE-9160	The “Add column” pop-up dialog in the data source overview has been optimized.	Content Store, SiteArchitect	5.2R2
CORE-9161	Frequently used objects in a FirstSpirit project are now also visualized in editing dialogs in ContentCreator. Further information can be found in chapter “ContentCreator: Visualization of frequently used objects”.	ContentCreator, Editor	5.2R2
CORE-9162	Making a change in the database schema for an existing table (i.e., creating a new column) may have resulted in a malfunction when maintaining data in the data source.	Content Store, Developer, Template Development	5.2R2
CORE-9163	Projects are now protected against simultaneous editing by several developers using the “FirstSpirit Template Wizard” function. Further information can be found in chapter “Template Wizard: Protection against simultaneous project editing”.	Developer, SiteArchitect, Template Development, Template Wizard	5.2R2
CORE-9164	New list entries in FS_LIST (DATABASE and INLINE types), FS_CATALOG, and FS_INDEX can now be created directly from the preview in ContentCreator via FS_BUTTON. Further information can be found in chapter “ContentCreator: Create new list items using the FS_BUTTON”.	ContentCreator, Developer, Editor, Template Development	5.2R2
CORE-9165	Some methods in the Content2 (FirstSpirit Access API, <code>de.espirit.firstspirit.access.store.contents</code> package) have been discontinued (“Deprecation”) and can be omitted in the next FirstSpirit major version (6.0). Further information can be found in chapter “Module Development, Scripts, API: Discontinuation (“Deprecation”) of methods for the “Content2” interface”.	Developer, FirstSpirit API, Module development, Template Development	5.2R2



ID	Description	Categories	Version
CORE-9166	<p>The version comparison dialog has been updated. It now also provides the option to “merge” differences between revisions.</p> <p>Further information can be found in chapter “SiteArchitect: Revised version comparison”.</p>	Developer, SiteArchitect, Template Development	5.2R2
CORE-9167	<p>Due to a change in the FirstSpirit Developer API, any special modules that you have created yourself and that use the <i>PreviewParameter</i> (package <i>de.espirit.firstspirit.client.mpp</i>) interface must be recreated after upgrading to FirstSpirit version 5.2R2.</p> <p>Further information can be found in chapter “Module Development, Scripts, API: General information”.</p>	Developer, FirstSpirit API, Module development	5.2R2
CORE-9168	<p>E-mails are now no longer sent automatically if the license has expired.</p> <p>Further information can be found in chapter “Administration: Expired license warning”.</p>	FirstSpirit Administrator, License	5.2R2
CORE-9169	<p>Security improvements when starting SiteArchitect and ContentCreator.</p>	ContentCreator, Security, SiteArchitect	5.2R2
CORE-9170	<p>Within the FS_LIST (INLINE type) component, the deletion of an entry from the list was not identified as a change even though it should have been.</p>	Editor, Input Components, SiteArchitect	5.2R2
CORE-9171	<p>Project exports can now be reduced by excluding pre-calculated image resolutions.</p> <p>Further information can be found in chapter “Administration: Reduce project exports by excluding pre-calculated image resolutions”.</p>	FirstSpirit Administrator, Project export / import, ServerManager	5.2R2
CORE-9172	<p>The options for code completion in templates have been expanded.</p> <p>Further information can be found in chapter “SiteArchitect: Optimizing code completion in templates”.</p>	Developer, SiteArchitect, Template Development	5.2R2



ID	Description	Categories	Version
CORE-9173	Sections can now also be moved into other content areas in ContentCreator. Further information can be found in chapter “ContentCreator: Move sections into other content areas”.	ContentCreator, Developer, Editor	5.2R2
CORE-9174	Within the FS_LIST (DATABASE type) input component, the selection view has been optimized in the selection dialog.	Input Components, SiteArchitect	5.2R2
CORE-9175	In terms of the “Enterprise Backup” functionality, license evaluation has been optimized for the purpose of creating a schedule.	Backup, FirstSpirit Administrator, ServerManager	5.2R2
CORE-9176	The pop-up dialog for searching in database tables incorrectly remained in the foreground when you switched to another application outside the FirstSpirit environment.	Content Store, Search, SiteArchitect	5.2R2
CORE-9180	Downloading the log files may have resulted in a malfunction in ServerMonitoring.	FirstSpirit Administrator, ServerMonitoring	5.2R2
CORE-9186	Added package <code>org.jetbrains.annotations</code> to <code>fs-isolated-runtime.jar</code> .	Isolated mode	2018-11
CORE-9189	Optimized logging of FirstSpirit Jetty Server.	Server Administrator	2018-11
CORE-9190	Optimized display of preset values in forms.	SiteArchitect	2018-11
CORE-9191	A more informative error message will now be shown if, erroneously, external users are used as technical users in schedule tasks.	FirstSpirit Administrator	2018-12
CORE-9193	When using Java 11, display issues could occur related to the caret in the input components CMS_INPUT_DOM and CMS_INPUT_DOMTABLE if certain fonts were used.	Input Components, Java	2018-12
CORE-9194	Optimized display of thumbnails during image selection.	ContentCreator	2018-10
CORE-9195	In the input component FS_CATALOG, the context menu entry “Paste” will now only be active when the clipboard contains a suitable element.	SiteArchitect	2018-11



ID	Description	Categories	Version
CORE-9198 CORE-9192	The use of the FirstSpirit Jetty Web Server has been improved.	FirstSpirit Administrator, Web server	2018-09
CORE-9200	In client logging, optimized consideration of the configured log level.	SiteArchitect	2018-11
CORE-9203	When using the "FirstSpirit OfficeConnect" module, erroneous behavior could occur when using certain rule configurations.	Developer, FirstSpirit Administrator, Modules	2019-03
CORE-9204	Canceling out of editing a form could in some cases cause the preview page to be reloaded unnecessarily.	ContentCreator	2018-11
CORE-9207	Improved consideration of user permissions when uploading files via a script.	Developer	2018-12
CORE-9220	Fixed a display error when updating modules in global web applications.	ServerManager	2018-10
CORE-9227	Optimized consideration of rule infractions in other languages when saving a form.	ContentCreator	2018-11
CORE-9238	Optimized shutdown behavior of FirstSpirit server when Jetty Web Server is used.	Server Administrator	2018-10
CORE-9246	Using the new interface <code>PreviewUrlAgent</code> (FirstSpirit Developer API, Package <code>de.espirit.firstspirit.agency</code>) URLs of FirstSpirit objects can be created for preview. Further information can be found in chapter "Module Development, Scripts, API: New Interface "PreviewUrlAgent" for creating preview URLs".	FirstSpirit API	2019-01



ID	Description	Categories	Version
CORE-9248	<p>Extension of the <i>ContentCreator-JavaScript-API / WE_API</i> to enable attaching client-side actions to FS_INDEX entries within the ContentCreator.</p> <p>Further information can be found in chapter “Module Development, Scripts, API: Extension of the ContentCreator-JavaScript-API / WE_API to enable client-side actions on FS_INDEX entries.”.</p>	ContentCreator, FirstSpirit API	2018-11
CORE-9259	When using the FirstSpirit Omnichannel Manager (also “TPP”), users are no longer redirected to the application root URL when making changes to the preview parameters in “Multi Perspective Preview” mode (MPP).	ContentCreator, Developer, FirstSpirit API, Module development, Multi Perspective Preview, Omnichannel Manager / Third Party Preview	2019-03
CORE-9271	Pressing the key <code>F5</code> now again refreshes the display.	ContentCreator	2018-10
CORE-9276	Optimized event handling between FirstSpirit server and web application.	ContentCreator	2018-12
CORE-9279	When selecting a file in the media selection dialog, it no longer matters whether the file extension is written in uppercase or lowercase letters.	Media Store, SiteArchitect	5.2R2
CORE-9297	Attempting to install a module with an incorrect <code>module.xml</code> now results in a more expressive error message.	FirstSpirit Administrator, Modules	2018-12
CORE-9298	<p><code>.normalize</code> is now only valid until the next call of <code>\$CMS_VALUE(st_dom)\$</code>. Thus, calling <code>.normalize</code> is now necessary each time the variable should be output in a normalized fashion in the template.</p> <p>Further information can be found in chapter “Input components: CMS_INPUT_DOM: Normalized output of block elements”.</p>	ContentCreator, Developer, Input Components, SiteArchitect	2018-12



ID	Description	Categories	Version
CORE-9300	<p>Installing and updating the FirstSpirit server via tar.gz archives</p> <p>Further information can be found in chapter “Administration: Installing and updating the FirstSpirit server via tar.gz archives”.</p>	Server Administrator	2018-11
CORE-9307	Improvements related to display of the navigation menu when creating a new page.	ContentCreator	2018-11
CORE-9321	<p>In the current FirstSpirit release, updated internally used software.</p> <p>Further information can be found in chapter “System: Update of internally used software”.</p>	Integrated software	2018-12
CORE-9323	<p>The configuration of the wrapper has been adapted so that the Java-specific parameters can be passed in a single configuration file. This new functionality is available after an update of the Tanuki Java Service Wrapper to version 3.5.36.</p> <p>Further information can be found in chapter “Administration: Configuration settings for the server start depending on the Java version (fs-wrapper.conf)”.</p>	FirstSpirit Administrator, Server Administrator	2018-11
CORE-9332	Improved consideration of the user interface language selected on the FirstSpirit start page.	ContentCreator	2018-11
CORE-9337	In very rare cases, it was possible that the FirstSpirit start page was no longer accessible after a server restart if web applications were used.	FirstSpirit Administrator	2018-10
CORE-9338	Improved handling of conflicting resources in web applications.	FirstSpirit Administrator, Modules	2018-11
CORE-9341	Improved tool tip information when editing metadata.	ContentCreator	2018-11



ID	Description	Categories	Version
CORE-9357	The functionality “Reintegrate object” can be used in the target project to remove an object node from the package link and to integrate a new object node into the package in its place. Here, element selection was optimized.	Corporate Content	2018-10
CORE-9362	In cluster operations, optimized the behavior during restart of the FirstSpirit master server. Further information can be found in chapter “Administration: Clustering: Optimized behavior during restart of the FirstSpirit master server”.	Clustering	2018-12
CORE-9379	The loading of context menu entries has been optimized.	SiteArchitect	2019-03
CORE-9384	Optimized logging of Jetty Web Server.	FirstSpirit Administrator, Web server	2018-11
CORE-9398	With the latest FirstSpirit release, JExplorer has been withdrawn as the browser engine for the integrated preview as planned. Further information can be found in chapter “SiteArchitect / ServerManager: “JExplorer” browser engine withdrawn (Integrated preview for content)”.	Editor, FirstSpirit Administrator, Integrated software, Java, Preview, ServerManager, SiteArchitect	2018-11
CORE-9399	As of FirstSpirit 2018-08, a new, optimized version of the FirstSpirit Launcher is provided. As opposed to older Launcher versions, the new version supports macOS and is generally operational on Linux as well. This Launcher version was released with FirstSpirit 2018-10. As of the current release, only the new Launcher version is supported. Further information can be found in chapter “Administration: End of support for older versions of FirstSpirit Launcher, migration to the new Launcher version recommended”.	Editor, FirstSpirit Administrator, Launcher, Webstart	2018-11
CORE-9419	The identification of errors when creating queries has been improved.	SiteArchitect, Template Development	2019-03



ID	Description	Categories	Version
CORE-9425	<p>The export format for external synchronization and feature transport has been changed.</p> <p>Further information can be found in chapter “External Synchronization / Content Transport: New export format (version 3.2)”.</p>	External synchronization	2019-04
CORE-9430	Optimized consideration of the translated status of the page when using the interface <code>OpenElementDataFormOperation</code> (package <code>de.espirit.firstspirit.ui.operations</code> , FirstSpirit Developer API).	ContentCreator, FirstSpirit API	2018-11
CORE-9451	If the FirstSpirit Jetty Service was in use, erroneous behavior could arise when searching in the FirstSpirit Online Documentation (“ODFS”).	Search, Web server	2018-11
CORE-9459	Improved performance when editing SEO URLs.	SiteArchitect	2018-12
CORE-9476	Optimized clean-up of data that is no longer needed when opening archive databases.	Archiving	2018-12
CORE-9484	<p>“BerkeleyUtil” now provides the option to exclude individual directories from consideration and conversion. By default, all directories whose names begin with <code>.</code> will be excluded. If other directories should be excluded, these must be provided via the parameter <code>--exclude</code> in the form of a suitable RegEx.</p> <p>Further information can be found in chapter “Administration: Conversion tool “BerkeleyUtil”: Exclusion of directories”.</p>	FirstSpirit Administrator, Repository	2018-11
CORE-9499	Optimized classloading when using Jetty Web Server.	Web server	2018-11
CORE-9502	The method <code>getAdminMode()</code> of the interface <code>User</code> (package <code>de.espirit.firstspirit.access</code> , FirstSpirit Access API) erroneously always returned <code>false</code> for a server administrator user, even if “Administrator mode” was active in FirstSpirit SiteArchitect (menu “Project”).	Developer	2018-12
CORE-9507	Optimized configuration and control of several system services.	FirstSpirit Administrator	2018-11



ID	Description	Categories	Version
CORE-9518	Visualization of validation problems Further information can be found in chapter “FragmentCreator: Visualization of validation problems”.	FragmentCreator	2018-11
CORE-9522	Erroneously, when editing a template externally, another file name extension than “txt” was used.	SiteArchitect, Template Store	2018-12
CORE-9536	Optimized code completion in the definition of FS_BUTTON input components.	Developer, SiteArchitect, Template Development	2018-12
CORE-9539	In rare cases, when the FirstSpirit start-up process was aborted at an inopportune time following an update, it was possible that some files were created with incomplete content. This state will now be recognized and corrected during the next start-up process.	FirstSpirit Administrator	2018-12
CORE-9542	As of the current release, FirstSpirit prevents the use of duplicate resources. Further information can be found in chapter “Module Development, Scripts, API: Check for duplicate resources”.	Developer, FirstSpirit Administrator, Module development, Server Administrator, ServerManager	2018-12
CORE-9545	The visualisation of the component for hierarchically structured data in FirstSpirit ContentCreator has been improved.	ContentCreator, Developer, Editor, Input Components, Modules	2019-07
CORE-9551	In the comparison view (page status, “Display all changes”), long text could cause a display issue.	ContentCreator	2018-11
CORE-9572	In the current release, a deadline time can now also be selected for workflows, in addition to the deadline date. Further information can be found in chapter “ContentCreator: Workflows: Selecting a deadline time”.	ContentCreator, Editor, Workflow	2020-05
CORE-9594	When displaying the log files in ServerMonitoring (“Log files / By deployment / History”), the evaluation of the date has been improved.	ServerMonitoring	2019-01



ID	Description	Categories	Version
CORE-9607	<p>Errors that occur when indexing a project are now included in the schedule log when using the “Rebuild search index” schedule.</p> <p>Further information can be found in chapter “Administration: “Rebuild search index” schedule: Logging errors”.</p>	FirstSpirit Administrator, Indexing, Search, ServerManager, Tasks	2019-03
CORE-9612	When a FirstSpirit server was restarted, some web applications did not work without a restart of an upstream Apache Tomcat.	FirstSpirit Administrator	2018-12
CORE-9614	Improved evaluation of the design element CMS_GROUP when it is displayed in forms.	ContentCreator	2018-12
CORE-9619	<p>New sorting system for entries in the FirstSpirit release notes</p> <p>Further information can be found in chapter “General: Release notes: chapter sorting”.</p>	Developer, Editor, FirstSpirit Administrator	2019-02
CORE-9632	In rare cases, using the ACL database for a generation could cause erroneous behavior.	Generation	2019-01
CORE-9649	<p>As of FirstSpirit 2018-12, the Java Service Wrapper files which enable operation of a FirstSpirit server in 32-bit mode will no longer be provided.</p> <p>Further information can be found in chapter “Administration: 64- and 32-bit support for FirstSpirit servers”.</p>	FirstSpirit Administrator, Integrated software	2018-12
CORE-9673	Improved detection of media usages in multiply nested input components.	SiteArchitect	2018-12
CORE-9674	Using the FirstSpirit Jetty Web Server, malfunctioning could occur when logging on to the FirstSpirit start page in certain languages.	FirstSpirit home page, Web server	2018-12
CORE-9675	<p>Adjustment of the Technical Datasheet</p> <p>Further information can be found in chapter “Administration: Adjustment of the Technical Datasheet”.</p>	FirstSpirit Administrator	2018-12



ID	Description	Categories	Version
CORE-9695	When saving datasets, using the “Server locks in content store” option in the project properties could cause erroneous behavior.	ContentCreator	2019-01
CORE-9701	How changes are notified within FirstSpirit has been optimized, making the process quicker and more reliable.	ContentCreator, Performance, SiteArchitect	2019-04
CORE-9708	<p>With the new <code>externalReference</code> parameter in <code>editorId()</code> calls, external references of the relevant FS_INDEX component can now be marked for use in ContentCreator. As part of this new development, the EasyEdit icon bar for cases where input forms allow inputs on multiple levels has also been redesigned.</p> <p>Further information can be found in chapter “ContentCreator: ContentCreator: New options for editing content”.</p>	ContentCreator, Data Access Plug-In, Developer, Editor, Input Components	2019-02
CORE-9709	Using the <code>start(SpecialistsBroker, ParameterMap)</code> method from the <code>DataProvider</code> interface (FirstSpirit Developer API, <code>de.espirit.firstspirit.client.plugin</code> package) could cause erroneous behavior in ContentCreator.	ContentCreator, FirstSpirit API	2019-01
CORE-9712	Improved performance in ContentCreator when using Jetty Web Server and Java 11.	ContentCreator, Performance	2019-01
CORE-9721	If multiple web servers were operated in parallel, certain conditions could cause a user to be redirected to the start page of the wrong web server upon logging out of ContentCreator.	ContentCreator	2018-12
CORE-9722	<p>As of the current release, developers can advertise outbound references of “data access plugins” and thus use the functionality of FirstSpirit's reference manager.</p> <p>Further information can be found in chapter “Module Development, Scripts, API: Data Access Plugins (DAP): Advertising references”.</p>	Developer, FirstSpirit API, Input Components	2018-12



ID	Description	Categories	Version
CORE-9728	Optimized clean-up of uninstalled web applications.	Server Administrator	2018-12
CORE-9733 CORE-9722 CORE-9734	<p>“FirstSpirit Media DAP” and “FirstSpirit Fragment DAP” module updates</p> <p>Further information can be found in chapter “FragmentCreator: “FirstSpirit Media DAP” and “FirstSpirit Fragment DAP” module updates”.</p>	Data Access Plug-In, FragmentCreator, Media Store, Remote access	2019-01
CORE-9741	Improved display of navigation when creating a new page.	ContentCreator	2018-12
CORE-9747	In rare cases, when running on Microsoft Windows, display errors could arise on monitors with 4K resolution.	SiteArchitect	2018-12
CORE-9759	The file <code>fs-isolated-runtime.jar</code> (relevant for FirstSpirit servers running in “Isolated mode”) is now rolled out to <code>~FS/data/fslib</code> (~FS = installation directory of the FirstSpirit server) when the FirstSpirit server is started.	FirstSpirit Administrator, Isolated mode	2018-12
CORE-9766	Security improvements related to object deserialization.	Module development, Security	2018-12
CORE-9769	After updating a module with a service, erroneous behavior could occur when removing a project-related web component.	FirstSpirit Administrator	2019-02
CORE-9784	Improved problem detection when configuring a faulty module.	Isolated mode	2018-12
CORE-9796	For the CMS_LABEL design element, a line break is automatically inserted in SiteArchitect for longer texts.	Input Components, SiteArchitect	2019-11
CORE-9802	The distribution of content between projects with different language sets was optimized.	Content Transport	2019-02
CORE-9826	Selecting a dataset from a DB scheme with read access using the input component FS_DATASET may have resulted in a malfunction.	ContentCreator	2019-02
CORE-9827	Optimized behavior related to module updates during server update.	FirstSpirit Administrator, Modules	2019-02



ID	Description	Categories	Version
CORE-9831	Logging of the “FirstSpirit Jetty Server” web server has been improved.	Web server	2018-12
CORE-9834	Optimized abortion conditions during generation.	Generation	2019-02
CORE-9837	Creating a dataset in a multiply nested input component FS_LIST (type DATABASE) could lead to erroneous behavior.	SiteArchitect	2019-02
CORE-9861	The evaluation and display of changes within the version comparison was improved for the FS_CATALOG input component.	SiteArchitect	2019-02
CORE-9863	Using Java 11, display issues could occur in the input component CMS_INPUT_DOM concerning blanks in connection with certain fonts.	SiteArchitect	2019-02
CORE-9878	The display of variants in the Favorites bar after showing/hiding them in the Favorites list has been improved.	FragmentCreator	2019-01
CORE-9889	The listener in WE_API.Common.addWorkflowTransitionListener((Interface Common, Package de.espirit.firstspirit.webedit.client.api, FirstSpirit Developer API) was not called for some workflow switchings. This has been corrected.	ContentCreator, FirstSpirit API, Workflow	2018-12
CORE-9891	After project archiving and subsequent modification of a node, erroneous behavior could occur when restoring.	Archiving, SiteArchitect	2019-01
CORE-9910	No more empty files are created during generation. Further information can be found in chapter “Administration: Generation: Files without content”.	Generation	2019-03
CORE-9917	User interface for the conversion from language-independent to language-dependent media has been improved	ContentCreator	2019-02
CORE-9934	When using the macOS operating system, the display of application icons for SiteArchitect and ServerManager has been improved.	ServerManager, SiteArchitect	2019-01



ID	Description	Categories	Version
CORE-9960	<p>The version number of the Java Service Wrapper which was used to start the FirstSpirit Server is now displayed in FirstSpirit ServerMonitoring, and provides information about whether an outdated version is being used. In addition, outdated versions are logged in the <code>fs-wrapper.log</code> file when the FirstSpirit Server is started.</p> <p>Further information can be found in chapter “Administration: Displaying the wrapper version in ServerMonitoring and log”.</p>	FirstSpirit Administrator, ServerMonitoring	2019-01
CORE-9962	In the input component FS_INDEX, malfunction may have occurred after the exchange of a selected entry.	SiteArchitect	2019-02
CORE-9989	<p>Support for template development with a JSON presentation channel.</p> <p>Further information can be found in chapter “Administration: JSON validator”.</p>	Developer, FirstSpirit Administrator, ServerManager, SiteArchitect, Template Development, Template Store	2019-01
CORE-10012	<p>The parameter <code>corsAllowedOrigins</code> may be used to define a global CORS configuration for CXT MicroApps and for CXT REST calls (default value is the <code>FIRST_SPIRIT_URL</code>).</p> <p>Further information can be found in chapter “FirstSpirit Content Experience Tools (CXT): Global CORS configuration for CXT MicroApps and for CXT REST calls”.</p>	Developer, FirstSpirit Content Experience Tools (CXT), FragmentCreator	2019-02
CORE-10019	In the target project, adding an element could cause erroneous behavior if the parent node belonged to a package and the user did not have access to the source project.	Corporate Content	2019-02
CORE-10029	Editing fragments within ContentCreator could cause erroneous behavior.	ContentCreator, FragmentCreator	2019-01



ID	Description	Categories	Version
CORE-10031	Improved detection of duplicate resources in modules	Developer, Isolated mode, Module development	2019-02
CORE-9542			
CORE-10024	Further information can be found in chapter "Module Development, Scripts, API: Improved detection of duplicate resources in modules".		
CORE-10034	Creating a new page in the Global Content could lead to erroneous behavior.	SiteArchitect	2019-01
CORE-10045	Erroneous behavior could occur in very rare instances when archiving a project.	Server Administrator	2019-03
CORE-10054	New API was created to implement preview URLs for media from remote projects. Further information can be found in chapter "Module Development, Scripts, API: Preview URLs for media from remote projects".	Developer, FirstSpirit API, Media Store, Omnichannel Manager / Third Party Preview	2019-03
CORE-10073	Improved JSON Validation Further information can be found in chapter "SiteArchitect: JSON: Improved validation".	Developer, Preview, SiteArchitect, Template Development, Template Store	2019-02
CORE-10087	With the current release, the version comparison dialog in ContentCreator can now also be accessed using an API. Further information can be found in chapter "Module Development, Scripts, API: Version comparison via API (ContentCreator)".	Developer, FirstSpirit API	2019-03
CORE-10089	Erroneous behavior could arise when using periods in search.	FragmentCreator	2019-02
CORE-10095	In the dialog for uploading media, the labeling of the drop area has been improved in Russian.	ContentCreator	2019-02



ID	Description	Categories	Version
CORE-10104	<p>A special character can be used as a normal search character by using a backslash (\).</p> <p>Further information can be found in chapter “SiteArchitect: Search syntax: Masking special characters by using backslashes (\)”.</p>	SiteArchitect	2019-02
CORE-10106 CORE-8365	<p>The FirstSpirit SAML Login Module is released.</p> <p>Further information can be found in chapter “Administration / Modules: The FirstSpirit SAML Login Module is released.”.</p>	Advanced URL	2019-02
CORE-10121	<p>Optimized adoption of form examples via drag-and-drop directly from within FirstSpirit Online Documentation shown in the preview area onto the tab “Form” in a template.</p>	SiteArchitect, Template Development	2019-02
CORE-10122	<p>In the file <code>fs-server.conf</code>, the value <code>TLS_DH_anon_WITH_AES_128_CBC_SHA</code> for the SSL-related parameter <code>fs.ssl.cipherSuites</code> is no longer valid and must be adjusted.</p> <p>Further information can be found in chapter “Administration: SSL Encryption: Modifications to “fs-server.conf””.</p>	FirstSpirit Administrator	2019-02
CORE-10126	<p>Using macOS operating system, erroneous behavior could arise when starting FirstSpirit ServerManager under Java 11.</p>	FirstSpirit Administrator	2019-02
CORE-10154	<p>Optimized module “fs-web-compatibility.fsm”.</p>	Modules	2019-02
CORE-10161	<p>The example modules for accessing web services via OData and SOAP have been converted to Isolated Mode. In addition the build process has been changed to Gradle.</p> <p>Further information can be found in chapter “Module Development, Scripts, API: Example modules for accessing web services via OData and SOAP converted to Isolated Mode.”.</p>	Data Access Plug-In, Developer, Isolated mode	2019-06



ID	Description	Categories	Version
CORE-10174	<p>As of the current release, it is possible to specify which variant should be shown initially when using the MicroApp “Edit fragment”.</p> <p>Further information can be found in chapter “FirstSpirit Content Experience Tools (CXT): Preselecting a variant for editing ("documentId")”.</p>	Developer, FirstSpirit Content Experience Tools (CXT), FragmentCreator	2019-02
CORE-10179	Erroneous behavior could occur when reading out metadata while uploading images containing Exif data.	Media Store	2019-03
CORE-10180	While an administrator was editing a CorporateContent package in the source project, it was not possible to add new elements to the target project in the meantime.	Corporate Content	2019-03
CORE-10189	<p>Removal of “InternalJetty”</p> <p>Further information can be found in chapter “Administration: Removal of "InternalJetty"”.</p>	Integrated software, Web server	2019-02
CORE-10202	Uninstalling web applications will now also cause removal of registered ServiceProviders as long as these were loaded via the context class loader of the web application. This ensures that the old classes are no longer used upon updating the web application.	FirstSpirit Administrator	2019-02
CORE-10204	<p>GUI changes for the “Integrated Preview” in SiteArchitect</p> <p>Further information can be found in chapter “SiteArchitect / ServerManager: GUI changes for the Integrated Preview in SiteArchitect ”.</p>	Preview, ServerManager, SiteArchitect	2019-04
CORE-10207	<p>“Isolated mode” is released.</p> <p>Further information can be found in chapter “Module Development, Scripts, API: "Isolated mode" is released”.</p>	Developer, Isolated mode, Module development, Modules	2019-02



ID	Description	Categories	Version
CORE-10222	The Technical Datasheet for FirstSpirit has been revised. Further information can be found in chapter “General: New Technical Datasheet for FirstSpirit”.	ContentCreator, Database, FragmentCreator, Java, ServerManager, ServerMonitoring, SiteArchitect	2019-02
CORE-10225	Erroneous behavior could arise when using the method <code>executeScriptMethod(String, Object)</code> of the interface <code>BrowserApplication</code> (FirstSpirit Developer API, package <code>de.espirit.firstspirit.client.gui.application.browser</code>).	FirstSpirit API	2019-02
CORE-10244	Optimized memory utilization when using bookmarks.	ContentCreator	2019-02
CORE-10249	The message <code>Requested localization not found</code> only appears with server log level <code>DEBUG</code> .	Server Administrator	2019-08
CORE-10271	Rule evaluation in the input component <code>FS_REFERENCE</code> has been optimized	SiteArchitect	2019-03
CORE-10274	Optimized performance of the method <code>getComponents(Class)</code> of the interface <code>ModuleAgent</code> (FirstSpirit Developer API, package <code>de.espirit.firstspirit.access</code>).	Isolated mode	2019-03
CORE-10279	The format of the JSON output has been optimized as of the current release. Further information can be found in chapter “SiteArchitect: JSON: Optimized output format”.	Developer, Support for JSON, Template Development	2019-05
CORE-10326	The use of user-specific libraries in the executable has been improved.	Module development	2019-03
CORE-10338 CORE-9323	Modification in the Java environment (wrapper configuration) Further information can be found in chapter “Administration: Modification in the Java environment (wrapper configuration)”.	FirstSpirit Administrator, Java	2019-03



ID	Description	Categories	Version
CORE-10343	Class loading performance has been improved.	Performance	2019-03
CORE-10357	Behavior when resizing the FS_CATALOG input component has been improved.	ContentCreator	2019-03
CORE-10360	If the spell checker was activated in the input component CMS_INPUT_DOM, a malfunction could occur if the project language used contained a hyphen in the language abbreviation.	ContentCreator	2019-04
CORE-10361	Improved display of the current status in the task list for parallel use of workflows.	SiteArchitect	2019-05
CORE-10365	Handling of incomplete display names of metadata in ContentCreator Further information can be found in chapter “Administration: Handling of incomplete display names for metadata in ContentCreator”.	ServerManager	2019-03
CORE-10375	Import/Export could in rare cases cause the file Entities.xml to be changed unnecessarily.	External synchronization	2019-03
CORE-10377	Problems with the validation of language-independent subforms have been fixed.	ContentCreator, Dynamic Forms, Editor, SiteArchitect	2019-04
CORE-10397	Erroneous behavior could occur when deactivating HTTPS mode for the “JettyService” service (FirstSpirit Jetty module).	FirstSpirit Administrator, Services	2019-03
CORE-10411 CORE-5785	New prefix CXT in the column “ID” of the release notes Further information can be found in chapter “General: IDs in FirstSpirit Release Notes: New prefix “CXT””.	FirstSpirit Content Experience Tools (CXT)	2019-05
CORE-10438	The display of forms in the Template Store was optimized for the use with Java 11.	Developer, Input Components, Java, SiteArchitect, Template Development, Template Store	2019-05



ID	Description	Categories	Version
CORE-10442	<p>Support of performance analyses on preview pages via preview URL parameter <code>/showLog=profile</code></p> <p>Further information can be found in chapter “General: Support of performance analyses on preview pages”.</p>	Developer, FirstSpirit Administrator, Performance, Preview, Template Development	2019-05
CORE-10443	<p>Changed directory for the FirstSpirit Template Debugger.</p> <p>Further information can be found in chapter “Administration / Modules: Changed directory for the FirstSpirit Template Debugger”.</p>	FirstSpirit Administrator	2019-04
CORE-10453	Improved behavior with large amounts of data in the project.	ContentCreator	2019-05
CORE-10466	<p>In the current FirstSpirit release, updated internally used software.</p> <p>Further information can be found in chapter “System: Update of internally used software”.</p>	Integrated software	2019-05
CORE-10472	New sections that had been created could not be displayed immediately in the preview in rare cases.	ContentCreator	2019-06
CORE-10478	<p>The parameter <code>indexing.extendedDatasetKeys</code> (<code>fs-server.conf</code>) can be used to adjust the format of the search index when using external databases. The default value is <code>indexing.extendedDatasetKeys=false</code>.</p> <p>Further information can be found in chapter “Search: New parameter “indexing.extendedDatasetKeys” for influencing the indexing of content at server level (for datasets)”.</p>	Database, Indexing	2019-06
CORE-10488	<p>Oracle Java 12 will be released in March 2019. The internal test phase for the use of Java 12 with FirstSpirit is currently starting.</p> <p>Further information can be found in chapter “Administration: Java 12”.</p>	FirstSpirit Administrator, Java, Server Administrator	2019-03



ID	Description	Categories	Version
CORE-10489	<p>Corrupt project archives are no longer listed in the list of available project archives and can therefore no longer be used for project import. If a corrupt project archive is selected via the local file system during the project import, the import of the corrupted file is blocked and an error message is displayed</p> <p>Further information can be found in chapter “Administration: Project import: Improved behavior while handling corrupt project archives”.</p>	FirstSpirit Administrator, Project export / import	2019-08
CORE-10496	A potential memory leak in FirstSpirit web applications has been rectified.	FirstSpirit Administrator	2019-04
CORE-10498 CORE-11555	<p>The output options for snippets have been extended (#item and others).</p> <p>Further information can be found in chapter “Template development: Extended output options for snippets”.</p>	Developer, Editor, FirstSpirit API, Snippets	2020-03
CORE-10506	<p>A problem has been solved which in rare cases could cause the connection from the SiteArchitect to the server to be closed.</p> <p>Further information can be found in chapter “Administration: Connection problem fixed and libraries updated”.</p>	FirstSpirit Administrator, SiteArchitect	2019-06
CORE-10508	When queries were used in the FS_INDEX input component, this could cause erroneous behavior when the value set was modified using rules.	ContentCreator	2019-04
CORE-10513	<p>The FirstSpirit product documentation is now available via docs.e-spirit.com.</p> <p>Further information can be found in chapter “General: FirstSpirit Documentation (docs.e-spirit.com)”.</p>	Developer, Editor, FirstSpirit Administrator, Modules	2019-08
CORE-10521	Unnecessary Environment is closed Berkeley database warnings could be issued in the fs-server.log file.	FirstSpirit Administrator	2019-04



ID	Description	Categories	Version
CORE-10523	A change to the behavior of Google Chrome (up to version 77) may have meant that new sections that had not yet been saved were persistently stored unintentionally when the browser tab was closed, enabling rule restrictions to be bypassed in some cases.	ContentCreator, Editor	2019-11
CORE-10537	Editing tables in the input component CMS_INPUT_DOM has been optimized.	ContentCreator	2019-05
CORE-10539	For the input components CMS_INPUT_DOM and CMS_INPUT_DOMTABLE, the evaluation of the listConfig parameter (editing list properties) has been improved.	ContentCreator, Input Components	2019-12
CORE-10540	The consideration of existing master copies has been optimized during the creation of a new section if there is just one permitted section template.	ContentCreator	2019-04
CORE-10546	Improved storage behavior for individual user sessions.	Server Administrator	2019-06
CORE-10553	Classloading has been improved for method calls in templates when the underlying objects originate from modules.	Module development, Template Development	2019-04
CORE-10560	The consideration of an running archiving in the recalculation of references and search indexing was optimized.	Archiving, Server Administrator	2019-11
CORE-10568	In rare cases, module log outputs were not recorded if the modules used Apache Commons Logging or included it as a library.	FirstSpirit Administrator, Module development	2019-04
CORE-10579	In rare cases, the status of a released record was reported as “never released” after a change. Now the correct status “Changed (not released)” is returned.	Content Store, FirstSpirit API, Release, SiteArchitect	2019-09
CORE-10582	If there are problems with the accessibility of the database, the error message of the database driver is now passed on.	Server Administrator	2019-05
CORE-10593	After a section had been defined as a master copy, the EasyEdit toolbar could display an error.	ContentCreator	2019-04



ID	Description	Categories	Version
CORE-10596	The autocompletion of rules has been optimized.	SiteArchitect, Template Development	2019-04
CORE-10626	Tar.gz archives released for installation and update Further information can be found in chapter “Administration: Release of tar.gz archives for installing and updating the FirstSpirit Server”.	Server Administrator	2019-06
CORE-10637	The interface <code>ModuleAdminAgent</code> (package <code>de.espirit.firstspirit.agency</code> , FirstSpirit Developer API) has been extended with the current FirstSpirit release. Further information can be found in chapter “Module Development, Scripts, API: Interface “ModuleAdminAgent”: Extended methods for installing/updating/deploying”.	Developer, FirstSpirit API, Module development, Modules	2019-07
CORE-10638	The parameters <code>-XX:SurvivorRatio=1</code> and <code>-XX:+NeverTenure</code> should no longer be used from Java 9 onward, as they have negative effects on the system's overall performance. Further information can be found in chapter “System: Wrapper configuration: The parameters <code>-XX:SurvivorRatio=1</code> and <code>-XX:+NeverTenure</code> should no longer be used from Java 9 onward”.	Java, Performance, Server Administrator	2019-05
CORE-10650	When using FirstSpirit ContentTransport or external synchronization, malfunction could occur in rare cases if projects have unequal language quantities	Content Transport, External synchronization	2019-06
CORE-10667	The new API method <code><user>.getExternalGroups()</code> returns a list of <code>ExternalGroup</code> objects. Further information can be found in chapter “Module Development, Scripts, API: New API method <code><user>.getExternalGroups()</code> ”.	FirstSpirit API	2019-06



ID	Description	Categories	Version
CORE-10673	<p>In the current FirstSpirit release, updated internally used software.</p> <p>Further information can be found in chapter “System: Update of internally used software”.</p>	Integrated software	2019-06
CORE-10680	Modifications made to a scheme were not taken into account in the preview in very rare cases.	FirstSpirit Administrator	2019-05
CORE-10689	<p>As of the current release, the last Oracle Java version contained in the “FirstSpirit Launcher JRE” module has been replaced by an alternative version of AdoptJDK.</p> <p>Further information can be found in chapter “SiteArchitect / ServerManager: Module “FirstSpirit Launcher JRE”: Replacement of Oracle Java by AdoptJDK”.</p>	Integrated software, Launcher, ServerManager, SiteArchitect	2019-06
CORE-10690	<p>From the latest release of FirstSpirit, the recommended Java version (reference) for use with the FirstSpirit Server is changing to OpenJDK 11 (in the current version) (previously: Oracle JDK 8u181). In addition, OpenJDK 12 has been included in the list of compatible JDKs. Support for Java 8 will cease in the future.</p> <p>Further information can be found in chapter “System: New JDKs for use with the FirstSpirit Server”.</p>	Java, Module development, Server Administrator	2019-05
CORE-10697	<p>In rare cases, session terminations could occur when editing dialogs in ContentCreator were open (error message: Failed to save this form. Reason: unknown form session: 1031063268).</p> <p>The editor will now be informed about this in the editing dialog.</p>	ContentCreator, Editor, FirstSpirit Administrator	2019-07



ID	Description	Categories	Version
CORE-10711	<p>The module “FirstSpirit Launcher JRE” is now included in the FirstSpirit standard scope of delivery. With the current release, the Java versions included have also been updated.</p> <p>Further information can be found in chapter “SiteArchitect / ServerManager: Module FirstSpirit Launcher JRE: New in the standard scope of delivery and java version update”.</p>	Launcher	2019-05
CORE-10715	<p>In the latest FirstSpirit release, the FirstSpirit Launcher supports the use of proxy operating system settings. To use the proxy settings, the <code>java.net.useSystemProxies=true</code> parameter must be set in the connection settings.</p> <p>Further information can be found in chapter “SiteArchitect / ServerManager: FirstSpirit Launcher: using the proxy settings of the operating system”.</p>	FirstSpirit Administrator, Launcher, Security, SiteArchitect	2019-11
CORE-10717	Compatibility of FirstSpirit web applications with the Servlet API 3.0 has been restored.	Server Administrator, Web server	2019-05
CORE-10718	<p>Enhance status menu in ContentCreator with client-side actions and menu item “Display all changes” is now hidden in “FirstSpirit Omnichannel Manager” scenarios</p> <p>Further information can be found in chapter “Module Development, Scripts, API: ContentCreator: Enhance status menu with client-side actions”.</p>	ContentCreator, Developer, FirstSpirit API, FirstSpirit Omnichannel Manager, Module development, Omnichannel Manager / Third Party Preview	2019-08
CORE-10719	When using external synchronization, a local project ID for GCA nodes was incorrectly transported.	External synchronization	2019-06
CORE-10720	When using external synchronization, a wrong ID for the metadata template was transported by mistake. This could lead to a merge conflict when exporting from different projects	External synchronization	2019-06



ID	Description	Categories	Version
CORE-10731	If reporting is activated, temporary files were erroneously deleted only when the FirstSpirit server was shut down. These files are now deleted immediately.	FirstSpirit Administrator	2019-06
CORE-10742	Support for WebSphere Application Server for use with FirstSpirit will be discontinued in the future. Further information can be found in chapter “Administration: Support for WebSphere Application Server will be discontinued in the future”.	Server Administrator, Web server	2019-05
CORE-10744	Improved validation of the input component CMS_INPUT_DATE in FirstSpirit ContentCreator.	ContentCreator, Developer, Dynamic Forms, Editor, Input Components, Template Development	2019-08
CORE-10746	Fixed a bug that in very rare cases could cause items added to the folder to disappear when restoring items.	Editor, SiteArchitect	2019-07
CORE-10749	Recursive use of <code>de.espirit.firstspirit.agency.RenderingAgent</code> possible Further information can be found in chapter “Module Development, Scripts, API: <code>de.espirit.firstspirit.agency.RenderingAgent</code> : Recursive use possible”.	FirstSpirit API	2019-06
CORE-10754	In FirstSpirit 2019-10 the distribution of <code>FS_INDEX</code> content containing data from a <code>DataAccessPlugin</code> was optimized. Now, values are stored in an <code>IndexAccessor</code> object upon first access and won't be resolved through the <code>DataAccessPlugin</code> again on repeated access. Further information can be found in chapter “Input components: Output optimization of <code>FS_INDEX</code> -content containing data from a <code>DataAccessPlugin</code> ”.	Data Access Plug-In, Developer, FirstSpirit API, Input Components, Template Development	2019-10



ID	Description	Categories	Version
CORE-10755	<p>New Java Reference and Strategy</p> <p>Further information can be found in chapter “Administration: News concerning Java support”.</p>	FirstSpirit Administrator, Integrated software, Isolated mode, Java, Launcher, ServerManager, SiteArchitect, Webstart	2019-05
CORE-10757	<p>When transporting global project information, the local project ID counter was incorrectly exported as well. This potentially caused a conflict in the merge files.</p>	External synchronization	2019-06
CORE-10759	<p>The parameter <code>-Xmn</code> should no longer be used from Java 9 onward, as it has negative effects on the Garbage Collection G1 (Garbage-First).</p> <p>Further information can be found in chapter “System: Wrapper configuration: The parameter <code>-Xmn</code> should no longer be used from Java 9 onward”.</p>	Java, Performance, Server Administrator	2019-06
CORE-10768	<p>Version comparison under macOS and update of JIDE libraries</p> <p>Further information can be found in chapter “System: Version comparison under macOS and update of JIDE libraries”.</p>	Editor, Integrated software, SiteArchitect	2019-06
CORE-10769	<p>Self-referencing remote connections are now adjusted when a project is exported or imported so that they continue to point to the same project after the import.</p> <p>Further information can be found in chapter “Administration: Projekt export/import, external Synchronization, ContentTransport: Behavior of self-referencing remote connections”.</p>	Content Transport, External synchronization, FirstSpirit Administrator, Remote access, ServerManager	2019-07
CORE-10773	<p>Corrected an error that could cause database assignments to be lost when transporting a database schema using External Synchronization.</p>	Database, External synchronization	2019-06



ID	Description	Categories	Version
CORE-10774	A problem has been solved which could cause an unneeded Derby layer to be created in the target project when using external synchronization.	External synchronization	2019-07
CORE-10775	A loading animation in the ContentCreator now shows that the preview of a page is loaded. Further information can be found in chapter "ContentCreator: Loading animation when loading a page".	ContentCreator, Editor	2019-06
CORE-10776	With the current FirstSpirit release the Java VM's startup parameters can be automatically updated. For this purpose, the startup options have been split into two separate configuration files. The new file <code>fs-wrapper-vendor.conf</code> contains the recommended vendor startup options. These are automatically updated when the FirstSpirit server is updated via the update archive <code>fs-update-[version].tar.gz</code> . The existing file <code>fs-wrapper[.isolated].conf</code> only contains those startup options which have been modified server-specifically. The changes are available for update archives from version 1.0.5 on. The update archive is available for download (if you need login data, please contact the FirstSpirit Technical Support). Further information can be found in chapter "Administration: Automatically update Java version-specific wrapper files".	FirstSpirit Administrator, Java, Migration, Server Administrator, ServerMonitoring	2020-04
CORE-10794	When using external synchronization, the path to the file that uses this unresolvable reference is now output for missing necessary dependencies.	External synchronization	2019-06
CORE-10796	Using the class <code>CsvReader</code> (FirstSpirit Developer API, Package <code>de.espirit.common.util</code>) could result in a malfunction when reading a non-valid file.	FirstSpirit API	2019-07



ID	Description	Categories	Version
CORE-10797	When transporting datasets via “External Synchronization” or “Content Transport”, updates were occasionally not recognized. The error only occurred if an input component was set to the value <code>NULL</code> . In this case, the value was ignored during the transport and an existing value in the target project was not updated. This error has been corrected.	Content Transport, External synchronization	2020-02
CORE-10798	A bug has been fixed that in rare cases could cause the release status of a linked dataset to be deleted when deleting a dataset.	Content Store, Database	2019-07
CORE-10801	In very rare cases a malfunction could occur when shutting down the FirstSpirit server.	Server Administrator	2019-06
CORE-10805	With the current FirstSpirit release we provide a system presentation channel for JSON. To activate the new channel in the projects, a corresponding template set must be added in your project's properties under “Template sets”. Further information can be found in chapter “Administration: JSON: New system presentation channel”.	SiteArchitect, Support for JSON, Template Development	2019-08
CORE-10806	If connections to the FirstSpirit server become invalid, an automatic re-registration is now performed (if SSO is used): Previously, if an invalid session was answered with a 500 error message in the browser in some cases (<code>java.lang.SecurityException: Not authorized</code>), a new login via the start page could only take place after deleting a corresponding cookie (e.g. by terminating all browser instances). Now a new login is performed automatically (or the login dialog is displayed if no SSO is used), the cookie no longer needs to be removed.	Sessions	2019-12
CORE-10815	Using the component with “Fragment Data Access Plugin” (<code>...<SOURCE name="FirstSpiritFragmentAccess/FSFACconnector">...</code>), the toolbar icons were rarely not displayed during the first hover.	ContentCreator, Editor	2019-06



ID	Description	Categories	Version
CORE-10828	Deleting a language template in the ServerManager could cause a malfunction when opening the Server Properties.	FirstSpirit Administrator, Languages, Server Administrator, ServerManager	2019-06
CORE-10829	In rare cases, moving sections by drag-and-drop could lead to malfunction.	ContentCreator, Editor	2019-06
CORE-10832	<p>In the latest FirstSpirit release, the order for displaying transitions on a workflow activity can be configured. The configuration is managed on the workflow in FirstSpirit SiteArchitect (“Templates” / “Workflows”) in the State diagram tab via the new property “Transitions”. The altered order affects the display of the buttons that are shown when a workflow is run through via the dialog box for the corresponding activity.</p> <p>Further information can be found in chapter “SiteArchitect / ContentCreator: Workflow: Changing the order of transitions on an activity”.</p>	ContentCreator, FragmentCreator, SiteArchitect, Template Store, Workflow	2020-05
CORE-10834	<p>The configuration options for the parameters “useWelcomeFileNames” and “stripWelcomeFileNames”, which are used for the configuration of user-specific path strategies for URL generation, have been extended in the latest FirstSpirit release.</p> <p>Further information can be found in chapter “Module Development, Scripts, API: Improved configuration options for user-specific URLs (AdvancedUrlCreator)”.</p>	Advanced URL, Developer, Generation, Migration, SiteArchitect	2020-05
CORE-10836	<p>When deleting a schedule with a generation action, the corresponding directory on the application server on which the Staging Web application is running is now also deleted.</p> <p>Further information can be found in chapter “Administration: Generation directories of deleted orders are cleaned up.”.</p>	FirstSpirit Administrator	2020-04



ID	Description	Categories	Version
CORE-10846	Optimized loading behavior for individual objects.	Performance, SiteArchitect	2019-06
CORE-10858	Using the FirstSpirit SAML Login Module could cause a login to the server to fail with a 403 error message Invalid XSRF token.	Server Administrator	2019-06
CORE-10867	Fixed a problem with “External Synchronization” of database templates (<code>schema.xml</code>) via ContentTransport or fs-cli.	Content Transport, External synchronization, FirstSpirit Administrator	2019-08
CORE-10884	Historical versions can now be displayed again in FirstSpirit ContentCreator.	ContentCreator, Editor, Reports	2019-07
CORE-10885	Deprecation: “Legacy mode” will be discontinued in the future. Further information can be found in chapter “Module Development, Scripts, API: Deprecation: "Legacy mode" will be discontinued in the future”.	Developer, Isolated mode, Module development, Modules	2019-06
CORE-10894	Support for the operating systems IBM AIX and Solaris for use with FirstSpirit servers will be discontinued in the future. Further information can be found in chapter “Administration: Deprecation: Support for IBM AIX and Solaris will be discontinued in the future”.	Developer, FirstSpirit Administrator	2019-06
CORE-10903	A security gap was closed through which users could obtain extended rights in the FirstSpirit ServerManager.	Security, ServerManager	2019-06
CORE-10934	With this FirstSpirit release the export format for “external synchronization” is updated. An attribute, that was incorrectly created for datasets with foreign key relations and potentially lead to a misleading detection that data had been changed by external systems, was removed. Further information can be found in chapter “External Synchronization: Export format updated”.	External synchronization	2019-09



ID	Description	Categories	Version
CORE-10935	The file permissions of some files in the installation archive have been changed.	FirstSpirit Administrator	2019-07
CORE-10944	In the current FirstSpirit release, updated internally used software. Further information can be found in chapter "System: Updated internally used software".	FirstSpirit Administrator, Integrated software, Launcher	2019-09
CORE-10947	The optional parameter <code>connectionValidationMillis</code> can be used within the connection settings to define in which interval a connection from an application (SiteArchitect, ServerManager) to the server should be validated, before being used again. Further information can be found in chapter "SiteArchitect / ServerManager: Connection settings: Optional parameter "connectionValidationMillis"".	FirstSpirit Administrator, FirstSpirit home page	2019-07
CORE-10949	In the current FirstSpirit release, updated internally used software. Further information can be found in chapter "System: Update of internally used software".	Integrated software	2019-07
CORE-10956	Performance improvements when loading datasets.	Content Store, Database, Editor, Performance, SiteArchitect	2019-08
CORE-10958	Temporarily, Clustering potentially did not work correctly.	Clustering, FirstSpirit Administrator, Generation	2019-07
CORE-10959	A bug has been fixed that in rare cases could cause cluster generation to fail.	Server Administrator	2019-08
CORE-10963	Error handling has been adjusted: There are no more unnecessary warnings from the Berkeley database (<code>Environment is closed</code>), especially when used in cluster environments.	FirstSpirit Administrator	2019-08



ID	Description	Categories	Version
CORE-10964	<p>The content of FirstSpirit JAR files is signed with a certificate. In the current FirstSpirit version, the content is signed with a new certificate that is valid until 2021-08-23 (23 August 2021).</p> <p>Further information can be found in chapter “General: Code signing certificate updated”.</p>	Webstart	2019-07
CORE-10970	<p>FS_LIST will be removed as of 01/01/2020.</p> <p>Further information can be found in chapter “Input components: FS_LIST will be removed as of 01/01/2020”.</p>	ContentCreator, Developer, Input Components, SiteArchitect, Template Development	2019-07
CORE-10994	<p>For technical reasons, metadata of media from remote projects cannot be edited in the target project. The corresponding icon is no longer displayed in the form (FS_REFERENCE) as of the current release.</p>	ContentCreator, Input Components, Metadata, Remote access	2019-08
CORE-10995 CORE-11067	<p>The behavior in case of server-client disconnections has been improved.</p>	Developer, FirstSpirit Administrator, ServerManager, Sessions, SiteArchitect	2019-08
CORE-11000	<p>Once a user has logged in successfully, the “Legal notices” link at the bottom of the FirstSpirit start page can be used to call up information regarding third-party software being used and the modules installed on the server.</p> <p>Further information can be found in chapter “General: FirstSpirit start page: information on third-party software and modules”.</p>	License	2019-10



ID	Description	Categories	Version
CORE-11008	<p>Due to the advancing technology in the area of database systems, the use of PostgreSQL 8.4 for productive use in FirstSpirit is no longer supported.</p> <p>Further information can be found in chapter “Administration: PostgreSQL 8.4 is no longer supported for productive use in FirstSpirit”.</p>	Database, FirstSpirit Administrator	2019-08
CORE-11009	Fixed a bug that could cause an error message <code>java.lang.ArrayIndexOutOfBoundsException</code> in rare cases when editing schedules.	FirstSpirit Administrator, ServerManager, Tasks	2019-09
CORE-11035	Searching in the documentation for the FirstSpirit ContentCreator now also works in the English version of the documentation.	ContentCreator, Editor, Languages, Search	2019-10
CORE-11062 CORE-10606 CORE-11061 CORE-11083	<p>In FirstSpirit 2019-08, updated internally used software.</p> <p>Further information can be found in chapter “System: Updated internally used software”.</p>	FirstSpirit Administrator, Integrated software, Java, Launcher, Modules	2019-08
CORE-11077 CORE-11173	<p>In the current FirstSpirit release, updated internally used software.</p> <p>Further information can be found in chapter “System: Update of internally used software”.</p>	Integrated software	2019-11
CORE-11088	<p>In the latest version of FirstSpirit, the delivery of content via a redirect can be configured (using the <code>preview.externalDeliveryRedirect</code> parameter). This new configuration option should be utilized if the application server used by FirstSpirit does not have access to the web server via which the content is delivered.</p> <p>Further information can be found in chapter “Administration: Configuring the delivery of content via a redirect (fs-server.conf)”.</p>	FirstSpirit Administrator, Preview, Web server	2019-12



ID	Description	Categories	Version
CORE-11091	<p>In the current FirstSpirit version, the certificate of the FirstSpirit Launcher is updated. The new certificate is valid until 2021-08-23.</p> <p>Further information can be found in chapter “SiteArchitect / ServerManager: Certificate update FirstSpirit Launcher”.</p>	Launcher	2019-08
CORE-11094	<p>The interface <code>ScheduleTaskAgent</code> (package: <code>de.espirit.firstspirit.agency</code>, FirstSpirit Developer API) becomes publicly available with this release.</p> <p>Further information can be found in chapter “Module Development, Scripts, API: New interface “ScheduleTaskAgent” for task creation”.</p>	Developer, FirstSpirit API, Tasks	2019-09
CORE-11096	<p>The behavior during the validation of JSON content has been changed in the latest FirstSpirit release. The call <code>\$CMS_SET(#global.stopGenerate, true)\$</code> for an otherwise empty JSON output no longer results in a generation error.</p> <p>Further information can be found in chapter “SiteArchitect: JSON: new behavior when validating JSON content”.</p>	Generation, Support for JSON, Template Development, Template Store	2019-11
CORE-11103	<p>The handling of symlinks in the file system has been improved.</p>	FirstSpirit Administrator	2019-08
CORE-11126	<p>As of the current release, session handling for FirstSpirit ContentCreator has been improved. Previously, opened sessions were no longer closed when the “Project history” was called. This could possibly have resulted in performance reductions.</p>	ContentCreator, Performance, Sessions	2019-09
CORE-11138	<p>An error could occur when another user called a link to the page preview.</p>	ContentCreator	2019-12
CORE-11140	<p>When exporting a project with the “Limit number of exported revisions” option, the “Export automatically calculated image resolutions” option was ignored. This problem has been fixed.</p>	FirstSpirit Administrator, Project export / import, ServerManager	2019-11



ID	Description	Categories	Version
CORE-11168	<p>The FirstSpirit Release Notes are now available via https://docs.e-spirit.com in the “FirstSpirit”/“All Documents” area and via the filtered “FirstSpirit”/“Administrators” view.</p> <p>Further information can be found in chapter “General: FirstSpirit Documentation (docs.e-spirit.com): Release Notes”.</p>	Developer, Editor, FirstSpirit Administrator	2019-09
CORE-11171	<p>In the latest version of FirstSpirit, the log level of the message indicating that data has been detected in an old data format has been changed from <i>WARN</i> to <i>DEBUG</i>. There are no plans to discontinue support for the old format. There is therefore no need to make manual modifications in the projects.</p> <p>Further information can be found in chapter “Input components: Changing the log level when indicating an old data format”.</p>	ContentCreator, Developer, Input Components, Migration, SiteArchitect, Template Development	2019-12
CORE-11174	<p>As of the current release, the Java Runtime Version is now displayed instead of the Java Version.</p> <p>Further information can be found in chapter “General: Java version specifications”.</p>	ContentCreator, Developer, FirstSpirit Administrator, FirstSpirit Content Experience Tools (CXT), FirstSpirit home page, FragmentCreator, Java, ServerManager, ServerMonitoring, SiteArchitect	2019-09
CORE-11175	<p>A problem has been fixed which could cause that when using the input component FS_INDEX in the errors of the preview not all corresponding messages were displayed.</p>	Developer, Generation, Input Components, Migration	2019-11



ID	Description	Categories	Version
<p>CORE-11180 CORE-11367</p>	<p>Input component for outputting a list of sections of a page: CMS_INPUT_SECTIONLIST (Substitute for FS_LIST, type PAGE)</p> <p>Further information can be found in chapter “Input components: Input component for outputting a list of sections of a page: CMS_INPUT_SECTIONLIST”.</p>	<p>ContentCreator, Developer, Editor, Input Components, Migration, Page Store, SiteArchitect, Template Development</p>	<p>2019-10</p>
<p>CORE-11181</p>	<p>As of the current FirstSpirit release, FirstSpirit ContentCreator provides a new way of maintaining media galleries (via FS_INDEX instead of FS_LIST as before).</p> <p>Further information can be found in chapter “ContentCreator: Media Galleries in ContentCreator (Alternative to FS_LIST)”.</p>	<p>ContentCreator, Data Access Plug-In, Developer, Editor, Input Components, Media, Migration</p>	<p>2019-10</p>
<p>CORE-11194</p>	<p>As of the current FirstSpirit release, FirstSpirit SiteArchitect provides a new way of maintaining media galleries (via FS_INDEX instead of FS_LIST as before).</p> <p>Further information can be found in chapter “Input components: Media Galleries in SiteArchitect (Alternative to FS_LIST)”.</p>	<p>Data Access Plug-In, Developer, Editor, Input Components, Media, Migration, SiteArchitect</p>	<p>2019-11</p>
<p>CORE-11199</p>	<p>The process for reading out the data of an FS_INDEX component with DatasetDataAccessPlugin via the API has been simplified (new createSession method in the de.espirit.firstspirit.client.access.editor package, FirstSpirit Developer API).</p> <p>Further information can be found in chapter “Module Development, Scripts, API: FS_INDEX: Reading out data via the API has been simplified (“createSession”)”.</p>	<p>Advanced URL, Data Access Plug-In, Developer, FirstSpirit API, Migration, Module development</p>	<p>2019-11</p>
<p>CORE-11200</p>	<p>Fixed a bug that in rare cases could cause the content of a CMS_GROUP component not to be displayed or not to be displayed correctly.</p>	<p>Developer, Editor, Input Components, SiteArchitect, Template Development</p>	<p>2019-09</p>



ID	Description	Categories	Version
CORE-11201	In the cluster mode of FirstSpirit a log message of level WARN was repeatedly generated as a consequence of a properly closed connection. This messages was downgraded to DEBUG so that it should no longer appear in productive systems.	Clustering, Server Administrator	2019-11
CORE-11212	When using FirstSpirit ContentTransport, the representation of database schemata in the editor is now taken into account again when transporting.	Content Transport, Database, Developer	2019-10
CORE-11245	Communication between FirstSpirit server and desktop apps (SiteArchitect, ServerManager) is now more robust with 500 error messages on HTTP connections: Even with error messages of this class, an attempt is now made to re-establish the HTTP connection.	FirstSpirit Administrator, SiteArchitect	2019-10
CORE-11253	As of the current FirstSpirit release, the recommended PostgreSQL database version (reference) for use with the FirstSpirit Server changes to PostgreSQL 11 (previously: PostgreSQL 9.4). Additionally PostgreSQL 10.x and PostgreSQL 11.x have been added to the list of compatible databases. Further information can be found in chapter “Administration: Support for PostgreSQL 10.x and PostgreSQL 11.x”.	Database, FirstSpirit Administrator	2019-12
CORE-11267	When using the spell check in the rich text editor (CMS_INPUT_DOM and CMS_INPUT_DOMTABLE), it was possible that spaces were removed accidentally.	ContentCreator, Editor, Spell Checker	2019-11
CORE-11301	For section references too, validations were performed by mistake and, where applicable, rule violations were displayed. This error has been resolved.	Dynamic Forms, Editor, SiteArchitect	2019-11



ID	Description	Categories	Version
CORE-11304	<p>As of FirstSpirit 2019-10, OpenJDK 13 (non-LTS; Release Date 2019-09) is officially approved for use with FirstSpirit (the FirstSpirit Server and the FirstSpirit desktop applications). With the support for OpenJDK 13, the support for OpenJDK 12 (non-LTS; Release Date 2019-03) expires. As part of product maintenance, discontinuation of support for Java 8 was announced with FirstSpirit 2019-05: FirstSpirit is scheduled to no longer support Oracle Java 8 and OpenJDK 8 from June 2020.</p> <p>Further information can be found in chapter “General: Java: Current status and outlook”.</p>	Developer, FirstSpirit Administrator, Java	2019-10
CORE-11309	<p>The Java versions included in the “FirstSpirit Launcher JRE” module were updated in the latest FirstSpirit release.</p> <p>Further information can be found in chapter “SiteArchitect / ServerManager: “FirstSpirit Launcher JRE” module: update to Java versions”.</p>	Java, Launcher	2019-10
CORE-11312	Forms containing special combinations of CMS_GROUP and/or rule definitions are now displayed correctly again in SiteArchitect.	Developer, Dynamic Forms, Editor, Input Components, SiteArchitect	2019-11
CORE-11321	Saving a <code>\$CMS_SET(...)\$</code> call to define a set (<code>java.util.Set</code>) was temporarily not possible.	Developer, Template Development	2019-11
CORE-11325	<p>Using FirstSpirit Desktop Apps with macOS X 10.15 (Catalina)</p> <p>Further information can be found in chapter “General: Using FirstSpirit Desktop Apps with macOS X 10.15 (Catalina)”.</p>	FirstSpirit Administrator, ServerManager, SiteArchitect	2019-10
CORE-11332	<p>The operating systems IBM AIX and Solaris for use with FirstSpirit servers are no longer supported.</p> <p>Further information can be found in chapter “Administration: IBM AIX and Solaris are no longer supported”.</p>	Developer, FirstSpirit Administrator	2019-10



ID	Description	Categories	Version
CORE-11351	Changing from <code>IllegalArgumentException</code> to <code>InvalidSessionException</code> , when trying to get a <code>UserService</code> with expired session.	Debugging, Developer, Module development, Services	2020-06
CORE-11357	Fixed a problem where in some cases the dialog window for testing LDAP settings could not be opened from the settings of the personalization module.	Modules, ServerManager	2019-11
CORE-11366	Support for the FS_LIST input component is scheduled to be dropped in January 2020. The ramp down phase is multi-leveled and starts with a deprecation warning in FirstSpirit 2019-11. Further information can be found in chapter "Input components: FS_LIST: Start of the ramp-down phase: Deprecation warnings".	ContentCreator, Developer, Input Components, Migration, SiteArchitect, Template Development	2019-11
CORE-11367	Support for the FS_LIST input component is scheduled to be dropped in January 2020. The ramp down phase is multi-leveled and starts with a deprecation warning in FirstSpirit 2019-11. Further information can be found in chapter "Input components: FS_LIST input component dropped 01/01/2020".	ContentCreator, Developer, Input Components, Migration, SiteArchitect, Template Development	2019-10
CORE-11369	With the current FirstSpirit release, a concurrency problem with the initialization of the preview in SiteArchitect has been fixed.	Preview, SiteArchitect	2019-11
CORE-11380	The loading behavior of libraries for image scaling has been optimized, meaning that these are now only loaded if they are actually needed.	Server Administrator	2019-11
CORE-11395	Performance improvement when using the input component FS_CATALOG in projects with many languages.	ContentCreator, Input Components, Performance	2020-01



ID	Description	Categories	Version
CORE-11442	<p>With the current FirstSpirit version the method <code>linkRoot()</code>, interface <code>RenderingAgent</code> (Package: <code>de.espirit.firstspirit.agency</code>, FirstSpirit Developer API) can now accept an object of type <code>PageRefFolder</code>. The calculations of relative links then take place in the context of this node.</p> <p>Further information can be found in chapter “Module Development, Scripts, API: Interface “RenderingAgent” extended”.</p>	Developer, FirstSpirit API, Module development	2019-11
CORE-11453	When using the “LiveEdit” functionality, it was possible that the page could not be edited after starting a workflow.	ContentCreator, Developer, Editor, LiveEdit, Workflow	2019-12
CORE-11462	<p>The “FirstSpirit External Synchronization” and “FirstSpirit Content Transport” mechanisms now provide an additional mapping file (<code>Mapping.xml</code>) for exporting database content (schemas, entities), in which the database names of the source project are stored together with FirstSpirit's own unique identifiers (UUIDs).</p> <p>Further information can be found in chapter “External Synchronization / Content Transport: External Synchronization and Content Transport: Improved support for shared access to a database”.</p>	Content Transport, Database, Developer, External synchronization, FirstSpirit API	2020-05
CORE-11471	<p>A bug was fixed that could cause that after updating a module used in schedules, the corresponding action could not be used until the server was restarted.</p> <p>Note: The problem may still occur once within the current execution for schedules that were running at the time of the update.</p>	FirstSpirit Administrator, Isolated mode, Modules, Server Administrator, Tasks	2020-04
CORE-11474	When using the input component <code>CMS_INPUT_SECTIONLIST</code> , a generation warning that the input component had been discontinued was issued erroneously.	Developer, Generation, Input Components	2019-11



ID	Description	Categories	Version
CORE-11499	Malfunctions occurred when exporting the project properties, which include a metadata configuration for the ContentCreator.	Advanced URL, ContentCreator, External synchronization, Metadata	2019-12
CORE-11501	<p>The Java versions included in the “FirstSpirit Launcher JRE” module were updated in the latest FirstSpirit release.</p> <p>Further information can be found in chapter “SiteArchitect / ServerManager: “FirstSpirit Launcher JRE” module: update to Java versions”.</p>	Java, Launcher	2019-12
CORE-11516	When copying elements using the <code>AccessUtil.copyStoreElement</code> method, contents were not copied in rare cases.	Developer, FirstSpirit API	2020-03
CORE-11520	<p>The FirstSpirit product documentation is made available via https://docs.e-spirit.com/. The presentation of the documentation on the page has been improved:</p> <ul style="list-style-type: none"> ■ The documentations are additionally sorted in alphabetical order. ■ Some documents are offered for different versions. In this case, a combobox is displayed for selecting the desired version. This combobox now always displays the current version as the first entry. Older versions are displayed in descending order below the current version. 	Developer, Editor, FirstSpirit Administrator, Modules	2019-12
CORE-11522	An error was fixed that could cause folder structures from the file system not to be transferred to the FirstSpirit Media Store when using the Media Import Wizard.	Media Store, SiteArchitect	2020-03



ID	Description	Categories	Version
CORE-11529	<p>With FirstSpirit 2019-12, the ramp-down phase for the FS_LIST input component is extended by additional use cases. A Deprecation warning can now also occur in projects that were still running without warnings in FirstSpirit 2019-11. The component remains fully functional with FirstSpirit 2019-12 and can still be used.</p> <p>Before updating to FirstSpirit 2020-01 or higher, all FS_LIST uses must be converted to one of the successor components.</p> <p>Further information can be found in chapter “Input components: FS_LIST: Ramp-down phase: Deprecation warnings”.</p>	ContentCreator, Developer, Input Components, Migration, SiteArchitect, Template Development	2019-12
CORE-11550	<p>Redirections in the client-server communication are restricted by the FirstSpirit server for security reasons. Using the optional parameter <code>allowedRedirectHosts</code> in the configuration file <code>fs-server.conf</code> URLs can be defined to which a redirect is to be allowed. Now the use of “wild-card” character is possible in the configuration.</p> <p>Further information can be found in chapter “Administration: Using wildcards to configure redirect URLs (fs-server.conf)”.</p>	FirstSpirit Administrator, Server Administrator	2019-12
CORE-11567	<p>For better error analysis, the latest version of FirstSpirit now creates a log if problems occur when starting the JettyService (in file <code>fs-server.log</code>). The underlying exception will also be thrown in the event of an error.</p> <p>Further information can be found in chapter “Administration: Improved logging when starting the JettyService”.</p>	FirstSpirit Jetty Web Server, Integrated software, Server Administrator, Services	2019-12
CORE-11581	<p>Fixed a bug that could cause instances of internal classes not to be removed when using ContentCreator when the underlying session was closed.</p>	ContentCreator, FirstSpirit Administrator, Sessions	2019-12



ID	Description	Categories	Version
CORE-11583	<p>Input components set to the “deprecated” state are now marked separately within the form (GOM definition). The opening and closing tag of the input component is crossed out in the form.</p> <p>Further information can be found in chapter “SiteArchitect: Templates: Better marking for input components in deprecated state”.</p>	SiteArchitect, Template Development, Template Store	2019-12
CORE-11584	Log level for OutOfMemory errors on the server has been changed from ERROR to FATAL.	Server Administrator	2019-12
CORE-11595	An error was fixed which could cause in rare cases that the transmission of reports could be delayed by one run due to a <code>java.lang.StackOverflowError</code> when reporting was activated.	Server Administrator	2019-12
CORE-11604	An error that prevented an input component migrated from FS_LIST to FS_CATALOG being edited initially in the ContentCreator has been corrected.	ContentCreator, Input Components, Migration, SiteArchitect, Template Development	2019-12
CORE-11607	<p>Project archiving has been improved in the latest FirstSpirit release. Using project archiving (the “Archive old project states” schedule), all automatically calculated media/pictures <u>whose resolutions have already been deleted in the project</u> can now be removed from the image cache.</p> <p>Further information can be found in chapter “Repository: Improved archiving function”.</p>	Archiving, FirstSpirit Administrator, Performance, ServerManager	2020-02



ID	Description	Categories	Version
<p>CORE-11608 CORE-11635 CXT-1099</p>	<p>In the current FirstSpirit release, updated internally used software.</p> <p>Further information can be found in chapter “System: Update of internally used software”.</p>	<p>FirstSpirit Administrator, FirstSpirit Content Experience Tools (CXT), FirstSpirit Jetty Web Server, Integrated software, Java</p>	<p>2019-12</p>
<p>CORE-11622</p>	<p>With the current FirstSpirit version an error was corrected that prevented the data stored by an FS_LIST (type SERVICE) input component from being read by an FS_INDEX input component (with DataAccessPlugin), even if the DataAccessPlugin used there was compatible with the stored data of the service in the FS_LIST.</p> <p>Further information can be found in chapter “Input components: Error corrected when migrating data from FS_LIST (type SERVICE) ”.</p>	<p>Developer, Input Components, Migration, Template Development</p>	<p>2019-12</p>
<p>CORE-11632</p>	<p>Releasing the JSON support in FirstSpirit</p> <p>Further information can be found in chapter “General: JSON support in FirstSpirit”.</p>	<p>Developer</p>	<p>2019-12</p>
<p>CORE-11691</p>	<p>Error handling when uploading reporting data has been improved. Reporting is only applied if it has been explicitly activated for the corresponding instance.</p>	<p>Debugging, FirstSpirit Administrator, Server Administrator, Tasks</p>	<p>2020-01</p>
<p>CORE-11699</p>	<p>The use of the revised ContentCreator (also “FirstSpirit CXT ContentCreator”) is officially released as of the current FirstSpirit release.</p> <p>Further information can be found in chapter “ContentCreator: ContentCreator re-design: Release”.</p>	<p>ContentCreator, Developer, Editor, FirstSpirit Administrator, ServerManager</p>	<p>2020-01</p>



ID	Description	Categories	Version
CORE-11711	<p>If the same global resources are provided by several modules in different versions, only one of these global resources can be used by all modules. The latest FirstSpirit release ensures that in normal operation, the latest version (i.e., the version with the highest version number) of a global resource is always used. This increases the stability when it comes to resolving dependencies after a module update.</p> <p>Further information can be found in chapter “Module Development, Scripts, API: Global module resources: Improved stability when resolving dependencies”.</p>	Developer, Isolated mode, Module development, Modules	2020-05
CORE-11722	<p>With the current FirstSpirit release all deprecation warnings of a project are consolidated and logged in the first section of the log file (in the case of generation in the generation log file and in the case of a preview under “Show preview errors”).</p> <p>Further information can be found in chapter “Input components: Improved Deprecation Warnings”.</p>	Developer, Input Components, Template Development	2020-01
CORE-11740		Sessions	2020-02
CORE-11741	<p>With FirstSpirit 2020-01, the input component FS_LIST is no longer supported. The component can no longer be used from this point on. That means forms with FS_LIST can no longer be edited and the expected output will no longer be generated.</p> <p>Further information can be found in chapter “Input components: FS_LIST: Ramp-down phase: The input component is no longer supported”.</p>	ContentCreator, Developer, Input Components, Migration, SiteArchitect, Template Development	2020-01
CORE-11772 CORE-11786	<p>Internal software has been updated in the latest FirstSpirit release.</p> <p>Further information can be found in chapter “System: Updates to integrated third-party software”.</p>	FirstSpirit Administrator, Integrated software, Java, Launcher, Modules	2020-03



ID	Description	Categories	Version
CORE-11796	<p>The metaspace (another native memory area next to the heap) is automatically managed by the Java VM. A different configuration of this memory area, for example using the parameters <code>MetaspaceSize</code> or <code>MaxMetaspaceSize</code>, is no longer recommended.</p> <p>Further information can be found in chapter “Administration: Metaspace: Note on the configuration of the Java VM”.</p>	Server Administrator	2020-02
CORE-11800	<p>With the current FirstSpirit release a new version of the JSON output format is released. From FirstSpirit 2020-02 the new format version 1.1 is used (standard setting). The previous format version 1.0 remains supported but is to be replaced in the medium term.</p> <p>Further information can be found in chapter “General: New JSON format version 1.1”.</p>	Developer, Support for JSON	2020-02
CORE-11808 CXT-652	<p>New interface <code>UrlSupporting</code> for “DataAccessPlugins”, which can be used to generate URLs for data objects.</p> <p>Further information can be found in chapter “Module Development, Scripts, API: DAP: New aspect “UrlSupporting” for URL generation”.</p>	Data Access Plug-In, Developer, Editor, FirstSpirit Content Experience Tools (CXT), FragmentCreator, Media	2020-03
CORE-11816	<p>The <code>RenderingAgent</code> interface (package: <code>de.espirit.firstspirit.agency</code>, FirstSpirit Developer API) can be used to control generation for specific dynamic FirstSpirit content directly via the API. In conjunction with the <code>json()</code> function, the output was incomplete here in rare cases. This error has been resolved.</p>	Developer, FirstSpirit API, Support for JSON	2020-04



ID	Description	Categories	Version
<p>CORE-11827</p> <p>CORE-12141</p> <p>CXT-1393</p>	<p>Update of internally used software</p> <p>Further information can be found in chapter "System: Update of internally used software".</p>	<p>FirstSpirit Administrator, FirstSpirit Content Experience Tools (CXT), FirstSpirit Jetty Web Server, Integrated software, Java, Launcher</p>	<p>2020-04</p>
<p>CORE-11835</p>	<p>An error was fixed that could cause data not to be displayed when migrating the input component FS_LIST (discontinued with 2020-01) to FS_INDEX. The problem only occurred in rare cases in connection with inconsistent data.</p>	<p>Developer, Input Components, Migration</p>	<p>2020-02</p>
<p>CORE-11857</p>	<p>An input component developer can now provide the form element's (e.g. input component's) model references via the aspect <code>FormReferenceContaining</code>, with the method <code>List<Reference> collectFormReferences(FormElement)</code> (FirstSpirit Developer API, package <code>de.espirit.firstspirit.client.access.editor</code>).</p> <p>Further information can be found in chapter "Module Development, Scripts, API: New Aspect "FormReferenceContaining" (provide a form element's model reference)".</p>	<p>Developer, FirstSpirit API, Template Development</p>	<p>2020-03</p>



ID	Description	Categories	Version
CORE-11858	<p>The <code>ReferenceConstructionAgent</code> (FirstSpirit Developer API, package <code>de.espirit.firstspirit.client.access.editor</code>) was expanded with the latest FirstSpirit release to include methods which enable references to be generated on the basis of meta information (via the unique identifier (UID) and <code>IDProvider.UidType</code> of a FirstSpirit object or via the global identifier (GID) for references to datasets). At the same time, the <code>ValueReferencesJournal</code> interface (FirstSpirit Access API, package <code>de.espirit.firstspirit.client.plugin.dataaccess</code>) was expanded with new methods which can be used to add defective references as well as regular references (e.g., in a <code>DataAccessProvider</code>).</p> <p>Further information can be found in chapter “Module Development, Scripts, API: API extension for generating references (<code>ReferenceConstructionAgent</code> and <code>ValueReferencesJournal</code>)”.</p>	Data Access Plug-In, Developer, FirstSpirit API, Module development	2020-04
CORE-11859	<p>During start-up of a FirstSpirit server, information about the current runlevel is provided. An error has been fixed, which caused the runlevel of the FirstSpirit server to be incorrect (after a restart) when using an external web server, unless the external web server was also restarted. This error had no effect on the functionality of the web applications. Now the correct runlevel is reached at the latest 15 minutes after starting the FirstSpirit server.</p>	Server Administrator, Web server	2020-03
CORE-11866	<p>In very rare cases, an error occurred while using the ContentCreator, which was caused by a “not authorized” message. This error has been fixed.</p>	ContentCreator	2020-02
CORE-11870 CXT-11809	<p>Rollout of the new ContentCreator</p> <p>Further information can be found in chapter “ContentCreator: Rollout of the new ContentCreator”.</p>	ContentCreator, FirstSpirit Administrator, Performance	2020-02



ID	Description	Categories	Version
CORE-11871	<p>The “Mithras Energy” demo project (for ContentCreator and SiteArchitect) will be dropped in the future and will no longer be distributed with FirstSpirit.</p> <p>Further information can be found in chapter “General: Announcement: FirstSpirit Experience Accelerator”.</p>	ContentCreator, Developer, Editor, SiteArchitect	2020-02
CORE-11878	A potential memory leak in ContentCreator has been fixed.	ContentCreator, FirstSpirit Administrator	2020-03
CORE-11906	<p>If a particular key term (e.g. FS_LIST) is selected in a FirstSpirit template and the “F1” key (or optionally the “Help” button) is pressed at the same time, the FirstSpirit documentation for this subject area is opened. For deprecated input components, the FirstSpirit documentation refers to alternative input components (e.g. FS_REFERENCE instead of CMS_INPUT_PICTURE). For the input component FS_LIST (that is no longer available) and all deprecated input components replaced by FS_LIST (e.g. CMS_INPUT_CONTENTLIST), the documentation refers to the corresponding migration guide.</p>	Developer, Input Components, Migration	2020-02
CORE-11911	<p>The DatasetDataAccessPlugin now also supports the referencing of records from external databases.</p> <p>Further information can be found in chapter “General: External database support via the DatasetDataAccessPlugin”.</p>	Data Access Plug-In, Database	2020-04
CORE-11913	<p>An error was fixed that could cause information in languages that are only present in the target project to be lost when transporting FS_LIST data migrated to FS_CATALOG. This problem affected all converted FS_LIST input components (discontinued with 2020-01) if they were converted with FirstSpirit version 2019-12 or 2020-01.</p>	Content Transport, External synchronization, Input Components, Migration	2020-02



ID	Description	Categories	Version
CORE-11919	<p>The control files for Windows and Linux operating systems have been enhanced with the current FirstSpirit release. The new control files support a range of functions that were not available in the previous control files (including <code>install</code> under Linux). This new development's result can be tested as part of an Early Access Program (EAP). The use in productive environments is not recommended at this time.</p> <p>Further information can be found in chapter "System: FirstSpirit server: New control files for Windows and Linux".</p>	Launcher, Server Administrator	2020-03
CORE-11932	<p>Rollout of the new ContentCreator for all customers</p> <p>Further information can be found in chapter "ContentCreator: New ContentCreator: Rollout for all customers".</p>	ContentCreator, Editor, FirstSpirit Administrator, Modules, ServerManager	2020-03
CORE-11992	<p>A vulnerability has been discovered in the Apache JServ Protocol (AJP) binary communication protocol used by Tomcat (Ghostcat CVE-2020-1938). The vulnerability is classified as critical. e-Spirit therefore recommends a prompt update to a secure Tomcat version (8.5.51 or 9.0.31). We also recommend checking the AJP Connector configuration in each installation and adjusting it if necessary, as the AJP Connector was activated by default in the <code>server.xml</code> configuration file before the above-mentioned versions.</p> <p>Further information can be found in chapter "Security: Apache Tomcat AJP: Vulnerability (Ghostcat)".</p>	FirstSpirit Administrator, Security, Server Administrator, Web server	2020-03
CORE-11993	<p>Due to the change from Java EE to Jakarta EE and the associated change of namespace (package) in Tomcat 10, FirstSpirit is currently not compatible with Tomcat 10.</p> <p>Further information can be found in chapter "Administration: FirstSpirit is currently not compatible with Tomcat 10".</p>	FirstSpirit Administrator, Server Administrator, Web server	2020-03



ID	Description	Categories	Version
CORE-12018	<p>Support Open JDK 14: As of FirstSpirit 2020-04, OpenJDK 14 (non-LTS; release date 2020/03) is officially approved for use with FirstSpirit (i.e, the FirstSpirit Server and the FirstSpirit desktop applications). With support for OpenJDK 14, support for OpenJDK 13 (non-LTS; release date was 2019/07) expires.</p> <p>Discontinuation of Java 8: As part of product maintenance, the discontinuation of support for Java 8 was announced with FirstSpirit 2019-05: FirstSpirit is scheduled to no longer support Oracle Java 8 and OpenJDK 8 from June 2020.</p> <p>Further information can be found in chapter “General: Java: Current status and outlook”.</p>	Developer, FirstSpirit Administrator, Java, Server Administrator	2020-04
CORE-12031	An error could occur when using services from your own services if the components involved were not yet fully started. This dependency scenario has been corrected.	FirstSpirit Administrator, Server Administrator	2020-04
CORE-12038	<p>With the current FirstSpirit release the FirstSpirit session cookie can be extended by the attribute <code>SameSite</code>. The setting <code>SameSite=None</code> may be necessary in individual cases if FirstSpirit web applications are integrated into other web applications (e.g. as an <code>IFrame</code>).</p> <p>Further information can be found in chapter “Administration: The FirstSpirit session cookie now supports the attribute <code>SameSite</code>”.</p>	FirstSpirit Administrator, Security, Server Administrator, ServerMonitoring	2020-05
CORE-12043	An error has been resolved which, in rare cases, could previously lead to problems when using X.509 certificates in conjunction with the <code>fs-jetty.fsm</code> module (“FirstSpirit Jetty Service”). (Note: Using Eclipse Jetty for production purposes is still not recommended!)	FirstSpirit Jetty Web Server, Server Administrator, Web server	2020-04
CORE-12060	<p>FirstSpirit documentation which we provide in the HTML format will no longer be provided as PDF.</p> <p>Further information can be found in chapter “General: FirstSpirit documentation: PDF format discontinued”.</p>	Documentation	2020-04



ID	Description	Categories	Version
CORE-12068	<p>Pop-up dialogs created using the interface <code>RequestOperation</code> (FirstSpirit Developer API, Package <code>de.espirit.firstspirit.ui.operations</code>) can now also be created as warning messages via <code>Enum RequestOperation.Kind</code> (FirstSpirit Developer API, Package <code>de.espirit.firstspirit.ui.operations</code>).</p> <p>Further information can be found in chapter “Module Development, Scripts, API: Creating a pop-up dialog as a warning message”.</p>	ContentCreator, Developer, FirstSpirit API, Module development, ServerManager, SiteArchitect	2020-05
CORE-12079	In rare cases, datasets could not be edited via EasyEdit due to incorrect evaluation of the relevant <code>editorId</code> .	Content Store, ContentCreator, Developer, Editor, Table templates	2020-04
CORE-12085	<p>Using the JSON function, the referenced FirstSpirit objects of the input component <code>FS_REFERENCE</code> can now be transferred to a JSON object structure (previously the referenced objects were not rendered). In this process, the object itself is not rendered; the function only renders the data that is required for referencing. No new version of the JSON output format will be published for this change; the changes will be made in the current format version 1.1.</p> <p>Further information can be found in chapter “Module Development, Scripts, API: JSON function: Improved support for <code>FS_REFERENCE</code>”.</p>	Developer, Support for JSON	2020-05
CORE-12091	<p>If one or more web applications are configured to run on the “old” ContentCreator of a FirstSpirit server, the start page of the FirstSpirit server will show a warning to users with the administrator role.</p> <p>Further information can be found in chapter “ContentCreator: Use of the “old” ContentCreator”.</p>	ContentCreator, Developer, FirstSpirit Administrator	2020-04



ID	Description	Categories	Version
CORE-12129	An error was rectified that could have meant that the Classloading for a service did not function as expected.	Developer, FirstSpirit Administrator, Modules, Server Administrator	2020-05
CORE-12171	<p>The vertical alignment of content in tables can now also be defined by the editor in FirstSpirit ContentCreator (CMS_INPUT_DOM / "Inline tables" and CMS_INPUT_DOMTABLE).</p> <p>Further information can be found in chapter "ContentCreator: Tables: Vertical alignment of content in cells ("valign")".</p>	ContentCreator, Developer, Editor	2020-05
CORE-12223	<p>The Java versions included in the "FirstSpirit Launcher JRE" module were updated in the latest FirstSpirit release.</p> <p>Further information can be found in chapter "SiteArchitect / ServerManager: "FirstSpirit Launcher JRE" module: update to Java versions".</p>	Java, Launcher	2020-06
CORE-12229	<p>Internal software has been updated in the latest FirstSpirit release.</p> <p>Further information can be found in chapter "System: Updates to integrated third-party software".</p>	FirstSpirit Administrator, Integrated software	2020-05
CORE-12245 CXT-12321	<p>When updating the "SpellService" module (file <code>fs-spell.fsm</code>) to a higher version, existing configurations were overwritten in rare cases. This could cause, for example, that self-created dictionaries were removed or not taken into account.</p> <p>In addition, a bug was fixed which caused the FirstSpirit server with "SpellService" module to no longer start after an update (error message in <code>fs-server.log</code> like <code>ERROR ... (de.espirit.firstspirit.server.module.Service cannot install service, module=SpellService, version=..., componentClass=de.espirit.firstspirit.opt.spell</code></p>	Modules, Spell Checker	2020-05



ID	Description	Categories	Version
CORE-12246	An error was rectified which was causing the installed method to be called up for all services when ServiceManager started up. Executing the installed method may have meant that global configuration files were rewritten, for example.	FirstSpirit Administrator, Modules, ServerManager, Services	2020-05
CORE-12250 CORE-11119	Update of internally used software. Further information can be found in chapter “System: Update of internally used software”.	Developer, FirstSpirit Administrator, FirstSpirit Jetty Web Server, Integrated software	2020-06
CORE-12261	Fixed a bug that could cause a freeze of the application in very rare cases (deadlock in DefaultStoreElement#_permissionCache).	Developer, FirstSpirit API	2020-06
CORE-12289	The configuration of permitted applications (“FirstSpirit ServerManager - Project properties - Applications”) is now taken into account for export and import when using the “External Synchronization” functionality.	Developer, External synchronization	2020-06
CORE-12298	A FirstSpirit server is installed via the installation archive fs-install-[version].tar.gz. When executing the commands FS_HOME/bin/fs-server installstart or FS_HOME/bin/fs-server install (under Linux operating systems) an error could occur because the run folder was not available. This folder is now included in the installation archive.	Server Administrator	2020-05
CORE-12322	In FirstSpirit ServerMonitoring, external groups of users are displayed in the “User” area only for server administrators, no longer for project administrators.	FirstSpirit Administrator, Permissions, Server Administrator, ServerMonitoring	2020-06



ID	Description	Categories	Version
CORE-12336	<p>As previously announced, with the end of Java 8 support, the support for the Windows installation program (.exe) and, at the same time, the support for the previous tar archive (.tgz) for all Unix systems will also be discontinued. The previous installation options will be replaced by new installation options for the FirstSpirit server and update options for the FirstSpirit backend.</p> <p>Further information can be found in chapter “Administration: The support for the Windows installation program and the tar archive (Unix) is discontinued”.</p>	FirstSpirit Administrator, Java, Server Administrator	2020-06
CORE-12337	<p>End of Java 8 support: As part of product maintenance, support for Java 8 with FirstSpirit version 2020-06 will be discontinued.</p> <p>Further information can be found in chapter “General: End of Java 8 support”.</p>	Developer, FirstSpirit Administrator, Java, Server Administrator	2020-06
CORE-12338	<p>Up to now, the FirstSpirit desktop apps (FirstSpirit SiteArchitect and ServerManager) could be started and updated (roll-out) via Java Web Start or via the FirstSpirit Launcher. With the current FirstSpirit version, FirstSpirit no longer supports the option of starting and rolling out the FirstSpirit desktop applications via Java Web Start (as announced with 2019-10).</p> <p>Further information can be found in chapter “Administration: End of support: Java Web Start”.</p>	FirstSpirit Administrator, Server Administrator, ServerManager, SiteArchitect	2020-06
CORE-12339	<p>With the current FirstSpirit release the Mithras Energy demo project for ContentCreator and SiteArchitect is no longer available and will no longer be distributed with FirstSpirit. e-Spirit replaces the demo project with the contemporary FirstSpirit Experience Accelerator.</p> <p>Further information can be found in chapter “SiteArchitect / ContentCreator: The Mithras Energy demo project is no longer available”.</p>	ContentCreator, Developer, Editor, FirstSpirit Administrator, SiteArchitect	2020-06



ID	Description	Categories	Version
CORE-12343	New layer for Oracle Database 19c Further information can be found in chapter “Compatibility: New layer for Oracle Database 19c”.	Database	2020-06
CORE-12362	An error was fixed that could cause that saving an FS_INDEX input component that references datasets was not possible.	Content Store, Developer, Editor, Input Components	2020-06
CXT-1	The selection of references (fragments, media) in FragmentCreator has been improved.	FirstSpirit Content Experience Tools (CXT), FragmentCreator	2019-03
CXT-2	After changing a fragment in the MicroApp, an outdated state could be returned when data is called via the REST API.	FirstSpirit Content Experience Tools (CXT)	2019-03
CXT-87	After having deleted a variant, it was possible that the corresponding fragment was no longer displayed in the fragment list.	Editor, FirstSpirit Content Experience Tools (CXT), FragmentCreator	2019-04
CXT-94	In CXT projects, referential integrity is now also ensured for cross-project fragment references.	FirstSpirit Content Experience Tools (CXT), FragmentCreator	2019-04
CXT-132	Categories require an appropriate folder in the “Page content” area. Further information can be found in chapter “FragmentCreator: Configuring categories”.	Developer, Editor, FirstSpirit Content Experience Tools (CXT), FragmentCreator	2019-03
CXT-146	“Quill” can now be used as an alternative to the markdown editor “SimpleMDE”. Further information can be found in chapter “FragmentCreator: New markdown editor: “Quill””.	Developer, Editor, FirstSpirit Administrator, FragmentCreator, Input Components	2019-03



ID	Description	Categories	Version
CXT-148	The parameter for the communication of internal REST services <code>webServiceBaseUrl</code> now also supports HTTPS.	FirstSpirit Content Experience Tools (CXT)	2019-03
CXT-177	<p>As of the current release, references to pages can now be created using the new <i>PageRef Access Plugin</i> module.</p> <p>Further information can be found in chapter “FirstSpirit Content Experience Tools (CXT): PageRef Access Plugin (PageRefDAP): Referencing pages”.</p>	Developer, Editor, FirstSpirit Administrator, FirstSpirit Content Experience Tools (CXT), FragmentCreator, Modules, Remote access, ServerManager, Template Development	2020-06
CXT-194	A display problem of the fragment list, that could also mean that it was not possible to scroll through the list, has been rectified.	Editor, FirstSpirit Content Experience Tools (CXT), FragmentCreator	2019-12
CXT-217	The presentation of variant selection in the middle area of the FragmentCreator has been improved.	Editor, FirstSpirit Content Experience Tools (CXT), FragmentCreator	2019-03
CXT-223	The user prompting has been improved for deleting fragments.	FragmentCreator	2019-04
CXT-228	<p>With the new release, fragments can now be duplicated.</p> <p>Further information can be found in chapter “FragmentCreator: Duplicating fragments”.</p>	Editor, FragmentCreator	2019-04



ID	Description	Categories	Version
CXT-246 CXT-899	Validation concerning the remote project has been improved (when using FS_INDEX with SOURCE "FirstSpiritFragmentAccess/FSFACConnector" or "FirstSpiritMediaAccess/Connector"): a dialog box with a more meaningful message will be displayed if the remote configuration or the specification of CATEGORY is not valid and the template can then not be saved.	Data Access Plug-In, Developer, FirstSpirit Content Experience Tools (CXT), FragmentCreator, SiteArchitect, Template Development	2019-09
CXT-247	Editing variants with several editors was optimized. Further information can be found in chapter "FragmentCreator: Behaviour in multi-user operation, locking forms".	Editor, FirstSpirit Content Experience Tools (CXT), FragmentCreator	2019-04
CXT-297	In the FS_MARKDOWN input component, HTML entities are now escaped if the toHtml() method is used for output.	Editor, FirstSpirit Content Experience Tools (CXT), FragmentCreator, Input Components	2019-03
CXT-323	The paths of the fragment entities in FirstSpirit Content as a Service (CaaS) have changed. Further information can be found in chapter "FirstSpirit Content Experience Tools (CXT): Modification of the paths of the fragment entities in FirstSpirit Content as a Service (CaaS)".	Developer, FirstSpirit Content Experience Tools (CXT), FirstSpirit Content as a Service (CaaS)	2019-05
CXT-356	In the current release, FragmentCreator visualizes if a fragment has a reference to another fragment. Further information can be found in chapter "FirstSpirit Content Experience Tools (CXT): Visualizing references".	Editor, FirstSpirit Content Experience Tools (CXT), Remote access	2019-05
CXT-378	Error handling has been improved.	FragmentCreator	2019-03



ID	Description	Categories	Version
CXT-389	When using the FirstSpirit Jetty Web Server, the correct version of the “FirstSpirit FragmentCreator” module is now displayed in the info dialog of the FragmentCreator.	FirstSpirit Content Experience Tools (CXT), FragmentCreator, Web server	2019-03
CXT-419	Handling of user sessions when using FragmentCreator has been optimized.	FirstSpirit Content Experience Tools (CXT), Sessions	2019-03
CXT-529	When generating referenced fragments, the current status and not the released status were erroneously taken into account.	FirstSpirit Content Experience Tools (CXT), FragmentCreator, Generation	2019-05
CXT-531	The MIME type check has been improved for media uploaded via FirstSpirit ContentCreator.	ContentCreator, Editor, Media Store	2019-03
CXT-546	Existing CXT installations require manual adaptation of the web.xml file to use FragmentCreator. Further information can be found in chapter “FirstSpirit Content Experience Tools (CXT): Important: FragmentCreator requires manual adaptation of the “web.xml” file”.	FirstSpirit Administrator, FirstSpirit Content Experience Tools (CXT)	2019-06
CXT-557	Improvement of the multi-tab and multi-frame capability Further information can be found in chapter “FirstSpirit Content Experience Tools (CXT): Multi-tab and multi-frame capability”.	Editor, FirstSpirit Content Experience Tools (CXT)	2019-05
CXT-558	With the latest release, the process of resetting the search has been simplified. Further information can be found in chapter “FragmentCreator: Resetting the search”.	Editor, FirstSpirit Content Experience Tools (CXT), FragmentCreator, Search	2019-04



ID	Description	Categories	Version
CXT-561	Optimization of the standard workflows	Editor, FirstSpirit	2019-05
CORE-9022	Further information can be found in chapter “FirstSpirit Content Experience Tools (CXT): Optimization of the standard workflows”.	Content Experience Tools (CXT), Workflow	
CXT-566	After starting a release workflow on a variant, it was erroneously possible to edit the form further. This could lead to a malfunction.	FragmentCreator	2019-04
CXT-569	Considering template changes in a fragment project was optimized in FragmentCreator.	FragmentCreator	2019-06
CXT-572	Access to tags and IDs of variants	Developer, FirstSpirit	2019-07
	Further information can be found in chapter “FirstSpirit Content Experience Tools (CXT): Access to tags and IDs of variants”.	API, FirstSpirit Content Experience Tools (CXT), FragmentCreator	
CXT-576	Work with the Quill Markdown Editor has been improved.	Editor, FirstSpirit	2019-04
	The “Quill” integration is currently in the EAP status (“Early Access Program”).	Content Experience Tools (CXT), FragmentCreator	
CXT-578	The ability for several editors to edit variants has been optimized.	Editor, FirstSpirit	2020-06
	Further information can be found in chapter “FirstSpirit Content Experience Tools (CXT): Optimizations for multi-user mode”.	Content Experience Tools (CXT), FragmentCreator, Sessions	
CXT-579	“CREATE FRAGMENT” button now shows the relevant category	Data Access Plug-In, Developer,	2019-12
	Further information can be found in chapter “FirstSpirit Content Experience Tools (CXT): FS_INDEX: "Create fragment" button now shows the relevant category”.	Editor, FirstSpirit Content Experience Tools (CXT), FragmentCreator, Input Components, Modules, Template Development	



ID	Description	Categories	Version
CXT-580	<p>Improved user guidance when selecting another medium (FS_INDEX).</p> <p>Further information can be found in chapter “FirstSpirit Content Experience Tools (CXT): FragmentCreator: Easier selection of other medium”.</p>	Editor, FirstSpirit Content Experience Tools (CXT), FragmentCreator, Input Components, Media	2020-01
CXT-582	The storage behavior when changing a fragment in the MicroApp widget has been optimized.	FragmentCreator	2019-05
CXT-586	<p>Optimization of authentication and new, optional parameters for the <code>web.xml</code> file of the “FragmentCreator” module.</p> <p>Further information can be found in chapter “FirstSpirit Content Experience Tools (CXT): Optimization of authentication”.</p>	FirstSpirit Administrator, FirstSpirit Content Experience Tools (CXT), Modules	2019-05
CXT-587	<p>Images can now be uploaded via FirstSpirit FragmentCreator.</p> <p>Further information can be found in chapter “FragmentCreator: Image upload”.</p>	Developer, Editor, FirstSpirit API, FirstSpirit Content Experience Tools (CXT), FragmentCreator, Input Components, Media Store, Modules	2019-09
CXT-607	<p>New function: “Change project”</p> <p>Further information can be found in chapter “FragmentCreator: Multi-tab capability and switching to another project”.</p>	Editor, FirstSpirit Content Experience Tools (CXT), FragmentCreator, Project switch	2019-08
CXT-609	The referential integrity of cross-project media references using FirstSpirit MediaDAP was optimized.	FirstSpirit Content Experience Tools (CXT)	2019-07
CXT-616	<p>Work with the Quill Markdown Editor has been improved.</p> <p>The “Quill” integration is currently in the EAP status (“Early Access Program”).</p>	FragmentCreator	2019-05



ID	Description	Categories	Version
CXT-644	When deploying several Spring boot applications simultaneously, a malfunction could occur.	FirstSpirit Content Experience Tools (CXT)	2019-05
CXT-650	Using FirstSpirit Jetty Web Server may have resulted in a malfunction when referencing fragments or media.	FirstSpirit Content Experience Tools (CXT), FirstSpirit Jetty Web Server, FragmentCreator	2019-05
CXT-652 CORE-11808	As of the current release, project-specific referencing options can be made available in the markdown editor <i>Quill</i> . Further information can be found in chapter “FirstSpirit Content Experience Tools (CXT): Markdown: Creating links using "DataAccessPlugins"”.	Data Access Plug-In, Developer, Editor, FirstSpirit Content Experience Tools (CXT), FragmentCreator, Media	2020-03
CXT-659	FirstSpirit Content Experience Tools: Latest module versions Further information can be found in chapter “FirstSpirit Content Experience Tools (CXT): Latest module versions”.	FirstSpirit Administrator, FirstSpirit Content Experience Tools (CXT), Modules	2019-05
CXT-666	New mandatory parameter in file <code>web.xml</code> : <code>externalBaseUrl</code> Further information can be found in chapter “FirstSpirit Content Experience Tools (CXT): New mandatory parameter in file "web.xml": "externalBaseUrl"”.	FirstSpirit Administrator, FirstSpirit Content Experience Tools (CXT)	2019-11
CXT-674	Threads started by FragmentCreator are now terminated correctly when terminating the web application. In this way, resource problems during multiple re-deployment without restarting the application server could be resolved.	FirstSpirit Administrator, FirstSpirit Content Experience Tools (CXT), Sessions, Web server	2019-07
CXT-677	Temporarily display problems could occur in Microsoft Edge and Mozilla Firefox.	Editor, FragmentCreator	2019-06



ID	Description	Categories	Version
CXT-679	<p>As of the current release, the name of the collection can now be freely defined in the dialog for configuring the project component “CXT CaaS Integration Configuration”.</p> <p>Further information can be found in chapter “FirstSpirit Content Experience Tools (CXT): “CaaS Integration” module: Defining the name of the collection freely”.</p>	FirstSpirit Administrator, FirstSpirit Content Experience Tools (CXT), FirstSpirit Content as a Service (CaaS), ServerManager	2019-11
CXT-683	Users with server admin rights, who are not registered as a project user in a Fragment project, cannot open such projects in FragmentCreator anymore.	FirstSpirit Content Experience Tools (CXT), FragmentCreator, Server Administrator	2019-07
CXT-692	Checking of the <code>SIZE</code> tag in rule definition for the <code>FS_INDEX</code> input component (restriction of the number of elements that can be selected) has been improved.	Data Access Plug-In, Dynamic Forms, Editor, FirstSpirit Content Experience Tools (CXT), FragmentCreator, Media	2019-11
CXT-699	With the current release the session handling for FirstSpirit CXT has been improved. Previously, actions in FragmentCreator could lead to the creation of unnecessary sessions and thus possibly to performance losses.	FirstSpirit Administrator, FirstSpirit Content Experience Tools (CXT), Performance, Sessions	2019-07
CXT-701 CXT-691	Improved visualization and evaluation of rules (“Dynamic forms”) in FragmentCreator.	Developer, Dynamic Forms, FirstSpirit Content Experience Tools (CXT), FragmentCreator, Template Development	2019-07
CXT-702	The filter area was accidentally closed after each setting.	FragmentCreator	2019-06



ID	Description	Categories	Version
CXT-706	In rare cases, the display of fragments was not up-to-date due to performance problems. Error messages <code>Conflicting changes!...</code> and <code>CxtElement request firstspirit-fragments-form/saveFormRequest failed...</code>	Editor, FragmentCreator	2019-06
CXT-707	When using <code>CxtMicroApps.getButtons(context)</code> the context is now checked for validity and buttons are only delivered with a valid fragment / variant.	Developer, FirstSpirit API, FirstSpirit Content Experience Tools (CXT)	2019-11
CXT-708	A properties file in the classpath can now be used to configure the CXT clients and to access data from external sources using a REST service. Further information can be found in chapter "FragmentCreator: Global configuration option via a properties file".	FirstSpirit Administrator, FragmentCreator, Modules	2019-08
CXT-710	Planned with FirstSpirit 2019-07: Release of FragmentCreator and availability in the cloud Further information can be found in chapter "FirstSpirit Content Experience Tools (CXT): Announcement: Release of FragmentCreator and availability in the Cloud / SaaS".	FirstSpirit Content Experience Tools (CXT), FragmentCreator	2019-06
CXT-711	The language defined using the <code>lang</code> attribute is now taken into account when input element labeling is displayed. Further information can be found in chapter "FirstSpirit Content Experience Tools (CXT): Labeling input elements in FragmentCreator ("display language)".	Editor, FirstSpirit Content Experience Tools (CXT), FragmentCreator, Languages	2020-06
CXT-716	FirstSpirit Content Experience Tools: Latest module versions Further information can be found in chapter "FirstSpirit Content Experience Tools (CXT): Latest module versions".	FirstSpirit Administrator, FirstSpirit Content Experience Tools (CXT), FragmentCreator, Modules	2019-06



ID	Description	Categories	Version
CXT-721	<p>With the current release, special variants can be created using the MicroApps API.</p> <p>Further information can be found in chapter “FirstSpirit Content Experience Tools (CXT): MicroApps API: Creating special variants (“variant dimensions”)”.</p>	Developer, Editor, FirstSpirit Content Experience Tools (CXT)	2019-12
CXT-731	Incorrect behavior could occur when displaying icons for editing referenced fragments.	ContentCreator, FirstSpirit Content Experience Tools (CXT), FragmentCreator	2019-07
CXT-732	Using customer-specific DataAccess plug-ins in FragmentCreator via the input component FS_INDEX (tag SOURCE) could lead to errors (e.g. Internal Server Error).	Data Access Plug-In, Developer, FirstSpirit Content Experience Tools (CXT)	2019-08
CXT-736	The timing of the automatic saving in FragmentCreator has been optimized to avoid unnecessary change conflicts (error message “Conflicting changes!”).	Editor, FirstSpirit Content Experience Tools (CXT), FragmentCreator	2019-11
CXT-739	A problem has been solved which could prevent the editing of fragments using MicroApp.	FirstSpirit Content Experience Tools (CXT), FragmentCreator	2019-07
CXT-742	Content from the FragmentCreator can also be edited in the ContentCreator if configured accordingly. Modifications are now visible in the preview directly when the corresponding form is closed, not only after a manual update of the preview page.	ContentCreator, Editor, FirstSpirit Content Experience Tools (CXT), FragmentCreator	2020-03
CXT-746	<p>A more meaningful message is now used instead of the message “An Error Occurred”, which was previously displayed in some cases when FragmentCreator was started: “FragmentCreator is starting up...”.</p> <p>Only in case of an error “FragmentCreator startup failed!” is displayed. Then an error analysis by the administrator is necessary.</p>	Editor, FirstSpirit Administrator, FirstSpirit Content Experience Tools (CXT), FirstSpirit home page, FragmentCreator	2019-08



ID	Description	Categories	Version
CXT-747	Fixed a timing problem when calling multiple MicroApps in parallel that caused only one MicroApp button to be displayed initially.	Developer, FirstSpirit Content Experience Tools (CXT)	2019-12
CXT-749	Release of FragmentCreator and availability in the cloud Further information can be found in chapter "FirstSpirit Content Experience Tools (CXT): Release of FragmentCreator and availability in the cloud / SaaS".	Developer, FirstSpirit Administrator, FirstSpirit Content Experience Tools (CXT), FragmentCreator, Template Development	2019-07
CXT-751	Temporarily, variants in FragmentCreator and ContentCreator could not be deleted using the corresponding icon in the MicroApp dialog.	ContentCreator, Editor, FirstSpirit Content Experience Tools (CXT), FragmentCreator	2019-07
CXT-752	The previously optional Markdown editor "Quill" is now default. Further information can be found in chapter "FirstSpirit Content Experience Tools (CXT): Markdown editor "Quill" is now default".	Editor, FirstSpirit Administrator, FirstSpirit Content Experience Tools (CXT), FragmentCreator, Input Components, Modules	2019-07
CXT-753	Restricting fragment editing in the MicroApp to specific variants Further information can be found in chapter "FirstSpirit Content Experience Tools (CXT): Restricting fragment editing in the MicroApp to specific variants".	Editor, FirstSpirit Content Experience Tools (CXT), FragmentCreator	2019-10
CXT-776	FirstSpirit Content Experience Tools: Latest module versions Further information can be found in chapter "FirstSpirit Content Experience Tools (CXT): Latest module versions".	FirstSpirit Administrator, FirstSpirit Content as a Service (CaaS), Modules	2019-07



ID	Description	Categories	Version
CXT-781	<p>In previous versions, the “FirstSpirit CXT FragmentCreator - CaaS Integration” module generated preview URLs. With this release, the desired URL creator for a generation can be selected.</p> <p>Further information can be found in chapter “FirstSpirit Content Experience Tools (CXT): “CaaS Integration” module: generation of URLs”.</p>	<p>FirstSpirit Administrator, FirstSpirit Content Experience Tools (CXT), FirstSpirit Content as a Service (CaaS), Preview</p>	2019-09
CXT-784	<p>With the current release, input components can be hidden for the editor using the <code>hidden</code> parameter.</p> <p>Further information can be found in chapter “FirstSpirit Content Experience Tools (CXT): Hiding input components: “hidden” parameter”.</p>	<p>Developer, FirstSpirit Content Experience Tools (CXT), FragmentCreator, Input Components</p>	2019-12
CXT-785	<p>Paths generated by FirstSpirit CXT are now compatible with FirstSpirit CaaS in all cases.</p> <p>Previously, when using the module “FirstSpirit CXT FragmentCreator - CaaS Integration”, error messages such as <code>java.lang.IllegalArgumentException: CaaS path is too long...</code> could occur if characters that are not supported by FirstSpirit CaaS (spaces, slashes, etc.) were used, for example, in project names.</p>	<p>FirstSpirit Content Experience Tools (CXT), FirstSpirit Content as a Service (CaaS)</p>	2019-08
CXT-790 CORE-10691	<p>The module “FirstSpirit Markdown Editor” requires at least FirstSpirit 2019-08 from version 1.14.</p> <p>Further information can be found in chapter “FirstSpirit Content Experience Tools (CXT): Module “FirstSpirit Markdown Editor”: Compatibility”.</p>	<p>FirstSpirit Administrator, FirstSpirit Content Experience Tools (CXT)</p>	2019-09



ID	Description	Categories	Version
CXT-792 CXT-761	<p>The display names of the FirstSpirit modules used for CXT have been adjusted.</p> <p>Further information can be found in chapter “FirstSpirit Content Experience Tools (CXT): Display names of CXT modules”.</p>	Developer, FirstSpirit Administrator, FirstSpirit Content Experience Tools (CXT), FragmentCreator, Isolated mode, Modules, ServerManager	2019-08
CXT-800	<p>The Eureka service handling of MicroApps has been improved: MicroApps that are no longer available are now automatically removed from the Eureka registry.</p>	FirstSpirit Administrator, FirstSpirit Content Experience Tools (CXT)	2019-09
CXT-821	<p>FirstSpirit Content Experience Tools: Latest module versions</p> <p>Further information can be found in chapter “FirstSpirit Content Experience Tools (CXT): Latest module versions”.</p>	FirstSpirit Administrator, FirstSpirit Content Experience Tools (CXT), FragmentCreator, Modules	2019-08
CXT-824	<p>An OutOfMemory error could occur in the Tomcat metaspace, e.g., after uninstalling and redeploying FragmentCreator. The web applications for FirstSpirit Content Experience Tools could then only be deployed after Tomcat was restarted. Error message: SEVERE [http-nio-127.0.0.1-8080-exec-674] org.apache.tomcat.util.modeler.BaseModelMBeanException invoking method [check] java.lang.OutOfMemoryError: Metaspace.</p> <p>This was an error with the Eureka framework. It was rectified in close cooperation with the manufacturer: With the current release, the error message specified no longer appears. In rare cases, the web application will need to be redeployed after the “FragmentCreator” module has been updated.</p>	FirstSpirit Administrator, FirstSpirit Content Experience Tools (CXT), Performance, Web server	2019-12



ID	Description	Categories	Version
CXT-829	<p>Update of internally used software</p> <p>Further information can be found in chapter “FirstSpirit Content Experience Tools (CXT): Update of internally used software”.</p>	FirstSpirit Content Experience Tools (CXT), Integrated software	2019-09
CXT-832	When using customer-specific DataAccess plug-ins in FragmentCreator via the input component FS_INDEX, the search function for fragments is now available again.	Data Access Plug-In, Developer, FirstSpirit Content Experience Tools (CXT), FragmentCreator, Module development	2019-09
CXT-834	<p>Parameters can be passed by URL to start the FragmentCreator.</p> <p>Further information can be found in chapter “FragmentCreator: Starting FragmentCreator with parameterized URL”.</p>	Developer, FirstSpirit Administrator, FirstSpirit Content Experience Tools (CXT)	2019-09
CXT-842	The initial width of MicroApp windows (e.g. “Edit fragment”) has been optimized.	FirstSpirit Content Experience Tools (CXT), FragmentCreator	2019-09
CXT-846	<p>FS_INDEX with DataAccessPlugin component <i>FirstSpiritFragmentAccess/FSFAConnector</i> now also supports the creation of fragments of several different categories (tag CATEGORY).</p> <p>Further information can be found in chapter “FirstSpirit Content Experience Tools (CXT): FS_INDEX now also supports the creation of fragments of several different categories (tag CATEGORY)”.</p>	Developer, FirstSpirit Content Experience Tools (CXT), FragmentCreator, Input Components	2020-04



ID	Description	Categories	Version
CXT-848 CXT-834	Parameters can be passed by URL to start the FragmentCreator. Further information can be found in chapter “FirstSpirit Content Experience Tools (CXT): Starting FragmentCreator with parameterized URL”.	Developer, FirstSpirit Administrator, FragmentCreator	2019-10
CXT-854	Design modifications to the input component for selecting date and time (CMS_INPUT_DATE) and to buttons in dialogs and radio buttons in FragmentCreator. In this context, the internally used software component “Flatpickr” was also updated from version 3.0.7 to version 4.6.1.	Editor, FirstSpirit Content as a Service (CaaS), FragmentCreator, Input Components	2019-09
CXT-864	The Fragment DAP report now features filtering fragments by category. Further information can be found in chapter “FirstSpirit Content Experience Tools (CXT): Fragment DAP: filter fragments in report by category”.	Data Access Plug-In, Editor, FirstSpirit Content Experience Tools (CXT), Reports	2020-05
CXT-867	The operation of customer-specific DataAccess plug-ins in FragmentCreator via the FS_INDEX input component has been improved.	FirstSpirit Content Experience Tools (CXT), FragmentCreator	2019-10
CXT-868	The display of tags already existing in the project by entering an initial letter and the key combination Ctrl + Space now works again.	Editor, FirstSpirit Content Experience Tools (CXT), FragmentCreator	2019-09
CXT-869	When transferring fragments by using the “FirstSpirit CXT FragmentCreator - CaaS Integration” module, the required connections to FirstSpirit are now closed correctly.	FirstSpirit Content Experience Tools (CXT), FirstSpirit Content as a Service (CaaS), Sessions	2019-09



ID	Description	Categories	Version
CXT-879	When using the module “FirstSpirit CXT FragmentCreator - CaaS Integration”, releases and other switching of workflows are now also taken into account during the event-based generation of fragments on the preview CaaS server. In addition, an error has been fixed that prevented the generation by task from being completed.	FirstSpirit Administrator, FirstSpirit Content Experience Tools (CXT), FirstSpirit Content as a Service (CaaS), Tasks, Workflow	2020-02
CXT-893	FirstSpirit Content Experience Tools: Latest module versions Further information can be found in chapter “FirstSpirit Content Experience Tools (CXT): Latest module versions”.	FirstSpirit Administrator, FirstSpirit Content Experience Tools (CXT), FragmentCreator, Modules	2019-09
CXT-944	The design and technical basis of the FirstSpirit ContentCreator are currently being revised. The ramp-up phase will start in October 2019. Official release of the revised ContentCreator for all customers is scheduled for early 2020. Further information can be found in chapter “ContentCreator: Advance notice: Redesign and new technology”.	ContentCreator, Editor	2019-09
CXT-948 CXT-949	Improved performance of FirstSpirit Content Experience Tools.	FirstSpirit Content Experience Tools (CXT), Performance	2019-10



ID	Description	Categories	Version
CXT-950	<p>The “FirstSpirit Markdown Editor” module (and thus the FS_MARKDOWN component) could temporarily not be used in ContentCreator.</p> <p>Error message:</p> <pre>Failed to create gadget type 'FS_MARKDOWN', due to missing JavaScript controller 'MarkdownWebGadget'. Make sure to install all necessary module components into your project-local ContentCreator instance.</pre>	Content Transport, FirstSpirit Administrator, FirstSpirit Content Experience Tools (CXT), Input Components	2019-10
CXT-966	References from <i>DataAccessPlugins</i> are now resolved correctly even if the ID of the element contains a slash (/).	Data Access Plug-In, Developer, Editor, FirstSpirit Content Experience Tools (CXT)	2019-12
CXT-967	<p>The module “FirstSpirit CXT FragmentCreator - CaaS Integration” can now generate Preview URLs again.</p> <p>Further information can be found in chapter “FirstSpirit Content Experience Tools (CXT): “CaaS Integration” module: Creating Preview URLs”.</p>	FirstSpirit Administrator, FirstSpirit Content Experience Tools (CXT), FirstSpirit Content as a Service (CaaS), Modules, ServerManager	2019-12
CXT-968	<p>Any errors that occur when using the DAP Bridge now generate more detailed log messages. This is particularly useful during initial setup.</p> <p>Logging must be configured accordingly using either the <code>web.xml</code> file of the fragment module or the property file.</p>	Debugging, Developer, FirstSpirit Administrator, FirstSpirit Content Experience Tools (CXT), Module development	2019-11



ID	Description	Categories	Version
CXT-972	<p>As of FirstSpirit 2019-11, the “ApplicationPlugin: FragmentCreator (WebApp)” web component is automatically added to the web app “start page” as soon as the “FragmentCreator” web component has been installed or updated in the global web app.</p> <p>Further information can be found in chapter “FirstSpirit Content Experience Tools (CXT): Configuring the start page”.</p>	<p>FirstSpirit Administrator, FirstSpirit Content Experience Tools (CXT), FirstSpirit home page, FragmentCreator, ServerManager</p>	2019-11
CXT-998	<p>Specification of a proxy when using the “FirstSpirit CXT FragmentCreator – CaaS Integration” module</p> <p>Further information can be found in chapter “FirstSpirit Content Experience Tools (CXT): “CaaS Integration” module: Specification of a proxy”.</p>	<p>FirstSpirit Administrator, FirstSpirit Content Experience Tools (CXT), FirstSpirit Content as a Service (CaaS), ServerManager</p>	2019-12
CXT-1003	<p>FirstSpirit Content Experience Tools: Latest module versions</p> <p>Further information can be found in chapter “FirstSpirit Content Experience Tools (CXT): Latest module versions”.</p>	<p>Developer, FirstSpirit Administrator, FirstSpirit Content as a Service (CaaS), FragmentCreator, Modules</p>	2019-10
CXT-1009	<p>When configured accordingly, variants can also be created with content originating from a translation plugin.</p> <p>Further information can be found in chapter “FirstSpirit Content Experience Tools (CXT): Creating a variant with translated content”.</p>	<p>Developer, Editor, FirstSpirit API, FirstSpirit Content Experience Tools (CXT), Languages, Module development</p>	2019-12
CXT-1013	<p>As of the current FirstSpirit release, the UI language selected by the editor can now be determined when using <i>DataAccessPlugins</i>.</p> <p>Further information can be found in chapter “FirstSpirit Content Experience Tools (CXT): DataAccessPlugin: Identifying the client language”.</p>	<p>Developer, FirstSpirit Content Experience Tools (CXT)</p>	2019-12



ID	Description	Categories	Version
CXT-1038	<p>In a previous version the usage of media references, as provided by the “Media DAP” module, required the specification of a PROJECT tag. In older projects that did not provide such specification, the following error was prompted: Invalid definition for tag 'SOURCE': Must define a a project!</p> <p>With this release, specifying a PROJECT tag is only required when referring to remote project media. This tag is optional for media from the same local project, as not specifying the tag is treated as an implicit self-reference.</p>	Developer, FirstSpirit Content Experience Tools (CXT), Media	2019-11
CXT-1048	<p>FirstSpirit Content Experience Tools: Latest module versions</p> <p>Further information can be found in chapter “FirstSpirit Content Experience Tools (CXT): Latest module versions”.</p>	Developer, FirstSpirit Administrator, FirstSpirit Content as a Service (CaaS), FragmentCreator, Modules	2019-11
CXT-1061	<p>The design and technical basis of the FirstSpirit ContentCreator are currently being revised. The revised ContentCreator will be officially released as of FirstSpirit 2020-01, the “old” ContentCreator will be discontinued as planned as of FirstSpirit 2020-07.</p> <p>Further information can be found in chapter “ContentCreator: ContentCreator re-design: Current time scheduling”.</p>	ContentCreator, Editor, FirstSpirit Administrator	2019-11
CXT-1096 CXT-985 CXT-1078	<p>The graphical user interface of FragmentCreator is currently being revised.</p> <p>Further information can be found in chapter “FirstSpirit Content Experience Tools (CXT): FragmentCreator: Design revision”.</p>	Editor, FirstSpirit Content Experience Tools (CXT), FragmentCreator	2019-12



ID	Description	Categories	Version
CXT-1102	For the input component CMS_INPUT_DATE, the default for the attribute <code>mode</code> is now the value <code>datetime</code> (<code>mode="datetime"</code>) for FragmentCreator (as with the other clients) so that the date and time can now be selected without specifying the attribute.	Developer, FirstSpirit Content Experience Tools (CXT), FragmentCreator, Input Components, Template Development	2019-12
CXT-1111	When starting MicroApps in FragmentCreator (creating/editing fragments or uploading images), the error message <code>An Error Occurred</code> no longer appears erroneously.	FirstSpirit Content Experience Tools (CXT)	2020-01
CXT-1122 CXT-1149 CXT-1173 CXT-1218 CXT-1219 CXT-1250	FragmentCreator's graphical interface is currently being revised. Further information can be found in chapter "FirstSpirit Content Experience Tools (CXT): FragmentCreator: Design revision".	Editor, FirstSpirit Content Experience Tools (CXT), FragmentCreator	2020-02
CXT-1132	FirstSpirit Content Experience Tools: Latest module versions Further information can be found in chapter "FirstSpirit Content Experience Tools (CXT): Latest module versions".	Developer, FirstSpirit Administrator, FirstSpirit Content as a Service (CaaS), FragmentCreator, Modules	2019-12
CXT-1140	The module "FirstSpirit Markdown Editor" requires at least FirstSpirit 2019-12 from version 1.17. Further information can be found in chapter "FirstSpirit Content Experience Tools (CXT): Module "FirstSpirit Markdown Editor": Compatibility".	Developer, FirstSpirit Content Experience Tools (CXT), FragmentCreator, Input Components, Modules, Support for JSON	2019-12



ID	Description	Categories	Version
CXT-1148	<p>The design and technical basis of the FirstSpirit ContentCreator are currently being revised. The revised ContentCreator will be officially released as of FirstSpirit 2020-01, the “old” ContentCreator will be discontinued as planned as of FirstSpirit 2020-07.</p> <p>Further information can be found in chapter “ContentCreator: ContentCreator re-design: Current time scheduling”.</p>	ContentCreator, Developer, Editor, FirstSpirit Administrator	2019-12
CXT-1158	When the “FirstSpirit CXT FragmentCreator - CaaS Integration” is being used, all affected fragments are now transferred correctly to the required CaaS instance again, even if they have been generated for each schedule by the server.	FirstSpirit Administrator, FirstSpirit Content Experience Tools (CXT), FirstSpirit Content as a Service (CaaS), Tasks	2020-02
CXT-1162	A problem relating to the FirstSpirit Omnichannel Manager, the <code>WE_API.Preview.reload</code> method, and the <code>WE_API.Preview.getWindow</code> method (FirstSpirit Developer API, <code>de.espirit.firstspirit.webedit.client.api</code> package, <code>Preview</code> interface) has been resolved.	FirstSpirit API, Omnichannel Manager / Third Party Preview	2020-02
CXT-1189	<p>FirstSpirit Content Experience Tools: Latest module versions</p> <p>Further information can be found in chapter “FirstSpirit Content Experience Tools (CXT): Latest module versions”.</p>	Developer, FirstSpirit Administrator, FirstSpirit Content Experience Tools (CXT), FragmentCreator, Modules	2020-01
CXT-1200	<p>The new (chromium-based) version of Microsoft Edge should be used for working with FirstSpirit.</p> <p>Further information can be found in chapter “General: Browser compatibilities (Microsoft Edge)”.</p>	Developer, Editor, FirstSpirit Content Experience Tools (CXT), FragmentCreator	2020-01



ID	Description	Categories	Version
CXT-1205	<p>The Media DAP now allows the type-dependent upload of files.</p> <p>Further information can be found in chapter “FirstSpirit Content Experience Tools (CXT): Media DAP: Type-dependent upload of files”.</p>	Developer, Editor, FirstSpirit Content Experience Tools (CXT), FragmentCreator, Media, Modules	2020-04
CXT-1206	<p>Information for analysis and debugging</p> <p>Further information can be found in chapter “FirstSpirit Content Experience Tools (CXT): Error analysis for MicroApp Framework”.</p>	Debugging, Developer, FirstSpirit Administrator, FirstSpirit Content Experience Tools (CXT)	2020-04
CXT-1209	<p>Update of internally used software</p> <p>Further information can be found in chapter “System: Update of internally used software”.</p>	FirstSpirit Administrator, Integrated software	2020-02
CXT-1215	<p>In rare cases, creating a new variant or starting workflows had to be executed twice in succession.</p>	Editor, FirstSpirit Content Experience Tools (CXT), FragmentCreator, Workflow	2020-02
CXT-1221	<p>Language selection lists now have a scroll bar if there are large numbers of entries.</p>	ContentCreator, Editor, Languages	2020-04
CXT-1224	<p>With the current release the information on the current project, the FirstSpirit version used, and the FirstSpirit license can be copied again in the new ContentCreator using the “Copy to clipboard” icon. Previously an error message of the type <code>UncaughtTypeError</code> could occur when using Google Chrome.</p>	ContentCreator, Developer, Editor	2020-03
CXT-1243	<p>FragmentCreator: Revision of the design (input fields)</p> <p>Further information can be found in chapter “FirstSpirit Content Experience Tools (CXT): FragmentCreator: Revision of the design (input fields)”.</p>	Developer, Editor, FirstSpirit Content Experience Tools (CXT), FragmentCreator, Input Components	2020-05



ID	Description	Categories	Version
CXT-1245	<p>With the current release, the handling of project selection has been improved.</p> <p>Further information can be found in chapter "ContentCreator: Project selection".</p>	ContentCreator, Editor, FirstSpirit home page, Project switch	2020-03
CXT-1262	<p>FirstSpirit Content Experience Tools: Latest module versions</p> <p>Further information can be found in chapter "FirstSpirit Content Experience Tools (CXT): Latest module versions".</p>	Developer, FirstSpirit Administrator, FirstSpirit Content Experience Tools (CXT), FragmentCreator, Modules	2020-02
CXT-1268 CXT-1473	<p>In the current release, MicroApps can now be integrated directly into HTML pages using the MicroApps API ("widget").</p> <p>Further information can be found in chapter "FirstSpirit Content Experience Tools (CXT): Extension of MicroApps API: Embedding of MicroApps into a page ("widget")".</p>	Developer, FirstSpirit API, FirstSpirit Content Experience Tools (CXT), FragmentCreator, Module development	2020-05
CXT-1290	<p>The security of the MicroApp Framework and the FragmentCreator has been increased, particularly with regard to cross-site request forgery attacks.</p>	Editor, FirstSpirit Administrator, FirstSpirit Content Experience Tools (CXT), FragmentCreator, Security	2020-03
CXT-1296	<p>In rare cases, pages that were newly created in the ContentCreator were not displayed directly in the preview.</p>	ContentCreator, Editor	2020-03
CXT-1300	<p><code>WE_API.Common.getDisplayLanguage()</code> (interface <code>Common</code>, package <code>de.espirit.firstspirit.webedit.client.api</code>, FirstSpirit Developer API) now also returns the display language in the new ContentCreator (instead of previously <i>undefined</i>).</p>	ContentCreator, Developer, Languages	2020-03



ID	Description	Categories	Version
CXT-1301	The language display in the new ContentCreator has been corrected (interface language).	ContentCreator, Developer, Editor, Workflow	2020-03
CXT-1302	The input component CMS_INPUT_DATE is used to enter the date and/or time.	Developer, Editor, FirstSpirit Content Experience Tools (CXT), FragmentCreator, Input Components	2020-03
CXT-803	Display and persistence in the FragmentCreator now work correctly. For example, the mode is now correctly taken into account and the selected time is now also displayed.		
CXT-1297			
CXT-1308	Improved behavior of the new ContentCreator when using modules with incompatible libraries.	ContentCreator, Developer, FirstSpirit API, Module development	2020-03
CXT-1315	Browser compatibilities Further information can be found in chapter “Administration: Browser compatibilities”.	ContentCreator, Developer, Editor, FirstSpirit Administrator, FirstSpirit Content Experience Tools (CXT), FragmentCreator	2020-05
CXT-1319	The standard workflow for deleting fragments and variants – “Request deletion” – now once again removes entire fragments from live CaaS instances rather than just individual variants. In existing projects which use this workflow, the relevant script must be updated accordingly. You will find this in the latest version of the blueprint project.	FirstSpirit Content Experience Tools (CXT), FirstSpirit Content as a Service (CaaS)	2020-04



ID	Description	Categories	Version
CXT-1330	In rare cases no preview image was displayed after dragging and dropping images into the corresponding dialog of FS_INDEX (error message: Refused to load the image 'blob:http://host.meinserver.de:8050/2796eb8b-643e-4791-bc37-42140696915b' because it violates the following Content Security Policy directive: "img-src 'self' data:").	Editor, FirstSpirit Content Experience Tools (CXT), FragmentCreator, Media	2020-04
CXT-1334	FirstSpirit Content Experience Tools: Latest module versions Further information can be found in chapter “FirstSpirit Content Experience Tools (CXT): Latest module versions”.	Developer, FirstSpirit Administrator, FirstSpirit Content Experience Tools (CXT), FragmentCreator, Modules	2020-03
CXT-1338	The display of buttons in dialogs in the “new” FirstSpirit ContentCreator has been optimized so that labels in dialogs for switching on workflows are now easier to read.	ContentCreator, Developer, Editor	2020-04
CXT-1339	Nested frames are now prevented in the new ContentCreator: Instead of another instance of ContentCreator being opened in an existing ContentCreator window (due to a corresponding template configuration in the project), an empty page is now displayed. (Error message in the browser console: (index):35 Skipping startup of nested ContentCreator, please contact your administrator.)	ContentCreator, Developer, Editor	2020-05
CXT-1343	A bug has been fixed that could cause unwanted flickering of icons in the new ContentCreator in rare cases (e.g. bookmark icon in the menu bar, icons in the image cropping dialog).	ContentCreator, Developer, Editor	2020-04
CXT-1354	LiveEdit now works again with the “new” ContentCreator.	ContentCreator, Developer, LiveEdit	2020-04



ID	Description	Categories	Version
CXT-1359	An error in the browser “Chromium” in combination with FirstSpirit Omnichannel Manager could lead to drag-and-drop not being possible in the new ContentCreator (e.g. when moving menu levels via “ACTIONS / Edit navigation”).	ContentCreator, Editor, FirstSpirit Omnichannel Manager	2020-03
CXT-1376	When uploading files by drag-and-drop in the new ContentCreator (via FS_REFERENCE), the MIME type is now correctly recognized by the file extension	ContentCreator, Editor, Media	2020-04
CXT-1378	The MicroApp Framework now works even more stably with native DataAccess plug-ins which are included in the standard scope of delivery of FirstSpirit, such as the <i>DatasetDataAccessPlugin</i> .	Data Access Plug-In, Developer, FirstSpirit Content Experience Tools (CXT), FragmentCreator	2020-04
CXT-1405	In addition to the preview, the FirstSpirit ContentCreator now offers navigation and editing options via a structure tree. Further information can be found in chapter “ContentCreator: New navigation view in the ContentCreator combines hierarchical structure display, context information and editing options”.	ContentCreator, Editor	2020-04
CXT-1413	In rare cases, data could not be edited because of timing problems. Instead, a loading animation was displayed.	ContentCreator, Editor	2020-05
CXT-1419	It is now possible to configure the <code>Content-Security-Policy</code> header. Further information can be found in chapter “FirstSpirit Content Experience Tools (CXT): Configuration of the Content-Security-Policy header”.	FirstSpirit Administrator, FirstSpirit Content Experience Tools (CXT)	2020-04
CXT-1421 CXT-1446	After having made modifications to pages, the view is now directly updated again, so that, among other things, the correct status (editing status/work flow) in combination with FirstSpirit Omnichannel Manager is displayed again.	ContentCreator, Developer, Editor, FirstSpirit Administrator, Omnichannel Manager / Third Party Preview, Workflow	2020-04



ID	Description	Categories	Version
CXT-1436	<p>FirstSpirit Content Experience Tools: Latest module versions</p> <p>Further information can be found in chapter “FirstSpirit Content Experience Tools (CXT): Latest module versions”.</p>	Developer, FirstSpirit Administrator, FirstSpirit Content Experience Tools (CXT), FragmentCreator, Modules	2020-04
CXT-1465	Workflows can be started and advanced with the flyout menu via the element state in the right-hand menu bar. Due to a timing problem, an incomplete or outdated view was sometimes displayed. The available workflow actions are now displayed directly, without the need to manually update the page.	ContentCreator, Editor	2020-05
CXT-1466	<p>No datasets could be created or edited via FS_INDEX with <i>DatasetDataAccessPlugin</i> if this input component was used in a metadata form.</p> <p>(Error message: <code>...java.lang.IllegalArgumentException: Unknown language: §...</code>)</p>	Content Store, ContentCreator, Data Access Plug-In, Developer, Editor, Input Components, Template Development	2020-05
CXT-1482	For security reasons, access to the error page for the MicroApp Framework introduced in FirstSpirit 2020-04 (accessible via <code>~/status</code>) is now limited – as intended – solely to FirstSpirit administrators. Furthermore, the error pages now contain more information on the cause of the error.	Debugging, Developer, FirstSpirit Administrator, FirstSpirit Content Experience Tools (CXT), Security	2020-05
CXT-1483	<p>When the “BasicWorkflows” (<code>basicworkflows.fsm</code> module) were in use, in ContentCreator it was not always possible to open all the navigation view elements in the preview (error message in the browser console: <code>CxtElement request cc-tree/getChildren failed: null, serverseitig: java.lang.UnsupportedOperationException: de.espirit.firstspirit.store.access.pagestore...) : unique identifier not supported!</code>).</p>	ContentCreator, Developer, Editor, Workflow	2020-06



ID	Description	Categories	Version
CXT-1490	<p>In the new ContentCreator, the user prompting/UX for the input elements “check box” (CMS_INPUT_CHECKBOX), “radio button” (CMS_INPUT_RADIOBUTTON) and “toggle” (CMS_INPUT_TOGGLE) have been improved.</p> <p>Further information can be found in chapter “ContentCreator: User prompting/UX: Display of check boxes, radio buttons and toggles”.</p>	ContentCreator, Developer, Editor, Input Components	2020-05
CXT-1525	<p>FirstSpirit Content Experience Tools: Latest module versions</p> <p>Further information can be found in chapter “FirstSpirit Content Experience Tools (CXT): Latest module versions”.</p>	Developer, FirstSpirit Administrator, FirstSpirit Content Experience Tools (CXT), FragmentCreator, Modules	2020-05
CXT-1528 CXT-1500	<p>Temporarily, when using the “FirstSpirit CXT FragmentCreator - CaaS Integration” module when releasing fragments, the content was no longer transferred to live CaaS instances, but only to preview CaaS instances.</p>	Developer, FirstSpirit Content as a Service (CaaS), FragmentCreator, Release	2020-05
CXT-1561	<p>The navigation view no longer shows elements for which the user does not have “Visible” permissions.</p> <p>Further information can be found in chapter “ContentCreator: Navigation view and evaluation of permissions: Hiding invisible elements”.</p>	ContentCreator, Developer, Editor, Permissions	2020-06
CXT-1596	<p>FirstSpirit Content Experience Tools: Latest module versions</p> <p>Further information can be found in chapter “FirstSpirit Content Experience Tools (CXT): Latest module versions”.</p>	Developer, FirstSpirit Administrator, FirstSpirit Content Experience Tools (CXT), FragmentCreator, Modules, ServerManager	2020-06



ID	Description	Categories	Version
CXT-1603	The language in which the preview page is displayed could not be changed in the preview itself after opening the navigation view (e.g. via a language switch on the preview page).	ContentCreator, Editor, Languages	2020-06



ID	Description	Categories	Version
DEVEX-140	<p>The current FSDevTools release (release 2.5.10) supports the execution of project and server schedules by means of the “schedule start” command. The parameters required for execution are transferred via the command line using the following schema:</p> <pre data-bbox="337 554 1036 625">fs-cli [-p -project <ProjectName>] schedule start [-n -name <scheduleName>]</pre> <p>Additionally, the “schedule list” command can be used to list all the server schedules or project schedules for a certain project:</p> <pre data-bbox="337 829 1036 900">fs-cli [-p -project <ProjectName>] schedule list</pre> <p><u>Parameters:</u></p> <p>-project: (optional) project name (short form -p)</p> <ul data-bbox="370 1098 998 1283" style="list-style-type: none"> ■ If the parameter is not specified, a server schedule is started. ■ If the parameter is transferred with a valid project name, a project schedule for this project is started. <p>-name: (mandatory parameter) schedule name (short form: -n)</p> <ul data-bbox="370 1451 998 1556" style="list-style-type: none"> ■ If the parameter is transferred with a valid schedule name (ScheduleEntry#getName), the schedule is executed. <p><u>Example:</u> bin\fs-cli -h example.com -port 4242 -p "SmartLiving" schedule start -n test executes the “test” schedule for the “SmartLiving” project.</p> <p>Information about the schedule and the execution duration is provided in the log.</p> <p><u>Note:</u> The command line tool should not be exited before the schedule is finished.</p> <p>Information about the individual commands is available via the fs-cli help <command> call.</p>	Developer, FSDevTools	2020-06



ID	Description	Categories	Version
DEVEX-278	<p>The latest FSDevTools release (Release 2.4.761) supports the use of a proxy server. The proxy configuration parameters are set via the command line.</p> <p>Further information can be found in chapter “External Synchronization: Proxy support for FSDevTools”.</p>	Developer, External synchronization, FSDevTools	2019-09
DEVEX-290	<p>With the current FSDevTools release, updated internally used software.</p> <p>Further information can be found in chapter “External Synchronization: Update of internally used software”.</p>	Developer, External synchronization, FSDevTools, Security	2019-09
DEVEX-309	<p>With the current FSDevTools release (Release 2.5.2) a bug was fixed that caused files in the <code>bin</code> directory to have no execution rights.</p> <p>In addition, the local and FirstSpirit versions of the server with which a connection is established are now displayed.</p>	External synchronization, FSDevTools	2019-09
DEVEX-324	<p>With the current FSDevTools release (release 2.5.5), an error has been rectified that prevented the import of projected in which global schedule templates were referenced.</p>	FSDevTools	2019-12

