

The logo for Antenna House Formatter V6. It features a stylized blue 'F' with a gradient and a shadow effect. To its right, the text 'ANTENNA HOUSE' is in a blue, sans-serif font. Below that, 'Formatter' is in a larger, bold, blue, sans-serif font with a slight shadow. To the right of 'Formatter', 'V6' is in a large, light blue, outlined font.

ANTENNA HOUSE  
**Formatter** V6



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## Overview

**AH Formatter V6.0** is a software to format XML/HTML documents and output them to paged media such as PDF, XPS and paper. It now supports page layouts specified using either XSL-FO (ExtensibleStylesheet Language - Formatting Objects) and CSS (Cascading StyleSheets) including CSS3 (Cascading Style Sheets Level3) which is under development by W3C.

The following six products are prepared according to the formatting capability of **AH Formatter V6.0**

- **AH Formatter V6.0**

XSL-FO formatting, HTML formatting using CSS are available. As long as there is no notice especially in this document, when it is called **AH Formatter V6.0**, it is a generic term of six types of all products in many cases, but it may point an individual product guessing from the context.

- **AH XSL Formatter V6.0**

XSL-FO formatting is available. HTML formatting using CSS is not available.

- **AH CSS Formatter V6.0**

HTML formatting using CSS is available. XSL-FO formatting is not available.

- **AH Formatter V6.0 Lite**

This is a function limited version of **AH Formatter V6.0**. Please refer to [About AH Formatter V6.0 Lite](#) . As long as there is no notice especially in this document, when it is called **AH Formatter V6.0 Lite**, it is a generic term including **AH XSL Formatter V6.0 Lite** and **AH CSS Formatter V6.0 Lite**.

- **AH XSL Formatter V6.0 Lite**

This is a function limited version of **AH XSL Formatter V6.0**. Please refer to [About AH Formatter V6.0 Lite](#)

- **AH CSS Formatter V6.0 Lite**

This is a function limited version of **AH CSS Formatter V6.0**. Please refer to [About AH Formatter V6.0 Lite](#)

## Highlights

---

**AH Formatter V6.0** provides the following features:

- **Compliant with XSL 1.1**

Corresponds to XSL 1.1 which is a XSL-FO specification. **AH Formatter V6.0** faithfully implements quite almost elements of the XSL specification and properties. Please refer to "[XSL-FO 1.1 Conformance](#)".

- **Compliant with CSS**

**AH Formatter V6.0** supports CSS2.1 and CSS3. Page models of CSS3 is also supported, now that high-quality page formatting will be available. Please refer to "[CSS Conformance](#)" for detail. HTML/XHTML formatting is also available except for frames, etc., in HTML. Please refer to "[Formatting HTML](#)".

- **Passes Acid2**

**AH Formatter V6.0** has passed the [Acid2](#) test published by "[The Web Standard Project \(WaSP\)](#)" that measures the conforming level to CSS.

- **Format virtually any size document**

**AH Formatter V6.0** can now format a document of virtually any size whether it is a publication, tens of thousands of invoices, reports, technical manuals, or personalized one to one documents. Please refer to "[Formatting Large Document](#)".

- **High speed formatting**

**AH Formatter V6.0** processes the formatting at high speed, and generates PDF. It is the best suited for applying to the Web application such as the PDF delivery on Web etc.

- **Multilingual language**

**AH Formatter V6.0** supports over 50 different languages, almost any language which is supported by Unicode including and also supports surrogate pairs. It offers the abilities to write in vertical mode, to run the text from right to left as in Arabic and Hebrew and also to create multilingual documents with language mixtures on the same page and even on the same line. It also offers the hyphenation processing, and the adjustment of white space before and behind the punctuation which differs according to the language. Moreover, **AH Formatter V6.0** makes it possible to [hyphenate more than 40 languages](#).

- **Outputs to the various file format**

[PDF output](#) can be done for an unlimited number of users on a server by utilizing the Antenna House developed PDF direct creation engine. The license of Acrobat is unnecessary. [AH Formatter PostScript Output Option](#), [INX Output Option](#), [MIF Output Option](#), [XPS Output Option](#) and [SVG Output Option](#) make PostScript® output, INX output, MIF output, XPS output and SVG output available.

- **Supports PDF/X and PDF/A**

**AH Formatter V6.0** supports **PDF/X**. PDF/X is a specification that places much value on exchanging data and defined by ISO for printing purpose. **PDF/A** is also supported. PDF/A is a format for long-term preservation of an electronic document and it is also defined by ISO.

- **Accessible PDF**

**AH Formatter V6.0** can generate the **Tagged PDF** for enhancing the accessibility to people with disabilities. This is a function indispensable to comply with **Section 508**, the law of the United States enforced on June 21, 2001.

- **Direct Printer output**

The Windows version also supports the ability to send the converted results directly to any Windows based printer without the need to first create a PDF document. It's also possible to get the formatted result and print it immediately by using **GUI**.

- **Native drawing of vector Graphics**

With **AH Formatter V6.0** **SVG**, **MathML**, **EMF**, **WMF** and **CGM** image is drawn into PDF as vector thus retaining the quality of output images. **AH Formatter CGM Option** is required for drawing CGM as vector graphic.

- **Supports the embedding of PDF into PDF**

An arbitrary page of other **PDF** can be embedded into PDF. It is possible to convert EPS into PDF and embed into PDF using this function. In the environment where Adobe Distiller and Ghostscript are installed, it can be performed automatically.

- **Supports PANTONE® color**

The color name of PANTONE® can be directly specified by using **AH Formatter PANTONE® Option**.

- **Wide array of Integration Interface**

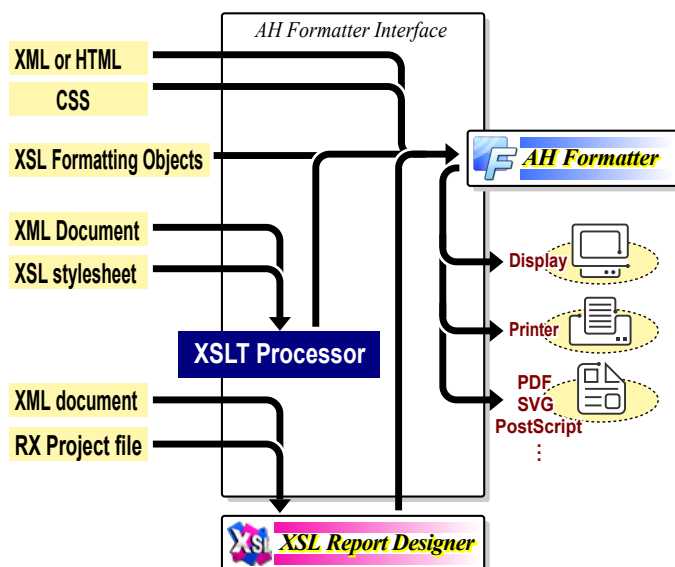
As integration interface **AH Formatter V6.0** provides **Command-line**, **.NET**, **COM**, **Java** and **C/C++** interface. (.NET and COM interfaces are available only for Windows.) All interfaces support streaming input/output which makes for the easy system integration. Also the output of the native parser of .NET (XML and XSLT output) can be directly received without going through a file. It is possible to receive DOM directly and process it with not only .NET interface but also COM interface.

- **Flexible float features**

By implementing the advanced float features, it's now available to arrange the float content in an arbitrary place of the page, or in multi-column layout with column spanning of the float. See also **Float Extension**.

## Antenna House Workflow

**AH Formatter V6.0** formats XSL Formatting Objects (XSL-FO), XML with XSL stylesheet, or HTML with CSS stylesheet. The formatted result will be displayed in **GUI** and outputted or printed to PDF. (Display and printing are available only with the Windows version). The work flow is as shown below.



- When an (X) HTML document is inputted, AH Formatter V5 formats it immediately using a default HTML stylesheet.
- When an XML document or a (X) HTML document with a CSS stylesheet are inputted, AH Formatter V5 formats it immediately.
- When an XSL Formatting Object is inputted, **AH Formatter V6.0** formats it immediately.
- When an XML document and an XSL stylesheet are inputted, **AH Formatter V6.0** transforms them to XSL Formatting Object using XSLT processor and formats the XSL Formatting Object.

- When an XML document and the Project file of **XSL Report Designer** are both inputted, **AH Formatter V6.0** transforms it into XSL Formatting Objects using **XSL Report Designer**.

Please find a list of implemented XSL-FO and properties in "[XSL-FO 1.1 Conformance](#)". As for CSS, please refer to "[CSS Conformance](#)".

## Enhancements and New Features

New Enhancements of **AH Formatter V6.0** from **AH Formatter V5.3** are as follows:

- By implementing the advanced [float features](#), it's now available to arrange the float content in an arbitrary place of the page or column, arranging the float content on top, bottom or specified corner in multi-column layout with column spanning of the float.
- [Ruby extension](#) makes it possible to specify advanced settings of ruby.
- Extension properties for [emphasis marks](#) are added. It's now available to specify types or fonts for emphasis marks.
- The following element is extended.
  - [change-bar-begin](#)
- The following properties are extended.
  - [axf:auto-letter-spacing](#)
  - [axf:letter-spacing-side](#)
  - [axf:indent-here](#)
- The following [units](#) are extended.
  - lh
  - rlh
  - gr
- Fillable PDF forms by AcroForms can now be [embedded](#).
- Support for .NET Framework 4.0 with [.NET Interface](#).

## System Requirements

Item	Contents
Windows version	Windows XP Windows Vista Windows Server2003 Windows Server2008 Windows 7
Windows x64 version	Windows XP x64 Edition Windows Vista x64 Edition Windows Server2003 x64 Edition Windows Server2008 x64 Edition Windows Server2008 R2 x64 Edition Windows 7 x64 Edition
Solaris version	Sun Solaris 10 (sparc version) Sun Solaris 10 (x86 version)
Linux version	Built by GCC4.1. (required libstdc++.so.6 runtime library)
Linux 64bit version	
Macintosh version	Mac OS X Version 10.5, 10.6, 10.7 (intel version)
AIX version	AIX Version 5.3, POWER version (required VXL C/C++ Runtime V7.0)

- All but "x64 edition" and the "64-bit version" are compiled with 32 bit.
- Hereinafter unless otherwise explicitly mentioned, the phrase "Windows version" includes both Windows version and Windows x64 version.
- Hereinafter unless otherwise explicitly mentioned, the phrase "Linux version" includes both Linux version and Linux 64bit version.
- Please see "[Font Setting](#)" for supported fonts. In addition, fonts are not included in the Windows version.
- Standard 14 Fonts in non-Windows version have the metrics information file only. They do not contain the file of the outline information. If you want to embed these fonts to PDF or PS file, please prepare whole fonts by yourself.
- Please confirm the necessary environment variables at "[Environment Variable](#)" in this manual.

- Please confirm the installed modules at "[Installed Modules](#)" in this manual.
- The printing function on the Windows version depends on Windows-based printer drivers.
- Optional [PDF Digital Signature Module](#) can be used with Windows version, but it cannot be used with Windows x64 version.
- In Windows version, the run time library of Microsoft Visual C++ 2010 is required. This run time library is installed when you have the product installed on your system. It is also possible to download it from the following site When you need the package of the library separately.
  - [Microsoft Visual C++ 2010 SP1 Redistributable Package \(x86\)](#)
  - [Microsoft Visual C++ 2010 SP1 Redistributable Package \(x64\)](#)

## Languages

**AH Formatter V6.0** supports languages expressed with the following scripts among the scripts specified by [ISO 15924](#).

- Latn : Latin
- Grek : Greek
- Cyrl : Cyrillic
- Arab : Arabic
- Hebr : Hebrew
- Deva : Devanagari
- Thai : Thai
- Kana : Katakana
- Hira : Hiragana
- Hang : Hangul
- Hani : Han (Kanji)
- Hans : Han (Chinese Simplified)
- Hant : Han (Chinese Traditional)
- Jpan : Japanese (Han+Hira+Kana)

Depending on the language, it's possible to [hyphenate](#) the Latin script, the Greek script and the Cyrille script.

Some of the language codes which is defined by [ISO 639-2](#) can be specified. The main codes are as follows. The corresponding scripts show the major example.

code		language	script	hyphenation
af	afr	Afrikaans	Latn	yes
ar	ara	Arabic	Arab	n/a
az	aze	Azerbaijani	Latn	no
bg	bul	Bulgarian	Cyrl	yes
ca	cat	Catalan	Latn	yes
cs	ces	Czech	Latn	yes
cy	cym	Welsh	Latn	yes
da	dan	Danish	Latn	yes
de	deu	German / Swiss German	Latn	yes
el	ell	Greek	Grek	yes
en	eng	English	Latn	yes
en-US	eng-US	American	Latn	yes
eo	epo	Esperanto	Latn	yes
es	spa	Spanish	Latn	yes
et	est	Estonian	Latn	yes
eu	eus	Basque	Latn	yes
fa	fas	Persian	Arab	n/a
fi	fin	Finnish	Latn	yes

code		language	script	hyphenation
fr	fra	French / Canadian French	Latn	yes
ga	gle	Irish (Erse or Gaelic)	Latn	yes
he	heb	Hebrew	Hebr	n/a
hi	hin	Hindi	Deva	n/a
hr	hrv	Croatian	Cyrl / Latn	yes
hu	hun	Hungarian	Latn	yes
id	ind	Indonesian	Latn	yes
is	isl	Icelandic	Latn	yes
it	ita	Italian	Latn	yes
ja	jpn	Japanese	Hani, Hira, Kana, Jpan	n/a
kk	kaz	Kazakh	Cyrl / Latn	no
ko	kor	Korean	Hang, Hani	n/a
la	lat	Latin	Latn	yes
lt	lit	Lithuanian	Latn	yes
lv	lav	Latvian	Latn	yes
ms	msa	Bahasa Malay	Latn	yes
mt	mlt	Maltese	Latn	yes
nl	nld	Dutch / Flemish	Latn	yes
no	nor	Norwegian	Latn	yes
pl	pol	Polish	Latn	yes
pt	por	Portuguese / Brazilian	Latn	yes
ro	ron	Romanian / Moldavian	Latn	yes
ru	rus	Russian	Cyrl	yes
sk	slk	Slovak	Latn	yes
sl	slv	Slovenian	Latn	yes
sr	srp	Serbian	Cyrl / Latn	yes
sv	swe	Swedish	Latn	yes
sw	swa	Swahili	Latn	yes
th	tha	Thai	Thai	yes
tr	tur	Turkish	Latn	yes
uk	ukr	Ukrainian	Cyrl	yes
ur	urd	Urdu	Latn	no
vi	vie	Vietnamese	Latn	no
zh-CN	zho-CN	Chinese	Hani, Hans	n/a
zh-TW	zho-TW	Chinese (Taiwanese)	Hani, Hant	n/a

## Encodings

**AH Formatter V6.0** supports the following HTML, CSS or FO Encodings. These are a part of [CHARACTER SETS](#) of [IANA](#).

- UTF-8
- UTF-16
- UTF-32
- ISO-10646-UCS-2
- ISO-10646-UCS-4
- Windows-31J
- Shift\_JIS
- EUC-JP
- ISO-2022-JP
- GB18030



- ANSI\_X3.4
- ISO\_646.irv
- ISO646-US
- US-ASCII
- ISO-8859-1
- latin1
- ISO-8859-2
- latin2
- ISO-8859-3
- latin3
- ISO-8859-4
- latin4
- ISO-8859-5
- cyrillic
- ISO-8859-6
- arabic
- ISO-8859-7
- greek
- ISO-8859-8
- hebrew
- ISO-8859-9
- latin5
- ISO-8859-10
- latin6
- ISO-8859-13
- ISO-8859-14
- latin8
- ISO-8859-15
- Latin-9
- ISO-8859-16
- latin10
- GBK
- GB2312
- Big5
- KS\_C\_5601-1987
- iso-ir-149
- korean

Windows-31J is regarded as Shift\_JIS.

The encoding of the XML document and XSL stylesheet depends on the XSLT processor you use when the XML document and XSL stylesheet are converted into XSL-FO by using the XSLT processor.

## XSLT Processor

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**AH Formatter V6.0** uses an XSLT processor for converting XML documents and XSL stylesheets into XSL Formatting Objects (XSL-FO). In the Windows version, either MSXML4 or MSXML3 is used as the standard XSLT processor. Windows users have the option to use a different XSLT processor if desired. In non-Windows version users set their desired XSLT processor through the "[Environment Variable](#)" or "[Option Setting File](#)". For Windows XP, Internet Explore 6 or later MSXML3 is already installed. There is no need for the user to separately install MSXML3.

## About AH Formatter V6.0 Lite

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**AH Formatter V6.0 Lite** is a popular version of **AH Formatter V6.0**, it limits some of the professional functions of V6.0 (hereafter Standard) and is a lower-cost alternative to V6.0 Standard. V6.0 Lite is suitable for customers who don't need advanced handling of PDF, formatting of a great deal of pages, etc. But it's still full of many other attractive functions.

- Total page number of the formatted pages are limited to 300 per 1 document. The watermark that shows the limited version is displayed and the URL of our Website is displayed at the bottom of the pages which exceed 300.
- [PDF/X](#), [PDF/A](#) and [Tagged PDF](#) are not supported.
- Cannot embed PDF that has 3D objects in it.
- Cannot linearize PDF for [Fast Web View](#).
- Cannot use the [PDF Digital Signature Module](#).
- Cannot perform [2-pass format](#).
- Cannot [save and load the area tree](#).
- Cannot [output TEXT](#).

- Cannot format by setting the Project file of Antenna House [XSL Report Designer](#).
- [MathML drawing](#) is not supported. In order to use the function of MathML, you will have to purchase the [AH Formatter MathML Option](#) separately.
- The following [extensions](#) are not supported. (When there is no specification written, they are common for XSL extension and CSS extension.)
  - [Printer marks such as a crop mark](#)
  - [Dynamic addition of a font](#)
  - [Bookmarks](#) (If a bookmark is basic, it's available.)
  - [PDF Forms](#)
  - [PDF annotation](#)
  - [Specify the page number of the link destination](#)
  - [PDF output in multi separate volume](#)
  - [Line continued marks](#)
  - [Line numbers](#)
  - [Foot note numbers](#)
  - [Printer control](#)
  - [Leader expansion](#)
  - [Repeat page sequence](#)
  - [Suppress a block on the first page](#)
  - [Character string conversion such as Japanese numerals.](#)
  - [Set the prefix for line numbers..](#)
  - [Omit header/footer on column breaks, not on page breaks..](#)
- Lite doesn't include 90 day warranty. Customers may purchase an annual maintenance agreement to get the customer service.

FYI: [no-LT](#) sign is applied to the restricted items or described as restriction in this Online Manual.

## About Evaluation Version

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**AH Formatter V6.0** Evaluation version has the following restrictions as compared to the product version.

- The URL of Antenna House website is shown at the bottom of all pages.
- The watermark image, "Evaluation Version", is placed on each page.
- The weight of the font may look changed a little and the color of the image may look different a little with the watermark. There is cause in Adobe Acrobat or Reader for this problem. In addition, the printing speed decreases for the amount of the watermark.
- PDF1.3 cannot be output with the evaluation version. PDF 1.4 is output.
- Impossible to input/output the Area Tree.
- When the [PDF Digital Signature Module](#) is installed, this module works as an evaluation version. However the Digital Signature cannot be used with **AH Formatter V6.0 Lite**.
- The function of [PostScript output](#) is effective. PostScript output has the following restrictions.
  - Only the first one page can be outputted.
 This function with the product version is provided as an option. In order to use this function with the product version, customers must purchase the [AH Formatter Postscript Output Option](#) separately.
- The function of [SVG output](#) is effective. SVG output has the following restrictions.
  - Only the first one page can be outputted.
  - Font embedding is not available.
 The SVG output function in the product version is provided as an option. In order to use this function in the product version, customers must purchase [AH Formatter SVG Output Option](#) separately.
- The function of [INX output](#) is effective. INX output has the following restrictions.
  - Only the first one page can be outputted.
 The INX output function in the product version is provided as an option. In order to use this function in the product version, customers must purchase [AH Formatter INX Output Option](#) separately.
- The function of [MIF output](#) is effective. MIF output has the following restrictions.
  - Only the first one page can be outputted.
 The MIF output function in the product version is provided as an option. In order to use this function in the product version, customers must purchase [AH Formatter MIF Output Option](#) separately.
- The function of [XPS output](#) is effective. XPS output has the following restrictions.
  - Only the first one page can be outputted.

The XPS output function in the product version is provided as an option. In order to use this function in the product version, customers must purchase [AH Formatter XPS Output Option](#) separately.

- The function of [CGM](#) drawing by utilizing our direct creation module is effective. This function in the product version is provided as an option. In order to use this function with the product version, customers must purchase [AH Formatter CGM Option](#) separately.
- The evaluation copy expires after 90 days.
- Use of the evaluation version for an live production or commercial purposes is expressly prohibited.
- It is forbidden to not display intentionally the guide of our Web site under the page, or the watermark indicating the evaluation version.

There are no restrictions on formatting functions except for the above mentioned. However, the optional features that are not explicitly stated above are invalid.

## Support

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For further information, please refer to Q&A Page on [our web site](#).

- [AH Formatter / XSL Formatter Q&A](#)

Antenna House provides numerous XSL-FO samples for testing and learning purpose. Please see:

- [Stylesheet Tutorial, Sample Files of Formatting Objects and Sample Stylesheets](#)
- 

For more information, technical support and service needs, please contact us by e-mail.

- [info@antennahouse.com](mailto:info@antennahouse.com)

The following information is necessary for the mail to our support. Please cooperate with us to do your support smoothly.

- Version of AH Formatter
- License information (Serial No., Company name, Section and User name)
- OS environment

If you are a user of the evaluation version, please enter "evaluation version" for the serial number. In the Windows product version, you can put the required information for support to the mail text automatically by using [\[Help\]-\[Mail to Support\]](#) on the menu bar in GUI.



## Graphical User Interface

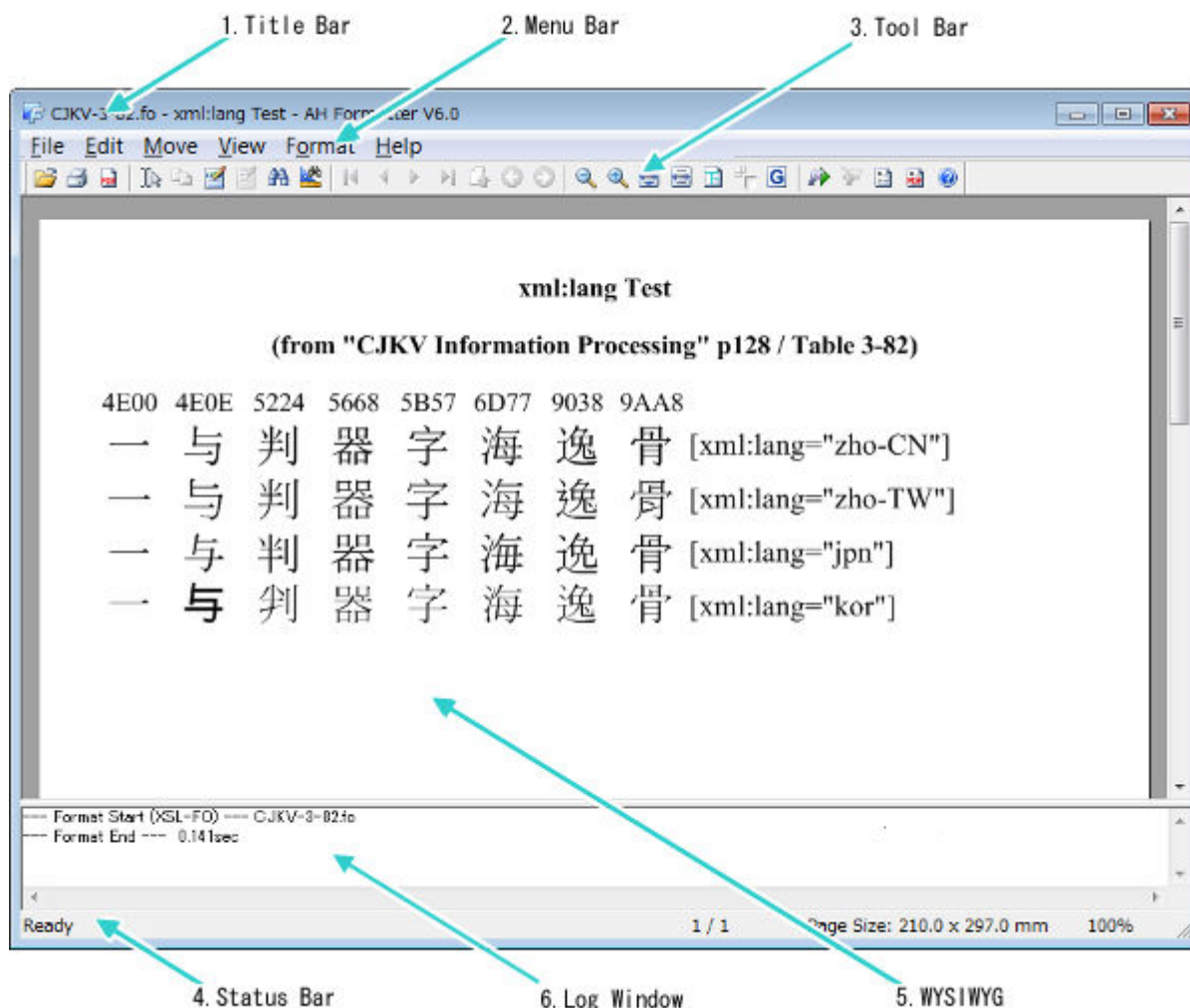
**AH Formatter V6.0** Windows version has a Graphical User Interface (GUI). By using the GUI, you can easily initiate formatting and then view the formatted results on the browser prior to outputting to PDF or print. You also have control over a number of formatting options, can set the options for PDF output and can direct files to any connected printer.

For developers the GUI provides quick visual feedback of formatting results and has the added ability to save Area and FO Trees to aid in the development processes. In a large multi page document the pages can be browsed as they are formatted. If errors are detected Formatting can be stopped prior to completion, thus on very large runs saving considerable time.

The GUI also lets you save the resulting XSL-FO file from XSLT. This is very useful when you want to transmit a file for formatting, but not the XML or XSL files.

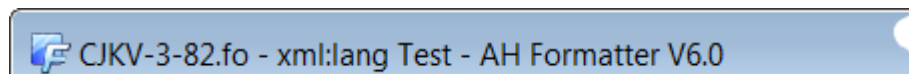
### Main Window

The application window of **AH Formatter V6.0** consists of following elements.



#### 1. Title Bar

The title bar shows the name of the original file being formatted; the stylesheet (XSL file) if formatting an XML file; and if in the <title> of HTML, FO file <fo:title> or if <axf:document-info> extension property, the content will also be shown (HTML's <title> or <fo:title> takes priority).



#### 2. Menu Bar

The menu bar contains the following 6 pull-down menus:

- File
- Edit

- [Move](#)
- [View](#)
- [Format](#)
- [Help](#)

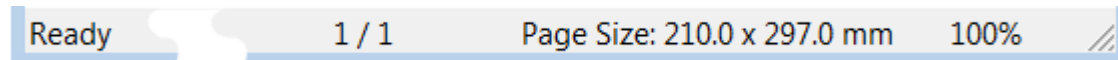
### 3. Tool Bar

The most commonly used menu functions are available as buttons on the Tool Bar. You can easily execute these functions by one click of the mouse. [\[View\]-\[Tool Bar\]](#)

### 4. Status Bar

The Status Bar displays the following information. [\[View\]-\[Status Bar\]](#)

- Current status of Formatter or the tool bar button function as you pass over the button with the pointer.
- Current page number/total number of pages (based on physical page count).
- The physical page size of the displayed page.
- Zoom ratio.



### 5. WYSIWYG (What You See Is What You Get)

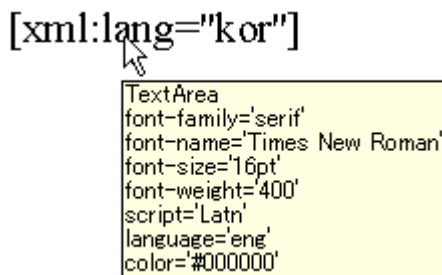
The WYSIWYG displays the formatted results. When the scroll bar is displayed, you can use the hand tool as the mouse pointer on the WYSIWYG window to move the page around so that you can view all the areas on it while pressing the left mouse button.

You can format various files by dropping on this window. When you drop a file on this window, the type of file will be judged automatically. If you'd like to specify the file type, please open the file using the [Document/Stylesheet Dialog](#). The dropped file will be added to the <Recent File> of a [File](#) menu and the file type will also be memorized. Therefore, when you choose the file dropped and saved in the Recent File, the file type will be judged again automatically. Formatting pattern by the file type is as follows: (See also [Judgment of Formatting Pattern by File Type](#) to learn about the automatic judgement.)

- FO file  
Starts formatting immediately.
- Stylesheet (XSL/CSS)  
When you drop the associated stylesheet on the formatted result, formatting starts with the dropped stylesheet. If not, it starts formatting after dropping an XML/HTML document combined with the stylesheet together.
- HTML file (without XSL/CSS specification in HTML)  
Formats the document using a default stylesheet.
- XML/HTML file (with XSL/CSS specification in XML/HTML)  
Formats the document using the stylesheet specified in XML/HTML.
- XML / HTML file (without XSL/CSS specification in XML/HTML) + Stylesheet (XSL/CSS)  
Formats the document using the stylesheet dropped together.
- XML / HTML file (with XSL/CSS specification in XML/HTML) + Stylesheet (XSL/CSS)  
Formats the document using the stylesheet dropped together.
- Graphics file  
The graphics file is drawn in the window when it is the [Graphics](#) supported by **AH Formatter V6.0**.

If another stylesheet is dropped when formatting the file except for FO or a graphics file, the file can be again formatted using the stylesheet. Moreover, if the Internet shortcut (.url) file, a URL character string or a Shortcut link (.lnk) to a file is dropped, the URL and the target file can be opened.

When a mouse is pointed on an area on the screen such as a character string or an image, the information about the area is displayed as a Tooltip. Font name, size, format and size of an image that are actually used can be checked.



As for the font name, some font names are displayed in order to show the difference between the specified font and the font actually adopted. Also refer to [\[Display Glyph\]](#) in the menu.

- font-family= The font-family specified by FO is displayed.
- font-name= The font name actually selected is displayed. If it is the same as font-family, it is not displayed.
- display-name= To display the character on the screen, the font name that Windows selected is displayed. If it is the same as font-name, it is not displayed.

## 6. Log Window

The log window shows a running status as the document is formatted. Minor warnings are shown here. Serious warnings are shown in a popup dialog box. The log window can hold a significant amount of status information. Older information is discarded if the information becomes too much. The final line of information is the time it took to format the document. The log window has its own scroll bar for viewing the information.




```
--- Format Start --- xsl-intro.fo
4E04:Graphic file not found: "file:///C:/My%20Documents/XSL%20Formatter/two-process.jpg" Line 54, Col 397, C:\My Docu
4E04:Graphic file not found: "file:///C:/My%20Documents/XSL%20Formatter/tree1-2.jpg" Line 61, Col 361, C:\My Documents
--- Format End --- 3.014sec
```

The content in the log window can now automatically be saved to a file by click the [Others](#) tab in the [Other Settings Dialog](#) and then checking the [Output Log File] check box.






When exiting **AH Formatter V6.0**, the position and the size of the GUI are stored. Formatter restarts at that same position and size.


## Menu

### 1. File








Menu	Shortcut	Description
 Open...	Ctrl+ O	Displays the <a href="#">Document/Stylesheet Dialog</a> .
Close	Ctrl+ W	Close the displaying formatted results.
Save AreaTree...		Displays the <a href="#">Save AreaTree Dialog</a> . <small>[no-LT]</small>
Save FOTree...		Displays the <a href="#">Save FOTree Dialog</a> .
Save FO...		Displays the <a href="#">Save FO Dialog</a> .
 Print...	Ctrl+ P	Displays the <a href="#">Print Dialog</a> .
 PDF Output	Ctrl+ D	Displays the <a href="#">PDF Output Dialog</a> .
SVG Output...		Displays the <a href="#">SVG Output Dialog</a> .
PostScript Output...		Displays the <a href="#">PostScript Output Dialog</a> .
XPS Output...		Displays the <a href="#">XPS Output Dialog</a> .
INX Output...		Displays the <a href="#">INX Output Dialog</a> .
MIF Output...		Displays the <a href="#">MIF Output Dialog</a> .
Text Output...		Displays the <a href="#">Text Output Dialog</a> . <small>[no-LT]</small>
Document Information...		Display the <a href="#">Document Information Dialog</a> .
<Recent File>		Displays the files that are recently formatted.
Exit	Alt+ F4	Exits <b>AH Formatter V6.0</b> .

### 2. Edit






Menu	Shortcut	Description
 Text Select		Enables you to select the text on the WYSIWYG window with the mouse.
 Copy	Ctrl+ C	Copies the selected text to the clipboard.
Select All	Ctrl+ A	Makes all the texts on the WYSIWYG window into selection mode.
Deselect		Cancels selection mode of the text.
 Edit Document		Edits the target XML document or stylesheet using the editor specified in the external editor page in the <a href="#">Other Settings Dialog</a> .
 Edit StyleSheet		
 Search String...	Ctrl+ F	Displays the <a href="#">Search String Dialog</a> .

Menu	Shortcut	Description
 Search Property...	Shift+Ctrl+ F	Display the <a href="#">Search Property Dialog</a> .
Search Previous	Shift+ F3	Searches previous from the position just before the search position.
Search Next	F3	Searches next from the position just before the search position.



### 3. Move

Menu	Shortcut	Description
 First Page	Ctrl+ Home	Goes to the first page.
 Previous Page	Ctrl+ PageUp	Goes to the previous page.
 Next Page	Ctrl+ PageDown	Goes to the next page.
 Last Page	Ctrl+ End	Goes to the last page. When you stop formatting before finishing, the last formatted page will be displayed.
 Go To Page...	Ctrl+ G	Displays the <a href="#">Go To Page Dialog</a> . This only functions in multi page documents. The current page position is shown in the <a href="#">Status Bar</a> .
 Back	Alt+ ←	As you move through the pages of a document Formatter stores up to 10 moves. By using the Back and Forward you can step backwards or forwards through the pages viewed.
 Forward	Alt+ →	





### 4. View

Menu	Shortcut	Description
 Fit in Window	Ctrl+ 0	Zooms the displayed size of the formatted page to automatically fit the entire page in the WYSIWYG window.
Actual Size	Ctrl+ 1	Set the zoom ratio as 100%.
 Fit Page Width	Ctrl+ 2	Automatically zooms the width of the formatted page to the width of the WYSIWYG window.
 Zoom In	Ctrl+ +	Changes the zoom ratio as follows: <ul style="list-style-type: none"> <li>• ...</li> <li>• 400%</li> <li>• 300%</li> <li>• 200%</li> <li>• 150%</li> <li>• 125%</li> <li>• 100%</li> <li>• 75%</li> <li>• 66.7%</li> <li>• 50%</li> <li>• 33.3%</li> <li>• 25%</li> <li>• 12.5%</li> </ul> Values from 5% to 2000% can be entered in the <a href="#">Zoom Dialog</a> . The current zoom ratio is shown in the <a href="#">Status Bar</a> .
 Zoom Out	Ctrl+ -	
Zoom...	Ctrl+ M	Displays the <a href="#">Zoom Dialog</a> .
Facing Page		Specifies whether to display the formatted pages with Facing Pages or Single Page on the WYSIWYG window.
Continuous		Specifies whether to display the formatted pages on the WYSIWYG window continuously or not.
 Show Border	Ctrl+ B	Used to confirm how the formatted result is divided in areas. The border does not affect <a href="#">PDF Output</a> or <a href="#">Print</a> .
Border Color...		Displays the Color Dialog. Possible to specify the border color.




Menu	Shortcut	Description
Show Ruler		Displays the ruler to confirm the position of the character, etc., in the document. The ruler can be moved to anywhere you like.
 Show Printer Mark		Effective when formatting the document that includes <a href="#">printer marks</a> . Specifies whether to display printer marks or not. <code>{no-LT}</code>
 Display Glyph		Available to see if the character is displayed with the font actually specified. In Windows, a font sometimes may be replaced, and such a character is not outputted correctly in the PDF.  When "Display Glyph" is turned on, XSL Formatter displays the character string by the glyph index of a font which is mapping to the character code. When the font you specify is not in the glyph index, then XSL Formatter doesn't display it with the alternative font and it will be displayed as blank.  When "Display Glyph" is turned off, XSL Formatter displays the character string by the character code with the specified font. Even if the font you specify is not in the glyph index, XSL Formatter displays it with the alternative font of the same character code.
Tool Bar		Specifies whether to show or hide the <a href="#">Tool Bar</a> .
Status Bar		Specifies whether to show or hide the <a href="#">Status Bar</a> .
Log Window		Specifies whether to show or hide the <a href="#">Log Window</a> . The log window is automatically displayed when execute formatting.

## 5. Format

Menu	Shortcut	Description
 Format	F5	Formats the current document (FO or XML+XSL etc.).
 Stop Format	ESC	Stops formatting. In a large multi page document the pages can be browsed as they are formatted. If errors are detected Formatting can be stopped prior to completion.
 Format Option Setting...	Shift+Ctrl+ O	Displays the <a href="#">Format Option Setting Dialog</a> .
 PDF Option Setting...	Shift+Ctrl+ P	Displays the <a href="#">PDF Option Setting Dialog</a> .
Other Settings...		Displays the <a href="#">Other Settings Dialog</a> .
Import Option Setting...		Displays the <a href="#">Import Option Setting Dialog</a> .
Export Option Setting...		Displays the <a href="#">Export Option Setting Dialog</a> .

## 6. Help

Menu	Shortcut	Description
 Online Manual	F1	Displays this Online Manual.
Q&A		Displays the <a href="#">Q&amp;A</a> on the Internet.
Mail to Support		Sends mail to Antenna House Support. The necessary information such as serial number, etc., is embedded automatically. It's not available with the evaluation version and <b>AH Formatter V6.0 Lite</b> .
Antenna House website		Displays the <a href="#">Antenna House website</a> on the Internet.
About AH Formatter V6.0...	Shift+ F1	Displays the <a href="#">About Dialog</a> of <b>AH Formatter V6.0</b> .

## Popup Menu

The following popup menu/boxes are displayed in the GUI.

Menu	Description
Copy	Copy text selected.
Format	Formats the current document (FO or XML+XSL etc.).

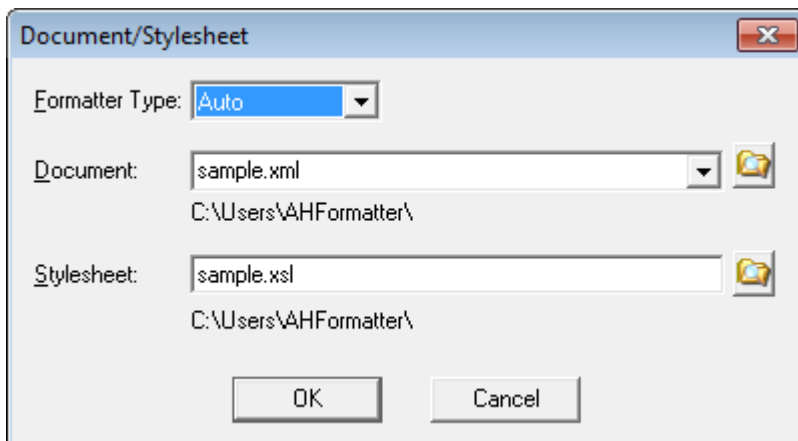
Menu	Description
Stop Format	Stops formatting.
Open	Open the destination file in the formatted result on the current window.
Open New Window	Open a link destination in the formatted result, or current document with a new window.
Shell Open	Open a link destination in the formatted result, or current document with a shell.

The content in the Log Window depends on what function Formatter is performing.

The following popup menu/boxes are displayed on the Ruler.

Menu	Description
cm	Sets the units of the ruler to cm.
mm	Sets the units of the ruler to mm.
in	Sets the units of the ruler to in.
pt	Sets the units of the ruler to pt.
pc	Sets the units of the ruler to pc.
px	Sets the units of the ruler to px.
Reset	Resets the position of the ruler to default.
Hide	Hides the ruler.

## Document/Stylesheet Dialog



- **Format Type**

Specify the type of target document and stylesheet in the Formatter Type combo box. By specifying the type of format, you can avoid the misjudge of the type of format. For example, it's effective when you want to specify the type of format as XML, which might be judged as XHTML by the auto judgement. When the specified type of format differs from the actual type, it is considered as AUTO and the type of format is judged automatically. The following five generic font families can be defined:

- Auto
- HTML
- XHTML
- XML+CSS
- XSL-FO

See also [Judgment of Formatting Pattern by File Type](#)

- **Document**

Used to specify the target FO, XML or HTML. Recent used files are listed in the Document drop-down list. Only the XML documents are listed even though the stylesheets are also specified in pairs. However the target stylesheet can be inserted in the Stylesheet combo box automatically when the document is selected. Specified files can reside on the local file system, the network or over the internet. Files over the internet can be specified with a URL via HTTP. Local files can also be specified by a URL format starting with file://.

- **Stylesheet**

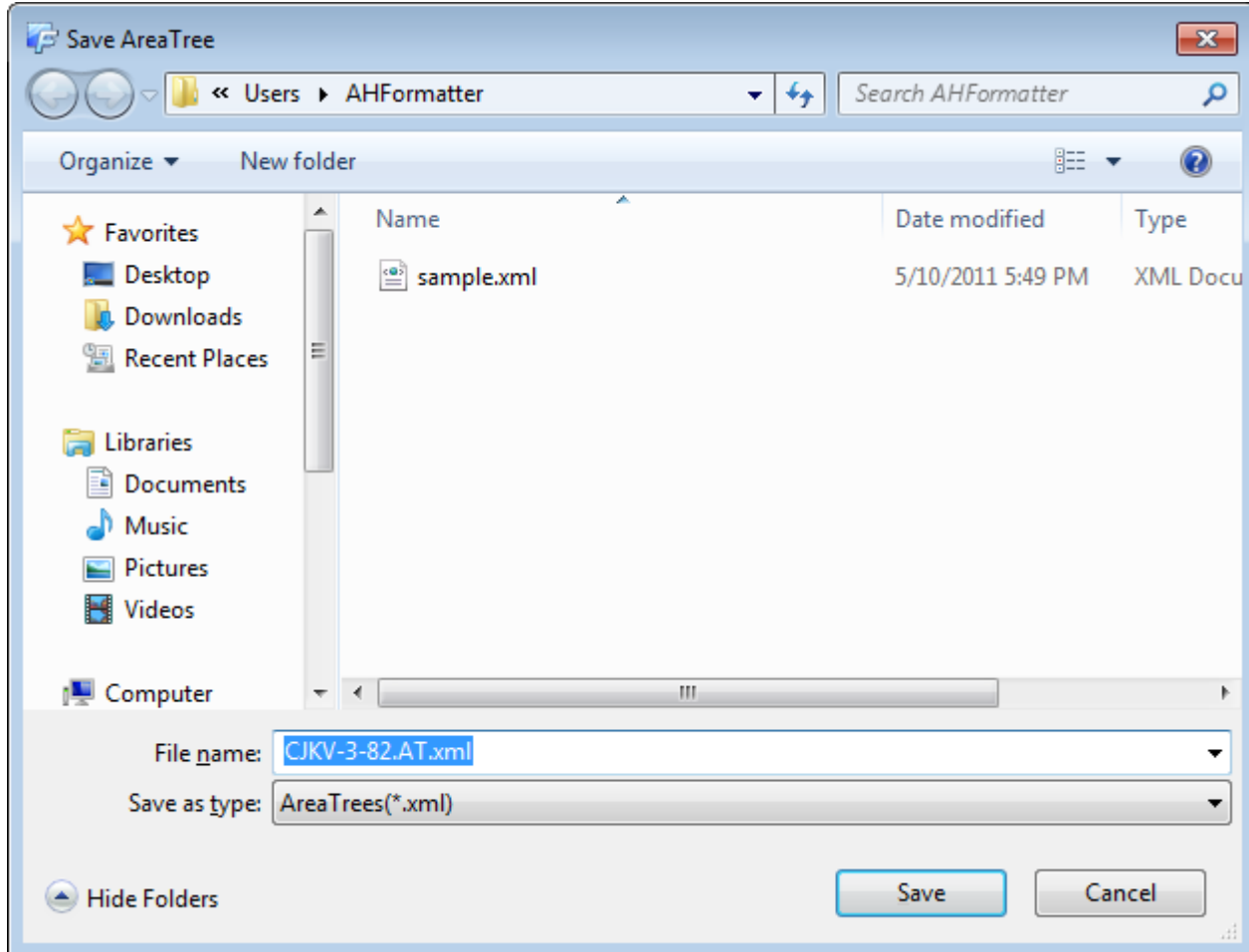
Used to specify the XSL stylesheet, CSS stylesheet or the Project file. The Project file is a file used in Antenna House [XSL Report Designer](#). FO files can only be specified in the document box.

Under the each edit box, the directory or the base URL is displayed, which indicate the base directory when the relative path is specified.

Click [OK] to start formatting.

**AH Formatter V6.0** determines the file type based on its content. If from within an document a stylesheet is called, then it is not necessary to separately specify a stylesheet. The specified stylesheet is automatically adopted.

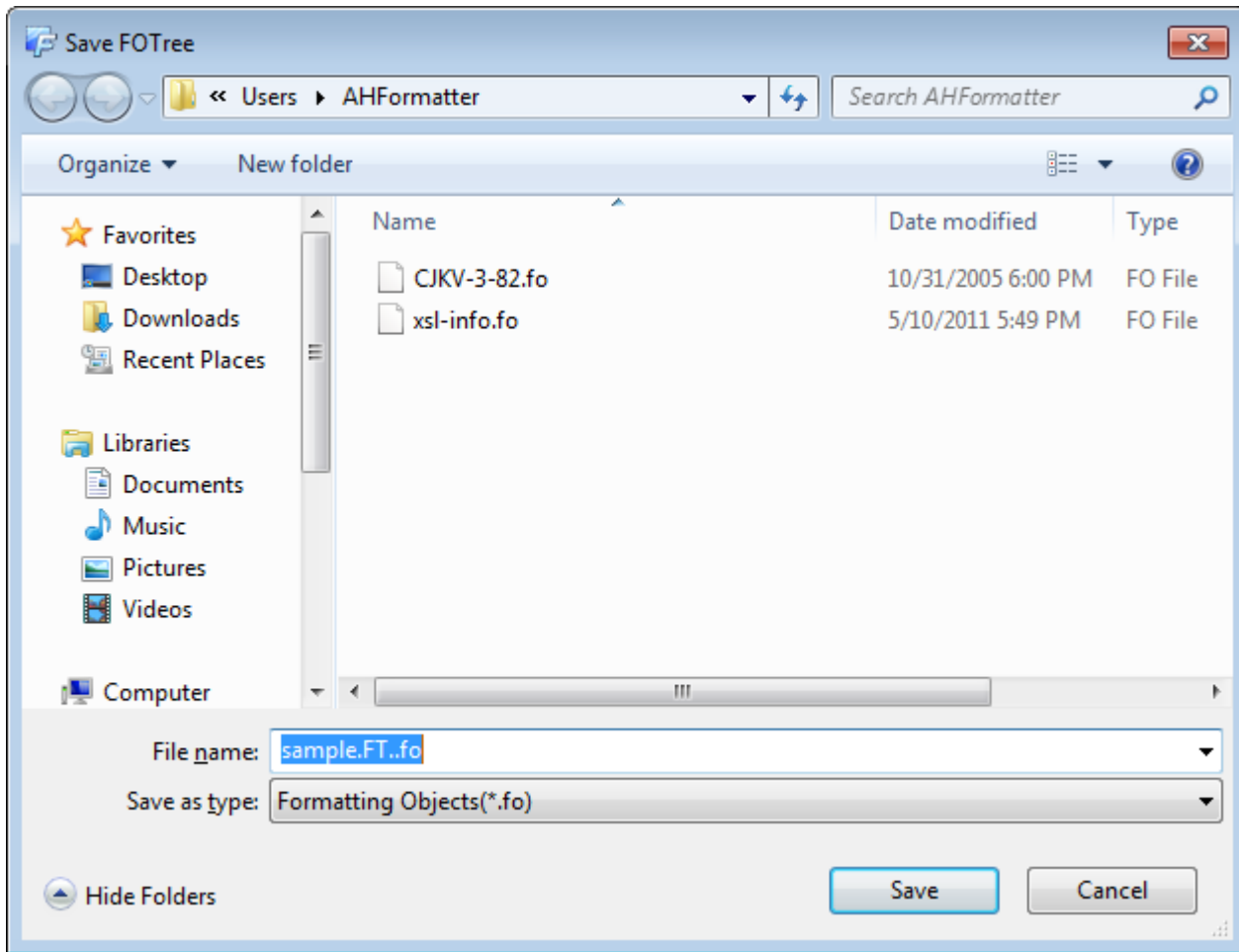
## Save AreaTree Dialog



The AreaTree is an XML representation of the formatted document that includes all the page geometry and layout information. Since all formatting information and all information necessary for formatting is included in the area tree it is a very useful tool for stylesheet developers. Press the [Save] button to save the area tree. An area tree XML file can be opened using the current browser. It's possible to format an area tree by specifying it in the document combo box of the [Document/Stylesheet Dialog](#). Caution: Area trees can be very large. Under normal circumstances they should not be modified as the reformatted results cannot be guaranteed.

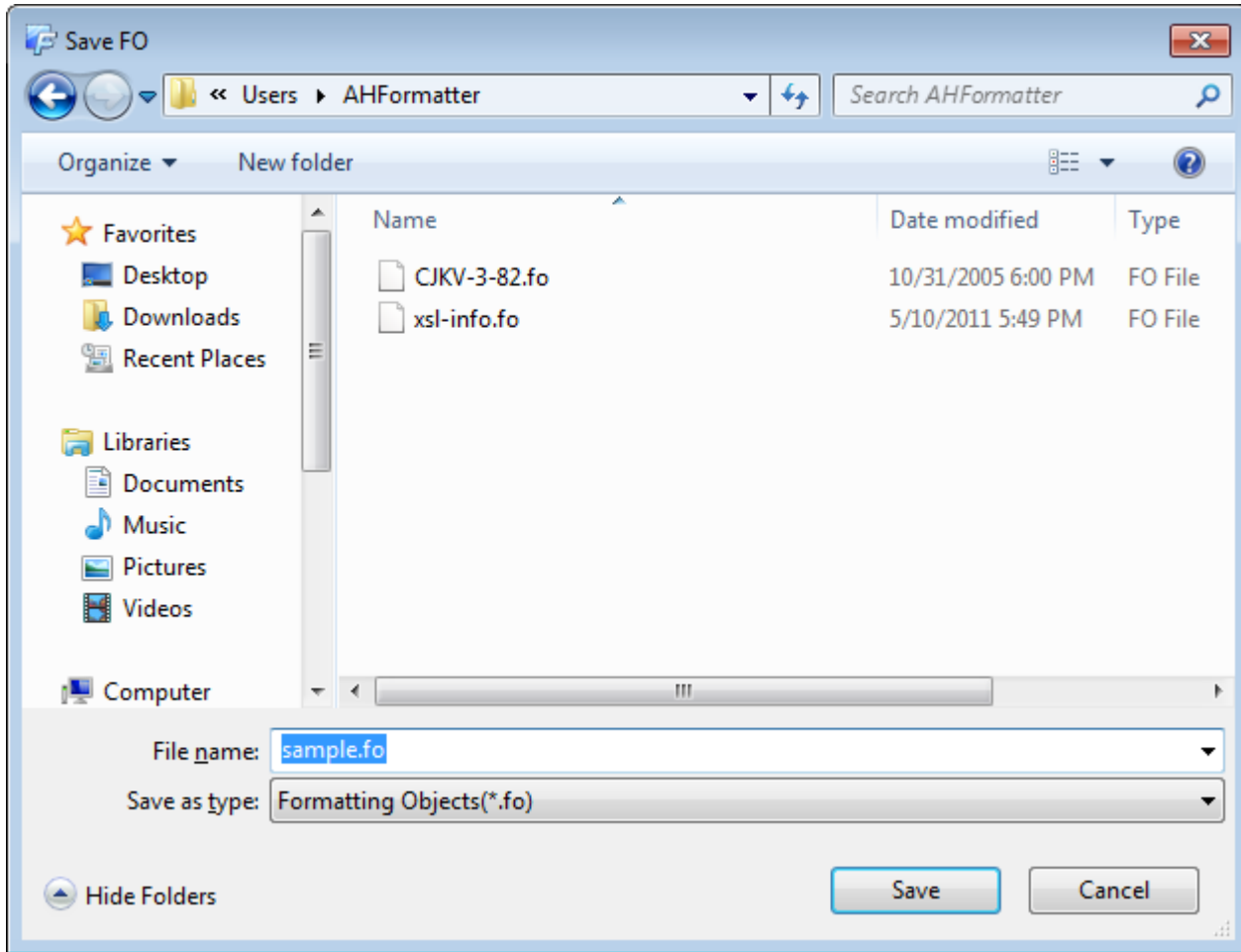
It's not available to save and load the area tree with **AH Formatter V6.0 Lite**.

## Save FOTree Dialog



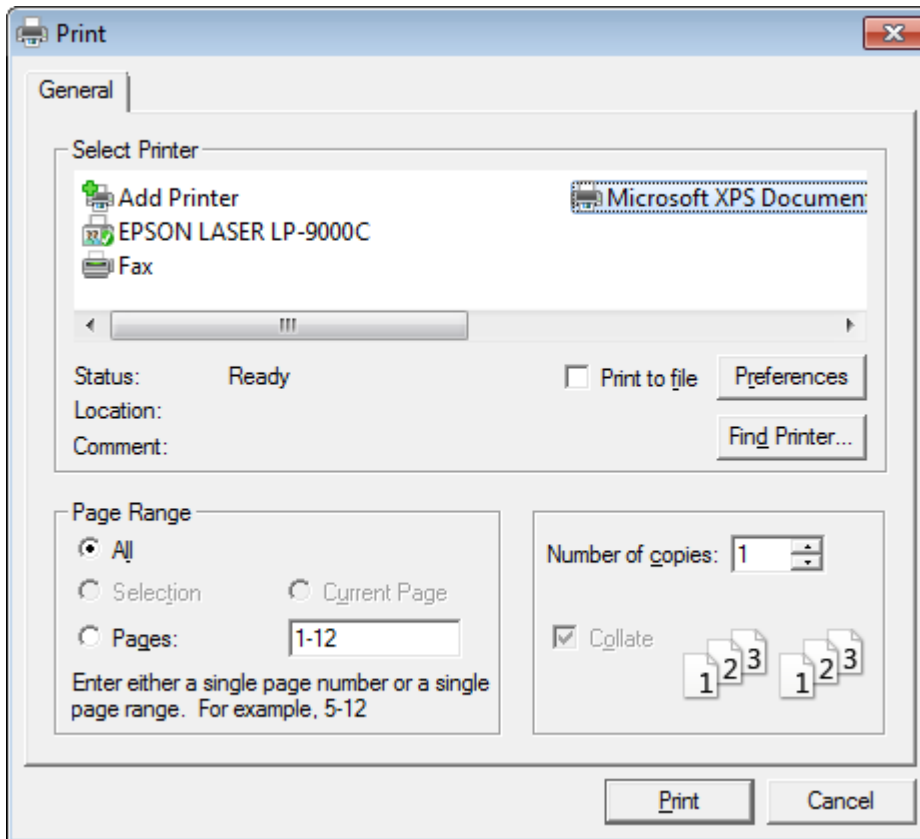
In processing an FO or XML and XSL file Formatter first complete the FO file by adding properties, adding the elements omitted in the loaded FO or the resulting FO of the XSLT transformation and removing unused elements. The area tree is generated by evaluating this completed FO. Press the [Save] button to save the FO that was made at this time. If you format a document from the area tree or when you format with CSS, this menu cannot be selected.

## Save FO Dialog



This menu item lets you save an FO file that is the result of the XSLT transformation of the XML and XSL files that is being formatted. This menu is only available for files formatted from XML and XSL files.

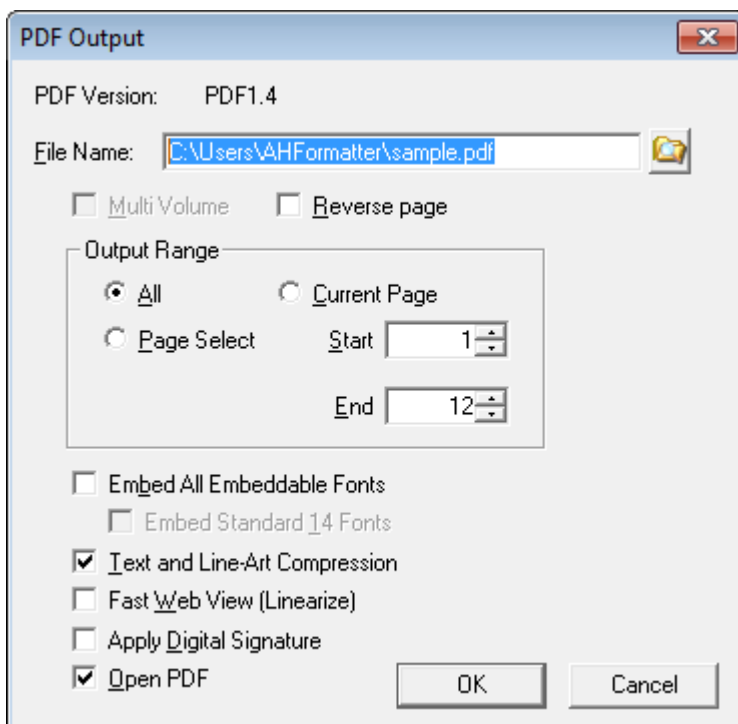
## Print Dialog



The print Dialog lets you output the formatted result to any printer installed or accessible from your Windows system. The user can select to print all pages, a range of pages, or selected pages. If formatting is not completed in the GUI Formatter reformats the document from the beginning for output to the printer. For this reason it may take more time to output to a printer than the GUI. The border used to confirm how the formatted result is divided in areas does not affect Print Output.

See also [Restrictions](#) regarding print.

## PDF Output Dialog



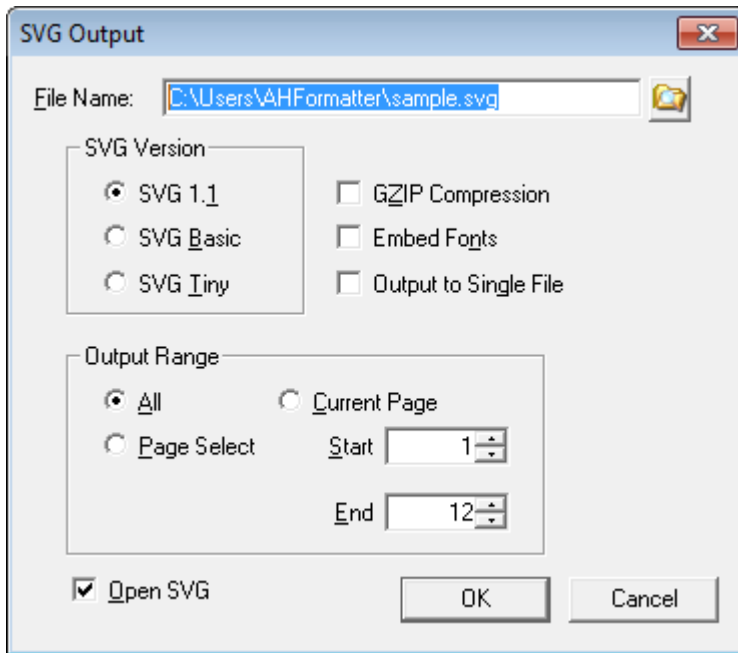
The PDF Output Menu enables outputting the formatted results to PDF by using the PDF output engine developed by Antenna House. Through the menu a user can select to output the entire document or selected range of pages. If formatting is not completed in the GUI then Formatter reformats the document from the beginning for output to PDF. For this reason it may take more time to output to a PDF file than the GUI. The border used to confirm how the formatted result is divided in areas does not affect PDF Output.

- Multi Volume no-LT  
When FO includes the [axf:output-volume-info](#) extension property which enables to output the volume separately, it's effective to check. By checking here, the output volume can be separated.  
**CAUTION:** The volume cannot be output separately with the CSS formatting.
- Reverse page  
Outputs pages in reverse order to PDF, from the end page to the start page.
- Output Range  
Specifies the number of volumes when outputting in multi separate volume, and specifies the number of pages for others. If the specified value in [End(E)] is 0 or larger than the actual number of volumes or pages, the output range continues to the end.
- Embed All Embeddable Fonts  
Embedding fonts in a PDF makes it possible to create a PDF that can be browsed anywhere and independent of the fonts available on the local machine. This is particularly important when generating multilingual PDF files. The negative is that it can substantially increase the size of the PDF file. When [PDF/X](#) is specified to create, all embeddable fonts are embedded. At that time, the check box is displayed in gray color.
- Embed Core 14 Fonts  
Usually, [Standard 14 Fonts](#) are not embedded even if the [Embed All Embeddable Fonts] check box is checked, However, by checking the [Embed Standard 14 Fonts] check box, Standard 14 Fonts can be embedded. When [PDF/X](#) is specified to create, Standard 14 fonts are embedded. At that time, the check box is displayed in gray color.
- Text and Line-Art Compression  
Selecting this option makes the PDF file more compact by compressing the text and line-art.
- Fast Web View no-LT  
Generates Linearized PDF. In PDF's character, it cannot be optimized unless once usual PDF is generated. Therefore, although the generation of the Linearized PDF requires time rather than usual, the display of the generated PDF on the Web will be in high-speed.
- Apply Digital Signature no-LT  
Specifies whether to apply a [digital signature](#) to a PDF file or not. Even when there is no [signature field](#), it's available to check it. But in this case a digital signature is not applied. In addition, when the PDF version is PDF/X or PDF/A, it's displayed in gray tones.  
**CAUTION:** In order to apply the digital signature, [PDF Digital Signature Module](#) must be installed on your PC.  
**CAUTION:** The digital signature cannot be applied with the CSS formatting.
- Open PDF  
Opens the created PDF using the application associated with extension [.pdf](#) (in many cases, it is Adobe Acrobat or Reader).

Changes made in PDF Output Dialog are temporary and do not affect the much more comprehensive [PDF Option Settings File](#) under the Format Menu. Please specify the detailed settings regarding PDF output in the [PDF Option Setting Dialog](#).

Please refer to [PDF output](#) to learn more about the outputted PDF.

## SVG Output Dialog



The SVG Output Menu enables outputting the formatted results to SVG by using the SVG output engine developed by Antenna House. Through the menu a user can select to output the entire document or selected range of pages. If formatting is not completed in the GUI then Formatter reformats the document from the beginning for output to SVG. For this reason it may take more time to output to a SVG file than the GUI. The border used to confirm how the formatted result is divided in areas does not affect SVG Output.

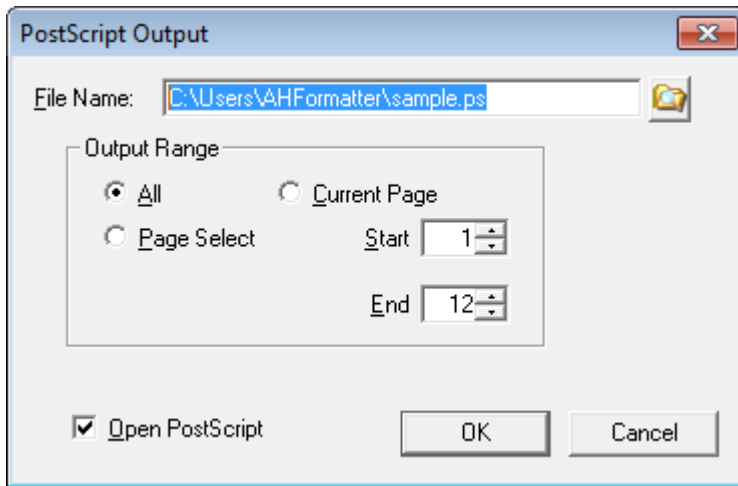
- **SVG Version**  
Selects the version of SVG to output from the followings:
  - SVG 1.1
  - SVG Basic
  - SVG Tiny
- **Output Range**  
Specifies the range to output. This feature is not available with the evaluation version.
- **GZIP Compression**  
Outputs GZIP compressed svgz. The extension is set to `.svgz`.
- **Embed Fonts**  
Embeds fonts in SVG. This feature is not available with the evaluation version.
- **Output to Single File**  
Specifies whether pages are outputted as one SVG file, or each page is outputted as an individual file when outputting two or more pages. When outputting two or more SVG, page numbers are placed before the extension of the output file name. For example, if the specified file name is `document.svg`, page numbers are put as `document1.svg`, `document2.svg`,... The number format can be set in [Option Setting File](#), etc.
- **Open SVG**  
Opens the created SVG using the application associated with extension `.svg`.

Changes in SVG Output Dialog are temporary and are not reflected to the [Option Setting File](#). See also [SVG Option](#) in the [Other Settings Dialog](#).

Please refer to [SVG output](#) to learn more about the outputted SVG.



## PostScript Output Dialog

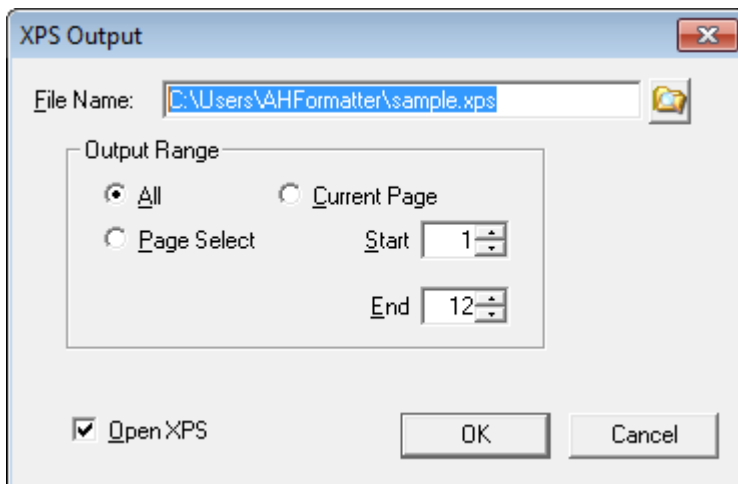


The PostScript Output Menu enables outputting the formatted results to PostScript by using the PostScript output engine developed by Antenna House. Through the menu a user can select to output the entire document or selected range of pages. If formatting is not completed in the GUI then Formatter reformats the document from the beginning for output to PostScript. For this reason it may take more time to output to a PostScript file than the GUI. The border used to confirm how the formatted result is divided in areas does not affect PostScript Output.

- Output Range  
Specifies the range to output. This feature is not available with the evaluation version.
- Open PostScript  
Opens the created PostScript using the application associated with extension `.ps`.

Please refer to [PostScript Output](#) to learn more about the outputted PostScript.

## XPS Output Dialog

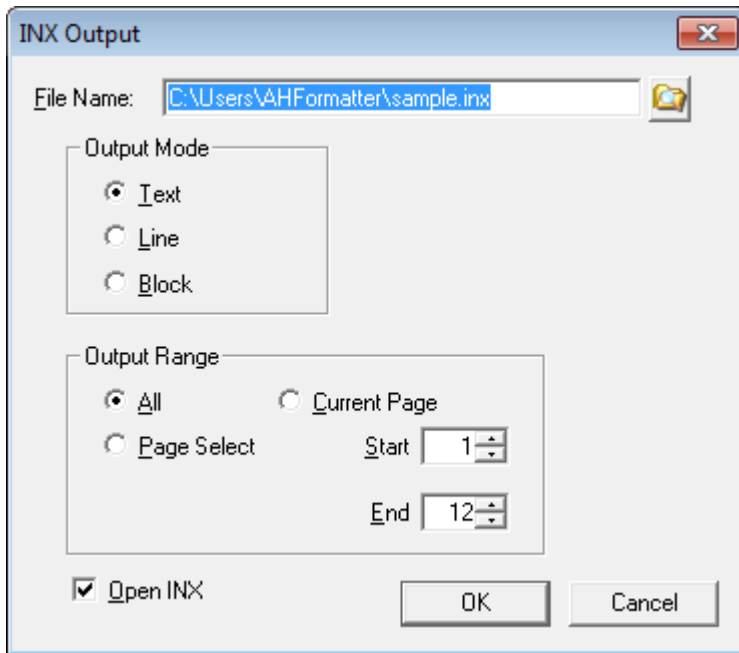


The XPS Output Menu enables outputting the formatted results to XPS (XML Paper Specification) file by using the XPS output engine developed by Antenna House. Through the menu a user can select to output the entire document or selected range of pages. If formatting is not completed in the GUI then Formatter reformats the document from the beginning for output to XPS. For this reason it may take more time to output to a XPS file than the GUI. The border used to confirm how the formatted result is divided in areas does not affect XPS Output.

- Output Range  
Specifies the range to output. This feature is not available with the evaluation version.
- Open XPS  
Opens the created XPS using the application associated with extension `.xps`.

Please refer to [XPS Output](#) to learn more about the outputted XPS.

## INX Output Dialog

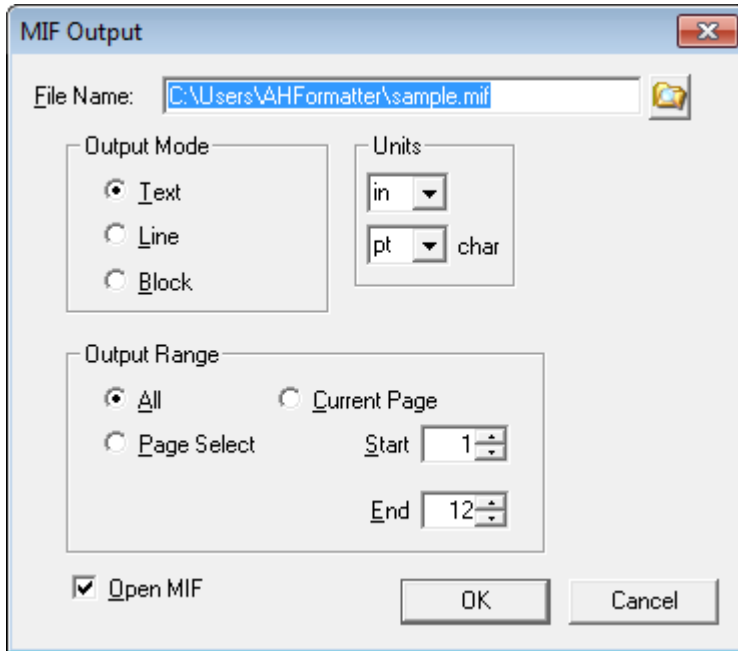


The INX Output Menu enables outputting the formatted results to INX (InDesign Interchange File) by using the INX output engine developed by Antenna House. Through the menu a user can select to output the entire document or selected range of pages. If formatting is not completed in the GUI then Formatter reformats the document from the beginning for output to INX. For this reason it may take more time to output to a INX file than the GUI. The border used to confirm how the formatted result is divided in areas does not affect INX Output.

- Output Mode
  - Selects the mode of text frame to output from the followings: Please refer to [INX Output](#) to learn more about Output Mode.
    - Text
    - Line
    - Block
- Output Range
  - Specifies the range to output. This feature is not available with the evaluation version.
- Open INX
  - Opens the created INX using the application associated with extension `.inx`.

Please refer to [INX Output](#) to learn more about the outputted INX.

## MIF Output Dialog

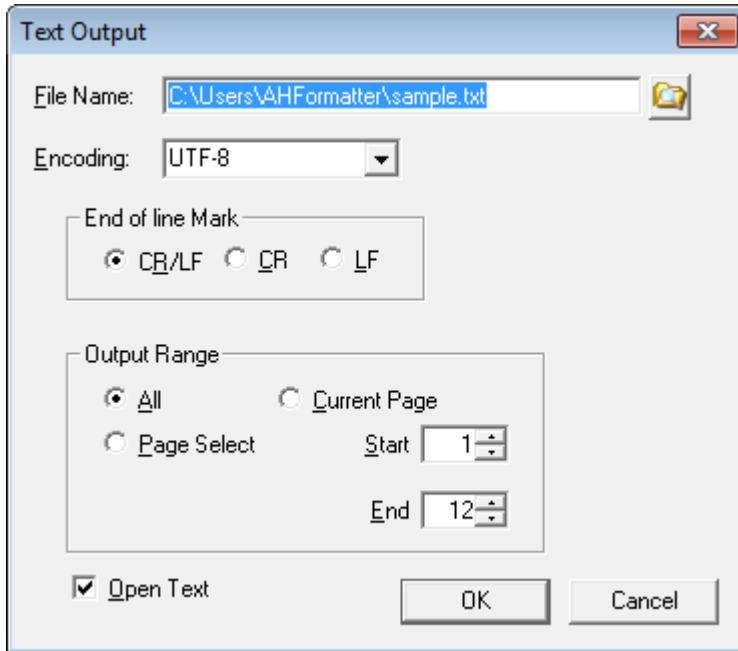


The MIF Output Menu enables outputting the formatted results to MIF (Maker Interchange Format) by using the MIF output engine developed by Antenna House. Through the menu a user can select to output the entire document or selected range of pages. If formatting is not completed in the GUI then Formatter reformats the document from the beginning for output to MIF. For this reason it may take more time to output to a MIF file than the GUI. The border used to confirm how the formatted result is divided in areas does not affect MIF Output.

- Output Mode
  - Selects the mode of text frame to output from the followings: Please refer to [MIF Output](#) to learn more about Output Mode.
  - Text
  - Line
  - Block
- Units
  - Specifies the unit of the size used with MIF. The upper list box is for a unit which specifies the size and the position (Units). The lower list box is for a unit which specifies the fontsize and the space between lines, etc (CharUnits).
  - Units
    - ◻ in
    - ◻ cm
    - ◻ mm
    - ◻ pt
    - ◻ pc
    - ◻ dd
    - ◻ cc
  - CharUnits
    - ◻ pt
    - ◻ q
- Output Range
  - Specifies the range to output. This feature is not available with the evaluation version.
- Open MIF
  - Opens the created MIF using the application associated with extension `.mif`.

Please refer to [MIF Output](#) to learn more about the outputted MIF.

## Text Output Dialog

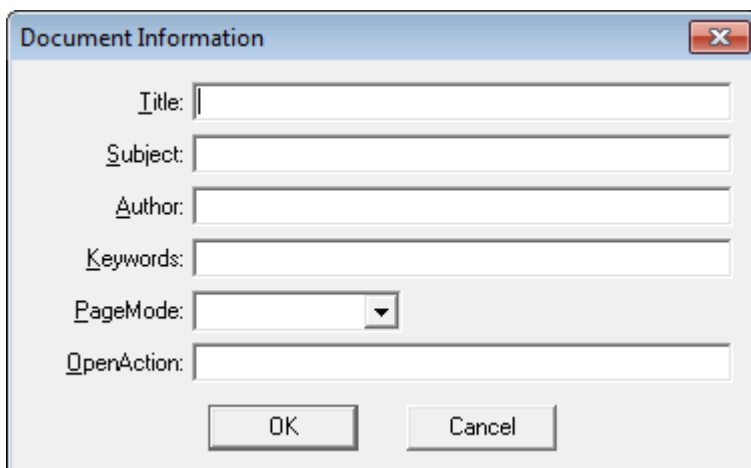


The TEXT Output Menu enables outputting the formatted results to plain text format. `no-LT`

- Encoding
  - Specifies the encoding of the output text. The default value is UTF-8. Please choose one from the list or input an encoding you want to specify. Refer to encoding attribute on [TEXT Output Settings](#) about the value which can be specified.
- End of line Mark
  - Selects the type of 'End of line Mark' from the followings:
    - CR/LF
    - CR
    - LF
- Output Range
  - Specifies the range to output. This feature is not available with the evaluation version.
- Open Text
  - Opens the created Text file using the application associated with extension `.txt`.

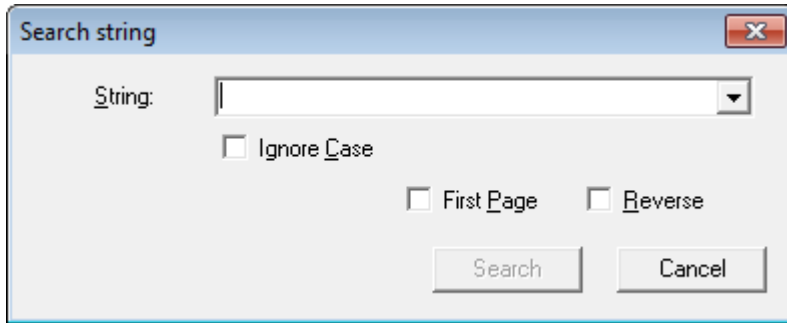
Please refer to [TEXT Output](#) to learn more about the outputted TEXT. Text output cannot be performed with **AH Formatter V6.0 Lite**.

## Document Information Dialog



The information of `axf:document-info` in FO is displayed. The content can be changed here, and it can be reflected to the output PDF. The content of the change is not reflected in former FO. Refer to `axf:document-info` for details.

## Search String Dialog



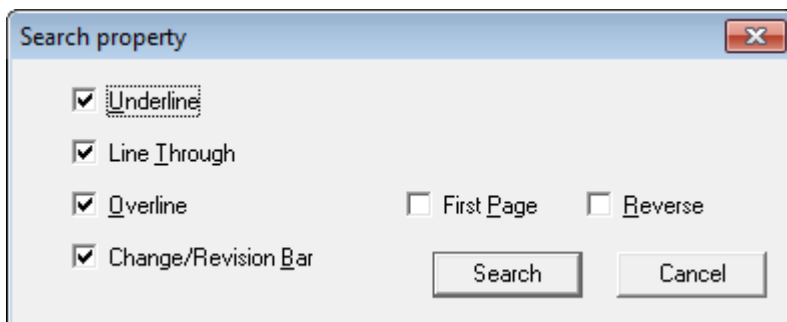
Specify a sequence of characters to search. This dialog continues being displayed until it closes. When some characters have found in the last searching, It start searching from the following character. For example, when ABCDE is searched and is found, the next searching starts from B. When having found nothing, the searching begins from the first or the last page. In order to cancel the highlight of a searching result, please click anywhere on the GUI screen.

- Ignore Case  
Searches a sequence of characters without distinguishing upper-case and lower-case. It is applied to all Latin alphabets, Cyrillic alphabets, etc. that have upper and lower case characters.
- First Page / Last Page  
When these check boxes are checked, It starts searching from the first or the last page. When the Reverse check box is unchecked, the display of the check box on the left side changes to [First Page]. When the Reverse check box is checked, the display of the check box on the left side changes to [Last Page].
- Reverse  
When the [Reverse] check box is checked, it starts searching toward the first page.

This search function has the following limitations.

- Impossible to search neither what has been deleted such as a white space, nor the strings summarized to one.
- Impossible to search the strings whose spelling has changed by the hyphenation.
- Impossible to search the strings whose spelling has changed by the hyphenation.

## Search Property Dialog

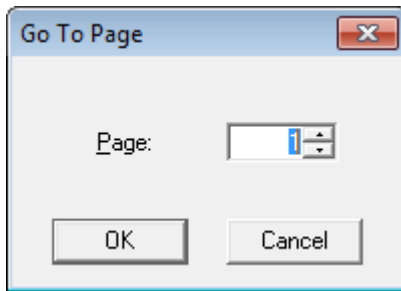


Specify a property to search. This dialog continues being displayed until it closes.

- Underline / Line Through / Overline / Change/Revision Bar  
Specify a property to search.
- First Page / Last Page  
When these check boxes are checked, It starts searching from the first or the last page. When the Reverse check box is unchecked, the display of the check box on the left side changes to [First Page]. When the Reverse check box is checked, the display of the check box on the left side changes to [Last Page].
- Reverse  
When the [Reverse] check box is checked, it starts searching toward the first page.

## Go To Page Dialog

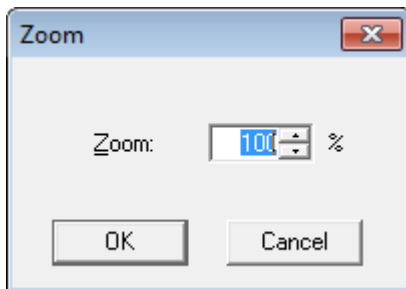
---



Used to specify the page number to go to and can be from 1 to the total number of formatted pages displayed in the [Status Bar](#).

## Zoom Dialog

---



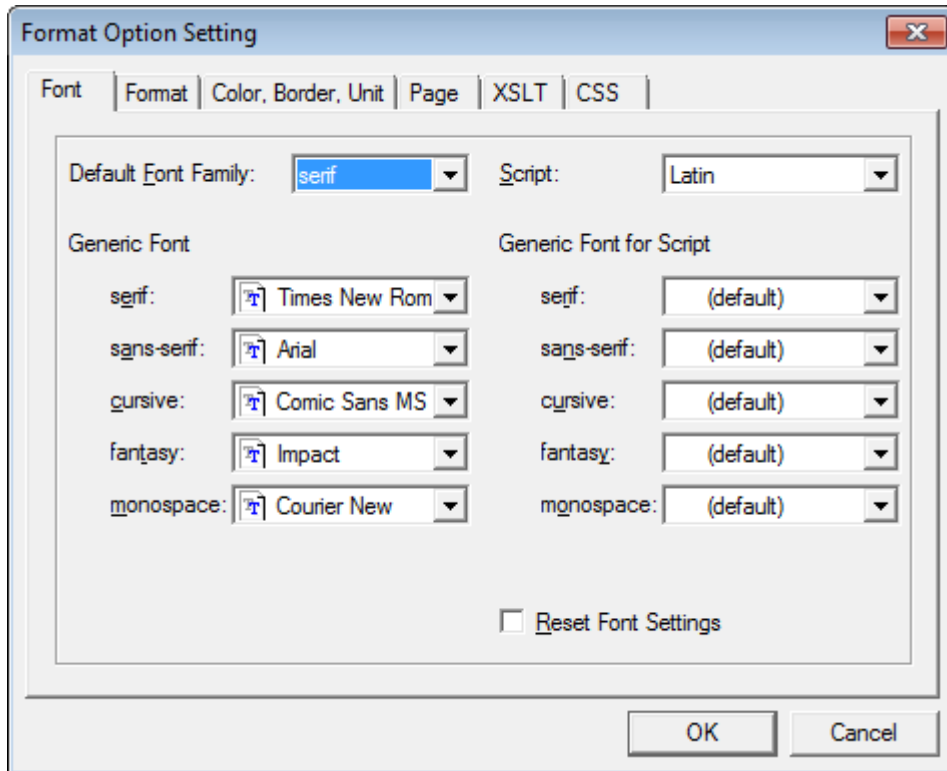
Specifies the zoom ratio. Can be set from 5% to 2000%.

## Format Option Setting Dialog

---

By default if the `AHFSettings.xml` (`AHFSettings(x64).xml` for Windows x64 version) file exists in the application data directory this file is automatically loaded at startup as the [Options Setting File](#). The application data directory is indicated by the environment variable, APPDATA. `[APPDATA]\AntennaHouse\AHFormatter\6.0\` If you want to load the other setting file, click [Import Setting Files](#) on the Format menu. Through the Format Option Setting Dialog, formatting items in the [Option Setting File](#) can be modified. Once changes are made through the [Format Option Setting Dialog](#), click [OK] to write the changed items to the `AHFSettings.xml` (`AHFSettings(x64).xml` for Windows x64 version) file that exists in the application data directory. Next time **AH Formatter V6.0** is started the saved settings will be used.

## Font



- Default Font Family

Specifies the generic font family to use automatically when there is no setting of the font family in the FO or CSS. If a generic font family is specified in the FO or CSS, this setting is ignored. The following five generic font families can be defined:

- serif
- sans-serif
- cursive
- fantasy
- monospace

Please refer to the following [Generic Font] for more detail.

- Generic Font

Maps actual fonts to each generic font family. Generic font families specified in the FO replace those specified here. These settings are adopted for those generic font families not specified in the FO or CSS.

```
<fo:block font-family="serif">
```

Generic font families are symbolic names defined in [CSS2 Specification](#). XSL Specification derives the generic font family from the CSS2 Specification.

Serif font families are fonts which have a slight projection at the end of a letters/glyphs such as Mincho (Japanese) and Times New Roman. Sans-serif font families have plain stroke endings for their letters/glyphs and corresponds to fonts such as Gothic (Japanese), Helvetica and Arial. Cursives are font families that have connected strokes and Italic typefaces for its glyphs such as Soushotai (Japanese). Fantasy fonts are primarily decorative. Monospace is a font family that its font pitch is fixed, such as Courier.

- Script

The Script setting lets you set the generic font families to be used for 10 different writing systems. This includes Japanese, Chinese Simplified, Chinese Traditional, Korean, Latin, Cyrillic, Greek, Arabic, Hebrew and Thai. Each of the 10 writing systems can have its own set of generic font families defined.

- Generic Font for Script

Fonts specified in the FO or CSS supersede the Generic font settings. When fonts are not defined in the FO or CSS then these settings are adopted.

The following examples illustrate which fonts would be used if serif was specified as the generic Font, the font-family and script properties are not specified in FO or CSS, and the script for the text is unclear.

1. `<fo:block>TEXT...`

The font specified in the serif combo box in Generic Font is used for the TEXT.

2. `<fo:block font-family="sans-serif">TEXT...`

The font specified in the sans-serif combo box in Generic Font is used for the TEXT.

3. `<fo:block script="ja">TEXT...`

The font specified in the serif combo box in Generic Font for Serif for Japanese is used. If it is not specified, the font specified in the serif combo box in Generic Font is then used.

4. `<fo:block script="ja" font-family="sans-serif">TEXT...`

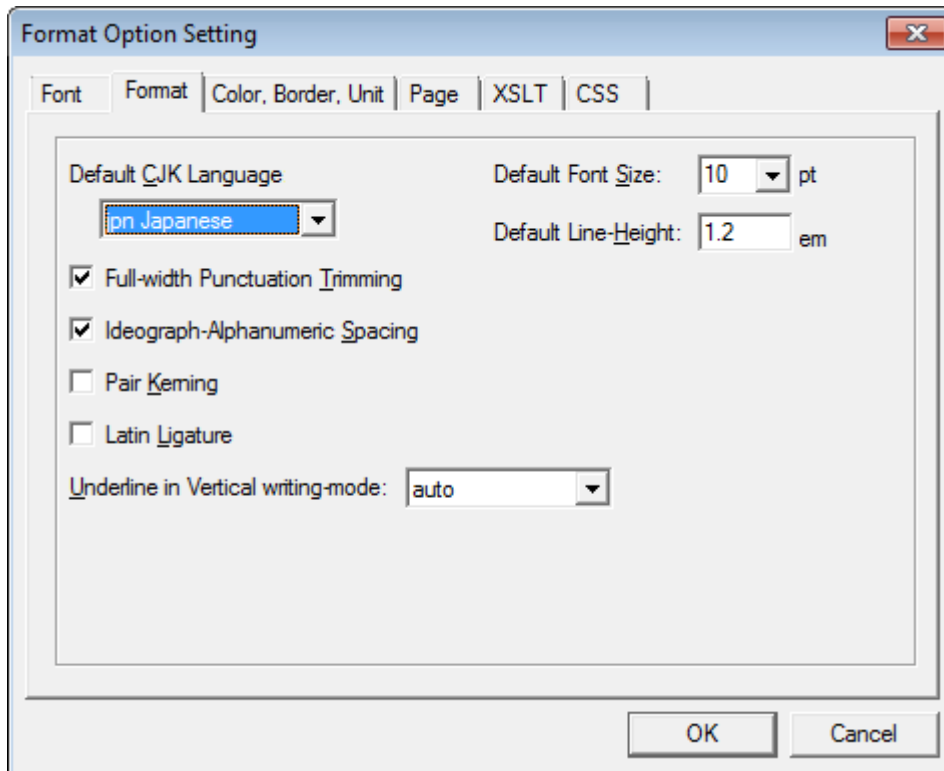
The font specified in the sans-serif combo box in Generic Font for sans-serif for Japanese is used. If it is not specified, the font specified in the sans-serif combo box in Generic Font is then used.

Please refer to [Font Selection](#) to learn how to select fonts for more details.

- Reset Font Settings

Check Reset Font Settings to reset all font settings to the default. Press [OK] to execute the setting.

## Format



- Default CJK Language

When the script is not explicitly specified, there may be cases where it is hard to distinguish CJK (Chinese/ Japanese/Korean) in Kanji. In such cases, the setting here is adopted. Select the appropriate CJK language from the followings.

- jpn Japanese
- kor Korean
- zho-CN Chinese Simplified
- zho-TW Chinese Traditional

- Full-width Punctuation Trimming

Specifies whether to trim the full-width punctuation in Japanese. This setting affects the value of the extension properties, `axf:punctuation-trim="auto"` and `axf:text-justify-trim="auto"`.

- Ideograph-alphanumeric Spacing

Specifies whether to add space between Japanese text and Western text. This setting affects the value of the extension properties `axf:text-autospace="auto"`. When checked this, it is equivalent to `axf:text-autospace="ideograph-numeric ideograph-alpha"`.

- Pair Kerning

Specifies whether to process pair kernings for European languages. This setup affects the value of the `axf:kerning-mode="auto"` extension property.

- Latin Ligature

Specifies whether to process ligatures for European languages. This setup affects the value of the `axf:ligature-mode="auto"` extension property.

- Underline in Vertical Writing-mode

Specifies whether to place the underline on the right side of the text or on the left side of the text in vertical writing-mode. When 'auto' is specified, if the language in the language property is Japanese(jpn) or Korean(kor), the underline is placed



on the right side. If there is no language property specified, it depends on the standard CJK language setting. This setting affects the value of the extension property `axf:vertical-underline-side="auto"`.

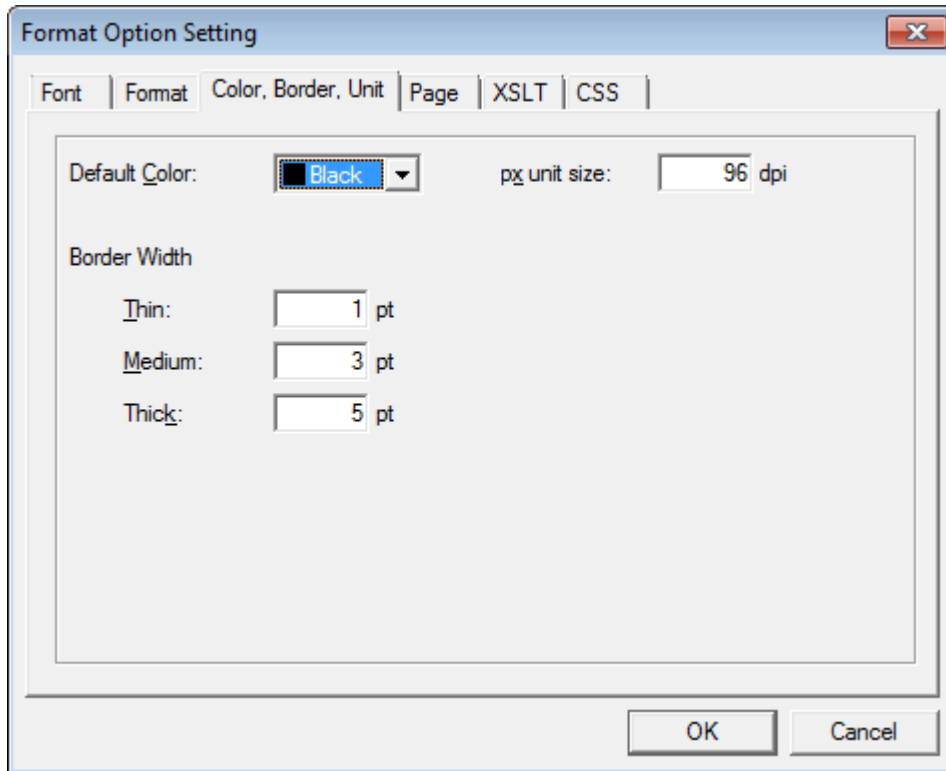
- Default Font Size

This setting is used to specify the font size when the font size is not specified in the FO or CSS. The value must be specified in point.

- Default Line-Height

















This setting is used to specify the line-height to be used when specified as a property in the FO or CSS. The value must be specified as a ratio against the font size in ems.

## Color, Border, Unit



- Default Color

Specifies the foreground color to be used when the color property is not specified in the FO or CSS. The following values can be used:

	Black	<code>color="#000000"</code>
	Blue	<code>color="#0000FF"</code>
	Aqua	<code>color="#00FFFF"</code>
	Lime	<code>color="#00FF00"</code>
	Fuchsia	<code>color="#FF00FF"</code>
	Red	<code>color="#FF0000"</code>
	Yellow	<code>color="#FFFF00"</code>
	White	<code>color="#FFFFFF"</code>
	Navy	<code>color="#000080"</code>
	Teal	<code>color="#008080"</code>
	Green	<code>color="#008000"</code>
	Purple	<code>color="#800080"</code>
	Maroon	<code>color="#800000"</code>
	Olive	<code>color="#808000"</code>
	Gray	<code>color="#808080"</code>
	Silver	<code>color="#C0C0C0"</code>

- Border Width

Specifies the actual border width of the three symbolic values; thin, medium and thick that can be written in FO or CSS. The value must be specified in pts (points).

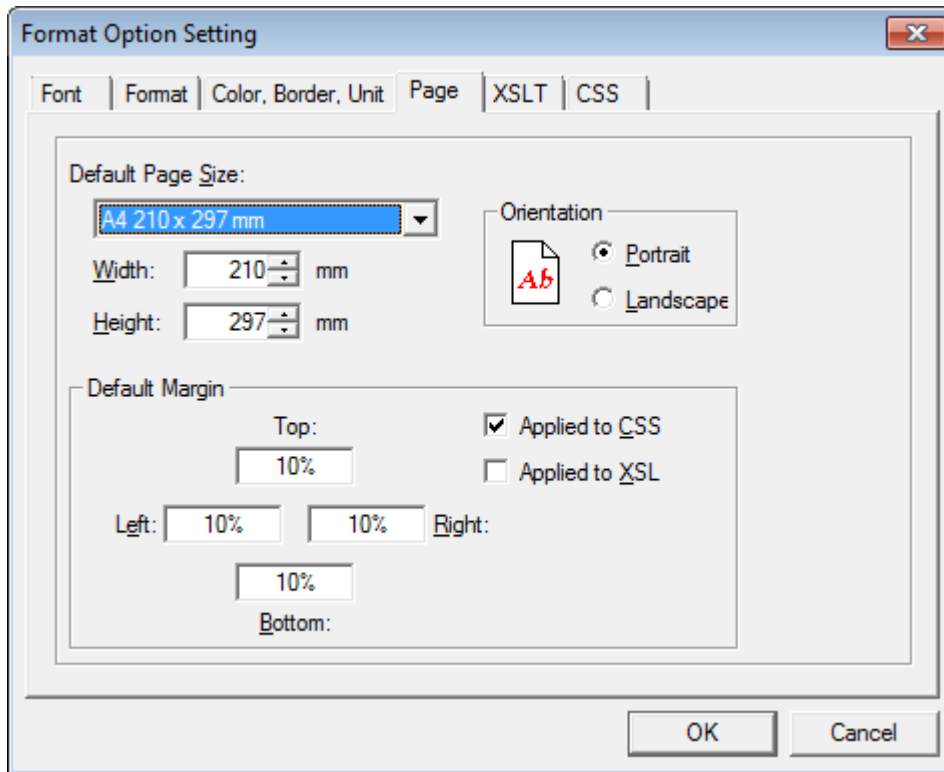
```
<fo:block border-width="thin">
```

- px unit size

Specifies the conversion factor for px (pixel) units written in FO or CSS as a point number per inch. This value is actually used when the formatted results are outputted to a browser or PDF. In XSL, you can specify 'pixel' as a unit of measure-

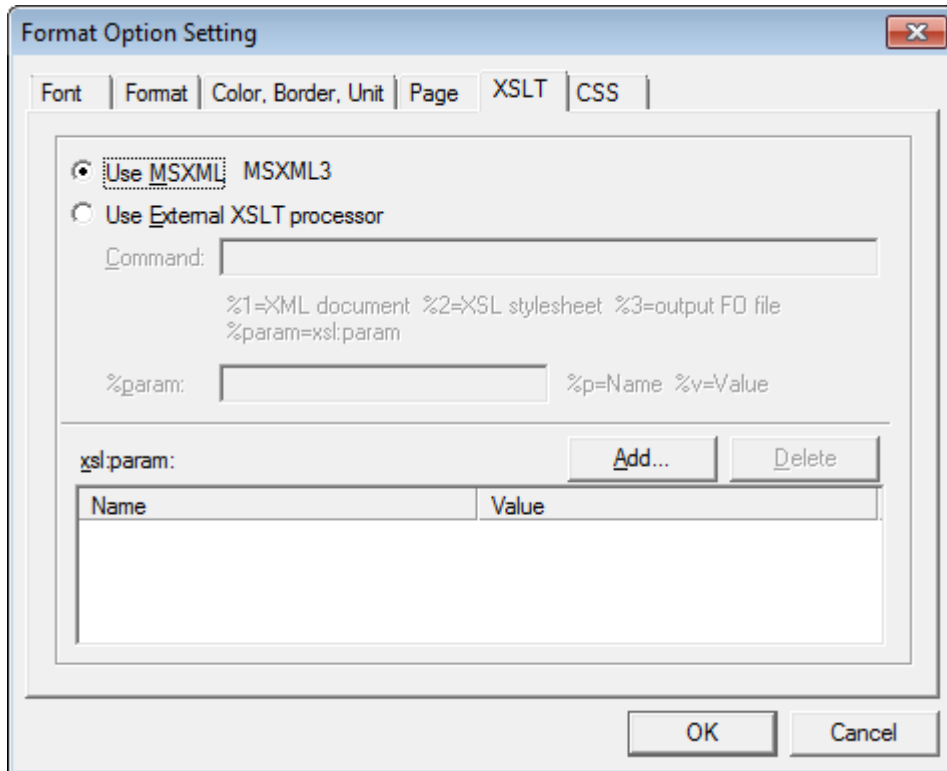
ment. P<sub>xpi</sub> specifies the coefficient, which converts the value of the specified pixel, as "the number of pixels per inch" when formatting. It's specified with the real-type numeric value. The initial value is 96.

## Page



- **Default Page Size**  
Specifies the page size to be used when the page-width and page-height properties are not specified in the FO or CSS. The page size selected from the combo boxes reflects the [Width] and [Height]. The page size can be changed arbitrarily. If you change the orientation of the page in the [Orientation] in this dialog, the value of the [Width] and [Height] are swapped.
- **Default Margin**  
Specify the margin of a page applied to FO or CSS when there is no specification of the margin.
- **Applied to CSS**  
When there is no margin specification by @page in CSS, the value specified in Default Margin is applied to CSS. The margin becomes zero when there is no check.
- **Applied to XSL**  
When there is no margin specification in fo:simple-page-master in XSL, the value specified in Default Margin is applied to XSL. The margin becomes zero when there is no check.

## XSLT



Specifies the settings regarding XSLT processors. See also [XSLT Settings](#) for more details.

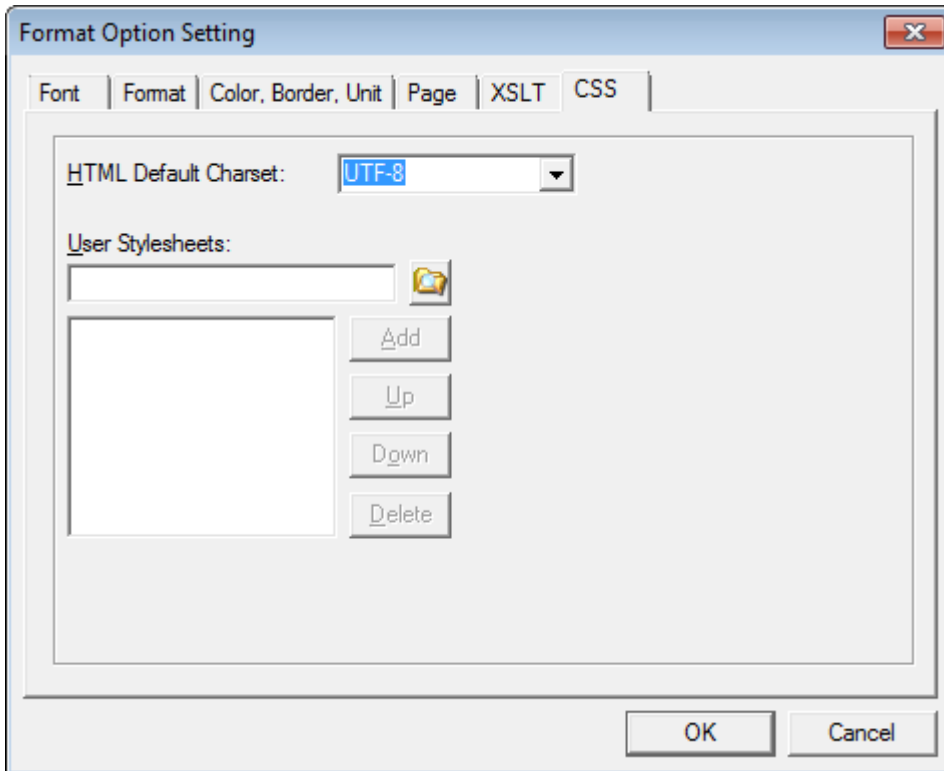
- Use MSXML  
Check [Use MSXML] to use MSXML3 or MSXML4 as an XSLT processor.
- Use External XSLT processor  
Check [Use External XSLT processor] to use an external XSLT processor. You have to specify the command-line format of a XSLT processor to use to [Command] and specify the Parameter format of xsl:param to [%param]. It is considered that MSXML is used when the command-line is not specified.
- xsl:param  
Specifies the parameter name and the parameter value of xsl:param given to an XSLT processor. Press [Add...] to add parameters, press [Delete] to delete the selected parameter.

Below shows examples of setting for some major XSLT processors.

- msxsl  
command: `msxsl %1 %2 -o %3 %param`  
%param: `%p=%v`
- Xalan  
command: `java -cp xalan.jar org.apache.xalan.xslt.Process -IN %1 -XSL %2 -OUT %3 %param`  
%param: `-PARAM %p %v`
- Saxon  
command: `java -cp saxon.jar com.icl.saxon.StyleSheet -o %3 %1 %2 %param`  
%param: `%p=%v`
- libxslt  
command: `xsltproc --output %3 %param %2 %1`  
%param: `--param %p %v`

**CAUTION:** The example shown here may be inaccurate. Please refer to each site and document.

## CSS



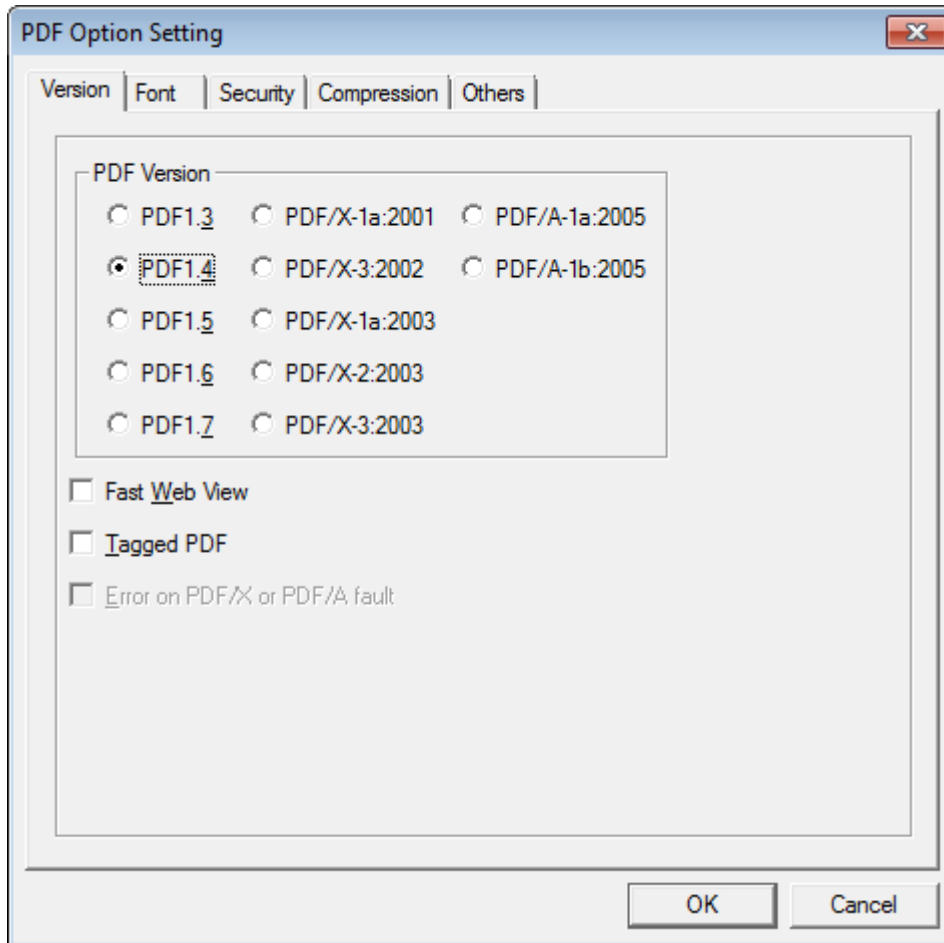
Settings of CSS for HTML.

- **HTML Default Charset**  
Specifies the default charset of HTML. The default value is UTF-8. Please choose one from the list or input a charset you want to specify. The character set in the [Supported Encoding](#) can be specified.
- **User Stylesheets**  
Set CSS stylesheets the user uses. The stylesheet specified here is applied by the specification order posterior to the default stylesheet (html.css). Sample user stylesheets are included in `[Install directory]/UserStylesheets` (Windows version) or in `[Install directory]/etc/UserStylesheets` (Non Windows version). See also [Cascading Order of CSS Stylesheet](#).

## PDF Option Setting Dialog

In PDF Option in the Other Setting Dialog, the item concerning PDF set in the [Option Setting File](#) is adjusted. The contents changed here are written out to `AHFSettings.xml` (`AHFSettings(x64).xml` for Windows x64 version) which exists in the application data directory by clicking the [OK] button. Therefore, it is reflected next time of the starting.

## Version



- PDF Version

Selects the PDF version to output from the followings:

- PDF1.3 – Acrobat 4.0
- PDF1.4 – Acrobat 5.0
- PDF1.5 – Acrobat 6.0
- PDF1.6 – Acrobat 7.0
- PDF1.7 – Acrobat 8.0
- PDF/X-1a:2001 – ISO 15930-1:2001 (based on PDF1.3) no-LT
- PDF/X-3:2002 – ISO 15930-3:2002 (based on PDF1.3) no-LT
- PDF/X-1a:2003 – ISO 15930-4:2003 (based on PDF1.4) no-LT
- PDF/X-2:2003 – ISO 15930-5:2003 (based on PDF1.4) no-LT
- PDF/X-3:2003 – ISO 15930-6:2003 (based on PDF1.4) no-LT
- PDF/A-1a – ISO 19005-1:2005 (based on PDF1.4) no-LT
- PDF/A-1b – ISO 19005-1:2005 (based on PDF1.4) no-LT

PDF/X or PDF/A cannot be selected with **AH Formatter V6.0 Lite**

- Fast Web View

Generates Linearized PDF. Linearized PDF enables PDF files to be viewed much faster over the Web by enabling viewing of the PDF as soon as the first page is downloaded rather than requiring that the entire PDF file be downloaded before it can be viewed. To linearize a PDF file is a two step process: First, a standard PDF file is produced. Second, the standard PDF file is linearized. generated first and then that file is linearized.

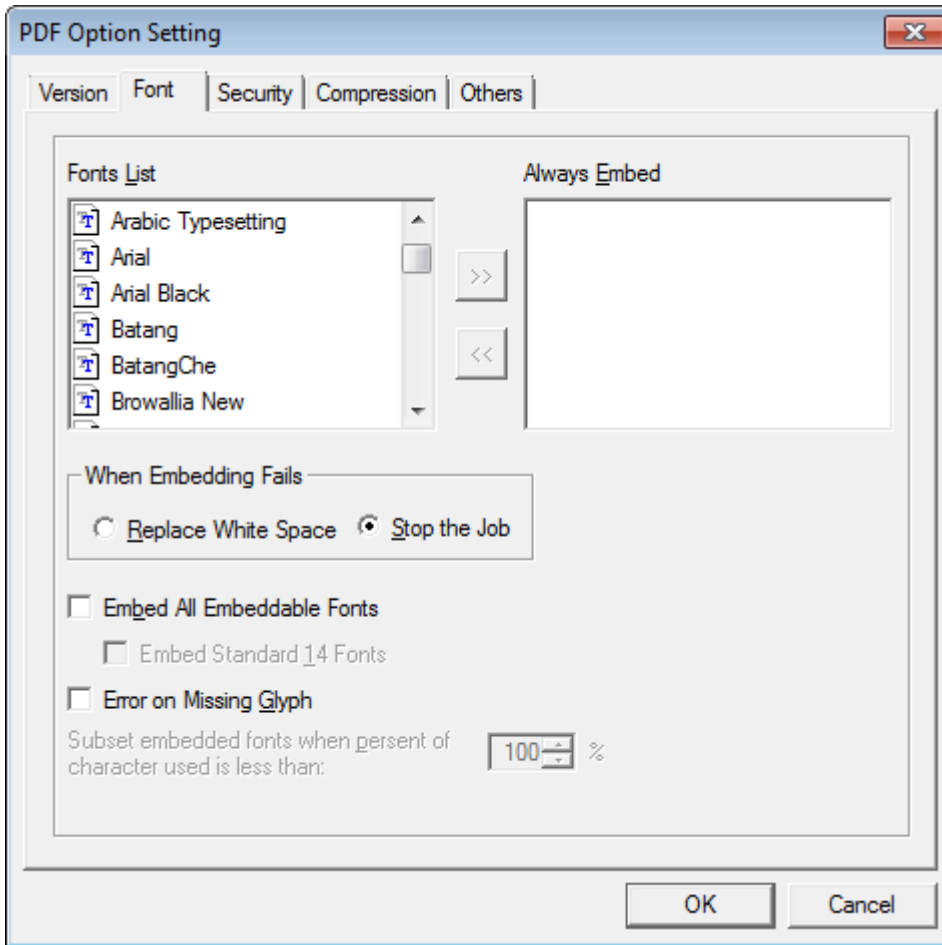
- Tagged PDF no-LT

Creates the **Tagged PDF**. When the created PDF is PDF1.3 , or with **AH Formatter V6.0 Lite** Tagged PDF cannot be selected.

- Error on PDF/X or PDF/A fault no-LT

Specifies whether to stop formatting as an error or ignore the unsuitable content and continue formatting when a content which is unsuitable for PDF/X or PDF/A is detected while creating PDF/X or PDF/A, such like PDF/X-1a that contains RGB images. When the processing is continued, a generated PDF may be incongruent as PDF/X or PDF/A. As a regular PDF, there would be no problem.

## Font



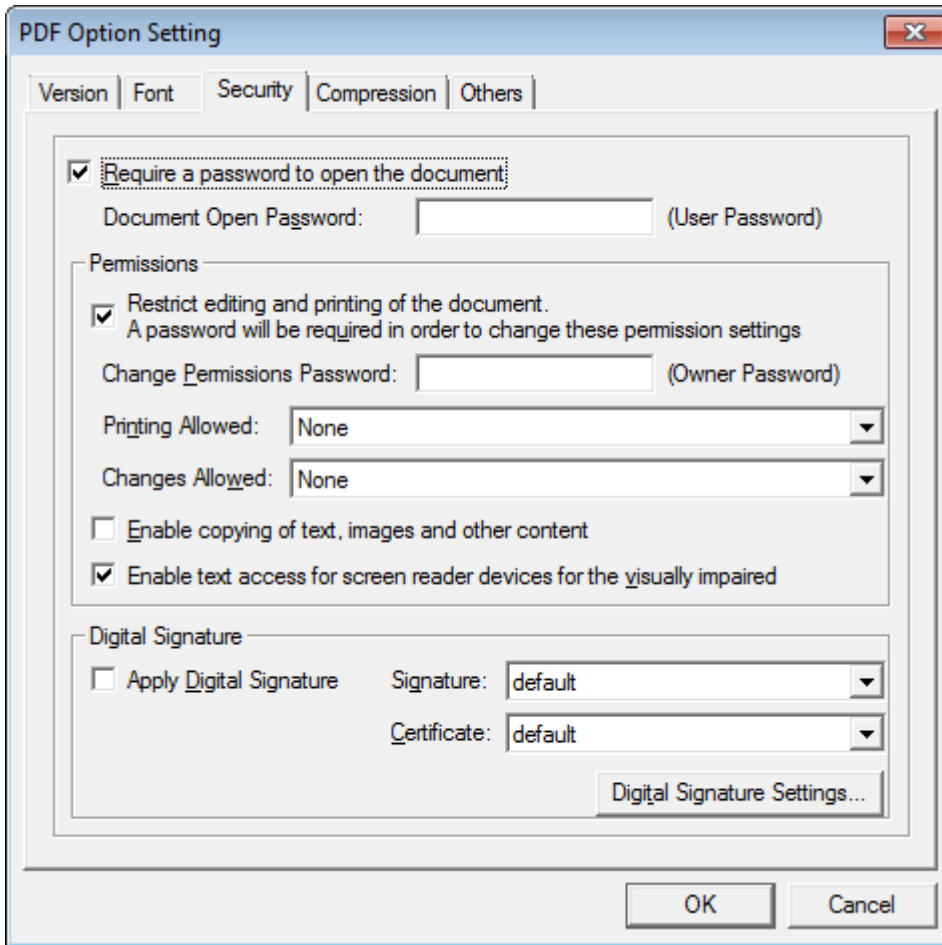
Select the target fonts you want to embed in PDF from the [Fonts List]. Press the [>>] button to move the selected font to [Always Embed]. If you want to delete the font from Always Embed. Press the [<<] button.

Gray-colored fonts are not available to embed. Also there may be a case that a font that cannot be embedded is included in the Font list if you edited the font originally in the [Option Setting File](#). Despite being in the list the font cannot be embedded

When PDF/X is specified to create, The items regarding embedding fonts in this page are displayed in gray color.

- This option lets you select what you want the system to do if embedding of a font fails.  
Select either:  
[Replace White Space] to continue embedding font. The font is replaced with white space and will be embedded.  
[Stop the Job] to stop embedding. An error will be reported and the PDF generation will be stopped.
- Embed All Embeddable Fonts  
Check [Embed All Embeddable Fonts] to embed all embeddable fonts in PDF. If this option is checked the fonts in the [Font List] and [Always Embed] are displayed in gray color.
- Embed Standard 14 Fonts  
Usually, Standard 14 Fonts are not embedded even if the [Embed All Embeddable Fonts] check box is checked, However, by checking the [Embed Standard 14 Fonts] check box, Standard 14 Fonts can be embedded.
- Error on Missing Glyph  
When the corresponding glyph for certain character to be displayed does not exist in the specified font, specifies whether to break off the processing as an error. Even if PDF is generated without checking this item, the character will be displayed as a white space or a small box in PDF for missing glyph. Also the glyph might actually not be exist in the specified font even when being able to be displayed on the screen of GUI.
- Subset embedded fonts when percent of character used is less than:  
Embeds all fonts when the percent of characters used is greater than or equal to the specified value, subsets embedded fonts when the percent of characters used is less than the specified value.

## Security

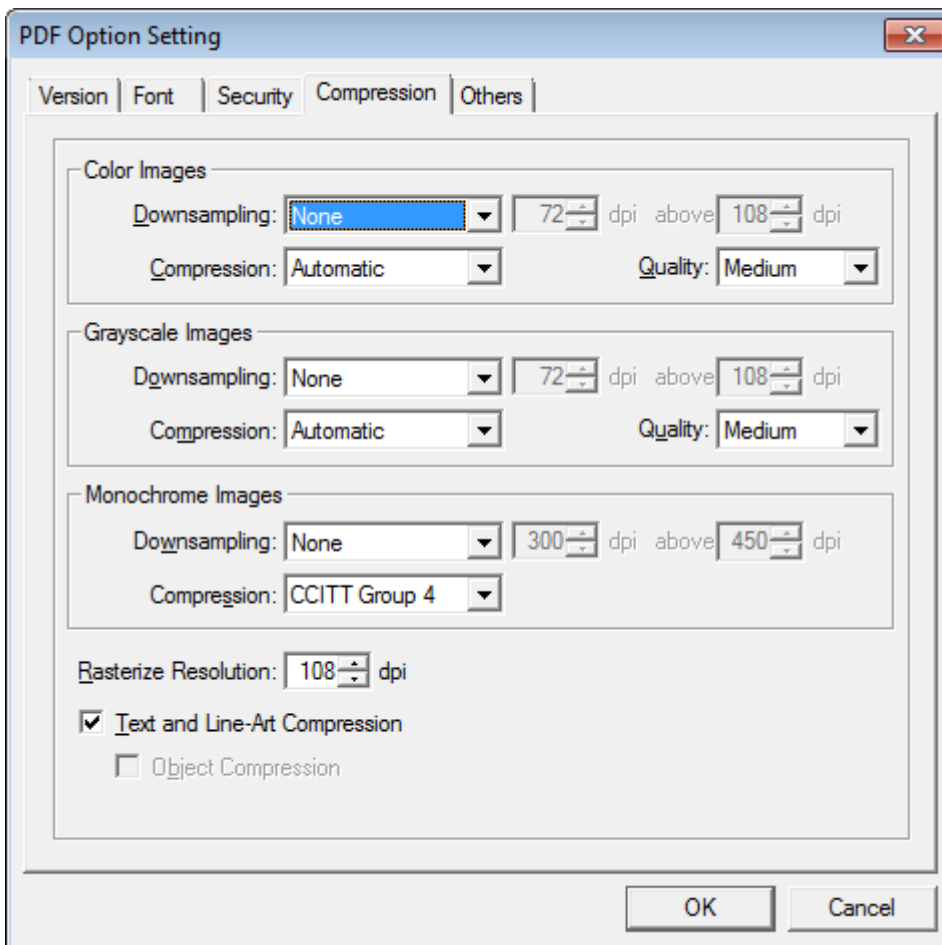


When the outputted PDF format is [PDF/X](#), many of items in this page are displayed in gray color.

- **Require a password to open the document**  
Check here when specifying the password which opens a PDF document.
- **Document Open Password**  
Specifies the password to open the PDF document. The contents of the setting here is not written out to the [Option Setting File](#).
- **Restrict editing and printing of the document. A password will be required in order to change these permission settings**  
Check here when specifying the password which changes the authority regarding the restrictions on printing or editing PDF documents. When this is not checked, all the authority is given to those who open a PDF document.
- **Change Permissions Password**  
Specify the password for changing the authority regarding the restrictions on printing or editing PDF documents. The contents of the setting here is not written out to the [Option Setting File](#).
- **Printing Allowed**  
Specifies whether to allow printing the PDF document or not. Select the operation form the followings in PDF 1.3.
  - None
  - High Resolution
 Select the operation form the followings in PDF 1.4 or later.
  - None
  - Low Resolution (150 dpi)
  - High Resolution
- **Changes Allowed**  
Specifies whether to allow changing the PDF document or not. Select the operation form the followings in PDF 1.3.
  - None
  - Commenting, filling in form fields, and signing signature fields
  - Page layout, filling in form fields, and signing signature fields
  - Any except extracting of pages
 Select the operation form the followings in PDF 1.4 or later.

- None
- Inserting, deleting and rotating pages
- Filling in form fields, and signing signature fields
- Commenting, filling in form fields, and signing signature fields
- Any except extracting of pages
- Enable copying of text, images and other content  
Specifies whether to allow copying of text, images and other contents in the PDF document to the clipboard or not. In PDF1.3, the expression on the dialog may somewhat differ.
- Enable text access for screen reader devices for the visually impaired  
Specifies whether to allow text access for screen reader devices in the PDF document or not. This setting is effective with PDF 1.4 or later.
- Apply Digital Signature [no-LT]  
Specifies whether to apply the [digital signature](#) to a PDF document or not. The digital signature can be applied to one of the [signature fields](#) in FO.  
**CAUTION:** In order to apply the digital signature, [PDF Digital Signature Module](#) must be installed on your PC.  
**CAUTION:** The digital signature cannot be applied with the CSS formatting.
- Signature [no-LT]  
Chooses the signature information adopted when applying an digital signature. The digital signature cannot be applied when the signature information is not chosen. The signature information can be created with Digital Signature Settings....
- Certificate [no-LT]  
Chooses the certificate information adopted when applying an digital signature. The digital signature cannot be applied when the certificate information is not chosen. The signature information can be created with Digital Signature Settings....
- Digital Signature Settings... [no-LT]  
The signature information and the certificate information can be added using [PDF Digital Signature Module](#).

## Compression



- Color Images, Grayscale Images, Monochrome Images  
This item applies raster image only. Specifies the downsampling and compression method of a raster image for each color images, grayscale images and monochrome images.



- Downsampling

Selects the method of a down sampling from the following.

- None
- Average
- Bicubic
- Subsampling

Specifies a image of more than what dpi is down sampled to what dpi, except None.

- Compression

Selects the compression method from the following for color images and grayscale images.

- Automatic
- JPEG
- ZLIB
- JPEG2000
- KeepLZW

Select Automatic to operate both JPEG compression and ZLIB compression, and adopt the one that produces the smaller size. When KeepLZW is selected, if the original image is LZW compressed, it becomes the LZW compression. If not, it becomes the same as Automatic. JPEG2000 compression is not taken into consideration.

The JPEG compression is available with the following conditions. If not, it becomes the ZLIB compression.

- BitsPerComponent is 8
- The color space is any of CMYK, RGB, gray scale or CIE L\*a\*b\*.

The JPEG2000 compression is available with the following conditions. If not, it becomes the ZLIB compression.

- PDF1.5 or later
- BitsPerComponent is 8
- The color space is any of RGB, gray scale or CIE L\*a\*b\*.

Selects the compression method from the following for monochrome images.

- CCITT Group 4
- CCITT Group 3
- Run Length
- ZLIB
- None

When the size after processing is increased by these compressions, the compression will not be performed.

- Quality

Selects the resolution from the following for color images and grayscale images.

- Minimum (50)
- Low (70)
- Medium (80)
- High (95)
- Maximum (100)

The numerical value on the right side indicates the value that corresponds to `-pq` of the command-line interface, etc.

- Rasterize Resolution

Some vector images are converted into a raster image, and are stored in PDF. The resolution of the raster image created by the conversion is specified with the value of 70 to 500dpi. SVG, MathML, EMF, and WMF are drawn in PDF, without being converted into a raster image. However, MathML can be used only with "AH Formatter MathML Option" with AH Formatter V5.0 Lite.

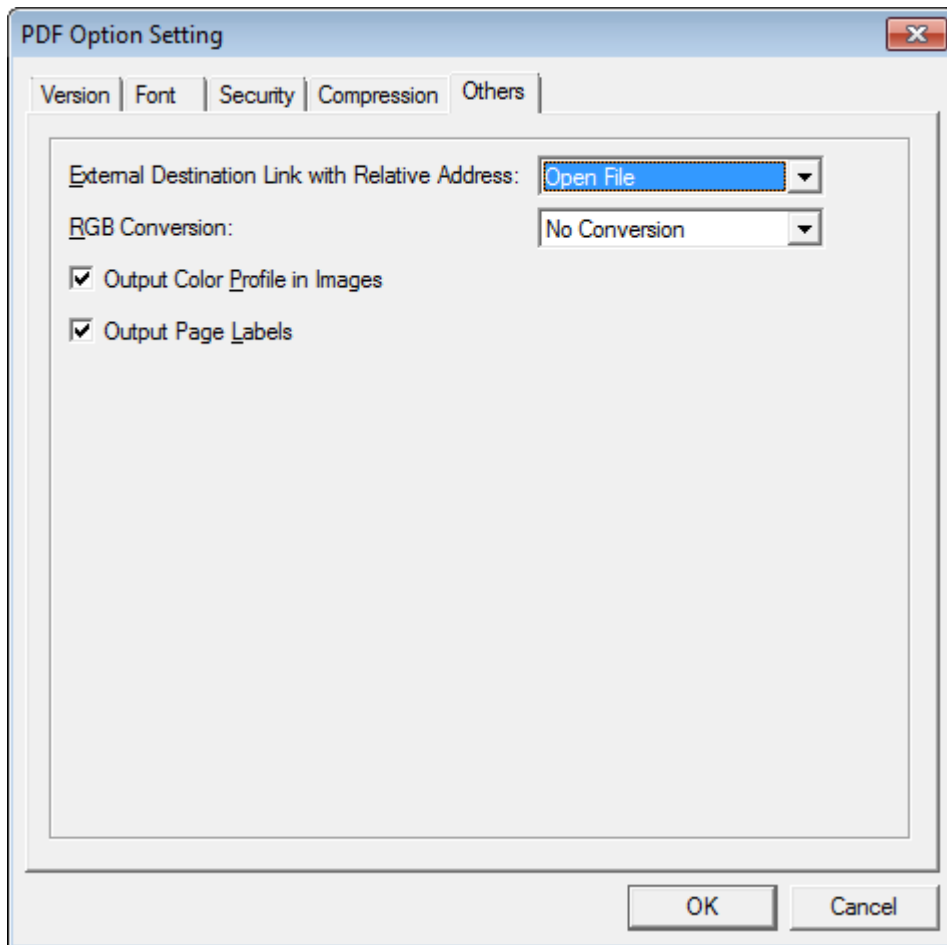
- Text and Line-Art Compression

Specifies whether to compress the text and the line art in the PDF to make the PDF size smaller or not.

- Object Compression

Specifies whether to compress the object other than text and the line art in the PDF to make the PDF size smaller or not. It's effective only when the version of PDF to output is 1.5 or more and Text and Line Art Compression in the PDF Option Setting is checked.

## Others



- External Destination Link with Relative Address

Specifies the way to transform the external destination links with relative addresses to the PDF link property. Select from one of the following:

- Open File
- World Wide Web Link

- RGB Conversion

Specifies how to convert the RGB color space to DeviceGray.

- No Conversion  
Does no conversion. DeviceRGB is outputted.
- Black to DeviceGray  
Converts Black to DeviceGray, converts the others to DeviceRGB before outputting.
- Gray to DeviceGray  
Converts Gray color (mono tone) to DeviceGray, converts the others to DeviceRGB before outputting.
- All RGB to DeviceGray  
Converts the RGB colors to DeviceGray before outputting. This conversion is based on the following formula:  $gray = 0.3 \times red + 0.59 \times green + 0.11 \times blue$  ( $0.0 \leq red, green, blue \leq 1.0$ ).
- All RGB to CMYK  
Converts the all RGB colors to CMYK before outputting.

As for the images other than SVG, MathML, EMF or WMF, which are drawn using their own drawing engine, there is no conversion. When PDF/X-1a is specified to create, it is considered that all are converted to CMYK. At that time the combo box is displayed in gray color.

- Output Color Profile in Images

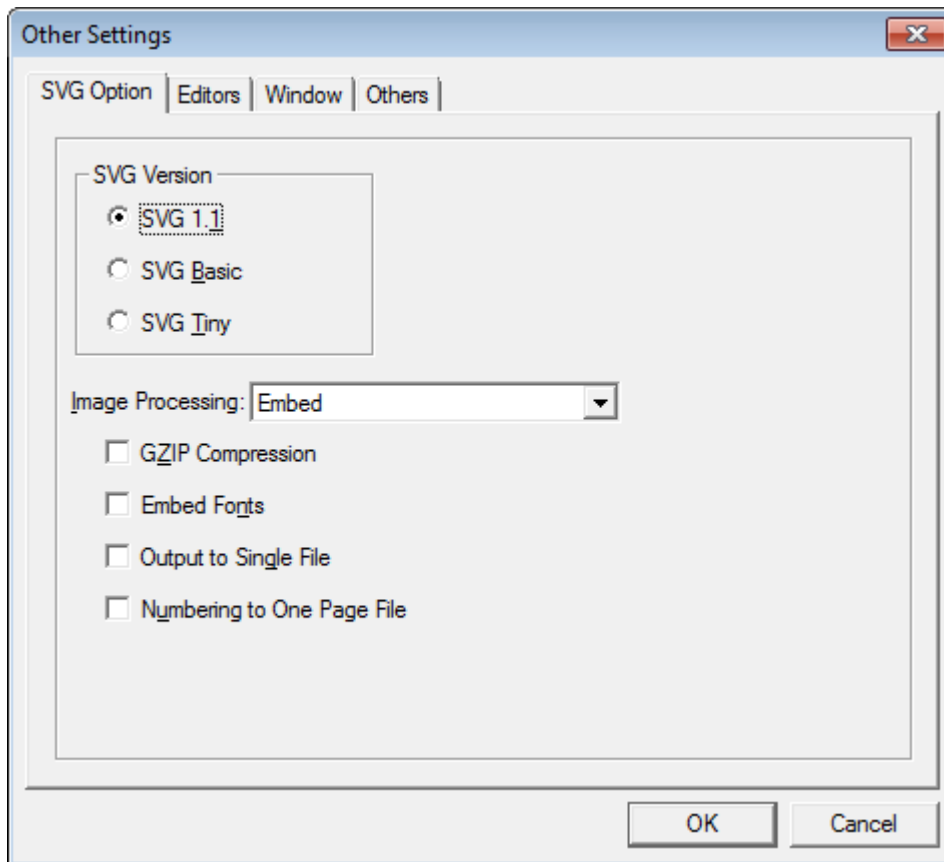
Specifies whether to output a color profile of images contained in an original image also to PDF.

- Output Page Labels

When FO with plural fo:page-sequence is outputted to PDF and displayed with Adobe Acrobat or Reader, the page number in the lower part of the window is shown like 1 (1/9). This is a function of the page label. If this check is turned OFF, the page label is not displayed but only the page number can be displayed.

## Other Settings Dialog

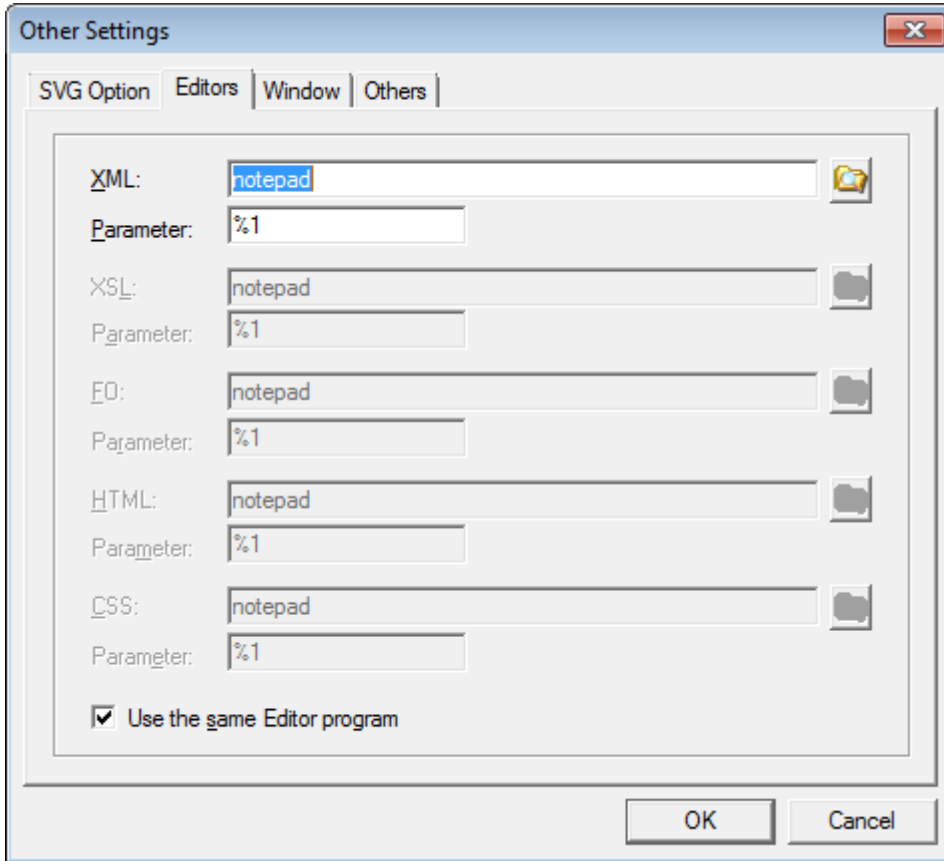
### SVG Option



In SVG Option in the Other Setting Dialog, the item concerning SVG set in the [Option Setting File](#) is adjusted. The contents changed here are written out to `AHFSettings.xml` (`AHFSettings(x64).xml` for Windows x64 version) which exists in the application data directory by clicking the [OK] button. Therefore, it is reflected next time of the starting.

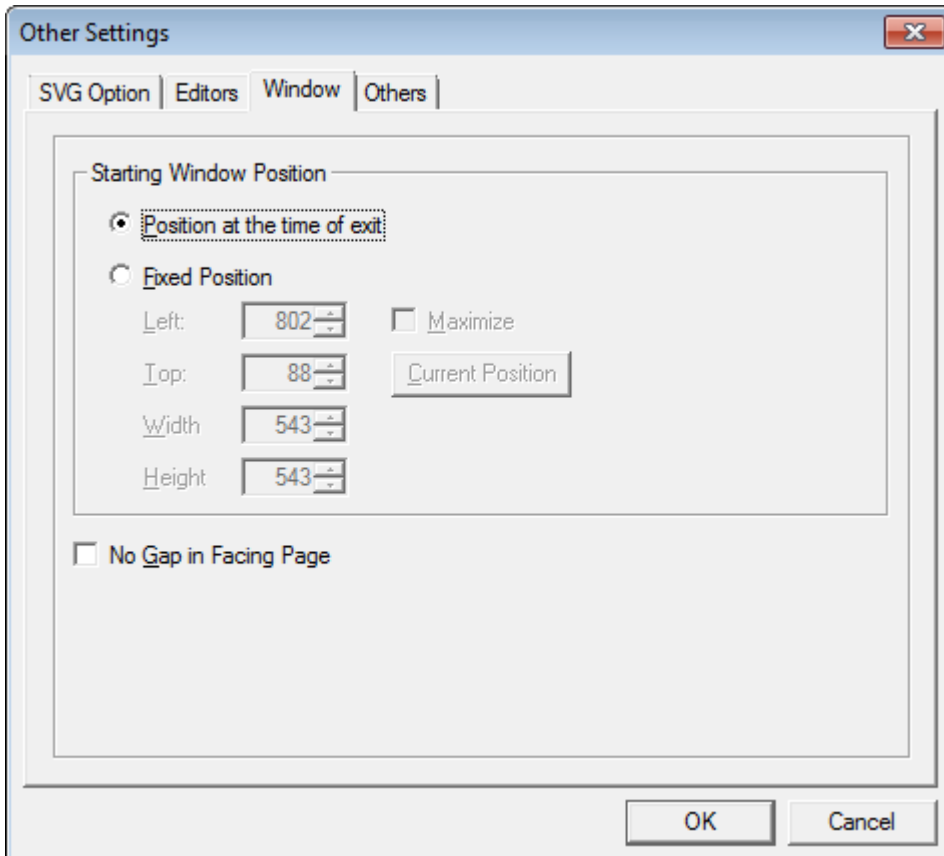
- **SVG Version**  
Selects the version of SVG to output from the followings:
  - SVG 1.1
  - SVG Basic
  - SVG Tiny
- **Image Processing**  
Specifies whether to embed or link images to SVG.
  - Embed
  - Copy and Link All Images
  - Link External Images
  - Copy and Link External Images
 Please refer to [Image Output](#) in [SVG Output](#) for details.
- **GZIP Compression**  
Outputs GZIP compressed svgz. The extension is set to `.svgz`.
- **Embed Fonts**  
Embeds fonts in SVG. Certain fonts might not be able to be embedded correctly.
- **Output to Single File**  
Specifies whether pages are outputted as one SVG file, or each page is outputted as an individual file when outputting two or more pages. When outputting two or more SVG, page numbers are placed before the extension of the output file name. For example, if the specified file name is `document.svg`, page numbers are put as `document1.svg`, `document2.svg`,... The number format can be set in [Option Setting File](#), etc.
- **Numbering to One Page File**  
When Output to Single File is not specified, specifies whether the number is placed to the output file name even if SVG has only one page.

**Editors**



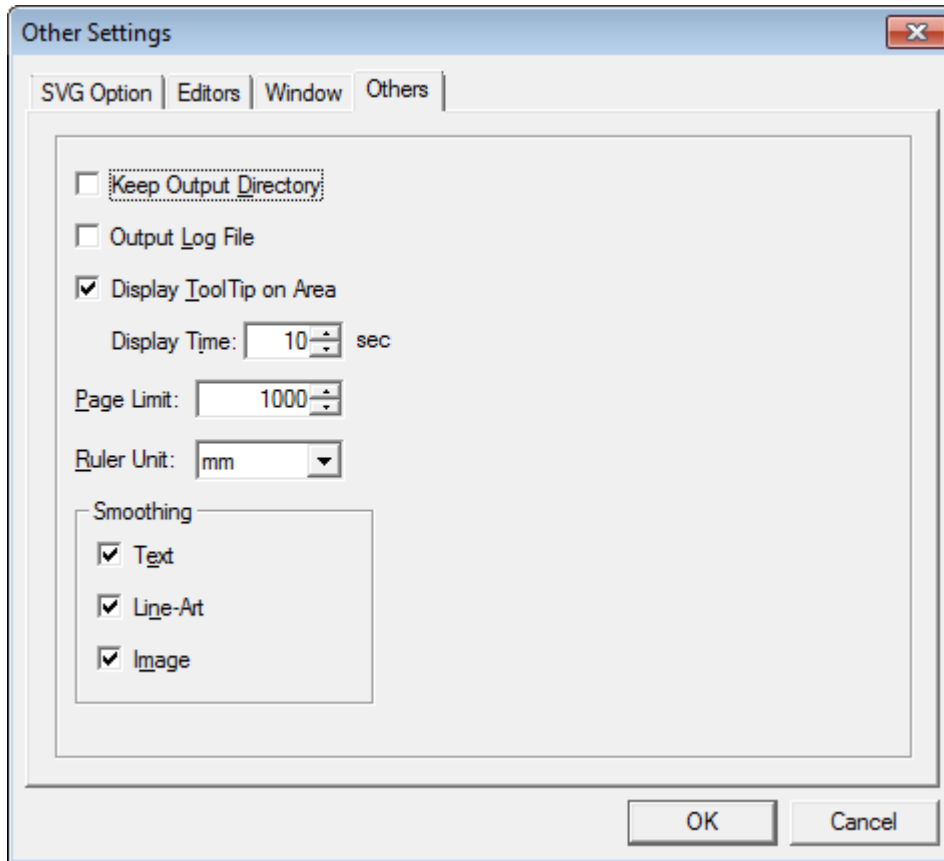
Edits the target document or stylesheet using the editor specified here. This setting can be used from [Edit Document] on the Edit menu or [Edit StyleSheet] on the Edit menu.

**Window**



- Starting Window Position  
Specifies the position of Window in GUI when starting up. Select the [Fixed Position], click the [Current Position] button to input the current information.
- No Gutter Between Facing Pages  
Specifies whether to apply the gutter between the facing pages or not.

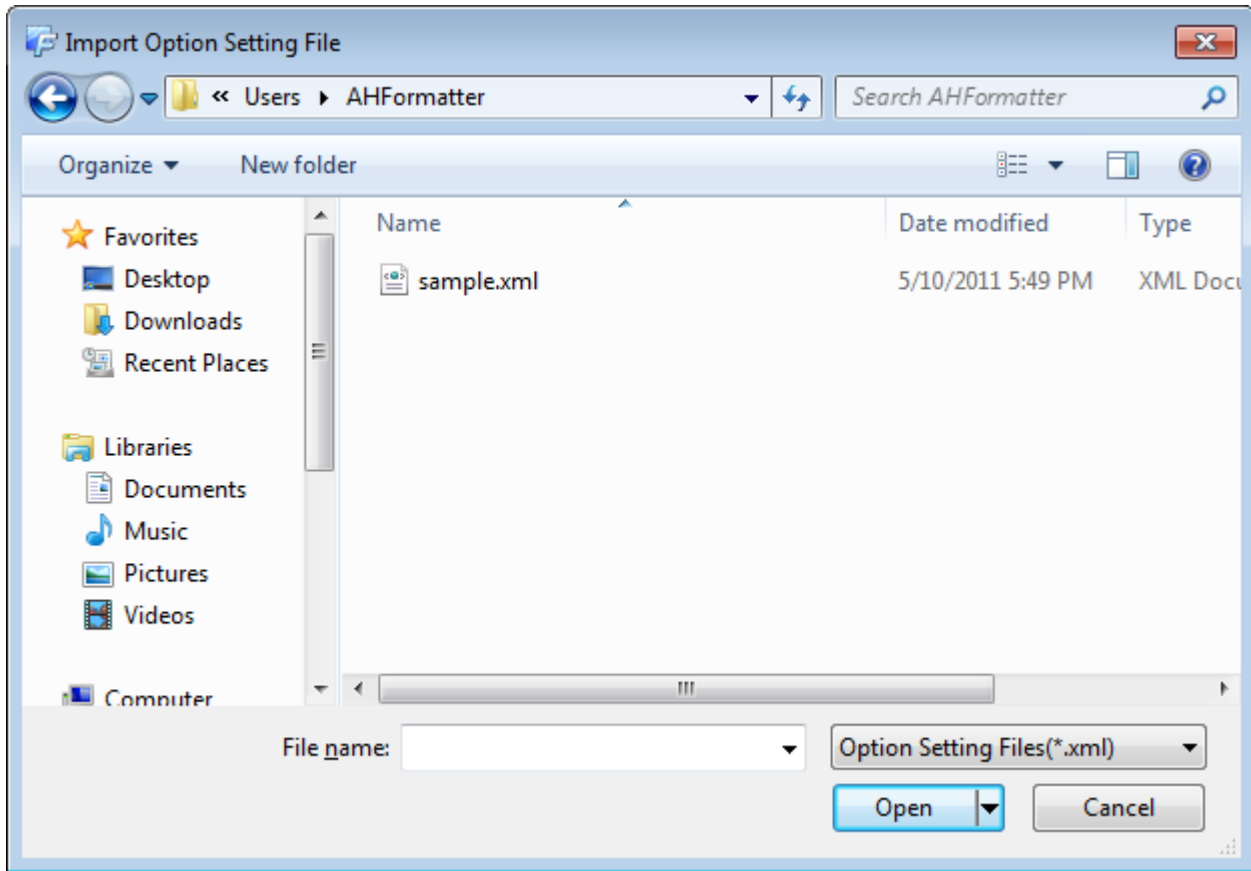
## Others



- Keep Output Directory  
Specifies whether to remember the previous position of the directory used as the standard of a file name in the [PDF Output Dialog](#), etc. If it's not checked, the same directory as the formatted document is assumed.
- Output Log File  
The information shown in the log window is saved as `AHFormatter.log` in the application data directory. The information in this file will be deleted when `AHFormatter.exe` is invoked.
- Display ToolTip on Area  
Specifies whether to display the information about the area as a [ToolTip](#) when a mouse is pointed on an area on the screen such as a character string or an image. A ToolTip automatically disappears by moving a mouse or reaching the specified display time.
- Page Limit  
This is used to control the maximum number of formatted pages for a very large document that a user wants to make available for display in the GUI. A large amount of memory is necessary to display a large number of pages. By specifying an appropriate value it is possible to improve the efficient working of the system. See also [Restrictions](#) for more detail. But, there is no such a restriction with other interfaces, such as Command-line Interface, etc.
- Ruler Unit  
The unit of the ruler can be selected from the following. The ruler can be displayed from the [view menu](#).
  - cm
  - mm
  - in
  - pt
  - pc
  - px
- Smoothing  
Specifies whether to process the anti-aliasing in GUI. This can be specified for the following.

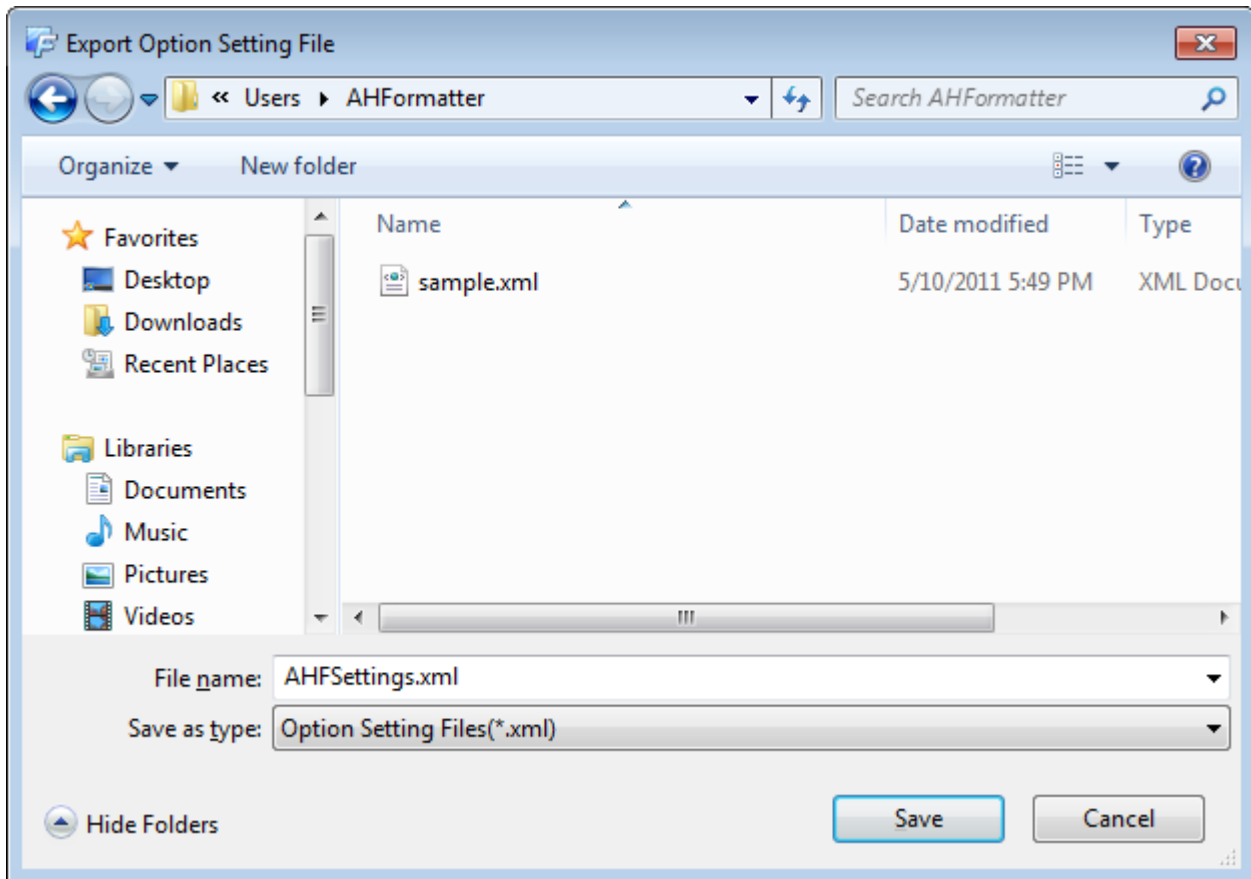
- Text
- Line-Art
- Image

## Import Option Setting Dialog



This enables you to load an [Options Setting File](#) with previously saved preferences from the [Option Setting Dialog](#). By default if the `AHFSettings.xml` (`AHFSettings(x64).xml` for Windows x64 version) file exists in the application data directory this file is automatically loaded at startup as the option setting file. The application data directory is indicated by the environment variable, `APPDATA`. `[APPDATA]\AntennaHouse\AHFormatter\6.0\`

## Export Option Setting Dialog



Writes the current setting to the [Option Setting File](#). Most of the setting contents can be referred to in the [Option Setting Dialog](#).

## About Dialog

Displays the version of **AH Formatter V6.0** and the license information. If you are using an evaluation license the evaluation period remaining can be confirmed here.

## Run with Parameters

The GUI program `AHFormatter.exe` can be invoked with parameters.

Parameter	Functions
-s	If <b>AH Formatter V6.0</b> has already been invoked, The formatting will be executed with the already running <b>AH Formatter V6.0</b> . If this parameter is not specified, another <b>AH Formatter V6.0</b> will run.
-d XML-Document	Specifies the URI of the target XML document. GUI screen is displayed.
-t XSL-Stylesheet	Specifies the URI of the XSL stylesheet which is used for formatting. Invalid if one of the -d, -p, -pt parameters is not specified.
-p XML-Document	Prints the XML document by displaying the <a href="#">Print Dialog</a> , without displaying the GUI screen. The -s parameter is invalid.
-pt XML-Document Printer-Name	Prints the XML document neither displaying the GUI screen nor displaying the <a href="#">Print Dialog</a> . If Printer-Name is omitted, the standard printer is used. The -s parameter is invalid.
-pts XML-Document Printer-Name	Same as the -pt parameter, but prints the XML document neither displaying the stop dialog box under printing. If Printer-Name is omitted, the standard printer is used. The -s parameter is invalid.
-ps Printer-Setting-File	Specify the path name of the Printer Setting file. Please refer to " <a href="#">How to create a Printer Setting file</a> ". When the XML document is specified by -d, please print the document by displaying the <a href="#">Print Dialog</a> .

Parameter	Functions
-c Copies	Specifies the number of copies when printing and effective only when the -pt or -pts parameter is specified. If it's omitted, the value is counted as 1.
-pdf XML-Document PDF-File	Outputs the XML document to PDF by displaying the <a href="#">PDF Output Dialog</a> without displaying the GUI screen. PDF-File can be omitted. The -s parameter is invalid.
-pdft XML-Document PDF-File	Outputs the XML document to PDF in the specified file neither displaying the GUI screen nor displaying the <a href="#">PDF Output Dialog</a> . The -s parameter is invalid.
-pdfts XML-Document PDF-File	Same as the -pdft parameter, but outputs the XML document to PDF neither displaying the stop dialog box under outputting PDF. The -s parameter is invalid.
-param name=value	Specifies the parameter name and the value of xsl:param. If the value contains a white space, please specify "name=value". -param can be specified multiply.

- Only one of the -d, -p, -pt, -pts, -pdf, -pdft, -pdfts parameters can be specified.

## Restrictions

The GUI has certain formatting restrictions that do not apply when using the other interfaces.

- The maximum number of pages that can be formatted is controlled by the [Others](#) tab in the [Other Settings Dialog](#). This is because storing formatted pages for browsing in the GUI consumes memory. For very large documents the system would run out of memory without this restriction.

When using one of the other interfaces it's possible to format a very large number of pages because the information of already formatted pages is aggressively discarded while formatting.

In the GUI all pages can be outputted to PDF or the printer regardless of this limitation.

- Windows functions are used for EMF and WMF drawing on the GUI. For this reason there may be a case that the formatted results in GUI and the formatted results in the PDF may be different. The same applies to the printing of EMF and WMF using Windows printer drivers from GUI or the Command-line Interface.
- There may be a case that the SVG drawing in GUI and in the PDF may be different.
- There may be a case that fonts displayed in an image are dropped when outputting to PDF. This is because Windows might substitute the fonts. It is necessary to specify the proper font-family in the FO or CSS in order to avoid this.





## Command-line Interface

The Command-line Interface is provided as an executable file. You can call it from either a Windows batch file or a Solaris / Linux / Macintosh / AIX shell script.

**AH Formatter V6.0** can be executed from the Command-line Interface by:

- Specifying an FO (XSL Formatting Objects) files to be formatted and the destination of the formatted file.
- Specifying an XML and XSL file which automatically starts transformation with XSLT, then formatting and finally outputting.
- As a filter that reads FO from standard in and writes PDF to standard out.

### Executable File Name

The executable file names are as follows:

<b>Windows</b>	AHFCmd.exe
<b>Solaris / Linux / Macintosh / AIX</b>	AHFCmd

Environment Variables have to be set in order to execute these files. In the Windows version these are automatically set by the installer. In the non-Windows versions they have to be set. Please refer to [Environment Variables](#).

### Running Command-line program on Windows

To run the command-line program of **AH Formatter V6.0** for Windows, enter the following command.

```
> cd [Install directory]
> AHFCmd -d samples\sample.fo -o \tmp\sample.pdf
```

If **AH Formatter V6.0** for Windows is successfully installed, the following message will be displayed.

```
AHFCmd : AH Formatter V6.0 XX for Windows (XXXX/XX/XX XX:XX:XX)
        Copyright (c) 1999-20XX Antenna House, Inc.
AHFCmd : Formatting finished normally.
```

Then you can view `sample.pdf` in the `\tmp` directory.

### Running Command-line program from a shell script

In **AH Formatter V6.0** for non-Windows, the installation program will place the shell script file named `run.sh` in the `[Install directory]`. This is a sample shell script for running the command-line program `AHFCmd`. This script sets the necessary environment variables in the shell, and runs `AHFCmd`. To run the command-line program of **AH Formatter V6.0** for non-Windows using this script, enter the following command from your terminal window.

```
$ cd [Install directory]
$ ./run.sh -d samples/sample.fo -o /tmp/sample.pdf
```

If **AH Formatter V6.0** for non-Windows is successfully installed, the following message will be displayed. Then you can get `sample.pdf` in `/tmp` directory.

```
AHFCmd : AH Formatter V6.0 XX for Xxxxxx (XXXX/XX/XX XX:XX:XX)
        Copyright (c) 1999-20XX Antenna House, Inc.
AHFCmd : Formatting finished normally.
```

The same parameters in the same formats apply to both `AHFCmd` and `run.sh`.

### Command-line Parameters

The following parameters apply to the Command-line Interface: Parameters with `*` in the following table indicate a negative meaning if no is placed in the beginning of the command. For example, `-nomultivol` cancels to output PDF in separate volume.

When specifying a path name that contains a space, the path name must be enclosed in double quotation marks. If two conflicting parameters are specified, the last parameter on the line takes precedence.

Parameter	Functions
-d Document	<p>Specifies the URI of the target XML/FO/HTML document to be formatted.</p> <ul style="list-style-type: none"> <li>When -d @STDIN is specified, FO document is loaded from standard in. The document loaded from standard in is supposed to be an FO file.</li> </ul> <p>If this parameter is omitted, a simple Command-line error message appears and processing stops without formatting.</p>
-s Stylesheet	<p>Specifies the URI of the target XSL/CSS document. If the specified XML document is FO, or the XML file contains the processing instruction <code>&lt;?xml-stylesheet ...?&gt;</code> and the stylesheet is specified, or the specified document is HTML, there is no need to specify a stylesheet. An XSLT processor is necessary to use XSL stylesheets. In the Windows version, MSXML4 or MSXML3 is used as the standard XSLT processor. If you want to use another XSLT processors or in non-Windows version, you need to set which XSLT processor you are going to use. Setting the XSLT processor is performed by "<a href="#">Environment Variables</a>" or "<a href="#">Option Setting File</a>". If the specified document is CSS, it will be the last user stylesheet. It is applied posterior to the stylesheet added by -css and the Option Setting File specified by -i.</p>
-f Formatter-Type	<p>Specifies the formatter type from the following:</p> <ul style="list-style-type: none"> <li>AUTO</li> <li>HTML</li> <li>XHTML</li> <li>XMLCSS</li> <li>XSLFO</li> </ul> <p>If this parameter is omitted or invalid, it is considered as <a href="#">AUTO</a>.</p>
-css User-Stylesheet	<p>Specifies the CSS user stylesheet you want to add. -css can be specified any number of times. It is applied by specified order prior to the stylesheet specified by -s.</p>
-htmlics Decalt-HTML-Charset	<p>Specifies the default encoding of HTML. This setting is applied to HTML whose encoding is unknown. If this parameter is omitted, UTF-8 is considered as default.</p>
-o Output-File	<p>Specifies the path name of the resulting output file.</p> <ul style="list-style-type: none"> <li>When -o @STDOUT is specified, the result is written to standard out.</li> <li>If both the printer name and this property are specified, the formatted result will be stored in the file using the printer driver.</li> <li>When -p @PDF or -p @TEXT or etc. is specified, the resulting PDF or text will be stored in the file specified by this parameter.</li> </ul> <p>If this parameter is omitted, the result will be written to standard out.</p>
-i Option-Setting-File	<p>Specifies the path name of "<a href="#">Option Setting File</a>" which defines <b>AH Formatter V6.0</b> options in XML-format. Any number of these parameters can be specified. If any content of this file is changed it automatically overwrites the previous settings. Because only a described parameter in the Option Setting File is evaluated, it is possible to change a part of setting by adding a file that describes those parameters that should be changed. If conflicting values for a parameter are specified in the Option Setting File and the Command-line, then the Command-line value takes precedence.</p>
-ix	<p>Imports <a href="#">AHFSettings.xml</a> (<a href="#">AHFSettings (x64) .xml</a> for Windows x64 version) in the application data directory indicated as the environment variable APPDATA as the <a href="#">Option Setting File</a>. This parameter is equivalent to</p> <pre>-i "[APPDATA]\AntennaHouse\AHFormatter\6.0\AHFSettings.xml"</pre> <p>or</p> <pre>-i "[APPDATA]\AntennaHouse\AHFormatter\6.0\AHFSettings (x64) .xml"</pre> <p>Effective only for Windows version.</p>
-p Printer-Name	<p>Specifies the printer name where the formatted result is outputted. If this parameter is omitted, -p @PDF is automatically specified.</p> <ul style="list-style-type: none"> <li>When -p @STDPRN is specified, the standard printer is used.</li> <li>When -p @PDF is specified, the formatted result is not output to a printer but rather to PDF.</li> <li>When -p @SVG is specified, the formatted result is output as SVG.</li> </ul>

Parameter	Functions
-p Printer-Name	<ul style="list-style-type: none"> <li>• When -p @PS is specified, the formatted result is output as PostScript.</li> <li>• When -p @INX is specified, the formatted result is output as INX.</li> <li>• When -p @XPS is specified, the formatted result is output as XPS.</li> <li>• When -p @MIF is specified, the formatted result is output as MIF.</li> <li>• When -p @TEXT is specified, the formatted result will be outputted to the file as text format. <code>no-LT</code></li> <li>• When -p @AreaTree is specified, the AreaTree will be outputted. <code>no-LT</code></li> <li>• When -p @MODCA is specified, the MO:DCA file will be outputted.</li> </ul> <p>A printer name can only be specified in the Windows version. Please refer to <a href="#">"How to specify the Printer Name"</a>.</p> <p>Please refer to <a href="#">"PDF Output"</a> for PDF output info.  Please refer to <a href="#">"SVG Output"</a> for SVG output info.  Please refer to <a href="#">"PostScript Output"</a> for PostScript output info.  Please refer to <a href="#">"INX Output"</a> for INX output info.  Please refer to <a href="#">"XPS Output"</a> for XPS output info.  Please refer to <a href="#">"MIF Output"</a> for MIF output info.  Please refer to <a href="#">"TEXT Output"</a> for text output info.  Please refer to <a href="#">"MO:DCA Output"</a> for MO:DCA output info.  @TEXT and @AreaTree are not effective with <b>AH Formatter V6.0 Lite</b>.</p>
-start Start-Page -end End-Page	<p>Specifies the start page and the end page of output document. If the start page is omitted or the specified value is 0 or less, the start page is considered the first page. If the end page is omitted or the specified value exceeds the actual page number, the end page is considered the last page. If the setting is inconsistent, (for example, -start 5 -end 3) an error occurs.</p> <ul style="list-style-type: none"> <li>• SBCCmd :FATAL: Error Level : 4</li> <li>• SBCCmd :FATAL: Error Code : 36865 (9001)</li> <li>• SBCCmd :FATAL: Parameter error : Must be Start page number &lt;= End page number</li> </ul> <p>When -multivol parameter is specified, the value does not mean the page number but the separate volume number. For example -start 3 outputs the third separate volume.</p>
-prevp *	Outputs pages in reverse order to PDF.
-multivol *	Specifies to output PDF in separate volume. The error occurs when FO doesn't include the <a href="#">axf:output-volume-info</a> extension property. When this parameter is specified, -start/-end can be specified as the unit of separate volume.
-2pass *	When formatting a huge document with a large amount of unresolved <code>&lt;fo:page-number-citation&gt;</code> , a large amount of memories are consumed because the cancellation of the page information is impossible. Therefore, the limit is caused in the number of pages to format. This parameter solves that problem by making the formatting two passes. Although its processing time may be increased, only the page number information which should be solved will consume the memory and the memory consumption will be extremely decreased. Please refer to <a href="#">"Formatting Large Document"</a> . <code>no-LT</code>
-base BaseURI	Specifies the default base URI.
-hypdic Directory	Specifies the directory where the hyphenation dictionary exists.
-param name=value	Specifies the parameter name and the value of xsl:param used with the XSLT transformation. If the value contains a white space, please specify "name=value". -param can be specified multiply.
-fontalias name=substname	Specifies font substitutions. If the option -fontalias A=B is specified, all of font family-name A in the FO file will be substituted with font B. If you are going to specify multiple substitutions, you must specify the -fontalias parameter for every substitution. You can also specify this option using the <a href="#">"Option Setting File"</a> . The substitution is not recursive, or is done only once.
-x Error-Level	<p>Permits setting the error level at which <b>AH Formatter V6.0</b> will stop formatting and abort the job.</p> <ol style="list-style-type: none"> <li>1. Information</li> <li>2. Warning</li> <li>3. Recoverable Error</li> <li>4. Fatal Error</li> </ol> <p>The default value is 2. Thus if an error occurs at the "warning" level or higher, the formatting process will be aborted. If a fatal error occurs, the formatting process will always be aborted.</p>

Parameter	Functions
-silent	Suppresses the output of <a href="#">error information</a> . Normally error information is sent to stdout or stderr.
-stdout	<a href="#">Error information</a> is sent to stdout only if this parameter is specified. It is outputted to stderr by default.
-stderr	<a href="#">Error information</a> is also sent to stderr if this parameter is specified. It is outputted to stderr by default.
-pgbar *	Outputs the progress of the page generation to the console.
-v	Shows the version, copyright and license information. Cannot be used with any other parameter.
-h or -?	Displays a list of all the Command-line parameters.

### Parameters for Printer

Parameter	Functions
-ps Printer-Setting-File	Specify the path name of the Printer Setting file. Please refer to " <a href="#">How to create a Printer Setting file</a> ".
-copies Copies	Specifies the number of copies when outputting to a printer. The default value is 1.
-collate *	This parameter is effective only when outputting multiple copies. When -collate is specified, printing from the specified starting page to the ending page repeated. When -nocollate is specified, the same page is continuously printed as multiple copies.

### Parameters for PDF Output

Parameter	Functions
-pdfver Version	<p>Specifies the PDF version from the following:</p> <ul style="list-style-type: none"> <li>• PDF1.3</li> <li>• PDF1.4 (default)</li> <li>• PDF1.5</li> <li>• PDF1.6</li> <li>• PDF1.7</li> <li>• PDF/X-1a:2001 <small>no-LT</small></li> <li>• PDF/X-3:2002 <small>no-LT</small></li> <li>• PDF/X-1a:2003 <small>no-LT</small></li> <li>• PDF/X-2:2003 <small>no-LT</small></li> <li>• PDF/X-3:2003 <small>no-LT</small></li> <li>• PDF/A-1a:2005 <small>no-LT</small></li> <li>• PDF/A-1b:2005 <small>no-LT</small></li> </ul> <p>If this parameter is omitted, PDF1.4 is outputted. Impossible to specify PDF/X or PDF/A with <b>AH Formatter V6.0 Lite</b>.</p>
-tpdf *	Generates <a href="#">Tagged PDF</a> . Ignored if PDF cannot be tagged depending on the PDF versions. <small>no-LT</small>
-lpdf *	Generates linearized PDF optimized for the display on the Web. <small>no-LT</small>
-dsig *	<p>Specifies to apply a <a href="#">Digital Signature</a>. When there is no signature field, a digital signature is not applied. <small>no-LT</small></p> <p><b>CAUTION:</b> In order to apply the digital signature, <a href="#">PDF Digital Signature Module</a> must be installed on your PC.</p>
-encrypt Key-Length	<p>Specifies the key length when encrypting the PDF file. The key length can be specified from the following: Ignored when you specify PDF 1.3.</p> <ul style="list-style-type: none"> <li>• 40rc4</li> <li>• 128rc4</li> <li>• 128aes</li> <li>• 256aes</li> </ul> <p>128aes is effective with PDF1.5 or later, 256aes is effective with PDF1.7 or later.</p>

Parameter	Functions
-userpwd Password	Specifies the user password required to open the PDF. The password must be less than or equal to 32 bytes.
-ownerpwd Password	Specifies the owner password for PDF. The password must be within 32 bytes.
-npt *	Prohibits printing the PDF file. It is necessary to specify -ownerpwd so that this parameter is effective.
-ncg *	Prohibits making changes of the PDF file. It is necessary to specify -ownerpwd so that this parameter is effective.
-ncc *	Prohibits copying the content of the PDF file. It is necessary to specify -ownerpwd so that this parameter is effective.
-nca *	Prohibits adding comments and form fields to the PDF file. It is necessary to specify -ownerpwd so that this parameter is effective.
-nff *	Prohibits filling in of form fields and signing of the PDF file. Ignored when you specify PDF 1.3. In order to make this parameter effective, other parameter settings may be required. See also the ' <a href="#">PDF Reference</a> ' from Adobe Systems Incorporated for more details.
-nab *	Prohibits text access for screen reader devices of the PDF file. Ignored when you specify PDF 1.3. It is necessary to specify -ncg so that this parameter is effective.
-nad *	Prohibits inserting, deleting and rotating the PDF pages. Ignored when you specify PDF 1.3. It is necessary to specify -ncg so that this parameter is effective.
-peb Value	Specifies whether to embed the embeddable fonts in PDF or not with one of the following values. <ul style="list-style-type: none"> <li>0. Specified font</li> <li>1. All fonts excluding Base14 font</li> <li>2. All fonts including Base14 font</li> </ul>
-pee Fontname	Embeds the specified font in the PDF. If you want to specify multiple fonts, put commas between the fonts.
-pesub Percent	Embeds all fonts when the percent of characters used is more than or equal to specified value, subsets embedded fonts when the percent of characters used is less than the specified value. The value without unit or % value can be specified. (1.0 = 100%). If nothing is specified, it is considered as 100 and embedded fonts are always subset.
-pef *	An error is not issued when font embedding fails.
-peg *	An error is not issued when glyphs are missing.
-pex *	An error is not issued when PDF/X or PDF/A is generating. <code>[no-LT]</code>
-ppa Value	Specifies whether to permit printing of the created PDF with one of the following values. This parameter is effective only when you specify PDF version 1.4 or later. <ul style="list-style-type: none"> <li>0. Not Allowed</li> <li>1. Low Resolution Printing</li> <li>2. High Resolution Printing</li> </ul>
-picc Value	Selects how to compress the color images embedded in PDF. <ul style="list-style-type: none"> <li>0. Auto</li> <li>1. JPEG compression</li> <li>2. ZLIB compression</li> <li>3. JPEG2000 compression</li> <li>4. Keep LZW</li> </ul> <p>This parameter is effective for images that cannot be directly embedded into a PDF or -picc value is not 0. JPEG2000 is effective only for PDF1.5 or later.</p>
-picg Value	Selects how to compress the grayscale images embedded in PDF. <ul style="list-style-type: none"> <li>0. Auto</li> <li>1. JPEG compression</li> <li>2. ZLIB compression</li> <li>3. JPEG2000 compression</li> <li>4. Keep LZW</li> </ul>

Parameter	Functions
-picg Value	This parameter is effective for images that cannot be directly embedded into a PDF or -pidg value is not 0. JPEG2000 is effective only for PDF1.5 or later.
-picm Value	<p>Selects how to compress the monochrome images embedded in PDF.</p> <ol style="list-style-type: none"> <li>0. None</li> <li>1. CCITT Group4</li> <li>2. CCITT Group3</li> <li>3. Run Length compression</li> <li>4. ZLIB compression</li> </ol> <p>This parameter is effective for images that cannot be directly embedded into a PDF or -pidm value is not 0.</p>
-pidc Value	Selects how to downsample the raster color images embedded in a PDF with the following values.
-pidct dpi	<ol style="list-style-type: none"> <li>0. None</li> <li>1. Average</li> <li>2. Bicubic</li> <li>3. Subsampling</li> </ol>
-pidca dpi	<p>When -pidc value (other than 0) is specified, a color image that has a resolution greater than -pidca dpi will be downsampled to the -pidct dpi value. The default dpi of -pidca is 108, -pidct is 72.</p>
-pidg Value	Selects how to downsample the raster grayscale images embedded in PDF using the following values.
-pidgt dpi	<ol style="list-style-type: none"> <li>0. None</li> <li>1. Average</li> <li>2. Bicubic</li> <li>3. Subsampling</li> </ol>
-pidga dpi	<p>When -pidg value (other than 0) is specified, a grayscale image with resolution greater than -pidga dpi will be downsampled to the -pidgt dpi resolution. The default dpi of -pidga is 108, -pidgt is 72.</p>
-pidm Value	Selects how to downsample the raster monochrome images embedded in PDF using the following values.
-pidmt dpi	<ol style="list-style-type: none"> <li>0. None</li> <li>1. Average</li> <li>2. Bicubic</li> <li>3. Subsampling</li> </ol>
-pidma dpi	<p>When -pidm value (other than 0) is specified, a monochrome image that has resolution larger than the -pidma dpi will be downsampled to the -pidmt dpi resolution. The default dpi of -pidma is 450, -pidmt is 300.</p>
-pqj Percent	Specifies the quality of the raster graphics when specified JPEG format by -picc or -picg using the range of 1-100(%). A higher % increases the image quality. However the file size also becomes larger. The initial value is 80.
-pcs *	Specifies not to compress text and line art in the PDF.
-plr *	Specifies whether the external link specified by the relative address is transformed into 'Open the file' or into 'World Wide Web link' in the PDF link properties. When -plr is specified, it is transformed to 'World Wide Web link'. When -nopl is specified, it is transformed to 'Open the file'. If the document is designed to be viewed on a browser then it is suggested to use the world wide web ?plr as the default setting.
-prc Value	<p>Specifies how to convert the RGB color space (DeviceRGB) to DeviceGray.</p> <ol style="list-style-type: none"> <li>0. No Conversion</li> <li>1. Black to DeviceGray</li> <li>2. Gray to DeviceGray</li> <li>3. All RGB to DeviceGray</li> <li>4. All RGB to CMYK</li> </ol>
-pcics *	Converts RGB images automatically into CMYK when outputting PDF/X and PDF/A. <code>[no-LT]</code>

Parameter	Functions
-prp dpi	Specifies the resolution value of the transformed raster images from 70 to 500(dpi). This parameter is available only in the Windows version and should be set with consideration of on whether better image quality or file size is more important.
-p3da *	Imports 3D object. <small>no-LT</small>
-pdfscale scale	Specifies the scaling ratio of the PDF to output. A value without a unit or % value can be specified as a scale (1.0 = 100%). When -pdfwidth is specified after - pdfscale, -pdfscale will take priority. The same applies to -pdfheight.
-pdfheight length	Scales the output height of PDF. Height values can be specified as a <a href="#">unit</a> or a % value.
-pdfwidth length	Scales the output width of PDF. Width values can be specified as a <a href="#">unit</a> or a % value.
-pds *	Applies the digital signature the signature field in PDF. Refer to <a href="#">Digital Signature</a> for more details. <small>no-LT</small>
-pdss name	Specifies the name of the signature information to be used when applying a digital signature. Refer to <a href="#">Digital Signature</a> for more details. <small>no-LT</small>
-pdsc name	Specifies the name of the certificate information to be used when applying a digital signature. Refer to <a href="#">Digital Signature</a> for more details. <small>no-LT</small>

## Parameters for SVG Output

Parameter	Functions
-svgver Profile	<p>Specifies the SVG profile:</p> <ul style="list-style-type: none"> <li>• SVG1.1 (default)</li> <li>• SVGBasic</li> <li>• SVGTiny</li> </ul> <p>If this parameter is omitted, SVG1.1 is outputted.</p>
-svgip Method	<p>Specifies how to treat images within the SVG file.</p> <ol style="list-style-type: none"> <li>0. Embeds all image files.</li> <li>1. Copies all image files to the destination that is specified by -svgicp, and then links.</li> <li>2. Links images that can be linked and embeds images that have to be embedded. Raster images other than JPEG and PNG are always embedded.</li> <li>3. Copies images that have been linked to the destination that is specified by -svgicp and links.</li> </ol> <p>If this parameter is omitted, it is considered as 0 and all images are embedded. Refer to <a href="#">Image Output in SVG Output</a> for details of the operation.</p>
-svgicp Directory	Specifies the destination for images when '1' or 3 is selected for the -svgip parameter (Outputs the image as an external file). When a relative path is used to specify the Directory, the path will be relative to the output path specified with -o. When -o is the standard output, an error will occur if the relative path is specified. Then it is necessary to specify an absolute path.
-svgiren *	Specifies whether to rename all file names to the prefix specified by -svgiprpx, or to use the original name when images are copied to the directory specified by -svgicp. When the file name is duplicated, a sequential number is added. When -svgiren is specified, all files are renamed.
-svgiprpx Prefix	When images are copied to the directory specified by -svgicp, specifies the prefix of the file name. The file name will be prefixed followed by sequence number. When it is not specified, they are only sequential numbers.
-svggzip *	Outputs SVG compressed in gzip.
-svgsingle *	A document composed of multiple pages is outputted as a single SVG file.
-svgfmt Format	When the original document has multiple pages and -svgsingle parameter is not specified, each page will be output as an SVG files that has a consecutive number at the end of the file name. This parameter specifies the format of those consecutive numbers. For example, when "document.svg" is specified as the name for the output file, by specifying "-01" for -svgfmt parameter the output files will be document-01.svg, document-02.svg and so on. If this parameter is omitted, "1" is considered as specified.
-svgsppn *	When -svgsingle is not specified and the output SVG has only one-page, the sequential number specified by -svgfmt is not added.
-svgea *	Embeds all fonts that can be embedded in the SVG.



Parameter	Functions
-svgee Font-Name	Embeds the specified font in SVG. If you want to specify multiple fonts, put commas between fonts.
-svgef *	An error is not issued when font embedding fails.
-svgic Value	<p>Selects how to convert the raster images which may not be directly embedded in the SVG.</p> <ol style="list-style-type: none"> <li>0. Auto</li> <li>1. JPEG conversion</li> <li>2. PNG conversion</li> </ol> <p>When Auto is selected, monochrome, grayscale or 256-or-less-color images are converted into PNG and the rest are converted into JPEG. When this parameter is omitted, the default is Auto. Refer to <a href="#">Image Output</a> in <a href="#">SVG Output</a> for information on embeddable images.</p>
-svgjq Percent	Specifies the quality of the raster graphics with the range of 1-100(%) when JPEG format is specified to -svgic. The quality becomes higher in proportion to the increase in the number, however the file size also becomes larger. The initial value is 80.
-svgrr dpi	Specifies the rasterize-resolution value of the transformed raster images from 70 to 500(DPI). This parameter is available only in the Windows version.

### Parameters for INX Output

Parameter	Functions
-inxomode Value	<p>Specify the INX output mode in <a href="#">INX Output option</a></p> <ol style="list-style-type: none"> <li>0. Text area output mode</li> <li>1. Line area output mode</li> <li>2. Block output mode</li> </ol> <p>If this parameter is omitted, Text area output mode is adopted. Refer to <a href="#">INX Output Settings</a> for details.</p>

### Parameters for MIF Output

Parameter	Functions
-mifomode Value	<p>Specify the MIF output mode in <a href="#">MIF Output option</a></p> <ol style="list-style-type: none"> <li>0. Text area output mode</li> <li>1. Line area output mode</li> <li>2. Block output mode</li> </ol> <p>If this parameter is omitted, Text area output mode is adopted. Refer to <a href="#">MIF Output Settings</a> for details.</p>
-mifip Method	<p>Specifies how to treat the referred image. <a href="#">MIF Output option</a></p> <ol style="list-style-type: none"> <li>0. Embeds all images in MIF.</li> <li>1. Links images as external files.</li> </ol> <p>If this parameter is omitted, embedding image is adopted. Refer to <a href="#">MIF Output Settings</a> for details.</p>

### Parameters for TEXT Output

Parameter	Functions
-tenc Encoding	Specifies the encoding for <a href="#">TEXT Output</a> . If this parameter is omitted, UTF-8 is adopted. See also <a href="#">TEXT Output Setting</a> for more detail.
-teol EOL-mark	Specifies the end-of-line code for <a href="#">TEXT Output</a> . If this parameter is omitted, CRLF is adopted. See also <a href="#">TEXT Output Setting</a> for more detail.

Text Output cannot be performed with **AH Formatter V6.0 Lite**.

Values can be added using one of the following units.

Representation	Meanings
cm	centimeter
mm	millimeter. 1 mm = 1/10 cm
in	inch. 1 in = 2.54 cm
pt	point. 1 pt = 1/72 in
pc	pica. 1 pc = 12 pt
jpt	1 jpt = 0.3514 mm
q	1 q = 0.25 mm

The following sample illustrates formatting `sample.xml` using XSL stylesheet `sample.xsl` and outputting the formatted result to `sample.pdf`.

```
AHFCmd -d "c:\My Documents\xml\sample.xml" -s "c:\My Documents\xml\sample.xsl" -p @PDF -o
"c:\My Documents\xml\sample.pdf"
```

In order to use the stylesheet in the non-Windows environment, it's necessary to specify external XSLT processor in the [Option Setting File](#) using `-i` parameter.

The following sample illustrates how to load the Option Setting File `options.xml`, format `sample.fo` and send the formatted result to a printer.

```
AHFCmd -d "c:\My Documents\xml\sample.fo" -i "c:\My Documents\xml\option.xml" -p "EPSON
LP-7100"
```

## Return Value

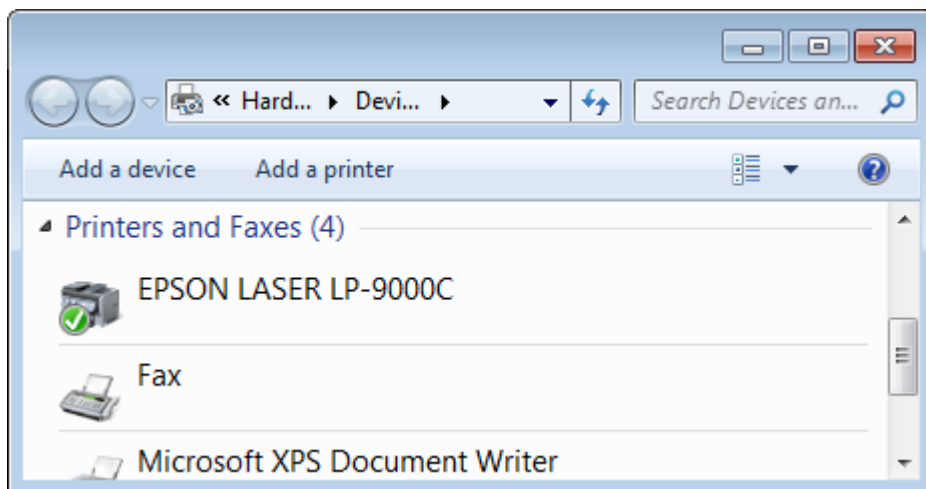
When executing formatting with a Command-line Interface, if the formatting is successful, it finishes the process with the return value of 0. If the formatting is not successful, the program finishes the process with a return value of 1. If the formatting is not performed because `?v` is not specified, the return value is 0.

## How to specify the Printer Name

The followings parameter settings apply only to the Windows version.


To send a file to a printer use a printer name from the Printers dialog in the Windows start menu or from Printers and Faxes in the Control Panel.

```
-p "Acrobat Distiller"
-p "EPSON LP-2500"
```

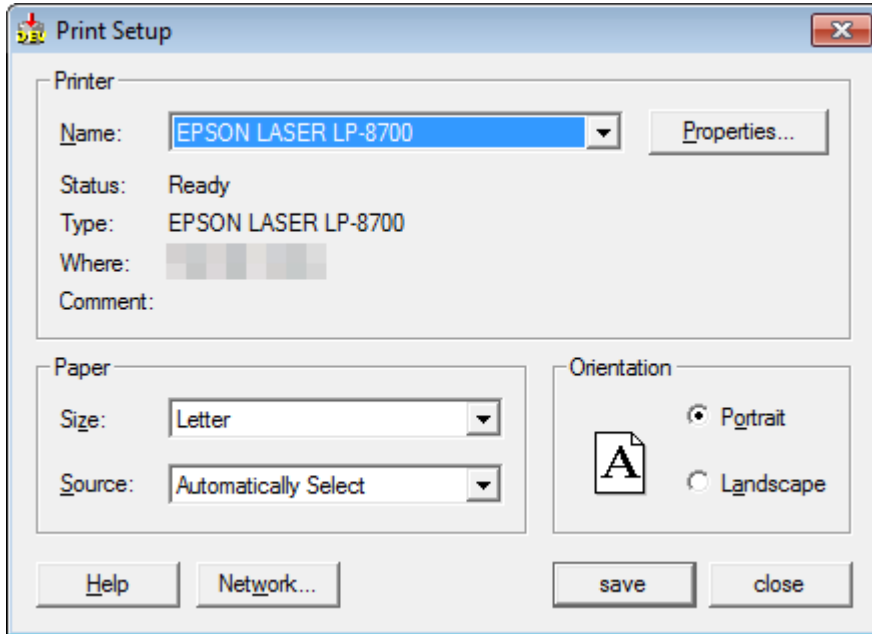


## How to create a Printer Setting file

The followings are effective only in the Windows version.

In the Windows environment, applications use the DEVMODE structure to exchange information about the printer settings. Also Windows printer drivers initialize themselves according to the information of the DEVMODE structure. **AH Formatter V6.0** provides `XSLDev.exe` as a utility to save the DEVMODE structure to a file. 

When this program is launched, the "Print Setup" dialog will be displayed. You can choose printers from "Name" combo box or you can set various printer properties by clicking the "Properties" button. After you set up printer properties, click "save" button, the "Save As" dialog will be displayed. Specify a file name to save the print setup to. This will then modify DEVMODE structure as a "data file that records printer setup." You can specify this file name for the PrinterSetting property of the .NET/COM Interface or -ps Parameter of the command line interface or other interfaces. To quit this application, click "close" button.



When a printer setting file is specified, a document is printed unless -p option is specified. The following shows how it operates.

- `AHFCmd -p printer-name -ps setting-file -d ...`  
Prints a document by applying DEVMODE specified in the `setting-file` to the `printer-name`.
- `AHFCmd -p @PDF -ps setting-file -d ...`  
Outputs a document to PDF disregarding the `-ps` option.
- `AHFCmd -ps setting-file -d ...`  
Prints a document using the DEVMODE specified in the `setting-file`. If the `printer-name` is not specified in DEVMODE, the default printer is used.

When `-collate` or `-copies` is specified, the content of DEVMODE is overwritten.

## Restrictions for Printing

See also restrictions in the [Graphical User Interface](#).



## .NET Interface

The .NET Interface makes it possible for the **AH Formatter V6.0** to function through .NET applications developed using Visual Basic.NET, Visual C#.NET and similar programs.

The .NET Interface has been tried and tested in the Microsoft .NET Framework 4.0 and Microsoft .NET Framework 2.0 environments.

**CAUTION:** You cannot have both **AH Formatter V6.0** and another version of **AH Formatter** or **XSL Formatter** installed on your machine when the NET interface is used. It is necessary to uninstall one version, or only set the path of the **AH Formatter** or **XSL Formatter** you want to use by deleting the unwanted path from the environment variables.

### Component Registration

The AH Formatter .NET component is not registered automatically to the global assembly cache (GAC). It is necessary to create the path either by putting the .NET component in the current folder of the application, or by creating an application configuration file.

.NET Component File Name	for .NET Framework 4.0	XfoDotNet40Ctl60.dll V6.0
	for .NET Framework 2.0	XfoDotNet20Ctl60.dll

### Using Windows x64 Edition

In order to use the .NET interface 32 bit version of **AH Formatter V6.0** with Windows x64 Edition, it is necessary to apply `/platform:x86` option to compilers, such as `csc.exe`, when compiling the higher rank application.

### Classes

The following classes are contained in the .NET component.

Name	Functions
XfoObj	<p><b>AH Formatter V6.0</b> class (itself). This class implements an IDisposable interface. When exiting XfoObj class object, please be sure to call Dispose method in order to release the resource.</p> <p>Example for C#</p> <pre>XfoDotNetCtl.XfoObj obj = new XfoDotNetCtl.XfoObj(); try {     // some process } finally {     obj.Dispose(); }</pre>
XfoException	<b>AH Formatter V6.0</b> exception class. Throws the execute method of XfoObj class.

### Properties

XfoException Class includes the following properties.

Name	Type	R/W	Functions
ErrorLevel	Int32	R	<p>Indicates the level of the error that occurred during the formatting process.</p> <ol style="list-style-type: none"> <li>1. Information</li> <li>2. Warning</li> <li>3. Recoverable Error</li> <li>4. Fatal Error</li> </ol>
ErrorCode	Int32	R	Indicates the code of the exception error that occurred during the formatting process. Zero means no error. Non-zero indicates any error occurred.
Message	String	R	Get the message of the exception error that occurred during the formatting process.

XfoObj Class includes the following properties.

Name	Type	R/W	Functions
Version	String	R	Get the version string of <b>AH Formatter V6.0</b> .
DocumentURI	String	R/W	<p>Specifies the URI of the XML/FO/HTML documents you will format.</p> <ul style="list-style-type: none"> <li>If DocumentURI is omitted or "@STDIN" is specified, XML documents are loaded from stdin.</li> </ul> <p>The documents loaded from stdin are supposed to be FO files.</p>
StylesheetURI	String	R/W	<p>Specifies the URI of XSL/CSS stylesheets for formatting. If the specified XML document is FO, or the XML file contains the processing instruction <code>&lt;?xml-stylesheet ...?&gt;</code> and the stylesheet is specified, or the specified document is HTML, there is no need to specify a stylesheet.</p> <p>If the specified document is CSS, it will be the last user stylesheet. It is applied posterior to the stylesheet added by <a href="#">AddUserStylesheetURI</a> and the Option Setting File specified by <a href="#">AddOptionFileURI</a>.</p>
FormatterType	Int32	R/W	<p>Specify formatter type. Use one of the following values to specify the formatter type. If this parameter is omitted or invalid, it is considered as <b>AUTO</b>.</p> <ol style="list-style-type: none"> <li>AUTO</li> <li>HTML</li> <li>XHTML</li> <li>XML+CSS</li> <li>XSL-FO</li> </ol>
HtmlDefaultCharset	String	R/W	Specifies the default encoding of HTML. This setting is applied to HTML whose encoding is unknown.
OptionFileURI	String	R/W	Specifies the URI of the XML-format <a href="#">Option Setting File</a> which describes <b>AH Formatter V6.0</b> options. The contents of the Option Setting File are evaluated immediately. When you set the property which is contrary to the already set property, the former setting will be overwritten. URI added by <a href="#">AddOptionFileURI</a> will be canceled.
OptionFileCount	Int32	R	Counts the number of Option Setting Files you specified.
PrinterName	String	R/W	<p>Specifies the output format or the printer name to output.</p> <ul style="list-style-type: none"> <li>When a printer name is specified, the formatted result is outputted to that printer.</li> <li>When "@STDP RN" is specified, the formatted result is outputted to the currently used printer.</li> <li>When "@PDF" is specified, the formatted result is outputted to PDF.</li> <li>When "@SVG" is specified, the formatted result is outputted to SVG.</li> <li>When "@PS" is specified, the formatted result is outputted to PostScript.</li> <li>When "@INX" is specified, the formatted result is outputted to INX.</li> <li>When "@MIF" is specified, the formatted result is outputted to MIF.</li> <li>When "@XPS" is specified, the formatted result is outputted to XPS.</li> <li>When "@TEXT" is specified, the formatted result is outputted to a text format file. <code>no-LT</code></li> <li>When "@AreaTree" is specified, the AreaTree will be outputted. <code>no-LT</code></li> <li>When "@MODCA" is specified, the formatted result is outputted to MO:DCA.</li> </ul> <p>If this parameter is omitted, -p @PDF is automatically specified. Please refer to "<a href="#">How to specify the printer name</a>" for details. Please refer to "<a href="#">PDF Output</a>" for the PDF output information. Please refer to "<a href="#">SVG Output</a>" for the SVG output information.</p>

Name	Type	R/W	Functions
PrinterName	String	R/W	Please refer to " <a href="#">PostScript Output</a> " for the PostScript output. Please refer to " <a href="#">INX Output</a> " for the INX output. Please refer to " <a href="#">MIF Output</a> " for the MIF output. Please refer to " <a href="#">XPS Output</a> " for the XPS output. Please refer to " <a href="#">TEXT Output</a> " for the text output information. Please refer to " <a href="#">MO:DCA Output</a> " for the MO:DCA output information. <a href="#">@TEXT</a> and <a href="#">@AreaTree</a> are not effective with <b>AH Formatter V6.0 Lite</b> .
PrinterSettingURI	String	R/W	Specifies the URI of the Printer Setting File. Please refer to " <a href="#">How to create a Printer Setting File</a> ".
OutputFilePath	String	R/W	Specifies the output file path of the formatted result. When a printer is specified as an output format by PrinterName, a printing result is saved to the specified file by the printer driver. When an output format other than a printer is specified, it is saved as the specified file with the specified output format. When omitted, or when " <a href="#">@STDOUT</a> " is specified, it goes to standard output.
OutputFOPath	String	R/W	Specifies the output FO (or HTML etc.) file as the result of XSLT when the input files are an XML document and XSL stylesheet. <ul style="list-style-type: none"> <li>• If the input file is FO, no file is outputted.</li> <li>• When "<a href="#">@STDOUT</a>" is specified, it is considered as stdout.</li> </ul> If the setting is omitted, nothing outputs.
ExternalXSLT	String	R/W	Command-line of External XSLT Processor. If this is omitted, default MSXML4 or MSXML3 will be used. For example: <pre>xslt %param -o %3 %1 %2</pre> These meanings are as follows. <ul style="list-style-type: none"> <li>• %1 : XML document</li> <li>• %2 : XSL stylesheet</li> <li>• %3 : XSLT output file</li> <li>• %param : xsl:param</li> </ul> %1 to %3 are used to express only parameter positions. Do not replace them with actual file names. In case you use XSL:param for external XSLT processor, set the parameter in XSLTParamFormat and SetXSLTParam.
XSLTParamFormat	String	R/W	Specifies the parameter format of xsl:param when using External XSLT Processor. For example: <pre>-p %p %v</pre> These meanings are as follows. <ul style="list-style-type: none"> <li>• %p : Parameter Name</li> <li>• %v : Parameter Value</li> </ul>
BaseURI	String	R/W	Specifies the default base URI.
FormattedPages	Int32	R	Get the formatted total pages.
TwoPassFormatting	Boolean	R/W	When formatting a huge document with a large amount of unresolved <a href="#">&lt;fo:page-number-citation&gt;</a> , a large amount of memories are consumed because the cancellation of the page information is impossible. Therefore, the limit is caused in the number of pages to format. This parameter solves that problem by making the formatting two passes. Although its processing time may be increased, only the page number information which should be solved will consume the memory and the memory consumption will be extremely decreased. Please refer to " <a href="#">Formatting Large Document</a> ". <a href="#">no-LT</a>
MultiVolume	Boolean	R/W	Specifies to output PDF in separate volume. The error occurs when FO doesn't include the <a href="#">axf:output-volume-info</a> extension property. When the value false is specified, the StartVolume/EndVolume parameter is invalid, instead the parameter StartPage/EndPage is effective. When

Name	Type	R/W	Functions
MultiVolume	Boolean	R/W	the value 'true' is specified, the parameter StartPage/EndPage is invalid, instead the parameter StartVolume/EndVolume is effective. <small>no-LT</small>
StartVolume EndVolume	Int32	R/W	Effective when MultiVolume=true is specified. Specifies the start and the end of separate volume to output. If the setting of start for separate volume is omitted or the value 'true' is less than or equal to 0, the start volume is accounted as the first volume. If the setting of start for separate volume is omitted or the value 'true' is more than actual number of separate volume, the end volume is accounted as the last volume. If the setting is conflicted, an error occurs. (e.g. StartVolume=5 EndVolume=3) <small>no-LT</small>
TotalVolumeCount	Int32	R	Gets the number of all the separate volumes when outputting PDF to multiple separate volumes. <small>no-LT</small>
OutputVolumeCount	Int32	R	Gets the number of the actual separate volumes when outputting PDF to multiple separate volumes. <small>no-LT</small>
StartPage EndPage	Int32	R/W	Specifies the start page or the end page of the output document. If the start page is omitted or the specified value is 0 or less, the start page is considered the first page. If the end page is omitted or the specified value exceeds the actual number of pages, the end page is considered as the last page. If the setting is inconsistent, (for example, StartPage=5 EndPage=3) an error occurs.
ExitLevel	Int32	R/W	Specifies at which error level to abort the formatting process. <b>AH Formatter V6.0</b> will stop formatting when the detected error level is equal to or higher than the ExitLevel property. The default value is 2 (Warning). Thus if a level 2 or higher error occurs and error level is 2 (Warning) or higher, the formatting process will be aborted. Acceptable values are from 1 to 4. When a value of 5 or higher is specified, it is considered to be a value of 4. If an error-level:4 (Fatal error) occurs, the formatting process will be aborted unconditionally. The ExitLevel does not cause an error message to be displayed no matter what value may be specified for this property.
ErrorLevel	Int32	R	Indicates the error level that occurred during the formatting process. <ul style="list-style-type: none"> <li>1. Information</li> <li>2. Warning</li> <li>3. Recoverable Error</li> <li>4. Fatal Error</li> </ul>
ErrorCode	Int32	R	Indicates the code of the error that occurred during the formatting process. Zero means no error. Non-zero indicates an error occurred.
ErrorMessage	String	R	Indicates the <a href="#">error message</a> of the error that occurred during the formatting process.
ErrorStreamType	Int32	R/W	Outputs the <a href="#">error message</a> to standard output or to standard error when the error level is less than the specified error level allowed while formatting. The error message is not outputted in default. <ul style="list-style-type: none"> <li>0. Not output</li> <li>1. Standard output</li> <li>2. Standard error output</li> </ul>
XmlDomDocument	System.Xml.XmlDocument	W	Specifies the target XML document by the System.Xml.XmlDocument class object.
XmlDomStylesheet	System.Xml.XmlDocument	W	Specifies the target XSL stylesheet by the System.Xml.XmlDocument class object.

## Properties – PDF Settings

Name	Type	R/W	Functions
PdfVersion	Int32	R/W	Specifies PDF version:



Name	Type	R/W	Functions
PdfVersion	Int32	R/W	<ul style="list-style-type: none"> <li>0. PDF1.3</li> <li>1. PDF1.4</li> <li>2. PDF1.5</li> <li>3. PDF1.6</li> <li>4. PDF1.7</li> <li>101. PDF/X-1a:2001</li> <li>103. PDF/X-3:2002</li> <li>104. PDF/X-1a:2003</li> <li>105. PDF/X-2:2003</li> <li>106. PDF/X-3:2003</li> <li>200. PDF/A-1a:2005</li> <li>400. PDF/A-1b:2005</li> </ul> <p>Impossible to specify PDF/X or PDF/A with <b>AH Formatter V6.0 Lite</b>.</p>
PdfEncryptLevel	Int32	R/W	<p>Specifies the key length when encrypting the PDF file during output. The key length can be specified as follows: (Note: This parameter is effective only when you specify PDF1.4 or later.)</p> <ul style="list-style-type: none"> <li>0. 40bit RC4</li> <li>1. 128bit RC4</li> <li>2. 128bit AES</li> <li>3. 256bit AES</li> </ul> <p>128bit AES is effective with PDF1.5 or later, 256bit AES is effective with PDF1.7 or later.</p>
PdfTag	Boolean	R/W	Generates Tagged PDF. Ignored if PDF cannot be tagged depending on the PDF versions. <code>[no-LT]</code>
PdfReversePage	Boolean	R/W	Outputs pages in reverse order to PDF.
PdfUserPassword	String	W	Specifies the user password for PDF. The password must be 32 bytes or less.
PdfOwnerPassword	String	W	Specifies the owner password for PDF. The password must be 32 bytes or less.
PdfNoPrinting	Boolean	R/W	Prohibits printing the PDF file. It is necessary to specify PdfOwnerPassword so that this parameter is effective.
PdfNoChanging	Boolean	R/W	Prohibits making changes to the PDF file. It is necessary to specify PdfOwnerPassword so that this parameter is effective.
PdfNoContentCopying	Boolean	R/W	Prohibits copying the content of the PDF file. It is necessary to specify PdfOwnerPassword so that this parameter is effective.
PdfNoAddingOrChangingComments	Boolean	R/W	Prohibits adding comments and form fields to the PDF file. It is necessary to specify PdfOwnerPassword so that this parameter is effective.
PdfNoFillForm	Boolean	R/W	Prohibits filling in of form fields and signing of the PDF file. This parameter is effective only when you specify PDF1.4 or later. In order to make this parameter effective, other parameter settings may be required. See also the ' <a href="#">PDF Reference</a> ' from Adobe Systems Incorporated for more details.
PdfNoAccessibility	Boolean	R/W	Prohibits text access for screen reader devices of the PDF file. This parameter is effective only when you specify PDF1.4 or later.
PdfNoAssembleDoc	Boolean	R/W	Prohibits inserting, deleting and rotating the PDF pages. This parameter is effective only when you specify PDF1.4 or later for the PdfVersion.
PdfEmbedAllFontsEx	Int32	R/W	Specifies whether or not to embed all embeddable fonts in the PDF output file. However, even if embed all fonts is specified,

Name	Type	R/W	Functions
PdfEmbedAllFontsEx	Int32	R/W	<p>fonts which restrict embedding or fonts are unable to be embedded to PDF will not be embedded.</p> <ol style="list-style-type: none"> <li>0. Specified font</li> <li>1. All fonts excluding Base14 font</li> <li>2. All fonts including Base14 font</li> </ol>
PdfEmbedFonts	String	R/W	Embeds the specified font in the created PDF. To specify multiple fonts, put commas between each font.
PdfEmbedSubsetFontPercentage	Int32	R/W	Embeds all fonts when the percent of characters used is greater than or equal to specified value, subsets embedded fonts when the percent of characters used is less than the specified value. If nothing is specified, it is considered as 100 and embedded fonts are always subset.
PdfErrorOnEmbedFault	Boolean	R/W	When true is specified, an error is issued when font embedding fails.
PdfErrorOnMissingGlyph	Boolean	R/W	When true is specified, an error is issued when there is a missing glyph.
PdfPrintingAllowed	Int32	R/W	<p>Specifies whether and how to permit printing of the PDF. This parameter is effective only when you specify PDF1.4 or later.</p> <ol style="list-style-type: none"> <li>0. Not Allowed</li> <li>1. Low Resolution Printing</li> <li>2. High Resolution Printing</li> </ol>
PdfImageCompression	Int32	R/W	<p>When a color image format cannot be stored directly in the PDF, the image is stored after being transformed into a bitmap format which is compatible with PDF. Use one of the following values to specify the compression method of the data stored in a PDF file. When Auto is selected, the process is automatically done and creates the image data according to the setting of PdfJPEGQuality and PdfRasterizeResolution. Whichever has the smaller compressed size, JPEG or ZLIB, is selected. These are the settings for color images. Specify PdfGrayscaleImageCompression for grayscale images and PdfMonochromeImageCompression for monochrome images.</p> <ol style="list-style-type: none"> <li>0. Auto</li> <li>1. JPEG compression</li> <li>2. ZLIB compression</li> <li>3. JPEG2000 compression (it is effective only when PdfVersion is PDF1.5 or higher)</li> <li>4. Keep LZW</li> </ol>
PdfJPEGQuality	Int32	R/W	<p>With color image formats that cannot be stored directly in a PDF, if JPEG compression is specified for PdfImageCompression the image quality can be specified with a numeric value of 1-100. Higher values are proportional to increased image quality. However the file size also becomes larger. This is the setting for color images. PdfGrayscaleJPEGQuality can also be specified for grayscale images.</p> <p><b>CAUTION:</b> This is not for changing the quality of a JPEG formatted image.</p>
PdfPutImageColorProfile	Boolean	R/W	Specifies whether to embed the color profile (of the embedded color image) in the PDF.
PdfImageDownSampling	Int32	R/W	<p>Specifies one of the following methods to downsample the raster color image in a PDF. When a value other than None is specified, an image that has a higher resolution than the PdfImageDownSamplingDPI will be downsampled to the resolution specified by PdfImageDownSamplingTarget. These are the settings for color images. Specify PdfGrayscaleImageDownSampling for grayscale images, and PdfMonochromeImageDownSampling for monochrome images.</p>

Name	Type	R/W	Functions
PdfImageDownSampling	Int32	R/W	<ul style="list-style-type: none"> <li>0. None</li> <li>1. Average</li> <li>2. Bicubic</li> <li>3. Subsampling</li> </ul>
PdfImageDownSamplingTarget	Int32	R/W	Sets the target resolution when a raster color image is downsampled.
PdfImageDownSamplingDPI	Int32	R/W	Sets the resolution for the downsampled raster color image.
PdfGrayscaleImageCompression	Int32	R/W	<p>When a grayscale image format cannot be stored directly in the PDF, the image is transformed into a bitmap format which is compatible with PDF. Use one of the following values to specify the compression method of the data stored in a PDF file. When Auto is selected, the process is automatically done and creates the image data according to the setting of PdfGrayscaleJPEGQuality and PdfRasterizeResolution. Whichever has the smaller compressed size, JPEG or ZLIB, is selected. These are the settings for grayscale images. Specify PdfImageCompression for color images, and PdfMonochromeImageCompression for monochrome images.</p> <ul style="list-style-type: none"> <li>0. Auto</li> <li>1. JPEG compression</li> <li>2. ZLIB compression</li> <li>3. JPEG2000 compression (it is effective only when PdfVersion is PDF1.5 or higher)</li> <li>4. Keep LZW</li> </ul>
PdfGrayscaleJPEGQuality	Int32	R/W	<p>For grayscale image formats that cannot be stored directly in the PDF, if JPEG compression is specified in PdfGrayscaleImageCompression the image quality can be specified by a numerical value of 1-100. Higher values are proportional to increased image quality, however the file size also becomes larger. Specify PdfJPEGQuality for color images.</p> <p><b>CAUTION:</b> This is not for changing the quality of a JPEG formatted image.</p>
PdfGrayscaleImageDownSampling	Int32	R/W	<p>Specifies one of the following methods to downsample raster grayscale images in a PDF. When a value other than None is specified, an image that has a higher resolution than the one specified in PdfGrayscaleImageDownSamplingDPI will be downsampled to the resolution specified by PdfGrayscaleImageDownSamplingTarget. These are the settings for grayscale images. Specify PdfImageDownSampling for color images, and PdfMonochromeImageDownSampling for monochrome images.</p> <ul style="list-style-type: none"> <li>0. None</li> <li>1. Average</li> <li>2. Bicubic</li> <li>3. Subsampling</li> </ul>
PdfGrayscaleImageDownSamplingTarget	Int32	R/W	Sets the target resolution when a raster grayscale image is downsampled.
PdfGrayscaleImageDownSamplingDPI	Int32	R/W	Sets the resolution for raster grayscale image.
PdfMonochromeImageCompression	Int32	R/W	<p>When monochrome image formats cannot be stored directly in the PDF, the image is transformed and stored in a bitmap format compatible with PDF. Use one of the following values to specify the compression method of data stored in a PDF file. These are the settings for monochrome images. Specify PdfGrayscaleImageCompression for grayscale images, and PdfImageCompression for color images.</p> <ul style="list-style-type: none"> <li>0. CCITT Group4</li> <li>1. CCITT Group3</li> </ul>

Name	Type	R/W	Functions
PdfMonochromeImageCompression	Int32	R/W	<ol style="list-style-type: none"> <li>2. Run Length compression</li> <li>3. ZLIB compression</li> <li>4. None</li> </ol>
PdfMonochromeImageDownSampling	Int32	R/W	<p>Specifies one of the following methods to downsample raster monochrome images in a PDF. When a value other than None is specified, an image that has a higher resolution than the one specified in PdfMonochromeImageDownSamplingDPI will be downsampled into the resolution specified by PdfMonochromeImageDownSamplingTarget. These are the settings for monochrome images. Specify PdfImageDownSampling for color images, and PdfGrayscaleImageDownSampling for grayscale images.</p> <ol style="list-style-type: none"> <li>0. None</li> <li>1. Average</li> <li>2. Bicubic</li> <li>3. Subsampling</li> </ol>
PdfMonochromeImageDownSamplingTarget	Int32	R/W	Sets the target resolution when a raster monochrome image is downsampled.
PdfMonochromeImageDownSamplingDPI	Int32	R/W	Sets the resolution for the downsampled raster monochrome image.
PdfLinearize	Boolean	R/W	Specifies whether to output linearized PDF or not. <small>[no-LT]</small>
PdfCompressContentStream	Boolean	R/W	Specifies whether the text and line art in a PDF are compressed in order to reduce the size of PDF.
PdfUseLaunchForRelativeURI	Boolean	R/W	Specifies whether external links specified by the relative address are transformed into 'Open the file' or into a 'World Wide Web link' in the PDF link properties. If the value is set as true, it becomes 'Open the file'. If the value is false, it becomes 'World Wide Web link'
PdfRGBConversion	Int32	R/W	<p>Specifies how to convert the RGB color space (DeviceRGB) to DeviceGray.</p> <ol style="list-style-type: none"> <li>0. No Conversion</li> <li>1. Black to DeviceGray</li> <li>2. Gray to DeviceGray</li> <li>3. All RGB to DeviceGray</li> <li>4. All RGB to CMYK</li> </ol>
PdfConvertImageColorSpace	Boolean	R/W	Converts RGB images automatically into CMYK when outputting PDF/X and PDF/A. <small>[no-LT]</small>
PdfRasterizeResolution	Int32	R/W	Specifies the rasterised-resolution value of the transformed raster images from 70 to 500(DPI). SVG, EMF and WMF are drawn in PDF as vectors without being changed to raster images.
PdfColorProfile	String	R/W	When PDF/A-1b:2005 is specified to PdfVersion, the specification of the color profile is indispensable. Specify the color profile with its full path. This parameter is invalid with any PDF other than PDF/A-1b:2005.
PdfImport3DAnnotation	Boolean	R/W	Imports 3D object. <small>[no-LT]</small>
PdfOutputScale	String	W	Specifies the scaling ratio of the output PDF. A unit or % value can be specified.
PdfOutputHeight	String	R/W	Scales the height of the output PDF. A unit or % value can be specified.
PdfOutputWidth	String	R/W	Scales the width of the output PDF. A unit or % value can be specified.
PdfErrorOnPDFXFault	Boolean	R/W	An error is not issued when PDF/X or PDF/A is generating.
PdfSignature	Boolean	R/W	Applies the digital signature the signature field in PDF. Refer to <a href="#">Digital Signature</a> for more details. <small>[no-LT]</small>

Name	Type	R/W	Functions
PdfSignatureName	String	R/W	Specifies the name of the signature information to be used when applying a digital signature. Refer to <a href="#">Digital Signature</a> for more details. <code>no-LT</code>
PdfCertificateName	String	R/W	Specifies the name of the certificate information to be used when applying a digital signature. Refer to <a href="#">Digital Signature</a> for more details. <code>no-LT</code>

## Properties – SVG Settings

Name	Type	R/W	Functions
SvgVersion	Int32	R/W	Specifies the SVG version: <ul style="list-style-type: none"> <li>0. SVG 1.1</li> <li>1. SVG Basic</li> <li>2. SVG Tiny</li> </ul>
SvgImageProcessingType	Int32	R/W	Specifies how to treat images contained in the output SVG. <ul style="list-style-type: none"> <li>0. Embeds all image files.</li> <li>1. Copies all image files to the destination specified by SvgImageCopyPath, and then links.</li> <li>2. Links images that can be linked and embeds images that have to be embedded. Raster images other than JPEG and PNG are always embedded.</li> <li>3. Copies images that have been linked to the destination that is specified by SvgImageCopyPath, and links. The embedded image are embedded.</li> </ul> <p>If this parameter is omitted, the default is 0 and all images are embedded.</p>
SvgImageCopyPath	String	R/W	Specifies the destination for the copied images if 1 or 3 is specified for SvgImageProcessingType.
SvgGzipCompression	Boolean	R/W	Specifies whether to compress the outputted SVG into gzip format.
SvgSingleFile	Boolean	R/W	Specifies whether a formatted result composed of multiple pages is output as a single SVG file or as multiple SVG files. If the value is true, output is as a single SVG file. If the value is false, output is as multiple SVG files. When multiple files are output, the files are named as specified in SvgFormat. This takes effect only when outputting to a file and is not valid when output is without a file name such as when streaming.
SvgImageRename	Boolean	R/W	When images are copied to the directory specified by SvgImageCopyPath etc., specifies whether to rename all file names to the prefix specified in SvgImagePrefix, or use the original name. When the file name is duplicated, a sequential number is added. When true is specified, all files are renamed.
SvgImagePrefix	String	R/W	When images are copied to the directory specified by SvgImageCopyPath, specifies the prefix of the file name. The file name will be prefixed followed by a sequential numbers only if the Default is empty.
SvgSinglePageNumber	Boolean	R/W	When SvgSingleFile=false is specified, specifies whether to add sequential number to the output SVG even if it has only one-page. If false it is not added to the output SVG.
SvgFormat	String	R/W	When the original document has multiple pages and false is specified in SvgSingleFile, each page will be output as an SVG files that has a consecutive number at the end of the file name. This parameter specifies the format of those consecutive numbers. For example, when "document.svg" is specified as the name, by specifying "-01" for SvgFormat the output files will be document-01.svg, document-02.svg and so on. If this parameter is omitted, "1" is considered to have been specified.
SvgEmbedAllFonts	Boolean	R/W	Specifies whether to embed fonts in the outputted SVG.
SvgEmbedFonts	String	R/W	Embeds the specified font in the created SVG. place commas between fonts to specify multiple fonts.
SvgErrorOnEmbedFault	Boolean	R/W	When true is specified, an error is issued when font embedding fails.

Name	Type	R/W	Functions
SvgImageConversion	Int32	R/W	Selects how to convert the images embedded in the output SVG to the following. 0. Auto 1. JPEG conversion 2. PNG conversion
SvgJPEGQuality	Int32	R/W	For image formats which cannot be stored directly in SVG, if JPEG conversion is specified in SvgImageConversion, specifies the quality of the image from 1-100. Higher values are proportional to increased image quality, however the file size also increases. The initial value is set at 80.
SvgRasterizeResolution	Int32	R/W	Specifies the rasterize-resolution value of the raster image (Changed from a vector image) from 70 to 500(DPI). SVG, EMF and WMF are drawn in SVG as vectors without being changed to raster images.

### Properties – INX Settings

Name	Type	R/W	Functions
InxOutputMode	Int32	R/W	Specifies the INX output mode. 0. Text area output mode 1. Line area output mode 2. Block area output mode

### Properties – MIF Settings

Name	Type	R/W	Functions
MifOutputMode	Int32	R/W	Specifies the MIF output mode. 0. Text area output mode 1. Line area output mode 2. Block area output mode
MifIpMode	Int32	R/W	Specifies the MIF image processing mode. 0. Embeds all images in MIF. 1. Links images as external files.

### Properties – Printer Settings

Name	Type	R/W	Functions
PrnCopies	Int32	R/W	Specifies the number of copies when outputting to a printer. If nothing is specified, the value is considered as 1.
PrnCollate	Boolean	R/W	Indicates collation of multiple copies when outputting to a printer. If it is not specified or the value 'false' is specified, the same page is multi-copied continuously. If 'true' is specified, the pages specified from start to end are printed repeatedly.
BatchPrint	Boolean	R/W	When the value false is specified, the print dialog box is displayed when printing. If the setting is omitted or the value 'true' is specified, the print dialog is not displayed.

Values can be added using the following units.

Representation	Meanings
cm	centimeter
mm	millimeter. 1 mm = 1/10 cm
in	inch. 1 in = 2.54 cm
pt	point. 1 pt = 1/72 in

Representation	Meanings
pc	pica. 1 pc = 12 pt
jpt	1 jpt = 0.3514 mm
q	1 q = 0.25 mm

## Methods

XfoObj Class provides the following methods.

Name	Return Value	Arguments	Functions
Dispose	None	None	Releases the resource. Please be sure to call this method when you exit the object.
Execute	None	None	Execute formatting and outputs to a PDF specified in OutputFilePath or the printer specified in PrinterName.
Render	None	Stream inputStream Stream outputStream String outDevice	Executes the formatting of XSL-FO document specified for inputStream, and outputs it to outputStream in the output form specified for outDevice.
Render	None	XmlDocument inputDoc Stream outputStream String outDevice	Executes the formatting of XSL-FO document specified for inputDoc, and outputs it to outputStream in the output form specified for outDevice.
Render	None	Stream inputStream Stream xsltStream Stream outputStream String outDevice	Transforms an XML document specified to xmlSrc using an XSL stylesheet specified to xsltSrc, then executes the formatting of XSL-FO document and outputs it to outputStream in the output form specified for outDevice. A standard XSLT processor of .NET Framework is used for the XSLT conversion. The ExternalXSLT property and the setting of XSLT processor in the Option Setting File is disregarded.
Clear	None	None	Initializes formatting engine.
SetXSLTParam	None	String name String value	Sets parameter name and value for xsl:param.
ClearXSLTParam	None	None	Clears all parameter name and value for xsl:param.
SetFontAlias	None	String fontname String aliasname	Sets the substitution of font name. This substitution acts on the font names existing in FO. The font name 'fontName' is replaced to 'aliasName'.
EraseFontAlias	None	String fontname	Erases the substitution of font name 'fontName'.
ClearFontAlias	None	None	Clears all substitutions of font name.
GetFormattingError	None	Collections.ArrayList errlist	After the formatting finishes, collects the error information and stores it as an argument in Collections.ArrayList provided the error is not an exit level (fatal) error. ErrorLevel, ErrorCode and ErrorMessage are the XfoErrorInformation classes reported.
GetOptionFileURI	String	Int32 index	Gets the URL of the Option Setting File from the index you specified
AddOptionFileURI	None	String fileURI	Adds the URL of the XML-based Option Setting File that indicates the options for <b>AH Formatter V6.0</b> . The contents of the Option Setting File are evaluated and if new properties are set, the former setting will be overwritten.
AddUserStylesheetURI	None	String fileURI	Specifies the CSS user stylesheet you want to add. AddUserStylesheetURI can be specified any number of times. It is applied by specified order prior to the stylesheet specified by StylesheetURI.

## PDF Output to the Web Browser

---

It's possible to directly output PDF to the Web Browser, when you use ASP.NET application on a server and output the formatted result in PDF. The following is its sample of program.

```
public class TestPage : Page
{
    public void OnStreamPDF(Object sender, EventArgs ea)
    {
        XfoDotNetCtl.XfoObj obj = new XfoDotNetCtl.XfoObj();
        obj.ExitLevel = 4;
        FileStream fs = null;
        try
        {
            fs = File.Open("c:\\temp\\sample.fo", FileMode.Open, FileAccess.Read);
            Response.Clear();
            Response.ContentType = "application/pdf";
            obj.Render(fs, Response.OutputStream);
            Response.End();
        }
        catch(Exception e)
        {
            throw e;
        }
        finally
        {
            if (fs != null)
                fs.Close();
        }
    }
}
```

## Programming Example

---

The following is a C# programming sample. In addition, [Install directory]/samples/dotnet includes some useful sample files for C# and VisualBasic.NET.

```
using System;

public class MainApp
{
    static public void Main()
    {
        XfoDotNetCtl.XfoObj obj = new XfoDotNetCtl.XfoObj();
        obj.DocumentURI = "c:\\temp\\test.xml";
        obj.StylesheetURI = "c:\\temp\\test.xsl";
        obj.OutputFilePath = "c:\\temp\\test.pdf";
        obj.ExitLevel = 4;
        try
        {
            obj.Execute();
        }
        catch(XfoException e)
        {
            Console.WriteLine("ErrCode : " + e.ErrorCode + "\n" + e.Message);
        }
        catch(Exception e)
        {
            Console.WriteLine(e.Message);
        }
        finally
        {
            obj.Dispose();
        }
    }
}
```





## COM Interface

The COM Interface makes it possible for the **AH Formatter V6.0** to function through applications using COM-supported languages such as Visual Basic, Delphi and VBScript.

### Object Class Name

The object class name is shown below. Use "XfoComCtl.XfoObj" as the object class name when invoking from the Create Object statement in Visual Basic.

<b>namespace</b>	XfoComCtl
<b>Object Class Name</b>	XfoObj
<b>COM DLL File Name</b>	XfoComCtl60.dll

In order to use the COM interface, Windows registration is required. When the **AH Formatter V6.0** is installed correctly, the registration of COM is automatically done. To re-register the COM, please run regsvr32 from the console as follows.

```
> cd [Install directory]
> regsvr32 XfoComCtl60.dll
```

When running regsvr32, an error may occur if User Account Control (UAC) function is set to Windows. In such a case, please run a command prompt as an administrator by clicking "Run As Administrator" from the context menu, then run regsvr32.

### Properties

XfoObj includes the following properties.

Name	Type	R/W	Functions
Version	String	R	Get the version string of <b>AH Formatter V6.0</b> .
DocumentURI	String	R/W	Specifies the URI of the XML/FO/HTML documents you will format. <ul style="list-style-type: none"> <li>If it is omitted or "@STDIN" is specified, XML documents are loaded from stdin.</li> </ul> The documents loaded from stdin are supposed to be FO files.
StylesheetURI	String	R/W	Specifies the URI of XSL/CSS stylesheets for formatting. If the specified XML document is FO, or the XML file contains the processing instruction <code>&lt;?xml-stylesheet ...?&gt;</code> and the stylesheet is specified, or the specified document is HTML, there is no need to specify a stylesheet. If the specified document is HTML, it will be the last user stylesheet. It is applied posterior to the stylesheet added by <a href="#">AddUserStylesheetURI</a> and the Option Setting File specified by <a href="#">AddOptionFileURI</a> .
FormatterType	Long	R/W	Specify formatter type. Use one of the following values to specify the formatter type. If this parameter is omitted or invalid, it is considered as AUTO. <ol style="list-style-type: none"> <li>AUTO</li> <li>HTML</li> <li>XHTML</li> <li>XML+CSS</li> <li>XSL-FO</li> </ol>
HtmlDefaultCharset	String	R/W	Specifies the default encoding of HTML. This setting is applied to HTML whose encoding is unknown.
OptionFileURI	String	R/W	Specifies the URI of the XML-format <a href="#">Option Setting File</a> which describes <b>AH Formatter V6.0</b> options. The contents of the Option Setting File are evaluated immediately. When you set the property which is contrary to the already set property, the former setting will be overwritten. URI added by <a href="#">AddOptionFileURI</a> will be canceled.
OptionFileCount	Long	R	Counts the number of Option Setting Files you specified.
PrinterName	String	R/W	Specifies the output format or the printer name to output. <ul style="list-style-type: none"> <li>When a printer name is specified, the formatted result is outputted to that printer.</li> </ul>

Name	Type	R/W	Functions
PrinterName	String	R/W	<ul style="list-style-type: none"> <li>• When "@STDP RN" is specified, the formatted result is outputted to the currently used printer.</li> <li>• When "@PDF" is specified, the formatted result is outputted to PDF.</li> <li>• When "@SVG" is specified, the formatted result is outputted to SVG.</li> <li>• When "@PS" is specified, the formatted result is outputted to PostScript.</li> <li>• When "@INX" is specified, the formatted result is outputted to INX.</li> <li>• When "@MIF" is specified, the formatted result is outputted to MIF.</li> <li>• When "@XPS" is specified, the formatted result is outputted to XPS.</li> <li>• When "@TEXT" is specified, the formatted result is outputted to a text format file. <code>no-LT</code></li> <li>• When "@AreaTree" is specified, the AreaTree will be outputted. <code>no-LT</code></li> <li>• When "@MODCA" is specified, the formatted result is outputted to MO:DCA.</li> </ul> <p>If this parameter is omitted, -p @PDF is automatically specified. Please refer to <a href="#">"How to specify the printer name"</a> for details.  Please refer to <a href="#">"PDF Output"</a> for the PDF output information.  Please refer to <a href="#">"SVG Output"</a> for the SVG output information.  Please refer to <a href="#">"PostScript Output"</a> for the PostScript output.  Please refer to <a href="#">"INX Output"</a> for the INX output.  Please refer to <a href="#">"MIF Output"</a> for the MIF output.  Please refer to <a href="#">"XPS Output"</a> for the XPS output.  Please refer to <a href="#">"TEXT Output"</a> for the text output information.  Please refer to <a href="#">"MO:DCA Output"</a> for the MO:DCA output information.  @TEXT and @AreaTree are not effective with <b>AH Formatter V6.0 Lite</b>.</p>
PrinterSettingURI	String	R/W	Specifies the URI of the Printer Setting File. Please refer to <a href="#">"How to create a Printer Setting File"</a> .
OutputFilePath	String	R/W	Specifies the output file path of the formatted result. When the printer is specified as an output format by PrinterName, a printing result is saved to the specified file by the printer driver. When output format other than a printer is specified, it is saved as the specified file with the specified output format. When "@STDO UT" is specified, it goes to standard output. When omitted, it goes to standard output. However in cases in which ActiveServerPages requires, <a href="#">PDF data is output to the Web Browser</a> .
OutputFOPath	String	R/W	<p>Specifies the output FO (or HTML etc.) file as the result of XSLT when the input files are an XML document and an XSL stylesheet.</p> <ul style="list-style-type: none"> <li>• If the input file is FO, no file is outputted.</li> <li>• When "@STDO UT" is specified, it is considered as stdout.</li> </ul> <p>If the setting is omitted, nothing outputs.</p>
ExternalXSLT	String	R/W	<p>Command-line of External XSLT Processor. If this is omitted, default MSXML4 or MSXML3 will be used. For example:</p> <pre>xslt %param -o %3 %1 %2</pre> <p>These meanings are as follows.</p> <ul style="list-style-type: none"> <li>• %1 : XML document</li> <li>• %2 : XSL stylesheet</li> <li>• %3 : XSLT output file</li> <li>• %param : xsl:param</li> </ul> <p>%1 to %3 are used to express only parameter positions. Do not replace them with actual file names. In case you use XSL:param for an external XSLT processor, set the parameter in XSLTParamFormat and SetXSLTParam.</p>
XSLTParamFormat	String	R/W	<p>Specifies the parameter format of xsl:param when using External XSLT Processor. For example:</p> <pre>-p %p %v</pre> <p>These meanings are as follows.</p> <ul style="list-style-type: none"> <li>• %p : Parameter Name</li> <li>• %v : Parameter Value</li> </ul>

Name	Type	R/W	Functions
BaseURI	String	R/W	Specifies the default base URI.
FormattedPages	Long	R	Get the formatted total pages.
TwoPassFormatting	Boolean	R/W	When formatting a huge document with a large amount of unresolved <fo:page-number-citation>, a large amount of memories are consumed because the cancellation of the page information is impossible. Therefore, the limit is caused in the number of pages to format. This parameter solves that problem by making the formatting two passes. Although its processing time may be increased, only the page number information which should be solved will consume the memory and the memory consumption will be extremely decreased. Please refer to " <a href="#">Formatting Large Document</a> ". <small>[no-LT]</small>
MultiVolume	Boolean	R/W	Specifies to output PDF in separate volume. The error occurs when FO doesn't include the <a href="#">axf:output-volume-info</a> extension property. When the value false is specified, the StartVolume/EndVolume parameter is invalid, instead the parameter StartPage/EndPage is effective. When the value true is specified, the parameter StartPage/EndPage is invalid, instead the parameter StartVolume/EndVolume is effective. <small>[no-LT]</small>
StartVolume EndVolume	Long	R/W	Effective when MultiVolume=true is specified. Specifies the start and the end of separate volume to output. If the setting of start for separate volume is omitted or the value true is less than or equal to 0, the start volume is accounted as the first volume. If the setting of start for separate volume is omitted or the value true is more than actual number of separate volume, the end volume is accounted as the last volume. If the setting is conflicted, an error occurs. (e.g. StartVolume=5 EndVolume=3) <small>[no-LT]</small>
TotalVolumeCount	Long	R	Gets the number of all the separate volumes when outputting PDF to multiple separate volumes. <small>[no-LT]</small>
OutputVolumeCount	Long	R	Gets the number of the actual separate volumes when outputting PDF to multiple separate volumes. <small>[no-LT]</small>
StartPage EndPage	Long	R/W	Specifies the start page number or the end page number of a document to output. If the start page is omitted or the specified value is 0 or less, the start page is considered the first page. If the end page is omitted or the specified value exceeds the actual page number, the end page is considered last page. If the setting is inconsistent, (for example, StartPage=5 EndPage=3) an error occurs.
ExitLevel	Long	R/W	Specifies error level to abort formatting process. <b>AH Formatter V6.0</b> will stop formatting when the detected error level is equal to the specified ExitLevel property or higher. The default value is 2 (Warning). Thus if an error occurred and error level is 2 (Warning) or higher, the formatting process will be aborted. Legal values are from 1 to 4. When the value of 5 or higher is specified, it is considered to be the value of 4. If an error-level:4 (Fatal error) occurs, the formatting process will be aborted unconditionally. Note: Setting this value does not cause an error message to be displayed.
ErrorLevel	Long	R	Indicates the error level that occurred during the formatting process. <ul style="list-style-type: none"> <li>1. Information</li> <li>2. Warning</li> <li>3. Recoverable Error</li> <li>4. Fatal Error</li> </ul>
ErrorCode	Long	R	Indicates the error code of the error that occurred during the formatting process. Zero means no error. Non-zero indicates an error occurred.
ErrorMessage	String	R	Indicates the <a href="#">error message</a> of the error that occurred during the formatting process.
XMLDOMDocument	Object	W	Specifies the target XML document used by the MSXML XMLDOMDocument object.
XMLDOMStylesheet	Object	W	Specifies the target XSL stylesheet used by the MSXML XMLDOMDocument object.

## Properties – PDF Settings

Name	Type	R/W	Functions
PdfVersion	Long	R/W	Specifies PDF version: <ul style="list-style-type: none"> <li>0. PDF1.3</li> <li>1. PDF1.4</li> <li>2. PDF1.5</li> </ul>

Name	Type	R/W	Functions
PdfVersion	Long	R/W	3. PDF1.6 4. PDF1.7 101. PDF/X-1a:2001 103. PDF/X-3:2002 104. PDF/X-1a:2003 105. PDF/X-2:2003 106. PDF/X-3:2003 200. PDF/A-1a:2005 400. PDF/A-1b:2005  Impossible to specify PDF/X or PDF/A with <b>AH Formatter V6.0 Lite.</b>
PdfEncryptLevel	Long	R/W	Specifies the key length when encrypting the PDF file during outputting. The key length can be specified as follows: (Note: This parameter is effective only when you specify PDF1.4 or later with PdfVersion.)  0. 40bit RC4 1. 128bit RC4 2. 128bit AES 3. 256bit AES  128bit AES is effective with PDF1.5 or later, 256bit AES is effective with PDF1.7 or later.
PdfTag	Boolean	R/W	Generates Tagged PDF. Ignored if PDF cannot be tagged depending on the PDF versions. <code>{no-LT}</code>
PdfReversePage	Boolean	R/W	Outputs pages in reverse order to PDF.
PdfUserPassword	String	W	Specifies the user password for PDF. The password must be within 32 bytes.
PdfOwnerPassword	String	W	Specifies the owner password for PDF. The password must be within 32 bytes.
PdfNoPrinting	Boolean	R/W	Prohibits printing the PDF file. It is necessary to specify PdfOwnerPassword so that this parameter is effective.
PdfNoChanging	Boolean	R/W	Prohibits making changes to the PDF file.
PdfNoContentCopying	Boolean	R/W	Prohibits copying the content of the PDF file. It is necessary to specify PdfOwnerPassword so that this parameter is effective.
PdfNoAddingOrChangingComments	Boolean	R/W	Prohibits adding comments and form fields to the PDF file. It is necessary to specify PdfOwnerPassword so that this parameter is effective.
PdfNoFillForm	Boolean	R/W	Prohibits filling in of form fields and signing of the PDF file. This parameter is effective only when you specify PDF1.4 or later for the PdfVersion. In order to make this parameter effective, the setting of the other parameter may be required. See also the ' <a href="#">PDF Reference</a> ' from Adobe Systems Incorporated for more details.
PdfNoAccessibility	Boolean	R/W	Prohibits text access for screen reader devices of the PDF file. This parameter is effective only when you specify PDF1.4 or later for the PdfVersion.
PdfNoAssembleDoc	Boolean	R/W	Prohibits inserting, deleting and rotating the PDF pages. This parameter is effective only when you specify PDF1.4 or later for the PdfVersion.
PdfEmbedAllFontsEx	Long	R/W	Specifies whether or not to embed all embeddable fonts used in the file of the formatted result into PDF. However, even if all fonts are specified to embed, the font forbidden embedding or the font which is not able to be embedded to PDF cannot be embedded.  0. Specified font

Name	Type	R/W	Functions
PdfEmbedAllFontsEx	Long	R/W	<ol style="list-style-type: none"> <li>1. All fonts excluding Base14 font</li> <li>2. All fonts including Base14 font</li> </ol>
PdfEmbedFonts	String	R/W	Embeds the specified font in the created PDF. If you want to specify plural fonts, put commas between each fonts.
PdfEmbedSubsetFontPercentage	Long	R/W	Embeds all fonts when the percent of characters used is greater than or equal to specified value, subsets embedded fonts when the percent of characters used is less than the specified value. If nothing is specified, it is considered as 100 and embedded fonts are always subset.
PdfErrorOnEmbedFault	Boolean	R/W	When true is specified, an error is issued when font embedding fails.
PdfErrorOnMissingGlyph	Boolean	R/W	When true is specified, an error is issued when there is a missing glyph.
PdfPrintingAllowed	Long	R/W	<p>Specifies whether and how to permit printing of PDF. This parameter is effective only when you specify PDF1.4 or later with PdfVersion.</p> <ol style="list-style-type: none"> <li>0. Not Allowed</li> <li>1. Low Resolution Printing</li> <li>2. High Resolution Printing</li> </ol>
PdfImageCompression	Long	R/W	<p>When a color image format cannot be stored directly in the PDF, an image is stored after being transformed into a bitmap format which is compatible with PDF. Use one of the following values to specify the compression method of the data stored in a PDF file. When Auto is selected, the process is automatically done and creates the image data according to the setting of PdfJPEGQuality and PdfRasterizeResolution. Whichever has the smaller compressed size, JPEG or ZLIB, is selected. These are the settings for color images. Specify PdfGrayscaleImageCompression for grayscale images, and PdfMonochromeImageCompression for monochrome images.</p> <ol style="list-style-type: none"> <li>0. Auto</li> <li>1. JPEG compression</li> <li>2. ZLIB compression</li> <li>3. JPEG2000 compression (it is effective only when PdfVersion is PDF1.5 or higher)</li> <li>4. Keep LZW</li> </ol>
PdfJPEGQuality	Long	R/W	<p>For color image formats that cannot be stored directly in PDF, the image quality can be specified by a numerical value within the range of 1-100 when JPEG compression is specified for the image-compression method. The quality becomes higher in proportion to the increase in the number; however the file size also becomes larger. This is the setting for color images. Specify PdfGrayscaleJPEGQuality for grayscale images.</p> <p><b>CAUTION:</b> This is not for changing the quality of a JPEG formatted image.</p>
PdfPutImageColorProfile	Boolean	R/W	Specifies whether to embed in the PDF the color profile of the color image that will be embedded.
PdfImageDownSampling	Long	R/W	<p>Specifies either of the following methods to downsample the raster color image in a PDF. When a value other than None is specified, an image that has a resolution larger than the one specified by PdfImageDownSamplingDPI will be downsampled into the resolution specified by PdfImageDownSamplingTarget. These are the settings for color images. Specify PdfGrayscaleImageDownSampling for grayscale images, and PdfMonochromeImageDownSampling for monochrome images.</p> <ol style="list-style-type: none"> <li>0. None</li> <li>1. Average</li> </ol>

Name	Type	R/W	Functions
PdfImageDownSampling	Long	R/W	<ol style="list-style-type: none"> <li>2. Bicubic</li> <li>3. Subsampling</li> </ol>
PdfImageDownSamplingTarget	Long	R/W	Sets the target resolution when a raster color image is downsampled.
PdfImageDownSamplingDPI	Long	R/W	Sets the resolution for which a raster color image is to be downsampled.
PdfGrayscaleImageCompression	Long	R/W	<p>When a raster grayscale image format cannot be stored directly in the PDF, the image is stored after being transformed into a bitmap format which is compatible with PDF. Use one of the following values to specify the compression method of the data stored in a PDF file. When Auto is selected, the process is automatically done and creates the image data according to the setting of PdfGrayscaleJPEGQuality and PdfRasterizeResolution. Whichever has the smaller compressed size, JPEG or ZLIB, is selected. These are the settings for grayscale images. Specify PdfImageCompression for color images and PdfMonochromeImageCompression for monochrome images.</p> <ol style="list-style-type: none"> <li>0. Auto</li> <li>1. JPEG compression</li> <li>2. ZLIB compression</li> <li>3. JPEG2000 compression (it is effective only when PdfVersion is PDF1.5 or higher)</li> <li>4. Keep LZW</li> </ol>
PdfGrayscaleJPEGQuality	Long	R/W	<p>For grayscale image formats that cannot be stored directly in the PDF, the image quality can be specified by a numerical value within the range of 1-100 when JPEG compression is specified for PdfGrayscaleImageCompression. The quality becomes higher in proportion to the increase in the number; however the file size also becomes larger. Specify PdfJPEGQuality for color images.</p> <p><b>CAUTION:</b> This is not for changing the quality of a JPEG formatted image.</p>
PdfGrayscaleImageDownSampling	Long	R/W	<p>Specifies either of the following methods to downsample raster grayscale images in a PDF. When a value other than None is specified, an image that has a resolution larger than the one specified by PdfGrayscaleImageDownSamplingDPI will be downsampled into the resolution specified by PdfGrayscaleImageDownSamplingTarget. These are the settings for grayscale images. Specify PdfImageDownSampling for color images and PdfMonochromeImageDownSampling for monochrome images.</p> <ol style="list-style-type: none"> <li>0. None</li> <li>1. Average</li> <li>2. Bicubic</li> <li>3. Subsampling</li> </ol>
PdfGrayscaleImageDownSamplingTarget	Long	R/W	Sets the target resolution when a raster grayscale image is downsampled.
PdfGrayscaleImageDownSamplingDPI	Long	R/W	Sets the resolution for which a raster grayscale image is to be downsampled.
PdfMonochromeImageCompression	Long	R/W	<p>When monochrome image formats cannot be stored directly in the PDF, the image is stored after being transformed into a bitmap format which is compatible with PDF. Use one of the following values to specify the compression method of the data stored in a PDF file. These are the settings for monochrome images. Specify PdfGrayscaleImageCompression for grayscale images and PdfImageCompression for color images.</p> <ol style="list-style-type: none"> <li>0. CCITT Group4</li> <li>1. CCITT Group3</li> <li>2. Run Length compression</li> </ol>

Name	Type	R/W	Functions
PdfMonochromeImageCompression	Long	R/W	3. ZLIB compression 4. None
PdfMonochromeImageDownSampling	Long	R/W	Specifies either of the following methods to downsample raster monochrome images in a PDF. When a value other than None is specified, an image that has a resolution larger than the one specified by PdfMonochromeImageDownSamplingDPI will be downsampled to the resolution specified for PdfMonochromeImageDownSamplingTarget. These are the settings for monochrome images. Specify PdfImageDownSampling for color images and PdfGrayscaleImageDownSampling for grayscale images.  0. None 1. Average 2. Bicubic 3. Subsampling
PdfMonochromeImageDownSamplingTarget	Long	R/W	Sets the target resolution when a raster monochrome image is downsampled.
PdfMonochromeImageDownSamplingDPI	Long	R/W	Sets resolution for which raster monochrome images are to be downsampled.
PdfLinearize	Boolean	R/W	Specifies whether to output linearized PDF or not. <a href="#">no-LT</a>
PdfCompressContentStream	Boolean	R/W	Specifies whether the text and the line art in PDF are compressed in order to make the size of PDF smaller or not.
PdfUseLaunchForRelativeURI	Boolean	R/W	Specifies whether external links specified by the relative address are transformed into 'Open the file' or into 'World Wide Web link' in the PDF link properties. If the value is true, it is transformed to 'Open the file'. If the value is false, it is transformed to 'World Wide Web link'
PdfRGBConversion	Long	R/W	Specifies how to convert the RGB color space (DeviceRGB) to DeviceGray.  0. No Conversion 1. Black to DeviceGray 2. Gray to DeviceGray 3. All RGB to DeviceGray 4. All RGB to CMYK
PdfConvertImageColorSpace	Boolean	R/W	Converts RGB images automatically into CMYK when outputting PDF/X and PDF/A. <a href="#">no-LT</a>
PdfRasterizeResolution	Long	R/W	Specifies the value of the rasterised-resolution of the transformed raster images in the range from 70 to 500(DPI). SVG, EMF and WMF are drawn in PDF as vectors without being transformed to raster images.
PdfColorProfile	String	R/W	When PDF/A-1b:2005 is specified to PdfVersion, the specification of the color profile is indispensable. Specify the color profile with its full path. This parameter is invalid with any PDF other than PDF/A-1b:2005.
PdfImport3DAnnotation	Boolean	R/W	Imports 3D object. <a href="#">no-LT</a>
PdfOutputScale	String	W	Specifies the scaling ratio of the PDF to output. A value with a <a href="#">unit</a> or % value can be specified as length.
PdfOutputHeight	String	R/W	Scales the height of PDF to output. A value with a <a href="#">unit</a> or % value can be specified as length.
PdfOutputWidth	String	R/W	Scales the width of PDF to output. A value with a <a href="#">unit</a> or % value can be specified as length.
PdfErrorOnPDFXFault	Boolean	R/W	An error is not issued when PDF/X or PDF/A is generating.
PdfSignature	Boolean	R/W	Applies the digital signature the signature field in PDF. Refer to <a href="#">Digital Signature</a> for more details. <a href="#">no-LT</a>



Name	Type	R/W	Functions
PdfSignatureName	String	R/W	Specifies the name of the signature information to be used when applying a digital signature. Refer to <a href="#">Digital Signature</a> for more details. <code>no-LT</code>
PdfCertificateName	String	R/W	Specifies the name of the certificate information to be used when applying a digital signature. Refer to <a href="#">Digital Signature</a> for more details. <code>no-LT</code>

## Properties – SVG Settings

Name	Type	R/W	Functions
SvgVersion	Long	R/W	Specifies SVG version: <ul style="list-style-type: none"> <li>0. SVG 1.1</li> <li>1. SVG Basic</li> <li>2. SVG Tiny</li> </ul>
SvgImageProcessingType	Long	R/W	Specifies how to treat images contained in the SVG being created. <ul style="list-style-type: none"> <li>0. Embeds all image files.</li> <li>1. Copies all image files to the destination that is specified by <code>SvgImageCopyPath</code>, and then links.</li> <li>2. Links images that can be linked and embeds images that have to be embedded. Raster images other than JPEG and PNG are always embedded.</li> <li>3. Copies images that have been linked to the destination that is specified by <code>SvgImageCopyPath</code>, and links. The embedded image are embedded.</li> </ul> <p>If this parameter is omitted, it is considered as 0 and all images are embedded.</p>
SvgImageCopyPath	String	R/W	Specifies the destination to copy images to as specified in 1 or 3 for <code>SvgImageProcessingType</code> .
SvgGzipCompression	Boolean	R/W	Specifies whether to compress the outputted SVG into gzip format or not.
SvgSingleFile	Boolean	R/W	Specifies whether a formatted result composed of multiple pages is output as a single SVG file or as multiple SVG files. If the value is true, outputs as a single SVG file. If the value is false, outputs as multiple SVG files. When multiple files are output, the files are named by the format specified by <code>SvgFormat</code> . This takes effect only when outputting to a file and is not valid when output is without a file name such as when streaming, etc.
SvgImageRename	Boolean	R/W	When images are copied to the directory specified by <code>SvgImageCopyPath</code> etc., specifies whether to rename all file names to the prefix specified by <code>SvgImagePrefix</code> , or use the original name. When the file name is duplicated a sequential number is added. When true is specified, all files are renamed.
SvgImagePrefix	String	R/W	When images are copied to the directory specified by <code>SvgImageCopyPath</code> , specifies the prefix of the file name. The file name will be prefixed followed by a sequential numbers only if the Default is empty.
SvgSinglePageNumber	Boolean	R/W	When <code>SvgSingleFile=false</code> is specified, specifies whether to add sequential number to the output SVG even if it has only one-page. If false it is not added.
SvgFormat	String	R/W	When the original document has multiple pages and false is specified in <code>SvgSingleFile</code> , each page will be output as an SVG file that has a consecutive number at the end of the file name. This parameter specifies the format of those consecutive numbers. For example, when "document.svg" is specified as the name for the output file, by specifying "-01" for <code>SvgFormat</code> the output files will be document-01.svg, document-02.svg and so on. If this parameter is omitted then "1" is considered to have been specified.
SvgEmbedAllFonts	Boolean	R/W	Specifies whether to embed fonts in the outputted SVG.
SvgEmbedFonts	String	R/W	Embeds the specified font in the created SVG. If you want to specify multiple fonts, put commas between fonts.
SvgErrorOnEmbedFault	Boolean	R/W	When true is specified, an error is issued when font embedding fails.
SvgImageConversion	Long	R/W	Selects how to convert the images embedded in SVG from the following.

Name	Type	R/W	Functions
SvgImageConversion	Long	R/W	0. Auto 1. JPEG conversion 2. PNG conversion
SvgJPEGQuality	Long	R/W	For the image format which cannot be stored directly in SVG, when JPEG conversion is specified in SvgImageConversion, specifies the quality of the image using the range of 1-100. The quality becomes higher in proportion to the increase in the number; however the file size also becomes larger. The initial value is 80.
SvgRasterizeResolution	Long	R/W	Specifies the value of the rasterize-resolution of the raster image which is transformed from vector image in the range from 70 to 500(DPI). SVG, EMF and WMF are drawn in SVG as vectors without being transformed to raster images.

**Properties – INX Settings**

Name	Type	R/W	Functions
InxOutputMode	Long	R/W	Specifies the INX output mode. 0. Text area output mode 1. Line area output mode 2. Block area output mode

**Properties – MIF Settings**

Name	Type	R/W	Functions
MifOutputMode	Long	R/W	Specifies the MIF output mode. 0. Text area output mode 1. Line area output mode 2. Block area output mode
MifIpMode	Long	R/W	Specifies the MIF image processing mode. 0. Embeds all images in MIF. 1. Links images as external files.

**Properties – Printer Settings**

Name	Type	R/W	Functions
PrnCopies	Long	R/W	Specifies the number of copies. Effective when outputting to a printer. If nothing is specified, the value is considered as 1.
PrnCollate	Boolean	R/W	Indicates collation of multiple copies. Effective when outputting to printer and the number of copies is more than 1. If it is not specified or the value 'false' is specified, the same page is multi-copied continuously. If true is specified, the pages specified print from start to end repeatedly.
BatchPrint	Boolean	R/W	When the value false is specified, the print dialog box is displayed when printing. If the setting is omitted or the value true is specified, the print dialog is not displayed.

Some values can be added one of the following units.

Representation	Meanings
cm	centimeter
mm	millimeter. 1 mm = 1/10 cm
in	inch. 1 in = 2.54 cm
pt	point. 1 pt = 1/72 in
pc	pica. 1 pc = 12 pt
jpt	1 jpt = 0.3514 mm

Representation	Meanings
q	1 q = 0.25 mm

## Methods

XfoObj provides the following methods.

Name	Return Value	Arguments	Functions
Execute	None	None	Executes the formatting and outputs to a PDF specified in OutputFilePath or printer specified in PrinterName.
Clear	None	None	Initializes the formatting engine.
SetXSLTParam	None	name : String value : String	Sets parameter name and value for xsl:param.
ClearXSLTParam	None	None	Clears all parameter names and values for xsl:param.
SetFontAlias	None	fontName : String aliasName : String	Sets the substitution of font name. This substitution acts on the font names existing in FO. The font name 'fontName' is replaced to 'aliasName'.
EraseFontAlias	None	fontName : String	Erases the substitution of font name 'fontName'.
ClearFontAlias	None	None	Clears all substitutions of font name.
GetOptionFileURI	String	index : Long	Gets the URL of Option Setting File from the index you specified.
AddOptionFileURI	None	fileURI : String	Adds the URL of the XML-based Option Setting File that indicates the options for <b>AH Formatter V6.0</b> . The contents of the Option Setting File are evaluated immediately. When you set a property which is contrary to a previously set property, the former setting will be overwritten.
AddUserStylesheetURI	None	String fileURI	Specifies the CSS user stylesheet you want to add. AddUserStylesheetURI can be specified any number of times. It is applied by specified order prior to the stylesheet specified by StylesheetURI.

## Event

XfoObj provides the following event.

Name	Return Value	Arguments	Functions
onMessage	None	errLevel : Long errCode : Long errMsg : String	Events that returns <a href="#">error information (error level, error code, error message)</a> in the formatting process.
onFormatPage	None	pageNo : Long	The number of pages that formatted during the formatting process can be received as an event. <ul style="list-style-type: none"> <li>• More than or equal to 1 : Page number when formatting finished.</li> <li>• 0 : All page formatting has finished.</li> <li>• -1 : Start of the first pass of 2 pass formatting.</li> <li>• -2 : Start of the second pass of 2 pass formatting.</li> </ul>

## PDF Output to the Web Browser

It's possible to directly output PDF to the Web Browser, when you use ASP application on a server and output the formatted result in PDF. This output requires the following conditions:

1. "@PDF" is specified to "PrinterName".
2. There is no "OutputFilePath" specified.
3. Perform "Response.End" after calling "Execute" method

## Programming Example

---

The following is a sample of VBScript programming. In addition, [Install directory]/samples/com included some useful sample files for COM.

```
dim obj
Set obj = CreateObject("XfoComCtl.XfoObj")

obj.DocumentURI = "c:\temp\test.xml"
obj.StylesheetURI = "c:\temp\test.xsl"
obj.OutputFilePath = "c:\temp\test.pdf"
obj.ExitLevel = 4
obj.Execute()

if obj.ErrorCode <> 0 then
  MsgBox "ErrorCode : " & obj.ErrorCode & " " & obj.ErrorMessage
else
  MsgBox "Create PDF : " & obj.OutputFilePath

Set obj = Nothing
```



## Java Interface

This interface allows **AH Formatter V6.0** to be invoked from Java programs. Please refer to [Java VM issues](#).

The Java Interface uses JNI (JavaNativeInterface).

### Library files

The following library files are included in `[Install directory]` or `[Install directory]/lib`.

Library file	Contents	Location
XfoJavaCtl.jar	Java Archiver	<code>[Install directory]/lib</code>
XfoJavaCtl60.dll	Java Interface Library for Windows	<code>[Install directory]</code>
libXfoJavaCtl60.so	Java Interface Library for Solaris	<code>[Install directory]/lib</code>
libXfoJavaCtl60.so	Java Interface Library for Linux	<code>[Install directory]/lib</code>
libXfoJavaCtl60.jnilib	Java Interface Library for Macintosh	<code>[Install directory]/lib</code>
libXfoJavaCtl60.so	Java Interface Library for AIX	<code>[Install directory]/lib</code>

In order to execute the Java Interface, directory of execute java and `[Install directory]/lib/XfoJavaCtl.jar` must be included in the CLASSPATH environment variable. In addition, from using JNI (JavaNativeInterface), in Windows version, `[Install directory]` must be included in the PATH environment variable. In the following environment, `[Install directory]/lib` must be included. In Solaris / Linux version, it must be included in the LD\_LIBRARY\_PATH environment variable. In Macintosh version, it must be included in the DYLD\_LIBRARY\_PATH environment variable. In AIX version, it must be included in the LIBPATH environment variable. See also [Environment Variables](#) for the necessary environment variables.

Windows version:

```
> set CLASSPATH=[Install directory]/lib/XfoJavaCtl.jar;%CLASSPATH%
> set PATH=[Install directory];%PATH%
```

Solaris / Linux version:

```
$ CLASSPATH=[Install directory]/lib/XfoJavaCtl.jar:${CLASSPATH}
$ export CLASSPATH
$ LD_LIBRARY_PATH=[Install directory]/lib:${LD_LIBRARY_PATH}
$ export LD_LIBRARY_PATH
```

### Java VM issues

The AIX version is built using Java 1.4.2. The other platforms are built using Java 1.5. The Java runtime environment below v1.4.2 is not supported.

### Using the interface in an application server

Since the native JNI library can be read by two or more Java VM class loaders, when using this interface in application servers, such as Tomcat, do not install the XfoJavaCtl.jar in the WEB-INF/lib of the WEB application. Set the interface to be read by class loaders (system class loader etc.) which only load once.

### Running the Sample Program

`[Install directory]/samples/java` contains several simple sample programs.

The following shows how to execute these sample programs. In this case `[Install directory]/samples/java` must be included in CLASSPATH.

```
> cd [Install directory]/samples/java
> javac sample.java
> java sample sample.fo sample.pdf
```

## API Specification

---

Please refer to the Javadoc documentation.





## C/C++ Interface

The C/C++ Interface makes it possible to integrate **AH Formatter V6.0** into C/C++ programs.

### Header files

The following header files are included in `[Install directory]/include`.

Header file	Contents	Location
xfoifc.h	Header for C++	<code>[Install directory]/include</code>
xfoifc_c.h	Header for C	

### Library files

The following library files are included in `[Install directory]/lib` or `[Install directory]/lib`.

Library file	Contents	Location
XfoInterface60.dll	C/C++ Interface Library for Windows	<code>[Install directory]</code>
libXfoInterface.so	C/C++ Interface Library for Solaris / Linux	<code>[Install directory]/lib</code>
libXfoInterface60.so	C/C++ Interface Library for AIX	<code>[Install directory]/lib</code>
libXfoInterface.dylib	C/C++ Interface Library for Macintosh	<code>[Install directory]/lib</code>

In the Windows version the following library file for link is included in `[Install directory]/lib`.

Library file	Contents	Location
XfoInterface.lib	Library for DLL linking	<code>[Install directory]/lib</code>

### Compiler issues

#### Windows

**AH Formatter V6.0** Windows version is built using Microsoft Visual C++ 2010. MFC is not used without GUI. Please use a compatible compiler for your program.

#### Solaris

**AH Formatter V6.0** Solaris version is built using Forte Developer 7 C++ 5.4 or Sun Studio 11. Please use a compatible compiler for your program.

#### Linux

**AH Formatter V6.0** Linux and Linux 64bit version is built using GCC 4.1. Your program must be compiled using GCC 4.1 or later. For more detailed information about GCC, please refer to "[GCC, the GNU Compiler Collection](#)".

#### Macintosh

**AH Formatter V6.0** Macintosh version is built using GCC 4.0 contained in Mac OS X Xcode Tools.

#### AIX

**AH Formatter V6.0** AIX version is built using VisualAge C++.

### Building the sample programs

`[Install directory]/samples/cpp` and `[Install directory]/samples/c` includes some simple sample programs.

## Windows

---

In order to build a sample with the command line of Visual C++ in the Windows environment, execute the compiler from the console as follows.

```
> cd [Install directory]/samples/cpp
> cl -EHsc -I ..\..\include sample.cpp ..\..\lib\XfoInterface.lib /MT
```

To build the executables for Windows, use the command prompt from [Start]-[Microsoft Visual Studio 2010]-[Visual Studio Tools].

[Install directory]/lib must be appended to the PATH environment variable in order to execute this program. The sample executes as follows.

```
> sample sample.fo sample.pdf
```

## Solaris

---

The following command-line shows how to build the sample in the Solaris environment. Be sure to specify `libXfoInterface.so` to the linker as the library. [Install directory]/lib must be appended to LD\_LIBRARY\_PATH environment variable.

```
$ cd [Install directory]/samples/cpp
$ LD_LIBRARY_PATH=./lib:${LD_LIBRARY_PATH}
$ export LD_LIBRARY_PATH
$ CC sample.cpp -I../include -L../lib -lXfoInterface -oSamplecppcmd -mt
```

In order to execute the built sample program, a setup of other environment variables is necessary. Please refer to [Environment Variables](#) for more details.

## Linux

---

The following command-line shows how to build the sample in the Linux environment using GCC.

```
$ cd [Install directory]/samples/cpp
$ LD_LIBRARY_PATH=./lib:${LD_LIBRARY_PATH}
$ export LD_LIBRARY_PATH
$ g++ sample.cpp -I../include -L../lib -lXfoInterface -oSamplecppcmd -lstdc++ -lpthread
```

In order to execute the built sample program, a setup of other environment variables is necessary. Please refer to [Environment Variables](#) for more details.

As mentioned previous, the GCC version is very important. Please check your GCC version using `--version` command-line option.

```
$ g++ --version
g++34 (GCC) 3.4.6 20060404 (Red Hat 3.4.6-4)
Copyright (C) 2006 Free Software Foundation, Inc.
This is free software; see the source for copying conditions. There is NO
warranty; not even for MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.
```

## AIX

---

In order to build a sample with the command line of VisualAge C++ in the AIX environment, execute the compiler from the console as follows.

```
$ cd [Install directory]/samples/cpp
$ LD_LIBRARY_PATH=./lib:${LD_LIBRARY_PATH}
$ export LD_LIBRARY_PATH
$ xlc sample.cpp -I../include -lXfoInterface42 -L../lib -brtl -oSamplecppcmd
```

To execute the built sample program, a setup of other environment variables is also necessary. Please refer to [Environment Variables](#) for more details.

## API Specification

---

Please refer to the document that was generated by Doxygen.



## PDF Output

PDF output is a standard function of **AH Formatter V6.0**. The PDF versions that can be output are as follows:

- PDF1.3  
PDF1.3 can be browsed by Adobe Acrobat(Reader) 4.0 or later.
- PDF1.4  
PDF1.4 can be browsed by Adobe Acrobat(Reader) 5.0 or later.
- PDF1.5  
PDF1.5 can be browsed by Adobe Acrobat(Reader) 6.0 or later.
- PDF1.6  
PDF1.6 can be browsed by Adobe Acrobat(Reader) 7.0 or later.
- PDF1.7  
PDF1.7 can be browsed by Adobe Acrobat(Reader) 8.0 or later.
- PDF/X no-LT  
Possible to output [PDF/X](#) with **AH Formatter V6.0**.
- PDF/A no-LT  
Possible to output [PDF/A](#) with **AH Formatter V6.0**.

PDF that can be outputted by **AH Formatter V6.0** has the following features.

- By setting extended properties inside the original document, bookmarks and links can be created. [Bookmark and Link in PDF Output](#)
- Possible to output PDF in multi separate volume from one FO. no-LT [Output PDF in multi separate volume](#)
- By setting extended properties inside the original document, 'Title', 'Subject', 'Author', and 'Keyword' information can be embedded. [Document Information for PDF Output](#)
- When setting the security, 40-bit RC4 is applied to the encryption. A higher level encryption, 128-bit RC4 is available with PDF 1.4 or later. [PDF Output Setting, PDF Option Setting Dialog](#)
- Possible to output [Tagged PDF](#). no-LT
- Possible to apply a [digital signature](#) in PDF. no-LT

See also [PDF Output Settings](#) for more details.

### PDF/X

PDF/X is defined in ISO 15930 and is a subset of PDF that aims to exchange the data for printing. Basically all the information for printing is included in the PDF file. It's possible to output PDF/X with the following versions with **AH Formatter V6.0**. Impossible to output PDF/X with **AH Formatter V6.0 Lite**.

- PDF/X-1a:2001 (ISO 15930-1:2001)  
It's a specification based on PDF 1.3.
- PDF/X-3:2002 (ISO 15930-3:2002)  
It's a specification based on PDF 1.3.
- PDF/X-1a:2003 (ISO 15930-4:2003)  
It's a specification based on PDF 1.4 and a subset of PDF/X-3:2003.
- PDF/X-2:2003 (ISO 15930-5:2003)  
It's a specification based on PDF 1.4 and a superset of PDF/X-3:2003.
- PDF/X-3:2003 (ISO 15930-6:2003)  
It's a specification based on PDF 1.4.

The following shows the main features for PDF/X.

	PDF/X-1a	PDF/X-2	PDF/X-3
All fonts must be embedded.	Yes	Yes	Yes
The output intent must be specified.	Yes	Yes	Yes
Supports only CMYK, Spot color including images.	Yes	No	No
Avoids transparent images.	Yes	Yes	Yes
The setting of password, the restriction for printing and the restriction for changing must not be done.	Yes	No	Yes
Contain neither link nor the annotation, etc.	Yes	Yes	Yes

In PDF/X, all fonts must be embedded. When the font that is not allowed to embed is used, PDF/X cannot be generated.

PDF/X adopts the appropriate information by ignoring the most of the information set by users, such as font embedding, etc. For example the version of the output PDF is specified to PDF/X, **Font Embedding** in the **PDF Option Setting Dialog** will be displayed in gray color.

In order to specify the output indent by **ICC color profile**, use the URL of the ICC color profile to the src property for fo:color-profile. In this case please omit the color-profile-name property or specify "#CMYK" or "#RGB". If this property is omitted, it is considered as "#CMYK". For example:

```
<fo:declarations>
  <fo:color-profile
    src="url (file:///C:/WINDOWS/system32/spool/drivers/color/JapanColor2001Coated.icc) "
    color-profile-name="#CMYK"
  />
</fo:declarations>
```

The output condition identifier can also be specified with the src property for fo:color-profile. The setting is done in the form of the fragmentation of URI. For example:

```
<fo:declarations>
  <fo:color-profile
    src="#OutputConditionIdentifier=CGATS TR 001&RegistryName=http://www.color.org"
  />
</fo:declarations>
```

The first character must be #. After that, the parameters are lined and separated by &. Each parameter is in the form of name=value. The name of the parameters are as follows (by mapping to the items of the OutputIntent dictionary for PDF/X.)

- **OutputConditionIdentifier**  
Specifies the output condition identifier. When the URI of the ICC color profile is specified, the default value is Custom.
- **OutputCondition**  
Specifies the output condition (Possible to omit.)
- **RegistryName**  
Specifies the URI of the registration agency of the output condition identifier. When OutputConditionIdentifier is specified and this is omitted, the default URI is <http://www.color.org>.
- **Info**  
Specifies the added information (Possible to omit.)

It's also possible to give the information of the profile by describing the format of the fragment parameter following to the URI of the ICC color profile.

```
<fo:declarations axf:base-uri="url (file:///C:/WINDOWS/system32/spool/drivers/color/) ">
  <fo:color-profile src="url ('Photoshop5DefaultCMYK.icc#Info=Photoshop5') "/>
</fo:declarations>
```

When the ICC color profile is specified by the output condition identifier, the ICC color profile is not embedded in PDF/X. The ICC color profile is embedded in PDF/X when it is specified in URI.

When the standard output intent is specified with URI, it's possible to select whether the color profile is embedded or not by **embed-std-output-intent** of the **PDF output** setting, because the embedding of the color profile is not indispensable. when specified by the output condition identifier, it's not embedded regardless of the setting of **embed-std-output-intent**.

When the output intent is not specified in FO, **default-output-intent** in the **PDF Output Settings** will be adopted.

The standard ICC color profile can be downloaded from Adobe.

 <http://www.adobe.com/support/downloads/detail.jsp?ftpID=3145>

The profile that can be downloaded may be already bundled with Adobe Acrobat and has already been installed on your system. If your OS is Windows, please search the %windir%\system32\spool\drivers\color directory.

## PDF/A

PDF/A-1 is defined by ISO 19005-1:2005 and it is the specification intended to be suitable for long-term preservation of electronic documents based on PDF1.4 specification. It's possible to output PDF/A with the following versions with **AH Formatter V6.0**. Impossible to output PDF/A with **AH Formatter V6.0 Lite**.

- **PDF/A-1a:2005**  
It is the specification which fully conforms to ISO 19005-1:2005. It is guaranteed that PDF can be displayed and furthermore the text can be extracted in a logical order.
- **PDF/A-1b:2005**

It is the specification which partially conforms to ISO 19005-1:2005. It is guaranteed that PDF can be displayed.

The following shows the main features for PDF/A.

	PDF/A-1a:2005	PDF/A-1b:2005
All fonts must be embedded.	Yes	Yes
Files must be tagged.	Yes	No
Files must include XMP metadata	Yes	Yes
Files may not include encryption	Yes	Yes
Files may not include LZW Compression	Yes	Yes
Files may not include Transparent images	Yes	Yes
Files may not refer to the external content	Yes	Yes
Files may not include JavaScript	Yes	Yes

In PDF/A, all fonts must be embedded as well as PDF/X. PDF/A cannot be generated when the font which is not permitted to embed is being used. Also, the embedding of the color profile is indispensable with PDF/A. Therefore, when specifying the output intent, only the URL specification of the color profile is effective.

Most information, including embedding of fonts etc., is adopted precisely disregarding the user setting. In PDF/A-1a, the tagging is done compulsorily. See also [Tagged PDF](#).

XMP metadata is automatically generated from the document information of PDF. In **AH Formatter V6.0**, it's not available to embed information other than these.

**CAUTION:** In **AH Formatter V6.0**, you cannot specify PDF/A and PDF/X simultaneously.

## Tagged PDF

Usual PDF does not have document structure in the contents. For example, the sentences are cut off per each line. In the column, the 1st line of the right column follows the 1st line of the left column. Therefore, even if a person with sight problems, etc. is going to read PDF using some kind of reader, it is very difficult to read a text in the right order. The same thing is applied to the text extraction from PDF.

Tagged PDF structurizes PDF documents with the tag embedded into PDF. By structurizing documents, PDF serves as reusable information. For this reason, Tagged PDF is indispensable to create accessible PDF documents. See also the site below for the accessibility.

<http://www.adobe.com/enterprise/accessibility/>

**AH Formatter V6.0** embeds the following tags (StructElem) for each FO element.

FO element	PDF element	Comment
fo:root	Document	
fo:page-sequence	Part	
fo:flow	Sect	
fo:static-content	Sect	
fo:block	P or Div	P when it has the content of inline-level, otherwise Div
fo:block-container	Div or Sect	Sect when absolute-position="fixed" or "absolute", otherwise Div
fo:inline	Span	
fo:inline-container	Span	
fo:leader	Span	
fo:page-number	Span	
fo:page-number-citation	Span	
fo:page-number-citation-last	Span	
fo:scaling-value-citation	Span	
fo:index-page-citation-list	Span	
fo:bidirectional-override	Span	

FO element	PDF element	Comment
fo:footnote	Note	
fo:footnote-body	Sect	
fo:float	Sect	
fo:external-graphic	Figure	
fo:instream-foreign-object	Figure	
fo:basic-link	Link	
fo:list-block	L	
fo:list-item	LI	
fo:list-item-label	Lbl	
fo:list-item-body	Lbody	
fo:table	Table	
fo:table-caption	Caption	
fo:table-header	THead	
fo:table-footer	TFoot	
fo:table-body	TBody	
fo:table-row	TR	
fo:table-cell	TD	

**AH Formatter V6.0** embeds the following tags (StructElem) for each HTML element.

HTML element	PDF element	Comment
html	Document	
div	Div	
h1	H1	
h2	H2	
h3	H3	
h4	H4	
h5	H5	
h6	H6	
p	P	
ul	L	
ol	L	
li	LI	
li::marker	LBL	list label
dl	L	
dt	LBL	
dd	LBody	
blockquote	BlockQuote	
caption	Caption	
table	Table	
tr	TR	
td	TD	
th	TH	

HTML element	PDF element	Comment
thead	THead	
tfoot	TFoot	
tbody	TBody	
span	Span	
img	Figure	
a[href]	Link	
other block elements	Div	
other inline elements	Span	

There are some tags which are not structural elements.

PDF element	Comment
Artifact	It is mapped to the contents distinguished from the text of a page. static-content which is repeatedly outputted at each line break, and table-header (except the one at the beginning of the table) and table-footer (except the one at the end of the table) serve as Artifact.
ReversedChars	It is mapped to the text which runs from right to left such as Arabic, etc.
Span	It is used for setting up the character string before being processed for the display as ActualText. It is different from Span in the structural element. The character strings before being processed mean the character string before the hyphenation is processed, or the character string before complicated glyph substitution is done in Thai etc., for example.

In order to create a tagged PDF, you can check Tagged PDF in the [PDF Option Setting Dialog](#), or you can specify `-taggedpdf` with the Commandline interface.

Using the `axf:pdftag` extension property, you can specify an arbitrary tag name to PDF.

**AH Formatter V6.0** processes as follows for each check item (in the case of Acrobat 7.0) of the Adobe Acrobat's Accessibility Full Check

- Alternative descriptions are provided  
Alternate text can be specified with the extension property, `axf:alttext`.

```
<fo:external-graphic src="..." axf:alttext="AltText"/>
```

**AH Formatter V6.0** makes an alternate text the space (U+0020) of one character when there is no alternate text provided. This is for preventing an error coming out with the accessibility check saying that an alternate text is not provided, even if an alternate text is an unnecessary image. It's a user's responsibility to give the alternative text which is effective.

In order to check whether an alternative text is given to the image, you can choose View in the Navigation Tabs, then click Tags to open the Tags tab with Acrobat, then see the alternate text item by opening the property of the <Figure> element.

- Text language is specified  
If the property of the language specification (language, country, xml:lang) is given to FO, it will become the language of the structure element of Tagged PDF. For example if you display the tags of the following Tagged PDF with Acrobat,

```
<fo:block language="ja">日本語です</fo:block>
```

and see the property of the <P> element in this paragraph, you will find the language as Japanense.

- Reliable character encoding is provided  
The text is outputted in Unicode, there is no problem.
- All content is contained in the document structure  
Refer to the tags in the above table.
- All form fields have descriptions  
If the `axf:field-description` extension property is specified, the text will be assigned, if not, the form name is assigned.
- List and table structure is correct  
`fo:list-block` is for the list structure of Tagged PDF and `fo:table` is for the table structure.
- The tag order matches to the order of the logical structure  
**AH Formatter V6.0** outputs tags in the right order.

It's impossible to output Tagged PDF with **AH Formatter V6.0 Lite**. It's also impossible to embed PDF to Tagged PDF. It's also impossible to embed `EPS` to PDF as PDF.



## Digital Signature

With the **AH Formatter V6.0** Windows version, a digital signature can be applied to PDF in the environment where you have the [PDF Digital Signature Module](#) installed when outputting to PDF.

Customers must purchase the [PDF Digital Signature Module](#) to put the digital signature. See also [Antenna House website](#) for more details.

In order to put a digital signature with **AH Formatter V6.0**, it is necessary to make a signature area in FO. A signature area can be created by using the `<axf:form-field>` extension property.

```
<axf:form-field
  field-type="signature"
  field-apply-signature="true"
  width="40pt"
  height="50pt"
```

The field type is specified by `field-type="signature"`. The appearance of the signature cannot be specified here. The size of the field etc. can only be specified. An actual signature is performed when generating PDF. At this time, the digital area is generated in PDF as the signed signature field. Although any number of signature areas can be made and set, **AH Formatter V6.0** can put only one of them in the generated PDF. You have to specify `field-apply-signature="true"` to the area you actually sign. When `field-apply-signature="true"` is specified multiply, the signature is applied to the first specified area. The non-signed signature field is generated to the signature area without the signature. A signature can be applied to such a signature field afterwards by using [PDF Digital Signature Module](#).

Moreover, in order to actually sign, you have to specify both the signature information which defines the appearance of the signature, etc. and the certificate to be used. These information is defined and saved by [PDF Digital Signature Module](#). In GUI, the digital signature can be specified on the [Security](#) section of [PDF Option Setting Dialog](#). With the `command-line`, the digital signature can be specified by the `-pdss` option. See also the setting method with the other interfaces respectively.

When [outputting PDF](#) by GUI, the signature field is not generated in PDF if the PDF is created without checking "Apply Digital Signature". Similarly, in the environment where [PDF Digital Signature Module](#) is not installed, even if the field type is specified by `field-type="signature"`, the signature field is not generated when outputting PDF. [PDF Digital Signature Module](#) applies a signature to the signature field in PDF. Please note that you must specify the executing of digital signature when formatting, even if you want to apply the signature later without applying a signature with **AH Formatter V6.0**. The same setting is applied for the other interfaces.

Followings are restrictions.

- Digital signatures cannot be applied to PDF/X or PDF/A.
- Digital signatures cannot be applied when you specify [PDF Output in Multi Separate Volume](#).

See also the manula of [PDF Digital Signature Module](#) for more details about digital signatures.

**CAUTION:** [PDF Digital Signature Module](#) is available only on the Windows version without Windows x64 version. Also, the function of digital signatures cannot be used with **AH Formatter V6.0 Lite**.

## PDF Embedding

Possible to embed PDF document in the other PDF. (Fillable PDF forms can also be embedded. [V6.0](#))

It is performed by using `<fo:external-graphic>` like handling an image. Please refer to [Graphics](#).

```
<fo:external-graphic src="embedded.pdf#page=3"/>
```

As described above, specify the page number which you want to embed to the URI. When there is no page number specified, the first page will be embedded. When there is no size specified, it's embedded in the page size of the PDF where it's embedded. However if you want to scale the size, `content-width` or `content-height` can be specified as follows:

```
<fo:external-graphic src="embedded.pdf#page=3" content-width="50%"/>
```

Possible to embed multiple pages continuously.

```
<fo:external-graphic src="embedded.pdf#page=3-5"/>
```

As described above, embed from the 3rd page to 5th page continuously. If you want to embed all pages, specify as follows.

```
<fo:external-graphic src="embedded.pdf#page=1-"/>
```

When specifying PDF by utilizing the data scheme ([RFC2397](#)), the page number can be specified as the parameter of the media type as follows.

```
<fo:external-graphic src="data:application/pdf;page=3;base64,JVBERi0xLjQKJeLjz9M..." />
```

Moreover, it's also possible to embed PDF as a background. This can be used when making a list form as a background and formatting only the content data on it. When specifying PDF as a background, please specify `axf:background-repeat="no-repeat"` to `fo:simple-page-master` or `fo:page-sequence` as follows. `axf:background-repeat="repeat"` cannot be specified.

```
<fo:simple-page-master axf:background-image="background.pdf"
    axf:background-repeat="no-repeat" ...>
```

When embedding PDF against the background, it's possible to embed not only 1 page but also two or more pages continuously. Specify as follows; `axf:background-repeat="paginate"`

```
<fo:simple-page-master axf:background-image="background.pdf#page=3-5"
    axf:background-repeat="paginate" ...>
```

In this example, pages from the 3rd to the 5th are embedded as the background. When the number of pages generated from the contents of `fo:flow` is less than the number of embedded PDF pages, pages are added so that all pages of embedded PDF may be outputted. Therefore, if the contents of `fo:flow` is empty, there would be no problem. When there is more number of pages generated from the contents of `fo:flow`, the background image of the page beyond the number of embedded PDF pages will drop off. Specify the page in the form of `#page=<FirstPage>-<LastPage>`. When `axf:background-repeat="paginate"` is not specified, the `<LastPage>` portion is disregarded.

- background.pdf#page=3-5  
from 3rd page to 5th page
- background.pdf#page=3-  
from 3rd page to the last page
- background.pdf#page=3  
3rd page only
- background.pdf  
All pages

When `axf:background-image` or `axf:background-repeat` are specified to both `fo:page-sequence` and `fo:simple-page-master`, `fo:simple-page-master` takes priority. It's possible to embed PDF to `fo:region-body/before/after/start/end` by specifying to `fo:simple-page-master`.

`axf:background-repeat="paginate"` is not available to specify with **AH Formatter V6.0 Lite**.

The version of embedded PDF must be less than or equal to the version of PDF to output. The following table shows the acceptable combination with PDF/X, etc.

Embedded PDF		PDF					PDF/X					PDF/A	
		1.3	1.4	1.5	1.6	1.7	1a:2001	3:2002	1a:2003	2:2003	3:2003	1a:2005	1b:2005
Output PDF	PDF1.3	Ok					Ok	Ok					
	PDF1.4	Ok	Ok				Ok	Ok	Ok	Ok	Ok	Ok	Ok
	PDF1.5	Ok	Ok	Ok			Ok	Ok	Ok	Ok	Ok	Ok	Ok
	PDF1.6	Ok	Ok	Ok	Ok		Ok	Ok	Ok	Ok	Ok	Ok	Ok
	PDF1.7	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok
	PDF/X-1a:2001						Ok						
	PDF/X-3:2002						Ok	Ok					
	PDF/X-1a:2003						Ok		Ok				
	PDF/X-2:2003						Ok	Ok	Ok	Ok	Ok		
	PDF/X-3:2003						Ok	Ok	Ok		Ok		
	PDF/A-1a:2005												
	PDF/A-1b:2005											Partial	Partial

When outputted PDF is TaggedPDF, it is impossible to embed PDF. It's also impossible to embed EPS to PDF as PDF. When there is no compatibility in OutputIntent, an error will occur when embedding PDF/A into PDF/A-1b: 2005.

## Font Output

Adobe Type1 fonts (including Adobe Standard 14 Fonts), and TrueType fonts (including OpenType fonts with TrueType Outlines), OpenType fonts (PostScript Outline) and Macintosh TrueType font data fork suitcase are supported for PDF output. Other font formats are not supported. For more details, refer to the "Fonts".

**AH Formatter V6.0** requires that the fonts, which are specified in documents, are installed on your system in order to use them correctly. Please refer to Windows help or follow the installation instructions attached to the fonts for the method of installing the font in the Windows version. The font placed aside from the font folder can be outputted to PDF in the Windows version. At this time, you need to specify some setting in the [font construction file](#). However, the font cannot be displayed in GUI.

These 14 Adobe Type1 fonts are called Standard 14 Fonts in PDF.

- Courier
- Courier-Bold
- Courier-Oblique
- Courier-BoldOblique
- Helvetica
- Helvetica-Bold
- Helvetica-Oblique
- Helvetica-BoldOblique
- Times-Roman
- Times-Bold
- Times-Italic
- Times-BoldItalic
- Symbol
- ZapfDingbats

Even when using an Adobe Type1 font except for these Standard 14 Fonts, it is not necessary to prepare an AFM (Adobe Font Metrics) file. The glyph names of Adobe Type1 fonts maps to character codes (Unicode) of formatting data according to the AGL (Adobe Glyph List) specification. The glyph with a name that is not defined in AGL is not output. See also [Unicode and glyph mapping using the .AFM file](#) for more details about .AFM file.

**CAUTION:** When the PDF including the transparent image is displayed with Adobe Acrobat/Reader, the character might be displayed somewhat bolder. This is a known problem of Adobe Acrobat/Reader.

## Character Sets, Encoding

The following character sets are supported:

- Adobe Standard Latin character set
- Symbol character set
- ZapfDingbats character set
- Japanese character set (Adobe-Japan1-Supplement2)
- Simplified Chinese character set (Adobe-GB1-Supplement2)
- Traditional Chinese character set (Adobe-CNS1-Supplement0)
- Korean character set (Adobe-Korea1-Supplement1)

Encoding of all characters is processed as Unicode within **AH Formatter V6.0**. In the case of Chinese, Japanese, Korean, (CJK), **AH Formatter V6.0** maps the Unicode to glyph in each CJK character sets by using the following CMap.

- Japanese : UniJIS-UCS2-H(V) UniJIS-UCS2-HW-H(V)
- Simplified Chinese : UniGB-UCS2-H(V)
- Traditional Chinese : UniCNS-UCS2-H(V)
- Korean : UniKS-UCS2-H(V)

The characters that do not belong to the above character sets are embedded in the PDF by getting the glyphs from the font files. This process is done only for TrueType fonts.

## Font Embedding

By embedding fonts in PDF, it becomes possible to display PDF files even in the environment where there are no fonts.

In the default setting of TrueType font processing, only the outline of glyphs that are not defined by CMap is embedded. In the case where TrueType fonts that are prohibited from embed by font vendor appears, error occurs and processing stops. You can avoid this error by replacing it with a white space and output PDF. You can also specify the option that all glyphs of a font are to be embedded whether the character is defined by CMap or not.

In the default setting of Adobe Type1 font processing, only the outline of a font that has font specific encoding is embedded. You can also specify the option that all glyphs of a font are to be embedded whether the font has standard encoding or font specific encoding.

You cannot embed the font in PDF if the font is not allowed to embed. See also [PDF Output Settings](#) to learn how to specify the font you want to embed.

Regardless of the setting, there may be a case that a font may always be embedded. In the following cases, the font is always embedded. If the font is not allowed to embed, you cannot use the font.

- Fonts for the following scripts
  - Arabic
  - Hebrew
  - Thai
  - Devalagari
- Ligatured form ⇨ [axf:ligature-mode](#)
- The glyph of modified by [font-variant](#) (except for an emulation of small-caps) [V6.0](#)
- The glyph of modified Japanese Kanji ⇨ [axf:japanese-glyph](#) (include Variation Sequence)
- The Unicode characters which cannot be expressed by 16bit.

## Image Output

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For more information about supported graphic images, refer to the "[Graphics](#)".

### Vector Images

---

The following vector images are outputted to PDF as vector primitives are replaced with PDF operators.

- [EMF](#)
- [WMF](#)
- [SVG](#)
- [MathML](#)
- [CGM](#)

In Windows version, vector images other than the above are transformed into the raster images and outputted to PDF. The resolution of the raster can be set in the result PDF with the value of dpi. Please refer to rasterize-resolution in [PDF Output Setting](#). In non-Windows versions, the vector image which cannot be outputted to PDF is disregarded.

Please refer to [EPS](#) in [Graphics](#) for details.

**CAUTION:** MathML can be used only with "[AH Formatter MathML Option](#)" with **AH Formatter V6.0 Lite**.

**CAUTION:** If AH Formatter [AH Formatter CGM Option](#) is not installed on your Formatter, please refer to [Graphics](#) for more detail.

### Raster Images

---

Generally the raster graphic data is compressed using a compression algorithms in the graphic file. If the compression method and the original (uncompressed) image format are both compatible with the PDF file format, the compressed raster graphic data will be directly embedded into the PDF file. If the compression method or original image format are not compatible with the PDF format, the graphic data will be uncompressed and converted to a PDF compatible bitmap format for output. If graphic data cannot be uncompressed, its data cannot be processed. Bitmap graphic will be compressed using JPEG or ZLIB compression and embedded into the PDF file. Refer to image-compression, jpeg-quality attributes in [PDF Output Setting](#) of the Option Setting File. If raster image data is directly embedded into the PDF file, these attributes will not be applied.

The raster image which can be embedded directly in PDF is as follows.

- [JPEG](#)
- [JPEG2000](#)
- [PNG](#)
- [TIFF](#)
- [GIF](#)

However, there are the following restrictions.

- Progressive JPEG, Interlaced GIF are transformed into regular JPEG or GIF images.
- 16-bit color in PNG or TIFF is reduced to a 8-bit color.
- When alpha channel is attached to PNG or TIFF, it is divided.
- There are some unsupported TIFF formats.

- JPEG2000 is embedded into PDF only when it is PDF1.5 or later. For other version, it is embedded after being converted to JPEG etc.

## Down sampling

---

In **AH Formatter V6.0**, the down sampling of the raster images embedded in PDF can be down sampled.

How it's down sampled can be specified in [Compression](#) in the [PDF Option Setting dialog](#) or in [Option Setting File](#).

## Miscellaneous

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- In **AH Formatter V6.0**, when the language is specified in the root element of <fo:root> or <html>, it is outputted as a language information on PDF. When the language is not specified, if [default-lang](#) is specified to the [Option Setting File](#), it is outputted as a language information on PDF.



## SVG Output

**AH Formatter V6.0** outputs SVG that is compliant to W3C [Scalable Vector Graphics \(SVG\) 1.1](#) specification. Moreover, it also outputs SVG Tiny and SVG Basic in the [Mobile SVG Profiles](#).

Customers must purchase "AH Formatter SVG Output Option" to output SVG. See also [Antenna House website](#) for more details.

### SVG Output Format

**AH Formatter V6.0** can output any of the [SVG 1.1](#), SVG Basic and SVG Tiny. When a profile is not specified, it is regarded as SVG 1.1.

[Mobile SVG Profiles](#) are the specifications for mobile computing devices or cellular phones which have restrictions in the throughput of the hardware, the memory capacity and the number of colors that can be displayed.

Since SVG Tiny is for the hardware with the most restrictions, like a cellular phone, the supported elements and attributes are quite limited. Therefore, the reproduction level of the original document may be low.

SVG Basic is for more high-efficient pocket devices, such as high-efficient PDA, and has fewer restrictions than SVG Tiny. See also [Mobile SVG Profiles](#) for more details.

**AH Formatter V6.0** outputs SVG Tiny and SVG Basic on the basis of the output for SVG 1.1 by disregarding the unsupported elements.

When the document composed of multiple pages is converted into SVG, each page will be output to each file. It is possible to output them collectively to one file by setting [Command-line Interface](#) etc. However, when it is output as standard out, it is always output to one file.

### Image Output

For more information about supported graphic images, refer to the "[Graphics](#)".

With SVG Output, there are three types of methods for handling images. these methods can be specified with the [Command-line Interface](#) or the [Option Setting File](#), etc.

- Embedding  
Raster images are embedded in SVG as Base64 encoding. Vector images are outputted as SVG.
- Linking  
Images are linked using the URI of the link origin without change.
- Copying and linking  
Images are copied to the place where they are specified and are described as a link there. the copy destination can be specified by [copy-image-path](#), etc. in the [Option Setting File](#).

There are two types of images in FO.

- Images by external reference  
Images are referenced externally by `<fo:external-graphic>` or `<img>` of HTML.
- Images embedded  
Images encoded by Base64 using the data scheme by `<fo:external-graphic>` or `<img>` of HTML is embedded, or the images are embedded in FO by `<fo:instream-foreign-object>`.

In **AH Formatter V6.0**, all the images referred by outputted SVG are converted into JPEG or PNG or SVG. For this reason, images embedded or externally referenced are handled as follows.

		Embed	Link	Copy and Link
JPEG	ExternalRef	Embeds images without change.	Links images without change.	Copies and links images without change.
	Embedded		Embeds images without change.	
PNG	ExternalRef		Links images without change.	
	Embedded		Embeds images without change.	

		Embed	Link	Copy and Link			
BMP	ExternalRef	Embeds images after converting into JPEG or PNG.		Copies and links images after converting into JPEG or PNG.			
	Embedded						
TIFF	ExternalRef						
	Embedded						
GIF	ExternalRef						
	Embedded						
JPEG2000	ExternalRef						
	Embedded						
SVG	ExternalRef				Embeds images as SVG.	Links images without change.	Copies and links images without change.
	Embedded					Embeds images as SVG.	
WMF	ExternalRef				Embeds images after converting into SVG.		Copies and links images after converting into SVG.
	Embedded						
EMF	ExternalRef						
	Embedded						
PDF	ExternalRef						
	Embedded						
MathML	ExternalRef	Embeds images after converting into SVG. It's invalid if <a href="#">AH Formatter MathML Option</a> is not installed with <b>AH Formatter V6.0 Lite</b> .		Copies and links images after converting into SVG. It's invalid if <a href="#">AH Formatter MathML Option</a> is not installed with <b>AH Formatter V6.0 Lite</b> .			
	Embedded						
CGM	ExternalRef	Embeds images after converting into JPEG or PNG. Effective only when ActiveCGM plug-in is installed on Windows version.		Copies and links images after converting into JPEG or PNG. Effective only when ActiveCGM plug-in is installed on Windows version.			
	Embedded						
EPS	ExternalRef	Embeds images after converging into JPEG or PNG in Windows version. In non-Windows versions, if the preview image included in EPS is the TIFF format, it's embedded after being chaned into JPEG or PNG, if it is the WMF format, it's embedded after being changed into SVG.		Copies and links images after converging into JPEG or PNG in Windows version. In non-Windows versions, if the preview image included in EPS is the TIFF format, it's copied and linked after being chaned into JPEG or PNG, if it is the WMF format, it's coied and linked after being changed into SVG.			
	Embedded						

## Font Output

Please refer to "[Fonts](#)" for the font.

With SVG Output, although the font can be embedded, the font file is not embedded but the stroke of the associated character of a font is embedded. Therefore, you cannot embed the font in SVG when the font is protected by the patent and its stroke cannot be acquired.

In addition, the correct outline might not be embedded with some of TrueType and OpenType fonts.

## Restrictions

### SVG Tiny

In SVG Tiny, since many elements are not supported, it may be difficult to reproduce output that is faithful to the original document. XSL Formatter V3.3 approximate the original as much as possible by substituting the elements with alternative expressions to the extent possible. The following are the main restrictions of SVG Tiny.

- SVG Tiny does not support fills that contain gradation. Plain color is used as a substitutes.



- Writing mode is not supported by SVG Tiny. When a document contains vertical writing, the position for every character will be specified. For this reason, the size of the document may become larger than the one outputted by SVG 1.1.
- Many SVG Tiny viewers do not support the rotation of characters. Those viewers will ignore the rotated character.



## PostScript Output

AH Formatter V6.0 can output PostScript®.

Customers must purchase "AH Formatter PostScript Output Option" to output PostScript. See also [Antenna House website](#) for more details.

The level of PostScript output is 3.

### Font Output

The following fonts are available to output with PostScript output. Please refer to [Fonts](#) for the font.

- [Adobe Type1 font](#)
- [TrueType font](#), [OpenType font \(TrueType outline\)](#)
- [OpenType font \(PostScript outline\)](#)

However, there are the following restrictions with PostScript output.

- Type1 fonts which contain greater than or equal to 256 glyphs are not supported.
- Vertical writing mode is not supported.
- PostScript output does not support complex script language such as Hebrew, Arabic, Thai.
- [Ligatures](#) are not supported.
- Not available to change the glyph of [font-variant](#) (except for an emulation of small-caps). [V6.0](#)
- Not available to [change the glyph of Japanese Kanji](#) (include Variation Sequence).
- The [EUDC](#), end user defined character, is not supported.
- Separation colors, such as [PANTONE®](#), are not supported.

### Image Output

For more information about graphic images, refer to the "[Graphics](#)". However, there are the following restrictions with PostScript output.

- `background-repeat="repeat"` is not supported.
- Patterns in SVG are not supported.
- The gradation in vector images other than EPS is not supported.
- Raster images containing transparent images and alpha channel are not supported.
- Separation colors, such as [PANTONE®](#), are not supported.

### Vector Images

The following vector images are outputted to PostScript as vector. However, the raster image contained in the vector image will have the restrictions of the [raster images](#) mentioned after. If fonts are contained, fonts in the vector image will also have the restrictions of [fonts](#).

- [WMF](#)
- [EMF](#)
- [EPS](#)
- [SVG](#)
- [MathML](#)
- [CGM](#)

All EPS is unprocessed and outputted to PostScript as is.

**CAUTION:** MathML can be used only with "[AH Formatter MathML Option](#)" with **AH Formatter V6.0 Lite**.

**CAUTION:** If AH Formatter [AH Formatter CGM Option](#) is not installed on your Formatter, please refer to [Graphics](#) for more detail.

### Raster Images

The following raster image can be outputted to PostScript. See also restrictions of each raster image respectively.

- BMP
- JPEG
- JPEG2000
- PNG
- TIFF
- GIF

The image which cannot be not embedded directly in PostScript will be transformed into the appropriate one and embedded.



## XPS Output

AH Formatter V6.0 can output XPS (XML Paper Specification File).

Customers must purchase "AH Formatter XPS Output Option" to output XPS. See also [Antenna House website](#) for more details.

XPS (XML Paper Specification) is an electronic document format developed by Microsoft which can be created easily with Microsoft Windows Vista and Microsoft Office 2007.

### Font Output

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The following fonts are available to output into XPS file. Please refer to [Fonts](#) for details.

- [TrueType font](#)
- [OpenType font \(TrueType outline\)](#)
- [OpenType font \(PostScript outline\)](#)

However, there are the following restrictions with XPS output.

- All of the fonts in the document should be embedded. So you cannot use the font that embedding is not permitted.
- If you use OpenType font that has CID CFF table, you can output it into XPS file, but XPS Viewer (XPS Viewer EP) will report an error when you open the outputted XPS file. The outputted XPS file can be validated with Microsoft XPS Conformance Tool (isXPS.exe) with no error. If you make XPS file by using this type of font by XPS Document Writer by Microsoft, you will also get the error when open the XPS file by XPS Viewer. But it will be displayed by XPS Viewer that is Internet Explorer plugin.
- XPS output does not support complex script language such as Hebrew, Arabic, Thai.
- [Ligatures](#) are not supported.
- Not available to change the glyph of [font-variant](#) (except for an emulation of small-caps). [V6.0](#)
- Not available to [change the glyph of Japanese Kanji](#) (include Variation Sequence).
- The [EUDC](#), end user defined character, is not supported.
- Separation colors, such as [PANTONE®](#), are not supported.

### Image Output

---

For more information about graphic images, refer to the "[Graphics](#)". However, there are the following restrictions with XPS output.

- Graphics file without the resolution setting will be treated as 96 DPI according to the XPS Specification.
- Graphics file other than JPEG, PNG, and TIFF will be converted into one of JPEG, PNG, and TIFF and will be embed into XPS.
- TIFF graphic file that is compressed type 1 to 6 or 32773 is supported. TIFF file of other compression types is converted to PNG.
- PNG graphic file that has the color management function such as sRGB, cHRM, gAMA, sBIT can be outputted into XPS. But when you open the outputted XPS file by XPS Viewer, the color management function is ignored due to XPS Specification.
- It is not implemented to manage the radiant shading.
- It is not implemented to manage the tiling of the background-image.
- It is not implemented to manage Windows Media Photo Image.

### Other Restrictions

---

- Temporary file is generated during the output.
- If the page width or height is shorter than 0.5 inch, it is assumed as 0.5 inch.
- Color spaces other than CMYK are converted into RGB color space.
- An error will occur if the rendering instruction generated from the document becomes complex and the canvas nesting exceeds over 16 levels that is allowed by the XPS Specification.
- It is not implemented to manage links.
- It is not implemented to make thumbnails.
- It is not implemented to set the printing scheme and the printing device.
- It is not implemented to use Digital Signature.
- It is not implemented to manage the outline information.
- It is not implemented to manage the story (table, segment) information.



## INX Output

AH Formatter can output INX (InDesign® Interchange File).

Customers must purchase "AH Formatter INX Output Option" to output INX. See also [Antenna House website](#) for more details.

### Features of INX Output

INX is the XML file that is used to interchange between InDesign® and its older version, or other products such as InCopy®, GoLive®. INX format keeps all of the InDesign® objects and properties as XML elements or attributes. AH Formatter generates INX file from the Area Tree that is the intermediate format of the formatting.

By outputting INX files, AH Formatter enables the content to be changed or enhanced using InDesign®.

### INX output mode

In InDesign®, objects that holds text are called text frames. The AH Formatter INX output has three kinds of text frame generation methods that can be specified at output. To determine the correct output setting consider the In -Design® task you wish to perform.

#### 1. Text area output mode

This mode generates text frames from a text area. The text area corresponds to the fo:inline in XSL-FO. This mode converts most closely to the formatting result of AH Formatter. Sometimes the different decorated successive inline areas are divided into multiple text frames in the INX output. Thus, it is more difficult to edit using InDesign® with this mode.

#### 2. Line area output mode

This mode generates text frames from line area. The line area corresponds to the each line generated from fo:block in XSL-FO. This mode enables line editing easier than Text area output mode. But the conversion accuracy can degrade.

#### 3. Block output mode

This mode generates text frames from block area. The block area corresponds to the fo:block in XSL-FO. Editing in InDesign® is easiest using this mode. However the conversion precision is the least reliable of the three modes.

Comparisons of the three conversion mode choices from the perspective of layout reproduction and ease of editing are as follows:

#### Layout reproduction

Good                      Limited

1 > 2 > 3

#### Easiness of edit

Good                      Limited

3 > 2 > 1

### Limitations

The following are limitations in INX output concerning XSL-FO elements and properties. These limitations concerning XSL also exist in the related CSS formatting.

#### Table

- Texts and images in a table cell are converted to InDesign® anchor objects and the conversion mode is restricted to the Text area output mode within the table cell.
- Due to the difference of character placement between AH Formatter and InDesign®, text in a cell can sometimes extend beyond the frame.

#### Border

- Border styles other than double, dashed, dotted, dot-dash, dot-dot-dash are outputted as solid.
- Borders other than table cell are implemented using the InDesign® line tool.
- Border assignment for fo:table is ignored.



- Diagonal lines are only effective with table cells only.
- Radius is not supported. The converted result is a square.

## Graphics

---

- Since graphic size cannot be correctly converted to INX, the user must resize the graphic object by hand within InDesign®.
- Supported raster graphic formats are BMP, JPEG, PNG, TIFF and GIF. Supported vector graphic are WMF, EMF and EPS. Vector graphics such as SVG, MathML, CGM are not supported. In addition, PDF is rasterized when it is converted to INX which can cause the quality of embedded graphics to degrade.
- INX output does not support background-repeat="repeat".
- Graphic files are embedded in the INX file.

## Texts

---

- Due to the differences in character placement between AH Formatter and InDesign®, occasionally the text frame cannot hold all of the texts. In this case, user must enlarge the text frame by hand.
- If letter-spacing is specified, a text frame is made for every character.
- Occasionally the display result differs between AH Formatter and InDesign®, if text-align="justify" is specified in FO and the text contains U+200B.

## Fonts

---

- If a non-existent font such as bold MS-Mincho is specified in XSL-FO, it will cause a warning error when InDesign® reads the INX file. An alternate font is selected automatically by InDesign.

## Leader

---

- Leader styles supported are double, dashed, dotted, dot-dash, dot-dot-dash, dots, use-contents. Others are interpreted as solid.

## Others

---

- PDF book mark becomes unstructured.
- INX output does not support printer marks.
- INX output does not support document information.
- INX output does not support annotation.
- INX output does not support ICC Color Profile.
- INX output does not support complex script language such as Hebrew, Arabic, Thai.
- If a line has line number (axf:line-number) , the output mode is fixed as text area output mode.
- If an upper line and under line is specified at once, the under line takes precedence since in InDesign®, the upper line is part of the under line.
- If text and graphics exist in the same line, the output mode is fixed as text area output mode.
- XSL-FO can define multiple page size masters in one document, but it is not supported with InDesign®. INX Output Option adopts the first used page master when outputting INX file.



## MIF Output

AH Formatter can output MIF (Maker Interchange Format File).

Customers must purchase "AH Formatter MIF Output Option" to output MIF. See also [Antenna House website](#) for more details.

### Features of MIF Output

---

MIF is a format to interchange information between Adobe FrameMaker® and other applications. MIF format keeps all of the FrameMaker® objects and properties. AH Formatter generates MIF file from the Area Tree that is the intermediate format of the formatting.

By outputting MIF files, you can edit the formatting result of AH Formatter using FrameMaker®8.

### MIF output mode

---

In FrameMaker®, text is stored in ParaLine. The AH Formatter MIF output has three kinds of ParaLine generation methods that can be specified at output. To determine the correct output setting consider the FrameMaker® task you wish to perform.

#### 1. Text area output mode

This mode generates ParaLine from text area. The text area corresponds to the fo:inline in XSL-FO. This mode converts most closely to the formatting result of AH Formatter. Sometimes the different decorated successive inline areas are divided into multiple text frames in the MIF output. Thus, it is more difficult to edit using FrameMaker with this mode.

#### 2. Line area output mode

This mode generates ParaLine from line area. The line area corresponds to the each line generated from fo:block in XSL-FO. This mode enables line editing easier than Text area output mode. But the conversion accuracy can degrade.

#### 3. Block output mode

This mode generates ParaLine from block area. The block area corresponds to the fo:block in XSL-FO. Editing in FrameMaker® is easiest using this mode. However the conversion precision is the least reliable of the three modes.

Comparing three conversion modes from the perspective of layout reproduction and easiness of edit are as follows:

#### Layout reproduction

Good	Limited
1 > 2 > 3	

#### Easiness of edit

Good	Limited
3 > 2 > 1	

### Image Output

---

For more information about supported graphic images, refer to the "[Graphics](#)".

With SVG Output, there are two types of methods for handling images. These methods can be specified with the [Command-line Interface](#) or the [Option Setting File](#), etc.

- Embeds all images in MIF.  
Raster images are converted into the hexadecimal character string according to the internal format of MIF and embedded in MIF. However, as for EPS, TIFF preview image is taken out and embedded in MIF, the image of a high resolution is lost.
- Links images as external files.  
The link specification becomes effective when the output MIF is a file and the image to which MIF is referring is a file. When MIF is a stream output or an image is embedded in the origin and not existing as a file, the image is embedded even if it is specified to link as an external file.  
When linking an image as an external file, the reference path to the image file in XML/FO/HTML is used as is regardless of the setting of relative path or absolute path. When the file name of MIF output is specified by the absolute path in non-Windows version, the external reference links might not be correctly set. In this case, the file will be embedded.

## Limitation

---

Following limitations exist in MIF output concerning XSL-FO elements and properties. These limitations concerning XSL also exist in the related CSS formatting.

## Table

---

- The conversion mode of texts and images in a table cell is restricted to the Line area output mode within the table cell.
- A complex table like the one that images and character strings are allocated to the table cell at the same time or a nested table might not be reproduced correctly.
- Due to the difference of character placement between AH Formatter and FrameMaker®, text in a cell can sometimes extend beyond the frame.
- Rotation of a table and cell is not supported.

## Border

---

- Border styles other than double are assumed solid.
- The border thickness of the table cell is outputted by the value of Thin, Medium, Thick, and Very Thin registered in Ruling-Catalog by default.
- When the border style is specified in detail with a complex table, the border might not be reproduced correctly.
- Border assignment for fo:table is ignored.
- Radius is not supported. The converted result is a square.
- When border and color fill are specified for the text area other than the table cell, the rectangle of border and color fill might be generated besides the text area. In that case, border, color fill might not match the text when ParaLine etc. are changed while editing.

## Graphics

---

- Supported raster graphic formats are BMP, JPEG, PNG, TIFF and GIF and supported vector graphic are WMF, EMF, EPS, SVG, CGM and PDF. Vector graphic such as MathML is not supported.
- JPEG2000 is converted into PNG and embedded.

## Texts

---

- Due to the difference of character placement between AH Formatter and FrameMaker®, occasionally the ParaLine cannot hold all of the texts. In this case, user must enlarge the ParaLine by hand.
- If letter-spacing is specified, the ParaLine is made by every character.
- Occasionally display result differs between AH Formatter and FrameMaker®, if text-align="justify" is specified in FO and the text contains U+200B.

## Fonts

---

- If a non-existent font such as bold MS-Mincho is specified in XSL-FO, it will cause a warning error when FrameMaker® reads the MIF file. An alternate font is selected automatically by FrameMaker®.

## Leader

---

- Leader styles supported are double, dashed, dotted, dot-dash, dot-dot-dash, dots, use-contents. Others are interpreted as solid.

## Others

---

- MIF output does not support links.
- MIF output does not support printer marks.
- MIF output does not support document information
- MIF output does not support annotation.
- MIF output does not support ICC Color Profile.
- MIF output does not support complex script language such as Hebrew, Arabic, Thai.
- If a line has line number (axf:line-number) , the output mode is fixed as text area output mode.

- If text and graphics exist in the same line, the output mode is fixed as text area output mode.
- XSL-FO can define multiple page size masters in one document, but it is not supported with FrameMaker®. MIF Output Option adopts the first used page master when outputting MIF file.
- The vertical writing mode is not supported with FrameMaker, documents in vertical writing mode cannot be correctly converted.



## MO:DCA Output

The MO:DCA Output can generate/output MO:DCA files.

MO:DCA is a file format for the print architecture for a large-scale printer named AFP. See also [AFP Consortium](#) to learn more about the specification of AFP and MO:DCA. **AH Formatter V6.0** MO:DCA Option outputs the MO:DCA file format that embeds PDF on each page.

With **AH Formatter V6.0**, MO:DCA Option is provided for customer's information and use. Please contact us if you are interested in MO:DCA Option.

- [support@antennahouse.com](mailto:support@antennahouse.com)





## TEXT Output

**AH Formatter V6.0** enables outputting the formatted result in a plain text format. It's best suited for getting the output composed as plain text only.

The encoding and the linefeed code of the output text can be specified in the [Option Setting File](#). When outputting from a GUI, it's possible to specify it by [Text Output Dialog](#).

### Restrictions

---

TEXT Output is not effective with **AH Formatter V6.0 Lite**.

- Only one font size is used in the output. FO font size settings are ignored.
- The indent is processed by calculating the current font size.
- Table borders are not output.
- Properties other than text, such as graphics are ignored.
- Vertical writing mode and rotation are not supported.



## Fonts

This chapter explains about the fonts which **AH Formatter V6.0** supports and how to use them. Also it explains the general consideration for each type of font. These are mainly for the no-Windows version. In the Windows version, the installed fonts are used as is without further effort.

The [Font Configuration File](#) is for setting the details of the font environment.

In Linux and Solaris version: Although the initial file is prepared, you need to set it in accordance with your font environment.

In the Windows version: The font configuration file may be used as is.

**AH Formatter V6.0** also supports [EUDC](#), (end user defined character) for Private Use Characters.

- ☞ See also [Font Output](#) in the [PDF Output](#).
- ☞ See also [Font Output](#) in the [SVG Output](#).
- ☞ See also [Font Output](#) in the [PostScript Output](#).
- ☞ See also [Font](#) in the [INX Output](#).
- ☞ See also [Font Output](#) in the [XPS Output](#).

## Supported font formats

**AH Formatter V6.0** supports the following types of fonts.

- Adobe Type1 fonts  
Adobe Type1 font usually consists of a pair of font files `.AFM+.PFB` or `.PFM+.PFB`. The former is used in non-Windows environment. The latter is used in Windows environment. For further information about Type1 fonts, refer to [Adobe Type1 font](#). In the following sentences, the word Type1 font indicates Adobe Type1 font.
- TrueType fonts  
TrueType font files have the extension `.TTF` or `.TTC`. For further information about TrueType fonts, refer to [TrueType font, OpenType \(TrueType outline\) font](#).
- OpenType fonts  
OpenType font files have the extension `.TTF` or `.OTF`. The former has the TrueType outline information in the font file. The latter has the PostScript outline in the font file. For further information about OpenType fonts, refer to [OpenType \(PostScript outline\) font](#).
- Macintosh TrueType font data fork suitcase  
Supports Macintosh TrueType font Suitcase expressed by the `.dfont` extension or the `.dfon` extension. This is the Font Suitcase whose font is defined as the data fork. The old Font Suitcase which is used by Classic MacOS and whose font is defined as the resource fork is not supported. The contents is TrueType fonts. See also [TrueType font, OpenType \(TrueType outline\) font](#) for details about TrueType font.

## Font Configuration File

To configure the font environment for **AH Formatter V6.0**, you must make a Font Configuration File. (Font Configuration File does not influence the display of GUI.)

The Font Configuration File is a simple structured XML file and is usually located in the `[Install directory]/etc` on non-Windows and `[Install directory]` on Windows.

The Font Configuration File should be set in the [Environment Variables](#). The name `font-config.xml` is set as default.

In the Font Configuration File, the most important element is `<font-folder>`. If you want to use more than the PDF Standard 14 Fonts on non-Windows, you must locate the font files in the some directory and add the `<font-folder path="...">` element to the configuration file.

**AH Formatter V6.0** automatically detects the font files in the specified directory at the `<font-folder path="...">`. However, there are a few cases where the font name cannot be resolved, only in such cases it is necessary to describe the font file. Normally it is not necessary to specify each file to be used.

- In the Solaris, fonts are installed in the following directories.

```

/usr/openwin/lib/X11/fonts/Type1
/usr/openwin/lib/X11/fonts/TrueType
/usr/openwin/lib/locale/ja/X11/fonts/TT
/usr/openwin/lib/locale/th/X11/fonts/TrueType
...

```

## Initial Font Configuration File

The following is the initial Font Configuration File. After you have finished the installation of **AH Formatter V6.0** non-Windows version, this file will be located at `[Install directory]/etc`.

```
<?xml version="1.0" encoding="UTF-8" ?>
<!-- DOCTYPE font-config SYSTEM "font-config.dtd" -->
<font-config otf-metrics-mode="typographic">
  <!-- add your font folder here -->
  <!-- font-folder path="/home/user-name/fonts" -->
  <!-- /font-folder -->
  <font-folder path="[Install directory]/fonts">
    <font-entry file="ZapfDingbats.afm"
      glyph-list="ZapfDingbats-glyphname.txt"/>
  </font-folder>
</font-config>
```

In **AH Formatter V6.0** Windows version, the following Font Configuration File is installed on `[Install directory]`. The Windows font directory is set to `[System font directory]`.

```
<?xml version="1.0" encoding="UTF-8" ?>
<!-- DOCTYPE font-config SYSTEM "font-config.dtd" -->
<font-config
  otf-metrics-mode="typographic"
  name-processing-mode="windows-name">
  <!-- add your font folder here -->
  <font-folder path="[System font directory]">
  </font-folder>
</font-config>
```

In Windows version, when there is no Font Configuration File, the Font Configuration File of this content will be assumed.

In the Windows version GUI, `[System font directory]` is accessed when the file is formatted even if `[System font directory]` is not specified in the font configuration file. In the generation such as PDF, only the font directory specified by the font configuration file will be referred to.

## Font Configuration File elements and attributes

The following table is a summary of the elements and attributes in the Font Configuration File.

Element	Location	Attribute	Description
<font-config>	root element	name-processing-mode	Specifies whether to map Type1 font names to font file using only Windows names ( <code>.PFM+ .PFB</code> ). Specifies the value "default" or "windows-name" to the value. The initial value is "default". The environment which "windows-name" is specified is called WindowsName mode.  <name-processing-mode mode="windows-name"/>
		otf-metrics-mode	Specify the method to evaluate font metrics information of TrueType and OpenType font. <ul style="list-style-type: none"> <li>"windows": use conventional method that is adopted until V4.2.</li> <li>"typographic": use the new method.</li> </ul> If the attribute is omitted or empty, "windows" is assumed. Also, if <code>use-windows-api="true"</code> is specified in <a href="#">Option Setting File</a> , "typographic" is assumed.  The conventional evaluation method until V4.2 has defect that commonly used Japanese font such as Ryumin is displayed lower position. The new method resolved this defect, but there is baseline positioning difference between new and old method. If you use CJK and Latin fonts together, new method influences line-height. If you want to avoid incompatibility with conventional version, specify "windows".
		windows-registry	Effective only with Windows version. Specifies whether to get the information of EUDC from the Windows registry or not. If the value is "enable", it refers to the registry. If the value is "disable", it doesn't. If the attribute is omitted, it's detected as enable.

Element	Location	Attribute	Description
<font-folder>	child of <font-config>	path	<p>Indicates the font folder using the "path" attribute.</p> <pre>&lt;font-folder path="/home/user-name/fonts"&gt;   .... &lt;/font-folder&gt;</pre> <p>This element can be specified as many times as necessary.</p>
<font-entry>	child of <font-folder>	file	Associated attributes are given to the font file specified by the "file" attribute.
		glyph-list	Specifies the glyph-list file of the font when the Type1 font is specified by the "file" attribute. The glyph-list defines Unicode to glyph-name mapping rule for Type1 fonts. For more information about glyph-list file, refer to the <a href="#">Glyph list file</a> .
		skip-glyphname-mapping	Specifies whether to map Unicode to the glyph name or map Unicode to the character-code of the font when the Type1 font is specified by the "file" attribute. If "true" is specified, it maps. If "false" is specified, it doesn't. For more information about these parameters, refer to <a href="#">Skipping the glyph name mapping</a> .
		font-exclude	Specifies whether to disregard the file specified by "File" attribute. If "true" is specified, it disregards. If "false" is specified, it doesn't. When "true" is specified, the font file is not processed.
		unicode-range	<p>Specifies the range of Unicode applied to the file specified by the "file" attribute. The setting can be done by the following format.</p> <pre>&lt;urange&gt;{, &lt;urange&gt;}*</pre> <p>&lt;urange&gt; is a hexadecimal number with the preceding "U+" and one of the followings. Case insensitive.</p> <ul style="list-style-type: none"> <li>• a single code point (e.g. U+416)</li> <li>• an interval value range (e.g. U+400-4FF)</li> <li>• a range where trailing "?" character implies "any digit value" (e.g. U+4??)</li> </ul> <p>U+4?? is equivalent to U+400-4FF. U+??? is equivalent to U+000-FFF. Unicode up to U+10FFFF is effective. Even if a range larger than U+10FFFF is specified, it is disregarded. When unicode-range is not specified, it is considered as total range U+0-10FFFF. Unicode-range is effective only when font-selection-strategy="character-by-character" is specified in FO, etc.</p>
		font-size-adjust	Adjusts the fontsize of the file specified by the "file" attribute. For instance, when specifying font-size-adjust="1.05", the output size is 1.05 times larger than the size specified in FO. It is also possible to specify it as "105%" using the % value. When font-size-adjust is not specified, the default value is 1.
baseline-adjust	Adjusts the baseline of the file specified by the "file" attribute. For instance, when specifying baseline-adjust="0.1", the value is added to the baseline specified in FO and adjusted to the added position. It is also possible to specify it as "10%" using the % value. When baseline-adjust is not specified, the default value is 0.		
<font-alias>	child of <font-folder>	file	<p>Indicates the alias name of the font family name. The source font file should be specified using the "file" and "entry" attributes. "file" attribute should specify font files. For Type1 fonts, specify the font files that have the .AFM or .PFM extensions. For TrueType or OpenType fonts, you can specify the font files that have the .TTF or .TTC or .OTF extensions. The "entry" attributes should be the number of the fonts in the .TTC (TrueType Collection) file. The number should be a numeric value of 1 or more. If the "entry" attribute is omitted, the value is considered as 1. If the font is not .TTC, the value is ignored.</p> <pre>&lt;font-alias file="simsun.ttc" entry="1"&gt;   .... &lt;/font-alias&gt;</pre>
		entry	

Element	Location	Attribute	Description
<font-alias>	child of <font-folder>	entry	To define the alias names, enumerates the <alias> element within this element. This element can be specified as many times as necessary.
<alias>	child of <font-alias>	family-name weight italic	<p>Indicates the actual alias name for the font described in the "font-alias" element. The alias information is specified using "family-name", "weight", "italic" attributes. "family-name" attribute is the alias font family-name. Newly defined names should not match any other existing font-family names. "weight" attribute is the alias font weight class. This attribute can be specified using a numeric value between "100" and "900" or the keyword "normal", "bold". If omitted, the value is considered as "normal". "italic" attribute indicates the font-style for italic. It should be specified using the keyword "true" or "false". If omitted the value is considered as "false". You can specify multiple alias definition for one font file. This element can be specified as often as necessary.</p> <p>It's possible to display the font file specified by &lt;font-alias file&gt; using the name and style specified here.</p> <pre>&lt;font-alias file="ARIALI.TTF"&gt;   &lt;alias family-name="MyArial"/&gt; &lt;/font-alias&gt; &lt;font-alias file="ARIALBI.TTF"&gt;   &lt;alias family-name="MyArial" weight="bold"/&gt; &lt;/font-alias&gt;</pre> <p>In the example above, font-family="MyArial" font-weight="normal" should display "ARIALI.TTF", font-family="MyArial" font-weight="bold" should display "ARIALBI.TTF" differently. Please note the following points.</p> <ul style="list-style-type: none"> <li>• When the italic font is originally specified, and even if font-style="normal" is specified, it doesn't become normal.</li> <li>• When the bold font is originally specified, and even if font-weight="normal" is specified, it doesn't become normal. Even if font-weight="bold" is specified, it doesn't become bolder.</li> </ul> <p>When &lt;alias&gt; is specified, the file set in &lt;font-alias file&gt; is selected by the name and style and displayed. For instance, when font-style="italic" is specified and there is no &lt;alias&gt; with italic setting, normal is adopted.</p>
<eudc-processing>	child of <font-config>	mapping	Specifies whether to process EUDC. If the "mapping" attribute is "enable", it processes EUDC. IF the "mapping" attribute is "disable", it doesn't. If the attribute is omitted, it's detected as enable.
<eudc-range>	child of <eudc-processing>	start end	<p>Specifies the range of EUDC by Unicode.</p> <pre>&lt;eudc-range start="57344" end="63743" /&gt;</pre> <p>Numeric value is specified. This sample indicates as 57344 = U+E000, 63743 = U+F8FF. If there is no numeric value specified, and the registry reference is effective with Windows version, it follows the instruction of the registry. If not, the PUA range is detected as (U+E000 to U+F8FF). When end is omitted, it is considered the same value as start. Multiple ranges can also be specified.</p>
<eudc-system-default>	child of <eudc-processing>	file-path	Specifies the EUDC font file of the system default. It is adopted when there is no supported glyphs in the specified EUDC font. If there is no EUDC font file specified, and the registry reference is effective with Windows version, it follows the registry setting. At that time, the code page 932 is referred. If not, EUDC font of the system default is detected as nothing.
<eudc-map>	child of <eudc-processing>	family-name file-path	Specifies the EUDC file by the "file-path" attribute, which is used when the character code of the EUDC range is specified to the font specified by the "family-name" attribute. If the registry reference is effective with Windows version, it is also taken into consideration. If there are the same "font-family" specified, the previous appearance takes precedence and the Font Configuration File takes precedence over the registry. This element can be specified as often as necessary.

The DTD of Font Configuration File is as follows:

```

<!ELEMENT font-config (font-folder+, eudc-processing?)>
<!ATTLIST font-config otf-metrics-mode      (windows|typographic) "typographic">
<!ATTLIST font-config name-processing-mode  (default|windows-name) "default">
<!ATTLIST font-config windows-registry     (enable|disable)      "enable">

<!ELEMENT font-folder (font-entry | font-alias)* >
<!ATTLIST font-folder path CDATA #REQUIRED>

<!ELEMENT font-entry EMPTY>
<!ATTLIST font-entry file                CDATA #REQUIRED>
<!ATTLIST font-entry glyph-list          CDATA #IMPLIED>
<!ATTLIST font-entry skip-glyphname-mapping (true|false) "false">
<!ATTLIST font-entry font-exclude        (true|false) "false">
<!ATTLIST font-entry unicode-range       CDATA "U+0-10FFFF">
<!ATTLIST font-entry font-size-adjust    CDATA "1.0">
<!ATTLIST font-entry baseline-adjust     CDATA "0.0">

<!ELEMENT font-alias (alias)*>
<!ATTLIST font-alias file CDATA #REQUIRED>
<!ATTLIST font-alias entry CDATA #IMPLIED>

<!ELEMENT alias EMPTY >
<!ATTLIST alias family-name CDATA #REQUIRED>
<!ATTLIST alias weight (normal|bold|100|200|300|400|500|600|700|800|900) #IMPLIED>
<!ATTLIST alias italic (true|false) #IMPLIED>

<!ELEMENT eudc-processing (eudc-range?, eudc-system-default?, eudc-map*)>
<!ATTLIST eudc-processing mapping (enable|disable) #IMPLIED>

<!ELEMENT eudc-range EMPTY>
<!ATTLIST eudc-range start CDATA #REQUIRED>
<!ATTLIST eudc-range end   CDATA #REQUIRED>

<!ELEMENT eudc-system-default EMPTY>
<!ATTLIST eudc-system-default file-path CDATA #REQUIRED>

<!ELEMENT eudc-map EMPTY>
<!ATTLIST eudc-map family-name CDATA #REQUIRED>
<!ATTLIST eudc-map file-path   CDATA #REQUIRED>

```

## Adobe Type1 font

This section describes general information for Adobe Type1 fonts and how **AH Formatter V6.0** supports them. It has tips on how to use Adobe Type1 fonts more conveniently in your environment. .

### Font organization and necessary condition

Adobe Type1 fonts are organized using the following font files.

File extension	Description
.PFB (Printer Font Binary)	Contains binary compressed font outline.
.AFM (Adobe Font Metrics)	Contains general font information and font metrics information. This is a text file. Mainly used in UNIX with <a href="#">.AFM+</a> <a href="#">.PFB</a> pairs.
.PFM (Printer Font Metrics)	Contains general font information and font metrics information. It also specifies the Windows font menu name. This is a binary format file. Mainly used in Windows with <a href="#">.PFM+</a> <a href="#">.PFB</a> pairs.

**AH Formatter V6.0** supports both types of combinations: [.AFM+](#) [.PFB](#), [.PFM+](#) [.PFB](#) files.

Type1 font considerations.

- The current version of **AH Formatter V6.0** does not support font outline files with [.PFA](#) (Printer Font ASCII) extension. Most Type1 font products are shipped in the [.PFB](#) format, which is supported by **AH Formatter V6.0**.
- Type1 font metrics data which has the [.MMM](#) extension is not supported. This metrics file is used for the Multiple Master Type1 fonts.
- Both [.PFB](#) and [.PFM](#) that maps to [.PFB](#) must exist in the same directory. Fonts may be installed in different directories by using ATM (Adobe Type Manager). Such fonts cannot be used for embedding with **AH Formatter V6.0**.

## How to use Adobe Type1 fonts

If you want to use Adobe Type1 fonts, simply specify the `font-family`, `font-weight` and `font-style` property in the FO. The following FO example uses Helvetica for the `fo:block`.

```
<fo:block font-family="Helvetica" font-weight="bold" font-style="italic">
  Helvetica (Bold-Italic) will be applied to this text.
</fo:block>
```

**AH Formatter V6.0** applies the following rules to map `font-family`, `font-weight`, `font-style` to Type1 fonts. Note that each `.AFM` and `.PFM` file has different mapping rules.

### Mapping rule in .AFM file

Property in FO	Mapping rule
font-family	Corresponds to the FamilyName parameter value in the global font information in <code>.AFM</code> file.
font-weight	Corresponds to the Weight parameter value in the global font information in <code>.AFM</code> file. The parameter value "Bold", "Demi", "ExtraBold" are assumed <code>font-weight="bold"</code> . Other assumed value is <code>font-weight="normal"</code> .
font-style	Corresponds to the ItalicAngle parameter value in the writing direction information in <code>.AFM</code> file. The parameter value "0" is assumed <code>font-style="normal"</code> . Other assumed value is <code>font-style="italic"</code> .

The `.AFM` file is a text file so you can easily confirm these parameters using a text editor. If you want to know about `.AFM` files, please refer to the Adobe document [Adobe Font Metrics File Format Specification](#).

- ☞ In WindowsName Mode, the mapping rule for the `.AFM` file is not applied. In order to use the `.AFM` file in WindowsName Mode, please use [Define the alias name of the font family](#).

### Mapping rule in .PFM file

Property in FO	Mapping rule
font-family	Corresponds to the WindowsName field in <code>.PFM</code> file.
font-weight	Corresponds to the dfWeight field of the PFMHEADER structure in <code>.PFM</code> file. This field holds the weight value 400 or 700.
font-style	Corresponds to the dfItalic field in <code>.PFM</code> file. The field value "0" is assumed <code>font-style="normal"</code> . Other assumed value is <code>font-style="italic"</code> .

The `.PFM` file has a binary format. Generally you cannot see the contents using a text editor. If you want to know about `.PFM` files, please refer to the Adobe document [Building PFM Files for PostScript-Language CJK Fonts](#). `.PFM` files were originally defined for Windows, but currently it is hard to get any of the original specification from Microsoft MSDN.

- ☞ Sometimes there are differences between "FamilyName" in the `.AFM` file and "WindowsName" in the `.PFM` file or "Weight" parameter in the `.AFM` file and the `dfItalic` field in the `.PFM` file. For instance, Adobe supplied `HVC_____ .AFM` has the family name "Helvetica", but the corresponding `HVC_____ .PFM` defines the family name as "Helvetica-Condensed".

## Embedding Adobe Type1 fonts

**AH Formatter V6.0** supports embedding the Type1 font into PDF files. The followings are required to embed fonts:

- The `.AFM+.PFB` or `.PFM+.PFB` font files must be in the folder specified in the `<font-folder>` of the font configuration file.
- In the [Option Setting File](#) specify the target font family name `<embed-font>` element or specify `<pdf-settings embed-all-fonts="true">` entry.

If you do not embed fonts, only `.AFM` or `.PFM` files are needed. If fonts are not embedded in the PDF the user will need the actual fonts on their system when they read the PDF file.

- ☞ **AH Formatter V6.0** embeds only what is being used among the glyphs of a Type1 font.

## Unicode and glyph mapping using the .AFM file

To use Adobe Type1 font with `.AFM` files, it is important to know how Unicode characters are mapped into Type1 font glyphs. The following is a brief explanation of how Type1 fonts are treated in PDF files.



- In the PDF file, letters which are associated with Type1 fonts are stored using 0..255 value character codes.
- Each Type1 font in the PDF file has the encoding parameters, which defines the character code to the corresponding glyph-name.
- The PDF reader application (typically Adobe Acrobat or Reader) converts the character codes to glyph-names using encoding parameters. Then reader then gets the Type1 glyph outline using the glyph-name as a key index. Finally the glyph is rendered using this outline data.

☞ If you want to know more about encoding details, please refer to the *D Character Sets and Encodings* of the [PDF Reference](#).

Example: if the encoding parameter of the Type1 font is Adobe Standard Encoding, and we want to write a "•" (U+2022 BULLET) to a PDF file, we must select character code 0xB7(183) because the glyph-name of this character is "bullet" and it is defined as 0xB7 in the Adobe Standard Encoding.

Before we can write a character code to the PDF file we must first get the glyph-name from the Unicode. This process is described in the Adobe web site document [Unicode and Glyph Names](#). The most important mapping rule is described in [AGL \(Adobe Glyph List\)](#) file. AGL is a simple text file that defines the Unicode to glyph name mapping rules for over 800 Latin characters. **AH Formatter V6.0** uses this data to map the Unicode to glyph name. Following is a brief description of how **AH Formatter V6.0** maps the Unicode value to glyph name and writes a character code to the PDF file.

1. Starting with a Unicode text character in the FO file.
2. **AH Formatter V6.0** using the AGL data gets the glyph name from this Unicode character.
3. Consulting the [.AFM](#) file, determines the encoding parameter for this Type1 font.
4. Also consulting the [.AFM](#) file gets the character metrics information and character code from the glyph name.
5. Writes the obtained character code and encoding information to the PDF file.

## Unicode and glyph mapping using the .PFM file

If you are using Adobe Type1 fonts with [.PFM](#) files, **AH Formatter V6.0** maps Unicode to glyphs differently than above, which does not use glyph names.

First, [.PFM](#) file has the only one encoding data in the `dfCharSet` field of PFM header. This one byte field contains the value known as character set. In the Windows environment, there are following character sets are defined in `WINGDI.H` header file.

dfCharSet Symbol	Value	Code Page
ANSI_CHARSET	0	1252
HEBREW_CHARSET	177	1255
ARABIC_CHARSET	178	1256
GREEK_CHARSET	161	1253
TURKISH_CHARSET	162	1254
VIETNAMESE_CHARSET	163	1258
THAI_CHARSET	222	874
EASTEUROPE_CHARSET	238	1250
RUSSIAN_CHARSET	204	1251
BALTIC_CHARSET	186	1257

Microsoft mapping can be found at the [Unicode to code page mapping data](#). **AH Formatter V6.0** uses this mapping data and converts the Unicode to the character code to write it to the PDF file. This mapping data has a maximum of 256 entries because the code page offers only 8-bit character width. You cannot use glyphs which are not defined in the code page data unless it exists in font the outline data.

☞ Sometimes code page mapping and actual encoding in the font file do not match. Because of this it is not recommended to use principally Type1 fonts as [.PFM+.PFB](#) pairs principally. If you must use this combination, please use as a supplementary step.

## Changing the glyph name mapping

As mentioned in [Unicode and glyph mapping using the .AFM file](#), AGL offers the Unicode to glyph name mapping rules. It covers commonly used Latin characters. But there are special fonts which do not fit the AGL. For instance, the Adobe Type1 product *Carta* ([CR\\_\\_\\_\\_\\_ .AFM](#), [CR\\_\\_\\_\\_\\_ .PFM](#), [CR\\_\\_\\_\\_\\_ .PFB](#)) has 189 pictorial glyphs and non-standard glyph names. If we look up the glyph names into the AGL, we will get the result that only 14-glyph names match and the others do not match with the AGL. If we leave it as it is, we cannot use most of the glyphs in the *Carta* with the [.AFM+.PFB](#) combination.

To solve such problem, **AH Formatter V6.0** offers two solutions. One is to make a *glyph list file* for this font. Another is to specify the skip-glyphname-mapping in the font configuration XML file.

## Glyph list file

The glyph list file is a simple text file, which describes the Unicode to glyph name mapping for a particular font. The format is the same as AGL.

- First field is the Unicode value represented using 4 uppercase hexadecimal digits.
- Second field is the glyph name defined in the `.AFM` file.
- Third field is the Unicode character name. This field is optional.
- All fields must be separated using semicolons. Lines starting with character `"#"` are assumed comments.

The following is a sample glyph list file. This glyph list file maps Unicode private user areas to the Carta glyph name with some exceptions. (Space and digits remain as is.)

```
# Carta sample glyphlist file
# file name:carta-glyphname.txt
0020;space;
E000;circle;
E001;lookoutcontrol;
E002;triangle;
E003;diamond;
E004;hexagon;
E005;explode2;
E006;lookout;
E007;IRBM;
E008;ICBM;
E009;explodel;
E00A;ruin;
E00B;goldbar;
E00C;lighthouse;
E00D;mining;
E00E;gaging;
0030;zero;
0031;one;
0032;two;
0033;three;
0034;four;
0035;five;
0036;six;
0037;seven;
0038;eight;
0039;nine;
E00F;boundary;
...
```

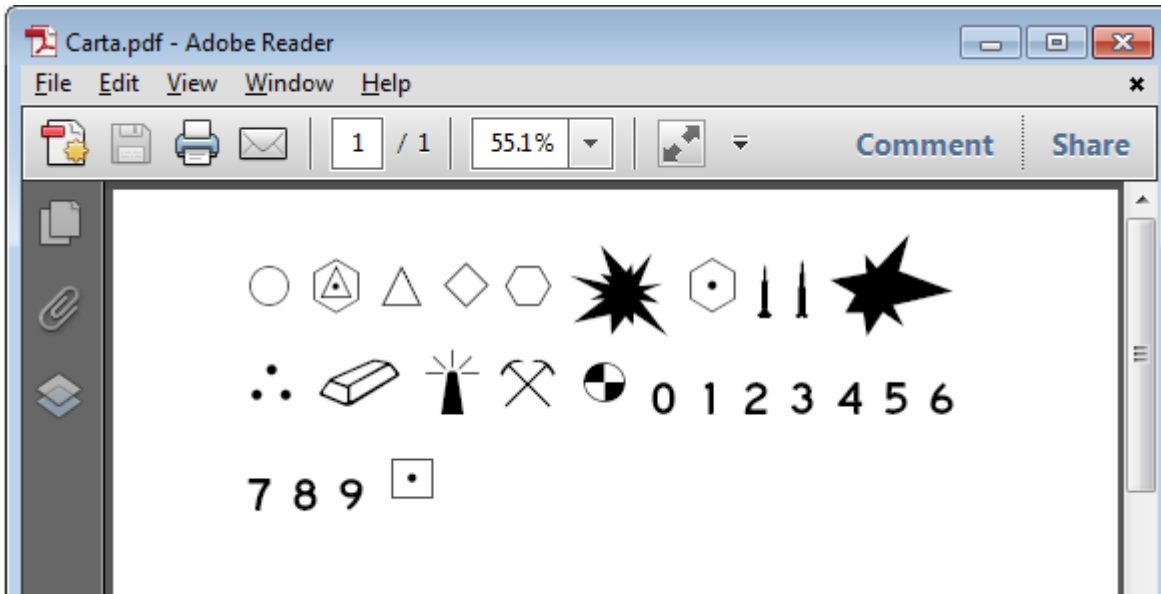
Once the glyph list file has been made, the next step is to add the glyph list file entry to the font configuration file. If the Carta font is located in the `/home/resource/fonts` directory, the following `glyph-list` entry should be made.

```
<font-config>
  <font-folder path="[Install directory]/fonts">
    <font-entry file="ZapfDingbats.afm"
      glyph-list="ZapfDingbats-glyphname.txt"/>
  </font-folder>
  <font-folder path="/home/resource/fonts">
    <font-entry file="CR____.AFM"
      glyph-list="carta-glyph-list.txt"/>
  </font-folder>
</font-config>
```

Once all glyph list files have been added successfully, the following FO will produce the PDF file shown below.

```
<fo:block font-family="Carta">
  &#xE000; &#xE001; &#xE002; &#xE003; &#xE004;
  &#xE005; &#xE006; &#xE007; &#xE008; &#xE009;
  &#xE00A; &#xE00B; &#xE00C; &#xE00D; &#xE00E;
  &#x0030; &#x0031; &#x0032; &#x0033; &#x0034;
  &#x0035; &#x0036; &#x0037; &#x0038; &#x0039;
```

```
&#xE00F;
</fo:block>
```



### Skipping the glyph name mapping

Another way to use the Carta font is to specify the skip-glyphname-mapping in the font configuration XML file for **AH Formatter V6.0** per for following example:

```
<font-config>
  <font-folder path="[Install directory]/fonts">
    <font-entry file="ZapfDingbats.afm"
      glyph-list="ZapfDingbats-glyphname.txt"/>
  </font-folder>
  <font-folder path="/home/resource/fonts">
    <font-entry file="CR____.AFM" skip-glyphname-mapping="true"/>
  </font-folder>
</font-config>
```

If this option is specified for the **.AFM** file, all of the associated Unicode characters in FO file are mapped to the characters in the PDF file as long as they are in the range of the font encoding. For instance, if the Unicode character is U+0021, this character will be written directly to the PDF file because Carta's encoding defines decimal value 33 as "circle". The Unicode character U+0101 will cause a missing glyph error, because it is not defined in the Carta's encoding. We can confirm which Unicode characters are available by consulting the **.AFM** files. Following is part of the Carta's **.AFM** file. If the Unicode character is equal to the number, which is to the right of the "C" character, it is available to use.

```
EncodingScheme FontSpecific
StartCharMetrics 189
C 32 ; WX 280 ; N space ; B 0 0 0 0 ;
C 33 ; WX 560 ; N circle ; B 30 150 530 650 ;
C 34 ; WX 620 ; N lookoutcontrol ; B 15 60 605 741 ;
...
C 250 ; WX 1042 ; N boat ; B 30 0 1012 280 ;
C 251 ; WX 852 ; N portofentry ; B 30 123 822 677 ;
C 252 ; WX 946 ; N whwycounty ; B 0 -58 946 857 ;
C 253 ; WX 1154 ; N whwytridown ; B 0 -100 1154 899 ;
C 254 ; WX 1072 ; N whwytriright ; B 0 -121 1073 919 ;
EndCharMetrics
```

If we want to obtain the same PDF results in the previous section, the FO contents should be as follows:

```
<fo:block font-family="Carta">
  &#x0021; &#x0022; &#x0023; &#x0024; &#x0025;
  &#x0026; &#x0027; &#x0028; &#x0029; &#x002A;
  &#x002B; &#x002C; &#x002D; &#x002E; &#x002F;
  &#x0030; &#x0031; &#x0032; &#x0033; &#x0034;
  &#x0035; &#x0036; &#x0037; &#x0038; &#x0039;
  &#x003A;
</fo:block>
```

## Define the alias name of the font family

Some Type1 font family names are troublesome when installed. For instance, if you install Adobe product *Eurostile* Type1 font in `.AFM+.PFB` pair, there occurs a font selection problem depending on the font file combination. The following table describes the font family name problem for some font file combinations.

PFB name	PFM information			AFM information			
	WindowsName	dfWeight	dfItalic	FullName	FamilyName	Weight	ItalicAngle
EU____.PFB	Eurostile	400	0	Eurostile Medium	Eurostile	Medium	0
EUB____.PFB	Eurostile Bold	400	0	Eurostile Bold		Bold	0
EUEX____.PFB	Eurostile ExtendedTwo	400	0	Eurostile Extended #2		Roman	0
EUBEX____.PFB	Eurostile ExtendedTwo	700	0	Eurostile Bold Extended #2		Bold	0

If you use these fonts with `.PFM+.PFB` combination, there are no problems because the `.PFM` file exposes all the different *font family names*. In contrast, if you install these fonts with `.AFM+.PFB` combination, all of the font family names are *Eurostile* only. Furthermore, there are plural fonts that have the same weight value. The *Weight* value *Medium* and *Roman* are interpreted as `font-weight="400"` and *Bold* is interpreted as `font-weight="700"`. Therefore the font selection is uncertain when you specify the following description in the FO.

```
<fo:block font-family="Eurostile">
  It is uncertain which font applies: "Eurostile Medium" or "Eurostile Extended #2"
</fo:block>
<fo:block font-family="Eurostile" font-weight="bold">
  It is uncertain which font applies: "Eurostile Bold" or "Eurostile Bold Extended #2"
</fo:block>
```

To avoid this problem, define a new family name using the alias element in the font configuration file. The following example defines the `.PFM` with like family name alias.

```
<font-config>
  <font-folder path="[Install directory]/fonts">
    <font-entry file="ZapfDingbats.afm"
      glyph-list="ZapfDingbats-glyphname.txt"/>
  </font-folder>
  <font-folder path="/home/resource/fonts">
    <!-- Set the family-name and weight to the PFM definition -->
    <font-alias file="EU____.AFM">
      <alias family-name="Adobe Eurostile"/>
    </font-alias>
    <font-alias file="EUB____.AFM">
      <alias family-name="Adobe Eurostile Bold" weight="normal"/>
    </font-alias>
    <font-alias file="EUEX____.AFM">
      <alias family-name="Adobe Eurostile ExtendedTwo"/>
    </font-alias>
    <font-alias file="EUBEX____.AFM">
      <alias family-name="Adobe Eurostile ExtendedTwo" weight="bold"/>
    </font-alias>
  </font-folder>
</font-config>
```

The alias family name can be used in the FO as follows:

```
<fo:block font-family="Adobe Eurostile">
  "Eurostile Medium" will be applied to this text.
</fo:block>
<fo:block font-family="Adobe Eurostile Bold">
  "Eurostile Bold" will be applied to this text.
</fo:block>
<fo:block font-family="Adobe Eurostile ExtendedTwo">
  "Eurostile Extended #2" will be applied to this text.
</fo:block>
<fo:block font-family="Adobe Eurostile ExtendedTwo" font-weight="bold">
  "Eurostile Bold Extended #2" will be applied to this text.
</fo:block>
```

- ☞ The newly defined family-name attribute of the font-alias element should be different from any other alias name in the font file. In addition, weight and italic combinations should be unique in the same family name groups.

## WindowsName mode

**AH Formatter V6.0** Windows version can print the formatted results without generating a PDF file. Windows functionality is used to do this, thus the font usage is based on Windows. In other words, Windows accesses the fonts using WindowsName in the `.PFM` file. For this reason, there is a possibility mapping will fail if you use the FamilyName in the `.AFM` file. This problem can be avoided by specifying `<name-processing-mode mode="windows-name"/>` in the Font Configuration File. In this case you need to define the alias name for `.AFM` file because the `.AFM` file cannot be specified directly.

As a general rule Windows does not normally use/include the `.AFM` file, so this is not a common problem.

## PDF Standard 14 Fonts

In non-Windows version, the following Adobe Type1 fonts are installed.

- Courier.afm
- Courier-Bold.afm
- Courier-Oblique.afm
- Courier-BoldOblique.afm
- Helvetica.afm
- Helvetica-Bold.afm
- Helvetica-Oblique.afm
- Helvetica-BoldOblique.afm
- Times-Roman.afm
- Times-Bold.afm
- Times-Italic.afm
- Times-BoldItalic.afm
- Symbol.afm
- ZapfDingbats.afm

Because `.AFM` or `.PFM` is not included in these, it is not possible to embed it in PDF. Please refer to the bundled `MustRead.html` before you use.

These fonts can be downloaded from [PDF core font information](#).

## TrueType font, OpenType (TrueType outline) font

This section describes **AH Formatter V6.0** implementation for TrueType and OpenType (TrueType outline) fonts. Tips on how to use these fonts in your environment are provided.

### Font organization and necessary condition

TrueType fonts were originally developed by Apple Computer and have been used in the Windows environment. OpenType fonts were jointly developed by Adobe and Microsoft as cross-platform fonts. Due to the origin, OpenType fonts have two flavors/kinds. One has the TrueType outline. The other has the PostScript outline. OpenType font files that have the TrueType outline have the file extension `.TTF` or `.TTC`. OpenType font files that have the PostScript outline have the extension `.OTF`. This section treats original TrueType fonts and OpenType (TrueType outline) fonts together. From now on, we will use the term TrueType fonts as the contraction of TrueType font and OpenType (TrueType outline).

- ☞ Macintosh TrueType font data fork suitcase is also TrueType font and its extension is `.dfont` or `.dfon`. Although it's somehow different from `.TTF`, since the treatment of TrueType is almost the same, its description is omitted here.

TrueType fonts are composed of a single file which has the extension `.TTF` or `.TTC`. TTC is the abbreviation of the TrueType Collection. It contains plural TrueType fonts in a single file structure. It is sometimes used in the CJK fonts.

TrueType font requirements:

- Font must have the cmap table which enables mapping the Unicode to glyph index. (Almost TrueType fonts have the cmap table available.)
- Some older TrueType fonts do not have Code Page information in the OS/2 table (ulCodePageRange1, 2) which can negatively influence **AH Formatter V6.0**'s font selection algorithms. For this reason we recommend not using old TrueType fonts.

- ☞ Please visit the following sites to get more details about TrueType font (cmap table, etc)

- [TrueType Reference Manual](#) (Apple)
- [TrueType and OpenType specifications](#) (Microsoft)

## How to use TrueType fonts

If you want to use TrueType fonts, locate the `.TTF` (`.TTC`) files in the directory specified in the `<font-folder>` element of the font configuration file. Then simply specify the `font-family` of the targeted font in FO.

```
<fo:block font-family="Arial" font-weight="bold" font-style="italic">
  If you install arialbi.ttf file,
  TrueType Arial (Bold-Italic) will be applied to this text.
</fo:block>
```

**AH Formatter V6.0** applies the following rules to map `font-family`, `font-weight`, `font-style` to TrueType fonts.

Property in FO	Mapping rule
<code>font-family</code>	Corresponds to the name table data whose <i>Platform ID</i> = 3 ( <i>Microsoft</i> ) and <i>Platform-specific encoding ID</i> = 1 ( <i>Unicode</i> ) and <i>Name ID</i> = 1 ( <i>Font Family Name</i> ).
<code>font-weight</code>	Corresponds to the <i>usWeightClass</i> field value of the OS/2 table. This field contains the weight value that is multiple of 100 in the range from 100 to 900.
<code>font-style</code>	Corresponds to the <i>fsSelection field's least significant bit</i> of the OS/2 table. If this bit is ON, <code>font-style="italic"</code> is assumed.

The information can be found by using Analysis tools for TrueType font ([TTFdump](#)) provided by Microsoft. For example, in order to refer to the font family of HG-GothicB, enter `ttfdump` from the command line as follows.

```
> ttfdump c:\winnt\fonts\HG-GothicB.ttf
```

Find the information that corresponds to the above mapping rules from the name table information. The information below maps to HG-GothicB. As Data shows the font family name, the font family name of HG-GothicB is "HG ゴシック B".

```
9. Platform ID:      3
   Specific ID:     1
   Language ID:    1041
   Name ID:        1
   Length:         14
   Offset:         362
   Data:  0 48  0 47 30 B4 30 B7 30 C3 < .H.G0'0·0Ã
          30 AF  0 42                      < 0".B
```

Some fonts have the plural font family name with another Language ID. **AH Formatter V6.0** supports this name for use as the `font-family` specification. For instance, `simsun.ttf` has the two family names "SimSun" and "宋体". Both names are valid to use.

## Embedding TrueType fonts

**AH Formatter V6.0** supports embedding the TrueType font as well as the Type1 font into PDF. One big difference is the embedding license. TrueType font has the license information in OS/2 table *fsType* field. **AH Formatter V6.0** respects this licensing information which will cause embedding errors when you specify font embedding against fonts with restrictions on embedding. In addition, only the used glyphs are embedded with the TrueType fonts.

- ☞ The "PDF Reference" says that TrueType fonts should be embedded to get predictable behavior across all viewer applications. If you don't embed TrueType fonts into the PDF file, Adobe Acrobat or Reader sometimes reports errors for particular Unicode character and font combinations. For instance, if you do not embed TrueType fonts, which are used with Thai characters, Adobe Acrobat or Reader will report the "font not found" error when opening the PDF file, even if the actual font exists. In contrast, the fonts which are used with Arabic characters do not cause errors when not embedded.

## OpenType (PostScript outline) font

This section describes how **AH Formatter V6.0** implements OpenType (PostScript outline) fonts. Tips on how to use OpenType fonts more conveniently in your environment are provided.

### Font organization and necessary condition

OpenType (PostScript outline) is one flavor of OpenType fonts as described in [Font organization and necessary condition](#). OpenType (PostScript outline) font files have an extension `.OTF` and consists of only a single file. In addition, OpenType(PostScript

outline) is classified into two categories. One is OpenType (PostScript) CID font and the other is OpenType (PostScript) non-CID font. The following table gives a brief description of these categories.

Type	Contents	Treatment in PDF
Non-CID font	Mainly contains Latin character glyphs. Glyphs are indexed using glyph name. It is the same as Type1 font.	Type1
CID font	Mainly contains CJK ideograph glyphs. Glyphs are indexed using CID.	Type0 (CIDFontType0)

OpenType is a new format standard requiring no special conditions to use it from **AH Formatter V6.0**.

### How to use OpenType (PostScript outline) fonts

The usage and family-name, font-weight, font-style mapping conditions are the same as for TrueType fonts. Please refer to the [Font organization and necessary condition](#) for details.

Some OpenType (PostScript outline) has the font-weight value which is not a multiple of 100. **AH Formatter V6.0** round off the font-weight value.

### Embedding OpenType (PostScript outline) fonts

Font embedding is the same as for TrueType fonts. Please refer to the [Embedding TrueType fonts](#) for details.

### Integrate the family name using the alias name

Some OpenType (PostScript outline) CID fonts have a family name defined per font file. Originally these fonts belonged to the same family and each font file has a different font-weight value.

Font file	Family-name	Weight	Italic
HeiseiKakuGoStd-W3.otf	"Heisei Kaku Gothic Std W3"	300	Normal
HeiseiKakuGoStd-W5.otf	"Heisei Kaku Gothic Std W5"	500	Normal
HeiseiKakuGoStd-W7.otf	"Heisei Kaku Gothic Std W7"	700	Normal
HeiseiKakuGoStd-W9.otf	"Heisei Kaku Gothic Std W9"	900	Normal

In the Windows environment it is not allowed to have more than three weight-values in the same family name. (Macintosh does allows such combinations.) As a result, these fonts have different family name per font file. This makes it inconvenient to use these fonts using the different family name. To integrate the family names, the following alias descriptions to the font configuration file should be added.

```
<font-config>
  <font-folder path="[Install directory]/fonts">
    <glyph-list file="ZapfDingbats.txt" afm="ZapfDingbats.afm"/>
  </font-folder>
  <font-folder path="/home/resource/fonts">
    <!-- Integrate the four OTF font's family name to
         "Heisei Kaku Gothic Std"-->
    <font-alias file="HeiseiKakuGoStd-W3.otf">
      <alias family-name="Heisei Kaku Gothic Std" weight="300" />
    </font-alias>
    <font-alias file="HeiseiKakuGoStd-W5.otf">
      <alias family-name="Heisei Kaku Gothic Std" weight="500" />
    </font-alias>
    <font-alias file="HeiseiKakuGoStd-W7.otf">
      <alias family-name="Heisei Kaku Gothic Std" weight="700" />
    </font-alias>
    <font-alias file="HeiseiKakuGoStd-W9.otf">
      <alias family-name="Heisei Kaku Gothic Std" weight="900" />
    </font-alias>
  </font-folder>
</font-config>
```

The alias family name can be used in the FO as follows:

```
<fo:block font-family="Heisei Kaku Gothic Std" font-weight="300">
  "Heisei Kaku Gothic Std W3" will be applied to this text.
</fo:block>
<fo:block font-family="Heisei Kaku Gothic Std" font-weight="500">
```

```

    "Heisei Kaku Gothic Std W5" will be applied to this text.
</fo:block>
<fo:block font-family="Heisei Kaku Gothic Std" font-weight="700">
    "Heisei Kaku Gothic Std W7" will be applied to this text.
</fo:block>
<fo:block font-family="Heisei Kaku Gothic Std" font-weight="900">
    "Heisei Kaku Gothic Std W9" will be applied to this text.
</fo:block>

```

## EUDC

---

EUDC: End User Defined Character is available with **AH Formatter V6.0**.

Since the information on EUDC is acquired from the registry, it is not necessary to create EUDC information to the [Font Configuration File](#) with Windows version. However when EUDC information is described by the [Font Configuration File](#), it is also taken into consideration. With no-Windows version, it is necessary to create EUDC information to the [Font Configuration File](#) in order to use EUDC.

```

<font-config>
  <name-processing-mode mode="windows-name"/>
  <windows-registry reference="enable"/>
  <font-folder path="c:\Windows\Fonts"/>
  <eudc-processing mapping="enable">
    <eudc-range start="57344" end="63743">
      <eudc-system-default file-path="c:\Windows\Fonts\EUDC.TTE"/>
      <eudc-map family-name="MS Mincho" file-path="c:\Program Files\east\jinmei3\FEJPMIN.TTG"/>
      <eudc-map family-name="MS PMincho" file-path="c:\Program Files\east\jinmei3\FEJPMIN.TTG"/>
    </eudc-processing>
  </font-config>

```

A user does not need to be conscious of utilizing EUDC. **AH Formatter V6.0** changes the font automatically by the character code.





## Graphics

- [BMP](#)
- [JPEG](#)
- [JPEG2000](#)
- [PNG](#)
- [TIFF](#)
- [GIF](#)
- [WMF](#)
- [EMF](#)
- [EPS](#)
- [SVG](#)
- [MathML](#)
- [CGM](#)
- [PDF](#)

Any graphics as the external files can be specified to `src` property of `<fo:external-graphic>` or `axf:background-image` property of `<fo:simple-page-master>`. **AH Formatter V6.0** detects the graphics format automatically. When the value of the content-type property is specified, it is assumed, then detected whether it conflicts or not. As the result if the specified value conflicts, then additional auto-detect will be done. In case of the image via HTTP, the content-type is given from the HTTP header. At that time it's assumed in preference to the value of the property.

The `data: scheme (RFC2397)` can be specified to `src` property of `<fo:external-graphic>` or `axf:background-image` property of `<fo:simple-page-master>`. In other word, the content of the graphics can be specified in do directly without preparing the external file.

```
<fo:external-graphic
src="data:image/png;base64,iVBORw0KGgoAAAANSUUhEUgAAACAAAAAgCAMAABEpIrGAAAAB
3RJTUUH1AIFCDIuN9BfzQAAAA1w ... =" />
```

It's not necessary to specify the media type in the `data: scheme`, if specified, it is assumed.

The `jar` scheme defined in [JarURLConnection](#) can be specified. This is effective to JAR or ZIP and possible to specify the entry in it.

```
jar:http://www.foo.com/bar/baz.jar!/COM/foo/Quux.png
```

What is specified from after the first separator `!` is considered as the entry specification. The nest of JAR or ZIP is not supported.

**AH Formatter V6.0** supports the following types of graphics. Unless otherwise noted they are supported across all platforms; Windows, non-Windows.

- ☞ See also [Image Output](#) in the [PDF Output](#) section.
- ☞ See also [Image Output](#) in the [SVG Output](#) section.
- ☞ See also [Image Output](#) in the [PostScript Output](#) section.
- ☞ See also [Graphics](#) in the [INX Output](#) section.
- ☞ See also [Graphics](#) in the [MIF Output](#) section.
- ☞ See also [Image Output](#) in the [XPS Output](#) section.

When the specified image cannot be acquired because the image is not existent, etc., a dummy image will be displayed instead. However if the image is a background-image, a dummy image will not be displayed.

---

### BMP

Supports Windows Bitmap. The content-type is "image/bmp".

---

### JPEG

Supports JFIF (JPEG File Interchange Format). The content-type is "image/jpeg".

---

### JPEG2000

Supports JPEG2000 of the following format.

- JP2 (The content-type is "image/jp2")

## PNG

---

Supports Portable Network Graphics Format with the following restrictions:

- Alpha channel information is effective with PDF1.4 or later.
- 16 bit color depth image will be truncated to 8 bit depth.

The content-type is "image/png".

## TIFF

---

Supports the TIFF files of TIFF Revision 6.0 specification.

- No Compression
- PackBits Compression
- Modified Huffman
- CCITT Group3 1D
- CCITT Group3 2D
- CCITT Group4
- JPEG Compression
- LZW Compression
- ZIP Compression

Supports the following color expression.

- Grayscale
- RGB
- CMYK
- YCbCr
- CIE L\*a\*b\*

Restrictions:

- Following formats are not supported.
  - Tiled Image
  - Planar Configuration=2 (Planar format)
- A YCbCr image is transformed into an RGB image when outputting to PDF.
- Alpha channel information is effective with PDF1.4 or later.
- 16 bit color depth image will be truncated to 8 bit depth.
- Multi page TIFF images are not supported. Only the first image in the TIFF file will be processed.
- Some parts of the TIFF extensions cannot be loaded properly.

The content-type is "image/tiff".

## GIF

---

Supports Graphics Interchange Format with some restrictions.

- In the case of Animation GIFs containing multiple pages, only the first page is displayed.

The content-type is "image/gif".

## WMF

---

Supports Windows Metafile. The image quality is maintained by embedding the vector image in the PDF, SVG, PostScript. The following restrictions currently exist:

- Only the horizontal value for the pen width can be used. If the value is 0.0, the drawing is not processed.
- The Bitmap specified for the brush is disregarded.
- The calculation of physical size may not correct.
- Clipping of Multiple rectangles is not supported.
- The raster operation is not supported. The original copied data is drawn as is.

- The function of clipping the characters is not supported.
- The background of the character is always transparent.
- The function of rotating the character from the baseline is not supported.

WMF in [gzip](#) file format is also supported. The content-type is "image/wmf".

## EMF

Supports Enhanced Metafile. The image quality is maintained by embedding the vector image in the PDF, SVG, PostScript. The following restrictions currently exist:

- Only the horizontal value for the pen width can be used. If the value is 0.0, the drawing is not processed.
- The Bitmap specified for the brush is disregarded.
- The calculation of physical size may not be correct.
- The raster operation is not supported. The original copied data is drawn as is.
- The function of clipping the characters is not supported.
- The background of the character is always transparent.
- The function of rotating the character from the baseline is not supported.
- The function of clipping the bottom drawing is not supported.

EMF in [gzip](#) file format is also supported. The content-type is "image/emf".

## EPS

Supports Encapsulated PostScript. When there is a preview image in EPS, the image can be outputted. When there is no image, a dummy image will be reflected in the GUI. When generating PDF using Adobe Distiller or outputting to a PS printer or [PostScript Output](#), a PostScript code in EPS is outputted instead of a preview image.

In the environment where Adobe Distiller and [Ghostscript](#) are installed, you can utilize them when outputting EPS to PDF (However, you cannot embed EPS to [Tagged PDF](#)). At that time EPS can be embedded to PDF as PDF. Please set [EPS-processor](#) in the [Option Setting File](#).

**CAUTION:** In Adobe Distiller, there may be a restriction on the PDF size that can be created. The size of EPS needs to be within the restriction that Adobe Distiller has. See also [PDF Reference and Adobe Extensions to the PDF Specification](#).

It is possible to embed EPS code directly in FO. Therefore it is possible to embed EPS code in PDF with Adobe Distiller, etc. The following is a sample using `<fo:instream-foreign-object>`.

```
<fo:instream-foreign-object><![CDATA[!PS-Adobe-3.0 EPSF-3.0
%%BoundingBox: 0 0 84 43
%%Pages: 0
%%Creator: Antenna House
%%Title: Green Rounded Box
%%CreationDate: 10 Feb 2003
%%LanguageLevel: 2
%%EndComments
%%BeginProlog
%%EndProlog
%%BeginSetup
%%EndSetup
%%Page: 1 1
%%BeginPageSetup
%%EndPageSetup
0 128 0 setrgbcolor
0.1 setlinewidth
newpath
0 5 moveto
0 43 84 43 5 arc
84 43 84 0 5 arc
84 0 0 0 5 arc
0 0 0 43 5 arc
closepath
gsave
stroke
grestore
fill
```

```

%%PageTrailer
%%Trailer
%%EOF
]]>
</fo:instream-foreign-object>

```

It is not necessary to have the CDATA section set, but appropriate character references are required.

EPS can be created by various kinds of software. For this reason, some of the EPS files may not generate the desired results when processed by **AH Formatter V6.0**.

The content-type is "application/postscript".

## SVG

Supports [Scalable Vector Graphics \(SVG\) 1.1](#). **AH Formatter V6.0** greatly enhances the display quality of SVG in PDF, PostScript through a newly developed SVG native output engine. Please refer to "[SVG Conformance](#)" for more details. SVG in [gzip](#) file format is also supported.

It is also possible to describe SVG code directly in FO. The following sample uses `<fo:instream-foreign-object>`.

```

<fo:instream-foreign-object
  width="100mm" height="100mm"
  content-width="96mm" content-height="72mm"
  display-align="center" text-align="center">
<svg version="1.1" xmlns="http://www.w3.org/2000/svg" viewBox="0 0 480 360">
  <circle cx="100" cy="100" r="50" fill="none" stroke="black" />
  <circle cx="220" cy="100" r="35" fill="red" stroke="black" />
  <circle cx="340" cy="100" r="20" fill="black" stroke="lime" stroke-width="4" />
  <circle cx="100" cy="260" r="20" stroke="lime" fill="yellow" stroke-width="4" />
  <circle cx="220" cy="260" r="35" stroke="none" fill="blue" />
  <circle cx="340" cy="260" r="50" stroke="red" fill="none" stroke-width="10" />
</svg>
</fo:instream-foreign-object>

```

If the correct xmlns is described in the svg tag, it's counted as SVG. If not, it's not counted as SVG.

If you want to include the DOCTYPE declaration in FO, please enclose it with the CDATA sections as follows. (Example of SVG1.1)

```

<fo:instream-foreign-object>
<![CDATA[
<!DOCTYPE svg PUBLIC "-//W3C//DTD SVG 1.1//EN"
  "http://www.w3.org/Graphics/SVG/1.1/DTD/svg11.dtd">
<svg version="1.1" xmlns="http://www.w3.org/2000/svg" viewBox="0 0 480 360">
  ...
</svg>
]]>
</fo:instream-foreign-object>

```

The typical content-type is "image/svg+xml".

## MathML

Supports [Mathematical Markup Language \(MathML\) 2.0](#). It's possible to draw high resolution image in PDF, SVG, PostScript because of the direct creation engine. Please refer to "[MathML Conformance](#)" for more details. With **AH Formatter V6.0 Lite**, the original drawing function of MathML is an option. You will need to purchase "[AH Formatter MathML Option](#)" separately.

It is also possible to describe MathML code directly in FO. The following sample uses `<fo:instream-foreign-object>`.

```

<fo:instream-foreign-object>
<math xmlns="http://www.w3.org/1998/Math/MathML">
<mrow>
  <mi>y</mi><mo>=</mo><mi>x</mi><mo>+</mo><mn>1</mn>
</mrow>
</math>
</fo:instream-foreign-object>

```

If the correct xmlns is described in the math tag, it's counted as MathML. If not, it's not counted as MathML. Because this MathML is a part of FO, it cannot describe MathML Character Names.

If you want to include [MathML Character Names](#) or the DOCTYPE declaration in FO, please enclose it with the CDATA sections as follows.

```
<fo:instream-foreign-object>
<![CDATA[
<!DOCTYPE math PUBLIC "-//W3C//DTD MathML 2.0//EN"
  "http://www.w3.org/Math/DTD/mathml2/mathml2.dtd">
<math xmlns="http://www.w3.org/1998/Math/MathML">
<mrow>
  <mi>y</mi><mo>=</mo><mi>x</mi><mo>&minus;</mo><mn>1</mn>
</mrow>
</math>
]]>
</fo:instream-foreign-object>
```

The typical content-type is "application/mathml+xml".

## CGM

---

Supports Computer Graphics Metafiles as defined in ISO 8632.

- When CGM Option is not installed
 

In the Windows version, when either of the following plug-in is installed, CGM can be displayed. CGM images are converted to raster images when outputting to PDF, SVG. CGM is not supported with the 非 Windows versions.

  - ActiveCGM (<http://www.corel.com/>)
  - IsoView / IsoView WebCGM (<http://www.isodraw.com/>)
  - Larson VizEx CGM Viewer (<https://www.cgmlarson.com/>)
- When CGM Option is installed
 

If CGM Option is installed, CGM graphic is embedded as vector graphic into PDF without rasterising degradation.

CGM Option is usable not only Windows version but also in all platforms of **AH Formatter V6.0**. For more details of CGM Option please refer to the [AH Formatter CGM Option](#). About the CGM conformances, please refer to [CGM Conformance](#) page.

Supported CGM is binary encoded file defined in ISO8632-3.

The content-type is "image/cgm".

## PDF

---

Although it is not an image, **AH Formatter V6.0** can treat PDF like an image. See also [PDF Embedding](#) in PDF Output.

The content-type is "application/pdf".



## Option Setting File

The Option Setting File is an XML file which describes the operating setup for the **AH Formatter V6.0**. It can be loaded by the `-i` option in [Command-line Interface](#), etc. In Windows Graphical User Interface the Option Setting File is loaded automatically if [AHF-Settings.xml](#) ([AHFSettings\(x64\).xml](#) for Windows x64 version) exists in the application specific data directory. The application data is indicated by the environment variable, APPDATA as follows: `[APPDATA]\AntennaHouse\AHFormatter\6.0\`

When the content of the Option Setting File is corrected with the editor, etc. while **AH Formatter V6.0** is running, the correction is not reflected to **AH Formatter V6.0**. Please exit **AH Formatter V6.0** once or load the Option Setting File from the [Import Option Setting Dialog](#) opened from the Format Menu in GUI.

The following are the elements of the Option Setting File:

Element	Location	Description
<formatter-config>	root element	Root element of the <b>AH Formatter V6.0</b> Option Setting File.
<formatter-settings>	child of <formatter-config>	<a href="#">Formatter Settings</a> element.
<font-settings>	child of <formatter-config>	<a href="#">Font Settings</a> element.
<script-font>	child of <font-settings>	Generic font mapping settings element.
<font-alias>	child of <font-settings>	Font alias settings element.
<pdf-settings>	child of <formatter-config>	The element of <a href="#">PDF Output Settings</a> .
<embed-font>	child of <pdf-settings>	Embedding font settings element.
<ps-settings>	child of <formatter-config>	The element of <a href="#">PostScript Output Settings</a> .
<svg-settings>	child of <formatter-config>	<a href="#">SVG Output Settings</a> element.
<inx-settings>	child of <formatter-config>	<a href="#">INX Output Settings</a> element.
<mif-settings>	child of <formatter-config>	<a href="#">MIF Output Settings</a> element.
<text-settings>	child of <formatter-config>	<a href="#">TEXT Output Settings</a> element. <span style="border: 1px dashed black; padding: 0 2px;">no-LT</span>
<mathml-settings>	child of <formatter-config>	<a href="#">MathML Settings</a> element.
<xslt-settings>	child of <formatter-config>	<a href="#">XSLT Settings</a> element.
<param>	child of <xslt-settings>	The xslt:param settings element.
<stylesheet>	child of <xslt-settings>	Default stylesheet settings element.
<rxs-settings>	child of <formatter-config>	<a href="#">XSL Report Designer Settings</a> element. <span style="border: 1px dashed black; padding: 0 2px;">no-LT</span>

**AH Formatter V6.0** allows you to specify one of the following units for the parameter (designated with asterisk \* sign) that takes the length value.

Representation	Meanings
cm	centimeter
mm	millimeter. 1 mm = 1/10 cm
in	inch. 1 in = 2.54 cm
pt	point. 1 pt = 1/72 in
pc	pica. 1 pc = 12 pt
jpt	1 jpt = 0.3514 mm
q	1 q = 0.25 mm

## Formatter Settings

These settings are used for the formatting.

Element	Location	Attribute	Default	Description
<formatter-settings>	child of <formatter-config>	abbreviation-character-count	3	Specify the number of characters considered to be an abbreviation when a line break is inserted. See also <a href="#">afx:abbreviation-character-count</a> .



Element	Location	Attribute	Default	Description
<formatter-settings>	child of <formatter-config>	append-non-end-of-line-characters		Specifies to append the non-end-of-line characters. White space, opening parenthesis and punctuations, that are originally non-end-of-line, are disregarded even though they are specified. See also <a href="#">axf:append-non-end-of-line-characters</a> in extended FO.
		append-non-starter-characters		Specifies to append the non-starter characters. White space, closing parenthesis and punctuations, that are originally non-starter, are disregarded even though they are specified. See also <a href="#">axf:append-non-starter-characters</a> in extended FO.
		auto-formatter-type	html	When the detection of formatting type is set automatically and the decision of XHTML or HTML is unclear, the priority can be given by specifying the following values. <ul style="list-style-type: none"> <li>• html</li> <li>• xhtml</li> </ul> See also <a href="#">Detection of Formatting Type</a> .
		barcode-text-font	OCRB,monospace	Specifies the font used when you add the text of an original code to the <a href="#">linear barcode</a> with <a href="#">Barcode Generator Option</a> .
		baseline-mode	5	In AH Formatter V5.0, there are some changes from <b>XSL Formatter V4</b> in deciding the baseline in the text with different scripts like a mixture of Western and Japanese. Please specify the value when you want to make it the same operation as V4. The following values can be specified. <ol style="list-style-type: none"> <li>1. Operates the same as <b>XSL Formatter V4</b>.</li> <li>2. Adds the improved operation by <b>AH Formatter V5</b>.</li> </ol> See also <a href="#">Difference in Formatting with XSL Formatter V4</a> . In addition, when baseline-mode="4" is specified, the <a href="#">text-altitude</a> and <a href="#">text-depth</a> properties are invalid.
		bidi-override-mode	5	In AH Formatter V5.0, there are some changes from <b>XSL Formatter V4</b> in the behavior of <fo:bidi-override>. Please specify the value when you want to make it the same operation as V4. The following values can be specified. <ol style="list-style-type: none"> <li>1. Operates the same as <b>XSL Formatter V4</b>.</li> <li>2. Adds the modified operation by <b>AH Formatter V5</b>.</li> </ol> See also <a href="#">Difference in Formatting with XSL Formatter V4</a> .
		bold-ratio	1.0	Specifies the weight of a font without bold in the font family. When 1.0 is specified, only the amount decided by the system is made thicker. For instance, when 1.5 is specified, it is drawn 1.5 times thicker. When 0.0 or less is specified, it is considered as 1.0 thick. This setting is effective with <a href="#">PDF Output</a> and <a href="#">PostScript Output</a> .
		border-medium-width *	3pt	Specifies the default border width in medium style with the real-type numeric value.
		border-thick-width *	5pt	Specifies the default border width in thick style with the real-type numeric value.
		border-thin-width *	1pt	Specifies the default border width in thin style with the real-type numeric value.

Element	Location	Attribute	Default	Description										
<formatter-settings>	child of <formatter-config>	default-CJK		Specifies the language (such as jpn or kor) to be applied when a script is ambiguous for CJK. Although the default value is determined from the operating environment, Japanese language is assumed when the operating environment is other than CJK.										
		default-color	#000000	Specifies the default color of text with the format of #RRGGBB.										
		default-font-size *	10pt	Specifies the default font size with the real-type numeric value.										
		default-from-page-master-region	false	In XSL1.1, there is no compatibility with XSL1.0 in the method of evaluating writing-mode or reference-orientation. If true is specified, it becomes the same operation as when writing-mode="from-page-master-region()" reference-orientation="from-page-master-region()" is specified for fo:page-sequence. Refer to <a href="#">from-page-master-region()</a> for details.										
		default-html-charset	UTF-8	Specifies the default encoding of HTML. This setting is applied to HTML with unknown encoding. When the setting is in HTML, or the encoding can be recognised by BOM, they are adopted. See also <a href="#">&lt;text-settings encoding&gt;</a> . Case insensitive.										
		default-lang		Specifies the default language code. The language code follows <a href="#">ISO 639-2</a> . There is no default value. default-lang specifies the language when FO doesn't have the language specification. This is outputted as the language information to the PDF. The default value of default-lang is empty. At this time, if the language is not specified for FO etc. , the language information is not outputted to the PDF. The language specified to <a href="#">default-lang2</a> is adopted when default-lang is empty.										
		default-lang2	eng	Specifies the language actually adopted when <a href="#">default-lang</a> is empty. When default-lang2 is empty, it depends on the locale of the system.										
		default-page-height *	297mm	Specifies the default page height with the real-type numeric value.										
		default-page-margin-bottom *	10%	Specifies a default page margin with the real-type numeric value.										
		default-page-margin-left *	10%											
		default-page-margin-right *	10%											
		default-page-margin-top *	10%											
		default-page-width *	210mm	Specifies the default page width with the real-type numeric value.										
fixed-width-space-treatment	true	The glyph such as EM SPACE (U+2003) etc. which corresponds to the white space with fixed width is not contained in many fonts. Therefore, alternative characters, such as an square symbol, will be displayed. In such a case, it specifies whether to put the white space or not without displaying an alternative glyph. If true is specified, a white space will be generated. If false is specified, an alternative glyph will be displayed. The target characters and their widths are as follows. (in units of em)												
		<table> <tbody> <tr> <td>U+2000</td> <td>EN QUAD</td> <td>1/2</td> </tr> <tr> <td>U+2001</td> <td>EM QUAD</td> <td>1</td> </tr> <tr> <td>U+2002</td> <td>EN SPACE</td> <td>1/2</td> </tr> <tr> <td>U+2003</td> <td>EM SPACE</td> <td>1</td> </tr> </tbody> </table>	U+2000	EN QUAD	1/2	U+2001	EM QUAD	1	U+2002	EN SPACE	1/2	U+2003	EM SPACE	1
U+2000	EN QUAD	1/2												
U+2001	EM QUAD	1												
U+2002	EN SPACE	1/2												
U+2003	EM SPACE	1												

Element	Location	Attribute	Default	Description
<formatter-settings>	child of <formatter-config>	fixed-width-space-treatment	true	<p>U+2004 THREE-PER-EM SPACE 1/3</p> <p>U+2005 FOUR-PER-EM SPACE 1/4</p> <p>U+2006 SIX-PER-EM SPACE 1/6</p> <p>U+2007 FIGURE SPACE The same width of the figure '0'.</p> <p>U+2008 PUNCTUATION SPACE The same width of the punctuation period '.'.</p> <p>U+2009 THIN SPACE Depends on the setting of <a href="#">thin-space-width</a>.</p> <p>U+200A HAIR SPACE Depends on the setting of <a href="#">hair-space-width</a>.</p> <p>U+205F MEDIUM MATHEMATICAL SPACE 4/18</p>
		hair-space-width	0.1	Specifies the character width of HAIR SPACE (U+200A) in units of em, when <a href="#">fixed-width-space-treatment="true"</a> is specified.
		HyphenationOption	true	Specifies whether to <a href="#">hyphenate words</a> by using the original processing that supports over 40 languages or to use the TeX dictionary. If false is specified, Words will be hyphenated by using the TeX dictionary. At that time, only the languages that have the dictionaries can be hyphenated.
		intrusion-displace-mode	6	<p>In AH Formatter V6, there are some changes from <b>AH Formatter V5</b> in the behavior of the intrusion-displace property. Please specify when you want to make it the same as V5.</p> <ol style="list-style-type: none"> <li>Operates the same as <b>AH Formatter V5</b>.</li> <li>Adds the modified operation by <b>AH Formatter V6</b>.</li> </ol> <p>See also <a href="#">Difference in Formatting with AH Formatter V5</a>. <a href="#">V6.0</a></p>
		latin-ligature	false	Specifies whether to process the ligature in European languages with the value of true or false. If true is specified, the ligature will be processed. If false is specified, it will not be processed. This setting affects the value of <code>axf:ligature-mode="auto"</code> .
		normal-line-height	1.2	Specifies the default line height with the real-type numeric value. A unit is not specified. The value means the ratio to the font size. The initial value is 1.2. Therefore, in case the font size is 10pt, the line height becomes 12pt.
		oblique-skew	0	<p>Specifies the amount of the inclination when using "font-style ="oblique" or "Backslant". When 0 or less is specified, it is considered as the system default. The font is inclined by the system default whenever there is no italic in the font when using "font-style ="italic". This setting is effective in the following outputs.</p> <ul style="list-style-type: none"> <li>GUI</li> <li>PDF Output</li> <li>PostScript Output</li> <li>XPS Output</li> <li>INX Output</li> </ul>

Element	Location	Attribute	Default	Description
<formatter-settings>	child of <formatter-config>	printer-marks-line-length	10mm	Specifies the length of the <a href="#">printer marks</a> .
		printer-marks-line-width	0.2pt	Specifies the width of the <a href="#">printer marks</a> .
		printer-marks-zero-margin	3mm	Specifies the margin between the page and the printer marks when <a href="#">bleed</a> is 0. <a href="#">[no-LT]</a>
		PrinterOrientation	auto	<p>When the paper is placed in landscape in the PS Printer, there may be a case that the printer rotate-output the line and EPS incorrectly because some printers cannot get information. Possible to correct the rotation by specifying one of the following values. (The value should be anti-clockwise rotation degree.)</p> <ul style="list-style-type: none"> <li>• auto</li> <li>• 0</li> <li>• 90</li> <li>• 270</li> </ul> <p>This setting is effective only with Windows version.</p>
		PscriptPassThrough	true	Possible to makes Pass Through output invalid when outputting to PS printer. If true is specified, Pass Through output is executed. If false is specified, Pass Through output is not executed but the output is executed only by GDI operator. This setting is effective only with Windows version.
		pair-kerning	false	Specifies whether to process the pair kerning in European languages with the value of true or false. If true is specified, the ligature will be processed. If false is specified, it will not be processed. This setting affects the value of <a href="#">axf:kerning-mode="auto"</a> .
		punctuation-spacing	0.5	Specifies the space width between the adjacent Japanese full-width characters with the real-type numeric value. The value means the ratio to the font size. This setting affects the value of <a href="#">axf:punctuation-spacing="auto"</a> in extended FO.
		punctuation-trim	true	When Japanese full-width characters (punctuations, parentheses) are used in succession or come at the start of a line, you can specify whether to trim the letter spacing or keep the same letter spacing with the value of true or false. If the value is true, the letter spacing will be tracked narrow. If the value is false, it will be the same as that of other full-width characters. This setting affects the values of <a href="#">axf:punctuation-trim="auto"</a> and <a href="#">axf:text-justify-trim="auto"</a> in extended FO.
		pxpi	96	In XSL or CSS, you can specify px (pixel) as a unit of measurement. Pxpi specifies the coefficient, which converts the value of the specified px, as "the number of pixels per inch" when formatting. It's specified with the real-type numeric value.
		ruby-align		Specifies the arrangement when <a href="#">axf:ruby-align="auto"</a> is specified. When nothing or "auto" is specified, it is considered as "Distribute-space center". <a href="#">[V6.0]</a>
table-auto-layout-limit	100	When <a href="#">table-layout="auto"</a> is specified, it is necessary to look ahead and read the table to decide the width of column. The number of row to read ahead can be limited because it takes a long time to read all row in a too huge table. After reading ahead up to the number of row specified here, the width of column is decided. If 0 is specified, all row is read, and then the width of column is decided. Refer to <a href="#">Table Auto Layout</a> for details.		

Element	Location	Attribute	Default	Description
<formatter-settings>	child of <formatter-config>	table-is-reference-area	false	In XSL1.1, there is no compatibility with XSL 1.0 about whether to make fo:table a reference area. If true is specified, fo:table will be made a reference area and its operation will be the same as XSL1.0. Refer to <a href="#">Incompatibility of fo:table</a> for more details.
		text-autospace	true	Specifies whether to insert spaces between Japanese characters and Western characters to make them look better with the value of true or false, in the document Japanese and Western are mixed. If the value is true, a space will be inserted to make them look better. If the value is false, a space won't be inserted. This setting affects the value of <code>axf:text-autospace="auto"</code> in extended FO.
		text-autospace-width	0.25	Specifies the space width between Japanese characters and Western characters with the real-type numeric value. The value means the ratio to the font size. This setting affects the value of <code>axf:text-autospace-width="auto"</code> in extended FO.
		text-decoration-mode	1	Specifies how much the underline, strikethrough and overline exceed the length of a word. <ul style="list-style-type: none"> <li>0. Do not exceed the word length.</li> <li>1. Exceed half-length of the space between words.</li> <li>2. Do not exceed the start edge of a word, but exceed the end edge of a word by the full space between words.</li> </ul>
		text-justify-mode	5	In <b>AH Formatter V6.0</b> , there are some changes from XSL Formatter V4 in trimming a line. Please specify the value when you want to make it the same operation as V4. This adjusts the initial value when <code>axf:text-justify-trim="auto"</code> is specified. The following values can be specified. <ul style="list-style-type: none"> <li>1. Operates the same as <b>XSL Formatter V4</b>. That is, it is considered that ideograph and inter-word are specified.</li> <li>2. Adds the improved operation by <b>AH Formatter V5</b>.</li> </ul> See also <a href="#">Difference in Formatting with XSL Formatter V4</a> .
		text-kashida-space	100%	Specifies the percentage of the Kashida in Arabic justification. The value indicates the percentage of white space and Kashida. If the value is 0%, Kashida is not inserted and only the white space expands as well as the normal justification. If the value is 100%, Kashida is inserted as much as possible. This setting affects the value of <code>axf:text-kashida-space="auto"</code> in extended FO.
		text-underline-mode	6	Some improved changes have been added for the position of underline and overline with <b>AH Formatter V6</b> . Please specify when you want to make it the same as V5. <ul style="list-style-type: none"> <li>1. Operates the same as <b>AH Formatter V5</b>.</li> <li>2. Adds the improved operation by <b>AH Formatter V6</b>.</li> </ul> See also <a href="#">Difference in Formatting with AH Formatter V5</a> . <code>V6.0</code>
		thin-space-width	0.2	Specifies the character width of THIN SPACE (U+2009) in units of em, when <code>fixed-width-space-treatment="true"</code> is specified.

Element	Location	Attribute	Default	Description
<formatter-settings>	child of <formatter-config>	two-pass-formatting	false	When formatting a huge document with a large amount of unresolved <fo:page-number-citation>, a large amount of memories are consumed because the cancellation of the page information is impossible. Therefore, the limit is caused in the number of pages to format. This parameter solves that problem by making the formatting two passes. Although its processing time may be increased, only the page number information which should be solved will consume the memory and the memory consumption will be extremely decreased. When the GUI, this setting is invalid. <code>&lt;no-LT&gt;</code>
		use-default-page-margin-CSS	true	Specifies whether default-page-margin-* is adopted or not when there is no margin specification in @page in CSS.
		use-default-page-margin-XSL	false	Specifies whether default-page-margin-* is adopted or not when there is no margin specification in fo:simple-page-master in XSL.
		vertical-block-width-mode	6	The behavior of the auto value of the width of vertical-text block within horizontal-text flow (or the height of horizontal-text block within vertical-text flow) is changed with <b>AH Formatter V6</b> . Please specify when you want to make it the same as V5. <ul style="list-style-type: none"> <li>1. Operates the same as <b>AH Formatter V5</b>. The width of vertical-text block is given by the width of the outer area.</li> <li>2. Adds the improved operation by <b>AH Formatter V6</b>. The width of vertical-text block shrinks to fit the content.</li> </ul> See also <a href="#">Difference in Formatting with AH Formatter V5</a> . <code>&lt;V6.0&gt;</code>
		vertical-underline-side	auto	In the XSL specification, there is no description about the underline in vertical writing mode. The vertical-underline-side property is an option which specifies whether to place the underline in vertical writing mode on the right side or on the left side. If left or right is specified, the underline is placed on the left or on the right. If auto is specified, the underline is placed on the right side when the language property is Japanese(jpn) or Korean(kor). The underline is placed on the left side when the language property is other than Japanese(ja) or Korean(ko). If there is no language properties specified, it depends on the standard CJK language setting. This setting affects the value of the extension property, <code>axf:vertical-underline-side="auto"</code> .
		watermark-font-family	sans-serif	Specifies the font family to the character string which you set to watermark-text.
		watermark-font-style	normal	Specifies the font style to the character string which you set to watermark-text.
		watermark-font-weight	normal	Specifies the font weight to the character string which you set to watermark-text. Possible to specify normal, bold or the numerical value from 100 to 900.
		watermark-text		Displays the specified watermark text on each page. Possible to make it multiple lines by delimiting with the line feed &#10;. This setting is invalid with the evaluation version. With <b>AH Formatter V6.0 Lite</b> , the watermark that shows the evaluation version is shown after the 300 pages, which is the limited formatted pages with the Lite verison. You will need to specify an appropriate <a href="#">watermark-font-family</a> according to the text you specify. Please confirm it by outputting PDF. In addition, complex scripts such as Thai and Arabic



Element	Location	Attribute	Default	Description
<formatter-settings>	child of <formatter-config>	watermark-text		cannot be specified. The text that cannot be outputted by a single font cannot be specified.
		WindowsFontAPI		<p><b>AH Formatter V6.0</b> handles Arabic, Hebrew, Hindi, Thai, etc. originally, it's possible to display these languages without depending on the platform. However there are some unsupported scripts and fonts which cannot be displayed correctly. Available to specify the script to be displayed by using WindowsAPI. Specify the scripts using the notation defined by <a href="#">ISO 15924</a> and putting commas between scripts. The following shows an example of Devanagari.</p> <pre>WindowsFontAPI="Deva"</pre> <p>However in this case, the same result cannot be gained when outputting to PDF. In order to get the same result, please use Adobe Distiller to create PDF. In order to make this setting effective, you need to specify <code>use-windows-api="true"</code> as well. The default value is empty. This setting is effective only with Windows version.</p> <p><b>CAUTION:</b> Some fonts may not be displayed correctly.</p>
<list-style-type>	child of <formatter-settings>	box		Specifies the character to use by list-style-type="box". As for the initial value when a null value being specified or a value not being specified, please refer to (-ah-)list-style-type.
		check		Specifies the character to use by list-style-type="check". As for the initial value when a null value being specified or a value not being specified, please refer to (-ah-)list-style-type.
		circle		Specifies the character to use by list-style-type="circle". As for the initial value when a null value being specified or a value not being specified, please refer to (-ah-)list-style-type.
		diamond		Specifies the character to use by list-style-type="diamond". As for the initial value when a null value being specified or a value not being specified, please refer to (-ah-)list-style-type.
		disc		Specifies the character to use by list-style-type="disc". As for the initial value when a null value being specified or a value not being specified, please refer to (-ah-)list-style-type.
		hyphen		Specifies the character to use by list-style-type="hyphen". As for the initial value when a null value being specified or a value not being specified, please refer to (-ah-)list-style-type.
		square		Specifies the character to use by list-style-type="square". As for the initial value when a null value being specified or a value not being specified, please refer to (-ah-)list-style-type.
<script-chars>	child of <formatter-settings>	script		<p>Evaluates all characters specified to the code as scripts specified to the script. For example, by specifying as follows,</p> <pre>&lt;script-chars script="Jpan" code="#x5C;" /&gt;</pre> <p>&amp;#x5C; is displayed as ¥. (Note that it is applied only when the font corresponding to Jpan is specified for font-family). When code not being specified, all characters specified to script are cancelled. When script not being specified, all characters specified to code are cancelled.</p>

Element	Location	Attribute	Default	Description
<script-chars>	child of <formatter-settings>	code		Evaluates all characters specified to the code as scripts specified to the script. For example, by specifying as follows,  <pre>&lt;script-chars script="Jpan" code="&amp;#x5C;"/&gt;</pre> &#x5C; is displayed as ¥. (Note that it is applied only when the font corresponding to Jpan is specified for font-family). When code not being specified, all characters specified to script are cancelled. When script not being specified, all characters specified to code are cancelled.
<space-after-punctuation>	child of <formatter-settings>	language		Specifies the language code.
		code		Specifies the character to be applied. For the specified language, the specified space is placed after the code specified. When code not being specified, all characters specified to script are cancelled.
		space		Specifies the amount of space with the real type numerical value. The value means the ratio to the fontsize.
<space-before-punctuation>	child of <formatter-settings>	language		Specifies the language code.
		code		Specifies the character to be applied. For the specified language, the specified space is placed before the code specified. When code not being specified, all characters specified to script are cancelled.
		space		Specifies the amount of space with the real type numerical value. The value means the ratio to the fontsize.
<space-between-digit-and-punctuation>	child of <formatter-settings>	language		Specifies the language code.
		code		Specifies the character to be applied. For the specified language, the specified space is placed between the digit and the code specified. When code not being specified, all characters specified to script are cancelled.
		space		Specifies the amount of space with the real type numerical value. The value means the ratio to the fontsize.
<space-between-punctuation-and-digit>	child of <formatter-settings>	language		Specifies the language code.
		code		Specifies the character to be applied. For the specified language, the specified space is placed between the code specified and the digit. When code not being specified, all characters specified to script are cancelled.
		space		Specifies the amount of space with the real type numerical value. The value means the ratio to the fontsize.
<usercss>	child of <formatter-settings>			Specifies the CSS user stylesheet you want to add by &lt;css&gt;. See also <a href="#">Cascading Order of CSS Stylesheet</a> .
<css>	child of <usercss>	path		Specifies the path of the CSS user stylesheet.
<script-language-in-CJK>	child of <formatter-config>	script		When the script specified to the script attribute appears in the sentence of CJK languages, the character string of the script is considered as the language that is specified to the language attribute. For example,  <pre>&lt;script-language-in-CJK script="Latn" language="eng"/&gt;</pre>
		language		



Element	Location	Attribute	Default	Description
<script-language-in-CJK>	child of <formatter-config>	language		The Latin character string that appears in Japanese or Chinese sentences can be recognized as English. If hyphenate="true" is specified, the hyphenation can be processed by considering this part as English. The CJK languages cannot be specified to language. When nothing is specified to the language attribute, the language specification to the script attribute is canceled.
<GS1-128>	child of <formatter-config>	AI		Registers the format of application identifier (AI) of <a href="#">GS1-128</a> . Some formats of AI has been already registered, but you can specify when you change the format or the format is not registered. AI is a number with 2 to 4 digits. AI starting from 0 should be two digits. The last digit can be set as * if AI is a 3 or 4 digit number. For instance, AI="380*" indicates 3800 to 3809. The following formats can be specified to the format attribute. <ul style="list-style-type: none"> <li>• n3 : 3-digit numbers</li> <li>• x3 : 3-digit arbitrary characters</li> <li>• n-10 : Numbers with greater than or equal to 1 and less than or equal to 10 digits.</li> <li>• x3-10 : Arbitrary characters with greater than or equal to 3 and less than or equal to 10 digits.</li> </ul> For example, specify as follows; <pre>&lt;GS1-128 AI="380*" format="n-15"/&gt;</pre>
		format		

## Font Settings

These settings are used for the fonts.

Element	Location	Attribute	Default	Description
<font-settings>	child of <formatter-config>	auto-fallback-font	true	Specifies whether to look for a fall back font automatically when a font with a glyph cannot be found in the font family which was specified by FO or CSS. See also <a href="#">Font Selection</a> to learn more about the fall back method.
		default-font-family	serif	Specifies the default generic font family. The choices are serif, sans-serif, cursive, fantasy or monospace. See also <a href="#">Font Selection</a> .
		fallback-glyph	1	Specifies whether to report it or not when the glyph is found in a fall back font. When the glyph corresponding to the specified character in the font family is not found, if <a href="#">auto-fallback-font</a> is specified, a fall back font will be looked for. The following either can be specified. <ol style="list-style-type: none"> <li>0. No message will be reported.</li> <li>1. The will be reported.</li> <li>2. The will be reported.</li> </ol>
		font-selection-strategy	auto	Specifies auto or character-by-character. When character-by-character is specified, even if font-selection-strategy="auto" is specified in FO or HTML, <a href="#">Font Selection</a> is performed as character-by-character.
		missing-font	1	Specifies whether to warn when a font is not found from the specified font family. The following either can be specified. <ol style="list-style-type: none"> <li>0. No error message will be reported.</li> <li>1. The will be reported.</li> <li>2. The will be reported.</li> </ol>
		missing-glyph	1	Specifies whether to warn when the glyph corresponding to the specified character is not found in the specified font family or the fallback font. The following either can be specified. <ol style="list-style-type: none"> <li>0. No error message will be reported.</li> </ol>

Element	Location	Attribute	Default	Description
<font-settings>	child of <formatter-config>	missing-glyph	1	<ol style="list-style-type: none"> <li>The will be reported.</li> <li>The will be reported.</li> </ol>
		missing-glyph-all	false	Usually the report on <a href="#">missing-glyph</a> is given only once to the same character. However, by specifying <code>missing-glyph-all="true"</code> , the report can be given to all. Please note that careless specification could cause huge amount of error. This setting is similarly applied to <a href="#">fallback-glyph</a> as well.
		use-windows-api	false	Specifies true when you want to use Windows API with the Windows version, without using the original API for the acquisition of the font information. Since Windows API and the original API are not completely the same, some difference may occur in the formatted result. Effective only with the Windows version. If false is specified, the setting of <formatter-serrings WindowsFontAPI> is invalid.
<script-font>	child of <font-settings>	script		<p>Specifies the script codes for multilingual setting. The available scripts conform to <a href="#">ISO 15924</a>. However, the <b>AH Formatter V6.0</b> does not support all scripts. The following scripts can be specified here.</p> <ul style="list-style-type: none"> <li>• Latn : Latin</li> <li>• Grek : Greek</li> <li>• Cyrl : Cyrillic</li> <li>• Arab : Arabic</li> <li>• Hebr : Hebrew</li> <li>• Deva : Devanagari</li> <li>• Thai : Thai</li> <li>• Hang : Hangul</li> <li>• Hans : Han (Chinese Simplified)</li> <li>• Hant : Han (Chinese Traditional)</li> <li>• Jpan : Japanese (Han+Hira+Kana)</li> <li>• Hrkt : Hiragana+Katakana</li> </ul> <p>For generic fonts you may omit the setting of the script or specify as <code>script="."</code>.</p>
		serif		Specifies the generic serif font when specified by the script.
		sans-serif		Specifies the generic sans-serif font when specified by the script.
		monospace		Specifies the generic monospace font when specified by the script.
		cursive		Specifies the generic cursive font when specified by the script.
		fantasy		Specifies the generic font for fantasy when specified by the script.
		fallback		Specifies the fall back font of the script specified by script. Two or more fonts can be enumerated by comma separated values.
<font-alias>	child of <font-settings>	src		<p>Formats the font name src (source) appearing in FO (or HTML etc.) by replacing with dst (destination). This is achieved by specifying an arbitrary font name for src and dst. This makes it possible to substitute an unknown font in a document made in a different environment, without modifying the document. However, in the following sample,</p> <pre>&lt;font-alias src="A" dst="B"&gt; &lt;font-alias src="B" dst="C"&gt;</pre> <p>"A" would never be replaced with "C". Moreover, the setting for &lt;font-alias&gt; doesn't affect the font name in the Option file.</p>
		dst		

## PDF Output Settings

These settings are used for [PDF Output](#).

Element	Location	Attribute	Default	Description
<pdf-settings>	child of <formatter-config>	certificate-name		Specifies the certificate used when you apply the <a href="#">digital signature</a> . The digital signature can be applied to the <a href="#">digital signature field</a> in PDF only in the environment where you have <a href="#">PDF Digital Signature Module</a> installed on you computer. <code>{no-LT}</code>
		convert-colorspace	true	If the value is true, RGB images are converted into CMYK images automatically when outputting PDF/X, PDF/A. This setting is not effective with <b>AH Formatter V6.0 Lite</b> .
		default-output-intent	#OutputConditionIdentifier=CGATS TR 001	Sets the default value when the output intent is not specified in FO while outputting <a href="#">PDF/X</a> . Values that can be specified are equal to the ones that can be specified to the src property for fo:color-profile. See also <a href="#">PDF/X</a>
		embed-all-fonts	false	Specifies whether to embed the all fonts in PDF or not with one of the following values, which are embeddable fonts in the formatted result. <ul style="list-style-type: none"> <li>• false</li> <li>• true</li> <li>• base14</li> </ul> If the value is false, only fonts specified in <code>&lt;embed-font&gt;</code> are embedded. If the value is true, all fonts that can be embedded except Standard 14 Fonts will be embedded. If the value is base14, all fonts including Standard 14 Fonts that can be embedded will be embedded.
		embed-font-encoding		Specifies the encoding when the TrueType font is embedded. When nothing is specified, Identity-H/V is the default. <ul style="list-style-type: none"> <li>• WinAnsiEncoding Specifies WinAnsiEncoding for encoding. If WinAnsiEncoding cannot be specified, Identity-H/V is considered as specified.</li> </ul>
		embed-std-output-intent	false	Specifies whether to embed the ICC color profile specified for the standard output intent into <a href="#">PDF/X</a> output. It is necessary to specify the actual file of the ICC color profile when embedding it. If false is specified, it is not embedded. This setting is invalid when outputting <a href="#">PDF/A</a> because the embedding of the color profile is indispensable with PDF/A output. Also it's not available to specify the output intent to the PDF versions other than PDF/X, PDF/A according to the <a href="#">PDF</a> specification.
		embed-subset-font-percentage	100	Finds the percent of the character used in PDF against the entire characters that the font has. When the percent of characters used is greater than or equal to the specified value, embeds all font characters including characters not used. If not, embeds only characters that are actually used.
		encryption-level	128rc4	Specifies the key length when encrypting the PDF file. <ul style="list-style-type: none"> <li>• 40rc4</li> <li>• 128rc4 (Effective with PDF1.4 or later)</li> <li>• 128aes (Effective with PDF1.5 or later)</li> <li>• 256aes (Effective with PDF1.7 or later)</li> </ul>
		EPS-processor	none	Specifies whether to output PDF after changing into PDF using an external processor when outputting EPS to PDF in the formatted result.

Element	Location	Attribute	Default	Description
<pdf-settings>	child of <formatter-config>	EPS-processor	none	<ul style="list-style-type: none"> <li>• none</li> <li>• distiller</li> <li>• ghostscript</li> </ul> <p>These have the following meanings.</p> <ul style="list-style-type: none"> <li>• none : Use nothing. The same way in the past.</li> <li>• distiller : Use Adobe Distiller in the environment where Adobe Distiller is installed. acrodist.exe is used. Effective only with the Windows version. EPS support at this time has a little restrictions. <ul style="list-style-type: none"> <li>◦ PS-Adobe-2.0 or later required.</li> <li>◦ %%BeginProlog、 %%EndProlog should be included.</li> </ul> </li> </ul> <p>☞ <a href="#">joboptions</a></p> <ul style="list-style-type: none"> <li>• ghostscript : Use <a href="#">Ghostscript</a> in the environment where Ghostscript is installed. Use gswin32c.exe with the Windows version and use gs with non-Windows. Since the program is invoked by fork() etc. and used, there is no problem with GPL license. The operation is tested with AFPL Ghostscript 8.54.</li> </ul> <p>☞ <a href="#">ghostscript</a></p> <p>Invalid in the environment where each processor is not installed. Moreover, it's necessary to set the PATH etc. of the program to use. The value is case-insensitive.</p>
		error-on-embed-fault	true	When an error occurs while embedding fonts, specifies whether to stop the job as an error or to continue embedding by replacing the character with a white space using the value of true or false. If the value is true, stops executing as an error. If the value is false, continues executing and outputs PDF by replacing the character with a white space.
		error-on-missing-glyph	false	When the corresponding glyph for the specified character does not exist in the specified font, specifies whether to break off the processing as an error or to continue the processing by using true or false. When true is specified, the processing will end as an error. When false is specified, although PDF is outputted, the character will be displayed as a white space or a small box in PDF for missing glyph.
		error-on-pdfx-fault	true	Specifies whether to stop formatting as an error or ignore the unsuitable content and continue formatting when a content which is unsuitable for PDF/X or PDF/A is detected while creating PDF/X or PDF/A, such like PDF/X-1a that contains RGB images. When the processing is continued, a generated PDF may be incongruent as PDF/X or PDF/A. As a regular PDF, there would be no problem. <code>no-LT</code>
		ghostscript		When converting EPS into PDF using Ghostscript, the full path to Ghostscript can be specified. For example, specify as follows; ghostscript="/usr/local/bin/gs." Thereby, Ghostscript can be invoked even if the PATH does not set to Ghostscript. Specify gswin32c.exe in Windows version.
		gif-pass-through	true	GIF image can be embedded into PDF directly. However the I/O error might occur if that PDF is printed on the PostScript printer. Please specify false when you want to avoid this.

Element	Location	Attribute	Default	Description
<pdf-settings>	child of <formatter-config>	grayscale-compression	auto	<p>When the grayscale image format cannot be stored directly in PDF, the image is stored after being transformed into the bit map format which is compatible with PDF. The compression method of the data stored in a PDF file is then specified by one of the following values.</p> <ul style="list-style-type: none"> <li>• auto</li> <li>• jpeg</li> <li>• zlib</li> <li>• jpeg2000</li> <li>• keepplzw</li> </ul> <p>When auto is selected, the process is automatically done and creates the image data according to the setting of <a href="#">grayscale-jpeg-quality</a> and <a href="#">rasterize-resolution</a>. When keepplzw is specified, if the original image is LZW compressed, it becomes the LZW compression. If not, it becomes the same as auto. Whichever has the smaller compressed size, JPEG or ZLIB, is selected. See also <a href="#">Image Output</a> to learn about the file formats which can be stored directly in PDF. This is the setting for the grayscale image. Specifies <a href="#">image-compression</a> for the color image, and <a href="#">monochrome-compression</a> for the monochrome image. JPEG2000 is effective only for PDF1.5 or later.</p>
		grayscale-downsampling	none	<p>Specifies the method to downsample the raster grayscale image that is put into PDF. The options are:</p>
		grayscale-downsampling-above-dpi	108	<ul style="list-style-type: none"> <li>• none</li> <li>• average</li> <li>• bicubic</li> <li>• subsampling</li> </ul>
		grayscale-downsampling-target-dpi	72	<p>When a value other than none is specified, the image that has resolution larger than the one specified by <a href="#">grayscale-downsampling-above-dpi</a> will be downsampled to the resolution specified by <a href="#">grayscale-downsampling-target-dpi</a>. This is the setting for the grayscale image. Specifies <a href="#">image-downsampling</a> for the color image, and <a href="#">monochrome-downsampling</a> for the monochrome image.</p>
		grayscale-jpeg-quality	80	<p>For the grayscale image format that cannot be stored directly in PDF, specifies the image quality by a numerical value within the range of 1-100 when jpeg is specified by <a href="#">grayscale-compression</a>. The higher the number the better the quality in proportion to the increase in the number; however the file size also becomes larger.</p> <p><b>CAUTION:</b> It is not for changing the quality of a JPEG format image.</p> <p>This is the setting for the grayscale image. Specifies <a href="#">jpeg-quality</a> for the color image.</p>
gs-add-options		<p>When converting EPS into PDF using Ghostscript, <b>AH Formatter V6.0</b> specifies the following parameters and starts Ghostscript.</p> <pre>-dPDFSETTINGS=/printer -dNOPAUSE -dBATCH -dSAFER -sDEVICE=pdfwrite -dDEVICEWIDTHPOINTS=Width -dDEVICEHEIGHTPOINTS=Height -dEPSFitPage</pre>		

Element	Location	Attribute	Default	Description
<pdf-settings>	child of <formatter-config>	gs-add-options		<pre>-q -sOutputFile=Temporary Output File -c .setpdfwrite -f Input EPS</pre> <p>An additional parameter can be specified as gs-add-options. The parameters specified here will be added before <code>-q</code> stated above. Two or more parameters can be specified by being separated with U+000A. The operation with an inaccurately specified parameter is not guaranteed.</p>
		image-color-profile	true	Specifies whether to embed in the PDF the color profile of the color image that will be embedded. If the value is true it is embedded. If the value is false it is not embedded.
		image-compression	auto	<p>When the color image format cannot be stored directly in PDF, the image is stored after being transformed into the bit map format which is compatible with PDF. The compression method of the data stored in a PDF file is then specified by one of the following values.</p> <ul style="list-style-type: none"> <li>• auto</li> <li>• jpeg</li> <li>• zlib</li> <li>• jpeg2000</li> <li>• keeplzw</li> </ul> <p>When auto is selected, the process is automatically done and creates the image data according to the setting of <a href="#">jpeg-quality</a> and <a href="#">rasterize-resolution</a>. When keeplzw is specified, if the original image is LZW compressed, it becomes the LZW compression. If not, it becomes the same as auto. Whichever has the smaller compressed size, JPEG or ZLIB, is selected. See also <a href="#">Image Output</a> to learn about the file formats which can be stored directly in PDF. This is the setting for the color image. Specifies <a href="#">grayscale-compression</a> for the grayscale image, and <a href="#">monochrome-compression</a> for the monochrome image. JPEG2000 is effective only for PDF1.5 or later.</p>
		image-downsampling	none	Specifies the method to downsample the raster color image that is put into PDF.
		image-downsampling-above-dpi	108	<ul style="list-style-type: none"> <li>• none</li> <li>• average</li> <li>• bicubic</li> <li>• subsampling</li> </ul>
		image-downsampling-target-dpi	72	When a value other than none is specified, the image that has resolution larger than the one specified by image-downsampling-above-dpi will be downsampled to the resolution specified by image-downsampling-target-dpi. This is the setting for the color image. Specifies <a href="#">grayscale-downsampling</a> for the grayscale image, and <a href="#">monochrome-downsampling</a> for the monochrome image.
		import-3Dannotation	false	If the value is true, imports 3D object to PDF. This setting is not available with <b>AH Formatter V6.0 Lite</b> .
		jpeg-quality	80	For the color image format that cannot be stored directly in PDF, specifies the image quality by the numerical value within the range of 1-100 when jpeg is specified by <a href="#">image-compression</a> . The higher the number the better the quality in proportion to the

Element	Location	Attribute	Default	Description
<pdf-settings>	child of <formatter-config>	jpeg-quality	80	<p>increase in the number; however the file size also becomes larger.</p> <p><b>CAUTION:</b> This is not for changing the quality of a JPEG format image.</p> <p>This is the setting for the color image. Specifies <a href="#">grayscale-jpeg-quality</a> for the grayscale image.</p>
		joboptions		<p>Specifies Adobe PDF Settings File which is passed to Distiller when converting EPS into PDF using Distiller. Only a local file can be specified. When specifying the relative path, the target EPS file is being considered a relative. However, when EPS itself is a relative path, the operation is instable. Please specify the joboptions with absolute path preferably. Please refer to the manual of Acrobat etc. for Adobe PDF Settings File. The operation when specifying an inaccurate file etc. will not be guaranteed. When this file is not specified, the following contents which are not almost specified at all will be assumed.</p> <pre>&lt;&lt;   /CompatibilityLevel 1.3   /AutoRotatePages /None &gt;&gt; setdistillerparams &lt;&lt; &gt;&gt;setpagedevice</pre> <p>Effective only with the Windows version.</p>
		linearized	false	<p>Specifies whether to create linearized PDF. If the value is true, creates linearized PDF that is optimized for Web display. If the value is false, creates normal PDF.</p>
		monochrome-compression	auto	<p>When the monochrome image format cannot be stored directly in PDF, the image is stored after being transformed into the bit map format which is compatible with PDF. The compression method of the data stored in a PDF file is then specified by one of the following values.</p> <ul style="list-style-type: none"> <li>• ccitt4</li> <li>• ccitt3</li> <li>• runlength</li> <li>• zlib</li> <li>• none</li> </ul> <p>Refer to the <a href="#">Image Output</a> for the image format that can be stored directly in PDF. This is the setting for monochrome images. Specifies <a href="#">image-compression</a> for the color image, and <a href="#">grayscale-compression</a> for the grayscale image.</p>
		monochrome-downsampling	none	<p>Specifies the method to downsample the raster monochrome image that is put into PDF.</p>
		monochrome-downsampling-above-dpi	450	<ul style="list-style-type: none"> <li>• none</li> <li>• average</li> <li>• bicubic</li> <li>• subsampling</li> </ul>
		monochrome-downsampling-target-dpi	300	<p>When a value other than none is specified, an image that has resolution larger than the one specified by monochrome-downsampling-above-dpi will be downsampled to the resolution specified by monochrome-downsampling-target-dpi. This is the setting for the monochrome image. Specifies <a href="#">image-</a></p>



Element	Location	Attribute	Default	Description
<pdf-settings>	child of <formatter-config>	monochrome-downsampling-target-dpi	300	<a href="#">downsampling</a> for the color image, and <a href="#">grayscale-downsampling</a> for the grayscale image.
		no-accessibility	false	Specifies whether to permit text access for screen reader devices of PDF files with the value of true or false. If false is specified, it is permitted. If true is specified, it is not permitted. This attribute is effective only when you specify PDF1.4 or later.
		no-adding-or-changing-comments	false	Specifies whether to permit adding or changing comments and form fields in the PDF or not with the value of true or false. If the value is false, permits adding or changing. If the value is true, permits no changes or additions are allowed.
		no-assemble-doc	false	Specifies whether to permit inserting, deleting and rotating of PDF pages with the value of true or false. If false is specified, it is permitted. If true is specified, it is not permitted. This attribute is effective only when you specify PDF1.4 or later.
		no-changing	false	Specifies whether or not to permit making form field and making other changes in the PDF file or not with the value of true or false. If the value is false, changes are permitted. If the value is true, no changes are permitted.
		no-content-copying	false	Specifies whether to permit copying the text and the graphics in PDF or not with the value of true or false. If the value is false, permits copying. If the value is true, permits no copying.
		no-fill-form	false	Specifies whether to permit filling in of form fields and signing of the PDF file with the value of true or false. If false is specified, it is permitted. If true is specified, it is not permitted. This attribute is effective only when you specify PDF1.4 or later.
		no-printing	false	Specifies whether to permit printing the PDF file or not with the value of true or false. If the value is false, permits printing. If the value is true, permits no printing.
		owner-password		Sets the strings specified as a master password. Specify the strings up to 32bytes. The characters with the code in the range of 0x20 to 0x7E, 0xA1 to 0xDF are effective. If the characters other than the above are included, it becomes invalid and no password is set. The default value is no-password. <div style="border: 1px dashed gray; padding: 5px; margin-top: 10px;"><b>CAUTION:</b> The password is described in plaintext in the file. Please use care in managing the file.</div>
		page-labels	true	Specifies whether to apply the page labels to the page numbers with the value of true or false. If true is specified the page labels are applied, if false is specified, they are not applied.
pdf-version	PDF1.4	Specifies the version of the PDF to create with one of the following values. <ul style="list-style-type: none"><li>• PDF1.3</li><li>• PDF1.4</li><li>• PDF1.5</li><li>• PDF1.6</li><li>• PDF1.7</li><li>• PDF/X-1a:2001 <small>no-LT</small></li><li>• PDF/X-3:2002 <small>no-LT</small></li><li>• PDF/X-1a:2003 <small>no-LT</small></li></ul>		



Element	Location	Attribute	Default	Description
<pdf-settings>	child of <formatter-config>	pdf-version	PDF1.4	<ul style="list-style-type: none"> <li>PDF/X-2:2003 <small>no-LT</small></li> <li>PDF/X-3:2003 <small>no-LT</small></li> <li>PDF/A-1a:2005 <small>no-LT</small></li> <li>PDF/A-1b:2005 <small>no-LT</small></li> </ul> <p>PDF/X or PDF/A cannot be selected with <b>AH Formatter V6.0 Lite</b>.</p>
		printing-allowed	high-resolution	Specifies whether to print the resulting PDF file or not. If high-resolution is specified, it allows to printing in high resolution. low-resolution is effective with PDF1.4 or later. If low-resolution is specified, it allows printing in low resolution. If the PDF version is 1.3, it is handled as hi-resolution. If none is specified, it does not allow printing.
		rasterize-resolution	108	If part of a vector image is transformed to a raster image and stored in the PDF. Specifies the value of the rasterize-resolution of the transformed raster images in the range from 70 to 500(dpi). This setting is effective only with Windows version. The vector format image which cannot be stored directly in PDF is not supported with non-Windows version. See also <a href="#">Image Output</a> to learn about the file formats which can be stored directly in PDF.
		reverse-page	false	If the value is true, outputs pages in reverse order to PDF.
		rgb-conversion	none	<p>Specifies how to convert the RGB color space to DeviceGray.</p> <ul style="list-style-type: none"> <li>none Does no conversion. DeviceRGB is outputted.</li> <li>black Converts Black to DeviceGray, converts the others to DeviceRGB before outputting.</li> <li>gray Converts Gray color (mono tone) to DeviceGray, converts the others to DeviceRGB before outputting.</li> <li>all Converts the all color spaces to DeviceGray before outputting. This conversion is based on the following formula: <math>gray = 0.3 \times red + 0.59 \times green + 0.11 \times blue</math> (<math>0.0 \leq red, green, blue \leq 1.0</math>).</li> <li>cmyk Converts the all color spaces to CMYK before outputting.</li> </ul> <p>As for the images other than SVG, MathML, EMF or WMF, which are drawn using their own drawing engine, there is no conversion.</p>
		signature	false	Specifies whether to apply the <a href="#">digital signature</a> . The digital signature can be applied to the <a href="#">digital signature field</a> in PDF only in the environment where you have <a href="#">PDF Digital Signature Module</a> installed on you computer. <small>no-LT</small>
		signature-name		Specifies the signature used when you apply the <a href="#">digital signature</a> . The digital signature can be applied to the <a href="#">digital signature field</a> in PDF only in the environment where you have <a href="#">PDF Digital Signature Module</a> installed on you computer. <small>no-LT</small>
		tagged-pdf	false	Specifies whether to make the Tagged PDF file or not. PDF may not be able to be tagged depending on the

Element	Location	Attribute	Default	Description
<pdf-settings>	child of <formatter-config>	tagged-pdf	false	PDF versions. In this case this setting will be ignored. <code>&lt;no-LT&gt;</code>
		text-and-lineart-compression	true	Specifies whether the text and the line art in PDF are compressed in order to make the size of PDF smaller or not. If the value is true, it is compressed. If the value is false, it is not compressed.
		use-launch-for-relative-uri	true	Specifies whether the external link (external-destination property) specified by the relative address is transformed into 'Open the file' or into 'World Wide Web link' in the PDF link properties with the value of true or false. If the value is true, it is transformed to 'Open the file'. If the value is false, it is transformed to 'World Wide Web link'.
		user-password		Sets the strings specified as a user password. Specify the strings up to 32bytes. The characters with the code in the range of 0x20 to 0x7E, 0xA1 to 0xDF are effective. If the characters other than the above are included, it becomes invalid and does not count as a password setting. The default value is no-password.  The password is described in plaintext <b>CAUTION:</b> in the file. Please use care in managing the file.
<embed-font>	child of <pdf-settings>	font		Specifies the fonts which are embedded in the PDF. This element can be specified without limit and is effective only when <code>embed-all-fonts="false"</code> is specified. When <code>embed-all-fonts="false"</code> is specified and this element is not specified, only the glyph of the character which is needed in the PDF output is embedded. When the element is specified and if the font indicated here is used within the formatted results, the glyph of the character currently used will be embedded. For a font which is not specified, embedding is performed only for the glyph of the character which is needed in the PDF output.

## PostScript Output Settings

These settings are used for [PostScript Output](#).

Element	Location	Attribute	Default	Description
<ps-settings>	child of <formatter-config>	noembed-font	false	Specifies whether fonts are embedded in the outputted PostScript. When true is specified, the font information is not embedded and the font must be referred to only by the PostScript name. Followings are restrictions. <ul style="list-style-type: none"> <li>The PostScript interpreter may not be correctly processed when the font includes a multi-byte code like Japanese, etc. With Distiller, an error like <code>MS-Mincho not found and using Courier.</code> may be generated.</li> <li>Character-codes greater than 255 cannot be outputted.</li> </ul> When using non-Type1 fonts, it's not recommended to specify noembed-font.
		use-launch-for-relative-uri		Specifies whether the external link (external-destination property) specified by the relative address is transformed into 'Open the file' or into 'World Wide Web link' in the PDF link properties with the value of true or false. If the value is true, it is transformed to 'Open the file'. If the value is false, it is transformed to 'World Wide Web link'. When nothing is specified, follows the specification of <code>use-launch-for-relative-uri</code> in <a href="#">PDF Output Settings</a> .

## SVG Output Settings

These settings are used for [SVG Output](#).

Element	Location	Attribute	Default	Description
<svg-settings>	child of <formatter-config>	copy-image-path		Specifies the destination directory to copy images to as specified by "copy-all" or "copy" by <a href="#">image-processing</a> .
		copy-image-prefix		When images are copied to the directory specified by <a href="#">copy-image-path</a> and processed, specifies the prefix of the file name. The file name will be prefix with sequence numbers. Default is empty character string with only sequential numbers.
		embed-all-fonts	false	By using true or false, specifies whether to embed in the SVG all the outline data of TrueType and Type1 fonts which are not limited to embed among fonts used in the formatted result. If the value is false, only the font specified by <embed-font> is embedded. If the value is true, all fonts that can be embedded are embedded.
		error-on-embed-fault	true	When an error occurs while embedding fonts, specifies whether to stop the job as an error or to continue embedding by replacing the character with a white space using the value of true or false. If the value is true, stops executing as an error. If the value is false, continues executing and outputs SVG by replacing the character with a white space.
		format	1	When the formatted result is output to multiple SVG files specified by "false" in <a href="#">singlefile</a> , specifies the format of the additional character string to output to the file name. This character string adopts the character string same as the format property of FO. Each file name is automatically determined based on the output file name. The character string as formatted by the value specified by format will be inserted just before the extension of the output file. For example, if the file name is document.svg, and format="-1" is specified, the file become document-1.svg and document-2.svg and so on.
		gzip-compression	false	If the value is true, creates SVG compressed in gzip format. If the value is false, it is not compressed.
		image-conversion	auto	<p>When the image format to be embedded is a raster image other than JPEG or PNG, it is converted into JPEG or PNG and embedded. The following either can be specified.</p> <ul style="list-style-type: none"> <li>• auto</li> <li>• jpeg</li> <li>• png</li> </ul> <p>When auto is selected, images of monochrome, grayscale or 256-or-less-color are converted into PNG, and the rest are converted into JPEG.</p>
		image-processing	embed-all	<p>Specifies how to treat the referred image.</p> <ul style="list-style-type: none"> <li>• embed-all Embeds all images in the SVG.</li> <li>• link Links images that have been linked, and embeds the embedded image. Raster images other than JPEG and PNG are always embedded.</li> <li>• copy-all Copies all image files to the destination that is specified by <a href="#">copy-image-path</a>, and then links.</li> <li>• copy Copies images that have been linked to the destination that is specified by <a href="#">copy-image-path</a>, and links. The embedded image are embedded.</li> </ul> <p>Refer to <a href="#">Image Output</a> in <a href="#">SVG Output</a> for details of operation.</p>
		jpeg-quality	80	For images that cannot be embedded directly in SVG, specifies the image quality by the numerical value within the range of 1-100 when "jpeg" or "auto" is specified by <a href="#">image-conversion</a> . The higher the number

Element	Location	Attribute	Default	Description
<svg-settings>	child of <formatter-config>	jpeg-quality	80	the better the quality in proportion to the increase in the number; however the file size also becomes larger. <b>CAUTION:</b> It is not for changing the quality of a JPEG format image.
		rename-copy-image	false	When images are copied to the directory specified by <a href="#">copy-image-path</a> etc. and processed, specifies whether to rename all file name to prefix specified by <a href="#">copy-image-prefix</a> , or use original name. When the file name overlaps, sequential number is added. When true is specified, all files are renamed.
		singlefile	false	Specifies whether the formatted result composed of multiple pages is output as a single SVG file or as multiple SVG files. If the value is true, outputs as a single SVG file. If the value is false, outputs as multiple SVG files. When multiple files are output, the file is named by the format specified by <a href="#">format</a> . Effective only when outputting to a file. It is invalid in the output without the file name like the stream etc.
		singlefile-number	true	When <a href="#">singlefile</a> ="false" is specified, specifies whether to add sequential number to the output SVG even if it has only one-page. It is not added in case of false.
		rasterize-resolution	108	If part of a vector image is transformed to a raster image and stored in the SVG. Specifies the value of the rasterised-resolution of the transformed raster images in the range from 70 to 500(dpi). SVG, EMF and WMF are drawn in SVG as vectors without being transformed to raster images. This setting is effective only with Windows version. The vector format image which cannot be stored directly in SVG is not supported with non-Windows version.
		svg-version	1.1	Specifies the version of the SVG to create with one of the following values. <ul style="list-style-type: none"> <li>• 1.1</li> <li>• Basic</li> <li>• Tiny</li> </ul>
<embed-font>	child of <pdf-settings>	font		Specifies the fonts which are embedded in the SVG. This element can be specified without limit and is effective only when <a href="#">embed-all-fonts</a> ="false" is specified. When <a href="#">embed-all-fonts</a> ="false" is specified and this element is not specified, only the outline of the glyph of the character which is needed in the SVG output is embedded. When the element is specified and if the font indicated here is used within the formatted results, the outline of the glyph of the character currently used will be embedded. For a font which is not specified, embedding is performed only for the glyph of the character which is needed in the SVG output.

## INX Output Settings

These settings are used for [INX Output](#).

Element	Location	Attribute	Default	Description
<inx-settings>	child of <formatter-config>	output-mode	text	Specify how to generate the text frame of InDesign® from text. <ul style="list-style-type: none"> <li>• text Text frame is generated from each text area. This mode can convert most closely to the formatting result. It is sometimes difficult to edit the result using InDesign®.</li> <li>• line Text frame is generated from each line area.</li> <li>• block Text frame is generated from each block area. It is easy to edit the result using InDesign®. Instead the conversion precision is lost at expense.</li> </ul>

## MIF Output Settings

These settings are used for [MIF Output](#).

Element	Location	Attribute	Default	Description
<mif-settings>	child of <formatter-config>	output-mode	text	Specify how to generate the ParaLine of FrameMaker® from text. <ul style="list-style-type: none"> <li>• text ParaLine is generated from each text area. This mode can convert most closely to the formatting result. It is sometimes difficult to edit the result using FrameMaker®.</li> <li>• line ParaLine is generated from each line area.</li> <li>• block ParaLine is generated from each block area. It is easy to edit the result using FrameMaker®. Instead the conversion precision is lost at expense.</li> </ul>
		image-processing	embed	Specifies how to treat the referred image. <ul style="list-style-type: none"> <li>• embed Embeds all images in the MIF.</li> <li>• link Links images as external files.</li> </ul>
		char-units	pt	Specifies a value of CharUnits used as a unit of fontsize etc. <ul style="list-style-type: none"> <li>• pt</li> <li>• q</li> </ul>
		units	in	Specifies a value of Units used as a unit of display. <ul style="list-style-type: none"> <li>• in</li> <li>• cm</li> <li>• mm</li> <li>• pt</li> <li>• pc</li> <li>• dd</li> <li>• cc</li> </ul>

## TEXT Output Settings

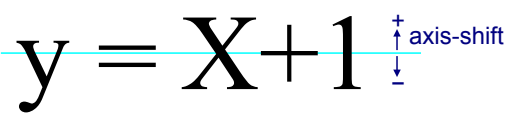
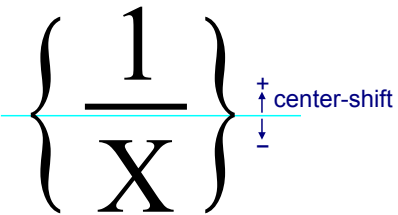
These settings are used for [TEXT Output](#). These settings are not effective with **AH Formatter V6.0 Lite**. [no-LT](#)

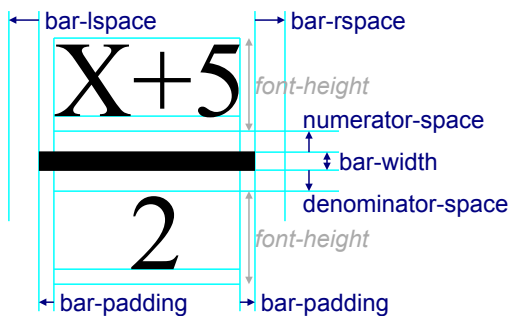
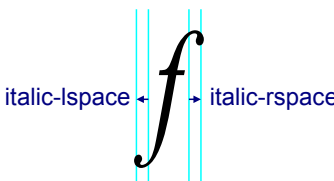
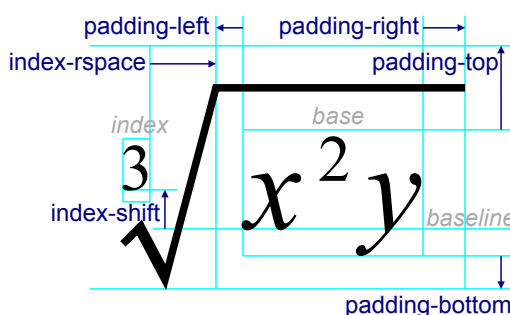
Element	Location	Attribute	Default	Description
<text-settings>	child of <formatter-config>	encoding	UTF-8	Specifies the encoding of the output text. The following encodings are available. They are not case sensitive. <ul style="list-style-type: none"> <li>• UTF-8</li> <li>• UTF-16</li> <li>• UTF-16BE</li> <li>• UTF-16LE</li> <li>• UTF-32</li> <li>• UTF-32BE</li> <li>• UTF-32LE</li> <li>• ISO-10646-UCS-2</li> <li>• ISO-10646-UCS-4</li> <li>• ANSI_X3.4</li> <li>• ISO_646.irv</li> <li>• ISO646-US</li> <li>• US-ASCII</li> </ul>

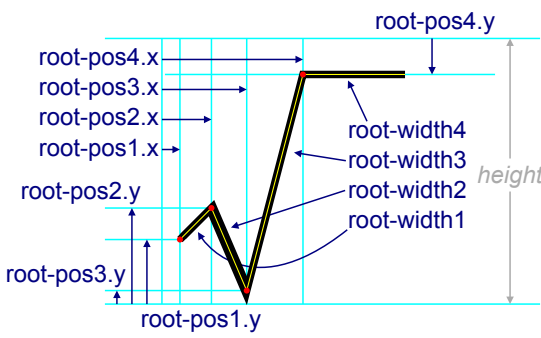
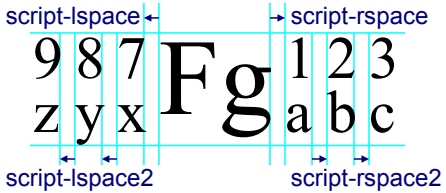
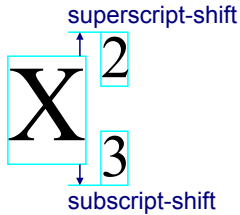
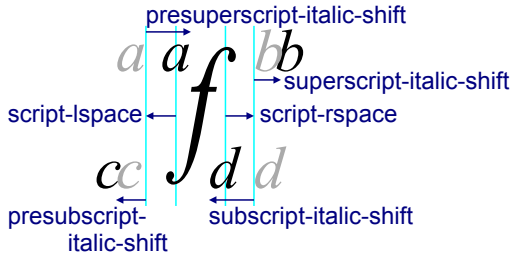
Element	Location	Attribute	Default	Description
<text-settings>	child of <formatter-config>	encoding	UTF-8	<ul style="list-style-type: none"> <li>• ISO_8859-1</li> <li>• latin1</li> <li>• Windows-31J</li> <li>• Shift_JIS</li> <li>• EUC-JP</li> <li>• ISO-2022-JP</li> </ul> <p>Endian of UTF-16, UTF-32 etc. depends on the processor in the operating system.</p>
		eol-marker	CRLF or LF	<p>Specifies the linefeed code of the output text. The followings can be specified. They are not case sensitive.</p> <ul style="list-style-type: none"> <li>• CRLF</li> <li>• LF</li> <li>• CR</li> </ul> <p>The default value is CRLF in Windows, LF in others.</p>

## MathML Settings

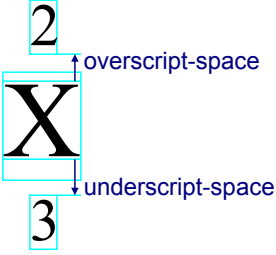
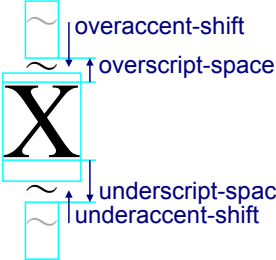
These settings are used for [MathML](#).

Element	Location	Attribute	Default	Description
<mathml-settings>	child of <formatter-config>	double_struck	msbm	Specifies the font family when mathvariant="double_struck" is specified.
		fraktur	eufm	Specifies the font family when mathvariant="fraktur" or mathvariant="bold-fraktur" is specified.
		script	eusb	Specifies the font family when mathvariant="script" or mathvariant="bold-script" is specified.
		sans-serif	sans-serif	Specifies the font family when mathvariant="sans-serif" is specified.
		monospace	monospace	Specifies the font family when mathvariant="monospace" is specified.
<math>	child of <mathml-settings>	small	0.8	Specifies the font size in units of em when mathsize="small" is specified.
		normal	1.0	Specifies the font size in units of em when mathsize="normal" is specified.
		big	1.25	Specifies the font size in units of em when mathsize="big" is specified.
		axis-shift	0.0	<p>Specifies the amount of justification for the position of axis in units of em.</p> 
<mfenced>	child of <mathml-settings>	center-shift	0.0	<p>Specifies the amount of justification for the position of parenthesis in units of em.</p> 

Element	Location	Attribute	Default	Description
<mfrac>	child of <mathml-settings>	bar-width	0.02	<p>Specifies the form of the fraction. All the values should be in units of em.</p> 
		numerator-space	0.1	
		denominator-space	0.1	
		bar-lspace	0.1	
		bar-rspace	0.1	
		bar-padding	0.1	
		thin	0.6	Specifies the bar width when linethickness="thin" is specified by the ratio against bar-width.
medium	1.0	Specifies the bar width when linethickness="medium" is specified by the ratio against bar-width.		
thick	1.7	Specifies the bar width when linethickness="thick" is specified by the ratio against bar-width.		
<mi>	child of <mathml-settings>	italic-lspace	0.0	<p>Expands the width of the character in Italic and adjusts the overlap to the next character. Values can be specified in units of em. This specification has effect on superscript-italic-shift, script-rspace, etc.</p>  <p>The value is set to the typical character for each in the <a href="#">Operator Dictionary</a>. The <b>CAUTION:</b> character set in the Operator Dictionary needs to be adjusted by the Operator Dictionary.</p>
		italic-rspace	0.05	
<mo>	child of <mathml-settings>	largeop	1.2	Specifies the font size in units of em when largeop="true" is specified.
		largeop-integral	2.0	Specifies the font size of integral sign in units of em when largeop="true" is specified.
<mroot>	child of <mathml-settings>	padding-left	0.0	<p>Specifies the position of the base part and index part against the root sign.</p> 
		padding-right	0.0	
		padding-top	0.1	
		padding-bottom	0.0	
		index-rspace	0.1	
		index-shift	0.1	
		root-pos1.x	0.0	<p>Specifies the form of root sign. The height values (*.y) should be specified by the ratio against the height of the area (= 'the height of the base part' + 'padding-top' + 'padding-bottom'). Other values are specified by units of em.</p>
		root-pos1.y	0.4	
		root-pos2.x	0.1	
		root-pos2.y	0.5	
		root-pos3.x	0.3	

Element	Location	Attribute	Default	Description
<mroot>	child of <mathml-settings>	root-pos3.y	0.1	 <p>The diagram shows a root symbol with several attributes: root-pos1.x, root-pos2.x, root-pos3.x, root-pos4.x, root-pos1.y, root-pos2.y, root-pos3.y, root-pos4.y, root-width1, root-width2, root-width3, root-width4, and height.</p>
		root-pos4.x	0.6	
		root-pos4.y	0.1	
		root-width1	0.02	
		root-width2	0.1	
		root-width3	0.03	
		root-width4	0.03	
<mscript>	child of <mathml-settings>	script-rspace	0.02	<p>Specifies the space between the base character and subscript of the &lt;msup&gt; &lt;msub&gt; &lt;msubsup&gt; &lt;mmultiscripts&gt; elements in units of em.</p>  <p>The diagram shows characters '9 8 7' and 'z y x' with 'script-lspace' between them, and 'F g' and '1 2 3' with 'script-rspace' between them.</p>
		script-lspace	0.02	
		script-lspace2	0.01	<p>Specifies the amount to shift the subscript of the &lt;msup&gt; &lt;msub&gt; &lt;msubsup&gt; &lt;mmultiscripts&gt; elements in the vertical direction. The value should be in units of em against the base character.</p>  <p>The diagram shows the character 'X' with 'superscript-shift' (value 2) and 'subscript-shift' (value 3) indicated by arrows.</p> <p><b>CAUTION:</b> The value is set to the typical character for each in the <a href="#">Operator Dictionary</a>. The character set in the Operator Dictionary needs to be adjusted by the Operator Dictionary.</p>
		superscript-shift	0.0	
		subscript-shift	0.0	
		superscript-italic-shift	0.1	<p>Specifies the amount of the adjustment by kerning the subscript of the &lt;msup&gt; &lt;msub&gt; &lt;msubsup&gt; &lt;mmultiscripts&gt; elements when fontstyle="italic" is specified to the base character. The value should be in units of em against the base character.</p>  <p>The diagram shows characters 'a', 'f', and 'd' with 'presubscript-italic-shift' and 'subscript-italic-shift' indicated by arrows.</p> <p><b>CAUTION:</b> The value is set to the typical character for each in the <a href="#">Operator Dictionary</a>. The character set in the Operator Dictionary needs to be adjusted by the Operator Dictionary.</p>
		subscript-italic-shift	0.1	
presubscript-italic-shift	0.1			
<mtable>	child of <mathml-settings>	border-width	0.04	Specifies the border width of <mtable> in units of em.



Element	Location	Attribute	Default	Description
<munderover>	child of <mathml-settings>	limit-size	0.6	Specifies the size of the subscript of the <mover> <munder> <munderover> elements when accent="false" in units of em against the base character. The font size is 1 em when accent="true" is specified.
		overscript-space	0.18	Specifies the space between subscripts of the <mover> <munder> <munderover> elements in units of em against the base character.
		underscript-space	0.18	 <p>The value is set to the typical character for each in the <a href="#">Operator Dictionary</a>. The <b>CAUTION:</b> character set in the Operator Dictionary needs to be adjusted by the Operator Dictionary.</p>
		overaccent-shift	0.18	Adjusts the position of the subscript of the <mover> <munder> <munderover> elements when accent="true" is specified. The value should be in units of em against the base character.
		underaccent-shift	0.18	 <p>The value is set to the typical character for each in the <a href="#">Operator Dictionary</a>. The <b>CAUTION:</b> character set in the Operator Dictionary needs to be adjusted by the Operator Dictionary.</p>
		bar-width	0.04	Specifies the form of &OverBar; and &UnderBar; of the <mover> <munder> <munderover> elements in units of em against the base character.
		bar-padding	0.05	
		overbar-space	0.1	
underbar-space	0.1			
<mstyle>	child of <mathml-settings>	scriptlevel	0	Specifies the each attribute value of the <mstyle> element when the value is omitted.
		displaystyle	false	
		scriptsizemultiplier	0.71	
		scriptminsize *	8pt	
		background	transparent	
		veryverythinmathspace	0.0555556	
		verythinmathspace	0.1111111	
		thinmathspace	0.166667	

Element	Location	Attribute	Default	Description
<mstyle>	child of <mathml-settings>	mediummathspace	0.222222	Specifies the each attribute value of the <mstyle> element when the value is omitted.
		thickmathspace	0.277778	
		verythickmathspace	0.333333	
		veryverythickmathspace	0.388889	
<operator-dictionary>	child of <mathml-settings>	src		<b>AH Formatter V6.0</b> has a operator dictionary existed in <a href="#">F. Operator Dictionary</a> . By changing the contents of this dictionary, the position of various operators can be tuned finely. URI of the <a href="#">Operator Dictionary</a> expressed by XML can be specified to the src attribute. When the relative URI is specified, it is regarded as the relativity from this Option Setting File. Any number of this element can be specified and evaluated in order of specification.

## XSLT Settings

These settings are used for XSLT processor.

Element	Location	Attribute	Default	Description
<xslt-settings>	child of <formatter-config>	msxml	true	Specifies whether to use MSXML or not. If true is specified, MSXML is used as an XSLT processor. Specification of command is disregarded at this time. If false is specified, the external XSLT processor specified from command will be used, but when nothing is specified from command, it is considered that true is specified and MSXML is used. This setting is ignored in non-Windows environment.
		command		The command line of the External XSLT Processor is specified here. The command line strings must include at least three identifiers, %1, %2 and %3. <ul style="list-style-type: none"> <li>• %1 : XML document</li> <li>• %2 : XSL stylesheet</li> <li>• %3 : XSLT Output File</li> <li>• %param : Parameter of xsl:param</li> </ul> If nothing is specified, or "@MSXML" is specified, the external processor is not used but the internal processor, MSXML4 or MSXML3 is used. This setting is effective only with Windows version. It's an initial setting of XSLT processor with all kinds of interfaces. If nothing is specified in non-Windows environment, XSLT transformation is not performed.
		param-option		Specifies the parameter type of xsl:param given to the external XSLT processor. The strings must include at least two identifiers, %p and %v. These values are as follows: <ul style="list-style-type: none"> <li>• %p : Value of &lt;param name&gt;</li> <li>• %v : Value of &lt;param value&gt;</li> </ul> These values affect the part of %param in the command line strings. When two or more <param>s are specified, they are divided by the white space and repeated.
<param>	child of <xslt-settings>	name		Specifies the parameter name of xsl:param for XSLT processor.
		value		Specifies the parameter value of xsl:param for XSLT processor. When the value includes a white space, please explicitly enclose in quotation marks.
<stylesheet>	child of <xslt-settings>	ns		Possible to specify the stylesheet applied to a specific XML document. Specifies the name space of the XML document by ns, and specifies the URI of the stylesheet by href. The following shows the example of XHTML and WordML.
		href		<pre>&lt;stylesheet ns="http://www.w3.org/1999/xhtml" href="xhtml2fo.xsl"/&gt; &lt;stylesheet ns="http://schemas.microsoft.com/office/word/2003/wordml"</pre>

Element	Location	Attribute	Default	Description
<stylesheet>	child of <xslt-settings>	href		<pre>href="[WordMLToFO install directory]/WordMLToFO.xsl"/&gt;</pre> <p>If the XML document has the name space specified here, it can be formatted by itself, without specifying the stylesheet. If the stylesheet is specified when formatting or the stylesheet is specified in the XML document, these are adopted and the setting here will be ignored.</p>

Suppose XSLT setting is as follows:

```
<xslt-settings command="xslt -o %3;%3%34; %34;%1%34; %34;%2%34; %param" param-option="%p=%v">
  <param name="foo" value="123"/>
  <param name="bar" value="%34;Hello, World%34;"/>
</xslt-settings>
```

XSLT processor executes as follows in order to transform file.xml and file.xsl into file.fo.

```
xslt -o "file.fo" "file.xml" "file.xsl" foo=123 bar="Hello, World"
```

As described in the example here, the actual file name given to %1 or %2 includes white space, it's necessary to enclose the file name with quotation mark, &#34;.

## Other Settings

These settings are not effective with **AH Formatter V6.0 Lite**.

Element	Location	Attribute	Default	Description
<rx-settings>	child of <formatter-config>	command		<p>Specifies the parameter when transforming the Project file of <b>XSL Report Designer</b> and XML document into FO automatically and format the generated FO. The setting must be the complete command-line format and includes three identifiers, %1, %2 and %3. These values are as follows:</p> <ul style="list-style-type: none"> <li>• %1 : XML document</li> <li>• %2 : Project file</li> <li>• %3 : Output FO file</li> </ul> <p>XSL Report Designer has the regular format of command-line. The following shows the simple example of XSL Report Designer command-line format. Actually more complicated setting will be necessary. See also XSL Report Designer Online Manual for more detail.</p> <pre>command="java jp.co.antenna.rx.rxe.rxe -layout %2 -output %3 %1"</pre> <p>If the actual file name given to %1 or %2 includes white space, it's necessary to enclose the file name with quotation mark, &amp;#34;. An actual setting will get longer as follows in a certain environment.</p> <pre>command="java -Xms16m -Xmx512m -cp %34;C:\Program Files\Antenna\XSLTemplateDesignerV1\lib\rxe.jar;C:\Program Files\Antenna\XSLTemplateDesignerV1\lib\xml-apis.jar;C:\Program Files\Antenna\XSLTemplateDesignerV1\lib\xercesImpl.jar;C:\Program Files\Antenna\XSLTemplateDesignerV1\lib\xalan.jar;C:\Program Files\Antenna\XSLTemplateDesignerV1\lib\jai_imageio.jar%34; jp.co.antenna.rx.rxe.rxe -layout %34;%2%34; -output %34;%3%34; %34;%1%34;"</pre> <p>When formatting from a command line, please specify the Project file to -s and specify the Option Setting File with &lt;rx-settings&gt; description to -i as follows:</p> <pre>AHFCmd -d sample.xml -s sample.rxl -o sample.pdf -i AHFSettings.xml</pre>

## Example for Option Setting File

```

<?xml version="1.0"?>
<formatter-config>
  <formatter-settings
    default-page-width="210mm"
    default-page-height="297mm"
    default-font-size="10pt"
    normal-line-height="1.2"
    default-color="#000000"
    border-thin-width="1pt"
    border-medium-width="3pt"
    border-thick-width="5pt"
    pxpi="96"
    default-lang=""
    default-CJK="ja"
    punctuation-trim="true"
    text-autospace="true"
    vertical-underline-side="auto"
    punctuation-spacing="0.5"
    text-autospace-width="0.25"/>
  <pdf-settings
    embed-all-fonts="false"
    error-on-embed-fault="false"
    user-password=""
    master-password=""
    no-printing="false"
    no-changing="false"
    no-content-copying="false"
    no-adding-or-changing-comments="false"
    image-compression="auto"
    jpeg-quality="80"
    compress-content-stream="true"
    use-launch-for-relative-uri="true"
    rasterize-resolution="108">
    <embed-font font="Arial"/>
    <embed-font font="Courier New"/>
  </pdf-settings>

  <font-settings default-font-family="serif">
    <script-font
      serif="Times New Roman"
      sans-serif="Arial"
      monospace="Courier New"
      cursive="Times New Roman"
      fantasy="Times New Roman"/>
    <script-font
      script="jpn"
      serif="MS Mincho"
      sans-serif="MS Gothic"
      monospace="MS Mincho"/>
    <script-font
      script="kor"
      serif="Batang"
      sans-serif="Gulim"
      monospace="BatangChe"/>
    <script-font
      script="zho-CN"
      serif="SimSun"
      sans-serif="SimHei"
      monospace="SimSun"/>
    <script-font
      script="zho-TW"
      serif="MingLiU"
      sans-serif="MingLiU"
      monospace="MingLiU"/>
  </font-settings>
  <xslt-settings command="xslt -o %34;%3&#34; %34;%1&#34; %34;%2&#34; %param"
    param-option="%p=%v">

```

```

    <param name="foo" value="123"/>
    <param name="bar" value="XYZ"/>
  </xslt-settings>
</formatter-config>

```

## DTD of Option Setting File

The DTD of Option Setting File is as follows: (This DTD is not very accurate. Please utilize it for taking a general view of the syntax only.)

```

<!-- the root element -->
<!ELEMENT formatter-config
  ( formatter-settings?
    , font-settings?
    , pdf-settings?
    , svg-settings?
    , text-settings?
    , mathml-settings?
    , xslt-settings?
    , rxe-settings?
  )
>

<!ENTITY % float      "CDATA"><!-- number without unit -->
<!ENTITY % abslength "CDATA"><!-- number with unit
                                unit is one of followings
                                cm : centimeter
                                mm : millimeter, 1 millimeter = 1/10 centimeter
                                in : inch, 1 inch = 2.54 centimeters
                                pt : point, 1 point = 1/72 inch
                                pc : pica, 1 pica = 12 points
                                -->
<!ENTITY % length    "CDATA"><!-- number with unit
                                unit is one of followings
                                cm : centimeter
                                mm : millimeter, 1 millimeter = 1/10 centimeter
                                in : inch, 1 inch = 2.54 centimeters
                                pt : point, 1 point = 1/72 inch
                                pc : pica, 1 pica = 12 points
                                px : pixel
                                em : relative length
                                -->

<!ENTITY % integer   "CDATA"><!-- integer with/without sign -->
<!ENTITY % uinteger  "CDATA"><!-- integer without sign -->
<!ENTITY % byteinteger "CDATA"><!-- uinteger of 0 to 225 -->

<!ENTITY % font-family "CDATA"><!-- font family -->

<!ENTITY % lang "CDATA"><!-- language code follows ISO 639 -->

<!ENTITY % script    "CDATA"><!-- script code follows RFC15924 -->
<!ENTITY % scripts   "CDATA"><!-- comma separated scripts -->

<!ENTITY % color     "CDATA"><!-- color name or #XXXXXX or #XXX -->

<!ENTITY % bool      "(true|false)" >

<!ENTITY % URI       "CDATA"><!-- universal resource identifier, RFC1630 -->

<!-- formatter settings -->

<!ELEMENT formatter-settings
  ( space-before-punctuation?
    , space-after-punctuation?
    , space-between-punctuation-and-digit?
    , space-between-digit-and-punctuation?
  )
>

```

```

<!ATTLIST formatter-settings default-page-width %abslength; "210mm">
<!ATTLIST formatter-settings default-page-height %abslength; "297mm">
<!ATTLIST formatter-settings default-font-size %abslength; "10pt">
<!ATTLIST formatter-settings normal-line-height %float; "1.2"><!-- em -->
<!ATTLIST formatter-settings default-color %color; "#000000">
<!ATTLIST formatter-settings border-thin-width %abslength; "1pt">
<!ATTLIST formatter-settings border-medium-width %abslength; "3pt">
<!ATTLIST formatter-settings border-thick-width %abslength; "5pt">
<!ATTLIST formatter-settings printer-marks-line-length %abslength; "10mm">
<!ATTLIST formatter-settings printer-marks-zero-margin %abslength; "3mm">
<!ATTLIST formatter-settings pxpi %uinteger; "96"><!-- dpi -->
<!ATTLIST formatter-settings default-lang %lang; "">
<!ATTLIST formatter-settings default-CJK %lang; #IMPLIED>
<!ATTLIST formatter-settings punctuation-trim %bool; "true">
  <!-- value of axf:punctuation-trim="auto"
    true means "both"
    false means "none" -->
<!ATTLIST formatter-settings punctuation-spacing %float; "0.5"><!-- em -->
<!ATTLIST formatter-settings text-autospace %bool; "true">
  <!-- value of axf:text-autospace="auto"
    true means "ideograph-numeric ideograph-alpha"
    false means "none" -->
<!ATTLIST formatter-settings text-autospace-width %float; "0.25"><!-- em -->
<!ATTLIST formatter-settings append-non-starter-characters CDATA "">
  <!-- except for white space
    closing parenthesis
    punctuations -->
<!ATTLIST formatter-settings append-non-end-of-line-characters CDATA "">
  <!-- except for white space
    opening parenthesis
    punctuations -->
<!ATTLIST formatter-settings vertical-underline-side (auto|left|right) "auto">
<!ATTLIST formatter-settings text-kashida-space %uinteger; "100"><!-- % : 0 to 100 -->
<!ATTLIST formatter-settings fixed-width-space-treatment %bool; "true">
<!ATTLIST formatter-settings thin-space-width %float; "0.2"><!-- em -->
<!ATTLIST formatter-settings hair-space-width %float; "0.1"><!-- em -->
<!ATTLIST formatter-settings SVGViewer %bool; "false">
<!ATTLIST formatter-settings WindowsFontAPI %scripts; "">
<!ATTLIST formatter-settings HyphenationOption %bool; "false">
<!ATTLIST formatter-settings PrinterOrientation (auto|0|90|270) "auto">
<!ATTLIST formatter-settings PscriptPassThrough %bool; "true">
<!ATTLIST formatter-settings table-auto-layout-limit %integer; "100">
<!ATTLIST formatter-settings table-is-reference-area %bool; "false">
<!ATTLIST formatter-settings default-from-page-master-region %bool; "false">
<!ATTLIST formatter-settings two-pass-formatting %bool; "false">

<!ELEMENT space-before-punctuation EMPTY >
<!ATTLIST space-before-punctuation language %lang; #IMPLIED>
<!ATTLIST space-before-punctuation code CDATA #IMPLIED>
<!ATTLIST space-before-punctuation space %float; #IMPLIED>
<!ELEMENT space-after-punctuation EMPTY >
<!ATTLIST space-after-punctuation language %lang; #IMPLIED>
<!ATTLIST space-after-punctuation code CDATA #IMPLIED>
<!ATTLIST space-after-punctuation space %float; #IMPLIED>
<!ELEMENT space-between-punctuation-and-digit EMPTY >
<!ATTLIST space-between-punctuation-and-digit language %lang; #IMPLIED>
<!ATTLIST space-between-punctuation-and-digit code CDATA #IMPLIED>
<!ATTLIST space-between-punctuation-and-digit space %float; #IMPLIED>
<!ELEMENT space-between-digit-and-punctuation EMPTY >
<!ATTLIST space-between-digit-and-punctuation language %lang; #IMPLIED>
<!ATTLIST space-between-digit-and-punctuation code CDATA #IMPLIED>
<!ATTLIST space-between-digit-and-punctuation space %float; #IMPLIED>

<!-- font settings -->

<!ELEMENT font-settings (script-font|font-alias)* >
<!ATTLIST font-settings default-font-family (serif|sans-serif|monospace|cursive|fantasy) "serif">
<!ATTLIST font-settings missing-font (0|1|2) "1">
<!ATTLIST font-settings missing-glyph (0|1|2) "1">

```

```

<!ELEMENT script-font EMPTY >
<!ATTLIST script-font script          %script; "">
<!ATTLIST script-font serif           %font-family; #IMPLIED>
<!ATTLIST script-font sans-serif     %font-family; #IMPLIED>
<!ATTLIST script-font monospace     %font-family; #IMPLIED>
<!ATTLIST script-font cursive       %font-family; #IMPLIED>
<!ATTLIST script-font fantasy       %font-family; #IMPLIED>

<!ELEMENT font-alias EMPTY >
<!ATTLIST font-alias src             %font-family; #IMPLIED>
<!ATTLIST font-alias dst             %font-family; #IMPLIED>

<!-- PDF output settings -->

<!ELEMENT pdf-settings (embed-font)* >
<!ATTLIST pdf-settings pdf-version CDATA "PDF1.4">
<!ATTLIST pdf-settings tagged-pdf          %bool; "false">
<!ATTLIST pdf-settings linearized          %bool; "false">
<!ATTLIST pdf-settings rgb-conversion (none|black|gray|all|cmyk) "none">
<!ATTLIST pdf-settings encryption-level    (40|128) "128">
<!ATTLIST pdf-settings embed-all-fonts    (true|false|base14) "false">
<!ATTLIST pdf-settings error-on-embed-fault %bool; "true">
<!ATTLIST pdf-settings error-on-missing-glyph %bool; "false">
<!ATTLIST pdf-settings error-on-pdfx-fault %bool; "false">
<!ATTLIST pdf-settings user-password      CDATA ""><!-- up to 32 bytes -->
<!ATTLIST pdf-settings master-password    CDATA ""><!-- up to 32 bytes -->
<!ATTLIST pdf-settings printing-allowed (high-resolution|low-resolution|none) "high-resolution">
<!ATTLIST pdf-settings no-printing        %bool; "false">
<!ATTLIST pdf-settings no-changing        %bool; "false">
<!ATTLIST pdf-settings no-content-copying %bool; "false">
<!ATTLIST pdf-settings no-adding-or-changing-comments %bool; "false">
<!ATTLIST pdf-settings no-fill-form       %bool; "false">
<!ATTLIST pdf-settings no-accessibility   %bool; "false">
<!ATTLIST pdf-settings no-assemble-doc    %bool; "false">
<!ATTLIST pdf-settings image-compression (auto|jpeg|zlib|jpeg2000) "auto">
<!ATTLIST pdf-settings image-downsampling (none|average|bicubic|subsampling) "none">
<!ATTLIST pdf-settings image-downsampling-above-dpi %integer; "108"><!-- dpi -->
<!ATTLIST pdf-settings image-downsampling-target-dpi %integer; "72"><!-- dpi -->
<!ATTLIST pdf-settings jpeg-quality        %integer; "80"><!-- % : 1 to 100 -->
<!ATTLIST pdf-settings image-color-profile %bool; "true">
<!ATTLIST pdf-settings grayscale-compression (auto|jpeg|zlib|jpeg2000) "auto">
<!ATTLIST pdf-settings grayscale-downsampling (none|average|bicubic|subsampling) "none">
<!ATTLIST pdf-settings grayscale-downsampling-above-dpi %integer; "108"><!-- dpi -->
<!ATTLIST pdf-settings grayscale-downsampling-target-dpi %integer; "72"><!-- dpi -->
<!ATTLIST pdf-settings grayscale-jpeg-quality %integer; "80"><!-- % : 1 to 100 -->
<!ATTLIST pdf-settings monochrome-compression (ccitt4|ccitt3|runlength|zlib|none) "ccitt4">
<!ATTLIST pdf-settings monochrome-downsampling (none|average|bicubic|subsampling) "none">
<!ATTLIST pdf-settings monochrome-downsampling-above-dpi %integer; "450"><!-- dpi -->
<!ATTLIST pdf-settings monochrome-downsampling-target-dpi %integer; "300"><!-- dpi -->
<!ATTLIST pdf-settings rasterize-resolution %integer; "108"><!-- dpi -->
<!ATTLIST pdf-settings use-launch-for-relative-uri %bool; "true">
<!ATTLIST pdf-settings text-and-lineart-compression %bool; "true">
<!ATTLIST pdf-settings gif-pass-through %bool; "true">
<!ATTLIST pdf-settings default-output-intent CDATA #IMPLIED>
<!ATTLIST pdf-settings page-labels %bool; "true">
<!ATTLIST pdf-settings signature %bool; "false">
<!ATTLIST pdf-settings signature-name CDATA "">
<!ATTLIST pdf-settings certificate-name CDATA "">

<!ELEMENT embed-font EMPTY >
<!ATTLIST embed-font font %font-family; #IMPLIED>

<!-- SVG output settings -->

<!ELEMENT svg-settings (embed-font)* >
<!ATTLIST svg-settings svg-version (1.1|Basic|Tiny) "1.1">
<!ATTLIST svg-settings copy-image-path CDATA "">
<!ATTLIST svg-settings copy-image-prefix CDATA "">
<!ATTLIST svg-settings embed-all-fonts %bool; "false">
<!ATTLIST svg-settings error-on-embed-fault %bool; "true">

```



```

<!ATTLIST svg-settings format                CDATA "1">
<!ATTLIST svg-settings gzip-compression      %bool; "false">
<!ATTLIST svg-settings image-conversion (auto|jpeg|png) "auto">
<!ATTLIST svg-settings image-processing (embed-all|link|copy-all|copy) "embed-all">
<!ATTLIST svg-settings jpeg-quality          %integer; "80"><!-- % : 1 to 100 -->
<!ATTLIST svg-settings rename-copy-image     %bool; "false">
<!ATTLIST svg-settings singlefile            %bool; "false">
<!ATTLIST svg-settings rasterize-resolution %integer; "108"><!-- dpi -->

<!ELEMENT embed-font EMPTY >
<!ATTLIST embed-font font %font-family; #IMPLIED>

<!-- text output settings -->

<!ELEMENT text-settings EMPTY >
<!ATTLIST text-settings encoding            CDATA "UTF-8"> <!-- ignore case -->
<!ATTLIST text-settings eol-marker (CRLF|LF|CR) #IMPLIED><!-- ignore case -->

<!-- MathML settings -->

<!ELEMENT mathml-settings
( math?
, mfenced?
, mfrac?
, mi?
, mo?
, mroot?
, mscripts?
, mtable?
, munderover?
, mstyle?
, operator-dictionary*
)
>
<!ATTLIST mathml-settings double_struck %font-family; #IMPLIED>
<!ATTLIST mathml-settings fraktur      %font-family; #IMPLIED>
<!ATTLIST mathml-settings script       %font-family; #IMPLIED>
<!ATTLIST mathml-settings sans-serif   %font-family; #IMPLIED>
<!ATTLIST mathml-settings monospace    %font-family; #IMPLIED>

<!ELEMENT math EMPTY >
<!ATTLIST math small %float; #IMPLIED>
<!ATTLIST math normal %float; #IMPLIED>
<!ATTLIST math big %float; #IMPLIED>
<!ATTLIST math axis-shift %float; #IMPLIED>

<!ELEMENT mfenced EMPTY >
<!ATTLIST mfenced center-shift %float; #IMPLIED>

<!ELEMENT mfrac EMPTY >
<!ATTLIST mfrac bar-width %float; #IMPLIED>
<!ATTLIST mfrac numerator-space %float; #IMPLIED>
<!ATTLIST mfrac denominator-space %float; #IMPLIED>
<!ATTLIST mfrac bar-lspace %float; #IMPLIED>
<!ATTLIST mfrac bar-rspace %float; #IMPLIED>
<!ATTLIST mfrac bar-padding %float; #IMPLIED>
<!ATTLIST mfrac thin %float; #IMPLIED>
<!ATTLIST mfrac medium %float; #IMPLIED>
<!ATTLIST mfrac thick %float; #IMPLIED>

<!ELEMENT mi EMPTY >
<!ATTLIST mi italic-lspace %float; #IMPLIED>
<!ATTLIST mi italic-rspace %float; #IMPLIED>

<!ELEMENT mo EMPTY >
<!ATTLIST mo largeop %float; #IMPLIED>
<!ATTLIST mo integral-size %float; #IMPLIED>

<!ELEMENT mroot EMPTY >
<!ATTLIST mroot padding-left %float; #IMPLIED>

```



```

<!ATTLIST mroot padding-right      %float; #IMPLIED>
<!ATTLIST mroot padding-top        %float; #IMPLIED>
<!ATTLIST mroot padding-bottom     %float; #IMPLIED>
<!ATTLIST mroot index-rspace       %float; #IMPLIED>
<!ATTLIST mroot index-shift        %float; #IMPLIED>
<!ATTLIST mroot root-pos1.x        %float; #IMPLIED>
<!ATTLIST mroot root-pos1.y        %float; #IMPLIED>
<!ATTLIST mroot root-pos2.x        %float; #IMPLIED>
<!ATTLIST mroot root-pos2.y        %float; #IMPLIED>
<!ATTLIST mroot root-pos3.x        %float; #IMPLIED>
<!ATTLIST mroot root-pos3.y        %float; #IMPLIED>
<!ATTLIST mroot root-pos4.x        %float; #IMPLIED>
<!ATTLIST mroot root-pos4.y        %float; #IMPLIED>
<!ATTLIST mroot root-width1        %float; #IMPLIED>
<!ATTLIST mroot root-width2        %float; #IMPLIED>
<!ATTLIST mroot root-width3        %float; #IMPLIED>
<!ATTLIST mroot root-width4        %float; #IMPLIED>

<!ELEMENT mscript EMPTY >
<!ATTLIST mscript script-rspace    %float; #IMPLIED>
<!ATTLIST mscript script-rspace2   %float; #IMPLIED>
<!ATTLIST mscript script-lspace    %float; #IMPLIED>
<!ATTLIST mscript script-lspace2   %float; #IMPLIED>
<!ATTLIST mscript superscript-shift %float; #IMPLIED>
<!ATTLIST mscript subscript-shift  %float; #IMPLIED>
<!ATTLIST mscript superscript-italic-shift %float; #IMPLIED>
<!ATTLIST mscript subscript-italic-shift %float; #IMPLIED>
<!ATTLIST mscript presuperscript-italic-shift %float; #IMPLIED>
<!ATTLIST mscript presubscript-italic-shift %float; #IMPLIED>

<!ELEMENT mtable EMPTY >
<!ATTLIST mtable border-width      %float; #IMPLIED>

<!ELEMENT munderover EMPTY >
<!ATTLIST munderover limit-size    %float; #IMPLIED>
<!ATTLIST munderover overscript-space %float; #IMPLIED>
<!ATTLIST munderover underscript-space %float; #IMPLIED>
<!ATTLIST munderover overaccent-shift %float; #IMPLIED>
<!ATTLIST munderover underaccent-shift %float; #IMPLIED>
<!ATTLIST munderover bar-width      %float; #IMPLIED>
<!ATTLIST munderover bar-padding    %float; #IMPLIED>
<!ATTLIST munderover overbar-space  %float; #IMPLIED>
<!ATTLIST munderover underbar-space %float; #IMPLIED>

<!ELEMENT mstyle EMPTY >
<!ATTLIST mstyle scriptlevel        %integer; #IMPLIED>
<!ATTLIST mstyle displaystyle        %bool; #IMPLIED>
<!ATTLIST mstyle scriptsizemultiplier %float; #IMPLIED>
<!ATTLIST mstyle scriptminsize      %abslength; #IMPLIED>
<!ATTLIST mstyle background          %color; #IMPLIED>
<!ATTLIST mstyle veryverythinmathspace %length; #IMPLIED>
<!ATTLIST mstyle verythinmathspace   %length; #IMPLIED>
<!ATTLIST mstyle thinmathspace       %length; #IMPLIED>
<!ATTLIST mstyle mediummathspace     %length; #IMPLIED>
<!ATTLIST mstyle thickmathspace      %length; #IMPLIED>
<!ATTLIST mstyle verythickmathspace  %length; #IMPLIED>
<!ATTLIST mstyle veryverythickmathspace %length; #IMPLIED>

<!ELEMENT operator-dictionary EMPTY >
<!ATTLIST operator-dictionary src %URI; #REQUIRED>

<!-- XSLT settings -->

<!ELEMENT xslt-settings (param|stylesheet)* >
<!ATTLIST xslt-settings command CDATA #REQUIRED>
<!ATTLIST xslt-settings param CDATA #REQUIRED>

<!ELEMENT param EMPTY >
<!ATTLIST param name CDATA #REQUIRED>
<!ATTLIST param value CDATA #REQUIRED>

```

```

<!ELEMENT stylesheet EMPTY >
<!ATTLIST stylesheet ns CDATA #REQUIRED>
<!ATTLIST stylesheet href %URI; #REQUIRED>

<!-- RXE settings -->

<!ELEMENT rxe-settings EMPTY >
<!ATTLIST rxe-settings command CDATA #REQUIRED>

```

## Operator Dictionary

Operator Dictionary is a setting file for adjusting the position of the operator in [MathML](#). The contents which can be set up are the same as [F. Operator Dictionary](#) and extensions. Please see also there for the details of attributes. The initial value for **AH Formatter V6.0** is made by adding the followings to the contents in [F.5 Operator dictionary entries](#).

- `&coprod`; (U+2210) : Added as the same content as `&Product`; (U+220F).
- `&minus`; (U+2212) : Added as the same content as `"-` (U+002D).
- `&Int`; (U+222C) : Added as the same content as `&Integral`; (U+220F).
- `&tint`; (U+222D) : Added as the same content as `&Integral`; (U+220F).

What is necessary will be to specify only a portion to change, since the attribute which was not specified is not evaluated.

[Extensions for the Operator Dictionary](#) is original for **AH Formatter V6.0**. The initial values will be described later.

Element	Location	Attribute	Description
<code>&lt;operator-dictionary&gt;</code>	root element		
<code>&lt;entry&gt;</code>	child of <code>&lt;operator-dictionary&gt;</code>	operator	Specifies the name of a operator. Entity references supported in MathML can also be specified like <code>operator="&amp;sum;"</code> Moreover, the arbitrary operators specified by <code>&lt;mo&gt;</code> can also be specified. Please be sure to specify this attribute.
		form	Specifies infix or prefix or postfix. These attributes show in which position the operator specified by the operator attribute appears. Please be sure to specify this attribute. <b>AH Formatter V6.0</b> makes it possible to specify the extensions. These are used when tuning the position of each character finely. For details, please refer to <a href="#">Extensions for Operator Dictionary</a> .
		fence	Specifies true or false.
		separator	Specifies true or false.
		lspace	A numerical value without a symbol with a unit or either of the following can be specified. <ul style="list-style-type: none"> <li>• <code>veryverythinmathspace</code></li> <li>• <code>verythinmathspace</code></li> <li>• <code>thinmathspace</code></li> <li>• <code>mediummathspace</code></li> <li>• <code>thickmathspace</code></li> <li>• <code>verythickmathspace</code></li> <li>• <code>veryverythickmathspace</code></li> </ul> The units which can be specified are arbitrary units, such as <code>em</code> which can be specified in <code>FO</code> , or <code>%</code> .
		rspace	
		stretchy	Specifies true or false.
		symmetric	Specifies true or false.
		maxsize	A numerical value without a symbol without a unit, a numerical value without a symbol with a unit, or either of the following can be specified. <ul style="list-style-type: none"> <li>• <code>infinity</code> (maxsize only)</li> <li>• <code>veryverythinmathspace</code></li> <li>• <code>verythinmathspace</code></li> <li>• <code>thinmathspace</code></li> </ul>
		minsize	

Element	Location	Attribute	Description
<entry>	child of <operator- dictionary>	minsize	<ul style="list-style-type: none"> <li>• mediummathspace</li> <li>• thickmathspace</li> <li>• verythickmathspace</li> <li>• veryverythickmathspace</li> </ul> <p>The units which can be specified are arbitrary units, such as em which can be specified in FO, or %.</p>
		largeop	Specifies true or false.
		movablelimits	Specifies true or false.
		accent	Specifies true or false.

## Extensions for Operator Dictionary

**AH Formatter V6.0** extends the Operator Dictionary and enables to tune a position of each character finely. By specifying `form="extension"`, character height, information about the kerning when it's Italic, details for output position adjustment of the over-script, subscript, etc., can be registered for every character and can be specified as follows, for example.

```
<entry operator="f" form="extension" italic-lsapce="0em" italic-rsapce="0.2em"/>
```

Attribute	Description
italic-lspace	Specifies the amount of white space when <code>fontstyle="italic"</code> is specified to the base character so that an overlap does not arise to an output element on either side when outputting <code>&lt;mi&gt;</code> <code>&lt;mo&gt;</code> <code>&lt;ci&gt;</code> character. This expands the occupancy width of the base character. Some fonts may run off the right edge when it is made italic, they may also run off the left edge. When <code>&lt;mi&gt;</code> <code>&lt;ci&gt;</code> elements are the characters in Italic, and the elements before and after the <code>&lt;mi&gt;</code> <code>&lt;ci&gt;</code> elements are <code>&lt;mi&gt;</code> <code>&lt;mn&gt;</code> <code>&lt;ci&gt;</code> and they are Italic, italic-lspace or italic-rspace adjacent to the element is not adjusted. This specification overwrites the <a href="#">specification of the Option Setting file</a> for the target character.
italic-rspace	
superscript-italic-shift	Specifies the amount of the adjustment by kerning the subscript of the <code>&lt;msup&gt;</code> <code>&lt;msub&gt;</code> <code>&lt;msubsup&gt;</code> <code>&lt;mmultiscripts&gt;</code> elements when <code>fontstyle="italic"</code> is specified to the base character. If <code>italic-lspace</code> and <code>italic-rspace</code> are specified, it will become the amount of movements from it. This specification overwrites the <a href="#">specification of the Option Setting file</a> for the target character.
subscript-italic-shift	
presuperscript-italic-shift	
presubscript-italic-shift	
superscript-shift	Specifies the amount to shift the subscript of the <code>&lt;msup&gt;</code> <code>&lt;msub&gt;</code> <code>&lt;msubsup&gt;</code> <code>&lt;mmultiscripts&gt;</code> elements in the vertical direction. This specification overwrites the <a href="#">specification of the Option Setting file</a> for the target character.
subscript-shift	
overscript-space	Specifies the space between subscripts of the <code>&lt;mover&gt;</code> <code>&lt;munder&gt;</code> <code>&lt;munderover&gt;</code> elements. This specification overwrites the <a href="#">specification of the Option Setting file</a> for the target character.
underscript-space	
overaccent-shift	Adjusts the position of the subscript of the <code>&lt;mover&gt;</code> <code>&lt;munder&gt;</code> <code>&lt;munderover&gt;</code> elements when <code>accent="true"</code> is specified. This specification overwrites the <a href="#">specification of the Option Setting file</a> for the target character.
underaccent-shift	
glyph-altitude	<p><code>glyph-altitude</code> specifies the distance from a baseline to the upper end of a character. This serves as a standard which asks for the position of overscript of <code>&lt;mover&gt;</code> <code>&lt;munderover&gt;</code>.</p> <p>When drawing overscript to two or more characters, the maximum value of <code>glyph-altitude</code> of each character is made as <code>glyph-altitude</code> of the whole character string.</p> <p>The standard of underscript does not perform adjustment for every character, but is based on the lower end (position of depth of a font) of a character. As for the character which does not specify <code>glyph-altitude</code> as a operator dictionary, "A" is a standard for English capital letters and numbers, "a" is a standard for lowercase letters, and the altitude of a font is a standard for the other characters.</p> <p>As for the <code>&lt;mover&gt;</code> <code>&lt;munderover&gt;</code> elements, when the formula of base has the structure of <code>&lt;msup&gt;</code> <code>&lt;mroot&gt;</code> etc. and cannot refer to the height of a character directly, the upper end of the region of the whole base is a standard of overscript.</p>

## Default of Operator Dictionary

The initial values for extensions of the operator dictionary are as follows. The values for the characters specified here overwrite the specification of the Option Setting file. That is, the specification in the Option Setting file is not effective. Refer to [F.5 Operator dictionary entries](#) for the initial values other than extension.

```

<operator-dictionary>
<entry operator="A" form="extension" italic-lspace="0.05em" italic-rspace="0em"
  glyph-altitude="0.6em"/>
<entry operator="B" form="extension" italic-lspace="0.05em" italic-rspace="0.04em"/>
<entry operator="C" form="extension" italic-lspace="0em" italic-rspace="0.08em"/>
<entry operator="D" form="extension" italic-lspace="0.03em" italic-rspace="0.04em"/>
<entry operator="E" form="extension" italic-lspace="0.03em" italic-rspace="0.1em"/>
<entry operator="F" form="extension" italic-lspace="0.03em" italic-rspace="0.14em"/>
<entry operator="G" form="extension" italic-lspace="0em" italic-rspace="0.06em"/>
<entry operator="H" form="extension" italic-lspace="0.03em" italic-rspace="0.16em"/>
<entry operator="I" form="extension" italic-lspace="0.03em" italic-rspace="0.14em"/>
<entry operator="J" form="extension" italic-lspace="0.05em" italic-rspace="0.16em"/>
<entry operator="K" form="extension" italic-lspace="0.05em" italic-rspace="0.14em"/>
<entry operator="L" form="extension" italic-lspace="0.05em" italic-rspace="0.4em"/>
<entry operator="M" form="extension" italic-lspace="0em" italic-rspace="0.16em"/>
<entry operator="N" form="extension" italic-lspace="0.05em" italic-rspace="0.16em"/>
<entry operator="O" form="extension" italic-lspace="0em" italic-rspace="0.08em"/>
<entry operator="P" form="extension" italic-lspace="0.03em" italic-rspace="0.08em"/>
<entry operator="Q" form="extension" italic-lspace="0em" italic-rspace="0.06em"/>
<entry operator="R" form="extension" italic-lspace="0.03em" italic-rspace="0.06em"/>
<entry operator="S" form="extension" italic-lspace="0em" italic-rspace="0.1em"/>
<entry operator="T" form="extension" italic-lspace="0em" italic-rspace="0.16em"/>
<entry operator="U" form="extension" italic-lspace="0em" italic-rspace="0.16em"/>
<entry operator="V" form="extension" italic-lspace="0em" italic-rspace="0.18em"/>
<entry operator="W" form="extension" italic-lspace="0em" italic-rspace="0.18em"/>
<entry operator="X" form="extension" italic-lspace="0.07em" italic-rspace="0.18em"/>
<entry operator="Y" form="extension" italic-lspace="0em" italic-rspace="0.18em"/>
<entry operator="Z" form="extension" italic-lspace="0em" italic-rspace="0.12em"/>
<entry operator="a" form="extension" italic-lspace="0em" italic-rspace="0.02em"
  glyph-altitude="0.42em"/>
<entry operator="b" form="extension" italic-lspace="0em" italic-rspace="0.02em"
  glyph-altitude="0.6em"/>
<entry operator="c" form="extension" italic-lspace="0em" italic-rspace="0.04em"/>
<entry operator="d" form="extension" italic-lspace="0em" italic-rspace="0.1em"
  glyph-altitude="0.6em"/>
<entry operator="e" form="extension" italic-lspace="0em" italic-rspace="0.04em"/>
<entry operator="f" form="extension" italic-lspace="0.18em" italic-rspace="0.26em"
  glyph-altitude="0.6em"/>
<entry operator="g" form="extension" italic-lspace="0.03em" italic-rspace="0.08em"
  glyph-altitude="0.6em"/>
<entry operator="h" form="extension" italic-lspace="0em" italic-rspace="0.2em"
  glyph-altitude="0.6em"/>
<entry operator="i" form="extension" italic-lspace="0em" italic-rspace="0.06em"
  glyph-altitude="0.6em"/>
<entry operator="j" form="extension" italic-lspace="0.19em" italic-rspace="0.06em"
  glyph-altitude="0.6em"/>
<entry operator="k" form="extension" italic-lspace="0em" italic-rspace="0.1em"
  glyph-altitude="0.6em"/>
<entry operator="l" form="extension" italic-lspace="0em" italic-rspace="0.08em"/>
<entry operator="m" form="extension" italic-lspace="0em" italic-rspace="0.02em"/>
<entry operator="n" form="extension" italic-lspace="0em" italic-rspace="0.04em"/>
<entry operator="o" form="extension" italic-lspace="0em" italic-rspace="0.04em"/>
<entry operator="p" form="extension" italic-lspace="0.1em" italic-rspace="0.04em"/>
<entry operator="q" form="extension" italic-lspace="0em" italic-rspace="0.04em"/>
<entry operator="r" form="extension" italic-lspace="0em" italic-rspace="0.08em"/>
<entry operator="s" form="extension" italic-lspace="0em" italic-rspace="0.06em"/>
<entry operator="t" form="extension" italic-lspace="0em" italic-rspace="0.08em"
  glyph-altitude="0.54em"/>
<entry operator="u" form="extension" italic-lspace="0em" italic-rspace="0.04em"/>
<entry operator="v" form="extension" italic-lspace="0em" italic-rspace="0.06em"/>
<entry operator="w" form="extension" italic-lspace="0em" italic-rspace="0.06em"/>
<entry operator="x" form="extension" italic-lspace="0.05em" italic-rspace="0.06em"/>
<entry operator="y" form="extension" italic-lspace="0.08em" italic-rspace="0.06em"/>

```

```

<entry operator="z" form="extension" italic-lspace="0.03em" italic-rspace="0.06em"/>
<entry operator=" " form="extension" glyph-altitude="0.42em"/>
<entry operator="-" form="extension" glyph-altitude="0.42em"/>
<entry operator="_" form="extension" glyph-altitude="0.42em"/>
<entry operator="&apos;" form="extension" glyph-altitude="0.42em"/>
<entry operator="&quot;" form="extension" glyph-altitude="0.42em"/>
<entry operator="+" form="extension" glyph-altitude="0.5em"/>
<entry operator="&minus;" form="extension" glyph-altitude="0.5em"/>
<entry operator="&mnplus;" form="extension" glyph-altitude="0.5em"/>
<entry operator="&plusdo;" form="extension" glyph-altitude="0.5em"/>
<entry operator="=" form="extension" glyph-altitude="0.5em"/>
<entry operator="&sum;" form="extension" overscript-space="-0.08em"
underscript-space="0.08em"/>
<entry operator="&cup;" form="extension" overscript-space="-0.08em"
underscript-space="0.08em"/>
<entry operator="&cap;" form="extension" overscript-space="-0.08em"
underscript-space="0.08em"/>
<entry operator="&Product;" form="extension" overscript-space="-0.08em"
underscript-space="0.08em"/>
<entry operator="&Coproduct;" form="extension" overscript-space="-0.08em"
underscript-space="0.08em"/>
<entry operator="&Integral;" form="extension" overscript-space="0.1em"
underscript-space="0em" italic-lspace="0em" italic-rspace="0em"/>
<entry operator="&Int;" form="extension" overscript-space="0.1em"
underscript-space="0em" italic-lspace="0em" italic-rspace="0em"/>
<entry operator="&tint;" form="extension" overscript-space="0.1em"
underscript-space="0em" italic-lspace="0em" italic-rspace="0em"/>
<entry operator="&ContourIntegral;" form="extension" overscript-space="0.1em"
underscript-space="0em" italic-lspace="0em" italic-rspace="0em"/>
<entry operator="&DoubleContourIntegral;" form="extension" overscript-space="0.1em"
underscript-rspace="0em" italic-lspace="0em" italic-rspace="0em"/>
<entry operator="&Cconint;" form="extension" overscript-space="0.1em"
underscript-space="0em" italic-lspace="0em" italic-rspace="0em"/>
<entry operator="&cwint;" form="extension" overscript-space="0.1em"
underscript-space="0em" italic-lspace="0em" italic-rspace="0em"/>
<entry operator="&cwconint;" form="extension" overscript-space="0.1em"
underscript-space="0em" italic-lspace="0em" italic-rspace="0em"/>
<entry operator="&awconint;" form="extension" overscript-space="0.1em"
underscript-space="0em" italic-lspace="0em" italic-rspace="0em"/>
<entry operator="&Breve;" form="extension" overaccent-shift="0.74em"
underaccent-shift="0em"/>
<entry operator="&Cedilla;" form="extension" overaccent-shift="-0.18em"
underaccent-shift="0.98em"/>
<entry operator="&DiacriticalGrave;" form="extension" overaccent-shift="0.54em"
underaccent-shift="0.16em"/>
<entry operator="&DiacriticalDot;" form="extension" overaccent-shift="0.78em"
underaccent-shift="0em"/>
<entry operator="&DiacriticalDoubleAcute;" form="extension" overaccent-shift="0.74em"
underaccent-shift="0em"/>
<entry operator="&LeftArrow;" form="extension" overaccent-shift="0.22em"
underaccent-shift="0.4em"/>
<entry operator="&LeftRightArrow;" form="extension" overaccent-shift="0.22em"
underaccent-shift="0.4em"/>
<entry operator="&LeftRightVector;" form="extension" overaccent-shift="0.22em"
underaccent-shift="0.4em"/>
<entry operator="&LeftVector;" form="extension" overaccent-shift="0.22em"
underaccent-shift="0.4em"/>
<entry operator="&DownLeftVector;" form="extension" overaccent-shift="0.22em"
underaccent-shift="0.4em"/>
<entry operator="&DiacriticalAcute;" form="extension" overaccent-shift="0.54em"
underaccent-shift="0.22em"/>
<entry operator="&RightArrow;" form="extension" overaccent-shift="0.22em"
underaccent-shift="0.4em"/>
<entry operator="&RightVector;" form="extension" overaccent-shift="0.22em"
underaccent-shift="0.4em"/>
<entry operator="&DownRightVector;" form="extension" overaccent-shift="0.22em"
underaccent-shift="0.4em"/>
<entry operator="&DiacriticalTilde;" form="extension" overaccent-shift="0.76em"
underaccent-shift="0em"/>
<entry operator="&DoubleDot;" form="extension" overaccent-shift="0.56em"

```

```

    underaccent-shift="0.16em"/>
<entry operator="&DownBreve;" form="extension" overaccent-shift="0.6em"
    underaccent-shift="0.1em"/>
<entry operator="&Hacek;" form="extension" overaccent-shift="0.74em"
    underaccent-shift="0em"/>
<entry operator="&Hat;" form="extension" overaccent-shift="0.36em"
    underaccent-shift="0.2em"/>
<entry operator="&OverBar;" form="extension" overaccent-shift="0.74em"
    underaccent-shift="0em"/>
<entry operator="&OverBrace;" form="extension" overaccent-shift="0em"
    underaccent-shift="0.5em"/>
<entry operator="&OverBracket;" form="extension" overaccent-shift="-0.2em"
    underaccent-shift="0.74em"/>
<entry operator="&OverParenthesis;" form="extension" overaccent-shift="0em"
    underaccent-shift="0.5em"/>
<entry operator="&TripleDot;" form="extension" overaccent-shift="0.22em"
    underaccent-shift="0.64em"/>
<entry operator="&UnderBar;" form="extension" overaccent-shift="0.74em"
    underaccent-shift="0.64em"/>
<entry operator="&UnderBrace;" form="extension" overaccent-shift="0.6em"
    underaccent-shift="0em"/>
<entry operator="&UnderBracket;" form="extension" overaccent-shift="-0.2em"
    underaccent-shift="0em"/>
<entry operator="&UnderParenthesis;" form="extension" overaccent-shift="0.6em"
    underaccent-shift="0em"/>
</operator-dictionary>

```

**CAUTION:** Initial values may be changed.

## DTD of Operator Dictionary

The DTD of Operator Dictionary is as follows: This DTD is not very accurate. Please utilize it for taking a general view of the syntax only.

```

<!-- the root element -->
<!ELEMENT operator-dictionary (entry)* >

<!ENTITY % bool "(true|false)" >
<!ENTITY % length "CDATA"><!-- unsigned number with unit
    unit is one of followings
        cm : centimeter
        mm : millimeter, 1 millimeter = 1/10 centimeter
        in : inch, 1 inch = 2.54 centimeters
        pt : point, 1 point = 1/72 inch
        pc : pica, 1 pica = 12 points
        px : pixel
        em : relative length
    -->
<!ENTITY % percentage "CDATA"><!-- unsigned number with % -->
<!ENTITY % namespace "veryverythinmathspace
    |verythinmathspace
    |thinmathspace
    |mediummathspace
    |thickmathspace
    |verythickmathspace
    |veryverythickmathspace" >

<!-- operator entry -->
<!ELEMENT entry EMPTY >
<!ATTLIST entry operator      CDATA #REQUIRED
    form      (infix|prefix|postfix|extension) #REQUIRED
    fence     %bool; #IMPLIED
    separator %bool; #IMPLIED
    lspace    (%length;|%percentage;|%namespace;) #IMPLIED
    rspace    (%length;|%percentage;|%namespace;) #IMPLIED
    stretchy %bool; #IMPLIED
    symmetric %bool; #IMPLIED
    maxsize   (%length;|%percentage;|%namespace;|infinity) #IMPLIED

```

```
minsize      (%length;|%percentage;|%namedspace;) #IMPLIED
largeop      %bool; #IMPLIED
movablelimits %bool; #IMPLIED
accent       %bool; #IMPLIED
italic-lspace (%length;|%percentage;) #IMPLIED
italic-rspace (%length;|%percentage;) #IMPLIED
superscript-italic-shift (%length;|%percentage;) #IMPLIED
subscript-italic-shift (%length;|%percentage;) #IMPLIED
presuperscript-italic-shift (%length;|%percentage;) #IMPLIED
presubscript-italic-shift (%length;|%percentage;) #IMPLIED
superscript-shift (%length;|%percentage;) #IMPLIED
subscript-shift (%length;|%percentage;) #IMPLIED
overscript-space (%length;|%percentage;) #IMPLIED
underscript-space (%length;|%percentage;) #IMPLIED
overaccent-shift (%length;|%percentage;) #IMPLIED
underaccent-shift (%length;|%percentage;) #IMPLIED
glyph-altitude (%length;|%percentage;) #IMPLIED
```

&gt;





## XSL-FO 1.1 Conformance

Implementation is based on [Extensible Stylesheet Language \(XSL\) Version 1.1](#).

- [yes] in the list means that the formatting object or property is implemented.
- [partial] means that the formatting object or property is partially implemented.
- [no] means not implemented.
- [-] means aural property, it is out of scope for implementation.

Sometimes items with [yes] have some limitation(s) that do not affect their ability to accomplish the specified tasks. See [8 Conformance] of XSL specification about "Conformance Level".

### 5.10 Core Function Library

The Conformance level is not defined for Core Function Library.

#### 5.10.1 Number Functions

Name	Conformance level	Current condition	Comments
floor		yes	
ceiling		yes	
round		yes	
min		yes	
max		yes	
abs		yes	

#### 5.10.2 Color Functions

Name	Conformance level	Current condition	Comments
rgb		yes	
rgb-icc		yes	This function is extended. <a href="#">↗ rgb-icc</a>
system-color		yes	

#### 5.10.3 Font Functions

Name	Conformance level	Current condition	Comments
system-font		no	

#### 5.10.4 Property Value Functions

Name	Conformance level	Current condition	Comments
inherited-property-value		yes	
label-end		yes	
body-start		yes	
from-parent		yes	
from-nearest-specified-value		yes	
from-page-master-region		yes	
from-table-column		yes	
proportional-column-width		yes	
merge-property-values		no	

**Incompatibility with XSL1.0** is caused by `from-page-master-region()` function added in XSL1.1. In XSL1.1, even if `writing-mode` or `reference-orientation` is specified for `fo:region-*`, it is supposed to be disregarded. To enable these specifications, it is necessary to specify the following for `fo:page-sequence`.

```
writing-mode="from-page-master-region()"
reference-orientation="from-page-master-region()"
```

Also, by specifying `default-from-page-master-region="true"` by the [Option Setting File](#), it can always be operated as interchangeable XSL1.0.

## 6 Formatting Objects

### 6.4 Declarations and Pagination and Layout Formatting Objects

Name	Conformance level	Current condition	Comments
6.4.2 fo:root	Basic	yes	
6.4.3 fo:declarations	Basic	yes	
6.4.4 fo:color-profile	Extended	yes	
6.4.5 fo:page-sequence	Basic	yes	
6.4.6 fo:page-sequence-wrapper	Basic	yes	
6.4.7 fo:layout-master-set	Basic	yes	
6.4.8 fo:page-sequence-master	Basic	yes	
6.4.9 fo:single-page-master-reference	Basic	yes	
6.4.10 fo:repeatable-page-master-reference	Basic	yes	
6.4.11 fo:repeatable-page-master-alternatives	Extended	yes	
6.4.12 fo:conditional-page-master-reference	Extended	yes	
6.4.13 fo:simple-page-master	Basic	yes	This object is extended to specify <code>background-image</code> , <code>background-repeat</code> , <code>background-position-horizontal</code> and <code>background-position-vertical</code> properties. <a href="#">Page Background</a>
6.4.14 fo:region-body	Basic	yes	
6.4.15 fo:region-before	Extended	yes	
6.4.16 fo:region-after	Extended	yes	
6.4.17 fo:region-start	Extended	yes	
6.4.18 fo:region-end	Extended	yes	
6.4.19 fo:flow	Basic	yes	
6.4.20 fo:static-content	Extended	yes	
6.4.21 fo:title	Extended	yes	
6.4.22 fo:flow-map	Extended	yes	
6.4.23 fo:flow-assignment	Extended	yes	
6.4.24 fo:flow-source-list	Extended	yes	
6.4.25 fo:flow-name-specifier	Extended	yes	
6.4.26 fo:flow-target-list	Extended	yes	
6.4.27 fo:region-name-specifier	Extended	yes	

## 6.5 Block-level Formatting Objects

Name	Conformance level	Current condition	Comments
6.5.2 fo:block	Basic	yes	
6.5.3 fo:block-container	Extended	yes	This object is extended to specify column-count, column-gap properties. <a href="#">↗ Block Column</a>

## 6.6 Inline-level Formatting Objects

Name	Conformance level	Current condition	Comments
6.6.2 fo:bidi-override	Extended	yes	
6.6.3 fo:character	Basic	yes	
6.6.4 fo:initial-property-set	Extended	no	
6.6.5 fo:external-graphic	Basic	yes	
6.6.6 fo:instream-foreign-object	Extended	yes	
6.6.7 fo:inline	Basic	yes	
6.6.8 fo:inline-container	Extended	yes	
6.6.9 fo:leader	Basic	yes	
6.6.10 fo:page-number	Basic	yes	
6.6.11 fo:page-number-citation	Extended	yes	
6.6.12 fo:page-number-citation-last	Extended	yes	
6.6.13 fo:folio-prefix	Extended	yes	Antenna House has already been supporting it by the extensions specification. <a href="#">↗ axf:page-number-prefix</a>
6.6.14 fo:folio-suffix	Extended	yes	
6.6.15 fo:scaling-value-citation	Extended	yes	

## 6.7 Formatting Objects for Tables

Name	Conformance level	Current condition	Comments
6.7.2 fo:table-and-caption	Basic	yes	
6.7.3 fo:table	Basic	yes	
6.7.4 fo:table-column	Basic	yes	
6.7.5 fo:table-caption	Extended	yes	
6.7.6 fo:table-header	Basic	yes	
6.7.7 fo:table-footer	Extended	yes	
6.7.8 fo:table-body	Basic	yes	
6.7.9 fo:table-row	Basic	yes	
6.7.10 fo:table-cell	Basic	yes	

## 6.8 Formatting Objects for Lists

Name	Conformance level	Current condition	Comments
6.8.2 fo:list-block	Basic	yes	
6.8.3 fo:list-item	Basic	yes	
6.8.4 fo:list-item-body	Basic	yes	
6.8.5 fo:list-item-label	Extended	yes	

## 6.9 Dynamic Effects: Link and Multi Formatting Objects

Name	Conformance level	Current condition	Comments
6.9.2 fo:basic-link	Extended	yes	
6.9.3 fo:multi-switch	Extended	no	
6.9.4 fo:multi-case	Basic	yes	
6.9.5 fo:multi-toggle	Extended	no	
6.9.6 fo:multi-properties	Extended	no	
6.9.7 fo:multi-property-set	Extended	no	

## 6.10 Formatting Objects for Indexing

Name	Conformance level	Current condition	Comments
6.10.2 fo:index-page-number-prefix	Extended	yes	
6.10.3 fo:index-page-number-suffix	Extended	yes	
6.10.4 fo:index-range-begin	Extended	yes	
6.10.5 fo:index-range-end	Extended	yes	
6.10.6 fo:index-key-reference	Extended	yes	
6.10.7 fo:index-page-citation-list	Extended	yes	
6.10.8 fo:index-page-citation-list-separator	Extended	yes	
6.10.9 fo:index-page-citation-range-separator	Extended	yes	

## 6.11 Formatting Objects for Bookmarks

Name	Conformance level	Current condition	Comments
6.11.1 fo:bookmark-tree	Extended	yes	Antenna House has already been supporting it by the extensions specification. <a href="#">☞ Bookmark and Link in PDF Output</a>
6.11.2 fo:bookmark	Extended	yes	
6.11.3 fo:bookmark-title	Extended	yes	

## 6.12 Out-of-Line Formatting Objects

Name	Conformance level	Current condition	Comments
6.12.2 fo:float	Extended	yes	
6.12.3 fo:footnote	Extended	yes	
6.12.4 fo:footnote-body	Extended	yes	This object is extended to be permitted to have an fo:float as a descendant.

## 6.13 Other Formatting Objects

Name	Conformance level	Current condition	Comments
6.13.2 fo:change-bar-begin	Extended	yes	Antenna House has already been supporting it by the extensions specification. <a href="#">☞ Revision Bar</a>
6.13.3 fo:change-bar-end	Extended	yes	
6.13.4 fo:wrapper	Basic	yes	
6.13.5 fo:marker	Extended	yes	
6.13.6 fo:retrieve-marker	Extended	yes	
6.13.7 fo:retrieve-table-marker	Extended	yes	

## 7 Formatting Properties

### 7.5 Common Accessibility Properties

Name	Conformance level	Current condition	Comments
7.5.1 source-document	Basic	yes	
7.5.2 role	Basic	yes	

### 7.6 Common Absolute Position Properties

Name	Conformance level	Current condition	Comments
7.6.1 absolute-position	Complete	yes	
7.6.2 top	Extended	yes	
7.6.3 right	Extended	yes	
7.6.4 bottom	Extended	yes	
7.6.5 left	Extended	yes	

### 7.7 Common Aural Properties

Aural Properties are out of implementation scope.

Name	Conformance level	Current condition	Comments
7.7.1 azimuth	Basic	-	
7.7.2 cue-after	Basic	-	
7.7.3 cue-before	Basic	-	
7.7.4 elevation	Basic	-	
7.7.5 pause-after	Basic	-	
7.7.6 pause-before	Basic	-	
7.7.7 pitch	Basic	-	
7.7.8 pitch-range	Basic	-	
7.7.9 play-during	Basic	-	
7.7.10 richness	Basic	-	
7.7.11 speak	Basic	-	
7.7.12 speak-header	Basic	-	
7.7.13 speak-numeral	Basic	-	
7.7.14 speak-punctuation	Basic	-	
7.7.15 speech-rate	Basic	-	
7.7.16 stress	Basic	-	
7.7.17 voice-family	Basic	-	
7.7.18 volume	Basic	-	

### 7.8 Common Border, Padding, and Background Properties

Name	Conformance level	Current condition	Comments
7.8.1 background-attachment	Extended	yes	
7.8.2 background-color	Basic	yes	This property is extended to apply fo:simple-page-master. <a href="#">axf:background-color</a>

Name	Conformance level	Current condition	Comments
7.8.3 background-image	Extended	yes	This property is extended to apply fo:simple-page-master. <a href="#">↗ axf:background-image</a>
7.8.4 background-repeat	Extended	yes	This property is extended to apply fo:simple-page-master. <a href="#">↗ axf:background-repeat</a>
7.8.5 background-position-horizontal	Extended	yes	This property is extended to apply fo:simple-page-master. <a href="#">↗ axf:background-position-horizontal</a>
7.8.6 background-position-vertical	Extended	yes	This property is extended to apply fo:simple-page-master. <a href="#">↗ axf:background-position-vertical</a>
7.8.7 border-before-color	Basic	yes	
7.8.8 border-before-style	Basic	yes	Extended the dot-dash, dot-dot-dash, and wave properties defined in CSS3. <a href="#">↗ border-style</a>
7.8.9 border-before-width	Basic	yes	
7.8.10 border-after-color	Basic	yes	
7.8.11 border-after-style	Basic	yes	Extended the dot-dash, dot-dot-dash, and wave properties defined in CSS3. <a href="#">↗ border-style</a>
7.8.12 border-after-width	Basic	yes	
7.8.13 border-start-color	Basic	yes	
7.8.14 border-start-style	Basic	yes	Extended the dot-dash, dot-dot-dash, and wave properties defined in CSS3. <a href="#">↗ border-style</a>
7.8.15 border-start-width	Basic	yes	
7.8.16 border-end-color	Basic	yes	
7.8.17 border-end-style	Basic	yes	Extended the dot-dash, dot-dot-dash, and wave properties defined in CSS3. <a href="#">↗ border-style</a>
7.8.18 border-end-width	Basic	yes	
7.8.19 border-top-color	Basic	yes	
7.8.20 border-top-style	Basic	yes	Extended the dot-dash, dot-dot-dash, and wave properties defined in CSS3. <a href="#">↗ border-style</a>
7.8.21 border-top-width	Basic	yes	
7.8.22 border-bottom-color	Basic	yes	
7.8.23 border-bottom-style	Basic	yes	Extended the dot-dash, dot-dot-dash, and wave properties defined in CSS3. <a href="#">↗ border-style</a>
7.8.24 border-bottom-width	Basic	yes	
7.8.25 border-left-color	Basic	yes	
7.8.26 border-left-style	Basic	yes	Extended the dot-dash, dot-dot-dash, and wave properties defined in CSS3. <a href="#">↗ border-style</a>
7.8.27 border-left-width	Basic	yes	
7.8.28 border-right-color	Basic	yes	
7.8.29 border-right-style	Basic	yes	Extended the dot-dash, dot-dot-dash, and wave properties defined in CSS3. <a href="#">↗ border-style</a>
7.8.30 border-right-width	Basic	yes	

Name	Conformance level	Current condition	Comments
7.8.31 padding-before	Basic	yes	
7.8.32 padding-after	Basic	yes	
7.8.33 padding-start	Basic	yes	
7.8.34 padding-end	Basic	yes	
7.8.35 padding-top	Basic	yes	
7.8.36 padding-bottom	Basic	yes	
7.8.37 padding-left	Basic	yes	
7.8.38 padding-right	Basic	yes	

## 7.9 Common Font Properties

Name	Conformance level	Current condition	Comments
7.9.2 font-family	Basic	yes	
7.9.3 font-selection-strategy	Complete	yes	
7.9.4 font-size	Basic	yes	
7.9.5 font-stretch	Extended	yes	Expands/Condenses the font face to the inline progression direction. The font is not replaced by the other font, such as condensed font. Supports % value. <a href="#">font-stretch</a>
7.9.6 font-size-adjust	Extended	yes	A font itself needs to have the x-height information. It is not effective with a font without x-height. A font name can be specified. <a href="#">font-size-adjust</a>
7.9.7 font-style	Basic	yes	Supports italic, oblique and backslant.
7.9.8 font-variant	Basic	yes	This function is extended. <a href="#">font-variant</a> V6.0
7.9.9 font-weight	Basic	yes	

## 7.10 Common Hyphenation Properties

Name	Conformance level	Current condition	Comments
7.10.1 country	Extended	yes	
7.10.2 language	Extended	yes	
7.10.3 script	Extended	yes	
7.10.4 hyphenate	Extended	yes	
7.10.5 hyphenation-character	Extended	yes	U+00AD cannot be specified.
7.10.6 hyphenation-push-character-count	Extended	yes	
7.10.7 hyphenation-remain-character-count	Extended	yes	

## 7.11 Common Margin Properties-Block

Name	Conformance level	Current condition	Comments
7.11.1 margin-top	Basic	yes	
7.11.2 margin-bottom	Basic	yes	
7.11.3 margin-left	Basic	yes	
7.11.4 margin-right	Basic	yes	
7.11.5 space-before	Basic	yes	
7.11.6 space-after	Basic	yes	

Name	Conformance level	Current condition	Comments
7.11.7 start-indent	Basic	yes	
7.11.8 end-indent	Basic	yes	

## 7.12 Common Margin Properties-Inline

Name	Conformance level	Current condition	Comments
7.12.1 margin-top	Basic	yes	
7.12.2 margin-bottom	Basic	yes	
7.12.3 margin-left	Basic	yes	
7.12.4 margin-right	Basic	yes	
7.12.5 space-end	Basic	yes	
7.12.6 space-start	Basic	yes	

## 7.13 Common Relative Position Properties

Name	Conformance level	Current condition	Comments
7.13.1 top	Extended	yes	
7.13.2 right	Extended	yes	
7.13.3 bottom	Extended	yes	
7.13.4 left	Extended	yes	
7.13.5 relative-position	Extended	yes	

## 7.14 Area Alignment Properties

Name	Conformance level	Current condition	Comments
7.14.1 alignment-adjust	Basic	yes	
7.14.2 alignment-baseline	Basic	yes	The auto is considered as baseline.
7.14.3 baseline-shift	Basic	yes	
7.14.4 display-align	Extended	yes	This function is extended. <a href="#">display-align</a>
7.14.5 dominant-baseline	Basic	yes	
7.14.6 relative-align	Extended	yes	

## 7.15 Area Dimension Properties

Name	Conformance level	Current condition	Comments
7.15.1 allowed-height-scale	Extended	yes	
7.15.2 allowed-width-scale	Extended	yes	
7.15.3 block-progression-dimension	Basic	yes	
7.15.4 content-height	Extended	yes	
7.15.5 content-width	Extended	yes	
7.15.6 height	Basic	yes	
7.15.7 inline-progression-dimension	Basic	yes	
7.15.8 max-height	Complete	yes	
7.15.9 max-width	Complete	yes	
7.15.10 min-height	Complete	yes	



Name	Conformance level	Current condition	Comments
7.15.11 min-width	Complete	yes	
7.15.12 scaling	Extended	yes	
7.15.13 scaling-method	Extended	no	
7.15.14 width	Basic	yes	

## 7.16 Block and Line-related Properties

Name	Conformance level	Current condition	Comments
7.16.1 hyphenation-keep	Extended	yes	<p>Either of the following happens to meet the requirement of hyphenation-keep.</p> <ul style="list-style-type: none"> <li>The word is sent to the next line so that the word should not be hyphenated in the place where page end/column end comes.</li> <li>The line is sent to the next page so that the line with hyphen should not come to page end/column end.</li> </ul>
7.16.2 hyphenation-ladder-count	Extended	yes	
7.16.3 last-line-end-indent	Extended	yes	
7.16.4 line-height	Basic	yes	
7.16.5 line-height-shift-adjustment	Extended	yes	
7.16.6 line-stacking-strategy	Basic	yes	
7.16.7 linefeed-treatment	Extended	yes	
7.16.8 white-space-treatment	Extended	yes	
7.16.9 text-align	Basic	yes	
7.16.10 text-align-last	Extended	yes	
7.16.11 text-indent	Basic	yes	
7.16.12 white-space-collapse	Extended	yes	
7.16.13 wrap-option	Basic	yes	

## 7.17 Character Properties

Name	Conformance level	Current condition	Comments
7.17.1 character	Basic	yes	
7.17.2 letter-spacing	Extended	yes	
7.17.3 suppress-at-line-break	Extended	no	
7.17.4 text-decoration	Extended	yes	
7.17.5 text-shadow	Extended	no	
7.17.6 text-transform	Extended	yes	
7.17.7 treat-as-word-space	Extended	no	
7.17.8 word-spacing	Extended	yes	

## 7.18 Color-related Properties

Name	Conformance level	Current condition	Comments
7.18.1 color	Basic	yes	
7.18.2 color-profile-name	Extended	yes	

Name	Conformance level	Current condition	Comments
7.18.3 rendering-intent	Extended	no	

### 7.19 Float-related Properties

Name	Conformance level	Current condition	Comments
7.19.1 clear	Extended	yes	
7.19.2 float	Extended	yes	This function is extended. <a href="#">Float Extension</a> V6.0
7.19.3 intrusion-displace	Extended	yes	

### 7.20 Keeps and Breaks Properties

Name	Conformance level	Current condition	Comments
7.20.1 break-after	Basic	yes	
7.20.2 break-before	Basic	yes	
7.20.3 keep-together	Extended	yes	
7.20.4 keep-with-next	Basic	yes	
7.20.5 keep-with-previous	Basic	yes	
7.20.6 orphans	Basic	yes	
7.20.7 widows	Basic	yes	

### 7.21 Layout-related Properties

Name	Conformance level	Current condition	Comments
7.21.1 clip	Extended	yes	
7.21.2 overflow	Basic	yes	This property is extended. <a href="#">overflow</a>
7.21.3 reference-orientation	Extended	yes	
7.21.4 span	Extended	yes	

### 7.22 Leader and Rule Properties

Name	Conformance level	Current condition	Comments
7.22.1 leader-alignment	Extended	partial	Limitation: page is not supported.
7.22.2 leader-pattern	Basic	yes	
7.22.3 leader-pattern-width	Extended	yes	
7.22.4 leader-length	Basic	yes	
7.22.5 rule-style	Basic	yes	
7.22.6 rule-thickness	Basic	yes	

### 7.23 Properties for Dynamic Effects Formatting Objects

Name	Conformance level	Current condition	Comments
7.23.1 active-state	Extended	no	
7.23.2 auto-restore	Extended	no	
7.23.3 case-name	Extended	no	
7.23.4 case-title	Extended	no	
7.23.5 destination-placement-offset	Extended	no	

Name	Conformance level	Current condition	Comments
7.23.6 external-destination	Extended	yes	<a href="#">xlink:href</a>
7.23.7 indicate-destination	Extended	no	
7.23.8 internal-destination	Extended	yes	This property is extended. <a href="#">internal-destination</a> , <a href="#">xlink:href</a>
7.23.9 show-destination	Extended	yes	
7.23.10 starting-state	Extended	no	
7.23.11 switch-to	Extended	no	
7.23.12 target-presentation-context	Extended	no	
7.23.13 target-processing-context	Extended	no	
7.23.14 target-stylesheet	Extended	no	

## 7.24 Properties for Indexing

Name	Conformance level	Current condition	Comments
7.24.1 index-class	Extended	yes	
7.24.2 index-key	Extended	yes	
7.24.3 page-number-treatment	Extended	yes	
7.24.4 merge-ranges-across-index-key-references	Extended	yes	
7.24.5 merge-sequential-page-numbers	Extended	yes	
7.24.6 merge-pages-across-index-key-references	Extended	yes	
7.24.7 ref-index-key	Extended	yes	

## 7.25 Properties for Markers

Name	Conformance level	Current condition	Comments
7.25.1 marker-class-name	Extended	yes	
7.25.2 retrieve-boundary-within-table	Extended	yes	
7.25.3 retrieve-class-name	Extended	yes	
7.25.4 retrieve-position	Extended	yes	
7.25.5 retrieve-boundary	Extended	yes	
7.25.6 retrieve-position-within-table	Extended	yes	

## 7.26 Properties for Number to String Conversion

Name	Conformance level	Current condition	Comments
7.26.1 format	Basic	yes	This property is extended. <a href="#">format</a>
7.26.2 grouping-separator	Extended	yes	
7.26.3 grouping-size	Extended	yes	
7.26.4 letter-value	Basic	partial	Limitation: Always uses auto value.

## 7.27 Pagination and Layout Properties

Name	Conformance level	Current condition	Comments
7.27.1 blank-or-not-blank	Extended	yes	
7.27.2 column-count	Extended	yes	This property is extended to apply fo:block-container. <a href="#">axf:column-count</a>

Name	Conformance level	Current condition	Comments
7.27.3 column-gap	Extended	yes	This property is extended to apply fo:block-container. <a href="#">axf:column-gap</a>
7.27.4 extent	Extended	yes	
7.27.5 flow-name	Basic	yes	
7.27.6 force-page-count	Extended	yes	This property is extended. <a href="#">force-page-count</a> When fo:flow is assigned to the region of the page master of the page added by force-page-count, a page doesn't break within the fo:flow and treated like fo:static-content.
7.27.7 initial-page-number	Basic	yes	
7.27.8 master-name	Basic	yes	
7.27.9 master-reference	Basic	yes	
7.27.10 maximum-repeats	Extended	yes	
7.27.11 media-usage	Extended	no	
7.27.12 odd-or-even	Extended	yes	
7.27.13 page-height	Basic	yes	Limitation: indefinite is not supported.
7.27.14 page-position	Extended	yes	
7.27.15 page-width	Basic	yes	Limitation: indefinite is not supported.
7.27.16 precedence	Extended	yes	
7.27.17 region-name	Basic	yes	
7.27.18 flow-map-name	Extended	yes	
7.27.19 flow-map-reference	Extended	yes	
7.27.20 flow-name-reference	Extended	yes	
7.27.21 region-name-reference	Extended	yes	

## 7.28 Table Properties

Name	Conformance level	Current condition	Comments
7.28.1 border-after-precedence	Basic	yes	
7.28.2 border-before-precedence	Basic	yes	
7.28.3 border-collapse	Extended	yes	
7.28.4 border-end-precedence	Basic	yes	
7.28.5 border-separation	Extended	yes	
7.28.6 border-start-precedence	Basic	yes	
7.28.7 caption-side	Complete	yes	caption-side="start" becomes "before", "end" becomes "after".
7.28.8 column-number	Basic	yes	
7.28.9 column-width	Basic	yes	
7.28.10 empty-cells	Extended	no	
7.28.11 ends-row	Extended	yes	
7.28.12 number-columns-repeated	Basic	yes	
7.28.13 number-columns-spanned	Basic	yes	
7.28.14 number-rows-spanned	Basic	yes	
7.28.15 starts-row	Extended	yes	
7.28.16 table-layout	Extended	yes	

Name	Conformance level	Current condition	Comments
7.28.17 table-omit-footer-at-break	Extended	yes	This property is extended. <a href="#">☞ table-omit-footer-at-break</a>
7.28.18 table-omit-header-at-break	Extended	yes	This property is extended. <a href="#">☞ table-omit-header-at-break</a>

### 7.29 Writing-mode-related Properties

Name	Conformance level	Current condition	Comments
7.29.1 direction	Basic	yes	
7.29.2 glyph-orientation-horizontal	Extended	yes	
7.29.3 glyph-orientation-vertical	Extended	yes	
7.29.4 text-altitude	Extended	yes	It's invalid if <code>baseline-mode="4"</code> is specified in the Option Setting File.
7.29.5 text-depth	Extended	yes	It's invalid if <code>baseline-mode="4"</code> is specified in the Option Setting File.
7.29.6 unicode-bidi	Extended	yes	
7.29.7 writing-mode	Basic	partial	Supports only lr-tb, rl-tb, tb-rl, lr, rl and rb.

### 7.30 Miscellaneous Properties

Name	Conformance level	Current condition	Comments
7.30.1 change-bar-class	Extended	yes	Antenna House has already been supporting it by the extensions specification. <a href="#">☞ Revision Bar</a>
7.30.2 change-bar-color	Extended	yes	
7.30.3 change-bar-offset	Extended	yes	
7.30.4 change-bar-placement	Extended	yes	
7.30.5 change-bar-style	Extended	yes	
7.30.6 change-bar-width	Extended	yes	
7.30.7 content-type	Extended	yes	
7.30.8 id	Basic	yes	<a href="#">☞ xml:id</a>
7.30.9 intrinsic-scale-value	Extended	yes	
7.30.10 page-citation-strategy	Extended	yes	
7.30.11 provisional-label-separation	Basic	yes	
7.30.12 provisional-distance-between-starts	Basic	yes	
7.30.13 ref-id	Extended	yes	
7.30.14 scale-option	Extended	yes	
7.30.15 score-spaces	Extended	yes	
7.30.16 src	Basic	yes	
7.30.17 visibility	Extended	yes	
7.30.18 z-index	Extended	yes	

### 7.31 Shorthand Properties

Name	Conformance level	Current condition	Comments
7.31.1 background	Complete	yes	
7.31.2 background-position	Complete	yes	
7.31.3 border	Complete	yes	

Name	Conformance level	Current condition	Comments
7.31.4 border-bottom	Complete	yes	
7.31.5 border-color	Complete	yes	
7.31.6 border-left	Complete	yes	
7.31.7 border-right	Complete	yes	
7.31.8 border-style	Complete	yes	Extended the dot-dash, dot-dot-dash, and wave properties defined in CSS3. <a href="#">border-style</a>
7.31.9 border-spacing	Complete	yes	
7.31.10 border-top	Complete	yes	
7.31.11 border-width	Complete	yes	
7.31.12 cue	Complete	-	
7.31.13 font	Complete	yes	
7.31.14 margin	Complete	yes	
7.31.15 padding	Complete	yes	
7.31.16 page-break-after	Complete	yes	
7.31.17 page-break-before	Complete	yes	
7.31.18 page-break-inside	Complete	yes	
7.31.19 pause	Complete	-	
7.31.20 position	Complete	yes	
7.31.21 size	Complete	yes	
7.31.22 vertical-align	Complete	yes	
7.31.23 white-space	Complete	yes	
7.31.24 xml:lang	Complete	yes	



## XSL Extensions

**AH Formatter V6.0** provides you with numerous XSL proprietary extension elements and properties. When you use the extension elements or properties, please be sure to specify the namespace URL <http://www.antennahouse.com/names/XSL/Extensions>.

```
<fo:root xmlns:fo="http://www.w3.org/1999/XSL/Format"
         xmlns:axf="http://www.antennahouse.com/names/XSL/Extensions">
```

- Extended Elements
- Extended Properties
- Extended Functions
- Extended Values
- Other Extensions

### Extended Elements

Element name	Description
<code>&lt;axf:document-info&gt;</code>	Specifies the document information. This information is embedded into the PDF.
<code>&lt;axf:footnote-number&gt;</code>	Generates a footnote number. <code>{no-LT}</code>
<code>&lt;axf:footnote-number-citation&gt;</code>	Cites a footnote number. <code>{no-LT}</code>
<code>&lt;axf:font-face&gt;</code>	Appends a font. <code>{no-LT}</code>
<code>&lt;axf:form&gt;</code>	Encloses the unit of the form action. <code>{no-LT}</code>
<code>&lt;axf:form-field&gt;</code>	Generates a form field. <code>{no-LT}</code>
<code>&lt;axf:form-field-option&gt;</code>	Specifies the component elements of the list box, combo box. <code>{no-LT}</code>
<code>&lt;axf:formatter-config&gt;</code>	Specifies additional option setting information. <code>{no-LT}</code>
<code>&lt;axf:hyphenation-info&gt;</code>	Specifies additional hyphenation information. <code>{no-LT}</code>
<code>&lt;axf:output-volume-info&gt;</code>	Outputs PDF in Multi Separate Volume. <code>{no-LT}</code>
<code>&lt;axf:ruby&gt;</code>	Generates the ruby structure. <code>{V6.0}</code>
<code>&lt;axf:ruby-base&gt;</code>	Specifies the base character of ruby. <code>{V6.0}</code>
<code>&lt;axf:ruby-text&gt;</code>	Specifies ruby. <code>{V6.0}</code>
<code>&lt;axf:space-after-punctuation&gt;</code>	Specifies the amount of space after the punctuation in European Typography.
<code>&lt;axf:space-before-punctuation&gt;</code>	Specifies the amount of space before the punctuation in European Typography.
<code>&lt;axf:space-between-digit-and-punctuation&gt;</code>	Specifies the amount of space between the digit and the punctuation in European Typography.
<code>&lt;axf:space-between-punctuation-and-digit&gt;</code>	Specifies the amount of space between the punctuation and digit in European Typography.
<code>&lt;fo:change-bar-begin&gt;</code>	Extends the child element so that <code>&lt;fo:float&gt;</code> can be described as the content of the element. <code>{V6.0}</code> <code>{no-LT}</code>

### Extended Properties

Property name	Description
<code>axf:abbreviation-character-count</code>	Specifies the minimum number of characters considered to be an abbreviation.
<code>axf:action-type</code>	Specifies the action of external link or form action.
<code>axf:alt-glyph</code>	Specifies the alternate glyph.
<code>axf:alttext</code>	Specifies the alternate text of the image.
<code>axf:annotation-color</code>	Specifies the color used for the background of the annotation. <code>{no-LT}</code>
<code>axf:annotation-contents</code>	Specifies the content of the annotation. <code>{no-LT}</code>



Property name	Description
<a href="#">axf:annotation-file-attachment</a>	Specifies the file with which file attachment annotation is related. <small>[no-LT]</small>
<a href="#">axf:annotation-flags</a>	Specifies the flag of the annotation. <small>[no-LT]</small>
<a href="#">axf:annotation-font-family</a>	Specifies the font family of the free text annotation. <small>[no-LT]</small>
<a href="#">axf:annotation-font-size</a>	Specifies the font size of the free text annotation. <small>[no-LT]</small>
<a href="#">axf:annotation-font-style</a>	Specifies whether to make the font of the free text annotation italic. <small>[no-LT]</small>
<a href="#">axf:annotation-font-weight</a>	Specifies the font weight of the free text annotation. <small>[no-LT]</small>
<a href="#">axf:annotation-height</a>	Specifies the height of the annotation. <small>[no-LT]</small>
<a href="#">axf:annotation-icon-name</a>	Specifies the name of the icon used for displaying the annotation. <small>[no-LT]</small>
<a href="#">axf:annotation-open</a>	Specifies the initial state of the annotation. <small>[no-LT]</small>
<a href="#">axf:annotation-position-horizontal</a>	Specifies the horizontal position of the annotation. <small>[no-LT]</small>
<a href="#">axf:annotation-position-vertical</a>	Specifies the vertical position of the annotation. <small>[no-LT]</small>
<a href="#">axf:annotation-text-align</a>	Specifies the alignment of the free text annotation. <small>[no-LT]</small>
<a href="#">axf:annotation-text-color</a>	Specifies the color of the free text annotation. <small>[no-LT]</small>
<a href="#">axf:annotation-title</a>	Specifies the title of the annotation. <small>[no-LT]</small>
<a href="#">axf:annotation-type</a>	Specifies the type of the annotation. <small>[no-LT]</small>
<a href="#">axf:annotation-width</a>	Specifies the width of the annotation. <small>[no-LT]</small>
<a href="#">axf:append-non-end-of-line-characters</a>	Specifies to append the non-end-of-line-characters.
<a href="#">axf:append-non-starter-characters</a>	Specifies to append the non-starter characters.
<a href="#">axf:assumed-page-number</a>	Specifies the assumed page number.
<a href="#">axf:auto-letter-spacing</a>	Changes the letter-spacing depending on the number of characters. <small>[V6.0] [no-LT]</small>
<a href="#">axf:avoid-widow-words</a>	Specifies the spacing behavior so that the last line of the paragraph does not have only one word left.
<a href="#">axf:background-content-height</a>	Specifies the content height of a background image.
<a href="#">axf:background-content-type</a>	Specifies the content type of a background image.
<a href="#">axf:background-content-width</a>	Specifies the content width of a background image.
<a href="#">axf:background-color</a>	Specifies the background color of a page.
<a href="#">axf:background-image</a>	Specifies the background image of a page.
<a href="#">axf:background-image-resolution</a>	Specifies the resolution of a background image.
<a href="#">axf:background-position-horizontal</a>	Specifies the the horizontal position of a background image of the page.
<a href="#">axf:background-position-vertical</a>	Specifies the vertical position of the background image of the page.
<a href="#">axf:background-repeat</a>	Specifies whether the background image of the page is repeated, and how.
<a href="#">axf:background-scaling</a>	Specifies the scaling ratio of a background image.
<a href="#">axf:base-uri</a>	Specifies the location which becomes the base of relative URI.
<a href="#">axf:bleed</a>	Specifies the width of the bleed region for cutting off. <small>[no-LT]</small>
<a href="#">axf:bleed-bottom</a>	Specifies the width of the bleed region on the bottom for cutting off. <small>[no-LT]</small>
<a href="#">axf:bleed-left</a>	Specifies the width of the bleed region on the left for cutting off. <small>[no-LT]</small>
<a href="#">axf:bleed-right</a>	Specifies the width of the bleed region on the right for cutting off. <small>[no-LT]</small>
<a href="#">axf:bleed-top</a>	Specifies the width of the bleed region on the top for cutting off. <small>[no-LT]</small>
<a href="#">axf:bookmark-include</a>	Specifies how to include bookmarks of PDF in Multi Separate Volume. <small>[no-LT]</small>
<a href="#">axf:border-bottom-left-radius</a>	Specifies the bottom left border of the radius.
<a href="#">axf:border-bottom-right-radius</a>	Specifies the bottom right border of the radius.
<a href="#">axf:border-radius</a>	Specifies the border of the radius.

Property name	Description
axf:border-top-left-radius	Specifies the top left border of the radius.
axf:border-top-right-radius	Specifies the top right border of the radius.
axf:box-shadow	Specifies the box shadow.
axf:column-count	Specifies the column count of the block.
axf:column-fill	Specifies whether to balance the column height.
axf:column-gap	Specifies the column gap of the block.
axf:column-number-format	Specifies the format of column number.
axf:column-rule-align	Specifies the alignment of the column rule.
axf:column-rule-color	Specifies the color of the column rule.
axf:column-rule-display	Specifies whether to also display a rule at the place which does not have columns at the end of a page, etc.
axf:column-rule-length	Specifies the length of the column rule.
axf:column-rule-style	Specifies the style of the column rule.
axf:column-rule-width	Specifies the width of the column rule.
axf:crop-area-visibility	Specifies whether to display the area that is extended beyond the finished page size. <code>{no-LT}</code>
axf:crop-offset	Specifies the distance from the physical end to the trim size of the output medium. <code>{no-LT}</code>
axf:crop-offset-bottom	Specifies the distance from the physical bottom edge to the trim size of the output medium. <code>{no-LT}</code>
axf:crop-offset-left	Specifies the distance from the physical left edge to the trim size of the output medium. <code>{no-LT}</code>
axf:crop-offset-right	Specifies the distance from the physical right edge to the trim size of the output medium. <code>{no-LT}</code>
axf:crop-offset-top	Specifies the distance from the physical top edge to the trim size of the output medium. <code>{no-LT}</code>
axf:destination-type	Specifies the type of destination for external links. <code>{no-LT}</code>
axf:diagonal-border-color	Specifies the color of the diagonal border.
axf:diagonal-border-style	Specifies the style of the diagonal border.
axf:diagonal-border-width	Specifies the width of the diagonal border.
axf:except-non-end-of-line-characters	Specifies to except the non-end-of-line-characters.
axf:except-non-starter-characters	Specifies to except the non-starter characters.
axf:field-apply-signature	Specifies whether to apply signature in the signature field. <code>{no-LT}</code>
axf:field-button-face	Specifies the caption displayed in the push button field. <code>{no-LT}</code>
axf:field-button-face-down	Specifies the caption displayed when pressing the push button. <code>{no-LT}</code>
axf:field-button-face-rollover	Specifies the caption displayed when rolling over the push button. <code>{no-LT}</code>
axf:field-button-icon	Specifies the icon displayed in the push button field. <code>{no-LT}</code>
axf:field-button-icon-down	Specifies the icon displayed when pressing the push button. <code>{no-LT}</code>
axf:field-button-icon-rollover	Specifies the icon displayed when rolling over the push button. <code>{no-LT}</code>
axf:field-button-layout	Specifies the positioning between the caption and icon displayed in the push button field. <code>{no-LT}</code>
axf:field-checked	Specifies the initial state of the check box and the radio button. <code>{no-LT}</code>
axf:field-checked-style	Specifies the style of the check box and the radio button. <code>{no-LT}</code>
axf:field-default-text	Specifies the text entered into the text field from the beginning. <code>{no-LT}</code>
axf:field-description	Specifies the descriptive text of the filed. <code>{no-LT}</code>

Property name	Description
axf:field-editable	Specifies whether the value can be edited with the combo box. [no-LT]
axf:field-maxlen	Specifies the maximum number of the characters which can be entered into the text field. [no-LT]
axf:field-multiline	Specifies whether the text field is a single-line enterable field or a multi-line enterable field. [no-LT]
axf:field-multiple	Specifies whether multiple items can be chosen in the list box. [no-LT]
axf:field-name	Specifies the field name. [no-LT]
axf:field-password	Specifies whether the text field requires the password or not. [no-LT]
axf:field-readonly	Specifies whether the field is read-only or not. [no-LT]
axf:field-required	Specifies whether the field is enter-required or not. [no-LT]
axf:field-scroll	Specifies whether the text field is scrollable or not. [no-LT]
axf:field-submit-coordinates	Specifies whether to send out the coordinates of the mouse when submitting a form field. [no-LT]
axf:field-submit-method	Specifies the way to send the information when submitting a form field. [no-LT]
axf:field-top-index	Specifies the first selected item in the list box, combo box. [no-LT]
axf:field-type	Specifies the field type. [no-LT]
axf:field-value	Specifies the value used when submitting a form field, etc. [no-LT]
axf:float	Shorthand property for setting float related extension properties. [V6.0]
axf:footnote-align	Specifies the alignment of the footnote.
axf:footnote-keep	Specifies whether to arrange a footnote and an anchor in the same page.
axf:footnote-number-format	Specifies the format of footnote number. [no-LT]
axf:footnote-number-initial	Specifies the initial footnote number. [no-LT]
axf:footnote-number-reset	Resets the footnote numbering. [no-LT]
axf:footnote-position	Specifies whether to layout the footnotes in each column or not.
axf:footnote-stacking	Specifies the method to layout the footnote.
axf:hanging-punctuation	Specifies whether to wrap punctuation characters or not.
axf:hyphenate-hyphenated-word	Specifies whether to hyphenate the already hyphenated word or not.
axf:hyphenation-minimum-character-count	Specifies the minimum number of the character to hyphenate.
axf:hyphenation-zone	Limits the range where a hyphenation is available.
axf:image-resolution	Specifies the resolution of a image.
axf:indent-here	Aligns the indent position to the resion position when a line break occurs. [V6.0]
axf:initial-volume-number	Specifies the initial volume number of PDF in Multi Separate Volume. [no-LT]
axf:justify-nbsp	Specifies whether to include NON-BREAKING SPACE for justification or not.
axf:kansuji-grouping-letter	Specifies the grouping character used for Japanese numerals. [no-LT]
axf:kansuji-letter	Specifies the character used for Japanese numerals. [no-LT]
axf:kansuji-style	Specifies the style used for Japanese numerals. [no-LT]
axf:kerning-mode	Specifies whether to process the kerning.
axf:leader-expansion	Specifies whether to expand leaders forcibly. [no-LT]
axf:letter-spacing-side	Specifies on which side of the character the space by letter-spacing is distributed. [V6.0]
axf:ligature-mode	Specifies whether to process the ligature.
axf:line-break	Specifies the method of line breaking.
axf:line-continued-mark	Specifies whether to show line continued marks. [no-LT]

Property name	Description
axf:line-continued-mark-background-color	Specifies the background color of line continued marks. <small>[no-LT]</small>
axf:line-continued-mark-color	Specifies the color of line continued marks. <small>[no-LT]</small>
axf:line-continued-mark-font-family	Specifies the font family of line continued marks. <small>[no-LT]</small>
axf:line-continued-mark-font-size	Specifies the font size of line continued marks. <small>[no-LT]</small>
axf:line-continued-mark-font-style	Specifies whether to make the font style italic. <small>[no-LT]</small>
axf:line-continued-mark-font-weight	Specifies the font weight of line continued marks. <small>[no-LT]</small>
axf:line-continued-mark-offset	Specifies the offset of line continued marks. <small>[no-LT]</small>
axf:line-number	Specifies whether to show line numbers. <small>[no-LT]</small>
axf:line-number-background-color	Specifies the background color of line numbers. <small>[no-LT]</small>
axf:line-number-color	Specifies the color of line numbers. <small>[no-LT]</small>
axf:line-number-display-align	Specifies the alignment of line numbers in the block-progression-direction. <small>[no-LT]</small>
axf:line-number-font-family	Specifies the font family of line numbers. <small>[no-LT]</small>
axf:line-number-font-size	Specifies the font size of line numbers. <small>[no-LT]</small>
axf:line-number-font-style	Specifies whether to make the font style italic. <small>[no-LT]</small>
axf:line-number-font-weight	Specifies the font weight of line numbers. <small>[no-LT]</small>
axf:line-number-format	Specifies the format of line numbers. <small>[no-LT]</small>
axf:line-number-initial	Specifies the line number of the first line. <small>[no-LT]</small>
axf:line-number-interval	Specifies the spacing between line numbers. <small>[no-LT]</small>
axf:line-number-offset	Specifies the offset of line numbers. <small>[no-LT]</small>
axf:line-number-orientation	Rotates line numbers. <small>[no-LT]</small>
axf:line-number-position	Specifies the position of line numbers. <small>[no-LT]</small>
axf:line-number-prefix	Sets the prefix of line number. <small>[no-LT]</small>
axf:line-number-reset	Reset line numbering. <small>[no-LT]</small>
axf:line-number-start	Specifies the starting line numbers. <small>[no-LT]</small>
axf:line-number-text-align	Specifies the alignment of line numbers in the line area. <small>[no-LT]</small>
axf:line-number-text-decoration	Specifies the text decoration of line numbers. <small>[no-LT]</small>
axf:line-number-width	Specifies the width of line numbers. <small>[no-LT]</small>
axf:number-transform	Converts the number sequence in the character string. <small>[no-LT]</small>
axf:number-type	Specifies whether to output the page number or to output the column number.
axf:origin-id	Specifies the origin of the page number.
axf:outline-color	Specifies the color of the title for the PDF bookmark. <small>[no-LT]</small>
axf:outline-expand	Specifies whether to display the lower hierarchy or not.
axf:outline-external-destination	Sets the external link in the PDF bookmark. <small>[no-LT]</small>
axf:outline-font-style	Specifies the font style of the title for the PDF bookmark. <small>[no-LT]</small>
axf:outline-font-weight	Specifies the font weight of the title for the PDF bookmark. <small>[no-LT]</small>
axf:outline-group	Groups bookmark items of PDF, and outputs them collectively.
axf:outline-internal-destination	Sets the internal link in the PDF bookmark. <small>[no-LT]</small>
axf:outline-level	This indicates the hierarchy level of bookmark items.
axf:outline-title	A string which appears as a title for bookmarks.
axf:output-volume-break	Separates the PDF in multi volume. <small>[no-LT]</small>
axf:output-volume-filename	Specifies the document file name in multi volume. <small>[no-LT]</small>
axf:overflow-align	Specifies the alignment of the overflowed block.

Property name	Description
axf:overflow-condense	Specifies how to condense the overflowed text within the region.
axf:overflow-condense-limit-font-size	Specifies the minimum font size when axf:overflow-condense="font-size" is specified.
axf:overflow-condense-limit-font-stretch	Specifies the minimum font size when axf:overflow-condense="font-stretch" is specified.
axf:overflow-replace	Specifies the alternative character string of the overflow text.
axf:page-number-prefix	Sets the prefix of page number.
axf:pdftag	Specifies the tag name of Tagged PDF files. <small>[no-LT]</small>
axf:physical-page-number	Gets the physical page number.
axf:printer-bin-selection	Selects the printer tray. <small>[no-LT]</small>
axf:printer-duplex	Specifies to print in duplex mode. <small>[no-LT]</small>
axf:printer-marks	Specifies the printer marks, such as a crop mark. <small>[no-LT]</small>
axf:printer-marks-line-color	Specifies the line color of the printer marks. <small>[no-LT]</small>
axf:printer-marks-line-length	Specifies the line length of the printer marks. <small>[no-LT]</small>
axf:printer-marks-line-width	Specifies the line width of the printer marks. <small>[no-LT]</small>
axf:printer-marks-zero-margin	Specifies the margin between the page and the printer marks when bleed is 0. <small>[no-LT]</small>
axf:punctuation-spacing	Specifies the width of adjacent full width punctuations.
axf:punctuation-trim	Specifies whether to treat full width punctuations.
axf:repeat-cell-content-at-break	Specifies whether to copy the contents of a cell when a cell breaks.
axf:repeat-footnote-in-table-footer	Specifies whether to repeat the fo:footnote in the fo:table-footer that is repeated by fo:table-omit-footer-at-break="false".
axf:repeat-footnote-in-table-header	Specifies whether to repeat the fo:footnote in the fo:table-header that is repeated by fo:table-omit-header-at-break="false".
axf:repeat-page-sequence-master	Specifies the repetition of the page sequence. <small>[no-LT]</small>
axf:reverse-diagonal-border-color	Specifies the color of the reverse diagonal border.
axf:reverse-diagonal-border-style	Specifies the style of the reverse diagonal border.
axf:reverse-diagonal-border-width	Specifies the width of the reverse diagonal border.
axf:reverse-page	Outputs pages in reverse order. <small>[no-LT]</small>
axf:revision-bar-color	Specifies the color of Revision Bar.
axf:revision-bar-offset	Specifies the offset of Revision Bar.
axf:revision-bar-position	Specifies the position of Revision Bar.
axf:revision-bar-style	Specifies the style of Revision Bar.
axf:revision-bar-width	Specifies the width of Revision Bar.
axf:ruby-align	Specifies the alignment of ruby. <small>[V6.0]</small>
axf:ruby-color	Specifies the color of ruby. <small>[V6.0]</small>
axf:ruby-condense	Specifies the font condense when ruby is longer than its base. <small>[V6.0]</small>
axf:ruby-font-family	Specifies the font family of ruby. <small>[V6.0]</small>
axf:ruby-font-size	Specifies the font size of ruby. <small>[V6.0]</small>
axf:ruby-font-stretch	Specifies the font stretching of ruby. <small>[V6.0]</small>
axf:ruby-font-style	Specifies whether ruby is made Italic. <small>[V6.0]</small>
axf:ruby-font-weight	Specifies the font weight of ruby. <small>[V6.0]</small>
axf:ruby-limit-overhang	Specifies the limit of the amount that ruby overhangs the adjacent base character when ruby is longer than its own base character. <small>[V6.0]</small>

Property name	Description
axf:ruby-limit-space	Specifies the limit of the amount of the space before and after the ruby when ruby is shorter than its base characters. [V6.0]
axf:ruby-minimum-font-size	Specifies the minimum font size of ruby. [V6.0]
axf:ruby-offset	Specifies the spacing between ruby and its base character. [V6.0]
axf:ruby-overhang	Specifies how ruby overhangs the adjacent base character. [V6.0]
axf:ruby-position	Specifies on which side of base characters ruby overhangs. [V6.0]
axf:ruby-small-kana	Specifies whether to allow using small kana for ruby. [V6.0]
axf:soft-hyphen-treatment	Specifies to output SOFT HYPHEN.
axf:suppress-duplicate-footnote	Specifies to delete the duplicated footnotes.
axf:suppress-duplicate-page-number	Specifies to delete the duplicated page numbers.
axf:suppress-folio-prefix	Invalidates the prefix of page numbers.
axf:suppress-folio-suffix	Invalidates the suffix of page numbers.
axf:suppress-if-first-on-page	Specifies whether to suppress the block at the beginning of a page. [no-LT]
axf:text-align-first	Specifies the text alignment of the first line.
axf:text-align-string	Specifies the text alignment when text-align="<string>".
axf:text-autospace	Specifies whether to add space surrounding ideographic glyphs or not.
axf:text-autospace-width	Specifies the width for axf:text-autospace.
axf:text-emphasis-color	Specifies the color of emphasis marks. [V6.0]
axf:text-emphasis-font-family	Specifies the font family of emphasis marks. [V6.0]
axf:text-emphasis-font-size	Specifies the font size of emphasis marks. [V6.0]
axf:text-emphasis-font-stretch	Specifies the font stretching of emphasis marks. [V6.0]
axf:text-emphasis-font-style	Specifies whether emphasis marks are made Italic. [V6.0]
axf:text-emphasis-font-weight	Specifies the font weight of emphasis marks. [V6.0]
axf:text-emphasis-offset	Specifies the space between emphasis marks and the base characters. [V6.0]
axf:text-emphasis-position	Specifies on which side of base characters emphasis marks are applied. [V6.0]
axf:text-emphasis-skip	Specifies the character to which emphasis marks are not applied. [V6.0]
axf:text-emphasis-style	Specifies the style of emphasis marks [V6.0]
axf:text-justify-trim	Specifies the way to trim.
axf:text-kashida-space	Specifies the percentage of Kashida in Arabic.
axf:text-line-color	Specifies the color of underline, strikethrough, and overline.
axf:text-line-style	Specifies the style of underline, strikethrough, and overline.
axf:text-line-width	Specifies the width of underline, strikethrough, and overline.
axf:text-replace	Replaces the character strings.
axf:text-underline-position	Specifies the position of underline.
axf:vertical-underline-side	Specifies the side for underline in vertical writing-mode.
axf:word-break	Specifies whether to enable line breaking between word.
axf:word-wrap	Specifies whether to brake lines forcibly.

## Extended Functions

Function name	Description
rgb-icc	Extends the rgb-icc function.



## Extended Values

Property name	Description
border-style border-*-style	<p>Extended the dot-dash, dot-dot-dash, and wave properties defined in CSS3. These styles are preferred in the following order:</p> <ol style="list-style-type: none"> <li>1. double</li> <li>2. solid</li> <li>3. dashed</li> <li>4. dot-dash</li> <li>5. dot-dot-dash</li> <li>6. dotted</li> <li>7. ridge</li> <li>8. outset</li> <li>9. groove</li> <li>10. inset</li> <li>11. wave</li> </ol> <p>This order is not described in CSS3.</p>
display-align	Extends the value of the display-align property.
font-size-adjust	Extends the value of the font-size-adjust property.
font-stretch	Extends the value of the font-stretch property.
font-variant	Extends the value of the font-variant property. <span style="border: 1px dashed black; padding: 0 2px;">V6.0</span>
force-page-count	Extends the value of the force-page-count property.
format	Extends the value of the format property.
internal-destination	Extends the value of the internal-destination property. <span style="border: 1px dashed black; padding: 0 2px;">no-LT</span>
overflow	Extends the value of the overflow property.
size	Extends the value of the size property.
table-omit-footer-at-break	Extends the value of the table-omit-footer-at-break property. <span style="border: 1px dashed black; padding: 0 2px;">no-LT</span>
table-omit-header-at-break	Extends the value of the table-omit-header-at-break property. <span style="border: 1px dashed black; padding: 0 2px;">no-LT</span>
text-transform	Extends the value of the text-transform property. <span style="border: 1px dashed black; padding: 0 2px;">no-LT</span>

## Other Extensions

1. In the XSL Specification, the width of the padding or the border specified to fo:region-body or fo:region-before, etc. should be zero. **AH Formatter V6.0** can accept and process values other than zero. The following is sample code.

```
<fo:region-body padding="1.5cm" border-color="red" border-style="solid" border-width="2pt" />
```

2. In the XSL Specification, the value of the <script> specified in the script property is supposed to be regulated in [ISO 15924](#). **AH Formatter V6.0** assigns a script called Math to mathematical operators, such as U+2200 to U+22FF for the accommodation of MathML.
3. Besides the units defined by the XSL specification, the following units can be used.
  - **jpt**  
Unit of the absolute value defined by JIS Z 8305. 1jpt = 0.3514mm.
  - **q**  
Unit of the absolute value expressing Q (quarter). 1q = 0.25mm. (JIS X 4052, JIS Z 8125)
  - **dpi**  
Used when expressing the resolution with [axf:image-resolution](#) .
  - **dd**  
Unit of the absolute value expressing didot. 1dd = 0.01483in.
  - **cc**  
Unit of the absolute value expressing cicero. 1cc = 12dd.
  - **rem**

Unit of em in the root element. It cannot be used for the value of the font-size property in the root element.

- **vw**  
Unit of the width expressing the viewport width as 100.
- **vh**  
Unit of the height expressing the viewport height as 100.
- **ch**  
Unit of the length expressing the width of character 0(U+0030) to be 1. When the glyph is not in the font, it becomes 0.5em.
- **wch**  
Unit of the length expressing the width of character U+3000 to be 1. When the glyph is not in the font, it becomes 1em.
- **lh** V6.0  
Unit of the length expressing the line-height to be 1. Even if line-height="2" is specified, for example, lh is converted into the absolute value. It cannot be used for the value of the line-height property.
- **rlh** V6.0  
Unit of lh in the root element. It cannot be used for the value of the line-height property in the root element.
- **gr** V6.0  
Unit to specify spanning columns.

4. Although only xml:lang of the XML specification is explicitly stated in the XSL specification, **AH Formatter V6.0** accepts the following XML input. The same is applied to XHTML and XML+CSS.
- [xml:lang](#)
  - [xml:base](#)  
Functions the same as [axf:base-uri](#).
  - [xml:id](#)  
Functions the same as [7.30.8 id](#).
  - [xlink:href](#)  
Treats the href attribute of the [XLink](#) namespace as a link.

## Document Information for PDF Output

---

This section describes how to embed document information into PDF file.

### <axf:document-info>

---

Document information such as an author and title can be embedded in the PDF. **AH Formatter V6.0** generates document information automatically by adding the following extended elements. The information that was embedded into PDF can be seen by Adobe Acrobat or Reader.

Common Usage:

Specifies the document information. The information is not included in the generated areas. For example, this information is embedded into PDF.

Areas:

None.

Constraints:

```
<!ELEMENT axf:document-info EMPTY>
<!ATTLIST axf:document-info name CDATA #REQUIRED>
<!ATTLIST axf:document-info value CDATA #REQUIRED>
```

The axf:document-info extension property can be placed in any position right under the fo:root and before fo:page-sequence. Its properties are "name" and "value", which are required. The value of 'name' must be one of the followings:

- "title"  
Specifies the title of the document.
- "subject"  
Specifies the subtitle of the document.
- "author"  
Specifies the author of the document.
- "keywords"  
Enumerates the comma-delimited keyword.
- "pagemode"



Specifies the method of the display when the document is opened. The following one can be specified.

- UseNone  
Neither document outline nor thumbnail images visible
- UseOutlines  
Document outline visible
- UseThumbs  
Thumbnail images visible
- FullScreen  
Full-screen mode, with no menu bar, window controls, or any other window visible
- UseOC  
Optional content group panel visible

UseOC can be specified for PDF1.5 or later. The default is UseOutlines when the outline exists.

- "pagelayout"

Specifies the page layout when a document is opened. You can specify either of the followings.

- SinglePage  
Display one page at a time
- OneColumn  
Display the pages in one column
- TwoColumnLeft  
Display the pages in two columns, with odd-numbered pages on the left
- TwoColumnRight  
Display the pages in two columns, with odd-numbered pages on the right
- TwoPageLeft  
Display the pages two at a time, with odd-numbered pages on the left
- TwoPageRight  
Display the pages two at a time, with odd-numbered pages on the right

TwoPageLeft and TwoPageRight can be specified for PDF1.5 or later. The default value is SinglePage.

- "hidetoolbar"

Specifies whether to hide a tool bar or not when a document is opened with the value of true or false. The default value is false.

- "hidemenubar"

Specifies whether to hide a menu bar or not when a document is opened with the value of true or false. The default value is false.

- "hidewindowui"

Specifies whether to hide user interface elements (a scroll bar, the control for navigation, etc.) or not when a document is opened with the value of true or false. The default value is false.

- "fitwindow"

Specifies whether to change the size of a document window to fit the page size or not when a document is opened with the value of true or false. The default value is false.

- "centerwindow"

Specifies whether to arrange a document window in the center of a screen or not when a document is opened with the value of true or false. The default value is false.

- "displaydoctitle"

Specifies whether to display the title of a document or not when a document is opened with the value of true or false. The default value is false. Effective with PDF 1.4 or later.

- "openaction"

Specifies the address displayed when the document is opened or the action executed. The value similar to <number-with-fragment> of [internal-destination](#) can be described here. Refer to [Making Link](#) too.

Action with a name and JavaScript can also be specified at this time.

- value="#Named=Print"  
The print dialog will be displayed when the document is opened.
- value="#Named=LastPage"  
The last page is displayed when the document is opened.
- value="#JavaScript=arbitrary JavaScript program"  
Executes the specified JavaScript.

# Named coming right after or JavaScript are case insensitive. Actions which can be specified to Named correspond to the menu name of a viewer. The operation in the case where an unknown name is specified to Named, or in the case where the wrong program is specified to JavaScript are not guaranteed.

JavaScript cannot be specified with [PDF/A](#)

Contents:

EMPTY

Examples:

```
<fo:root xmlns:fo="http://www.w3.org/1999/XSL/Format"
  xmlns:axf="http://www.antennahouse.com/names/XSL/Extensions">
  <axf:document-info name="title" value="The document title"/>
  <axf:document-info name="subject" value="The document subject"/>
  <axf:document-info name="author" value="The author"/>
  <axf:document-info name="keywords" value="Comma separated keywords list"/>
  ...
```

axf:document-info as a child of fo:page-sequence is effective only for PDF output in multi separate volume. axf:document-info as a child of fo:page-sequence overwrites axf:document-info as a child of fo:root and is utilized for an information of the document when outputting in separate volume. Therefore the same document information is embedded in all the separate volumes unless axf:document-info is specified to fo:page-sequence.

"openaction" and "pagemode" cannot be specified for the multi separate volume. Only the specification of the right under of fo:root is effective. When the separate volume is output, it is specified for the first separate volume.

With **AH Formatter V6.0 Lite**, axf:document-info specified to fo:page-sequence is ignored.

### axf:pdftag

Specifies the tag name of Tagged PDF files. `no-LT`

*Value:* <string>  
*Initial:* empty string  
*Applies to:* all formatting objects  
*Inherited:* no  
*Percentages:* N/A

Customizes the tag name when outputting Tagged PDF. When you want to make the tag name of the relevant element "paragraph", e.g., specify as follows:

```
<fo:block axf:pdftag="Paragraph">
```

## PDF Output in Multi Separate Volume

**AH Formatter V6.0** makes it possible to out put PDF in Multi Separate Volume. These functions are not available with **AH Formatter V6.0 Lite**.

### <axf:output-volume-info>

Common Usage:

Makes it possible to output PDF in separate volume per fo:page-sequence when outpitting the formatted result.

Areas:

None.

Constraints:

```
<!ELEMENT axf:output-volume-info EMPTY>
<!ATTLIST axf:output-volume-info initial-volume-number NUMBER "1">
<!ATTLIST axf:output-volume-info format CDATA "1">
<!ATTLIST axf:output-volume-info bookmark-include (first|all|separate) "separate">
```

The axf:output-volume-info is placed as a child of fo:root. If it comes before fo:page-sequence appears, it is possible to put it in an arbitrary position under a child of fo:root.

Contents:

EMPTY

Examples:

```
<axf:output-volume-info
  initial-volume-number="2"
  format="-1"
  bookmark-include="separate">
```

```

/>

<fo:page-sequence>
  PAGE-SEQUENCE-1
  ...
</fo:page-sequence>
<fo:page-sequence>
  PAGE-SEQUENCE-2
  ...
</fo:page-sequence>
<fo:page-sequence axf:output-volume-break="true">
  PAGE-SEQUENCE-3
  ...
</fo:page-sequence>

```

Effective only when outputting to files. It's not available for printing or stream output. At that time the file name should be given by GUI, command line parameter or etc. The file names of separate volumes are given automatically based on the output file names. This process is done by inputting the strings formatted by the format property right before the file extension of the output file name. In the above example, when document.pdf is given to the file name, PAGE-SEQUENCE-1 and PAGE-SEQUENCE-2 are outputted to document-2.pdf, PAGE-SEQUENCE-3 is outputted to document-3.pdf.

The numeric value applied to the format property can be given by the `axf:initial-volume-number` property as the initial value. The format property is the same as "7.26.1. `format`" in the XSL-FO specification.

The volume is separated by the `axf:output-volume-break` property specified to `fo:page-sequence`. If the `axf:output-volume-file-name` property is specified, only the separated volumes can be outputted with the specified file name.

The book mark of PDF in multi separate volume can be set by the `axf:bookmark-include` from the following options.

- Adds a bookmark to the first separate volume only.
- Adds bookmarks to all the separate volumes.
- Adds each bookmark to each separate volume.

The following conditions are required for the actual separate volume.

- The `<axf:output-volume-info>` element should be included in FO.
- The following items are set in each interface.

<b>GUI</b>	Multi Volume should be checked in the <a href="#">PDF Output Dialog</a> .
<b>Command-line</b>	The <code>-multivol</code> parameter should be specified.
<b>.NET</b>	true should be specified to the <code>MultiVolume</code> property.
<b>COM</b>	true should be specified to the <code>MultiVolume</code> property.
<b>Java</b>	The separate volume should be specified by <code>XfoObj::setMultiVolume()</code> .
<b>C/C++</b>	The separate volume should be specified by <code>XfoObj::setMultiVolume()</code> .

## **axf:bookmark-include**

Specifies how to include bookmarks in multi separate volume. `no-LT`

*Value:* first | all | separate  
*Initial:* separate  
*Applies to:* axf:output-volume-info  
*Inherited:* no  
*Percentages:* N/A

Values have the following meanings.

### **first**

Adds a bookmark to the first separate volume.

### **all**

Adds bookmarks to all the separate volumes.

**separate**

Adds each bookmark to each separate volume. Bookmarks are added to the volume where `axf:outline-level="1"` appears. The bookmark that goes across the volume is added to the previous volume. For that reason, the external link to the other volume may be included even though `axf:bookmark-include="separate"` is specified.

This property is not available with **AH Formatter V6.0 Lite**.

**axf:initial-volume-number**

Specifies the initial volume number in multi separate volume. no-LT

*Value:* <number>  
*Initial:* 1  
*Applies to:* axf:output-volume-info  
*Inherited:* no  
*Percentages:* N/A

This value is applied for the format property and utilized for the PDF file name to output. In the following example, the file name of the separate volume is `document-2.pdf, document-3.pdf, document-4.pdf,...`

```
<axf:output-volume-info
  initial-volume-number="2"
  format="-1"
/>
```

This property is not available with **AH Formatter V6.0 Lite**.

**axf:output-volume-break**

Separates the file in multi volume. no-LT

*Value:* true | false  
*Initial:* false  
*Applies to:* fo:page-sequence  
*Inherited:* no  
*Percentages:* N/A

Values have the following meanings.

**true**

Separates the volume newly from this fo:page-sequence.

**false**

Do not separates the volume newly from this fo:page-sequence.

Specifies `axf:output-volume-break="true"` to `fo:page-sequence` where you want to start separating the volume. The document number increases one by one. When separating the volume, `axf:output-volume-break="true"` is regarded as always being specified to the first `fo:page-sequence`. If `axf:output-volume-break="false"` is specified explicitly, it is ignored.

This property is not available with **AH Formatter V6.0 Lite**.

**axf:output-volume-filename**

Specifies the document file name in multi separate volume. no-LT

*Value:* <string>  
*Initial:* empty string  
*Applies to:* fo:page-sequence  
*Inherited:* no  
*Percentages:* N/A

If nothing specified, the automatic file name using the format property is adopted. If this property is specified, the specified name is adopted. This property is effective only with the top fo:page-sequence or with the fo:page-sequence where `axf:output-volume-break="true"` is specified.

In the following example, suppose that if `document.pdf` is specified as the file name of the PDF output, the separated file names will be `document-2.pdf, chapterX.pdf, document-4.pdf,...`

```
<axf:output-volume-info
  initial-volume-number="2"
```

```

    format="-1"
  />

  <fo:page-sequence>
    ...
  </fo:page-sequence>
  <fo:page-sequence axf:output-volume-break="true" axf:output-volume-filename="ChapterX.pdf">
    ...
  </fo:page-sequence>
  <fo:page-sequence axf:output-volume-break="true">
    ...
  </fo:page-sequence>

```

The original PDF file name cannot be omitted even though `axf:output-volume-filename` is specified to all the `fo:page-sequence`. This property is not available with **AH Formatter V6.0 Lite**.

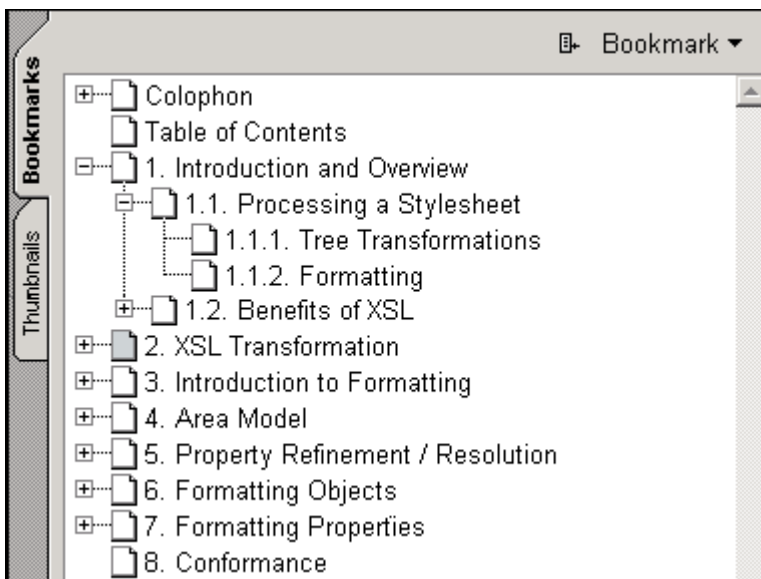
## Bookmark and Link in PDF Output

This section describes how to create bookmark and link within the PDF file.

### Making Bookmark

A PDF document has a function called bookmarks. Bookmarks in Adobe Acrobat or Reader consist of a tree-structured hierarchy which serve as a "visual table of contents," allowing the user to navigate to the target place by clicking on items.

**CAUTION:** A similar function is equipped in XSL1.1. Please make use of `fo:bookmark`. However, please use `axf:outline-*` instead of `fo:bookmark` when you output PDF in [Multi Separate Volume](#).



**AH Formatter V6.0** generates bookmarks automatically by adding the extended properties to the objects to have bookmarks.

The following sample illustrates how to create the bookmark of the above picture.

```

<fo:root xmlns:fo="http://www.w3.org/1999/XSL/Format"
         xmlns:axf="http://www.antennahouse.com/names/XSL/Extensions">
  ...
  <fo:block axf:outline-level="1"
           axf:outline-expand="false"
           axf:outline-title="Colophon">
    ...
  </fo:block>
  <fo:block axf:outline-level="1"
           axf:outline-expand="false"
           axf:outline-title="Table of Contents">
    ...
  </fo:block>
  <fo:block axf:outline-level="1"
           axf:outline-expand="true"
           axf:outline-title="1. Introduction and Overview">
    <fo:block axf:outline-level="2"

```

```

        axf:outline-expand="true"
        axf:outline-title="1.1. Processing a Stylesheet">
<fo:block axf:outline-level="3"
        axf:outline-expand="false"
        axf:outline-title="1.1.1. Tree Transformations">
    ...
</fo:block>
<fo:block axf:outline-level="3"
        axf:outline-expand="false"
        axf:outline-title="1.1.2. Formatting">
    ...
</fo:block>
</fo:block>
<fo:block axf:outline-level="2"
        axf:outline-expand="false"
        axf:outline-title="1.2. Benefits of XSL">
    ...
</fo:block>
</fo:block>
<fo:block axf:outline-level="1"
        axf:outline-expand="false"
        axf:outline-title="2. XSL Transformation">
    ...
</fo:block>
    ...

```

---

### axf:outline-expand

The axf:outline-expand specifies whether to display the lower hierarchy of bookmark items or not.

*Value:* true | false  
*Initial:* true  
*Applies to:* block-level formatting objects  
*Inherited:* no  
*Percentages:* N/A

True specifies to display the lower hierarchy in the expanded state. False specifies to display in the collapsed state.

---

### axf:outline-group

The axf:outline-group groups bookmark items, and outputs them collectively.

*Value:* <string>  
*Initial:* empty string  
*Applies to:* block-level formatting objects  
*Inherited:* no  
*Percentages:* N/A

If this property is omitted or specifies empty string, bookmark items are not grouped. If this specifies any string, the string is used as the name of group. The group with the same name is outputted collectively. The non-grouped bookmark is outputted as the group without the group name.

---

### axf:outline-level

The axf:outline-level indicates the hierarchy level of bookmark items.

*Value:* <number>  
*Initial:* 0  
*Applies to:* block-level formatting objects  
*Inherited:* no  
*Percentages:* N/A

The <number> must be a non-negative integer. Initial value is zero and it means that bookmarks should not be created. The highest level of bookmarks is 1 and it becomes 2 or more according to the hierarchy level of the bookmarks.

---

### axf:outline-title

The axf:outline-title specifies the string which appears as a title of bookmarks.

*Value:* <string>  
*Initial:* empty string  
*Applies to:* block-level formatting objects

*Inherited:* no  
*Percentages:* N/A

If this property is omitted or has an empty string, the text of the object to which the property is added will become the title. In other words, the following two samples create the same bookmark.

```
<fo:block axf:outline-level="2" axf:outline-title="1. Introduction">...
```

```
<fo:block axf:outline-level="2">1. Introduction</fo:block>
```

---

### axf:outline-color

The axf:outline-color specifies the color which appears as a title of bookmarks. no-LT

*Value:* <color>  
*Initial:* the value of the 'color' property  
*Applies to:* block-level formatting objects  
*Inherited:* no  
*Percentages:* N/A

This property is effective with PDF 1.4 or later. This property is not available with **AH Formatter V6.0 Lite**.

---

### axf:outline-font-style

The axf:outline-font-style specifies the font style which appears as a title of bookmarks. no-LT

*Value:* normal | italic  
*Initial:* normal  
*Applies to:* block-level formatting objects  
*Inherited:* no  
*Percentages:* N/A

Values have the following meanings.

#### **normal**

Specifies normal style.

#### **italic**

Specifies italic.

This property is effective with PDF 1.4 or later. This property is not available with **AH Formatter V6.0 Lite**.

---

### axf:outline-font-weight

The axf:outline-font-weight specifies the font weight which appears as a title of bookmarks. no-LT

*Value:* normal | bold  
*Initial:* normal  
*Applies to:* block-level formatting objects  
*Inherited:* no  
*Percentages:* N/A

Values have the following meanings.

#### **normal**

Specifies normal weight.

#### **bold**

Specifies bold weight.

This property is effective with PDF 1.4 or later. This property is not available with **AH Formatter V6.0 Lite**.

---

### Remarks

- These three object properties have to be created in block areas or inline areas. (fo:block, fo:inline ...) If you specify them in an fo:wrapper, for example, they are not effective.
- When the language is not supported in Acrobat and the font that belongs to the unsupported language is specified for the bookmark, there may be a possibility of the font displaying incorrectly in Adobe Acrobat or Reader.

## Making Link

PDF links can be created easily by using fo:basic-link.

PDF links are classified either as an internal link to a specified position in the PDF document, or as a external link to an external document. The internal-destination property of fo:basic-link indicates a link to a position in the same document. The external-destination property indicates a link to an external document. Below are the examples of both.

- Internal Link

```
<fo:block>
Answer may be found in <fo:basic-link internal-destination="appendix-a">Appendix-A</
fo:basic-link>.
</fo:block>

...
<fo:block id="appendix-a">
Appendix-A
</fo:block>
```

- External Link

```
<fo:block>
Here is <fo:basic-link external-destination="http://www.w3.org/">W3C Home Page</
fo:basic-link>.
</fo:block>
```

The external link specified by the relative address is transformed into either 'Open the file' or 'World Wide Web link' by the [use-launch-for-relative-uri](#) property in [PDF Output Setting](#). The external link specified by the absolute address is always transformed into 'World Wide Web link'.

Furthermore, it's possible to specify professional links as follows. For further understanding see also "[PDF Reference](#)" by Adobe Systems Incorporated. The professional links are not available with **AH Formatter V6.0 Lite**.

- Specifies the following actions for the external link explicitly.
  - Moves the destination inside PDF (GoToR)
  - Opens the file (Launch)
  - World Wide Web link (URI)
- Possible to specify ID for the external link in PDF as well as the internal link.
- Possible to specify the page number for the external link in PDF.
- Possible to specify the page number for the internal link.
- Possible to specify the type of destination for the external link.
- Possible to specify the external link in the bookmark.
- Possible to specify the internal link in the bookmark.

The setting of external-destination for the external link in PDF conforms to the following specification of PDF parameters. Not all the parameters are effective with **AH Formatter V6.0**. The invalid parameters are ignored.

- [PDF Open Parameters](#)

This specification provides the following examples.

- <http://mydocs/doc.pdf#nameddest=Chapter6>
- <http://mydocs/doc.pdf#page=3>
- <http://mydocs/doc.pdf#page=3&zoom=200,250,100>
- <http://mydocs/doc.pdf#zoom=50>
- <http://mydocs/doc.pdf#page=72&view=fitH,100>
- <http://mydocs/doc.pdf#view=fitb&nameddest=Chapter3>
- <http://mydocs/doc.pdf#pagemode=none>
- <http://mydocs/doc.pdf#pagemode=bookmarks&page=2>
- <http://mydocs/doc.pdf#page=3&pagemode=thumbs>

Only the following parameters are effective with **AH Formatter V6.0**. The case sensitivity is ignored.

- nameddest
- page
- zoom
- view



- viewrect

For example, it's invalid to specify fitH, fitR and fitBH for the external link. These are effective only with the internal link. If the required values for the PDF parameters are omitted in fitH, etc., the values are accounted as 0.

With the external link for PDF, it's possible to specify whether to open a new window by the show-destination property. A link destination except PDF is invalid. If show-destination="new" is specified, a new window will be opened and PDF will be displayed on the window. If show-destination="replace" is specified, a new window will not be opened but PDF will be displayed in the current window. When nothing specified, it depends on the operation of the PDF viewer application. Although it is defined as "replace" in the XSL-FO specification when the property is omitted, **AH Formatter V6.0** complies with the specification a little differently. show-destination property is invalid under the following conditions.

- Other than the case that `axf:action-type` is specified as "gotor" or as "launch" when the link destination is PDF.
- In the internal link. There may be a case that an internal link is embedded as an external link when separating the volume. show-destination specified to the internal link is effective only in that case.

**AH Formatter V6.0** provides the following extension properties for the professional link.

### `axf:action-type`

Specifies the action of [external link](#) or [form action](#).

*Value:* gotor | launch | uri | reset | submit | auto  
*Initial:* auto  
*Applies to:* fo:basic-link, axf:form-field  
*Inherited:* no  
*Percentages:* N/A

Values have the following meanings.

#### **gotor**

Opens the link destination by the "GoToR" action as PDF. The URI of the destination is regarded as PDF.

#### **launch**

Opens the link destination by the "Launch" action as the file.

#### **uri**

Opens the link destination by the "URI" action as URI (World Wide Web).

#### **reset** no-LT

Resets a form filed as a form action and can be specified to [axf:form-field](#).

#### **submit** no-LT

Submits a form filed as a form action and can be specified to [axf:form-field](#).

#### **auto**

Dependent on the system setting.

When the link destination is not a local file, such as http:, the action type is "URI" at any time. When `axf:action-type="auto"` specified, the external link specified by the relative address is transformed into either 'Open the file' or 'World Wide Web link' by the [use-launch-for-relative-uri](#) property in [PDF Output Setting](#). The external link specified by the absolute address is always transformed into 'World Wide Web link'.

### `axf:destination-type`

Specifies the type of destination for the external link. These are the types of destination for PDF as the external link. no-LT

*Value:* <string>  
*Initial:* empty string  
*Applies to:* block level formatting object  
*Inherited:* no  
*Percentages:* N/A

The destination type has the following options. If nothing specified, it's accounted as `axf:destination-type="xyz-top"`. The case sensitivity is ignored.

**CAUTION:** Although the link functions in GUI, `destination-type` is invalid and it is always considered as `xyz-left-top`.

Destination Type of PDF	How to specify axf:destination-type
[page /XYZ left top zoom]	<p><b>AH Formatter V6.0</b> calculates the value of left/top. However it's possible to specify null or non-null explicitly. The user can specify the arbitrary value for zoom.</p> <p>axf:destination-type="xyz"            Specifies left and top as null.  axf:destination-type="xyz-left"       Specifies top as null.  axf:destination-type="xyz-top"       Specifies left as null.  axf:destination-type="xyz-left-top"</p> <p>If nothing is specified to zoom, it's accounted as null. Specifies % value to zoom as follows.  axf:destination-type="xyz-top 75"</p> <p>If only the numbers are specified, the value is accounted for xyz-top.  axf:destination-type="75"</p>
[page /Fit]	axf:destination-type="fit"
[page /FitH top]	<p><b>AH Formatter V6.0</b> calculates the value of top. Effective only to specify in the internal link.  axf:destination-type="fith"</p>
[page /FitV left]	<p><b>AH Formatter V6.0</b> calculates the value of left.  axf:destination-type="fitv"</p>
[page /FitR left bottom right top]	<p><b>AH Formatter V6.0</b> calculates the value of left/bottom/right/top. Effective only to specify in the internal link.  axf:destination-type="fitr"</p>
[page /FitB]	axf:destination-type="fitb"
[page /FitBH top]	<p><b>AH Formatter V6.0</b> calculates the value of top. Effective only to specify in the internal link.  axf:destination-type="fitbh"</p>
[page /FitBV left]	<p><b>AH Formatter V6.0</b> calculates the value of left.  axf:destination-type="fitbv"</p>

This property is not available with **AH Formatter V6.0 Lite**.

### axf:outline-external-destination

Sets the external link in the PDF bookmark. no-LT

*Value:*            <uri-specification>  
*Initial:*           empty string  
*Applies to:*      block-level formatting objects  
*Inherited:*       no  
*Percentages:*    N/A

Values have the following meanings.

#### <uri-specification>

Specifies the URI of the link destination.

This property is not available with **AH Formatter V6.0 Lite**.

### axf:outline-internal-destination

Sets the internal link in the PDF bookmark. no-LT

*Value:*            empty string | <idref> | <number-with-fragment>  
*Initial:*           empty string  
*Applies to:*      block-level formatting objects  
*Inherited:*       no  
*Percentages:*    N/A

Values have the following meanings.

#### <idref>

Specifies the ID of the link destination.

#### <number-with-fragment>

Specifies the page number of the link destination. This string is simple numeric characters or the following string that combines numeric characters and a fragment with #. Refer to [Making Link](#) for the fragment.

123#zoom=50

The page number also can be specified in the fragment.

```
#page=123&zoom=50
```

When the page number is not specified, it is usually regarded as the 1st page. However, when the top position is specified, it is regarded as the head of the page of a block where `axf:outline-internal-destination` is contained. For example, it is specified as follows.

```
#view=fit
#view=fith
#zoom=,,0
```

This property is not available with **AH Formatter V6.0 Lite**.

## ID in the External Link

When specifying the ID in the external link, the type of the destination should be given to the ID of the link destination. `Nameddest` is only effective as the parameter in the URI. The type of the destination can be specified to the link destination. Values indicated in `axf:destination-type` can be specified for "xxxx".

- Link origin:

```
<fo:basic-link external-destination="http://mydocs/doc.pdf#nameddest=Chapter6"
axf:action-type="gotor">
```

- Link destination:

```
<fo:block id="Chapter6" axf:destination-type="xxxx">
```

## ID in the Internal Link

When specifying the ID in the internal link, the type of the destination should be given to the ID of the link destination as well as the external link.

- Link origin:

```
<fo:basic-link internal-destination="Chapter6">
```

- Link destination:

```
<fo:block id="Chapter6" axf:destination-type="xxxx">
```

## Page Number in the External Link

The page number can be accounted by the page parameter in the URI. If both page and `nameddest` are specified, `nameddest` takes priority. When specifying the page number, the destination information cannot be set to the link destination. Therefore the type of the destination is given by reading the parameter in the URI. The unreadable parameter is discarded.

```
<fo:basic-link external-destination="http://mydocs/doc.pdf#page=72&view=fitH,100"
axf:action-type="gotor">
```

When neither page nor `nameddest` are included in the parameter of the URI, it's accounted as `page=1`. The page number is accounted as physical in PDF.

## Page Number in the Internal Link

Adds extension in order to specify the page number to the value of `internal-destination`.

```
<fo:basic-link internal-destination="72">
```

The type of the destination can be specified by adding the parameter of the external link URI.

```
<fo:basic-link internal-destination="72#view=fitH,100">
```

The page number is accounted as physical in PDF. If only the page number is specified, the type of the destination is accounted as `view=fit`.

## Bookmark with the External Link

Specify the `axf:outline-external-destination` property as follows in order to specify the external link to the bookmark.

```
<fo:block axf:outline-level="1"
axf:outline-title="Chapter 6"
axf:outline-external-destination="http://mydocs/doc.pdf#nameddest=Chapter6">
```

```
axf:action-type="gotor"
show-destination="new">
```

At that time, this bookmark becomes independent of the block such as fo:block, etc., which the bookmark belongs to.

### Bookmark with the Internal Link

Specify the axf:outline-internal-destination property as follows in order to specify the internal link to the bookmark.

```
<fo:block axf:outline-level="1"
axf:outline-title="Chapter 6"
axf:outline-internal-destination="Chapter6">
```

At that time, this bookmark becomes independent of the block such as fo:block, etc., which the bookmark belongs to.

### Remarks

- Specify either internal-destination or external-destination.
- There may be a case that an internal link is accounted as an external link when [separating the volume](#). At that time, the action type of the link is accounted as axf:action-type="gotor".

## Annotation in PDF Output

Annotations can be added to PDF with **AH Formatter V6.0**. See also "[PDF Reference](#)" for more details. Annotations which can be specified here are a part of those defined in "[PDF Reference](#)". This function is not available with **AH Formatter V6.0 Lite**.

### axf:annotation-type

Specifies the type of the annotation. no-LT

*Value:* <string>  
*Initial:* empty string  
*Applies to:* all block-level and inline-level formatting objects  
*Inherited:* no  
*Percentages:* N/A

Any of the following types of the annotation can be specified.

- Empty string  
No annotations.
- "Text"  
Text annotation.
- "FreeText"  
Free text annotation.
- "Stamp"  
Rubber stamp annotation.
- "FileAttachment"  
File attachment annotation.

Character strings are case insensitive.

This property is not available with **AH Formatter V6.0 Lite**.

### axf:annotation-title

Specifies the title of the annotation. no-LT

*Value:* <string>  
*Initial:* empty string  
*Applies to:* all block-level and inline-level formatting objects  
*Inherited:* no  
*Percentages:* N/A

This property is not available with **AH Formatter V6.0 Lite**.

### axf:annotation-contents

Specifies the content of the annotation. no-LT

*Value:* <string>  
*Initial:* empty string  
*Applies to:* all block-level and inline-level formatting objects  
*Inherited:* no  
*Percentages:* N/A

Specifies the character strings to be displayed when any of the following types of the annotations ([axf:annotation-type](#)) is specified.

- "Text"
- "FreeText"
- "Stamp"
- "FileAttachment"

This property is not available with **AH Formatter V6.0 Lite**.

---

### axf:annotation-color

Specifies the color used for the background of the annotation. no-LT

*Value:* <color> | none  
*Initial:* none  
*Applies to:* all block-level and inline-level formatting objects  
*Inherited:* no  
*Percentages:* N/A

This property is not available with **AH Formatter V6.0 Lite**.

---

### axf:annotation-flags

Specifies the flag of the annotation. no-LT

*Value:* <string>  
*Initial:* empty string  
*Applies to:* all block-level and inline-level formatting objects  
*Inherited:* no  
*Percentages:* N/A

Specifies the following character sequences by enumerating using the white space. They are case insensitive.

- Invisible
- Hidden
- Print
- NoZoom
- NoRotate
- NoView
- ReadOnly
- Locked
- ToggleNoView

See also "[PDF Reference](#)" to learn more.

This property is not available with **AH Formatter V6.0 Lite**.

---

### axf:annotation-open

Specifies the initial state of the annotation. no-LT

*Value:* true | false  
*Initial:* false  
*Applies to:* all block-level and inline-level formatting objects  
*Inherited:* no  
*Percentages:* N/A

Specifies whether it is displayed in the open state when the type of the annotation ([axf:annotation-type](#)) is as follows.

- "Text"

Values have the following meanings.

**true**

Displays the annotation in the open state.

**false**

Displays the annotation in the closed state.

This property is not available with **AH Formatter V6.0 Lite**.

**axf:annotation-icon-name**

Specifies the name of the icon used for displaying the annotation. no-LT

*Value:* <string>  
*Initial:* empty string  
*Applies to:* all block-level and inline-level formatting objects  
*Inherited:* no  
*Percentages:* N/A

Although arbitrary name can be specified for the icon used for the display of annotations, whether it can be displayed or not depends on the viewer application of a document. The annotation type ([axf:annotation-type](#)) shows the standard name which can be specified.

- "Text"

Standard names are as follows:

- "Comment"
- "Help"
- "Insert"
- "Key"
- "NewParagraph"
- "Note"
- "Paragraph"

Empty string is regarded as "None".

- "Stamp"

Standard names are as follows:

- "Approved"
- "AsIs"
- "Confidential"
- "Departmental"
- "Draft"
- "Experimental"
- "Expired"
- "Final"
- "ForComment"
- "ForPublicRelease"
- "NotApproved"
- "NotForPublicRelease"
- "Sold"
- "TopSecret"

Empty string is regarded as "Draft".

- "FileAttachment"

Standard names are as follows:

- "Graph"
- "Paperclip"
- "PushPin"
- "Tag"

Empty string is regarded as "PushPin".

This property is not available with **AH Formatter V6.0 Lite**.

**axf:annotation-position-horizontal**

Specifies the horizontal position of the annotation. no-LT

*Value:* <length>  
*Initial:* Opt  
*Applies to:* all block-level and inline-level formatting objects  
*Inherited:* no  
*Percentages:* N/A

The position specified is the distance from the left edge of the region and is used for the position of pop-up or icons and the position of rubber stamp annotations.

This property is not available with **AH Formatter V6.0 Lite**.

---

### axf:annotation-position-vertical

Specifies the vertical position of the annotation. no-LT

*Value:* <length>  
*Initial:* Opt  
*Applies to:* all block-level and inline-level formatting objects  
*Inherited:* no  
*Percentages:* N/A

The position specified is the distance from the top edge of the region and is used for the position of pop-up or icons and the position of rubber stamp annotations.

This property is not available with **AH Formatter V6.0 Lite**.

---

### axf:annotation-width

Specifies the width of the annotation. no-LT

*Value:* <length> | auto  
*Initial:* auto  
*Applies to:* all block-level and inline-level formatting objects  
*Inherited:* no  
*Percentages:* N/A

This property is used for the width of pop-up and the width of rubber stamp annotations.

This property is not available with **AH Formatter V6.0 Lite**.

---

### axf:annotation-height

Specifies the height of the annotation. no-LT

*Value:* <length> | auto  
*Initial:* auto  
*Applies to:* all block-level and inline-level formatting objects  
*Inherited:* no  
*Percentages:* N/A

This property is used for the height of pop-up and the height of rubber stamp annotations.

This property is not available with **AH Formatter V6.0 Lite**.

---

### axf:annotation-font-family

Specifies the font family of the free text annotation. no-LT

*Value:* <string>  
*Initial:* depends on user agent  
*Applies to:* all block-level and inline-level formatting objects  
*Inherited:* no  
*Percentages:* N/A

This property is not available with **AH Formatter V6.0 Lite**.

---

### axf:annotation-font-size

Specifies the font size of the free text annotation. no-LT

*Value:* <absolute-size> | <relative-size> | <length> | <percentage>  
*Initial:* depends on user agent  
*Applies to:* all block-level and inline-level formatting objects  
*Inherited:* no

*Percentages:* refer to the font size

This property is not available with **AH Formatter V6.0 Lite**.

---

### axf:annotation-font-weight

Specifies the font weight of the free text annotation. no-LT

*Value:* normal | bold  
*Initial:* normal  
*Applies to:* all block-level and inline-level formatting objects  
*Inherited:* no  
*Percentages:* N/A

This property is not available with **AH Formatter V6.0 Lite**.

---

### axf:annotation-font-style

Specifies whether to make the font of the free text annotation italic. no-LT

*Value:* normal | italic  
*Initial:* normal  
*Applies to:* all block-level and inline-level formatting objects  
*Inherited:* no  
*Percentages:* N/A

This property is not available with **AH Formatter V6.0 Lite**.

---

### axf:annotation-text-color

Specifies the color of the free text annotation. no-LT

*Value:* <color>  
*Initial:* depends on user agent  
*Applies to:* all block-level and inline-level formatting objects  
*Inherited:* no  
*Percentages:* N/A

This property is not available with **AH Formatter V6.0 Lite**.

---

### axf:annotation-text-align

Specifies the alignment of the free text annotation. no-LT

*Value:* left | center | right  
*Initial:* left  
*Applies to:* all block-level and inline-level formatting objects  
*Inherited:* no  
*Percentages:* N/A

This property is not available with **AH Formatter V6.0 Lite**.

---

### axf:annotation-file-attachment

Specifies the file with which file attachment annotation is related. no-LT

*Value:* <uri-specification>  
*Initial:* empty string  
*Applies to:* all block-level and inline-level formatting objects  
*Inherited:* no  
*Percentages:* N/A

This property is not available with **AH Formatter V6.0 Lite**.

---

## Acroform in PDF Output

It's possible to create PDF forms with XSL Formatter V4.2. Forms consist of the field to fill in the text and buttons, etc. Moreover, the action accompanied by push-button can be specified.



- Form Fields
- Form Actions

Forms can be specified by describing `<axf:form-field>` inside `<axf:form>`.

```
<axf:form
  external-destination="http://www.antenna.co.jp/form-test.cgi"
  field-submit-method="post"
  field-submit-coordinates="true">
<fo:block>
  Submit:
  <axf:form-field
    field-type="button"
    field-name="SubmitButton"
    action-type="submit"
    field-button-layout="caption"
    field-button-face="Submit!"
    width="5em"
    background-color="#eee"
    border="2px silver outset"
  />
</fo:block>
<fo:block>
  Text Field:
  <axf:form-field
    field-type="text"
    field-name="InputText"
    field-default-text="Input text here!"
    field-multiline="false"
    field-scroll="true"
    field-maxlen="32"
    width="10em"
    height="1.2em"
    background-color="#ff8"
    border="1pt silver inset"
  />
</fo:block>
</axf:form>
```

When `<axf:form-field>` is not inside of `<axf:form>` and `action-type` is "submit" or "reset", these does not function. `<axf:form-field>` other than these will work fine regardless of `<axf:form>`.

This function is not available with **AH Formatter V6.0 Lite**.

---

### **<axf:form>**

Common Usage:

Encloses the unit of the form action. `[no-LT]`

Areas:

Generates and returns a block-area.

Contents:

`(%block;)*`

---

### **<axf:form-field>**

Common Usage:

Generates a form field. `[no-LT]`

Areas:

Generates and returns a single normal inline-area.

Contents:

`(axf:form-field-option)*`

**<axf:form-field-option>**

---

Common Usage:

Specifies the component elements of the list box, combo box. no-LT

Areas:

No areas generated.

Contents:

#PCDATA

**axf:field-type**

---

Specifies the field type. no-LT

*Value:* text | button | checkbox | radio | listbox | combobox | signature  
*Initial:* N/A, value is required  
*Applies to:* axf:form-field  
*Inherited:* no  
*Percentages:* N/A

Values have the following meanings.

**text**

Specifies the [text field](#).

**button**

Specifies the [push button field](#).

**checkbox**

Specifies the [check box field](#)

**radio**

Specifies the [radio button field](#)

**listbox**

Specifies the [list box field](#)

**combobox**

Specifies the [combo box field](#)

**signature**

Specifies the [digital signature field](#)

**axf:field-name**

---

Specifies the field name. no-LT

*Value:* <string>  
*Initial:* N/A, value is required  
*Applies to:* axf:form-field  
*Inherited:* no  
*Percentages:* N/A

**axf:field-description**

---

Specifies the descriptive text of the field. no-LT

*Value:* <string>  
*Initial:* empty string  
*Applies to:* axf:form-field  
*Inherited:* no  
*Percentages:* N/A

**axf:field-value**

---

Specified the value used when submitting a form field, etc. no-LT

*Value:* <string>  
*Initial:* empty string  
*Applies to:* axf:form-field  
*Inherited:* no  
*Percentages:* N/A

### axf:field-readonly

---

Specifies whether the field is read-only or not. `no-LT`

*Value:* true | false  
*Initial:* false  
*Applies to:* axf:form-field  
*Inherited:* no  
*Percentages:* N/A

Values have the following meanings.

**true**

The field is read-only.

**false**

The field is not read-only.

### axf:field-required

---

Specifies whether the field is enter-required or not. `no-LT`

*Value:* true | false  
*Initial:* false  
*Applies to:* axf:form-field  
*Inherited:* no  
*Percentages:* N/A

Values have the following meanings.

**true**

The field is enter-required.

**false**

The field is not enter-required.

### axf:field-default-text

---

Specifies the text entered into the text field from the beginning. `no-LT`

*Value:* <string>  
*Initial:* empty string  
*Applies to:* axf:form-field  
*Inherited:* no  
*Percentages:* N/A

### axf:field-multiline

---

Specifies whether the text field is a single-line enterable field or a multi-line enterable field. `no-LT`

*Value:* false | true  
*Initial:* false  
*Applies to:* axf:form-field  
*Inherited:* no  
*Percentages:* N/A

Values have the following meanings.

**false**

The text field is a single-line enterable field.

**true**

The text field is a multi-line enterable field.

**axf:field-scroll**

---

Specifies whether the text field is scrollable or not. no-LT

*Value:* false | true  
*Initial:* false  
*Applies to:* axf:form-field  
*Inherited:* no  
*Percentages:* N/A

Values have the following meanings.

**false**

The text field is not scrollable.

**true**

The text field is scrollable.

**axf:field-password**

---

Specifies whether the text field requires the password or not. no-LT

*Value:* false | true  
*Initial:* false  
*Applies to:* axf:form-field  
*Inherited:* no  
*Percentages:* N/A

Values have the following meanings.

**false**

The text field does not require the password.

**true**

The text field requires the password. Entered characters are shown as \*, etc.

**axf:field-maxlen**

---

Specifies the maximum number of characters which can be entered into the text field. no-LT

*Value:* <number>  
*Initial:* 0  
*Applies to:* axf:form-field  
*Inherited:* no  
*Percentages:* N/A

When 0 or less is specified, the number of characters is not limited.

**axf:field-button-layout**

---

Specifies the positioning between the caption and icon displayed in the push button field. no-LT

*Value:* caption | icon | caption-below-icon | caption-above-icon | icon-caption | caption-icon | caption-over-icon  
*Initial:* caption  
*Applies to:* axf:form-field  
*Inherited:* no  
*Percentages:* N/A

Values have the following meanings.

**caption**

Only a caption is displayed on the button. An icon is not displayed.

**icon**

Only an icon is displayed on the button. A caption is not displayed.

**caption-below-icon**

A caption is displayed under the icon.

**caption-above-icon**

A caption is displayed on top of the icon.

**icon-caption**

A caption is displayed on the right side of the icon.

**caption-icon**

A caption is displayed on the left side of the icon.

**caption-over-icon**

A caption is displayed on the icon in piles.

**axf:field-button-face**

---

Specifies the caption displayed in the push button field. [no-LT]

*Value:* <string>  
*Initial:* empty string  
*Applies to:* axf:form-field  
*Inherited:* no  
*Percentages:* N/A

**axf:field-button-icon**

---

Specifies the icon displayed in the push button field. [no-LT]

*Value:* <uri-specification>  
*Initial:* empty string  
*Applies to:* axf:form-field  
*Inherited:* no  
*Percentages:* N/A

**axf:field-button-face-down**

---

Specifies the caption displayed in the push button field. [no-LT]

*Value:* <string>  
*Initial:* empty string  
*Applies to:* axf:form-field  
*Inherited:* no  
*Percentages:* N/A

**axf:field-button-icon-down**

---

Specifies the icon displayed when pressing the push button. [no-LT]

*Value:* <uri-specification>  
*Initial:* empty string  
*Applies to:* axf:form-field  
*Inherited:* no  
*Percentages:* N/A

**axf:field-button-face-rollover**

---

Specifies the caption displayed when rolling over the push button. [no-LT]

*Value:* <string>  
*Initial:* empty string  
*Applies to:* axf:form-field  
*Inherited:* no  
*Percentages:* N/A

**axf:field-button-icon-rollover**

---

Specifies the icon displayed when rolling over the push button. [no-LT]

*Value:* <uri-specification>  
*Initial:* empty string  
*Applies to:* axf:form-field  
*Inherited:* no

Percentages: N/A

### axf:field-checked

---

Specifies the initial state of the check box and the radio button. [no-LT]

*Value:* false | true  
*Initial:* false  
*Applies to:* axf:form-field  
*Inherited:* no  
*Percentages:* N/A

Values have the following meanings.

**false**

The initial state is unchecked.

**true**

The initial state is checked.

### axf:field-checked-style

---

Specifies the style of the check box and the radio button. [no-LT]

*Value:* checkmark | circle | square | cross | star  
*Initial:* checkmark  
*Applies to:* axf:form-field  
*Inherited:* no  
*Percentages:* N/A

### axf:field-top-index

---

Specifies the first selected item in the list box, combo box. [no-LT]

*Value:* <number>  
*Initial:* 1  
*Applies to:* axf:form-field  
*Inherited:* no  
*Percentages:* N/A

The specified value indicates what number of `<axf:form-field-option>` it is. The beginning number is 1. When less than 1 is specified or the specified number exceeds the number of elements contained, the value is regarded as 1.

### axf:field-multiple

---

Specifies whether multiple items can be chosen in the list box. [no-LT]

*Value:* false | true  
*Initial:* false  
*Applies to:* axf:form-field  
*Inherited:* no  
*Percentages:* N/A

Values have the following meanings.

**false**

Multiple items cannot be chosen.

**true**

Multiple items can be chosen.

### axf:field-editable

---

Specifies whether the value can be edited with the combo box. [no-LT]

*Value:* false | true  
*Initial:* false  
*Applies to:* axf:form-field  
*Inherited:* no  
*Percentages:* N/A

Values have the following meanings.

**false**

The value cannot be edited.

**true**

The value can be edited.

---

### axf:field-apply-signature

Specifies whether to apply a signature in the signature field. no-LT

*Value:* true | false  
*Initial:* false  
*Applies to:* axf:form-field  
*Inherited:* no  
*Percentages:* N/A

Values have the following meanings.

**true**

Applies a signature in the signature field in PDF.

**false**

Does not apply a signature in the signature field in PDF.

The signature field can be specified automatically when generating PDF. See also [Digital Signature](#) in the PDF page for more details.

---

### axf:field-submit-method

Specifies the way to send the information when submitting a form field. no-LT

*Value:* get | post  
*Initial:* get  
*Applies to:* axf:form  
*Inherited:* no  
*Percentages:* N/A

Values have the following meanings.

**get**

Sends out a form as GET request.

**post**

Sends out a form as POST request.

---

### axf:field-submit-coordinates

Specified whether to send out the coordinates of the mouse when submitting a form field. no-LT

*Value:* false | true  
*Initial:* false  
*Applies to:* axf:form  
*Inherited:* no  
*Percentages:* N/A

Values have the following meanings.

**false**

Does not send out the coordinates.

**true**

Sends out the coordinates.

---

## Form Fields

These fields can be added to your forms:

- Text field
  - one line text
  - multi line text
- Button field
  - Push Button field
  - Checkbox field
  - Radio Button field
- Select field
  - Listbox field
  - Combobox field
- Digital Signature field

These are all expressed by the `<axf:form-field>` extension element. `<axf:form-field>` is an inline element. Although many common extension properties can be specified to `<axf:form-field>`, the effective property differs depending on the field type. The size of the field can be specified with the width and the height properties. When omitted, a suitable size will be applied. Below shows the example of the setting for each form field.

---

### Text field

Text field can be specified by `field-type="text"`. The contents are empty. Whether it is a single line or not depends on the setting of `field-multiline`.

```
<axf:form-field
  field-type="text"
  field-default-text="TEXT"
  field-multiline="false"
  field-scroll="false"
  field-password="true"
  field-maxlen="100"
/>
```

The contents of `field-default-text` are not displayed in GUI.

---

### Push Button field

Push Button field can be specified by `field-type="button"`. The contents are empty. The Push button is usually an object used to perform an action.

```
<axf:form-field
  field-type="button"
  field-button-layout="caption"
  field-button-face="TEXT"
  field-button-icon="URI"
  field-button-face-down="DOWN"
  field-button-icon-down="URI"
  field-button-face-rollover="OVER"
  field-button-icon-rollover="URI"
/>
```

The contents of `field-button-face` are not displayed in GUI.

---

### Checkbox field

Checkbox field can be specified by `field-type="checkbox"`. The contents are empty.

```
<axf:form-field
  field-type="checkbox"
  field-checked="true"
  field-checked-style="checkmark"
/>
```

The status of `field-checked="true"` are not displayed in GUI.

---

### Radio Button field

Radio Button field can be specified by `field-type="radio"`. The contents are empty.



```

<axf:form-field
  field-type="radio"
  field-checked="true"
  field-checked-style="checkmark"
  field-name="Card"
  field-value="MasterCard"
/>

```

Radio buttons are usually arranged in groups of two or more. The group is identified as a radio button with the same field-name. The user can select only one of the radio buttons. Even if checked="true" are set multiply, only one button in a group is checked.

The status of field-checked="true" are not displayed in GUI.

---

### Listbox field

Listbox field can be specified by field-type="listbox". <axf:form-field-option> is required for the contents. It should not be empty. <axf:form-field-option> expresses the contents of the list and these are lined up in the appearance order in the list. Neither the value of field-value nor the content text in <axf:form-field-option> should be empty or white-space characters.

```

<axf:form-field
  field-type="listbox"
  field-top-index="1"
  field-multiple="true"
>
  <axf:form-field-option field-value="M">MasterCard</axf:form-field-option>
  <axf:form-field-option field-value="V">Visa</axf:form-field-option>
  <axf:form-field-option field-value="A">AMEX</axf:form-field-option>
</axf:form-field>

```

The contents of the list box are not displayed in GUI.

---

### Combobox field

Combobox field can be specified by field-type="combobox". <axf:form-field-option> is required for the contents. The contents should not be empty. <axf:form-field-option> is the same as that of the list box.

```

<axf:form-field
  field-type="combobox"
  field-top-index="1"
  field-edittable="true"
>
  <axf:form-field-option field-value="M">MasterCard</axf:form-field-option>
  <axf:form-field-option field-value="V">Visa</axf:form-field-option>
  <axf:form-field-option field-value="A">AMEX</axf:form-field-option>
</axf:form-field>

```

The contents of the combo box are not displayed in GUI.

---

### Digital Signature field

Digital Signature field can be specified by field-type="signature". The contents are empty. The appearance cannot be specified beforehand.

```

<axf:form-field
  field-type="signature"
  field-apply-signature="true"
  width="40pt"
  height="50pt"
/>

```

When performing the formatting process, the signature area is only reserved and the signature field is not generated. The signature field is generated and an actual signature is applied when generating PDF using [PDF Digital Signature Module](#). When the [PDF Digital Signature Module](#) is not installed, neither generation of the signature field nor the actual signature can be performed. See also [Digital Signature](#) in the PDF Output page.

---

### Form Actions

Form actions are realized by specifying the event to be triggered and the action corresponding to the event to each field. In **AH Formatter V6.0**, the action can be specified to the field which is included in <axf:form>. The contents of <axf:form> are arbitrary and generate a block area. Usually, <axf:form-field> is included in <axf:form>. The action is generated only by pushing the bottom. The action has the following three types.

- [Reset](#)
- [Submit](#)
- [Link](#)

`axf:action-type` is extended for Form actions.

---

## Reset

Reset initializes the value of all the fields included in `<axf:form>` to their initial state. Specify `axf:action-type="reset"` to the button to reset.

```
<axf:form>
  <axf:form-field field-type="button" action-type="reset" .../>
  <axf:form-field field-type="text" default-text="XXX" .../>
  ...
</axf:form>
```

---

## Submit

Submit sends out the information by using HTTP. The contents of each field are sent out as GET or the POST request of HTTP. That is, the information is submitted using the same HTTP method of HTML.

```
<axf:form
  external-destination="URI"
  field-submit-method="post"
  field-submit-coordinates="false"
>
  <axf:form-field field-type="button" action-type="submit" .../>
  <axf:form-field field-type="text" default-text="YYY" .../>
  ...
</axf:form>
```

---

## Link

Link can not be specified to `<axf:form>` but directly specified to the Button field. The method is the same as that of `<fo:basic-link>`. The internal link can be specified as follows. Nothing is specified to `action-type`.

```
<axf:form-field field-type="button" internal-destination="URI" .../>
```

The internal link can be specified as follows. You can specify any one of `gotor`, `launch` or `uri` to `action-type`.

```
<axf:form-field field-type="button" external-destination="URI"
  action-type="gotor" .../>
```

---

## Extension for European Rule

**AH Formatter V6.0** provides the extension for adjusting the amount of space before and after the punctuation in European Typography.

---

### **<axf:space-after-punctuation>**

Specifies the amount of space after the punctuation.

---

### **<axf:space-before-punctuation>**

Specifies the amount of space before the punctuation.

---

### **<axf:space-between-digit-and-punctuation>**

Specifies the amount of space between the digit and the punctuation.

---

### **<axf:space-between-punctuation-and-digit>**

Specifies the amount of space between the punctuation and the digit.

These extension elements are all empty element and can be put on the right under `<fo:declarations>`. The area is not generated. The following properties can be specified.

## language

Specifies the language code (RFC3066). It is not possible to omit it.

*Value:* <language>  
*Initial:* N/A  
*Inherited:* no  
*Percentages:* N/A

## space

Specifies the amount of space. Specification is invalid when 0 or less.

*Value:* <number> | <length> | <percentage> | figure | punctuation | thin | hair  
*Initial:* N/A  
*Inherited:* no  
*Percentages:* refer to the font size

Values have the following meanings.

### figure

Indicates the same amount as U+2007.

### punctuation

Indicates the same amount as U+2008.

### thin

Indicates the same amount as U+2009.

### hair

Indicates the same amount as U+200A.

## code

Specifies the code point to be applied.

*Value:* <string>  
*Initial:* empty string  
*Inherited:* no  
*Percentages:* N/A

language and space are applied to all the specified code points.

For instance, the following would be specified to format French.

```
<afx:space-before-punctuation code="?" space="1 div 3" language="fr"/>
<afx:space-before-punctuation code="!" space="1 div 3" language="fr"/>
<afx:space-before-punctuation code=";" space="1 div 3" language="fr"/>
<afx:space-before-punctuation code=":" space="1 div 4" language="fr"/>
<afx:space-before-punctuation code="&#xBB;" space="1 div 4" language="fr"/>
<afx:space-after-punctuation code="&#xAB;" space="1 div 4" language="fr"/>
<afx:space-between-punctuation-and-digit code="+" space="thin" language="fr"/>
<afx:space-between-punctuation-and-digit code="&#x2112;" space="thin" language="fr"/>
<afx:space-between-punctuation-and-digit code="&#xB1;" space="thin" language="fr"/>
<afx:space-between-digit-and-punctuation code="%" space="thin" language="fr"/>
<afx:space-between-digit-and-punctuation code="&#x2103;" space="thin" language="fr"/>
<afx:space-between-digit-and-punctuation code="&#x2109;" space="thin" language="fr"/>
```

These settings for European Typography can also be specified by the [Option Setting File](#). The setting in FO overwrites it.

## Appending a Font

This element is not available with **AH Formatter V6.0**.

### <afx:font-face>

Common Usage:

Specifies an additional font. This element does not generate area. These functions are not available with **AH Formatter V6.0 Lite**. no-LT

**Areas:**

None.

**Constraints:**

```
<!ELEMENT axf:font-face EMPTY>
<!ATTLIST axf:font-face src          CDATA #REQUIRED>
<!ATTLIST axf:font-face font-family CDATA #IMPLIED>
```

The `<axf:font-face>` element can be placed directly under `<fo:declarations>`. `src` is an indispensable property and specifies the URI of a font. This font can be specified in a document using a font family name of its own, or a font-family name specified by `font-family`.

**Contents:**

EMPTY

**Examples:**

```
<fo:declarations>
  <axf:font-face src="url(http://www.hixie.ch/resources/fonts/AHEM____.TTF)"
                font-family="AHEM"/>
</fo:declarations>
```

A font specified by `<axf:font-face>` is always embedded. A font with embedding prohibition information cannot be specified. In addition, the font specified by `<axf:font-face>` is not displayed in GUI.

## Appending Option Setting Information

---

**AH Formatter V6.0** can specify the additional option setting information used inside the document.

### `<axf:formatter-config>`

---

**Common Usage:**

Specifies additional option setting information. This element doesn't generate the area tree. These features are not available with **AH Formatter V6.0 Lite**. `no-LT`

**Areas:**

None.

**Constraints:**

```
<!ELEMENT axf:formatter-config (%axs-settings;)*>
<!ATTLIST axf:formatter-config src CDATA #IMPLIED>
```

The `axf:formatter-config` extension element can be set as many as you want right under `fo:declarations`.

The `src` property can optionally specify the external Option Setting File. It's an additional setting to the original settings and effective only in this FO. It becomes base-uri for the relative path. A part of the element which is the same as `%axs-settings` under the specified file is evaluated.

**Contents:**

`%axs-settings;` is an element which belongs to the name space <http://www.antennahouse.com/names/XSL/Settings>. The properties in the [Option Setting File](#) are included in the name space, however currently only the following elements can be described. The other elements will be disregarded.

- `<pdf-settings>`
- `<text-settings>`
- `<svg-settings>`
- `<inx-settings>`
- `<mif-settings>`
- `<ps-settings>`

These settings for output are not related to the formatting process.

**Examples:**

```
<fo:declarations>
  <axf:formatter-config src="add-settings.xml">
```

```

xmlns:axs="http://www.antennahouse.com/names/XSL/Settings">
<axs:pdf-settings pdf-version="PDF1.6" tagged-pdf="true"/>
</axf:formatter-config>
</fo:declarations>

```

In this example, an additional option setting file, add-settings.xml is specified, and then PDF setting is added.

## Remarks

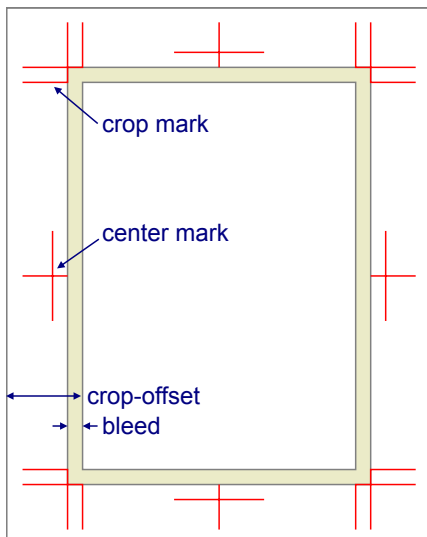
Usually, the additional setting by <axf:formatter-config> never influences the formatting process of the following document. However, when the following settings are done by GUI, the additional settings will be reflected on the default settings, then reflected on the formatting of the following document.

- [Format Option Setting](#)
- [PDF Option Setting](#)
- [Other Settings](#)
- [Import Option Setting](#)
- [Export Option Setting](#)

The addition option setting information by <axf:formatter-config> is not reflected in the area tree.

## Printer Marks

**AH Formatter V6.0** can draw printer marks in PDF etc. Since printer marks are drawn outside of the actual page size (trim size) specified with the page-width and page-height properties, they have no effect on the contents of the document. This function is not available with **AH Formatter V6.0 Lite**.



**axf:crop-offset**  
**axf:crop-offset-top**  
**axf:crop-offset-bottom**  
**axf:crop-offset-left**  
**axf:crop-offset-right**

Specifies the distance from the physical end to the trim size of the output medium. no-LT

*Value:* <length>  
*Initial:* Opt  
*Applies to:* fo:simple-page-master  
*Inherited:* no  
*Percentages:* N/A

The trim size is specified by the page-width and page-height properties. crop-offset is for specifying how much the space is taken outside the trim size. In order to specify the same values vertically and horizontally, axf:crop-offset can be used. In order to specify an individual value, axf:crop-offset-top, axf:crop-offset-bottom, axf:crop-offset-left, and axf:crop-offset-right can be used. When axf:crop-offset and others are specified simultaneously, axf:crop-offset takes priority.

These properties are not available with **AH Formatter V6.0 Lite**.

**axf:crop-area-visibility**

Specifies whether to display the area that is extended beyond the finished page size. no-LT

*Value:* hidden | visible  
*Initial:* hidden  
*Applies to:* fo:simple-page-master  
*Inherited:* no  
*Percentages:* N/A

Specifies whether the area that overflows on the margin specified with [axf:crop-offset](#) is clipped with the finished page size or the extended area is displayed.

These properties are not available with **AH Formatter V6.0 Lite**.

**axf:bleed**  
**axf:bleed-top**  
**axf:bleed-bottom**  
**axf:bleed-left**  
**axf:bleed-right**

Specifies the width of the bleed region for cutting off. no-LT

*Value:* <length>  
*Initial:* 0pt  
*Applies to:* fo:simple-page-master  
*Inherited:* no  
*Percentages:* N/A

The region of the bleed is taken outside the trim size. In order to specify the same values vertically and horizontally, `axf:bleed` can be used. In order to specify an individual value, `axf:bleed-top`, `axf:bleed-bottom`, `axf:bleed-left`, and `axf:bleed-right` can be used. When `axf:bleed` and others are specified simultaneously, `axf:bleed` takes priority.

These properties are not available with **AH Formatter V6.0 Lite**.

**axf:printer-marks**

Specifies the Printing marks, such as a crop mark. Specifies the action of external link. no-LT

*Value:* [ crop || cross || <uri-specification> [<uri-specification>]\* ] | none  
*Initial:* none  
*Applies to:* fo:simple-page-master  
*Inherited:* no  
*Percentages:* N/A

Values have the following meanings.

**crop**

Outputs crop marks.

**cross**

Outputs cross marks, registration marks.

**<uri-specification>**

Original printer marks, color bars, etc. can be outputted by specifying images, such as SVG. Two or more URIs can be specified.

Crop marks becomes what unites the inner printer marks (crop marks) and the outside printer marks (bleed marks) when there is specification of [axf:bleed](#).

This property is not available with **AH Formatter V6.0 Lite**.

**axf:printer-marks-line-color**

Specifies the line color of printer marks. no-LT

*Value:* <color> | auto  
*Initial:* auto  
*Applies to:* fo:simple-page-master  
*Inherited:* no  
*Percentages:* N/A

When the value is auto, the color is regarded as the registration color.

This property is not available with **AH Formatter V6.0 Lite**.

---

### axf:printer-marks-line-length

Specifies the line length of printer marks. no-LT

*Value:* <length> | auto  
*Initial:* auto  
*Applies to:* fo:simple-page-master  
*Inherited:* no  
*Percentages:* N/A

When the value is auto, the length depends on the system setting. The default length of a printer mark is 10mm, it can be adjusted in the [Option Setting File](#).

This property is not available with **AH Formatter V6.0 Lite**.

---

### axf:printer-marks-line-width

Specifies the line width of printer marks. no-LT

*Value:* <length> | auto  
*Initial:* auto  
*Applies to:* fo:simple-page-master  
*Inherited:* no  
*Percentages:* N/A

When the value is auto, the width depends on the system setting. The default width of a printer mark is 0.2pt, it can be adjusted in the [Option Setting File](#).

This property is not available with **AH Formatter V6.0 Lite**.

---

### axf:printer-marks-zero-margin

Specifies the margin between the page and the printer marks when [bleed](#) is 0. no-LT

*Value:* <length> | auto  
*Initial:* auto  
*Applies to:* fo:simple-page-master  
*Inherited:* no  
*Percentages:* N/A

When the value is auto, the margin depends on the system setting. The default margin is 3mm, it can be adjusted in the [Option Setting File](#).

This property is not available with **AH Formatter V6.0 Lite**.

---

## Printing

---

### axf:printer-bin-selection

Selects the printer tray. no-LT

*Value:* <string> | <integer>  
*Initial:* Depends on the environment  
*Applies to:* fo:page-sequence  
*Inherited:* no  
*Percentages:* N/A

Effective only with the Windows version and functions when outputting to a printer. Whether it is effective also depends on a printer. What can be specified by the character string is the tray name which comes out in each printer setting dialog. This is the tray name acquired from a printer driver. The specified name which does not match to the tray name acquired from a printer driver is invalid. The specified integer needs to match to the tray number acquired from a printer driver.

This property is not available with **AH Formatter V6.0 Lite**.

---

### axf:printer-duplex

Specifies to print in duplex mode. no-LT

*Value:* <integer>

*Initial:* Depends on the environment  
*Applies to:* fo:page-sequence  
*Inherited:* no  
*Percentages:* N/A

Effective only with the Windows version and functions when outputting to a printer. Whether it is effective also depends on a printer. Specify the value which is specified by the printer driver. Most printers support following integer values.

1. Simplex Printing.
2. Duplex Printing. Flip on Long Edge. (The before edge of the first side of a page and the second side of a page are in the same way.)
3. Duplex Printing. Flip on Short Edge. (The before edge of the first side of a page and the second side of a page are in the reverse way.)

This property is not available with **AH Formatter V6.0 Lite**.

## Base URI

The `axf:base-uri` specifies the location which becomes the base of relative URI. The value of `axf:base-uri` is applied to all relative URIs in a document. When making links using `fo:basic-link` and specify relative URI, the location that is specified using `axf:base-uri` is interpreted to be base URI.

 [xml:base](#)

### axf:base-uri

*Value:* <uri-specification>  
*Initial:* empty string  
*Applies to:* all formatting objects  
*Inherited:* yes  
*Percentages:* N/A

In the case of the following example, it links to: "`http://www.antennahouse.co.jp/xsl-info/Thai/THAI-BangKokNationalMuseum.pdf`".

```
<fo:root xmlns:fo="http://www.w3.org/1999/XSL/Format"
         xmlns:axf="http://www.antennahouse.com/names/XSL/Extensions"
         axf:base-uri="http://www.antennahouse.co.jp/xsl-info/">
  :
  :
  <fo:basic-link external-destination="Thai/THAI-BangKokNationalMuseum.pdf">
  ...
</fo:basic-link>
```

## Page Sequence Extensions

### axf:repeat-page-sequence-master

The `axf:repeat-page-sequence-master` specifies the repetition of the page sequence. no-LT

*Value:* true | false  
*Initial:* false  
*Applies to:* fo:page-sequence-master  
*Inherited:* no  
*Percentages:* N/A

When the value is true, if the page output reaches in the end of `fo:page-sequence-master` and the page which should still be outputted remains, page output repeats from the start of `fo:page-sequence-master`.

This property is not available with **AH Formatter V6.0 Lite**.

### axf:reverse-page

Outputs pages in reverse order. V6.0 no-LT

*Value:* true | false  
*Initial:* false  
*Applies to:* fo:page-sequence  
*Inherited:* no  
*Percentages:* N/A



Values have the following meanings.

**true**

Outputs pages in reverse order.

**false**

Outputs pages in order.

Specifies whether to output pages within fo:page-sequence in reverse order. This setting does not cover all the output destinations. Effective only with [PDF Output](#).

This property is not available with **AH Formatter V6.0 Lite**.

## Block Extensions

---

### axf:suppress-if-first-on-page

---

axf:suppress-if-first-on-page specifies whether to suppress the block at the beginning of a page. `{no-LT}`

*Value:* false | true  
*Initial:* false  
*Applies to:* fo:block, fo:block-container  
*Inherited:* no  
*Percentages:* N/A

Values have the following meanings.

**false**

Does nothing.

**true**

Suppresses a block when it comes at the beginning of a page. Since it is actually not deleted but exists without display as a block of size zero, it's effective to refer to ID, etc.

This property is not available with **AH Formatter V6.0 Lite**.

## Block Column

---

Columns can be set inside of a block. Each extended property can be specified to fo:block-container.

### axf:column-count

---

The axf:column-count specifies the number of columns of fo:block-container.

*Value:* <number>  
*Initial:* 1  
*Applies to:* fo:block-container  
*Inherited:* no  
*Percentages:* N/A

### axf:column-gap

---

The axf:column-count specifies the width of the separation between adjacent columns of fo:block-container.

*Value:* <length> | <percentage>  
*Initial:* 12.0pt  
*Applies to:* fo:block-container  
*Inherited:* refer to width of the fo:block-container  
*Percentages:* N/A

### axf:column-fill

---

Specifies whether to balance the column height.

*Value:* auto | balance  
*Initial:* balance  
*Applies to:* multi-column elements  
*Inherited:* no

Percentages: N/A

Values have the following meanings.

#### auto

Do not balance the height. However if span="all" is specified, it is balanced before the spanned column.

#### balance

Balance the height.

## Line Breaking

**AH Formatter V6.0** provides extension properties to control the line-breaking. Usually, the line-breaking complies with [UAX#14: Line Breaking Properties](#). Also refer to [Line Breaking](#) in [Technical Notes](#).

### axf:line-break

The axf:line-break specifies the method of line breaking.

*Value:* normal | strict  
*Initial:* normal  
*Applies to:* all block-level and inline-level formatting objects  
*Inherited:* yes  
*Percentages:* N/A

Values have the following meanings.

#### normal

Nonstarter Japanese characters (prolonged sound mark, small hiragana letters, small katakana letters, and iteration marks) defined in JIS X 4051:2004 are not treated as Nonstarter characters. Also, the properties of [axf:append-non-starter-characters](#), [axf:except-non-starter-characters](#), [axf:append-non-end-of-line-characters](#), [axf:except-non-end-of-line-characters](#) are disregarded.

#### strict

Nonstarter character is treated for Japanese. Also, the characters specified to the properties of [axf:append-non-starter-characters](#), [axf:except-non-starter-characters](#), [axf:append-non-end-of-line-characters](#), [axf:except-non-end-of-line-characters](#) are included.

The Nonstarter character in [LineBreak-5.0.0.txt](#) is as follows. [JIS] is classified into the Nonstarter character in JIS X 4051:2004.

U+17D6	KHMER SIGN CAMNUC PII KUUH	
U+203C	DOUBLE EXCLAMATION MARK	!!
U+203D	INTERROBANG	?
U+2047	DOUBLE QUESTION MARK	
U+2048	QUESTION EXCLAMATION MARK	
U+2049	EXCLAMATION QUESTION MARK	
U+3005	IDEOGRAPHIC ITERATION MARK	々 [JIS]
U+301C	WAVE DASH	〜
U+303B	VERTICAL IDEOGRAPHIC ITERATION MARK	[JIS]
U+303C	MASU MARK	
U+3041	HIRAGANA LETTER SMALL A	あ [JIS]
U+3043	HIRAGANA LETTER SMALL I	い [JIS]
U+3045	HIRAGANA LETTER SMALL U	う [JIS]
U+3047	HIRAGANA LETTER SMALL E	え [JIS]
U+3049	HIRAGANA LETTER SMALL O	お [JIS]
U+3063	HIRAGANA LETTER SMALL TU	っ [JIS]
U+3083	HIRAGANA LETTER SMALL YA	や [JIS]
U+3085	HIRAGANA LETTER SMALL YU	ゆ [JIS]
U+3087	HIRAGANA LETTER SMALL YO	よ [JIS]
U+308E	HIRAGANA LETTER SMALL WA	わ [JIS]
U+3095	HIRAGANA LETTER SMALL KA	[JIS]
U+3096	HIRAGANA LETTER SMALL KE	[JIS]
U+309B	KATAKANA-HIRAGANA VOICED SOUND MARK	゛
U+309C	KATAKANA-HIRAGANA SEMI-VOICED SOUND MARK	゜
U+309D	HIRAGANA ITERATION MARK	ゝ [JIS]
U+309E	HIRAGANA VOICED ITERATION MARK	ゞ [JIS]
U+30A0	KATAKANA-HIRAGANA DOUBLE HYPHEN	
U+30A1	KATAKANA LETTER SMALL A	ア [JIS]

U+30A3	KATAKANA LETTER SMALL I	イ	[JIS]
U+30A5	KATAKANA LETTER SMALL U	ウ	[JIS]
U+30A7	KATAKANA LETTER SMALL E	エ	[JIS]
U+30A9	KATAKANA LETTER SMALL O	オ	[JIS]
U+30C3	KATAKANA LETTER SMALL TU	ツ	[JIS]
U+30E3	KATAKANA LETTER SMALL YA	ヤ	[JIS]
U+30E5	KATAKANA LETTER SMALL YU	ユ	[JIS]
U+30E7	KATAKANA LETTER SMALL YO	ヨ	[JIS]
U+30EE	KATAKANA LETTER SMALL WA	ワ	[JIS]
U+30F5	KATAKANA LETTER SMALL KA	カ	[JIS]
U+30F6	KATAKANA LETTER SMALL KE	ケ	[JIS]
U+30FB	KATAKANA MIDDLE DOT	・	
U+30FC	KATAKANA-HIRAGANA PROLONGED SOUND MARK	ー	[JIS]
U+30FD	KATAKANA ITERATION MARK	ゝ	[JIS]
U+30FE	KATAKANA VOICED ITERATION MARK	ゞ	[JIS]
U+31F0	KATAKANA LETTER SMALL KU		[JIS]
U+31F1	KATAKANA LETTER SMALL SI		[JIS]
U+31F2	KATAKANA LETTER SMALL SU		[JIS]
U+31F3	KATAKANA LETTER SMALL TO		[JIS]
U+31F4	KATAKANA LETTER SMALL NU		[JIS]
U+31F5	KATAKANA LETTER SMALL HA		[JIS]
U+31F6	KATAKANA LETTER SMALL HI		[JIS]
U+31F7	KATAKANA LETTER SMALL HU		[JIS]
U+31F8	KATAKANA LETTER SMALL HE		[JIS]
U+31F9	KATAKANA LETTER SMALL HO		[JIS]
U+31FA	KATAKANA LETTER SMALL MU		[JIS]
U+31FB	KATAKANA LETTER SMALL RA		[JIS]
U+31FC	KATAKANA LETTER SMALL RI		[JIS]
U+31FD	KATAKANA LETTER SMALL RU		[JIS]
U+31FE	KATAKANA LETTER SMALL RE		[JIS]
U+31FF	KATAKANA LETTER SMALL RO		[JIS]
U+A015	YI SYLLABLE WU		
U+FE54	SMALL SEMICOLON		
U+FE55	SMALL COLON		
U+FF1A	FULLWIDTH COLON	:	
U+FF1B	FULLWIDTH SEMICOLON	;	
U+FF65	HALFWIDTH KATAKANA MIDDLE DOT	・	
U+FF67	HALFWIDTH KATAKANA LETTER SMALL A	ア	[JIS]
U+FF68	HALFWIDTH KATAKANA LETTER SMALL I	イ	[JIS]
U+FF69	HALFWIDTH KATAKANA LETTER SMALL U	ウ	[JIS]
U+FF6A	HALFWIDTH KATAKANA LETTER SMALL E	エ	[JIS]
U+FF6B	HALFWIDTH KATAKANA LETTER SMALL O	オ	[JIS]
U+FF6C	HALFWIDTH KATAKANA LETTER SMALL YA	ヤ	[JIS]
U+FF6D	HALFWIDTH KATAKANA LETTER SMALL YU	ユ	[JIS]
U+FF6E	HALFWIDTH KATAKANA LETTER SMALL YO	ヨ	[JIS]
U+FF6F	HALFWIDTH KATAKANA LETTER SMALL TU	ツ	[JIS]
U+FF70	HALFWIDTH KATAKANA-HIRAGANA PROLONGED SOUND MARK	ー	[JIS]
U+FF9E	HALFWIDTH KATAKANA VOICED SOUND MARK	ゝ	
U+FF9F	HALFWIDTH KATAKANA SEMI-VOICED SOUND MARK	ゞ	

### axf:append-non-starter-characters

Specifies the append-non-starter-characters in CJK.

*Value:* <string>  
*Initial:* empty string  
*Applies to:* fo:page-sequence  
*Inherited:* no  
*Percentages:* N/A

When `axf:line-break="strict"` is specified, the characters included in <string> can be appended to the non-starter-characters. If the specified characters are also specified in `axf:except-non-starter-characters` as well in the same tag, the effect could be wrong. White space, closing parenthesis and punctuations, that are originally non-starter, are disregarded even though they are specified. The initial value of non-starter-characters can be set by `append-non-starter-characters` in the Option Setting File.

### axf:except-non-starter-characters

Specifies the except-non-starter-characters in CJK.

*Value:* <string>  
*Initial:* empty string

*Applies to:* fo:page-sequence  
*Inherited:* no  
*Percentages:* N/A

When `axf:line-break="strict"` is specified, the characters included in `<string>` can be eliminated from the non-starter-characters. If the specified characters are also specified to `axf:append-non-starter-characters` in the same tag as well, the effect is not guaranteed. White space, closing parenthesis and punctuations, that are originally non-starter, are disregarded even though they are specified. The initial value of non-starter-characters can be set by `append-non-starter-characters` in the Option Setting File.

---

### **axf:append-non-end-of-line-characters**

Specifies the append-non-end-of-characters in CJK.

*Value:* <string>  
*Initial:* empty string  
*Applies to:* fo:page-sequence  
*Inherited:* no  
*Percentages:* N/A

When `axf:line-break="strict"` is specified, the characters included in `<string>` can be appended to the non-end-of-line-characters. If the specified characters are also specified to `axf:except-non-end-of-line-characters` as well in the same tag, the effect could be wrong. White space, opening parenthesis and punctuations, that are originally non-end-of-line, are disregarded even though they are specified. The initial value of non-end-of-line-characters can be set by `append-non-end-of-line-characters` in the Option Setting File.

---

### **axf:except-non-end-of-line-characters**

Specifies the except-non-end-of-characters in CJK.

*Value:* <string>  
*Initial:* empty string  
*Applies to:* fo:page-sequence  
*Inherited:* no  
*Percentages:* N/A

When `axf:line-break="strict"` is specified, the characters included in `<string>` can be eliminated from the non-end-of-line-characters. If the specified characters are also specified to `axf:append-non-end-of-line-characters` in the same tag as well, the effect is not guaranteed. White space, opening parenthesis and punctuations, that are originally non-end-of-line, are disregarded even though they are specified. The initial value of non-end-of-line-characters can be set by `append-non-end-of-line-characters` in the Option Setting File.

---

### **axf:word-break**

The `axf:word-break` specifies whether to enable line breaking even between word.

*Value:* normal | break-all | keep-all  
*Initial:* normal  
*Applies to:* all block-level and inline-level formatting objects  
*Inherited:* yes  
*Percentages:* N/A

Values have the following meanings.

#### **normal**

Follows a normal line breaking rule.

#### **break-all**

The line breaking is enabled between all the characters in the word. This is effective only with the following scripts.

- Latn
- Cyrl
- Grek
- Zyyy

#### **keep-all**

Do not break between words. A word here indicates a character string which consists of the following category (General Category) of Unicode.

- Letter
- Mark

- Number

Whether to break lines on a boundary with characters other than these follows the rule of the standard line break. Moreover, hyphenate="true" is disregarded.

### axf:word-wrap

Specifies whether to break word forcibly when line break cannot be performed.

*Value:* normal | break-word  
*Initial:* break-word  
*Applies to:* all block-level and inline-level formatting objects  
*Inherited:* yes  
*Percentages:* N/A

Values have the following meanings.

#### normal

The line is not broken forcibly. The text will overflow across the region.

#### break-word

The line is broken forcibly at an appropriate position.

### axf:abbreviation-character-count

Specifies the minimum number of characters considered to be an abbreviation.

*Value:* auto | <number>  
*Initial:* auto  
*Applies to:* fo:block  
*Inherited:* yes  
*Percentages:* N/A

Values have the following meanings.

#### auto

The value specified by [abbreviation-character-count](#) in the Option Setting File is adopted.

#### <number>

Specifies the number of characters considered to be an abbreviation.

Axf:abbreviation-character-count controls the line break of the abbreviation delimited by U+002F or /. In general, the line break occurs with km/h or w/o, etc. because the position right after / is the target for the line break and it's not desirable. In [UAX#14: Line Breaking Properties](#), it is written to avoid splitting in such cases. In **AH Formatter V6.0**, when the number of characters of the word right after / is less than the specified number with axf:abbreviation-character-count, the word is considered as the abbreviation and the line does not break. The same behavior is also applied to the hyphenation. Only when the string is one of the following scripts, it is considered as an abbreviation.

- Latn
- Cysl
- Grek
- Zyyy

The axf:abbreviation-character-count must be an integer number of 0 or more. 0 does not control over the abbreviation. In addition, when the line overflows without finding the line break position, the line break may forcibly occur right after /.

## Extension for Hyphenations

**AH Formatter V6.0** provides the extended features for hyphenations.

### axf:hyphenation-minimum-character-count

The axf:hyphenation-minimum-character-count specifies the minimum number of the character to hyphenate.

*Value:* <number>  
*Initial:* 1  
*Applies to:* fo:block, fo:character  
*Inherited:* yes

Percentages: N/A

The axf:hyphenation-minimum-character-count must be an integer number of 1 or more.

## axf:hyphenation-zone

---

axf:hyphenation-zone limits the range where a hyphenation is available.

*Value:* none | <length>  
*Initial:* none  
*Applies to:* fo:block  
*Inherited:* yes  
*Percentages:* N/A

Values have the following meanings.

### none

Nothing is limited in hyphenation.

### <length>

If the length from the end of a word to the end of line is less or equal to the specified value, the following word is not hyphenated.

It is invalid when zero or less value is specified.

## axf:hyphenate-hyphenated-word

---

Specifies whether to hyphenate the already hyphenated word or not.

*Value:* true | false  
*Initial:* true  
*Applies to:* fo:block, fo:character  
*Inherited:* yes  
*Percentages:* N/A

Values have the following meanings.

### true

Hyphenates a word.

### false

Does not hyphenate a word. The line may break only at the hyphen position.

The followings are recognized as hyphens.

U+002D HYPHEN-MINUS  
 U+00AD SOFT HYPHEN  
 U+2010 HYPHEN  
 U+2011 NON-BREAKING HYPHEN

This setting is invalid when hyphenate="false" is specified.

## <axf:hyphenation-info>

---

Common Usage:

Specifies additional hyphenation information. This element doesn't generate the area tree. These features are not available with **AH Formatter V6.0 Lite**. `no-LT`

Areas:

None.

Constraints:

```
<!ELEMENT axf:hyphenation-info (%axh-elements;)*>
<!ATTLIST axf:hyphenation-info language CDATA #REQUIRED>
<!ATTLIST axf:hyphenation-info src CDATA #IMPLIED>
```

The axf:hyphenation-info extension element can be set as many as you want right under fo:declarations.

The language property is indispensable to indicate which language this element is associated with. It is not available to do hyphenation if the specified language is originally not hyphenated. This setting is invalid for Thai.

The `src` property can optionally specify the exception dictionary. It's an additional setting to the original dictionary and effective only in this FO. There is no language dependency constraint for the file name unlike the original dictionary. It is a relative base-uri for the relative path. It's not a relative path to the [environment valuable](#) of the hyphenation dictionary. `<exceptions>` in the specified dictionary is evaluated. When multiple words of the same spelling are registered, the information on the last registered word becomes effective.

Contents:

`%axs-settings`; is an element which belongs to the name space <http://www.antennahouse.com/names/XSL/Hyphenations>. The elements in the [Hyphenation Exception Dictionary](#) are included in the name space, however currently only `<exceptions>` (and its child element, `<hyphen>`) can be described.

Examples:

```
<fo:declarations>
  <axf:hyphenation-info language="eng" src="en-add.xml"
    xmlns:axh="http://www.antennahouse.com/names/XSL/Hyphenations">
    <axh:exceptions>
      abc-defg
    </axh:exceptions>
  </axf:hyphenation-info>
</fo:declarations>
```

In this example, an additional exception dictionary, `en-add.xml` is specified for English language, and then the exception hyphenation is specified for the word spelled `abcdefg`.

In the example above, do not use the following setting. (`<hyphen/>` is disregarded.)

```
abc<hyphen/>defg
```

**CAUTION:**

Instead, please make sure to specify

```
abc<axh:hyphen/>defg
```

## Trimming and Hanging

AH Formatter V6.0 provides extension properties to trim and to hang.

### axf:punctuation-trim

Specifies whether to treat full width punctuations in Japanese.

*Value:* none | [ [ start | start-except-first ] || [ end | allow-end | end-except-fullstop ] || adjacent ] | all | <string> | auto  
*Initial:* auto  
*Applies to:* all block-level and inline-level formatting objects  
*Inherited:* yes  
*Percentages:* N/A

Values have the following meanings.

#### none

Punctuation characters are not trimmed.

#### start

Punctuation characters (open parenthesis etc.) at start of line are trimmed.

#### start-except-first

Same as start except for a start line of a paragraph or a line right after the forced line break. [V6.0](#)

#### end

When `text-align="right"` or `text-align="justify"` (or `text-align-last="justify"`) is specified and full-width punctuation marks (closing parenthesis etc.) come to the end of the sentence, the character is treated as half width forcibly.

#### allow-end

When `text-align="right"` or `text-align="justify"` (or `text-align-last="justify"`) is specified and full-width punctuation marks (closing parenthesis etc.) come to the end of the sentence, characters are treated as full width if text fits into one line, characters are treated as half width if text does not fit into one line.

#### end-except-fullstop

Behaves as the same as the end value except that the following two characters are not included.

U+3002 IDEOGRAPHIC FULL STOP 。  
 U+FF0E FULLWIDTH FULL STOP .

### adjacent

The space between a full width punctuation and a full width character in Japanese is trimmed.

- Between full width close parenthesis and full width open parenthesis.
- Between full width close parenthesis and full width close parenthesis.
- Between full width close parenthesis and full width middle dots.
- Between full width close parenthesis and full width non punctuation characters.
- Between full width open parenthesis and full width open parenthesis.
- Between full width middle dots and full width open parenthesis.
- Between full width non punctuation character and full width open parenthesis.

Full width punctuation characters are treated the same as full width close parenthesis. The adjacent value is equivalent to `axf:kerning-mode="contextual"` with **XSL Formatter V4**.

### all

Trim all parentheses, middle points, and punctuations of full width and treat them as half width.

### <string>

Behave the same as "all", but only the character included in the character strings specified here is treated as a half width. Other than parentheses, middle points, and punctuations of full width are disregarded.

### auto

Dependent on the system setting. This is the value specified by `punctuation-trim` and `text-justify-mode` in the Option Setting File.

Full width punctuation open parenthesis processed by `axf:punctuation-trim` are:

U+2018	LEFT SINGLE QUOTATION MARK	‘
U+201C	LEFT DOUBLE QUOTATION MARK	“
U+3008	LEFT ANGLE BRACKET	<
U+300A	LEFT DOUBLE ANGLE BRACKET	<<
U+300C	LEFT CORNER BRACKET	┌
U+300E	LEFT WHITE CORNER BRACKET	┌
U+3010	LEFT BLACK LENTICULAR BRACKET	【
U+3014	LEFT TORTOISE SHELL BRACKET	[
U+3016	LEFT WHITE LENTICULAR BRACKET	[
U+3018	LEFT WHITE TORTOISE SHELL BRACKET	[
U+301A	LEFT WHITE SQUARE BRACKET	[
U+301D	REVERSED DOUBLE PRIME QUOTATION MARK	”
U+FF08	FULLWIDTH LEFT PARENTHESIS	(
U+FF3B	FULLWIDTH LEFT SQUARE BRACKET	[
U+FF5B	FULLWIDTH LEFT CURLY BRACKET	{
U+FF5F	FULLWIDTH LEFT WHITE PARENTHESIS	(

Full width punctuation close parenthesis processed by `axf:punctuation-trim` are:

U+2019	RIGHT SINGLE QUOTATION MARK	’
U+201D	RIGHT DOUBLE QUOTATION MARK	”
U+3009	RIGHT ANGLE BRACKET	>
U+300B	RIGHT DOUBLE ANGLE BRACKET	>>
U+300D	RIGHT CORNER BRACKET	┐
U+300F	RIGHT WHITE CORNER BRACKET	┐
U+3011	RIGHT BLACK LENTICULAR BRACKET	】
U+3015	RIGHT TORTOISE SHELL BRACKET	]
U+3017	RIGHT WHITE LENTICULAR BRACKET	]
U+3019	RIGHT WHITE TORTOISE SHELL BRACKET	]
U+301B	RIGHT WHITE SQUARE BRACKET	]
U+301E	DOUBLE PRIME QUOTATION MARK	”
U+301F	LOW DOUBLE PRIME QUOTATION MARK	”
U+FF09	FULLWIDTH RIGHT PARENTHESIS	)
U+FF3D	FULLWIDTH RIGHT SQUARE BRACKET	]
U+FF5D	FULLWIDTH RIGHT CURLY BRACKET	}
U+FF60	FULLWIDTH RIGHT WHITE PARENTHESIS	)

Full width punctuations processed by `axf:punctuation-trim` are:



U+3001 IDEOGRAPHIC COMMA 、  
 U+3002 IDEOGRAPHIC FULL STOP 。  
 U+FF0C FULLWIDTH COMMA ;  
 U+FF0E FULLWIDTH FULL STOP .

Full width middle dots processed by `afx:punctuation-trim` are:

U+30FB KATAKANA MIDDLE DOT ・  
 U+FF1A FULLWIDTH COLON :  
 U+FF1B FULLWIDTH SEMICOLON ;

**CAUTION:** If you specify `afx:punctuation-trim="both"` with **XSL Formatter V4**, please specify `afx:punctuation-trim="start end"` or `afx:punctuation-trim="start allow-end"` with **AH Formatter V6.0** to make it the same. In addition, if you use this extension together with `afx:kerning-mode="contextual"`, please specify `afx:punctuation-trim="start end adjacent"` etc. with **AH Formatter V6.0**.

## afx:text-justify-trim

Specifies the way to trim..

*Value:* none | [ punctuation | punctuation-except-fullstop ] || [ kana | ideograph ] || inter-word ] | auto  
*Initial:* auto  
*Applies to:* all block-level and inline-level formatting objects  
*Inherited:* yes  
*Percentages:* N/A

Values have the following meanings.

### none

Do not trim Japanese text.

### punctuation

Trim text with parentheses, middle points, and punctuations of full width in Japanese.

### punctuation-except-fullstop

Behaves as the same as the punctuation value except that the following two characters are not included.

U+3002 IDEOGRAPHIC FULL STOP 。  
 U+FF0E FULLWIDTH FULL STOP .

### kana

Trim Hiragana and Katakana a bit.

### ideograph

Trim spaces between Chinese characters or kana.

### inter-word

Trim spaces between Western words.

### auto

Dependent on the system setting. This is the value specified by `punctuation-trim` and `text-justify-mode` in the Option Setting File. However, when `afx:avoid-widow-words` is "true", it is considered as "Ideograph inter-word" specified.

Trim the spaces between characters as specified so that text fits into a line. When `afx:punctuation-trim="all"` is specified, there may be no more space to trim.

## afx:kerning-mode

The `afx:kerning-mode` specifies whether to process the kerning.

*Value:* none | pair | auto  
*Initial:* auto  
*Applies to:* all block-level and inline-level formatting objects  
*Inherited:* yes  
*Percentages:* N/A

Values have the following meanings.

**none**

The kerning is not processed.

**pair**

The pair kerning for Western characters is processed.

**auto**

Dependent on the system setting.

You can specify whether pair kernings for European languages is performed or not by [pair-kerning](#) in the Option Setting File. This can also be set in the [Option Setting dialog](#) in GUI.

**CAUTION:** `axf:kerning-mode="contextual"` with **XSL Formatter V4** was abolished with **AH Formatter V6.0**. Please use `axf:punctuation-trim="adjacent"` instead.

`axf:kerning-mode` does not work when letter-spacing is specified.

**axf:punctuation-spacing**

The `axf:punctuation-spacing` specifies the spacing between a full width punctuation and a full width character in Japanese.

*Value:* <length> | <percentage> | auto  
*Initial:* 50%  
*Applies to:* all block-level and inline-level formatting objects  
*Inherited:* yes  
*Percentages:* refer to the font size

The initial value of this space can be set by [punctuation-spacing](#) in the Option Setting File.

Values have the following meanings.

**auto**

Dependent on the system setting. This is the value specified by [punctuation-spacing](#) in the Option Setting File.

This space is used for the following space amount specified by `axf:punctuation-trim="adjacent"`.

- Between full width close parenthesis and full width open parenthesis.
- Between full width close parenthesis and full width non punctuation characters.
- Between full width non punctuation character and full width open parenthesis.

**axf:hang-punctuation**

Specifies whether to hang punctuations at the start of the line or end of the line.

*Value:* none | [ start || first || [ force-end | allow-end ] || last ]  
*Initial:* none  
*Applies to:* fo:block  
*Inherited:* yes  
*Percentages:* N/A

Values have the following meanings.

**none**

Do not hang punctuations at the start of the line or end of the line.

**start**

Hangs punctuations at the start of the line. If the target character for hanging comes to the start of the line, the character is hanged forcibly.

**first**

Behaves as the same as the start value only with the start line of a paragraph.

**force-end**

Hangs punctuations at the end of the line. When `text-align="right"` or `text-align="justify"` (or `text-align-last="justify"`) is specified and a target character for hanging comes to the end of the sentence, the character is hanged forcibly. When anything else is specified to `text-align`, the character is hanged naturally. the **end** value before V5 is taken as the **allow-end** value.

**allow-end**

Hangs punctuations at the end of the line. When text-align="right" or text-align="justify" (or text-align-last="justify") is specified and a target character for hanging comes to the end of the sentence, the character is not hanged if text fits into one line, the character is hanged if text does not fit into one line. When anything else is specified to text-align, the character is hanged naturally.

**last**

Behaves the same as the force-end value only with the end of the line of a paragraph.

The target punctuation marks is as follows.

- force-end、allow-end  
Japanese or Simplified Chinese
  - U+3001 IDEOGRAPHIC COMMA 、
  - U+3002 IDEOGRAPHIC FULL STOP 。
  - U+FF0C FULLWIDTH COMMA 、
  - U+FF0E FULLWIDTH FULL STOP 。
- Traditional Chinese
  - U+FE50 SMALL COMMA ，
  - U+FE51 SMALL IDEOGRAPHIC 。
  - U+FE52 SMALL FULL STOP 。
  - U+FF64 HALFWIDTH IDEOGRAPHIC COMMA 、
- Other languages
  - Same as the last value.
- last  
quotation marks, closing parentheses, period, comma and hyphen
- start、first  
quotation marks, closing parentheses and bullet

**axf:avoid-widow-words**

The axf:avoid-widow-words specifies spacing behavior between words or characters so that the last line of the paragraph does not have only one word left (one character for CJK).

*Value:* true | false  
*Initial:* false  
*Applies to:* fo:block  
*Inherited:* yes  
*Percentages:* N/A

Values have the following meanings.

**true**

Adjusts the spacing so that the last line of the paragraph does not have only one word left when the spacing behavior is available by trimming the space between Japanese characters or Western words. In CJK, when the case where one character or one character + punctuation come to the end of line, it will be avoided. If the trimming is not available, then one character will be sent to the next line if available.

**false**

Does nothing.

If the width of columns (length of the line) is short, it is not so effective because there is not enough space to run on. In addition, in case there is no room for a word to be placed at the end of the line, axf:avoid-widow-words has no effect. Please note that there may have no more space to trim by setting [axf:punctuation-trim](#) or [axf:text-justify-trim](#). With non-CJK languages, adjusting by sending a character to the next will not be done.

**Spacing and Alignment****Adding Space****axf:text-autospace**

The axf:text-autospace specifies whether to add space surrounding ideographic glyphs or not.

*Value:* none | [ ideograph-numeric || ideograph-alpha || ideograph-parenthesis || ideograph-punctuation ] | auto  
*Initial:* auto  
*Applies to:* all block-level and inline-level formatting objects  
*Inherited:* yes  
*Percentages:* N/A

Values have the following meanings.

#### **none**

Space is not added.

#### **ideograph-numeric**

Space is added between ideograph character and non-ideographic number character. Non-ideographic number character mentioned here indicates the character of Nd, NI, and No classified by Unicode.

#### **ideograph-alpha**

Space is added between ideograph character and non-ideographic alphabet character. Non-ideographic alphabet character mentioned here indicates the character of Lu, LI, Lt, Lm and Lo classified by Unicode.

#### **ideograph-parenthesis**

Space is added between ideograph character and non-ideographic parenthesis character. However space is not added between ideograph character and non-ideographic closing parenthesis or between non-ideographic opening parenthesis and ideograph character.

#### **ideograph-punctuation**

Space is added between ideograph character and non-ideographic punctuation character. Non-ideographic punctuation character mentioned here indicates the character of Ps, Pe, Po, Pi, and Pf classified by Unicode excluding parenthesis character and quotation mark. Space is added between period and ideograph character. However space is not added between ideograph character and period. The same rule is applied to comma.

#### **auto**

Dependent on the system setting. It's regarded as "none" or "ideograph-numeric ideograph-alpha" according to the setting.

The initial value of whether space is added or not can be set by [text-autospace](#) in the Option Setting File. It can also be set in the [Format Option Setting Dialog](#) in the GUI.

---

### **axf:text-autospace-width**

The axf:text-autospace-width specifies the width for axf:text-autospace.

*Value:* <length> | <percentage>  
*Initial:* 25%  
*Applies to:* all block-level and inline-level formatting objects  
*Inherited:* yes  
*Percentages:* refer to the font size

This space is used in [axf:text-autospace](#). In addition, the initial value of the space can be set by [text-autospace-width](#) in the Option Setting File.

---

### **axf:letter-spacing-side**

Specifies on which side of the character the space by letter-spacing is distributed. v6.0

*Value:* both | start | end  
*Initial:* both  
*Applies to:* inline-level formatting objects  
*Inherited:* yes  
*Percentages:* N/A

Values have the following meanings.

#### **both**

Half the amount of space is distributed on both side of the character for each.

#### **start**

The space is distributed only on the start side of the character.

**end**

The space is distributed only on the end side of the character.

## axf:auto-letter-spacing

Changes letter-spacing depending on the number of characters. `V6.0` `no-LT`

*Value:* [ none | <length> | <percentage> ]\*  
*Initial:* none  
*Applies to:* inline-level formatting objects  
*Inherited:* no  
*Percentages:* refer to the font size

Values have the following meanings.

### none

Does not specify letter-spacing.

Values can be enumerated corresponding to the number of characters of two or more. For example, if specified as follows;

```
axf:auto-letter-spacing="2em 1em 0.5em 0.25em"
```

when the number of characters in this FO is 2, then letter-spacing="2em" is applied. When 3 characters, then letter-spacing="1em" is applied. When 4 characters, then letter-spacing="0.5em" is applied. When 5 characters, then letter-spacing="0.25em" is applied. Nothing is done with the other numbers of characters. Only the characters included in the first in-line element is counted.

This property is defined mainly assuming the chapter in CJK. In the following case,

第 1 章 はじめに

it's better to use `axf:letter-spacing-side` together as follows.

```
第 1 章 <fo:inline axf:auto-letter-spacing="2em 1em 0.5em 0.25em" axf:letter-spacing-side="end">はじめに</fo:inline>
```

When letter-spacing is specified explicitly, it's invalid. In addition, it's not possible to apply this property to the text to which the number of characters (like page numbers, etc.) is not decided.

This property is not available with **AH Formatter V6.0 Lite**.

## Text Alignment

### axf:text-align-string

`axf:text-align-string` specifies the text alignment when `text-align="<string>"`.

*Value:* start | center | end | inside | outside | left | right  
*Initial:* end  
*Applies to:* fo:block  
*Inherited:* yes  
*Percentages:* N/A

Values have the following meanings.

**start**  
**center**  
**end**  
**inside**  
**outside**  
**left**  
**right**

Same as `text-align` or `text-align-last`.

Although the specification of `<string>` to `fo:table-cell` aligns the character position of decimal point, etc., there is no definition for the alignment of the whole character string. At a default, **AH Formatter V6.0** displayed it right aligned according to the illustration of [17.5.4 Horizontal alignment in a column](#). **AH Formatter V6.0** extends the alignment and makes it possible to align left or align center

**axf:text-align-first**

axf:text-align-first specifies the text alignment of the first line.

*Value:* relative | start | center | end | justify | inside | outside | left | right  
*Initial:* relative  
*Applies to:* fo:block  
*Inherited:* yes  
*Percentages:* N/A

Values have the following meanings.

**relative**

Does nothing. axf:text-align-first is invalid.

**start**

**center**

**end**

**justify**

**inside**

**outside**

**left**

**right**

Same as text-align or text-align-last.

Specifies the alignment of the child of the first line area and the alignment of the line coming right after the line with U+000A at the end. Priority is given above text-align-last.

Refer to [axf:leader-expansion](#).

**axf:leader-expansion**

axf:leader-expansion specifies whether to expand a leader forcibly. `{no-LT}`

*Value:* auto | force  
*Initial:* auto  
*Applies to:* fo:block  
*Inherited:* yes  
*Percentages:* N/A

Values have the following meanings.

**auto**

Operates as usual by specifying text-align.

**force**

Considers a line with leaders as text-align="justify". Consequently, leaders will expand.

Suppose you create a table of contents using leaders. Then you might want to format as follows with the length of a label, or the length of the number of pages.

1. Short Label ..... 10,20,30
2. Short Label ... 10,20,30,40,50,60,70,80,90,100,  
110,120,130,140,150
3. Very Looooooooooooooooooooooooooooooooong Label ...  
..... 10,20,30
4. Very Looooooooooooooooooooooooooooooooong Label ...  
... 10,20,30,40,50,60,70,80,90,100,110,120,130,  
140,150
5. Very Very Very Looooooooooooooooooooooooooooooooong  
Long Long Label ..... 10,20,30
6. Very Very Very Looooooooooooooooooooooooooooooooong  
Long Long Label ... 10,20,30,40,50,60,70,80,90,  
100,110,120,130,140,150

When the following XSL Standard is specified,

```
<fo:block text-align="justify" text-align-last="justify">
Label
```

```
<fo:leader leader-pattern="dots"/>
Pages
</fo:block>
```

only the simple 1. and 5. can get the expected results. And 3. can be performed by the following specification.

```
<fo:block text-align="justify" text-align-last="justify">
Label
<fo:leader leader-length.minimum="0pt" leader-pattern="dots"/><fo:leader leader-pattern="dots"/>
Pages
</fo:block>
```

Next, by using `axf:text-align-first` as follows,

```
<fo:block text-align="justify" text-align-last="right" axf:text-align-first="justify">
Label
<fo:leader leader-length.minimum="0pt" leader-pattern="dots"/><fo:leader leader-pattern="dots"/>
Pages
</fo:block>
```

all cases excluding 3. and 5. gets the result as expected. Furthermore, by using `axf:leader-expansion` as follows,

```
<fo:block text-align="justify" text-align-last="right" axf:text-align-first="justify"
axf:leader-expansion="force">
Label
<fo:leader leader-length.minimum="0pt" leader-pattern="dots"/><fo:leader leader-pattern="dots"/>
Pages
</fo:block>
```

all cases gets the result as expected.

This property is not available with **AH Formatter V6.0 Lite**.

### axf:text-kashida-space

---

Specifies the percentage of Kashida in Arabic justification.

*Value:* <percentage> | auto  
*Initial:* auto  
*Applies to:* all block-level and inline-level formatting objects  
*Inherited:* yes  
*Percentages:* yes

Values have the following meanings.

#### <percentage>

Indicates the percentage of white space and Kashida. If the value is 0%, Kashida is not inserted and only the white space expands as well as the normal justification. If the value is 100%, Kashida is inserted as much as possible. The value should be from 0% to 100%.

#### auto

Dependent on the system setting.

The initial value of the the percentage can be set by `text-kashida-space` in the Option Setting File.

### axf:justify-nbsp

---

The `axf:justify-nbsp` specifies whether to justify NON-BREAKING SPACE or not. Generally, NON-BREAKING SPACE (U+00A0) is intended for justification. The `axf:justify-nbsp` property can be used when you do not want to include U+00A0 in justification. In V2.5, U+00A0 is not intended for justification. This property can also be specified for compatibility with V2.5.

*Value:* true | false  
*Initial:* true  
*Applies to:* all formatting objects  
*Inherited:* yes  
*Percentages:* N/A

Values have the following meanings.

#### true

NON-BREAKING SPACE is included for justification.

**false**

NON-BREAKING SPACE is not included for justification.

**axf:indent-here**

Aligns the indent position to the resion position when a line break occurs. V6.0 no-LT

*Value:* none | <length>  
*Initial:* none  
*Applies to:* fo:inline  
*Inherited:* no  
*Percentages:* N/A

Values have the following meanings.

**none**

Nothing is done.

**<length>**

Aligns the indent position to the shifted position by <length> from the beginning of the specified line area.

The range enclosed with <fo:inline> which contains this property will be indented as follows;

```
<fo:block>Indent-here: <fo:inline axf:indent-here="0pt">The quick brown fox jumps over the lazy dog...</fo:inline></fo:block>
```

This property is not available with **AH Formatter V6.0 Lite**.

**Character and Text Decoration****axf:text-line-color**

axf:text-line-color specifies the color of underline, strikethrough, and overline.

*Value:* auto | <color>  
*Initial:* auto  
*Applies to:* all elements with and generated content with textual content  
*Inherited:* no  
*Percentages:* N/A

**axf:text-line-style**

axf:text-line-style specifies the style of underline, strikethrough, and overline.

*Value:* <border-style>  
*Initial:* solid  
*Applies to:* all elements with and generated content with textual content  
*Inherited:* no  
*Percentages:* N/A

none cannot be specified to <border-style>.

**axf:text-line-width**

axf:text-line-width specifies the width of underline, strikethrough, and overline.

*Value:* auto | <border-width>  
*Initial:* auto  
*Applies to:* all elements with and generated content with textual content  
*Inherited:* no  
*Percentages:* N/A

**axf:text-underline-position**

axf:text-underline-position specifies the position of underline.

*Value:* auto | [ [ before-edge | alphabetic | after-edge ] || [ <percentage> | <length> ] ]  
*Initial:* auto  
*Applies to:* all elements with and generated content with textual content  
*Inherited:* no



**Percentages:** refers to the "line-height" of the parent area

Values have the following meanings.

#### **auto**

The underline is placed on the automatically adjusted position. The specification of [axf:vertical-underline-side](#) in vertical writing mode is effective.

#### **before-edge**

The underline is placed on the before-edge. When `<percentage>` or `<length>` is not specified, the upper end of the height of an underline is placed on the before-edge. When `<percentage>` or `<length>` is specified, the center of the height of an underline is placed on the before-edge.

#### **alphabetic**

The underline is placed on the position of the baseline. When `<percentage>` or `<length>` is not specified, the upper end of the height of an underline is placed on the baseline. When `<percentage>` or `<length>` is specified, the center of the height of an underline is placed on the baseline.

#### **after-edge**

The underline is placed on the after-edge. When `<percentage>` or `<length>` is not specified, the upper end of the height of an underline is placed on the after-edge. When `<percentage>` or `<length>` is specified, the center of the height of an underline is placed on the after-edge.

#### **<percentage>**

#### **<length>**

The underline position is shifted by the specified amount. When the underline is placed on the right side by [axf:vertical-underline-side](#), it is moved to the opposite direction of the left side.

---

### **axf:vertical-underline-side**

The `axf:vertical-underline-side` specifies on which side of the text to put underline in vertical writing-mode.

*Value:* left | right | depend-on-language | auto  
*Initial:* auto  
*Applies to:* all block-level and inline-level formatting objects  
*Inherited:* yes  
*Percentages:* N/A

Values have the following meanings.

#### **left**

The underline is placed on the left side.

#### **right**

The underline is placed on the right side.

#### **depend-on-language**

The underline is placed on the right side when the language property is Japanese(jpn) or Korean(kor). The underline is placed on the left side when the language property is other than Japanese(jpn) or Korean(kor).

#### **auto**

Dependent on the system setting.

This property is effective only when `axf:text-underline-position="auto"` is specified. The overline is placed on the opposite position of the underline.

The initial value of the underline position can be set by [vertical-underline-side](#) in the Option Setting File. It can also be set in the [Format Option Setting Dialog](#) in the GUI.

When `axf:vertical-underline-side="auto"` is specified and the initial value of the system is also auto, the underline is placed on the right side when the language property is Japanese(jpn) or Korean(kor). The underline is placed on the left side when the language property is other than Japanese(jpn) or Korean(kor). If there is no language properties specified, it depends on the [Default CJK language setting](#).

---

## **Emphasis Marks**

**AH Formatter V6.0** is capable of applying emphasis marks to the character string. However, emphasis marks cannot be applied to an arbitrary script. Only to the following scripts in addition to CJK are available.

- Latn
- Cyrl
- Grek
- Zyyy

It's not available to apply emphasis marks to the **ruby** characters, though it is available to apply to ruby's base characters.

As for the glyph of the emphasis mark in the general font, the size of glyph image is various, you will need to adjust the position and size according to the emphasis mark you use.

```
axf:text-emphasis-style="sesame"
axf:text-emphasis-offset="-0.25"
axf:text-emphasis-font-size="1"
axf:text-emphasis-position="before"
```

```
axf:text-emphasis-style="circle"
axf:text-emphasis-offset="0.25"
axf:text-emphasis-font-size="0.25"
axf:text-emphasis-position="before"
```

Free proprietary fonts for emphasis marks have been prepared. ([☞ Kenten Generic OpenType Font](#)). These fonts have the same size of emphasis marks, then the same settings for any emphasis marks will be OK.

```
axf:text-emphasis-style="sesame"
axf:text-emphasis-offset="0"
axf:text-emphasis-font-size="0.5"
axf:text-emphasis-font-family="KentenGeneric"
axf:text-emphasis-position="before"
```

## axf:text-emphasis-style

Specifies the style of emphasis marks. V6.0

*Value:* none | [ [ filled | open ] ] | [ dot | circle | double-circle | triangle | sesame ] | <string>  
*Initial:* none  
*Applies to:* all elements  
*Inherited:* yes  
*Percentages:* N/A

Values have the following meanings.

### none

No emphasis marks.

### filled

Specifies a character with color-fill.

### open

Specifies a character with an outline without color-fill.

### dot

Specifies a filled dot. **filled dot** is U+2022 ●, **open dot** is U+25E6 ○.

### circle

Specifies a circle. **filled circle** is U+25CF ●, **open circle** is U+25CB ○.

### double-circle

Specifies a double-circle. **filled double-circle** is U+25C9 ⊙, **open double-circle** is U+25CE ⊚.

### triangle

Specifies a triangle. **filled triangle** is U+25B2 ▲, **open triangle** is U+25B3 △.

### sesame

Specifies a sesame dot. **filled sesame** is U+FE45 ↰, **open sesame** is U+FE46 ↲.

### <string>

Specifies an arbitrary character string. When multiple characters are specified, overlapping of emphasis marks is not considered though everything is displayed.

when **filled** or **open** is not specified, it's considered as **filled**. When **filled** or **open** is specified, it's considered as **circle** in vertical writing mode.

### axf:text-emphasis-position

---

Specifies on which side of base characters emphasis marks are put. V6.0

*Value:* before | after  
*Initial:* before  
*Applies to:* all elements  
*Inherited:* yes  
*Percentages:* N/A

Values have the following meanings.

#### **before**

Emphasis marks are put on the before side.

#### **after**

Emphasis marks are put on the after side.

### axf:text-emphasis-offset

---

Specifies the space between emphasis marks and the base characters. V6.0

*Value:* <number> | <length> | <percentage>  
*Initial:* Opt  
*Applies to:* all elements  
*Inherited:* yes  
*Percentages:* refer to the font size

It's a value created by crossing the text-emphasis-font-size with the setting of <number>. When **ruby** and emphasis marks are put on the same side, it is adjusted to the larger one of the the specified value and the ruby beight.

### axf:text-emphasis-skip

---

Specifies the character to which emphasis marks are not applied. V6.0

*Value:* none | [ spaces || punctuation || symbols || narrow ]  
*Initial:* spaces  
*Applies to:* all elements  
*Inherited:* yes  
*Percentages:* N/A

Values have the following meanings.

#### **spaces**

White space characters are excluded.

#### **punctuation**

Punctuations are excluded.

#### **symbols**

Symbols are excluded.

#### **narrow**

non double-byte characters (single-byte characters, etc.) are excluded.

### axf:text-emphasis-font-family

---

Specifies the font family of emphasis marks. V6.0

*Value:* [ [ <family-name> | <generic-family> ], ]\* [ <family-name> | <generic-family> ]  
*Initial:* empty string  
*Applies to:* emphasis elements  
*Inherited:* yes  
*Percentages:* N/A

If nothing is specified, it's considered the same as font-family.

**axf:text-emphasis-font-size**

Specifies the font size of emphasis marks. [V6.0](#)

*Value:* <number> | <absolute-size> | <relative-size> | <length> | <percentage>  
*Initial:* 0.5  
*Applies to:* emphasis elements  
*Inherited:* yes  
*Percentages:* refer to the font size

It's a value created by crossing the font size with the setting of <number>

**axf:text-emphasis-font-style**

Specifies whether emphasis marks are made Italic. [V6.0](#)

*Value:* normal | italic  
*Initial:* empty  
*Applies to:* emphasis elements  
*Inherited:* yes  
*Percentages:* N/A

If nothing is specified, it's considered the same as font-style.

**axf:text-emphasis-font-weight**

Specifies the font weight of emphasis marks. [V6.0](#)

*Value:* normal | bold | bolder | lighter | 100 | 200 | 300 | 400 | 500 | 600 | 700 | 800 | 900  
*Initial:* empty  
*Applies to:* emphasis elements  
*Inherited:* yes  
*Percentages:* N/A

If nothing is specified, it's considered the same as font-weight.

**axf:text-emphasis-font-stretch**

Specifies the font stretching of emphasis marks. [V6.0](#)

*Value:* normal | wider | narrower | ultra-condensed | extra-condensed | condensed | semi-condensed | semi-expanded | expanded | extra-expanded | ultra-expanded | <percentage> | <number>  
*Initial:* empty  
*Applies to:* emphasis elements  
*Inherited:* yes  
*Percentages:* refer to the text-emphasis-font-size

If nothing is specified, it's considered the same as font-stretch.

**axf:text-emphasis-color**

Specifies the color of emphasis marks. [V6.0](#)

*Value:* <color>  
*Initial:* empty  
*Applies to:* emphasis elements  
*Inherited:* yes  
*Percentages:* N/A

If nothing is specified, it's considered the same as color.

**Output Glyph by SOFT HYPHEN**

Generally SOFT HYPHEN (U+00AD) is displayed only when the line breaks and is not displayed when the line does not break. However in this processing, it is often the case that the glyph assigned to U+00AD may not be printed when the fonts such as pictographic characters are used.

**AH Formatter V6.0** implements the extension property `axf:soft-hyphen-treatment` which makes it possible to eliminate this problem.

```
<fo:block axf:soft-hyphen-treatment="preserve" font-family="Wingdings">abc&#xAD;xyz
```

## axf:soft-hyphen-treatment

---

*Value:* auto | preserve  
*Initial:* auto  
*Applies to:* all formatting objects  
*Inherited:* yes  
*Percentages:* N/A

Values have the following meanings.

### auto

SOFT HYPHEN is deleted except when needed for line breaking. (normal)

### preserve

SOFT HYPHEN is not deleted and the target glyph is output.

## Text Transformation

---

### axf:text-replace

---

Replaces the character strings.

*Value:* none | [ <string> <string> ]+  
*Initial:* none  
*Applies to:* all block-level and inline-level formatting objects  
*Inherited:* no  
*Percentages:* N/A

Values have the following meanings.

### none

Do nothing.

### <string> <string>

The first pair of character strings is replaced by the latter character strings. You have to specify a character string by a pair. It is not replaced when character strings are odd pieces or the first character string is empty. White space characters will be replaced after being processed by white-space-treatment, etc.

When it is simultaneously specified with text-transform or [axf:number-transform](#), axf:text-replace will be evaluated at the end.

### axf:number-transform

---

Converts the number sequence in the character string. `no-LT`

*Value:* none | kansuji | kansuji-if-vertical | <list-style-type> | <string>  
*Initial:* none  
*Applies to:* all block-level and inline-level formatting objects  
*Inherited:* yes  
*Percentages:* N/A

Values have the following meanings.

### none

Do nothing.

### kansuji

Converts the contained number sequence into Japanese numerals. The details of the Japanese numeral format can be specified by [axf:kansuji-style](#), [axf:kansuji-letter](#) and [axf:kansuji-grouping-letter](#).

### kansuji-if-vertical

Only with the vertical writing, such as writing-mode="tb-rl", text-transform="kansuji" is applied. Nothing is changed when it's not the vertical writing.

### <list-style-type>

Among the [list-style-type](#) defined by CSS, the number related types which can be specified are <algorithmic>, <numeric>, <alphabetic>, <symbolic>, <non-repeating>. Convertible digit numbers may differ depending on list-style-type. Too long number sequence cannot be converted.

**<string>**

When a character string is specified, the behavior is same as when the character string is specified by [format](#).

A number sequence (number) here indicates character strings of the following forms.

```
number ::= digits
digits ::= [0-9]+
```

When it is simultaneously specified with text-transform or [axf:text-replace](#), [axf:number-transform](#) is evaluated previously.

**Japanese Numerals**

**AH Formatter V6.0** can convert numbers into Japanese numerals using [axf:number-transform](#). This function is not available with **AH Formatter V6.0 Lite**.

**axf:kansuji-style**

Specifies the style used for Japanese numerals. `{no-LT}`

*Value:* simple | grouping | readable  
*Initial:* simple  
*Applies to:* all block-level and inline-level formatting objects  
*Inherited:* yes  
*Percentages:* N/A

Values have the following meanings.

**simple**

Converts a number sequence into Japanese numerals by one to one correspondence.

```
12340  ⇒ 一二三四〇
6700000 ⇒ 六七〇〇〇〇〇
```

**grouping**

In adds to the conversion of one to one correspondence, grouping for 万億兆京垓秭穰溝澗正載極 is inserted.

- When all the parts below a certain grouping are zero, they are deiregarded.

```
12340  ⇒ 一万二三四〇
6700000 ⇒ 六七〇万
```

**readable**

Inserts grouping of 万億兆… and uses 十百千 additionally so that the character strings becomes readable.

- Preceding zero is disregarded.
- In the huge numerical value which needs the next grouping of 極, the digits more than 極 are converted by one to one correspondence.

```
12340  ⇒ 一万二千三百四十
6700000 ⇒ 六百七十万
1000000 ⇒ 百万
000015 ⇒ 十五
0       ⇒ 〇
```

**axf:kansuji-letter**

Specifies the character used for Japanese numerals. `{no-LT}`

*Value:* kanji | latin | <string>  
*Initial:* kanji  
*Applies to:* all block-level and inline-level formatting objects  
*Inherited:* yes  
*Percentages:* N/A

Values have the following meanings.

**kanji**

Use Japanese numerals for numbers. Equivalent to specify `axf:kansuji-letter="〇一二三四五六七八九"`.

〇 : U+3007  
 一 : U+4E00  
 二 : U+4E8C  
 三 : U+4E09  
 四 : U+56DB  
 五 : U+4E94  
 六 : U+516D  
 七 : U+4E03  
 八 : U+516B  
 九 : U+4E5D

**latin**

Use double-byte western numerals for numbers. Equivalent to specify `axf:kansuji-letter="0 1 2 3 4 5 6 7 8 9"`.

0 : U+FF10  
 1 : U+FF11  
 2 : U+FF12  
 3 : U+FF13  
 4 : U+FF14  
 5 : U+FF15  
 6 : U+FF16  
 7 : U+FF17  
 8 : U+FF18  
 9 : U+FF19

**<string>**

Specifies arbitrary characters as numbers you use. For example, if you want to use traditional Japanese numerals, specify `axf:kansuji-letter="零壹貳參肆伍陸柒捌玖"`. If you want to specify traditional Japanese numerals only to "一二三", specify `axf:kansuji-letter="〇壹貳參四五六七八九"`. If you specify only the head part like `axf:kansuji-letter="〇壹貳參"`, it is compensated as `axf:kansuji-letter="〇壹貳參四五六七八九"`.

零 : U+96F6  
 壹 : U+58F1  
 貳 : U+5F10  
 參 : U+53C2  
 肆 : U+8086  
 伍 : U+4F0D  
 陸 : U+9678  
 柒 : U+67D2  
 捌 : U+634C  
 玖 : U+7396

**axf:kansuji-grouping-letter**

Specifies the grouping character used for Japanese numerals. `{no-LT}`

*Value:* <string>  
*Initial:* empty string  
*Applies to:* all block-level and inline-level formatting objects  
*Inherited:* yes  
*Percentages:* N/A

The null character sequence is regarded as "十百千万億兆京垓秭穰溝澗正載極". Please change and specify only a corresponding character if you want to change "万" to "萬", for example. When you specify only the head part like "拾佰阡萬", it is compensated as "拾佰阡萬億兆京垓秭穰溝澗正載極".

十 : U+5341  
 百 : U+767E  
 千 : U+5343  
 万 : U+4E07  
 億 : U+5104  
 兆 : U+5146  
 京 : U+4EAC  
 垓 : U+5793

杼 : U+25771  
 穰 : U+7A63  
 溝 : U+6E9D  
 澗 : U+6F97  
 正 : U+6B63  
 載 : U+8F09  
 極 : U+6975

拾 : U+62FE  
 佰 : U+4F70  
 阡 : U+9621  
 萬 : U+842C

## Ligature

---

### axf:ligature-mode

---

Specifies whether to perform the ligature processing.

*Value:* none | [ latin || kana ] | all | auto  
*Initial:* auto  
*Applies to:* all block-level and inline-level formatting objects  
*Inherited:* yes  
*Percentages:* N/A

Values have the following meanings.

#### none

The ligature processing is not performed.

#### latin

Processes the ligature in European languages. It is processed when the scripts are the followings.

- Latn
- Grek
- Cyrl

#### kana

Processes the ligature of Kana + semivoiced sound symbol in JIS X 0213:2004 as follows.

- U+304B + U+309A
- U+304D + U+309A
- U+304F + U+309A
- U+3051 + U+309A
- U+3053 + U+309A
- U+30AB + U+309A
- U+30AD + U+309A
- U+30AF + U+309A
- U+30B1 + U+309A
- U+30B3 + U+309A
- U+30BB + U+309A
- U+30C4 + U+309A
- U+30C8 + U+309A
- U+31F7 + U+309A

Although the ligature of European languages and the ligature of symbols are included in JIS X 0213:2004, these are processed by ligature-mode="latin".

#### all

latin and kana are considered to be specified.



**auto**

Dependent on the system setting.

The ligature processed here is the ligature defined in the font itself. The ligature, U+FB01 etc. defined in Unicode are not processed. That is, a sequence of U+0066 U+0069 are not substituted with U+FB0. If the ligature corresponding to U+0066 U+0069 is defined inside the font, its glyph will be outputted.

You can specify whether ligatures for European languages are performed or not by [latin-ligature](#) in the Option Setting File. These can also be set in the [Option Setting dialog](#) in GUI.

**axf:japanese-glyph**

Specifies the glyph of Japanese Kanji. Applied only to the Japanese Kanji that has the substitution function for the specific Open type.

*Value:* none | jp78 | jp83 | jp90 | jp04  
*Initial:* none  
*Applies to:* all block-level and inline-level formatting objects  
*Inherited:* yes  
*Percentages:* N/A

Values have the following meanings.

**none**

Nothing is done.

**jp78**

jp78 is applied. Nothing is done when the font does not have jp78.

**jp83**

Jp83 is applied. Nothing is done when the font does not have jp83.

**jp90**

Jp90 is applied. Nothing is done when the font does not have jp90.

**jp04**

Jp04 is applied. Nothing is done when the font does not have jp04.

The glyph of Japanese Kanji is changed more than a little by JIS in which it is being defined. Some of the Open Type font have glyphs that correspond to JIS respectively. The glyphs of such fonts can be specified by the `japanese-glyph` property.

**CAUTION:** AH Formatter V6.0 supports Unicode Variation Sequence. We recommend to use the feature of [Variation Sequence](#) as much as possible for Japanese Kanji.

**CAUTION:** In AH Formatter V6.0, the specification of `<string>` is not recommended. Please use [font-variant](#). V6.0

**axf:alt-glyph**

Specifies the alternative glyph of a character. It is applied only to the specific OpenType.

*Value:* <number> | <string> <number>?  
*Initial:* 0  
*Applies to:* all block-level and inline-level formatting objects  
*Inherited:* yes  
*Percentages:* N/A

Values have the following meanings.

**<number>**

Specifies the order of the alternative glyph. 0 is a standard glyph. When the specified order is beyond the number of the glyph which is contained in the font, it is regarded as 0.

**<string>**

Specifies the tag of OpenType GSUB feature. If omitted, it is regarded as `aalt`. `<number>` is required or not required depending on the tag. When `<number>` is omitted even if it's necessary, it is regarded as 1. The following tags can be specified.

- `aalt`
- `nalt`

**CAUTION:** In **AH Formatter V6.0**, the specification of <string> is not recommended. Please use `font-variant="annotation(<number>)"` for nalt. **V6.0**

Some of the OpenType font have some alternative glyphs against a certain glyph. In such a font, a glyph can be chosen with the alt-glyph property. **AH Formatter V6.0** doesn't offer the way to investigate what type and how many glyphs are contained. It is applied only to the script associated with Chinese character, Hiragana, Katakana, Latin, Greek, Cyrillic and Number.

## Page Number

**AH Formatter V6.0** provides extension properties to control the page number.

### axf:suppress-duplicate-page-number

The axf:suppress-duplicate-page-number specifies to delete the duplicated page numbers.

**CAUTION:** A similar function is equipped in XSL1.1. Please make use of `marge-*-index-key-reference`.

*Value:* true | false  
*Initial:* false  
*Applies to:* all formatting objects  
*Inherited:* yes  
*Percentages:* N/A

When formatting a index, generally several fo:page-number-citation line up for one index item. In such case, when fo:page-number-citation refers to the same page number of the index, page numbers are output repeatedly using the standard property.

For example:

When axf:suppress-duplicate-page-number is not specified.

```
<fo:block text-align-last="justify">
  <fo:block>bcd
    <fo:leader lender-pattern="dots"/>
    <fo:basic-link internal-destination="ID1">
      <fo:page-number-citation ref-id="ID1"/>
    </fo:basic-link>
  </fo:block>
  <fo:block>index
    <fo:leader lender-pattern="dots"/>
    <fo:basic-link internal-destination="ID2">
      <fo:page-number-citation ref-id="ID2"/>,
    </fo:basic-link>
    <fo:basic-link internal-destination="ID3">
      <fo:page-number-citation ref-id="ID3"/>,
    </fo:basic-link>
    <fo:basic-link internal-destination="ID4">
      <fo:page-number-citation ref-id="ID4"/>,
    </fo:basic-link>
    <fo:basic-link internal-destination="ID5">
      <fo:page-number-citation ref-id="ID5"/>,
    </fo:basic-link>
    <fo:basic-link internal-destination="ID6">
      <fo:page-number-citation ref-id="ID6"/>,
    </fo:basic-link>
    <fo:basic-link internal-destination="ID7">
      <fo:page-number-citation ref-id="ID7"/>,
    </fo:basic-link>
  </fo:block>
</fo:block>
```

Format example of the above text is as follows.

```
bcd ..... 2
index ..... 3, 3, 4, 4, 4, 4
```

When axf:suppress-duplicate-page-number is specified.

```
<fo:block text-align-last="justify" axf:suppress-duplicate-page-number="true">
  <fo:block>bcd
    <fo:leader lender-pattern="dots"/>
```

```

<fo:basic-link internal-destination="ID1">
  <fo:page-number-citation ref-id="ID1"/>
</fo:basic-link>
</fo:block>
<fo:block>index
  <fo:leader lender-pattern="dots"/>
  <fo:basic-link internal-destination="ID2">
    <fo:page-number-citation ref-id="ID2"/>,
  </fo:basic-link>
  <fo:basic-link internal-destination="ID3">
    <fo:page-number-citation ref-id="ID3"/>,
  </fo:basic-link>
  <fo:basic-link internal-destination="ID4">
    <fo:page-number-citation ref-id="ID4"/>,
  </fo:basic-link>
  <fo:basic-link internal-destination="ID5">
    <fo:page-number-citation ref-id="ID5"/>,
  </fo:basic-link>
  <fo:basic-link internal-destination="ID6">
    <fo:page-number-citation ref-id="ID6"/>,
  </fo:basic-link>
  <fo:basic-link internal-destination="ID7">
    <fo:page-number-citation ref-id="ID7"/>,
  </fo:basic-link>
</fo:block>
</fo:block>

```

Format example of the above text is as follows.

```

bcd ..... 2
index ..... 3, 4

```

## axf:page-number-prefix

The axf:page-number-prefix sets the prefix of page number.

**CAUTION:** A similar function is equipped in XSL1.1. Please make use of fo:folio-prefix.

*Value:* <string>  
*Initial:* empty string  
*Applies to:* fo:page-sequence  
*Inherited:* no  
*Percentages:* N/A

Specifies the prefix for page numbers. Specified string will be outputted before the page number by fo:page-number and fo:page-number-citation. Also this string will be used as the page label in the PDF.

```

<fo:page-sequence axf:page-number-prefix="A-" format="i" initial-page-number="10">
  <fo:static-content ...>
    ...<fo:page-number/>...
  </fo:static-content>
  ...
</fo:page-sequence>

```

Arabic and Hebrew cannot be specified for the value of axf:page-number-prefix.

## axf:physical-page-number

The axf:physical-page-number gets physical page number.

*Value:* true | false  
*Initial:* false  
*Applies to:* fo:page-number, fo:page-number-citation, fo:page-number-citation-last  
*Inherited:* no  
*Percentages:* N/A

The value of initial-page-number property is disregarded and the physical page number that is not affected by the page-sequence is obtained. In order to obtain the total number of pages, ID is given to the last page per the following example:

```

<fo:page-number-citation ref-id="lastpage" axf:physical-page-number="true"/>

```

See also `fo:page-number-citation-last` in XSL1.1.

### axf:origin-id

Specifies the origin of the page number.

*Value:* <idref>  
*Initial:* none  
*Applies to:* fo:page-number, fo:page-number-citation, fo:page-number-citation-last  
*Inherited:* no  
*Percentages:* N/A

ID for the origin of the page number can be specified in `fo:page-number` or `fo:page-number-citation`. The output page number is as follows:

```
[ref-id page] - [origin-id page] + 1
```

If the specified Page is after the ref-id page, the value becomes 0. In `fo:page-number`, ref-id is considered to be the position of `fo:page-number` itself.

### axf:assumed-page-number

Specifies the assumed page number.

*Value:* <number>  
*Initial:* N/A  
*Applies to:* all formatting objects  
*Inherited:* yes  
*Percentages:* N/A

When `<fo:page-number-citation>` appears, the reference area is sometimes undecided. In evaluation of `<fo:page-number-citation>`, the temporary area is secured first, and when a page number is decided, it is adjusted to the right contents. Since the size of an area may change at this time, the formatted result is sometimes not desirable. For example, when an area becomes narrow, it seems that there is an unnecessary line break, and condition that a character will overflow if an area becomes large appears. `axf:assumed-page-number` gives the assumed page number at that time.

**AH Formatter V6.0** expects the area of at least three-digit page number and formats temporarily. What is necessary will be just to specify `axf:assumed-page-number="99"` etc., when the page number is clearly less than that.

### axf:number-type

The `axf:number-type` specifies whether to output the page number or to output the column number.

*Value:* page | column | page-and-column  
*Initial:* page  
*Applies to:* fo:page-number, fo:page-number-citation, fo:page-number-citation-last  
*Inherited:* no  
*Percentages:* N/A

Values have the following meanings.

#### page

Outputs the page number.

#### column

Outputs the column number.

#### page-and-column

Outputs both of the page number and the column number.

It can be specified to `fo:page-number`, etc. and the column number can be outputted instead of the page number. While `format` property is applied to the format of the page number, `axf:column-number-format` property is applied to the format of the column number. The column number is not outputted if multiple column is not specified by specifying of `column-count="1"` or `span="all"`.

### axf:column-number-format

The `axf:column-number-format` specifies the format of column number.

*Value:* <string>  
*Initial:* A  
*Applies to:* fo:page-sequence  
*Inherited:* no

*Percentages:* N/A

It applies to the format of column number specified by `axf:number-type` property. It can be specified with the same way as `format` property.

### axf:suppress-folio-prefix

Invalidates the prefix of page numbers.

*Value:* true | false  
*Initial:* false  
*Applies to:* fo:page-number, fo:page-number-citation, fo:page-number-citation-last  
*Inherited:* no  
*Percentages:* N/A

Specifies whether to invalidate the prefix set by fo:folio-prefix.

Values have the following meanings.

**true**

Invalidates the prefix.

**false**

Validates the prefix.

### axf:suppress-folio-suffix

Invalidates the suffix of page numbers.

*Value:* true | false  
*Initial:* false  
*Applies to:* fo:page-number, fo:page-number-citation, fo:page-number-citation-last  
*Inherited:* no  
*Percentages:* N/A

Specifies whether to invalidate the suffix set by fo:folio-suffix.

Values have the following meanings.

**true**

Invalidates the suffix.

**false**

Validates the suffix.

## Line Numbering

Place line numbers as part of the text. Line numbers can be placed against the line area. Even though the place looks empty, if there is a line area, line numbers can be placed. These are not placed in the space or in the margin. The `axf:line-number` is not effective inside fo:float or fo:footnote.

**CAUTION:** Placing the line numbering for the page formatted complexly with fo:block-container or fo:table, etc. might get unintended consequences. Please apply the line numbering to a simple structural document as much as possible.

This function is not available with **AH Formatter V6.0 Lite**.

### axf:line-number

The `axf:line-number` specifies whether to show line numbers. `no-LT`

*Value:* none | show | hide  
*Initial:* none  
*Applies to:* all block-level formatting objects which are descendants of fo:flow  
*Inherited:* yes  
*Percentages:* N/A

Values have the following meanings.

**none**

Line numbers are not generated.

**show**

Line numbers are shown.

**hide**

Line numbers are not shown but the numbers of the line are counted.

Line numbers are counted against the lines inside the block where `axf:line-number="show"` or `axf:line-number="hide"` is specified.

This property is not available with **AH Formatter V6.0 Lite**.

**axf:line-number-background-color**

The `axf:line-number-background-color` specifies the background color of line numbers. no-LT

*Value:* <color> | transparent  
*Initial:* transparent  
*Applies to:* all block-level formatting objects which are descendants of fo:flow  
*Inherited:* yes  
*Percentages:* N/A

This property is not available with **AH Formatter V6.0 Lite**.

**axf:line-number-color**

The `axf:line-number-color` specifies the color of line numbers. no-LT

*Value:* <color>  
*Initial:* the value of the 'color' property  
*Applies to:* all block-level formatting objects which are descendants of fo:flow  
*Inherited:* yes  
*Percentages:* N/A

This property is not available with **AH Formatter V6.0 Lite**.

**axf:line-number-display-align**

The `axf:line-number-display-align` specifies the alignment, in the block-progression-direction, of line numbers in the line area. no-LT

*Value:* auto | before | center | after  
*Initial:* auto  
*Applies to:* all block-level formatting objects which are descendants of fo:flow  
*Inherited:* yes  
*Percentages:* N/A

Values have the following meanings.

**before**

Align the line numbers in the upper end of the line area.

**center**

Align the line numbers in the middle of the line area.

**after**

Align the line numbers in the lower end of the line area.

**auto**

It is considered after in horizontal writing, and center in vertical writing.

This property is not available with **AH Formatter V6.0 Lite**.

**axf:line-number-font-family**

The `axf:line-number-font-family` specifies the font family of line numbers. no-LT

*Value:* [ [ <family-name> | <generic-family> ], ]\* [ <family-name> | <generic-family> ]  
*Initial:* depends on UA  
*Applies to:* all block-level formatting objects which are descendants of fo:flow  
*Inherited:* yes  
*Percentages:* N/A

This property is not available with **AH Formatter V6.0 Lite**.

### axf:line-number-font-size

The axf:line-number-font-size specifies the font size of line numbers. no-LT

*Value:* <absolute-size> | <relative-size> | <length> | <percentage>  
*Initial:* medium  
*Applies to:* all block-level formatting objects which are descendants of fo:flow  
*Inherited:* yes  
*Percentages:* refer to the font size

This property is not available with **AH Formatter V6.0 Lite**.

### axf:line-number-font-style

The axf:line-number-font-style specifies whether to make the font style italic. no-LT

*Value:* normal | italic  
*Initial:* normal  
*Applies to:* all block-level formatting objects which are descendants of fo:flow  
*Inherited:* yes  
*Percentages:* N/A

This property is not available with **AH Formatter V6.0 Lite**.

### axf:line-number-font-weight

The axf:line-number-font-weight specifies the font weight of line numbers. no-LT

*Value:* normal | bold | bolder | lighter | 100 | 200 | 300 | 400 | 500 | 600 | 700 | 800 | 900  
*Initial:* normal  
*Applies to:* all block-level formatting objects which are descendants of fo:flow  
*Inherited:* yes  
*Percentages:* N/A

This property is not available with **AH Formatter V6.0 Lite**.

### axf:line-number-format

The axf:line-number-format specifies the format of line numbers. no-LT

*Value:* <string>  
*Initial:* 1  
*Applies to:* fo:page-sequence  
*Inherited:* no  
*Percentages:* N/A

Line numbers are shown as the specified format. The way to specify is the same as that for the [format](#) property.

This property is not available with **AH Formatter V6.0 Lite**.

### axf:line-number-initial

The axf:line-number-initial specifies the line number of the first line. no-LT

*Value:* auto | <number>  
*Initial:* auto  
*Applies to:* fo:page-sequence  
*Inherited:* no  
*Percentages:* N/A

Values have the following meanings.

#### auto

Line numbers are not initialized, and it is succeeded from previous fo:page-sequence. When previous fo:page-sequence does not exist, it becomes 1.

#### <number>

Initializes the line number with the specified value. The value must be equal to or more than 1. Actual initialization takes place at the time when [axf:line-number-reset](#) is specified.

This property is not available with **AH Formatter V6.0 Lite**.

**afx:line-number-interval**

The afx:line-number-interval specifies the interval of line numbers. no-LT

*Value:* <number> | auto  
*Initial:* auto  
*Applies to:* fo:page-sequence  
*Inherited:* no  
*Percentages:* N/A

Values have the following meanings.

**auto**

The specification of previous fo:page-sequence is succeeded. When previous fo:page-sequence does not exist, it becomes 1.

**<number>**

Sets the interval of the line numbers to the value specified.

Specifies to show the line numbers like 5, 10, 15. In this case, afx:line-number-initial="1" afx:line-number-start="5" afx:line-number-interval="5" can be applied.

This property is not available with **AH Formatter V6.0 Lite**.

**afx:line-number-offset**

The afx:line-number-offset specifies the offset of line numbers. no-LT

*Value:* <length>  
*Initial:* 0pt  
*Applies to:* all block-level formatting objects which are descendants of fo:flow  
*Inherited:* yes  
*Percentages:* N/A

This property is not available with **AH Formatter V6.0 Lite**.

**afx:line-number-orientation**

Rotates line numbers. no-LT

*Value:* 0 | 90 | 180 | 270 | -90 | -180 | -270  
*Initial:* 0  
*Applies to:* fo:page-sequence  
*Inherited:* no  
*Percentages:* N/A

Rotates line numbers with specified degrees.

This property is not available with **AH Formatter V6.0 Lite**.

**afx:line-number-position**

The afx:line-number-position specifies the position of line numbers. no-LT

*Value:* start | end | inside | outside | alternate  
*Initial:* start  
*Applies to:* all block-level formatting objects which are descendants of fo:flow  
*Inherited:* yes  
*Percentages:* N/A

Values have the following meanings.

**start**

Places line number at start-edge.

**end**

Places line number at end-edge.

**inside**

Places line number at start-edge on odd pages, at end-edge on even pages.



**outside**

Places line number at end-edge on odd pages, at start-edge on even pages.

**alternate**

Places line number at end-edge in the last column of multi-column layout, except for the last column, places it at start-edge.

This property is not available with **AH Formatter V6.0 Lite**.

**axf:line-number-prefix**

---

The axf:line-number-prefix sets the prefix of line number. `no-LT`

*Value:* <string>  
*Initial:* empty string  
*Applies to:* fo:page-sequence  
*Inherited:* no  
*Percentages:* N/A

Specifies the prefix for line numbers. Specified string will be outputted before the page number by [axf:line-number](#).

This property is not available with **AH Formatter V6.0 Lite**.

**axf:line-number-reset**

---

The axf:line-number-reset reset line numbering. `no-LT`

*Value:* auto | none | page | column  
*Initial:* auto  
*Applies to:* fo:page-sequence  
*Inherited:* no  
*Percentages:* N/A

Values have the following meanings.

**auto**

The specification of previous fo:page-sequence is succeeded. When previous fo:page-sequence does not exist, it becomes none.

**none**

Line numbers are not reset.

**page**

Line numbers are reset when pages break.

**column**

Line numbers are reset when column break.

Line numbers are reset to the value specified to [axf:line-number-initial](#).

This property is not available with **AH Formatter V6.0 Lite**.

**axf:line-number-start**

---

The axf:line-number-start specifies the starting line number. `no-LT`

*Value:* <number> | auto  
*Initial:* auto  
*Applies to:* fo:page-sequence  
*Inherited:* no  
*Percentages:* N/A

Values have the following meanings.

**auto**

The specification of previous fo:page-sequence is succeeded. When previous fo:page-sequence does not exist, it becomes 1.

**<number>**

Sets the line number that begins outputting to the value specified.

Line numbers are shown when the value is equal to or more than the value specified here. When `axf:line-number-initial="1"` `axf:line-number-start="5"` are specified, the first 4 lines are not shown but the 5th line starts being outputted. When `axf:line-number-initial="5"` `axf:line-number-start="6"` are specified, the first line is not shown but the next line is outputted as 6.

This property is not available with **AH Formatter V6.0 Lite**.

### axf:line-number-text-align

The `axf:line-number-text-align` specifies the alignment of line numbers in the line area. `no-LT`

*Value:* auto | start | center | end | inside | outside | left | right  
*Initial:* auto  
*Applies to:* all block-level formatting objects which are descendants of fo:flow  
*Inherited:* yes  
*Percentages:* N/A

Values have the following meanings.

**start**  
**center**  
**end**  
**inside**  
**outside**  
**left**  
**right**

Same as text-align.

**auto**

When the position of the line numbers is in the start side, it is regarded as end. When the position of the line numbers is in the end side, it is regarded as start. The position of line numbers is specified by [axf:line-number-position](#).

When [axf:line-number-width](#) is not specified, It is always regarded as auto.

This property is not available with **AH Formatter V6.0 Lite**.

### axf:line-number-text-decoration

The `axf:line-number-text-decoration` specifies the test decoration of line numbers. `no-LT`

*Value:* same as text-decoration  
*Initial:* none  
*Applies to:* all block-level formatting objects which are descendants of fo:flow  
*Inherited:* yes  
*Percentages:* N/A

Values have the same meaning as text-decoration.

This property is not available with **AH Formatter V6.0 Lite**.

### axf:line-number-width

The `axf:line-number-text-align` specifies the width of line numbers. `no-LT`

*Value:* auto | <length>  
*Initial:* auto  
*Applies to:* all block-level formatting objects which are descendants of fo:flow  
*Inherited:* yes  
*Percentages:* N/A

Values have the following meanings.

**auto**

The width of line numbers becomes the width of the text of the line.

When specifying the arrangement of line numbers by [axf:line-number-text-align](#) , the value other than auto should be specified for the width.

This property is not available with **AH Formatter V6.0 Lite**.

## Line Continued Mark

When the line with long text strings is broken and continues to the next line, line continued marks can be applied to the end of line. It is invalid inside fo:float or fo:footnote.

This function is not available with **AH Formatter V6.0 Lite**.

### afx:line-continued-mark

The afx:line-continued-mark specifies whether to show line continued marks. `{no-LT}`

*Value:* <string>  
*Initial:* empty string  
*Applies to:* all block-level formatting objects which are descendants of fo:flow  
*Inherited:* yes  
*Percentages:* N/A

Values have the following meanings.

#### <string>

Line continued marks with the specified character strings are shown. If the character strings are empty, line continued marks are not shown.

**CAUTION:** Complicated character strings which consist of multiple scripts or complicated scripts, such as Arabic, Thai, etc., are not supported.

This property is not available with **AH Formatter V6.0 Lite**.

### afx:line-continued-mark-background-color

The afx:line-continued-mark-background-color specifies the background color of line continued marks. `{no-LT}`

*Value:* <color> | transparent  
*Initial:* transparent  
*Applies to:* all block-level formatting objects which are descendants of fo:flow  
*Inherited:* yes  
*Percentages:* N/A

This property is not available with **AH Formatter V6.0 Lite**.

### afx:line-continued-mark-color

The afx:line-continued-mark-color specifies the color of line continued marks. `{no-LT}`

*Value:* <color>  
*Initial:* depends on the current line area  
*Applies to:* all block-level formatting objects which are descendants of fo:flow  
*Inherited:* yes  
*Percentages:* N/A

This property is not available with **AH Formatter V6.0 Lite**.

### afx:line-continued-mark-font-family

The afx:line-continued-mark-font-family specifies the font family of line continued marks. `{no-LT}`

*Value:* [ [ <family-name> | <generic-family> ], ]\* [ <family-name> | <generic-family> ]  
*Initial:* depends on the current line area  
*Applies to:* all block-level formatting objects which are descendants of fo:flow  
*Inherited:* yes  
*Percentages:* N/A

This property is not available with **AH Formatter V6.0 Lite**.

### afx:line-continued-mark-font-size

The afx:line-continued-mark-font-size specifies the font size of line continued marks. `{no-LT}`

*Value:* <absolute-size> | <relative-size> | <length> | <percentage>  
*Initial:* depends on the current line area  
*Applies to:* all block-level formatting objects which are descendants of fo:flow  
*Inherited:* yes

*Percentages:* refer to the font size

This property is not available with **AH Formatter V6.0 Lite**.

### axf:line-continued-mark-font-style

The axf:line-continued-mark-font-style specifies whether to make the font style italic. no-LT

*Value:* normal | italic  
*Initial:* depends on the current line area  
*Applies to:* all block-level formatting objects which are descendants of fo:flow  
*Inherited:* yes  
*Percentages:* N/A

This property is not available with **AH Formatter V6.0 Lite**.

### axf:line-continued-mark-font-weight

The axf:line-continued-mark-font-weight specifies the font weight of line numbers. no-LT

*Value:* normal | bold | bolder | lighter | 100 | 200 | 300 | 400 | 500 | 600 | 700 | 800 | 900  
*Initial:* depends on the current line area  
*Applies to:* all block-level formatting objects which are descendants of fo:flow  
*Inherited:* yes  
*Percentages:* N/A

This property is not available with **AH Formatter V6.0 Lite**.

### axf:line-continued-mark-offset

The axf:line-continued-mark-offset specifies the offset of line continued marks. no-LT

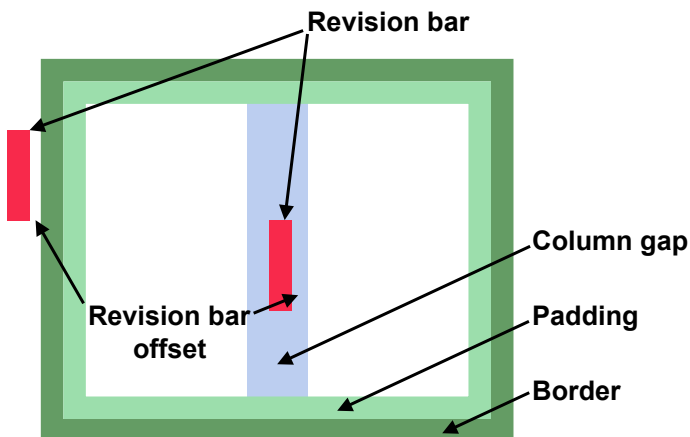
*Value:* <length>  
*Initial:* 0pt  
*Applies to:* all block-level formatting objects which are descendants of fo:flow  
*Inherited:* yes  
*Percentages:* N/A

This property is not available with **AH Formatter V6.0 Lite**.

## Revision Bar

**AH Formatter V6.0** provides extension properties to layout the revision bars in the documents. The revision bar is shown above the border or the column rule.

**CAUTION:** A similar function is equipped in XSL1.1. Please make use of fo:change-bar-begin and fo:change-bar-end.



### axf:revision-bar-color

The axf:revision-bar-color specifies the color of the revision bar.

*Value:* <color>  
*Initial:* the value of the 'color' property

*Applies to:* all block-level and inline-level formatting objects which are descendants of fo:flow  
*Inherited:* yes  
*Percentages:* N/A

---

### axf:revision-bar-offset

The axf:revision-bar-offset specifies the offset of the revision bar.

*Value:* <length>  
*Initial:* Opt  
*Applies to:* all block-level and inline-level formatting objects which are descendants of fo:flow  
*Inherited:* yes  
*Percentages:* N/A

---

### axf:revision-bar-position

The axf:revision-bar-position specifies the position of the revision bar.

*Value:* start | end | inside | outside | alternate | both  
*Initial:* start  
*Applies to:* all block-level and inline-level formatting objects which are descendants of fo:flow  
*Inherited:* yes  
*Percentages:* N/A

Values have the following meanings.

#### start

Places revision bar at start-edge.

#### end

Places revision bar at end-edge.

#### inside

Places revision bar at start-edge on odd pages, at end-edge on even pages.

#### outside

Places revision bar at end-edge on odd pages, at start-edge on even pages.

#### alternate

Places revision bar at end-edge in the last column of multi-column layout, except for the last column, places it at start-edge.

#### both

Places revision bar at start-edge and end-edge.

---

### axf:revision-bar-style

The axf:revision-bar-style specifies the style of the revision bar.

*Value:* <border-style>  
*Initial:* none  
*Applies to:* all block-level and inline-level formatting objects which are descendants of fo:flow  
*Inherited:* yes  
*Percentages:* N/A

---

### axf:revision-bar-width

The axf:revision-bar-width specifies the width of the revision bar.

*Value:* <border-width>  
*Initial:* medium  
*Applies to:* all block-level and inline-level formatting objects which are descendants of fo:flow  
*Inherited:* yes  
*Percentages:* N/A

---

### <fo:change-bar-begin>

Extends the child element so that <fo:float> can be described as the content of the element. As a result, arbitrary characters can be placed for side marks. V6.0 no-LT

```

<fo:change-bar-begin change-bar-class="xxx">
<fo:float float="start">
<fo:block-container width="2.5em" absolute-position="absolute" left="-4em">
<fo:block font-size="12pt">This is a change log.</fo:block>
</fo:block-container>
</fo:float>
</fo:change-bar-begin>

```

This extension is not available with **AH Formatter V6.0 Lite**.

## Footnote

---

### Footnote Positioning

---

With **AH Formatter V6.0**, footnotes can be arranged per each column or footnotes duplicated in the same page can be deleted. Also, sidenotes can be generated.

#### axf:footnote-align

---

Specifies the alignment of the footnotes.

*Value:* auto | before | after  
*Initial:* auto  
*Applies to:* fo:region-body, fo:footnote  
*Inherited:* no  
*Percentages:* N/A

Values have the following meanings.

##### auto

Footnotes are placed automatically. Footnotes are the usual arrangement. When the text is one column, sidenotes are arranged with an anchor position, and in the case of two or more columns, sidenotes are arranged near by the before side.

##### before

Sidenotes are arranged near by the before side. In the case of usual footnotes which are not sidenotes, footnotes are arranged immediately after the text in a page.

##### after

Sidenotes are arranged near by the after side. In the case of usual footnotes which are not sidenotes, footnotes are arranged at the last of a page.

Specifies the method of arrangement of footnotes or sidenotes. When it is sidenotes (footnote arrangement into region-start or region-end is specified by [axf:footnote-position](#)), it's possible to specify whether it is arranged automatically, or it is arranged near by the before side, or it is arranged near by the after side.

#### axf:footnote-stacking

---

The axf:footnote-stacking specifies the method to layout the footnote.

*Value:* block | inline  
*Initial:* block  
*Applies to:* fo:region-body, fo:footnote  
*Inherited:* no  
*Percentages:* N/A

Values have the following meanings.

##### block

Arranges the footnotes in the block progression direction.

##### inline

Arranges the footnotes in the inline progression direction.

#### axf:footnote-position

---

The axf:footnote-position specifies the location to layout the footnote.

*Value:* page | start | end | inside | outside | column | start-column | end-column | inside-column | outside-column  
*Initial:* page  
*Applies to:* fo:region-body, fo:footnote  
*Inherited:* no  
*Percentages:* N/A

Values have the following meanings.

#### **page**

Footnotes are placed at the bottom of each page in region-body. This is the standard layout of XSL specification.

#### **start**

Footnotes are placed at each page in region-start.

#### **end**

Footnotes are placed at each page in region-end.

#### **inside**

Footnotes are placed at each even-page in region-end and each odd-page in region-start.

#### **outside**

Footnotes are placed at each even-page in region-start and each odd-page in region-end.

#### **column**

Footnotes are placed at the bottom of each column.

#### **start-column**

Footnotes are placed at the bottom of the first column.

#### **end-column**

Footnotes are placed at the bottom of the last column.

#### **inside-column**

Footnotes are placed in the same way as end-column at even-page and in the same way as start-column at odd-page.

#### **outside-column**

Footnotes are placed in the same way as start-column at even-page and in the same way as end-column at odd-page.

It is possible to arrange footnotes inside the region-start or the region-end (these notes are called sidenotes). Besides specifying them to fo:region-body, it is also effective to specify to individual fo:footnote. It is possible to make several types of notes intermingled by this extension.

There are following restrictions for sidenotes.

- The sidenotes which run over from the specified area will overflow.
- The xsl-footnote-separator is not effective.

start-column, end-column, inside-column and outside-column have the following limitations.

- It is not possible to specify these values to fo:footnote. It is only available to specify them to region-body.
- When you specify these values to region-body, column cannot be specified to fo:footnote.
- These values cannot be used with the forcible column break such as break-before="column", etc. These values cannot be used for a large volume of footnotes.

---

### **axf:footnote-keep**

Specifies whether to arrange a footnote and an anchor in the same page

*Value:* auto | always  
*Initial:* auto  
*Applies to:* fo:region-body, fo:footnote  
*Inherited:* no  
*Percentages:* N/A

Values have the following meanings.

#### **auto**

When a footnote does not fit within the column, it is sent to the next page or the next column.

**always**

When a footnote does not fit within the column, the following line of the anchor and the subsequent lines are sent to the following page, and a footnote and an anchor are arranged in the same page. When `axf:footnote-position="column"` is specified, a footnote and an anchor are arranged in the same column.

**axf:suppress-duplicate-footnote**

Specifies whether to delete footnotes duplicated in the same page.

*Value:* true | false  
*Initial:* false  
*Applies to:* fo:footnote  
*Inherited:* yes  
*Percentages:* N/A

Deters the display of duplicated footnotes on the same footnote region when the same footnote is assigned to two or more places in the same page. When `axf:footnote-position="column"` is specified, it is effective only for the footnote in the same column.

**Footnote Numbering**

These functions are not available with **AH Formatter V6.0 Lite**.

**<axf:footnote-number>**

Common Usage:

Generates a footnote number. `<no-LT>`

Areas:

Generates and returns a single normal inline-area.

Constraints:

`<axf:footnote-number>` can be specified only as an anchor area. That is, it can be specified only as a descendant of `<fo:inline>` which is a child of `<fo:footnote>`.

Contents:

EMPTY

This element is not available with **AH Formatter V6.0 Lite**.

**<axf:footnote-number-citation>**

Common Usage:

Cites a footnote number. `<no-LT>`

Areas:

Generates and returns a single normal inline-area.

Constraints:

`<axf:footnote-number-citation>` can be specified only as a descendant of `<fo:footnote-body>`. The `ref-id` property is required, and the ID should be referenced by `<axf:footnote-number>` in the same anchor area.

Contents:

EMPTY

This element is not available with **AH Formatter V6.0 Lite**.

**axf:footnote-number-format**

Specifies the format of footnote number. `<no-LT>`

*Value:* <string>  
*Initial:* 1  
*Applies to:* fo:page-sequence  
*Inherited:* no  
*Percentages:* N/A



Adopted as a format of [axf:footnote-number](#). It can be specified in the same way as the [format](#) property.

This property is not available with **AH Formatter V6.0 Lite**.

---

### axf:footnote-number-initial

Specifies the initial footnote number. `no-LT`

*Value:* auto | <number>  
*Initial:* auto  
*Applies to:* fo:page-sequence  
*Inherited:* no  
*Percentages:* N/A

Values have the following meanings.

#### auto

Succeeded from the before existing fo:page-sequence without initializing a footnote number. When fo:page-sequence does not exist before, it is set to 1.

#### <number>

Initializes the footnote number with the specified value. The value must be more than or equal to 1. Actual initialization takes place at the time when [axf:footnote-number-reset](#) is specified.

This property is not available with **AH Formatter V6.0 Lite**.

---

### axf:footnote-number-reset

Resets the footnote numbering. `no-LT`

*Value:* auto | none | page | odd-page | even-page | column  
*Initial:* auto  
*Applies to:* fo:page-sequence  
*Inherited:* no  
*Percentages:* N/A

Values have the following meanings.

#### auto

Succeeded from the before existing fo:page-sequence. When fo:page-sequence does not exist before, it is set to none.

#### none

Does not reset the footnote number.

#### page

Resets the footnote number when a page breaks.

#### odd-page

Resets the footnote number when an odd page breaks.

#### even-page

Resets the footnote number when an even page breaks.

#### column

Resets the footnote number when a column breaks.

A footnote number is reset by the value specified by [axf:footnote-number-initial](#).

This property is not available with **AH Formatter V6.0 Lite**.

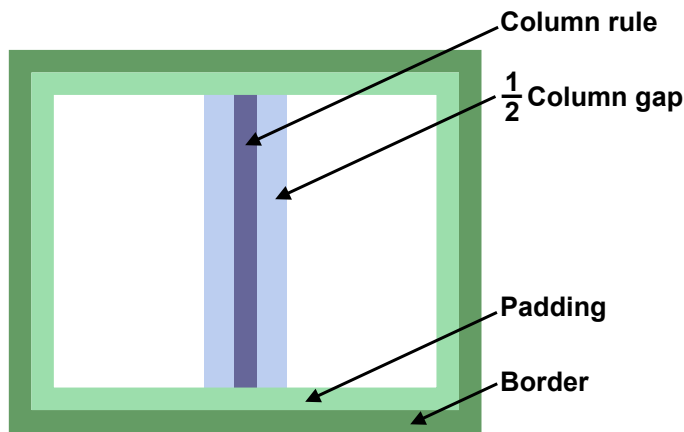
---

## Borders

---

### Column Rule

**AH Formatter V6.0** provides extension properties to layout the column rules in the column gaps. These properties are placed as fo:region-body and fo:block-container. The column rule is placed above the border and below the revision bar.



### axf:column-rule-align

The axf:column-rule-align specifies the alignment of the column rule.

*Value:* before | center | after  
*Initial:* center  
*Applies to:* fo:region-body, fo:block-container  
*Inherited:* no  
*Percentages:* N/A

### axf:column-rule-color

The axf:column-rule-color specifies the color of the column rule.

*Value:* <color>  
*Initial:* the value of the 'color' property  
*Applies to:* fo:region-body, fo:block-container  
*Inherited:* no  
*Percentages:* N/A

### axf:column-rule-display

axf:column-rule-display specifies whether to also display a rule at the place which does not have columns at the end of a page, etc.

*Value:* gap | end | all  
*Initial:* gap  
*Applies to:* fo:region-body, fo:block-container  
*Inherited:* no  
*Percentages:* N/A

Values have the following meanings.

#### gap

Displays a rule only between the existing columns.

#### end

Displays a rule at the end side of the existing column. However, the most end side of the column is not included.

#### all

Displays a rule all between the non-existing columns at the end of a page, etc.

### axf:column-rule-length

The axf:column-rule-length specifies the length of the column rule.

*Value:* <length> | <percentage>  
*Initial:* 100%  
*Applies to:* fo:region-body, fo:block-container  
*Inherited:* no  
*Percentages:* refer to the size of the column

**axf:column-rule-style**

The axf:column-rule-style specifies the style of the column rule.

*Value:* <border-style>  
*Initial:* none  
*Applies to:* fo:region-body, fo:block-container  
*Inherited:* no  
*Percentages:* N/A

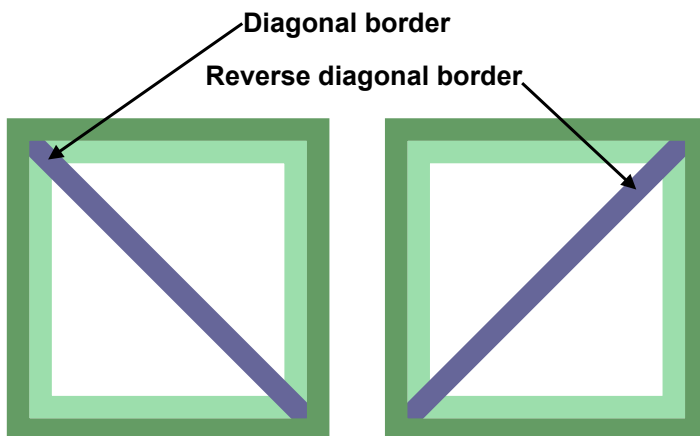
**axf:column-rule-width**

The axf:column-rule-width specifies the width of the column rule.

*Value:* <border-width>  
*Initial:* medium  
*Applies to:* fo:region-body, fo:block-container  
*Inherited:* no  
*Percentages:* N/A

**Diagonal Border**

**AH Formatter V6.0** provides extension properties to draw the diagonal border in the area such as the table cell where the border can be specified. The diagonal border by axf:diagonal-border-\* is drawn from the edge of before-start to the edge of after-end. The diagonal border by axf:reverse-diagonal-border-\* is drawn from the edge of before-end to the edge of after-start. When the writing-mode="lr-tb" is specified, the diagonal border is drawn as follows. When the writing-mode="rl-tb" or "tb-rl" is specified, it is drawn in a reverse way.

**axf:diagonal-border-color**

The axf:diagonal-border-color specifies the color of the diagonal border.

*Value:* <color>  
*Initial:* the value of the 'color' property  
*Applies to:* all FOs which can have borders  
*Inherited:* yes  
*Percentages:* N/A

**axf:diagonal-border-style**

The axf:diagonal-border-style specifies the style of the diagonal border.

*Value:* <border-style>  
*Initial:* none  
*Applies to:* all FOs which can have borders  
*Inherited:* no  
*Percentages:* N/A

**axf:diagonal-border-width**

The axf:diagonal-border-width specifies the width of the diagonal border.

*Value:* <border-width>  
*Initial:* medium  
*Applies to:* all FOs which can have borders  
*Inherited:* yes  
*Percentages:* N/A

---

### **axf:reverse-diagonal-border-color**

The axf:reverse-diagonal-border-color specifies the color of the reverse diagonal border.

*Value:* <color>  
*Initial:* the value of the 'color' property  
*Applies to:* all FOs which can have borders  
*Inherited:* yes  
*Percentages:* N/A

---

### **axf:reverse-diagonal-border-style**

The axf:reverse-diagonal-border-style specifies the style of the reverse diagonal border.

*Value:* <border-style>  
*Initial:* none  
*Applies to:* all FOs which can have borders  
*Inherited:* no  
*Percentages:* N/A

---

### **axf:reverse-diagonal-border-width**

The axf:reverse-diagonal-border-width specifies the width of the reverse diagonal border.

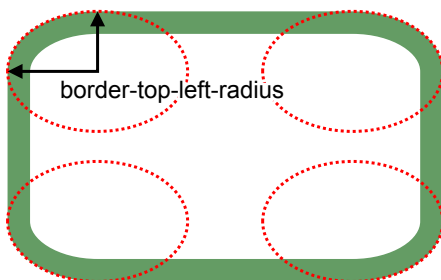
*Value:* <border-width>  
*Initial:* medium  
*Applies to:* all FOs which can have borders  
*Inherited:* yes  
*Percentages:* N/A

---

## **Rounding Border**

**axf:border-radius**  
**axf:border-top-left-radius**  
**axf:border-top-right-radius**  
**axf:border-bottom-left-radius**  
**axf:border-bottom-right-radius**

The radii of quarter ellipse (rounding border) are specified.



*Value:* <length> <length>?  
*Initial:* 0  
*Applies to:* all FOs which can have borders  
*Inherited:* no  
*Percentages:* N/A

The first value is the horizontal radius (or vertical if the 'writing-mode' is vertical). If the second length is omitted it is equal to the first. If either length is less or equal zero, the corner is square, not rounded. When border-collapse="collapse" is specified, border-radius is effective only when specified to fo:table.

## Box Shadow

### axf:box-shadow

The box shadow is specified.

*Value:* none | [ <length> <length> <length>? || <color> ]  
*Initial:* none  
*Applies to:* all FOs which can have borders  
*Inherited:* no  
*Percentages:* N/A

The meanings of the three <length>s and a <color> are as follows:

- The first <length> is an offset of a horizontal shadow. It becomes a right-side shadow of a region when a positive value is specified. It becomes a left-side shadow of a region when a negative value is specified.
- The second <length> is an offset of a vertical shadow. It becomes a bottom-side shadow of a region when a positive value is specified. It becomes a top-side shadow of a region when a negative value is specified.
- The 3rd <length> must be a non-negative value and specifies the quantity of gradation. If the value is 0, there is no gradation. With **AH Formatter V6.0**, this value is disregarded and it is always considered as 0.
- Gradation of color can be specified by <color>.

## Table

### axf:repeat-cell-content-at-break

axf:repeat-cell-content-at-break specifies whether to copy the contents of a cell when a cell breaks.

*Value:* true | false  
*Initial:* false  
*Applies to:* fo:table-cell  
*Inherited:* no  
*Percentages:* N/A

Values have the following meanings.

#### true

When the content of table cell fits in table-cell-area without breaking and table-cell-area breaks according to the break of other table-cell in the same row, or according to the break among the plural rows with number-rows-spanned, usually the content of table-cell-area becomes empty. When axf:repeat-cell-content-at-break is specified to table-cell, the content of the cell before break is copied and repeated.

#### false

The content of the cell is not copied.

### axf:repeat-footnote-in-table-footer

Specifies whether to repeat the fo:footnote in the fo:table-footer that is repeated by fo:table-omit-footer-at-break="false".

*Value:* true | false  
*Initial:* true  
*Applies to:* fo:table-footer  
*Inherited:* yes  
*Percentages:* N/A

Values have the following meanings.

#### true

Process fo:footnote repeatedly.

#### false

Do not process fo:footnote repeatedly.

### axf:repeat-footnote-in-table-header

Specifies whether to repeat the fo:footnote in the fo:table-header that is repeated by fo:table-omit-header-at-break="false".

*Value:* true | false  
*Initial:* true  
*Applies to:* fo:table-header  
*Inherited:* yes  
*Percentages:* N/A

Values have the following meanings.

**true**

Process fo:footnote repeatedly.

**false**

Do not process fo:footnote repeatedly.

## Images

---

### axf:alttext

---

Specifies the alternate text of the image.

*Value:* <string>  
*Initial:* empty string  
*Applies to:* fo:external-graphic, fo:instream-foreign-object  
*Inherited:* no  
*Percentages:* N/A

Effective when outputting [Tagged PDF](#). When there is no specification of axf:alttext, the value of the role property is used as an alternate text. But, since it's not an original use of the role property, it's not recommended.

### axf:image-resolution

---

Specifies the resolution of an image.

*Value:* normal | [ from-image || <dpi> ]  
*Initial:* from-image  
*Applies to:* fo:external-graphic, fo:instream-foreign-object  
*Inherited:* no  
*Percentages:* N/A

Values have the following meanings.

**normal**

Depends on the default value of the system. It's a value specified as [pxpi](#) in the Option Setting File. Ignores the actual resolution of an image.

**from-image**

Uses the actual resolution of an image. When an image does not have the resolution, it will follow the <dpi> specification. If nothing is specified, it is the same as normal.

**<dpi>**

Specifies the resolution (dpi) Ignores the actual resolution of an image.

The resolution of a background image is specified by [axf:background-image-resolution](#).

In case of vector images, such as SVG, it is applied to numerical values with no units. from-image is ignored.

### axf:image-smoothing

---

Specifies whether to process anti-aliasing of an image on the screen.

*Value:* auto | true | false  
*Initial:* auto  
*Applies to:* fo:external-graphic fo:instream-foreign-object  
*Inherited:* no  
*Percentages:* N/A

Values have the following meanings.

**auto**

Depends on [smoothing settings in GUI](#).

**true**

Processes anti-aliasing of an image.

**false**

Does not process anti-aliasing of an image.

---

## Page Background

**AH Formatter V6.0** provides extension properties to set the background of the page. These properties are placed as fo:simple-page-master or fo:page-sequence.

---

### axf:background-color

The axf:background-color specifies the background color of fo:simple-page-master.

*Value:* <color> | transparent  
*Initial:* transparent  
*Applies to:* fo:simple-page-master, fo:page-sequence  
*Inherited:* no  
*Percentages:* N/A

---

### axf:background-image

The axf:background-image specifies the background image of fo:simple-page-master.

*Value:* <uri-specification> | none  
*Initial:* none  
*Applies to:* fo:simple-page-master, fo:page-sequence  
*Inherited:* no  
*Percentages:* N/A

---

### axf:background-position-horizontal

The axf:background-position-horizontal specifies the horizontal position of the background image of fo:simple-page-master.

*Value:* <percentage> | <length> | left | center | right  
*Initial:* 0%  
*Applies to:* fo:simple-page-master, fo:page-sequence  
*Inherited:* no  
*Percentages:* refer to the size of the padding-rectangle

---

### axf:background-position-vertical

The axf:background-position-vertical specifies the vertical position of the background image of fo:simple-page-master.

*Value:* <percentage> | <length> | top | center | bottom  
*Initial:* 0%  
*Applies to:* fo:simple-page-master, fo:page-sequence  
*Inherited:* no  
*Percentages:* refer to the size of the padding-rectangle

---

### axf:background-repeat

The axf:background-repeat specifies whether the background image of fo:simple-page-master or fo:page-sequence is repeated, and how.

*Value:* repeat | repeat-x | repeat-y | no-repeat | paginate  
*Initial:* repeat  
*Applies to:* fo:simple-page-master, fo:page-sequence  
*Inherited:* no  
*Percentages:* N/A

Extended values have the following meanings.

**paginate**

Effective when embedding PDF in the background image and indicates to embed plural pages of PDF. For details, please refer to [PDF Embedding](#). This value cannot be specified by **AH Formatter V6.0 Lite**.

---

**axf:background-content-width**  
**axf:background-content-height**  
**axf:background-content-type**  
**axf:background-scaling**


---

content-width, content-height, content-type, and scaling can be applied to background-image, which are the same properties applied to fo:external-graphic.

---

**axf:background-image-resolution**


---

Specifies the resolution of a background image.

*Value:* normal | [ from-image || <dpi> ]  
*Initial:* from-image  
*Applies to:* fo:simple-page-master, fo:page-sequence  
*Inherited:* no  
*Percentages:* N/A

Values have the following meanings.

**normal**

Depends on the default value of the system. It's a value specified as `pxpi` in the Option Setting File. Ignores the actual resolution of an image.

**from-image**

Uses the actual resolution of an image. When an image does not have the resolution, it will follow the <dpi> specification. If nothing is specified, it is the same as normal.

**<dpi>**

Specifies the resolution (dpi) Ignores the actual resolution of an image.

The resolution of a non-background image is specified by [axf:image-resolution](#).

In case of vector images, such as SVG, it is applied to numerical values with no units. from-image is ignored.

---

**Overflow Extensions**


---

**AH Formatter V6.0** extends the value of the [overflow](#) property and provides the extension property to regulate the behavior of the value.

---

**axf:overflow-align**


---

Specifies the alignment of the overflowed block.

*Value:* normal | start | end | center  
*Initial:* normal  
*Applies to:* block-level formatting objects  
*Inherited:* yes  
*Percentages:* N/A

Values have the following meanings.

**normal**

Specifies the alignment of the block according to the text-align setting.

**start**

Specifies the alignment of the block to the start side.

**end**

Specifies the alignment of the block to the end side.

**center**

Specifies the block to center aligned.



**axf:overflow-condense**

The axf:overflow-condense specifies how to condense the overflowed text within the region.

*Value:* letter-spacing | font-stretch | font-size | line-height | auto  
*Initial:* auto  
*Applies to:* all block-level formatting objects  
*Inherited:* yes  
*Percentages:* N/A

Values have the following meanings.

**letter-spacing**

Condenses the text by adjusting the letter spacing.

**font-stretch**

Condenses the text by adjusting the font width.

**font-size**

Condenses the text by adjusting the font size.

**line-height**

Condenses the text by adjusting the line height.

**auto**

Dependent on the system setting.

Condensing the text within the region can be specified with the properties of `overflow="condense"`. The adjustment for condensing the text includes both the inline progression direction and the block progression direction. The system will process the specified method by combining the methods considered as suitable.

The length of the absolute value specified inside the block will not be adjusted. For example, in the following case, the length will not be adjusted.

```
<fo:block-container width="4in" overflow="condense" axf:overflow-condense="font-size">
  this text will be condensed
<fo:block font-size="24pt">no condensed text</fo:block>
</fo:block-container>
```

**axf:overflow-condense-limit-font-size**

axf:overflow-condense-limit-font-size specifies the minimum font size when `axf:overflow-condense="font-size"` is specified.

*Value:* <length> [ visible | hidden | scroll | error-if-overflow | repeat ]  
*Initial:* 0pt  
*Applies to:* all block-level formatting objects  
*Inherited:* yes  
*Percentages:* N/A

Values have the following meanings.

**<length>**

Specifies the minimum font size. A font is not made smaller than that value. It is invalid when zero or less are specified.

When the content exceeds the limit shown by <length>, the region still overflows. Then a solution can be specified as follows.

```
axf:overflow-condense-limit-font-size="4pt hidden"
```

**axf:overflow-condense-limit-font-stretch**

axf:overflow-condense-limit-font-stretch specifies the minimum value when `axf:overflow-condense="font-stretch"` is specified.

*Value:* [ <number> | <percentage> ] [ visible | hidden | scroll | error-if-overflow | repeat ]  
*Initial:* 0  
*Applies to:* all block-level formatting objects  
*Inherited:* yes  
*Percentages:* refer to the font size

Values have the following meanings.

**<percentage>**

Specifies the percentage against the minimum font width. Font size becomes above this percentage. The zero or less percentage value is invalid.

**<number>**

Equivalent to `<percentage> / 100`.

When the content exceeds the limit shown by `<percentage>` or `<number>`, the region still overflows. Then a solution can be specified as follows.

```
axf:overflow-condense-limit-font-stretch="30% hidden"
```

**axf:overflow-replace**

An alternative character string for the specified overflow text.

*Value:* <string>  
*Initial:* depends on system  
*Applies to:* all block-level formatting objects  
*Inherited:* yes  
*Percentages:* N/A

When `overflow="replace"` is specified, the overflow text is replaced by repeating the specified string. The font shown by an alternative character string is decided to one font by the value of the script property or the typical script of its own. A complex character string cannot be specified.

**Extended Functions**

AH Formatter V6.0 extends some FO functions.

**rgb-icc**

The format of the argument which the `rgb-icc` function can accept is as follows. An identifier beginning with # is case insensitive. Formats using identifiers which begins with # are extended specifications in **AH Formatter V6.0**.

- `rgb-icc(#Grayscale,<Scale>)`  
Specifies Grayscale. The depth in color can be specified by `<Scale>`.
- `rgb-icc(<R>,<G>,<B>,#CMYK,<C>,<M>,<Y>,<K>)`
- `rgb-icc(#CMYK,<C>,<M>,<Y>,<K>)`  
Specifies CMYK. When RGB is omitted, it is calculated from CMYK.
- `rgb-icc(<R>,<G>,<B>,#Separation,<Name>,<Tint>,<C>,<M>,<Y>,<K>)` no-LT
- `rgb-icc(<R>,<G>,<B>,#Separation,<Name>,<Tint>)` no-LT
- `rgb-icc(<R>,<G>,<B>,#Separation,<Name>)` no-LT
- `rgb-icc(#Separation,<Name>,<Tint>,<C>,<M>,<Y>,<K>)` no-LT  
Specifies Separation color (Spot color). The name of the ink in use is specified as `<Name>`. For example, specify "PANTONE 131 PC". The color tone is specified as `<Tint>`. When `<Tint>` is omitted, it is considered as 1.0. It is also necessary to specify RGB or CMYK. When RGB is omitted, it is calculated from CMYK.
- `rgb-icc(#Separation,<Name>,<Tint>)` no-LT
- `rgb-icc(#Separation,<Name>)` no-LT

If you purchase **AH Formatter PANTONE® Option**, it includes the ability for more than 1000 **PANTONE®** Colors to be converted into RGB or CMYK values automatically. This is specified in the FO as follows:

```
rgb-icc(#Separation, 'PANTONE 131 PC')
```

- `rgb-icc(<R>,<G>,<B>,#Registration,<Tint>)` no-LT
- `rgb-icc(<R>,<G>,<B>,#Registration)` no-LT  
Specifies Registration color. The color tone is specified as `<Tint>`. When `<Tint>` is omitted, it is considered as 1.0. Registration color is used for the registered trademark outputted to all the color versions. Registration color can also be expressed by specifying "All" as the `<Name>` of `#Separation`.

Arguments take the following values, respectively.

- `<R>,<G>,<B>` = % value or 0 to 255 integer value
- `<C>,<M>,<Y>,<K>` = % value or 0.0 to 1.0 float value
- `<Scale>` = % value or 0.0 (black) to 1.0 (white) float value

- <Tint> = % value or 0.0 (lightest) to 1.0 (darkest) float value

## Extended Values

---

**AH Formatter V6.0** extends some values of the FO properties. In order to use these values, you have to specify exactly as follows:

```
axf:overflow="condense"
```

However, with **AH Formatter V6.0**, even if axf: is not added, it is made so that it may function similarly. Moreover, the FO standard property and the extended property can be specified simultaneously as follows:

```
overflow="hidden" axf:overflow="condense"
```

At this time, the standard property will be overwritten by the extended property and only axf:overflow="condense" becomes effective. That is, it is the same as having overflow="condense" specified. However, in order to avoid the confusion, please do not use such specification.

### display-align

---

Following bold value is extended.

*Value:* auto | before | center | after | inherit | **justify**

Values have the following meanings.

#### **justify**

Justifies the text to block-progression dimension by adjusting the space between lines.

### font-size-adjust

---

Following bold value is extended.

*Value:* none | <number> | **<string>**

Values have the following meanings.

#### **<string>**

Considers a character string as a font name and acquires the x-height value of the font. When a font does not exist or it does not have x-height information, it is regarded as none.

### font-stretch

---

Following bold values are extended.

*Value:* normal | wider | narrower | ultra-condensed | extra-condensed | condensed | semi-condensed | semi-expanded | expanded | extra-expanded | ultra-expanded | **<percentage>** | **<number>**

Values have the following meanings.

#### **<percentage>**

Specifies the percentage against the font width.

#### **<number>**

Equivalent to <percentage> / 100.

### font-variant

---

Following bold values are extended. V6.0

*Value:* normal | [ **<font-variant-caps>** || **<font-variant-numeric>** || **<font-variant-alternates>** || **<font-variant-east-asian>** ]

<b>&lt;font-variant-caps&gt;</b> =	small-caps   <b>all-small-caps</b>   <b>petite-caps</b>   <b>all-petite-caps</b>   <b>titling-caps</b>   <b>unicase</b>
<b>&lt;font-variant-numeric&gt;</b> =	<b>&lt;numeric-figure-values&gt;</b>    <b>&lt;numeric-spacing-values&gt;</b>    <b>&lt;numeric-fraction-values&gt;</b>    <b>slashed-zero</b>
<b>&lt;numeric-figure-values&gt;</b> =	<b>lining-nums</b>   <b>oldstyle-nums</b>
<b>&lt;numeric-spacing-values&gt;</b> =	<b>proportional-nums</b>   <b>tabular-nums</b>
<b>&lt;numeric-fraction-values&gt;</b> =	<b>diagonal-fractions</b>   <b>stacked-fractions</b>
<b>&lt;font-variant-alternates&gt;</b> =	<b>historical-forms</b>   <b>stylistic(&lt;number&gt;)</b>   <b>swash(&lt;number&gt;)</b>   <b>ornament(&lt;number&gt;)</b>   <b>annotation(&lt;number&gt;)</b>

**<font-variant-east-asian>** = **<east-asian-variant-values>** || **<east-asian-width-values>**  
**<east-asian-variant-values>** = **jis78 | jis83 | jis90 | jis04 | hojo-kanji | nlckanji | simplified | traditional**  
**<east-asian-width-values>** = **full-width | proportional-width**

These are achieved by using the GSUB feature of OpenType fonts. small-caps and all-small-caps are emulated to the fonts which don't have the GSUB feature. The other is disregarded.

These are part of [CSS3 Fonts Module Level3](#). See also CSS3 for the corresponding GSUB features.

## force-page-count

Following bold values are extended.

*Value:* auto | even | **doubly-even** | odd | end-on-even | **end-on-doubly-even** | end-on-odd | **doubly-even-document** | [ **end-on** | **document** ] **<number>** [ **<number>** ] | no-force

Values have the following meanings.

### **doubly-even**

Force an doubly-even number of pages in this page-sequence.

### **end-on-doubly-even**

Force the last page in this page-sequence to be an doubly-even-page.

### **doubly-even-document**

Force the number of pages counted from the document head to be an doubly-even number.

[ **end-on** | **document** ] **<number>** [ **<number>** ] no-LT

Suppose that the first **<number>** is A, the next **<number>** is B, the number of pages of specified page-sequence is set as a multiple number of A + B. A must be an integer equal to or more than 1, B must be an integer equal to or more than 0 and less than A. When B is omitted, it is regarded as 0. when end-on was specified, the page number of the last page of the specified page-sequence is applied. When document is specified, The number of the page counted from the beginning of the document is applied. For example (assuming 5 pages of content in a page sequence):

- force-page-count="even"  
equivalent to force-page-count="2"
- force-page-count="odd"  
equivalent to force-page-count="2 1"
- force-page-count="doubly-even"  
equivalent to force-page-count="4"
- force-page-count="end-on-doubly-even"  
equivalent to force-page-count="end-on 4"
- force-page-count="end-on 2"  
total number of pages is 6 with 1 blank page
- force-page-count="end-on 4"  
total number of pages is 8 with 3 blank page
- force-page-count="end-on 4 1"  
total number of pages is 5 with 0 blank pages
- force-page-count="end-on 4 3"  
total number of pages is 7 with 2 blank pages
- force-page-count="end-on 6 5"  
total number of pages is 5 with 0 blank pages
- force-page-count="end-on 6 4"  
total number of pages is 10 with 5 blank pages

## format

The format tokens for the format property supports the format tokens defined in the [XSLT 1.0 Recommendation](#) and some extensions. [axf:column-number-format](#) is also the same.

- Numerals

Regular decimal representation of the numbers is generated. The minimum number of figures can be specified as 01, 001, etc.. The following numbers can be specified as a format token.

Format Token		Digits	Description
1	0		
U+0031	U+0030	0 1 2 3 4 5 6 7 8 9	DIGIT
U+00B9	U+2070	0 <sup>1</sup> 2 <sup>3</sup> 4 <sup>5</sup> 6 <sup>7</sup> 8 <sup>9</sup>	SUPERSCRIPT DIGIT
U+0661	U+0660	٠ ١ ٢ ٣ ٤ ٥ ٦ ٧ ٨ ٩	ARABIC-INDIC DIGIT
U+06F1	U+06F0	٠ ١ ٢ ٣ ٤ ٥ ٦ ٧ ٨ ٩	EXTENDED ARABIC-INDIC DIGIT
U+0967	U+0966	० १ २ ३ ४ ५ ६ ७ ८ ९	DEVANAGARI DIGIT
U+09E7	U+09E6	০ ১ ২ ৩ ৪ ৫ ৬ ৭ ৮ ৯	BENGALI DIGIT
U+0A67	U+0A66	੦ ੧ ੨ ੩ ੪ ੫ ੬ ੭ ੮ ੯	GURMUKHI DIGIT
U+0AE7	U+0AE6	૦ ૧ ૨ ૩ ૪ ૫ ૬ ૭ ૮ ૯	GUJARATI DIGIT
U+0B67	U+0B66	୦ ୧ ୨ ୩ ୪ ୫ ୬ ୭ ୮ ୯	ORIYA DIGIT
U+0C67	U+0C66	౦ ౧ ౨ ౩ ౪ ౫ ౬ ౭ ౮ ౯	TELUGU DIGIT
U+0CE7	U+0CE6	೦ ೧ ೨ ೩ ೪ ೫ ೬ ೭ ೮ ೯	KANNADA DIGIT
U+0D67	U+0D66	൦ ൧ ൨ ൩ ൪ ൫ ൬ ൭ ൮ ൯	MALAYALAM DIGIT
U+0E51	U+0E50	๐ ๑ ๒ ๓ ๔ ๕ ๖ ๗ ๘ ๙	THAI DIGIT
U+0ED1	U+0ED0	໐ ໑ ໒ ໓ ໔ ໕ ໖ ໗ ໘ ໙	LAO DIGIT
U+0F21	U+0F20	༠ ༡ ༢ ༣ ༤ ༥ ༦ ༧ ༨ ༩	TIBETAN DIGIT
U+1041	U+1040	၀ ၁ ၂ ၃ ၄ ၅ ၆ ၇ ၈ ၉	MYANMAR DIGIT
U+17E1	U+17E0	០ ១ ២ ៣ ៤ ៥ ៦ ៧ ៨ ៩	KHMER DIGIT
U+1811	U+1810	᠐ ᠑ ᠒ ᠓ ᠔ ᠕ ᠖ ᠗ ᠘ ᠙	MONGOLIAN DIGIT
U+4E00	U+3007	〇 一 二 三 四 五 六 七 八 九	CJK IDEOGRAPH DIGIT
U+C77C	U+C601	영 일 이 삼 사 오 육 칠 팔 구	HANGUL DIGIT
U+FF11	U+FF10	0 1 2 3 4 5 6 7 8 9	FULLWIDTH DIGIT

• Roman Numerals

Roman Numeral, such as I II III IV V VI VII VIII IX X . . . , is generated.

Format Token	Numerals	Description
U+0049 (I)	I V X L C D M Ⅰ Ⅱ Ⅲ Ⅳ Ⅴ Ⅵ Ⅶ Ⅷ Ⅸ Ⅹ	LATIN CAPITAL LETTER I
U+0069 (i)	i v x l c d m	LATIN SMALL LETTER I
U+2160 (Ⅰ)	Ⅰ Ⅴ Ⅹ ⅠⅠ ⅠⅡ ⅠⅢ ⅠⅣ ⅠⅤ ⅠⅥ ⅠⅦ ⅠⅧ ⅠⅨ ⅠⅩ	ROMAN NUMERAL ONE
U+2170 (i)	i v x l c d m	SMALL ROMAN NUMERAL ONE
U+FF29 (Ⅰ)	Ⅰ Ⅴ Ⅹ ⅠⅠ ⅠⅡ ⅠⅢ ⅠⅣ ⅠⅤ ⅠⅥ ⅠⅦ ⅠⅧ ⅠⅨ ⅠⅩ	FULLWIDTH LATIN CAPITAL LETTER I
U+FF49 (i)	i v x l c d m	FULLWIDTH LATIN SMALL LETTER I

Numerical values with upper case up to 39999 and numerical values with lower case up to 3999 can be expressed.

• Hebrew Numerals

Hebrew Numeral, such as א ב ג ד ה ... י יא יב יג יד טו ..., is generated.

Format Token	Numerals	Description
U+05D0 (א)	א ב ג ד ה ו ז ח ט י כ ל מ נ ס פ צ ק ר ש ת ך ם ן ף ץ	HEBREW LETTER ALEF

The specification of the grouping-separator and grouping-size properties are ignored and always regarded as grouping-separator=" " grouping-size="3".

• Armenian Numerals

Formats Armenian numerals. It's available to express up to 99999999.



Format Token	Alphabets	Description
U+3131 (ㄱ)	ㄱ ㄴ ㄷ ㄹ ㅁ ㅂ ㅅ ㅈ ㅊ ㅋ ㆁ ㆂ ㆃ	HANGUL CHOSUNG
U+5B50 (子)	子 丑 寅 卯 辰 巳 午 未 申 酉 戌 亥	CHINESE ZODIAC 12
U+7532 (甲)	甲 乙 丙 丁 戊 己 庚 辛 壬 癸	CHINESE ZODIAC 10
U+AC00 (가)	가 나 다 라 마 바 사 아 자 차 카 타 파 하	HANGUL GANADA
U+FF21 (A)	A B C D E F G H I J K L M N O P Q R S T U V W X Y Z	FULLWIDTH LATIN CAPITAL LETTER A
U+FF41 (a)	a b c d e f g h i j k l m n o p q r s t u v w x y z	FULLWIDTH LATIN SMALL LETTER A
U+FF71 (ｱ)	ｱｲｳｴｵｶｷｸｹｺｻｼｽｾｿﾀﾁﾂﾃﾄﾅﾆﾇﾈﾉﾊﾋﾌへほまみむめもや よらりるれろわろん	HALFWIDTH KATAKANA AIUEO
U+FF72 (ｲ)	ｲﾛﾊﾆﾎへとちりヌルヲワカヨタレソツネナラムウノオクヤマケフコエテアサ キュメシヒモセス	HALFWIDTH KATAKANA IROHA

• Non-repeating

Format Token	Characters	Description
U+2460 (①)	① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩ ⑪ ⑫ ⑬ ⑭ ⑮ ⑯ ⑰ ⑱ ⑲ ⑳	CIRCLED DIGIT ONE 0 to 20 can be expressed.
U+2474 (⑴)	(1) (2) (3) (4) (5) (6) (7) (8) (9) (10) (11) (12) (13) (14) (15) (16) (17) (18) (19) (20)	PARENTHEZIZED DIGIT ONE 1 to 20 can be expressed.
U+2488 ( 1.)	1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 20.	DIGIT ONE FULL STOP 1 to 20 can be expressed.
U+249C (a)	(a) (b) (c) (d) (e) (f) (g) (h) (i) (j) (k) (l) (m) (n) (o) (p) (q) (r) (s) (t) (u) (v) (w) (x) (y) (z)	PARENTHEZIZED LATIN SMALL LETTER A 1 to 26 can be expressed.
U+24B6 (A)	A B C D E F G H I J K L M N O P Q R S T U V W X Y Z	CIRCLED LATIN CAPITAL LETTER A 1 to 26 can be expressed.
U+24D0 (a)	a b c d e f g h i j k l m n o p q r s t u v w x y z	CIRCLED LATIN SMALL LETTER A 1 to 26 can be expressed.
U+24EB (⑪)	⑪ ⑫ ⑬ ⑭ ⑮ ⑯ ⑰ ⑱ ⑲ ⑳	NEGATIVE CIRCLED NUMBER ELEVEN 11 to 20 can be expressed.
U+24F5 (Ⓛ)	Ⓛ ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩	DOUBLE CIRCLED DIGIT ONE 1 to 10 can be expressed.
U+7532 U+5B50 (甲子)	甲子 乙丑 丙寅 丁卯 戊辰 己巳 庚午 辛未 壬申 癸酉 甲戌 乙亥 丙子 丁丑 戊寅 己卯 庚辰 辛巳 壬午 癸未 甲申 乙酉 丙戌 丁亥 戊子 己丑 庚寅 辛卯 壬辰 癸巳 甲午 乙未 丙申 丁酉 戊戌 己亥 庚子 辛丑 壬寅 癸卯 甲辰 乙巳 丙午 丁未 戊申 己酉 庚戌 辛亥 壬子 癸丑 甲寅 乙卯 丙辰 丁巳 戊午 己未 庚申 辛酉 壬戌 癸亥	CHINESE ZODIAC 60 1 to 60 can be expressed.

- The strings which consist of the same character with two or more altogether  
For example, when format="\*\*\*" is specified, \* is repeated by the number of numerical values. Up to 999 can be expressed.
- The symbols of all different character with two or more altogether  
For example, if format="\*\*++" is specified, the regular expression of "\*\*\*\* +""++" \*\*\*\*"++" ++""\*\*\*\*\* ++" "++"..." will be generated. Up to 999 can be expressed.
- The character string which does not include symbols, with all different two or more characters altogether  
For example, character strings such as "上中下", which means the sequence of "first, second and third classes...,etc.", is considered as a format token and generates the sequence of "上" "中" "下" "上上" "上中" "上下"... order.

internal-destination

Following bold value is extended. [no-LT]

*Value:* empty string | <idref> | **<number-with-fragment>**

Values have the following meanings.

#### **<number-with-fragment>**

Effective for the internal link in PDF. indicates the page number of the link destination. This string is simple numeric characters or the following string that combines numeric characters and a fragment with #. Refer to [Making Link](#) for fragment.

```
123#zoom=50
```

The page number also can be specified in the fragment.

```
#page=123&zoom=50
```

When the page number is not specified, it is usually regarded as the 1st page. However, when the top position is specified, it is regarded as the head of the page of a block where internal-destination is contained. For example, it is specified as follows.

```
#view=fit
#view=fith
#zoom=,,0
```

This property is not extended with **AH Formatter V6.0 Lite**.

---

### **overflow**

Following bold values are extended.

*Value:* visible | hidden | scroll | error-if-overflow | repeat | **replace** | **condense** | auto

Values have the following meanings.

#### **replace**

The string specified by [axf:overflow-replace](#) is repeated in a full area. When the specified string is empty, the string of the area is replaced with an empty string. The original string is discarded.

#### **condense**

Condenses the overflowed text within the region. How to condense the text can be specified by [axf:overflow-condense](#).

These values are applied to fo:block-container or fo:inline-container only.

---

### **size**

Following bold values are extended.

*Value:* <length>{1,2} | auto | [ **<page-size>** || [ portrait | landscape ] ]

Values have the following meanings.

#### **<page-size>**

Specifies the paper size. See also [size](#) in CSS.

---

### **table-omit-footer-at-break**

Following bold value is extended. `no-LT`

*Value:* true | false | **column**

Values have the following meanings.

#### **column**

Omits footer on column breaks, but not on page breaks.

This property is not extended with **AH Formatter V6.0 Lite**.

---

### **table-omit-header-at-break**

Following bold value is extended. `no-LT`

*Value:* true | false | **column**

Values have the following meanings.



**column**

Omits header on column breaks, but not on page breaks.

This property is not extended with **AH Formatter V6.0 Lite**.

**text-transform**

---

Following bold values are extended.

*Value:* none | [ [ capitalize | uppercase | lowercase | **capitalize-lowercase** ] || [ **fullwidth** | **fullwidth-if-vertical** ] || **fullsize-kana** ] ]

Values have the following meanings.

**capitalize-lowercase**

Makes an initial letter an upper case and makes the remainder lower cases. See also [Difference in Formatting with XSL Formatter V4](#).

**fullwidth**

Converts the character of U+0021 - U+007E into double-byte. `{no-LT}`

**fullwidth-if-vertical**

Only with the vertical writing (`writing-mode="tb-rl"`), `text-transform="fullwidth"` will be applied. Nothing is changed when it's not the vertical writing. `{no-LT}`

**fullsize-kana**

Converts small-kana into original kana. Only double-byte characters can be converted. Single-byte characters are not convertible. `{V6.0}`



## Float Extension

By implementing the advanced float features, **AH Formatter V6.0** is capable of arranging the float content in an arbitrary place of the page, arranging the float content in multi-column layout with column spanning of the float. As a result, **AH Formatter V6.0** can meet various demands of the arrangement while formatting the document with the illustration, etc.

Using with XSL-FO, the float extension properties (axf:float-\*) is applied to the fo:float objects.

Using with CSS, the float extension properties (-ah-float-\*) is applied to elements that will become floated elements.

### Float Extension Properties

#### axf:float

This is a shorthand property for setting float related extension properties.

*Value:* <float-x> || <float-y> || <float-reference> || <float-move>  
*Initial:* none  
*Applies to:* fo:float / floated elements  
*Inherited:* no  
*Percentages:* N/A

Values have the following meanings.

**<float-x>: none | start | end | left | right | top | bottom | center | inside | outside**

Specifies horizontal (or vertical if writing-mode is vertical) float alignment.

**<float-y>: none | before | after | top | bottom | left | right | inside | outside**

Specifies vertical (or horizontal if writing-mode is vertical) float alignment.

**<float-reference>: auto | normal | page | column | multicol**

Specifies reference area where the float is positioned.

**<float-move>: auto | next | auto-next | auto-move | keep**

Specifies whether the float moves to the next page (or column).

This extension property is treated as a shorthand and maps to individual extension properties. For example,

```
<!-- XSL-FO example -->
<fo:float axf:float="before column auto-move">
  ...
</fo:float>

<!-- XHTML+CSS example -->
<div style="-ah-float: before column auto-move">
  ...
</div>
```

is equivalent to the following:

```
<!-- XSL-FO example -->
<fo:float axf:float-x="none" axf:float-y="before"
  axf:float-reference="column" axf:float-move="auto-move">
  ...
</fo:float>

<!-- XHTML+CSS example -->
<div style="-ah-float-x: none; -ah-float-y: before;
  -ah-float-reference: column; -ah-float-move: auto-move">
  ...
</div>
```

See individual extension properties for details.

#### axf:float-x

Specifies horizontal (or vertical if writing-mode is vertical) float alignment.

*Value:* none | start | end | left | right | top | bottom | center | inside | outside  
*Initial:* none  
*Applies to:* fo:float / floated elements  
*Inherited:* no  
*Percentages:* N/A

Values have the following meanings.

**none**

Not floated horizontally (or vertically if writing-mode is vertical).

**start**

Floated to the start side. Same as **left** in horizontal left-to-right writing-mode.

**end**

Floated to the end side. Same as **right** in horizontal left-to-right writing-mode.

**left**

Floated to the left side.

**right**

Floated to the right side.

**top**

Floated to the top (in vertical writing-mode).

**bottom**

Floated to the bottom (in vertical writing-mode).

**center**

Floated to the center horizontally (or vertically if writing-mode is vertical).

**inside**

Floated to the inside (left side on a right page, right side on a left page).

**outside**

Floated to the outside (right side on a right page, left side on a left page).

---

## axf:float-y

Specifies vertical (or horizontal if writing-mode is vertical) float alignment.

*Value:* none | before | after | top | bottom | left | right | inside | outside  
*Initial:* none  
*Applies to:* fo:float / floated elements  
*Inherited:* no  
*Percentages:* N/A

Values have the following meanings.

**none**

Not floated vertically (or horizontally if writing-mode is vertical).

**before**

Floated to the before side. Same as **top** in horizontal left-to-right writing-mode.

**after**

Floated to the after side. Same as **bottom** in horizontal left-to-right writing-mode.

**top**

Floated to the top.

**bottom**

Floated to the bottom.

**left**

Floated to the left side (in vertical writing-mode).

**right**

Floated to the right side (in vertical writing-mode).

**inside**

Floated to the inside (left side on a right page, right side on a left page, in vertical writing-mode).

**outside**

Floated to the outside (right side on a right page, left side on a left page, in vertical writing-mode).

**axf:float-reference**

Specifies reference area where the float is placed.

*Value:* auto | normal | page | column | multicol  
*Initial:* auto  
*Applies to:* fo:float / floated elements  
*Inherited:* no  
*Percentages:* N/A

Values have the following meanings.

**auto**

Same as **normal**, except that in CSS the float positioning is affected by block indents where the block contains the float anchor.

**normal**

The float is placed in the current reference area.

**page**

The float is placed in the page area (region-body).

**column**

The float is placed in the column area.

**multicol**

The float is placed in the multi-column area.

When using with CSS, if **float-y** is none and the float-reference is **auto** the float positioning is affected by block indents where the block contains the float anchor, but by specifying **normal**, **page**, or **column**, it is possible positioning floats regardless of the block indents.

**CAUTION:** When **float-y** is none and the float-reference value is **multicol** or **page**, the text doesn't wrap around the float excluding the specified column and the text and the float may overlap.

**axf:float-move**

Specifies whether the float moves to the next page (or column).

*Value:* auto | next | auto-next | auto-move | keep  
*Initial:* auto  
*Applies to:* fo:float / floated elements  
*Inherited:* no  
*Percentages:* N/A

Values have the following meanings.

**auto**

Same as **keep** if **float-y** is none, same as **auto-next** otherwise.

**next**

The float is moved to the next page (or column).

**auto-next**

The float is moved to the next page (or column) if there is no sufficient space in the current page (or column).

**auto-move**

The float is moved to the next page (or column) if there is no sufficient space in the current page (or column). It is also possible that the float anchor and around text are moved to the next page (or column) instead.

**keep**

The float and its anchor are always placed on the same page (or column). If there is no sufficient space for that, a page (or column) break occurs before the float anchor and a blank space is left.

If both [float-x](#) and [float-y](#) are none, the object is not floated and specifying the float-move is ineffective.

**axf:float-min-wrap-x**

Specifies the minimum width for the text wrapping around the float.

*Value:* normal | <length> | <percentage>  
*Initial:* normal  
*Applies to:* fo:float / floated elements  
*Inherited:* no  
*Percentages:* refer to the size of containing block

If the width for the text wrapping around the float is smaller than the width specified by this property, the text doesn't wrap.

The initial value, **normal** is minimum wrapping width of normal floats. It is same as Opt.

**axf:float-min-wrap-y**

Specifies the minimum extent for the text placed before and after the float.

*Value:* normal | <length> | <percentage>  
*Initial:* normal  
*Applies to:* fo:float / floated elements  
*Inherited:* no  
*Percentages:* refer to the size of containing block

When the [float-y](#) value is not none and there is remaining space to place the text before or after the float within the formatting target area, if the extent of that space is smaller than the extent specified by this property, the text is not placed to that space.

When the [float-y](#) value is none and the [float-move](#) value is **auto-next** and there is remaining space to place the text after the float within the formatting target area, if the extent of that space is smaller than the extent specified by this property, the float position will move so that the extent may become zero. The text placed after the float will move in front of the float.

When the [float-y](#) value is none and the [float-move](#) value is **auto-move**, the behavior is similar to auto-next; if the space extent for the text not only after but also before the float is smaller than the extent specified by this property within the formatting target area, the float position will move so that the extent may become zero. The text placed before the float will move after the float.

The initial value, **normal** is the same as twice the line-height value.

**axf:float-centering-x**

Specifies whether the float is centered when the width for the text wrapping around the float is insufficient.

*Value:* none | auto | <length> | <percentage>  
*Initial:* none  
*Applies to:* fo:float / floated elements  
*Inherited:* no  
*Percentages:* refer to the size of containing block

Values have the following meanings.

**none**

The float is not centered.

**auto**

The float is centered when the width for the text wrapping around the float is less than the width specified by the [float-min-wrap-x](#) property.

**<length>**  
**<percentage>**

The float is centered when the width for the text wrapping around the float is less than the width specified by this property.

### axf:float-centering-y

---

Specifies whether the float is centered when the extent for the text placed before and after the float is insufficient.

*Value:* none | auto | <length> | <percentage>  
*Initial:* none  
*Applies to:* fo:float / floated elements  
*Inherited:* no  
*Percentages:* refer to the size of containing block

Values have the following meanings.

#### none

The float is not centered.

#### auto

The float is centered when the extent for the text placed before and after the float is less than the extent specified by the [float-min-wrap-y](#) property.

**<length>**  
**<percentage>**

The float is centered when the extent for the text placed before and after the float is less than the extent specified by this property.

### axf:float-margin-x

---

Specifies the space between the float and the text wrapping around the float (in x-axis).

*Value:* <length> | <percentage>  
*Initial:* 0pt  
*Applies to:* fo:float / floated elements  
*Inherited:* no  
*Percentages:* refer to the size of containing block

### axf:float-margin-y

---

Specifies the space between the float and the text before and after the float (in y-axis).

*Value:* <length> | <percentage>  
*Initial:* 0pt  
*Applies to:* fo:float / floated elements  
*Inherited:* no  
*Percentages:* refer to the size of containing block

### axf:float-float-margin-x

---

Specifies the space between the float and another neighboring float (in x-axis).

*Value:* auto | <length> | <percentage>  
*Initial:* auto  
*Applies to:* fo:float / floated elements  
*Inherited:* no  
*Percentages:* refer to the size of containing block

The initial value **auto** is same as the [float-margin-x](#) value.

Limitation: The float-float-margin-x value cannot exceed the [float-margin-x](#) value.

### axf:float-float-margin-y

---

Specifies the space between the float and another neighboring float (in y-axis).

*Value:* auto | <length> | <percentage>  
*Initial:* auto  
*Applies to:* fo:float / floated elements

*Inherited:* no  
*Percentages:* refer to the size of containing block

The initial value **auto** is same as the **float-margin-y** value.

Limitation: The float-margin-y value cannot exceed the the **float-margin-y** value.

### axf:float-offset-x

Specifies the offset placement for the float (in x-axis).

*Value:* <length> | <percentage>  
*Initial:* Opt  
*Applies to:* fo:float / floated elements  
*Inherited:* no  
*Percentages:* refer to the size of containing block minus the size of the float

If **float-x** is **start**, the offset to the end side is specified. If it is **end**, the offset to the start side is specified.

### axf:float-offset-y

Specifies the offset placement for the float (in y-axis).

*Value:* <length> | <percentage>  
*Initial:* Opt  
*Applies to:* fo:float / floated elements  
*Inherited:* no  
*Percentages:* refer to the size of containing block minus the size of the float

If **float-y** is **before**, the offset to the after side is specified. If it is **after**, the offset to the before side is specified.

## Unit 'gr' to specify spanning columns

The unit 'gr' is a special length unit and it counts both column-width and column-gap as 1gr. n-column-spanning can be specified as (2n-1)gr. Fractions of gr unit can be used to specify halfway length of column-width or column-gap. Negative value cannot be specified.

The following is an example of two-column-spanning float:

```
<fo:float axf:float="multicol top left">
  <fo:block-container width="3gr">
    <fo:block>This is a two-column-spanning float.</fo:block>
  </fo:block-container>
</fo:float>
```

Note that the '3gr' means 2 column-widths plus 1 column-gap.

```
0.5gr = 0.5 columnWidth
1gr = 1 columnWidth
1.5gr = 1 columnWidth + 0.5 columnGap
2gr = 1 columnWidth + 1 columnGap
2.5gr = 1 columnWidth + 1 columnGap + 0.5 columnWidth
3gr = 1 columnWidth + 1 columnGap + 1 columnWidth
(2n-1)gr = n columnWidth + (n-1) columnGap
```

**CAUTION:** gr is defined only to the float specified as axf:float="multicol". It is not applicable to the other floats or properties other than float. If applied, the operation will be indefinite.

## Extended Float Examples

### Page Float Examples

In the following example, the float is placed on top of a page.

```
<fo:float axf:float="page top">
  <fo:block>This is a page float.</fo:block>
</fo:float>
```

In the following example, the float is placed on bottom of a page.



```
<fo:float axf:float="page bottom">
  <fo:block>This is a page float.</fo:block>
</fo:float>
```

## Column Float Examples

---

In the following example, the float is placed on top of a column.

```
<fo:float axf:float="column top">
  <fo:block>This is a column float.</fo:block>
</fo:float>
```

In the following example, the float is placed on bottom of a column.

```
<fo:float axf:float="column bottom">
  <fo:block>This is a column float.</fo:block>
</fo:float>
```

## Multi-column Float Examples

---

In the following example, the float is placed on the top right corner spanning three columns on a multi-column area.

```
<fo:float axf:float="multicol top right">
  <fo:block-container width="5gr">
    <fo:block>This is a multicol float.</fo:block>
  </fo:block-container>
</fo:float>
```

In the following example, the float is placed on the bottom inside corner on a multi-column area.

```
<fo:float axf:float="multicol bottom inside">
  <fo:block-container width="1gr">
    <fo:block>This is a multicol float.</fo:block>
  </fo:block-container>
</fo:float>
```



## Ruby Extension

**AH Formatter V6.0** is capable of expressing ruby. **AH Formatter V5** or earlier could not express ruby directly, there was no other choice to use fo:inline-container etc. and follow an example. Therefore, there were a lot of restrictions for arranging ruby and the line break. The ruby extension removed such restrictions and the original ruby is expressible. [V6.0](#)

See also the followings for more details of ruby.

- [Requirements for Japanese Text Layout](#) W3C Working Group Note 4 June 2009
- JIS X 4051:2004 Formatting rules for Japanese documents
- [CSS3 Ruby Module](#) W3C Working Draft 03 December 2010 (Editor's copy)
- [Ruby Annotation](#) W3C Recommendation 31 May 2001 (Markup errors corrected 25 June 2008)

Ruby is expressed by the following three elements.

XSL-FO	HTML	CSS	Meanings
<axf:ruby>	<ruby>	display: ruby	Shows the ruby structure.
<axf:ruby-base>	<rb>	display: ruby-base	Shows the base character of ruby.
<axf:ruby-text>	<rt>	display: ruby-text	Shows ruby.

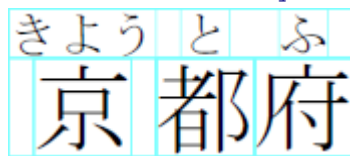
One <axf:ruby-base> maps to one <axf:ruby-text>. A pair of one <axf:ruby-base> and <axf:ruby-text> is called the ruby container. The line can break between a ruby container and another ruby container though the line cannot break within a ruby container.

Ruby has three types and it is classified as follows. (<ruby> <rb> <rt> are used in the following example.)

- Mono-ruby

Mono-ruby is expressed as follows.

```
<ruby><rb>京</rb><rt>きょう</rt></ruby><ruby><rb>都</rb><rt>と</rt></ruby><ruby><rb>府</rb><rt>ふ</rt></ruby>
```

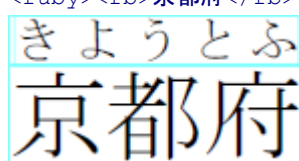


Mono-ruby can be considered as a group ruby whose base character consists of one character. The ruby container of mono-ruby is independent and ruby characters never overhang the base character of the adjacent ruby.

- Group-ruby

Group-ruby is expressed as follows.

```
<ruby><rb>京都府</rb><rt>きょうとふ</rt></ruby>
```

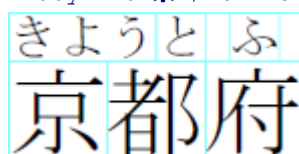


Group-ruby can be considered as a jukugo (idiom) ruby whose base character consists of one character. Group-ruby is evenly arranged to the entire base characters.

- Jukugo (kanji compound word)-ruby

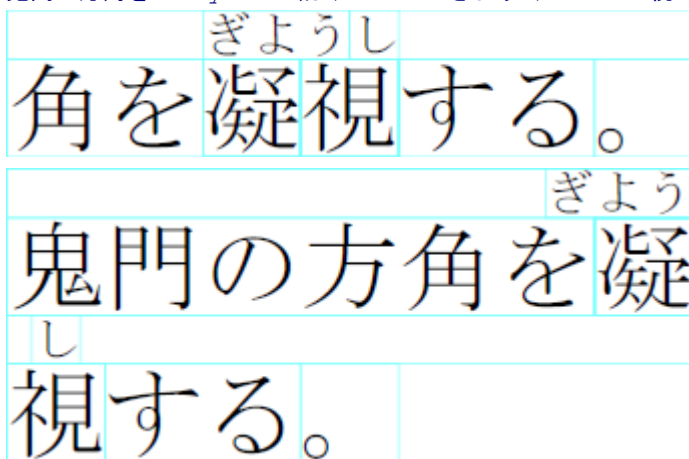
Jukugo-ruby is expressed as follows.

```
<ruby><rb>京</rb><rt>きょう</rt><rb>都</rb><rt>と</rt><rb>府</rb><rt>ふ</rt></ruby>
```



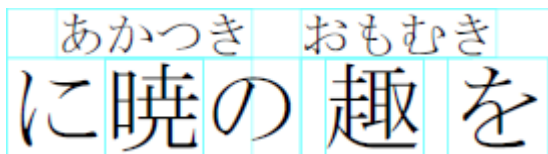
Jukugo-ruby consists of one or more ruby containers. The line can break between ruby containers. The method of arranging Jukugo-ruby is complex. As a general rule, the ruby container arranges ruby as group-ruby. However when the ruby text is wider than the ruby base characters, ruby text is allowed to partially overhang any adjacent text in addition to its own base to adjust its position.

鬼門の方角を<ruby><rb>凝</rb><rt>ぎょう</rt><rb>視</rb><rt>し</rt></ruby>する。

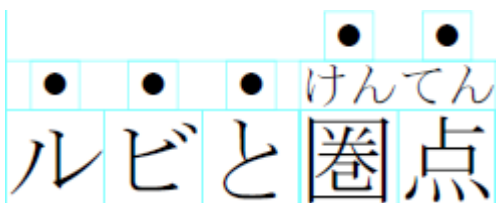


When ruby is wider than its own base characters, ruby will overhang the adjacent character. In the following cases, ruby cannot overhang the character.

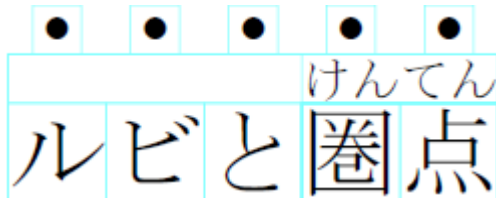
- The adjacent content is a non-text structure, such as an image or <fo:inline-container>.
- The adjacent content is ruby.
- The font size of the adjacent base character differs from the ruby's own base or it's a script other than Kanji or Kana or there are any improprieties.
- The adjacent character is a character excluded by [axf:ruby-overhang](#).
- Ruby overhangs the adjacent character and there is no enough space between ruby and adjacent to the adjacent ruby. (Ruby might overhang partially.)



Ruby and [emphasis marks](#) can be used together. When the ruby and emphasis marks are put on the same side, emphasis marks will be put outside of ruby. When you want to align emphasis marks to the text without ruby and emphasis marks to ruby, please specify [axf:text-emphasis-offset](#).

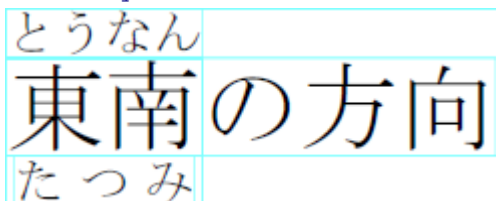


```
... text-emphasis-offset="0.5em">ルビと<ruby><rb>圏点</rb><rt>けんてん</rt></ruby>
```



With [group-ruby](#), ruby can overhang both side of text or it can be nested several times. At this time, only ruby specified on the outside can overhang the adjacent character.

```
<ruby ruby-position="after"><rb><ruby ruby-position="before"><rb>東南</rb><rt>とうなん</rt></ruby></rb><rt>たつみ</rt></ruby>の方向
```



In **AH Formatter V6.0**, ruby has the following restrictions.

- Ruby cannot overhang non-text content, like an image, etc.
- Bopomofo is not supported.
- Emphasis marks can be put on the base characters of ruby, but they cannot be put on ruby characters.
- Within the ruby structure, it doesn't expand by justify. This is defined by JIS X 4051 and "Requirements for Japanese Text Layout".
- Ruby doesn't affect the line height. The line height is decided only by the base characters.

## Ruby Extended Elements

---

### <afx:ruby>

---

Common Usage:

Specifies the ruby structure.

Areas:

Generates and returns the ruby area.

Constraints:

```
<!ELEMENT axf:ruby (afx:ruby-base, axf:ruby-text)+>
<!ATTLIST axf:ruby axf:ruby-align          CDATA    "auto">
<!ATTLIST axf:ruby axf:ruby-position       CDATA    "before">
<!ATTLIST axf:ruby axf:ruby-offset        CDATA    "0pt">
<!ATTLIST axf:ruby axf:ruby-overhang      CDATA    "auto">
<!ATTLIST axf:ruby axf:ruby-limit-overhang CDATA    "1.0">
<!ATTLIST axf:ruby axf:ruby-limit-space   CDATA    "1.0">
<!ATTLIST axf:ruby axf:ruby-small-kana    CDATA    "auto">
<!ATTLIST axf:ruby axf:ruby-font-family   CDATA    #IMPLIED>
<!ATTLIST axf:ruby axf:ruby-font-size     CDATA    "0.5">
<!ATTLIST axf:ruby axf:ruby-minimum-font-size CDATA    #IMPLIED>
<!ATTLIST axf:ruby axf:ruby-font-style    CDATA    #IMPLIED>
<!ATTLIST axf:ruby axf:ruby-font-weight   CDATA    #IMPLIED>
<!ATTLIST axf:ruby axf:ruby-font-stretch  CDATA    #IMPLIED>
<!ATTLIST axf:ruby axf:ruby-condense     CDATA    "none">
<!ATTLIST axf:ruby axf:ruby-color        CDATA    #IMPLIED>
```

### <afx:ruby-base>

---

Common Usage:

Specifies the base character of ruby.

Areas:

Generates and returns the text area.

Constraints:

```
<!ELEMENT axf:ruby-base (#PCDATA | axf:ruby)>
```

### <afx:ruby-text>

---

Common Usage:

Specifies ruby.

Areas:

Generates and returns the text area. This text area does not impact upon the block progression dimension in the line area.

Constraints:

```
<!ELEMENT axf:ruby-text #PCDATA>
```

Within the axf:ruby extension elements, the Nth axf:ruby-text extension element addresses to the Nth axf:ruby-base extension element. The Nth axf:ruby-text extension element must be placed after the Nth axf:ruby-base extension element.

## Ruby Extended Properties

### axf:ruby-align

Specifies the alignment of ruby. V6.0

*Value:* auto | [[distribute-space | distribute-letter] || [center | start | end | start-if-vertical]]  
*Initial:* auto  
*Applies to:* axf:ruby  
*Inherited:* yes  
*Percentages:* N/A

Values have the following meanings.

#### auto

The value specified by `ruby-align` in the Option Setting File is adopted.

#### distribute-space

Same as distribute-space center.

#### distribute-space center

Spaces before and after ruby are made and ruby is evenly distributed. If ruby consists of one character, then it's center aligned.

#### distribute-space start

Spaces before and after ruby are made and ruby is evenly distributed. If ruby consists of one character, then it is start aligned.

#### distribute-letter

Same as distribute-letter center.

#### distribute-letter center

Spaces before and after ruby are not made and ruby is evenly distributed. If ruby consists of one character, then it is center aligned.

#### distribute-letter start

Spaces before and after ruby are not made and ruby is evenly distributed. If ruby consists of one character, then it is start aligned.

#### center

Ruby is positioned at the center with solid setting.

#### start

Ruby is positioned on the start side with solid setting.

#### end

Ruby is positioned on the end side with solid setting.

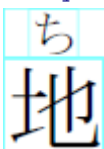
#### start-if-vertical

Same as start if the writing-mode is vertical, same as center if the writing-mode is horizontal.

Axf:ruby-align decides the alignment of ruby. Originally, center alignment and start alignment are the concept of `mono-ruby`, however, the same concept is also applied for `group-ruby` whose base text has more than 2 characters. When ruby is longer than its base characters, ruby will be positioned with solid setting.

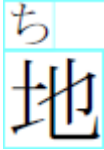
Center alignment of mono-ruby can be specified as follows;

```
<ruby ruby-align="center"><rb>地</rb><rt>ち</rt></ruby>
```



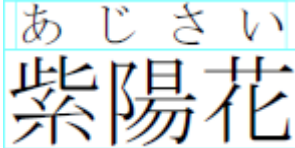
Start alignment of mono-ruby can be specified as follows;

```
<ruby ruby-align="start"><rb>地</rb><rt>ち</rt></ruby>
```



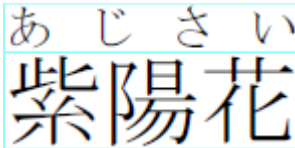
The following shows the example of giving spaces before and after group-ruby. The amount of space before and after the ruby is half the size of a character.

```
<ruby ruby-align="distribute-space"><rb>紫陽花</rb><rt>あじさい</rt></ruby>
```



The following shows the example of not giving spaces before and after group-ruby.

```
<ruby ruby-align="distribute-letter"><rb>紫陽花</rb><rt>あじさい</rt></ruby>
```



## axf:ruby-position

Specifies on which side of base characters ruby overhangs. [V6.0](#)

*Value:* before | after  
*Initial:* before  
*Applies to:* axf:ruby  
*Inherited:* yes  
*Percentages:* N/A

Values have the following meanings.

### before

Ruby overhangs on the before side.

### after

Ruby overhangs on the after side.

## axf:ruby-offset

Specifies the spacing between ruby and its base character. [V6.0](#)

*Value:* <number> | <length> | <percentage>  
*Initial:* Opt  
*Applies to:* axf:ruby  
*Inherited:* yes  
*Percentages:* refer to the font size

Values have the following meanings.

### <number>

It's a value created by crossing the font size of ruby ([axf:ruby-font-size](#)) in the [axf:ruby-text](#) element.

### <length>

Specifies the length.

### <percentage>

It's a value created by crossing the font size (not the font size of ruby).

**axf:ruby-overhang**

---

Specifies how ruby overhangs the adjacent base character. V6.0

*Value:* none | auto | [start || end || except-kanji || except-katakana || except-start-open-parenthesis || except-end-close-parenthesis]  
*Initial:* auto  
*Applies to:* axf:ruby  
*Inherited:* yes  
*Percentages:* N/A

Values have the following meanings.

**none**

Does not overhang the adjacent base character.

**auto**

Same as start end except-kanji

**start**

Overhangs on the start side of the adjacent base character (if available).

**end**

Overhangs on the end side of the adjacent base character (if available).

**except-kanji**

Does not overhang when the adjacent base character is kanji.

**except-katakana**

Does not overhang when the adjacent base character is katakana.

**except-start-open-parenthesis**

Does not overhang when the open parenthesis is on the start side.

**except-end-close-parenthesis**

Does not overhang when the close parenthesis is on the end side.

When only except-\* is specified and neither start nor end are specified, it is considered as start and end are specified.

**axf:ruby-limit-overhang**

---

Specifies the limit of the amount that ruby overhangs the adjacent base character when ruby is longer than its own base character. V6.0

*Value:* <number> | <length> | <percentage>  
*Initial:* 1.0  
*Applies to:* axf:ruby  
*Inherited:* yes  
*Percentages:* refer to the font size

Values have the following meanings.

**<number>**

It's a value created by crossing the font size of ruby ([axf:ruby-font-size](#)) in the [axf:ruby-text](#) element. The value should be non-negative.

**<length>**

Specifies the length. The value should be non-negative.

**<percentage>**

It's a value created by crossing the font size (not the font size of ruby). The value should be non-negative.

This value shows the amount that ruby overhangs the adjacent base character (It is not a protruding amount).

**axf:ruby-limit-space**

---

Specifies the limit of the amount of the space before and after the ruby when ruby is shorter than its base characters. V6.0



**Value:** <number> | <length> | <percentage> | none  
**Initial:** 1.0  
**Applies to:** axf:ruby  
**Inherited:** yes  
**Percentages:** refer to the font size

Values have the following meanings.

#### <number>

It's a value created by crossing the font size of ruby (`axf:ruby-font-size`) in the `axf:ruby-text` element. The value should be non-negative.

#### <length>

Specifies the length. The value should be non-negative.

#### <percentage>

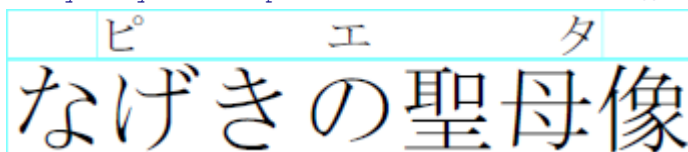
It's a value created by crossing the font size (not the font size of ruby). The value should be non-negative.

#### none

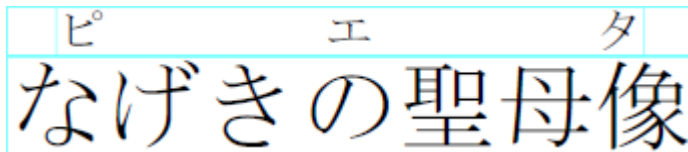
Does not limit the amount of the space.

Possible to avoid generating too much spaces before and after the ruby because ruby is too shorter than its base characters when `axf:ruby-align="distribute-space"` is specified. The amount of the space will be limited to the specified value.

```
<ruby ruby-limit-space="none"><rb>なげきの聖母像</rb><rt>ピエタ</rt></ruby>
```



```
<ruby ruby-limit-space="1.0"><rb>なげきの聖母像</rb><rt>ピエタ</rt></ruby>
```



## axf:ruby-small-kana

Specifies whether to allow using small kana for ruby. V6.0

**Value:** auto | convert  
**Initial:** auto  
**Applies to:** axf:ruby  
**Inherited:** yes  
**Percentages:** N/A

Values have the following meanings.

#### auto

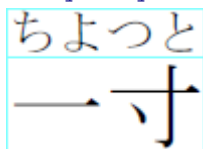
Does nothing.

#### convert

Small kana of only double-byte is converted into the general kana. Single-byte characters will not be converted.

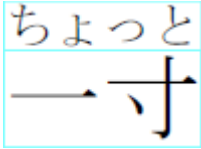
It's made available not to use small kana for ruby. Even if small kana is specified to ruby in FO, it will be transformed into the original kana.

```
<ruby ruby-small-kana="convert"><rb>一寸</rb><rt>ちよつと</rt></ruby>
```



When `ruby-small-kana="auto"` is specified, there is nothing special. Small kana will be applied for ruby as is unless `text-transform="fullsize-kana"` is specified.

```
<ruby ruby-small-kana="auto"><rb>一寸</rb><rt>ちよつと</rt></ruby>
```



## axf:ruby-font-family

Specifies the font family of ruby. [V6.0](#)

*Value:* [[<family-name> | <generic-family>],]\* [<family-name> | <generic-family>]  
*Initial:* empty string  
*Applies to:* axf:ruby  
*Inherited:* yes  
*Percentages:* N/A

If nothing is specified, it's considered the same as font-family.

## axf:ruby-font-size

Specifies the font size of ruby. [V6.0](#)

*Value:* <number> | <absolute-size> | <relative-size> | <length> | <percentage>  
*Initial:* 0.5  
*Applies to:* axf:ruby  
*Inherited:* yes  
*Percentages:* refer to the font size

It's a value created by crossing the font size with the setting of <number>

## axf:ruby-minimum-font-size

Specifies the minimum font size of ruby. [V6.0](#)

*Value:* none | <absolute-size> | <relative-size> | <length> | <percentage>  
*Initial:* none  
*Applies to:* axf:ruby  
*Inherited:* yes  
*Percentages:* refer to the font size

## axf:ruby-font-style

Specifies whether ruby is made Italic. [V6.0](#)

*Value:* normal | italic  
*Initial:* empty  
*Applies to:* axf:ruby  
*Inherited:* yes  
*Percentages:* N/A

If nothing is specified, it's considered the same as font-style.

## axf:ruby-font-weight

Specifies the font weight of ruby. [V6.0](#)

*Value:* normal | bold | bolder | lighter | 100 | 200 | 300 | 400 | 500 | 600 | 700 | 800 | 900  
*Initial:* empty  
*Applies to:* axf:ruby  
*Inherited:* yes  
*Percentages:* N/A

If nothing is specified, it's considered the same as font-weight.

## axf:ruby-font-stretch

Specifies the font stretching of ruby. [V6.0](#)

*Value:* normal | wider | narrower | ultra-condensed | extra-condensed | condensed | semi-condensed | semi-expanded | expanded | extra-expanded | ultra-expanded | <percentage> | <number>  
*Initial:* empty

*Applies to:* axf:ruby  
*Inherited:* yes  
*Percentages:* refer to the ruby-font-size

If nothing is specified, it's considered the same as font-stretch.

### **axf:ruby-condense**

---

Specifies the font condense when ruby is longer than its base. [V6.0]

*Value:* none | <percentage> | <number>  
*Initial:* none  
*Applies to:* axf:ruby  
*Inherited:* yes  
*Percentages:* refer to the ruby-font-size

Condenses ruby by "stretch" so that length of ruby becomes the same as its base characters when ruby is longer than its base characters. The numerical value shows the limit to be shorten at that time. If none is specified, ruby is not condensed.

### **axf:ruby-color**

---

Specifies the color of ruby. [V6.0]

*Value:* <color>  
*Initial:* empty  
*Applies to:* axf:ruby  
*Inherited:* yes  
*Percentages:* N/A

If nothing is specified, it's considered the same as color.



## CSS Conformance

The following shows the current CSS specifications. ([CSS3-GCPM] etc. written at the beginning is an abbreviated name when referring to the specification.)

- [\[CSS2.1\] Cascading Style Sheets Level 2 Revision 1 \(CSS 2.1\)](#) (W3C Recommendation 07 June 2011)
- [\[CSS3-Background\] CSS3 Backgrounds and Borders](#) (W3C Candidate Recommendation 17 December 2009)
- [\[CSS3-Content\] CSS3 Generated and Replaced Content Module](#) (W3C Working Draft 14 May 2003)
- [\[CSS3-Fonts\] CSS3 Fonts](#) (W3C Working Draft 18 June 2009)
- [\[CSS3-GCPM\] CSS3 Generated Content for Paged Media](#) (W3C Working Draft 08 June 2010),
- [\[CSS3-Line\] CSS3 Line](#) (W3C Working Draft 15 May 2002)
- [\[CSS3-Lists\] CSS3 Lists](#) (W3C Working Draft 7 November 2002)
- [\[CSS3-Multicol\] CSS3 Multi-column layout](#) (W3C Candidate Recommendation 17 December 2009)
- [\[CSS3-Namespace\] CSS3 Namespaces](#) (W3C Candidate Recommendation 23 May 2008)
- [\[CSS3-Page\] CSS3 Paged Media](#) (W3C Last Call Working Draft 10 October 2006),
- [\[CSS3-Selectors\] CSS3 Selectors](#) (W3C Proposed Recommendation 15 December 2009)
- [\[CSS3-Tables\] CSS3 Tables](#) (CSS3 specification is not yet published)
- [\[CSS3-Text\] CSS3 Text](#) (W3C Working Draft 6 March 2007), [CSS3 Text Level3](#) (W3C Editor's Draft)
- [\[CSS3-Ruby\] CSS3 Ruby Module](#) (W3C Working Draft 03 December 2010)
- [\[CSS3-UI\] CSS3 Basic User Interface](#) (W3C Candidate Recommendation 11 May 2004)
- [\[CSS3-Values\] CSS3 Values and Units](#) (W3C Working Draft 19 September 2006)


**CAUTION:** These specifications are not yet endorsed as W3C Recommendation. Especially CSS3 still has many drafts and there may be specification changes in the future. AH Formatter V5.0 will continue to correspond to these specification changes.

- [yes] in the list means that the formatting object or property is implemented.
- [partial] means that the formatting object or property is partially implemented.
- [no] means not implemented.

Sometimes items with [yes] have some limitation(s) that do not affect their ability to accomplish the specified tasks. With CSS3, a draft specification before the candidate, when a certain implementation is performed, it is considered as [yes]. This is because specification is not being fixed, we cannot judge whether it's partial or not clearly. See also [CSS Reference](#).

## CSS Level 2 Revision 1 (CSS2.1)

### 4 Syntax and basic data types

Name	Current condition	Comments
4.4 <a href="#">@charset</a>	yes	 <a href="#">Encodings</a>

### 5 Selectors

Name	Current condition	Comments
5.2.1 <a href="#">Grouping</a> (,)	yes	
5.3 <a href="#">Universal selector</a> (*)	yes	
5.4 <a href="#">Type selectors</a> (E)	yes	
5.5 <a href="#">Descendant selectors</a> (E F)	yes	
5.6 <a href="#">Child selector</a> (E > F)	yes	
5.7 <a href="#">Adjacent sibling selectors</a> (E + F)	yes	
5.8.1 <a href="#">Matching attributes and attribute values</a> ([att], [att=val], [att~=val], [att =val])	yes	
5.8.3 <a href="#">Class selectors</a> (.class)	yes	
5.9 <a href="#">ID selectors</a> (#id)	yes	
5.11.1 The <a href="#">:first-child</a> pseudo-class	yes	

Name	Current condition	Comments
5.11.2 The <a href="#">link pseudo-classes</a> : :link and :visited	partial	:visited is not supported.
5.11.3 The dynamic pseudo-classes: :hover, :active, and :focus	no	
5.11.4 The <a href="#">language pseudo-class</a> : lang	yes	
5.12.1 The <a href="#">:first-line</a> pseudo-element	yes	
5.12.2 The <a href="#">:first-letter</a> pseudo-element	yes	
5.12.3 The <a href="#">:before</a> and <a href="#">:after</a> pseudo-elements	yes	

## 6 Assigning property values, Cascading, and Inheritance

Name	Current condition	Comments
6.2.1 The <a href="#">'inherit'</a> value	yes	
6.3 The <a href="#">@import</a> rule	yes	
6.4.2 <a href="#">!important</a> rules	yes	

## 7 Media types

Name	Current condition	Comments
7.2.1 The <a href="#">@media</a> rule	yes	'print' and 'all' media types are supported.

## 8 Box model

Name	Current condition	Comments
8.3 <a href="#">Margin properties</a> : 'margin-top', 'margin-right', 'margin-bottom', 'margin-left', 'margin'	yes	
8.4 <a href="#">Padding properties</a> : 'padding-top', 'padding-right', 'padding-bottom', 'padding-left', 'padding'	yes	
8.5.1 <a href="#">Border width</a> : 'border-top-width', 'border-right-width', 'border-bottom-width', 'border-left-width', 'border-width'	yes	
8.5.2 <a href="#">Border color</a> : 'border-top-color', 'border-right-color', 'border-bottom-color', 'border-left-color', 'border-color'	yes	
8.5.3 <a href="#">Border style</a> : 'border-top-style', 'border-right-style', 'border-bottom-style', 'border-left-style', 'border-style'	yes	
8.5.4 <a href="#">Border shorthand properties</a> : 'border-top', 'border-right', 'border-bottom', 'border-left', 'border'	yes	

## 9 Visual formatting model

Name	Current condition	Comments
9.2.4 The <a href="#">'display'</a> property	yes	<a href="#">CSS3 Ruby</a>
9.3.1 <a href="#">Choosing a positioning scheme</a> : 'position'	yes	
9.3.2 <a href="#">Box offsets</a> : 'top', 'right', 'bottom', 'left'	yes	
9.5.1 <a href="#">Positioning the float</a> : 'float'	yes	The page break (column break) in the float is supported.
9.5.2 <a href="#">Controlling flow next to floats</a> : 'clear'	yes	
9.9.1 <a href="#">Specifying the stack level</a> : 'z-index'	yes	
9.10 <a href="#">Text direction</a> : 'direction', 'unicode-bidi'	yes	

## 10 Visual formatting model details

Name	Current condition	Comments
10.2 <a href="#">Content width</a> : 'width'	yes	
10.4 <a href="#">Minimum and maximum widths</a> : 'min-width', 'max-width'	yes	
10.5 <a href="#">Content height</a> : 'height'	yes	

Name	Current condition	Comments
10.7 <a href="#">Minimum and maximum heights</a> : 'min-height', 'max-height'	yes	
10.8 Line height calculations: 'line-height'	yes	
10.8 Line height calculations: 'vertical-align'	yes	

## 11 Visual effects

Name	Current condition	Comments
11.1.1 <a href="#">Overflow</a> : 'overflow'	yes	
11.1.2 <a href="#">Clipping</a> : 'clip'	yes	
11.2 <a href="#">Visibility</a> : 'visibility'	yes	visibility:collapse specified to table-column is considered as hidden.

## 12 Generated content, automatic numbering, and lists

Name	Current condition	Comments
12.2 The ' <a href="#">content</a> ' property	yes	open-quote, close-quote, no-open-quote and no-close-quote are supported.
12.3.1 Specifying quotes with the ' <a href="#">quotes</a> ' property	yes	
12.4 Automatic counters and numbering: ' <a href="#">counter-reset</a> '	yes	
12.4 Automatic counters and numbering: ' <a href="#">counter-increment</a> '	yes	
12.5.1 Lists: ' <a href="#">list-style-type</a> '	yes	
12.5.1 Lists: ' <a href="#">list-style-image</a> '	yes	
12.5.1 Lists: ' <a href="#">list-style-position</a> '	yes	
12.5.1 Lists: ' <a href="#">list-style</a> '	yes	

## 13 Paged media

Name	Current condition	Comments
13.2 <a href="#">Page boxes</a> : the @page rule	yes	
13.2.2 <a href="#">Page selectors</a> : selecting left, right, and first pages (:left, :right, :first)	yes	
13.3.1 <a href="#">Page break properties</a> : 'page-break-before', 'page-break-after', 'page-break-inside'	yes	☞ (-ah-)page-break-before ☞ (-ah-)page-break-after ☞ (-ah-)page-break-inside
13.3.2 <a href="#">Breaks inside elements</a> : 'orphans', 'widows'	yes	

## 14 Colors and Backgrounds

Name	Current condition	Comments
14.1 Foreground color: 'color'	yes	
14.2.1 Background properties: 'background-color'	yes	
14.2.1 Background properties: 'background-image'	yes	
14.2.1 Background properties: 'background-repeat'	yes	
14.2.1 Background properties: 'background-attachment'	yes	
14.2.1 Background properties: 'background-position'	yes	
14.2.1 Background properties: 'background'	yes	

## 15 Fonts

Name	Current condition	Comments
15.3 Font family: 'font-family'	yes	
15.4 Font styling: 'font-style'	yes	
15.5 Small-caps: 'font-variant'	yes	
15.6 Font boldness: 'font-weight'	yes	
15.7 Font size: 'font-size'	yes	
15.8 Shorthand font property: 'font'	yes	

## 16 Text

Name	Current condition	Comments
16.1 Indentation: 'text-indent'	yes	
16.2 Alignment: 'text-align'	yes	
16.3.1 Underlining, overlining, striking, and blinking: 'text-decoration'	yes	Limitation: blink is not supported.
16.4 Letter and word spacing: 'letter-spacing'	yes	
16.4 Letter and word spacing: 'word-spacing'	yes	
16.5 Capitalization: 'text-transform'	yes	
16.6 Whitespace: 'white-space'	yes	

## 17 Tables

Name	Current condition	Comments
17.4.1 Caption position and alignment: 'caption-side'	yes	
17.5.2 Table width algorithms: 'table-layout'	yes	
17.6.1 The separated borders model: 'border-spacing'	yes	
17.6.1.1 Borders and Backgrounds around empty cells: 'empty-cells'	yes	
17.6.2 The collapsing border model: 'border-collapse'	yes	

## 18 User interface

Name	Current condition	Comments
18.1 Cursors: 'cursor'	no	
18.4 Dynamic outlines: 'outline'	no	

## CSS3 Backgrounds and Borders

### Background properties

Name	Current condition	Comments
3.7 The 'background-clip' property	yes	☞ (-ah-)background-clip
3.8 The 'background-origin' property	yes	☞ (-ah-)background-origin
3.9 The 'background-size' property	yes	
6.1 The 'box-decoration-break' property	yes	



## Border properties

Name	Current condition	Comments
The 'border-top-right-radius' property	yes	☞ (-ah-)border-*-radius
The 'border-bottom-right-radius' property	yes	
The 'border-bottom-left-radius' property	yes	
The 'border-top-left-radius' property	yes	
The 'border-radius' property	yes	☞ (-ah-)border-radius

## CSS3 Generated and Replaced Content Module

### Replaced content

Name	Current condition	Comments
'crop' property	yes	☞ (-ah-)crop

## CSS3 Fonts

### Font specification

Name	Current condition	Comments
'font-size-adjust' property	yes	☞ (-ah-)font-size-adjust
'font-stretch' property	yes	☞ (-ah-)font-stretch

### Font resources

Name	Current condition	Comments
<a href="#">@font-face</a> at-rule	yes	<p>Only the following specifications are supported.</p> <ul style="list-style-type: none"> <li>src</li> <li>font-family</li> </ul> <p>☞ <code>&lt;axf:font-face&gt;</code></p>

## CSS3 Generated Content for Paged Media (GCPM)

### Named strings

Name	Current condition	Comments
Setting named strings: 'string-set' property	yes	☞ (-ah-)string-set env() is not supported.
Using named strings: <a href="#">string()</a>	yes	

### Leaders

Name	Current condition	Comments
<a href="#">leader()</a>	yes	

## Cross-references

Name	Current condition	Comments
target-counter()	yes	
target-counters()	yes	
target-text()	yes	

## Footnotes

Name	Current condition	Comments
float: footnote	yes	☞ (-ah-)float
@footnote	yes	display: inline is not supported.
'border-length' property	yes	☞ (-ah-)border-length
::footnote-call pseudo-element	yes	
::footnote-marker pseudo-element	yes	
content: target-pull()	no	

## Sidenotes

Name	Current condition	Comments
float: sidenote	yes	☞ (-ah-)float
@sidenote	yes	
::sidenote-call pseudo-element	yes	
::sidenote-marker pseudo-element	yes	

## Border parts

Name	Current condition	Comments
'border-clip' property	yes	

## Hyphenation

Name	Current condition	Comments
'hyphens' property	yes	☞ (-ah-)hyphens
'hyphenate-before' property	yes	☞ (-ah-)hyphenate-before
'hyphenate-after' property	yes	☞ (-ah-)hyphenate-after
'hyphenate-lines' property	yes	☞ (-ah-)hyphenate-lines
'hyphenate-character' property	yes	☞ (-ah-)hyphenate-character

## New counter styles

Name	Current condition	Comments
'super-decimal' list-style-type	yes	☞ (-ah-)list-style-type

## Character substitution

Name	Current condition	Comments
'text-replace' property	yes	☞ (-ah-)text-replace

## Image resolution

Name	Current condition	Comments
'image-resolution' property	yes	☞ (-ah-)image-resolution
'background-image-resolution' property	yes	☞ (-ah-)background-image-resolution

## Page marks and bleed area

Name	Current condition	Comments
'marks' property	yes	☞ (-ah-)marks
'bleed' property	yes	☞ (-ah-)bleed

## CMYK colors

Name	Current condition	Comments
cmyk()	yes	

## Page floats

Name	Current condition	Comments
'float' property	yes	☞ (-ah-)float multicol, intrude, unless-room, next, page() and hide are not supported.

## Named page lists

Name	Current condition	Comments
'page' property	yes	☞ (-ah-)page

## Change bars

Name	Current condition	Comments
'change-bar-class' property	yes	☞ (-ah-)change-bar-class
'change-bar-color' property	yes	☞ (-ah-)change-bar-color
'change-bar-offset' property	yes	☞ (-ah-)change-bar-offset
'change-bar-side' property	yes	☞ (-ah-)change-bar-side
'change-bar-style' property	yes	☞ (-ah-)change-bar-style
'change-bar-width' property	yes	☞ (-ah-)change-bar-width

## CSS3 Line

### Baseline alignment

Name	Current condition	Comments
'alignment-adjust' property	yes	☞ (-ah-)alignment-adjust
'alignment-baseline' property	yes	☞ (-ah-)alignment-baseline
'baseline-shift' property	yes	☞ (-ah-)baseline-shift
'dominant-baseline' property	yes	☞ (-ah-)dominant-baseline
'vertical-align' property	yes	☞ (-ah-)vertical-align

## CSS3 Lists

### List Content: The 'list-style-type' property

Name	Current condition	Comments
'list-style-type' property	yes	<a href="#">(-ah-)list-style-type</a>

### Markers: The ::marker pseudo-element

Name	Current condition	Comments
::marker pseudo-element	yes	

## CSS3 Multi-column layout

### The number and width of columns

Name	Current condition	Comments
'column-width' property	yes	<a href="#">(-ah-)column-width</a>
'column-count' property	yes	<a href="#">(-ah-)column-count</a>
'columns' property	yes	<a href="#">(-ah-)columns</a>

### Column gaps and rules

Name	Current condition	Comments
'column-gap' property	yes	<a href="#">(-ah-)column-gap</a>
'column-rule-color' property	yes	<a href="#">(-ah-)column-rule-color</a>
'column-rule-style' property	yes	<a href="#">(-ah-)column-rule-style</a>
'column-rule-width' property	yes	<a href="#">(-ah-)column-rule-width</a>
'column-rule' property	yes	<a href="#">(-ah-)column-rule</a>

### Column breaks

Name	Current condition	Comments
'break-before' property	yes	<a href="#">(-ah-)break-before</a>
'break-after' property	yes	<a href="#">(-ah-)break-after</a>
'break-inside' property	yes	<a href="#">(-ah-)break-inside</a>

### Spanning columns

Name	Current condition	Comments
'column-span' property	yes	<a href="#">(-ah-)column-span</a>

### Filling columns

Name	Current condition	Comments
'column-fill' property	yes	<a href="#">(-ah-)column-fill</a>

## CSS3 Namespaces

---

### Declaring namespaces: the @namespace rule

---

Name	Current condition	Comments
@namespace rule	yes	

### CSS Qualified Names

---

Name	Current condition	Comments
CSS qualified name	yes	

## CSS3 Paged Media

---

### Margin Boxes

---

Name	Current condition	Comments
@top-left-corner	yes	
@top-left	yes	
@top-center	yes	
@top-right	yes	
@top-right-corner	yes	
@left-top	yes	
@left-middle	yes	
@left-bottom	yes	
@right-top	yes	
@right-middle	yes	
@right-bottom	yes	
@bottom-left-corner	yes	
@bottom-left	yes	
@bottom-center	yes	
@bottom-right	yes	
@bottom-right-corner	yes	

### Page-based counters

---

Name	Current condition	Comments
Page number: counter(page)	yes	
Total number of pages: counter(pages)	yes	

### Page size

---

Name	Current condition	Comments
Page size: 'size' property	yes	☞ (-ah-)size

## Using named pages

Name	Current condition	Comments
'page' property	yes	☞ (-ah-)page

## CSS3 Selectors

### Structural pseudo-classes

Name	Current condition	Comments
:root pseudo-class	yes	
:nth-child() pseudo-class	yes	
:nth-last-child() pseudo-class	yes	
:nth-of-type() pseudo-class	yes	
:nth-last-of-type() pseudo-class	yes	
:first-child pseudo-class	yes	
:last-child pseudo-class	yes	
:first-of-type pseudo-class	yes	
:last-of-type pseudo-class	yes	
:only-child pseudo-class	yes	
:only-of-type pseudo-class	yes	
:empty pseudo-class	yes	

### Negation pseudo-class

Name	Current condition	Comments
:not pseudo-class	yes	

### Pseudo-elements

Name	Current condition	Comments
::before and ::after pseudo-elements	yes	

### Combinators

Name	Current condition	Comments
General sibling combinator (E ~ F)	yes	

## CSS3 Tables

There are no specifications about CSS3 Tables opened to the public. table-column-span and table-row-span are just candidate properties that will be dominant.

### table-column-span and table-row-span

Name	Current condition	Comments
'table-column-span' property	yes	☞ (-ah-)table-column-span
'table-row-span' property	yes	☞ (-ah-)table-row-span

## CSS3 Text

### Line Breaking and Word Boundaries

Name	Current condition	Comments
'word-break' property	yes	☞ (-ah-)word-break

### Text Wrapping

Name	Current condition	Comments
'word-wrap' property	yes	☞ (-ah-)word-wrap

### Alignment and Justification

Name	Current condition	Comments
'text-align' property	yes	☞ (-ah-)text-align
'text-align-last' property	yes	☞ (-ah-)text-align-last

### Spacing

Name	Current condition	Comments
'punctuation-trim' property	yes	☞ (-ah-)punctuation-trim
'text-justify-trim' property	yes	☞ (-ah-)text-justify-trim
'text-autospace' property	yes	☞ (-ah-)text-autospace

### Text Decoration

See also [Editor's Draft](#).

Name	Current condition	Comments
'text-decoration-line' property	yes	☞ (-ah-)text-decoration-line
'text-decoration-color' property	yes	☞ (-ah-)text-decoration-color
'text-decoration-style' property	yes	☞ (-ah-)text-decoration-style
'text-decoration' property	yes	☞ (-ah-)text-decoration
'text-underline-position' property	yes	☞ (-ah-)text-underline-position
'text-emphasis-style' property	yes	☞ (-ah-)text-emphasis-style V6.0
'text-emphasis-color' property	yes	☞ (-ah-)text-emphasis-color V6.0
'text-emphasis-position' property	partial	☞ (-ah-)text-emphasis-position V6.0
'text-emphasis-skip' property	yes	☞ (-ah-)text-emphasis-skip V6.0

### Edge Effects

Name	Current condition	Comments
'hanging-punctuation' property	yes	☞ (-ah-)hanging-punctuation

## CSS3 Text Layout

Name	Current condition	Comments
'block-progression' property	yes	☞ (-ah-)block-progression
'writing-mode' property	yes	☞ (-ah-)writing-mode

## CSS3 Ruby

Name	Current condition	Comments
3.1 Ruby specific 'display' property values	partial	ruby, ruby-base and ruby-text are supported. <a href="#">V6.0</a>
'ruby-position' property	partial	☞ (-ah-)ruby-position <a href="#">V6.0</a>
'ruby-align' property	partial	☞ (-ah-)ruby-align <a href="#">V6.0</a>
'ruby-overhang' property	yes	☞ (-ah-)ruby-overhang <a href="#">V6.0</a>
'ruby-span' property	no	

## CSS3 Basic User Interface

### Box Model addition

Name	Current condition	Comments
'box-sizing' property	yes	☞ box-sizing

## CSS3 Values and Units

### Keywords

Name	Current condition	Comments
'inherit' value	yes	
'initial' value	yes	
'default' value	yes	

### Functional notation

Name	Current condition	Comments
attr() function	yes	
url() function	yes	
counter() function	yes	
calc() function	yes	





## CSS Reference

AH Formatter V6.0 supports the following CSS properties.

- [CSS Properties](#)
- [CSS Extended Properties](#)
- [CSS Selectors](#)
- [CSS Rules](#)
- [CSS Functions](#)
- [CSS Keywords](#)
- [CSS Units](#)

As for the property of CSS2.1 or CSS3, please refer to the associated specifications of W3C shown in [CSS Conformance](#) for details. This section introduces the details of CSS extension properties, CSS2.1 or CSS3 properties with restrictions only. As for abbreviated expressions, such as [CSS3-GCPM] etc. in the table, please refer to [CSS Conformance](#).

### CSS Properties

It's safer to use a prefix with -ah- when the property is still a draft specification before the candidate recommendation. (-ah-) is applied to such a property in the following table. **AH Formatter V6.0** also processes the property even if -ah- is not applied. However the property may become invalid when a specification changes in the future. When you follow the candidate recommendation such as CSS2.1, it is not necessary to apply -ah-.

Property name	Description
<a href="#">(-ah-)alignment-adjust</a>	[CSS3-Line] Baseline alignment
<a href="#">(-ah-)alignment-baseline</a>	[CSS3-Line] Baseline alignment
<a href="#">background</a>	[CSS2.1] 14.2.1 Background properties
<a href="#">background-attachment</a>	[CSS2.1] 14.2.1 Background properties
<a href="#">(-ah-)background-clip</a>	[CSS3-Background] Background properties
<a href="#">background-color</a>	[CSS2.1] 14.2.1 Background properties
<a href="#">background-image</a>	[CSS2.1] 14.2.1 Background properties
<a href="#">(-ah-)background-image-resolution</a>	[CSS3-GCPM] Image resolution
<a href="#">(-ah-)background-origin</a>	[CSS3-Background] The 'background-origin' property
<a href="#">background-position</a>	[CSS2.1] 14.2.1 Background properties
<a href="#">background-repeat</a>	[CSS2.1] 14.2.1 Background properties
<a href="#">(-ah-)baseline-shift</a>	[CSS3-Line] Baseline alignment
<a href="#">(-ah-)block-progression</a>	[CSS3-Text-Layout] Text flow
<a href="#">(-ah-)bookmark-label</a>	[CSS3-GCPM] Bookmarks
<a href="#">(-ah-)bookmark-level</a>	[CSS3-GCPM] Bookmarks
<a href="#">(-ah-)bookmark-state</a>	[CSS3-GCPM] Bookmarks
<a href="#">border</a>	[CSS2.1] 8.5.4 Border shorthand properties
<a href="#">border-bottom</a>	[CSS2.1] 8.5.4 Border shorthand properties
<a href="#">border-bottom-color</a>	[CSS2.1] 8.5.2 Border color
<a href="#">(-ah-)border-bottom-left-radius</a>	[CSS3-Background] Border properties
<a href="#">(-ah-)border-bottom-right-radius</a>	[CSS3-Background] Border properties
<a href="#">border-bottom-style</a>	[CSS2.1] 8.5.3 Border style
<a href="#">border-bottom-width</a>	[CSS2.1] 8.5.1 Border width
<a href="#">(-ah-)border-break</a>	[CSS3-Background] Border properties
<a href="#">border-collapse</a>	[CSS2.1] 17.6 Borders
<a href="#">border-color</a>	[CSS2.1] 8.5.2 Border color

Property name	Description
border-left	[CSS2.1] 8.5.4 Border shorthand properties
border-left-color	[CSS2.1] 8.5.2 Border color
border-left-style	[CSS2.1] 8.5.3 Border style
border-left-width	[CSS2.1] 8.5.1 Border width
<a href="#">(-ah-)border-length</a>	[CSS3-GCPM] The 'border-length' property
<a href="#">(-ah-)border-radius</a>	[CSS3-Background] Border properties
border-right	[CSS2.1] 8.5.4 Border shorthand properties
border-right-color	[CSS2.1] 8.5.2 Border color
border-right-style	[CSS2.1] 8.5.3 Border style
border-right-width	[CSS2.1] 8.5.1 Border width
border-spacing	[CSS2.1] 17.6.1 The separated borders model
border-style	[CSS2.1] 8.5.3 Border style
border-top	[CSS2.1] 8.5.4 Border shorthand properties
border-top-color	[CSS2.1] 8.5.2 Border color
<a href="#">(-ah-)border-top-left-radius</a>	[CSS3-Background] Border properties
<a href="#">(-ah-)border-top-right-radius</a>	[CSS3-Background] Border properties
border-top-style	[CSS2.1] 8.5.3 Border style
border-top-width	[CSS2.1] 8.5.1 Border width
border-width	[CSS2.1] 8.5.1 Border width
bottom	[CSS2.1] 9.3.2 Box offsets
<a href="#">(-ah-)box-shadow</a>	[CSS3-Background] Border properties
<a href="#">box-sizing</a>	[CSS3-UI] Box Model addition
<a href="#">(-ah-)break-after</a>	[CSS3-Multicol] Column breaks
<a href="#">(-ah-)break-before</a>	[CSS3-Multicol] Column breaks
<a href="#">(-ah-)break-inside</a>	[CSS3-Multicol] Column breaks
caption-side	[CSS2.1] 17.4.1 Caption position and alignment
<a href="#">(-ah-)change-bar-class</a>	[CSS3-GCPM] Change bars
<a href="#">(-ah-)change-bar-color</a>	[CSS3-GCPM] Change bars
<a href="#">(-ah-)change-bar-offset</a>	[CSS3-GCPM] Change bars
<a href="#">(-ah-)change-bar-side</a>	[CSS3-GCPM] Change bars
<a href="#">(-ah-)change-bar-style</a>	[CSS3-GCPM] Change bars
<a href="#">(-ah-)change-bar-width</a>	[CSS3-GCPM] Change bars
clear	[CSS2.1] 9.5.2 Controlling flow next to floats
clip	[CSS2.1] 11.1.2 Clipping
<a href="#">(-ah-)crop</a>	[CSS3-Content] The 'crop' property
color	[CSS2.1] 14.1 Foreground color
<a href="#">(-ah-)column-count</a>	[CSS3-Multicol] The number and width of columns
<a href="#">(-ah-)column-fill</a>	[CSS3-Multicol] Filling columns
<a href="#">(-ah-)column-gap</a>	[CSS3-Multicol] Column gaps and rules
<a href="#">(-ah-)column-rule</a>	[CSS3-Multicol] Column gaps and rules
<a href="#">(-ah-)column-rule-color</a>	[CSS3-Multicol] Column gaps and rules
<a href="#">(-ah-)column-rule-style</a>	[CSS3-Multicol] Column gaps and rules

Property name	Description
<a href="#">(-ah-)column-rule-width</a>	[CSS3-Multicol] Column gaps and rules
<a href="#">(-ah-)column-span</a>	[CSS3-Multicol] Spanning columns
<a href="#">(-ah-)column-width</a>	[CSS3-Multicol] The number and width of columns
<a href="#">(-ah-)columns</a>	[CSS3-Multicol] The number and width of columns
content	[CSS2.1] 12.2 The 'content' property
counter-increment	[CSS2.1] 12.4 Automatic counters and numbering
counter-reset	[CSS2.1] 12.4 Automatic counters and numbering
direction	[CSS2.1] 9.10 Text direction
display	[CSS2.1] 9.2.4 The 'display' property [CSS3-Ruby] 3.1 Ruby specific 'display' property values
<a href="#">(-ah-)dominant-baseline</a>	[CSS3-Line] Baseline alignment
<a href="#">(-ah-)float</a>	[CSS2.1] 9.5.1 Positioning the float [CSS3-GCPM] Page floats
font	[CSS2.1] 15.8 Shorthand font property
font-family	[CSS2.1] 15.3 Font family
font-size	[CSS2.1] 15.7 Font size
<a href="#">(-ah-)font-size-adjust</a>	[CSS3-Fonts] Font specification
<a href="#">(-ah-)font-stretch</a>	[CSS3-Fonts] Font specification
font-style	[CSS2.1] 15.4 Font styling
font-variant	[CSS2.1] 15.5 Small-caps
font-weight	[CSS2.1] 15.6 Font boldness
<a href="#">(-ah-)hanging-punctuation</a>	[CSS3-Text] Edge Effects
height	[CSS2.1] 10.5 Content height
<a href="#">(-ah-)hyphenate-after</a>	[CSS3-GCPM] Hyphenation
<a href="#">(-ah-)hyphenate-before</a>	[CSS3-GCPM] Hyphenation
<a href="#">(-ah-)hyphenate-character</a>	[CSS3-GCPM] Hyphenation
<a href="#">(-ah-)hyphenate-lines</a>	[CSS3-GCPM] Hyphenation
<a href="#">(-ah-)hyphens</a>	[CSS3-GCPM] Hyphenation
<a href="#">(-ah-)image-resolution</a>	[CSS3-GCPM] Image resolution
left	[CSS2.1] 9.3.2 Box offsets
letter-spacing	[CSS2.1] 16.4 Letter and word spacing
line-height	[CSS2.1] 10.8.1 Leading and half-leading
list-style	[CSS2.1] 12.5.1 Lists
list-style-image	[CSS2.1] 12.5.1 Lists
list-style-position	[CSS2.1] 12.5.1 Lists
<a href="#">(-ah-)list-style-type</a>	[CSS2.1] 12.5.1 Lists [CSS3-Lists] List Content: The 'list-style-type' property [CSS3-GCPM] The 'super-decimal' list-style-type
margin	[CSS2.1] 8.3 Margin properties
margin-bottom	[CSS2.1] 8.3 Margin properties
margin-left	[CSS2.1] 8.3 Margin properties
margin-right	[CSS2.1] 8.3 Margin properties
margin-top	[CSS2.1] 8.3 Margin properties

Property name	Description
<a href="#">(-ah-)marks</a>	[CSS3-GCPM] Page marks and bleed area
max-height	[CSS2.1] 10.7 Minimum and maximum heights
max-width	[CSS2.1] 10.4 Minimum and maximum widths
min-height	[CSS2.1] 10.7 Minimum and maximum heights
min-width	[CSS2.1] 10.4 Minimum and maximum widths
orphans	[CSS2.1] 13.3.2 Breaks inside elements
overflow	[CSS2.1] 11.1.1 Overflow
padding	[CSS2.1] 8.4 Padding properties
padding-bottom	[CSS2.1] 8.4 Padding properties
padding-left	[CSS2.1] 8.4 Padding properties
padding-right	[CSS2.1] 8.4 Padding properties
padding-top	[CSS2.1] 8.4 Padding properties
<a href="#">(-ah-)page</a>	[CSS3-GCPM] Named page lists
<a href="#">(-ah-)bleed</a>	[CSS3-GCPM] Page marks and bleed area
<a href="#">(-ah-)page-break-after</a>	[CSS2.1] 13.3.1 Page break properties [CSS3-Page] Break before/after elements
<a href="#">(-ah-)page-break-before</a>	[CSS2.1] 13.3.1 Page break properties [CSS3-Page] Break before/after elements
<a href="#">(-ah-)page-break-inside</a>	[CSS2.1] 13.3.1 Page break properties [CSS3-Page] Break before/after elements
position	[CSS2.1] 9.3.1 Choosing-- a positioning scheme
<a href="#">(-ah-)punctuation-trim</a>	[CSS3-Text] Spacing
right	[CSS2.1] 9.3.2 Box offsets
<a href="#">(-ah-)ruby-align</a>	[CSS3-Ruby] Ruby <a href="#">V6.0</a>
<a href="#">(-ah-)ruby-overhang</a>	[CSS3-Ruby] Ruby <a href="#">V6.0</a>
<a href="#">(-ah-)ruby-position</a>	[CSS3-Ruby] Ruby <a href="#">V6.0</a>
<a href="#">(-ah-)size</a>	[CSS3-Page] Page size
<a href="#">(-ah-)string-set</a>	[CSS3-GCPM] Named strings
<a href="#">(-ah-)table-column-span</a>	[CSS3-Tables] table-column-span and table-row-span properties
table-layout	[CSS2.1] 17.5.2 Table width algorithms
<a href="#">(-ah-)table-row-span</a>	[CSS3-Tables] table-column-span and table-row-span properties
<a href="#">(-ah-)text-align</a>	[CSS2.1] 16.2 Alignment and Justification [CSS3-Text] Text Alignment
<a href="#">(-ah-)text-align-last</a>	[CSS3-Text] Alignment and Justification
<a href="#">(-ah-)text-autospace</a>	[CSS3-Text] Spacing
<a href="#">(-ah-)text-decoration</a>	[CSS2.1] 16.3.1 Underlining, overlining, striking, and blinking [CSS3-Text] Text Decoration
<a href="#">(-ah-)text-decoration-color</a>	[CSS3-Text] Text Decoration
<a href="#">(-ah-)text-decoration-line</a>	[CSS3-Text] Text Decoration
<a href="#">(-ah-)text-decoration-style</a>	[CSS3-Text] Text Decoration
<a href="#">(-ah-)text-emphasis-color</a>	[CSS3-Text] Text Decoration <a href="#">V6.0</a>
<a href="#">(-ah-)text-emphasis-position</a>	[CSS3-Text] Text Decoration <a href="#">V6.0</a>
<a href="#">(-ah-)text-emphasis-skip</a>	[CSS3-Text] Text Decoration <a href="#">V6.0</a>
<a href="#">(-ah-)text-emphasis-style</a>	[CSS3-Text] Text Decoration <a href="#">V6.0</a>

Property name	Description
text-indent	[CSS2.1] 16.1 Indentation
(-ah-)text-justify-trim	[CSS3-Text] Spacing
(-ah-)text-replace	[CSS3-GCPM] Character substitution
text-transform	[CSS2.1] 16.5 Capitalization
(-ah-)text-underline-position	[CSS3-Text] Text Decoration
top	[CSS2.1] 9.3.2 Box offsets
unicode-bidi	[CSS2.1] 9.10 Text direction
(-ah-)vertical-align	[CSS2.1] 10.8.1 Leading and half-leading [CSS3-Line] Baseline alignment
visibility	[CSS2.1] 11.2 Visibility
white-space	[CSS2.1] 16.6 Whitespace
widows	[CSS2.1] 13.3.2 Breaks inside elements
width	[CSS2.1] 10.2 Content width
(-ah-)word-break	[CSS3-Text] Line Breaking and Word Boundaries
word-spacing	[CSS2.1] 16.4 Letter and word spacing
(-ah-)word-wrap	[CSS3-Text] Text Wrapping
(-ah-)writing-mode	[CSS3-Text-Layout] Text flow
z-index	[CSS2.1] 9.9.1 Specifying the stack level

## CSS Extended Properties

All of CSS extension properties of Antenna House start with -ah-. These are the properties which are not defined in the CSS specification. Many of them are the same features as those in XSL specification or XSL extension specification. See also [XSL-FO 1.1 Conformance](#) and [XSL Extensions](#). If the extended property is only with CSS, [CSS-EXT] is added in the description in the following table.

Property name	Description
-ah-abbreviation-character-count	Specifies the minimum number of characters considered to be an abbreviation.
-ah-action-type	Specifies the action of external link or form action.
-ah-allowed-height-scale	[XSL1.1] 7.15.1 allowed-height-scale
-ah-allowed-width-scale	[XSL1.1] 7.15.2 allowed-width-scale
-ah-alt-glyph	Specifies the alternate glyph.
-ah-alttext	Specifies the alternate text of the image.
-ah-annotation-color	Specifies the color used for the background of the annotation. <span style="border: 1px dashed black; padding: 0 2px;">no-LT</span>
-ah-annotation-contents	Specifies the content of the annotation. <span style="border: 1px dashed black; padding: 0 2px;">no-LT</span>
-ah-annotation-file-attachment	Specifies the file with which file attachment annotation is related. <span style="border: 1px dashed black; padding: 0 2px;">no-LT</span>
-ah-annotation-flags	Specifies the flag of the annotation. <span style="border: 1px dashed black; padding: 0 2px;">no-LT</span>
-ah-annotation-font-family	Specifies the font family of the free text annotation. <span style="border: 1px dashed black; padding: 0 2px;">no-LT</span>
-ah-annotation-font-size	Specifies the font size of the free text annotation. <span style="border: 1px dashed black; padding: 0 2px;">no-LT</span>
-ah-annotation-font-style	Specifies whether to make the font of the free text annotation italic. <span style="border: 1px dashed black; padding: 0 2px;">no-LT</span>
-ah-annotation-font-weight	Specifies the font weight of the free text annotation. <span style="border: 1px dashed black; padding: 0 2px;">no-LT</span>
-ah-annotation-height	Specifies the height of the annotation. <span style="border: 1px dashed black; padding: 0 2px;">no-LT</span>
-ah-annotation-icon-name	Specifies the name of the icon used for displaying the annotation. <span style="border: 1px dashed black; padding: 0 2px;">no-LT</span>
-ah-annotation-open	Specifies the initial state of the annotation. <span style="border: 1px dashed black; padding: 0 2px;">no-LT</span>
-ah-annotation-position-horizontal	Specifies the horizontal position of the annotation. <span style="border: 1px dashed black; padding: 0 2px;">no-LT</span>

Property name	Description
-ah-annotation-position-vertical	Specifies the vertical position of the annotation. <small>no-LT</small>
-ah-annotation-text-align	Specifies the alignment of the free text annotation. <small>no-LT</small>
-ah-annotation-text-color	Specifies the color of the free text annotation. <small>no-LT</small>
-ah-annotation-title	Specifies the title of the annotation. <small>no-LT</small>
-ah-annotation-type	Specifies the type of the annotation. <small>no-LT</small>
-ah-annotation-width	Specifies the width of the annotation. <small>no-LT</small>
-ah-append-non-end-of-line-characters	Specifies to append the non-end-of-line-characters.
-ah-append-non-starter-characters	Specifies to append the non-starter characters.
-ah-auto-letter-spacing	Changes the letter-spacing depending on the number of characters. <small>V6.0 no-LT</small>
-ah-avoid-widow-words	Specifies the spacing behavior so that the last line of the paragraph does not have only one word left.
-ah-background-content-height	Specifies the content height of a background image.
-ah-background-content-type	Specifies the content type of a background image.
-ah-background-content-width	Specifies the content width of a background image.
-ah-background-scaling	Specifies the scaling ratio of a background image.
-ah-base-uri	Specifies the location which becomes the base of relative URI.
-ah-bleed-bottom	Specifies the width of the bleed region on the bottom for cutting off. <small>no-LT</small>
-ah-bleed-left	Specifies the width of the bleed region on the left for cutting off. <small>no-LT</small>
-ah-bleed-right	Specifies the width of the bleed region on the right for cutting off. <small>no-LT</small>
-ah-bleed-top	Specifies the width of the bleed region on the top for cutting off. <small>no-LT</small>
-ah-block-progression-dimension	[XSL1.1] 7.15.3 block-progression-dimension
-ah-border-after-color	[XSL1.1] 7.8.10 border-after-color
-ah-border-after-precedence	[XSL1.1] 7.28.1 border-after-precedence
-ah-border-after-style	[XSL1.1] 7.8.11 border-after-style
-ah-border-after-width	[XSL1.1] 7.8.12 border-after-width
-ah-border-before-color	[XSL1.1] 7.8.7 border-before-color
-ah-border-before-precedence	[XSL1.1] 7.28.2 border-before-precedence
-ah-border-before-style	[XSL1.1] 7.8.8 border-before-style
-ah-border-before-width	[XSL1.1] 7.8.9 border-before-width
-ah-border-end-color	[XSL1.1] 7.8.16 border-end-color
-ah-border-end-precedence	[XSL1.1] 7.28.4 border-end-precedence
-ah-border-end-style	[XSL1.1] 7.8.17 border-end-style
-ah-border-end-width	[XSL1.1] 7.8.18 border-end-width
-ah-border-start-color	[XSL1.1] 7.8.13 border-start-color
-ah-border-start-precedence	[XSL1.1] 7.28.6 border-start-precedence
-ah-border-start-style	[XSL1.1] 7.8.14 border-start-style
-ah-border-start-width	[XSL1.1] 7.8.15 border-start-width
-ah-column-rule-align	Specifies the alignment of the column rule.
-ah-column-rule-color	Specifies the color of the column rule.
-ah-column-rule-length	Specifies the length of the column rule.
-ah-content-height	[XSL1.1] 7.15.4 content-height
-ah-content-type	[XSL1.1] 7.30.7 content-type

Property name	Description
-ah-content-width	[XSL1.1] 7.15.5 content-width
-ah-crop-area-visibility	Specifies whether to display the area that is extended beyond the finished page size. <a href="#">no-LT</a>
-ah-crop-offset	Specifies the distance from the physical end to the trim size of the output medium. <a href="#">no-LT</a>
-ah-crop-offset-bottom	Specifies the distance from the physical bottom edge to the trim size of the output medium. <a href="#">no-LT</a>
-ah-crop-offset-left	Specifies the distance from the physical left edge to the trim size of the output medium. <a href="#">no-LT</a>
-ah-crop-offset-right	Specifies the distance from the physical right edge to the trim size of the output medium. <a href="#">no-LT</a>
-ah-crop-offset-top	Specifies the distance from the physical top edge to the trim size of the output medium. <a href="#">no-LT</a>
-ah-destination-type	Specifies the type of destination for external links. <a href="#">no-LT</a>
-ah-diagonal-border-color	Specifies the color of the diagonal border.
-ah-diagonal-border-style	Specifies the style of the diagonal border.
-ah-diagonal-border-width	Specifies the width of the diagonal border.
-ah-display-align	[XSL1.1] 7.14.4 display-align
-ah-except-non-end-of-line-characters	Specifies to except the non-end-of-line-characters.
-ah-except-non-starter-characters	Specifies to except the non-starter characters.
-ah-float	Shorthand property for setting float related extension properties. <a href="#">V6.0</a>
-ah-font-selection-strategy	[XSL1.1] 7.9.3 font-selection-strategy
-ah-glyph-orientation-horizontal	[XSL1.1] 7.29.2 glyph-orientation-horizontal
-ah-glyph-orientation-vertical	[XSL1.1] 7.29.3 glyph-orientation-vertical
-ah-hyphenate-hyphenated-word	Specifies whether to hyphenate the already hyphenated word or not.
-ah-hyphenation-keep	[XSL1.1] 7.16.1 hyphenation-keep
-ah-hyphenation-minimum-character-count	Specifies the minimum number of the character to hyphenate.
-ah-hyphenation-zone	Limits the range where a hyphenation is available.
-ah-ignore-leading-newline	[CSS-EXT] Specifies whether the line break right after the start tag is disregarded or not.
-ah-inline-progression-dimension	[XSL1.1] 7.15.7 inline-progression-dimension
-ah-intrusion-displace	[XSL1.1] 7.19.3 intrusion-displace
-ah-justify-nbsp	Specifies whether to include NON-BREAKING SPACE for justification or not.
-ah-kerning-mode	Specifies whether to process the kerning.
-ah-lang	[XSL1.1] 7.31.24 xml:lang
-ah-language	[XSL1.1] 7.10.2 language
-ah-last-line-end-indent	[XSL1.1] 7.16.3 last-line-end-indent
-ah-letter-spacing-side	Specifies on which side of the character the space by letter-spacing is distributed. <a href="#">V6.0</a>
-ah-ligature-mode	Specifies whether to process the ligature.
-ah-line-break	Specifies the method of line breaking.
-ah-line-continued-mark	Specifies whether to show line continued marks. <a href="#">no-LT</a>
-ah-line-continued-mark-background-color	Specifies the background color of line continued marks. <a href="#">no-LT</a>
-ah-line-continued-mark-color	Specifies the color of line continued marks. <a href="#">no-LT</a>
-ah-line-continued-mark-font-family	Specifies the font family of line continued marks. <a href="#">no-LT</a>



Property name	Description
-ah-line-continued-mark-font-size	Specifies the font size of line continued marks. <small>no-LT</small>
-ah-line-continued-mark-font-style	Specifies whether to make the font style italic. <small>no-LT</small>
-ah-line-continued-mark-font-weight	Specifies the font weight of line continued marks. <small>no-LT</small>
-ah-line-continued-mark-offset	Specifies the offset of line continued marks. <small>no-LT</small>
-ah-line-height-shift-adjustment	[XSL1.1] 7.16.5 line-height-shift-adjustment
-ah-line-stacking-strategy	[XSL1.1] 7.16.6 line-stacking-strategy
-ah-linefeed-treatment	[XSL1.1] 7.16.7 linefeed-treatment
-ah-link	[CSS-EXT] Generates a hyper-link.
-ah-margin-after	[CSS-EXT] Specifies the margin of the after region.
-ah-margin-before	[CSS-EXT] Specifies the margin of the before region.
-ah-margin-break	[CSS-EXT] Specifies how to treat the margin when the page breaks.
-ah-margin-end	[CSS-EXT] Specifies the margin of the end region.
-ah-margin-start	[CSS-EXT] Specifies the margin of the start region.
-ah-number-transform	Converts the number sequence in the character string. <small>no-LT</small>
-ah-outline-color	Specifies the color of the title for the PDF bookmark. <small>no-LT</small>
-ah-outline-external-destination	Sets the external link in the PDF bookmark. <small>no-LT</small>
-ah-outline-font-style	Specifies the font style of the title for the PDF bookmark. <small>no-LT</small>
-ah-outline-font-weight	Specifies the font weight of the title for the PDF bookmark. <small>no-LT</small>
-ah-outline-group	Groups bookmark items of PDF, and outputs them collectively.
-ah-outline-internal-destination	Sets the internal link in the PDF bookmark. <small>no-LT</small>
-ah-overflow-align	Specifies the alignment of the overflowed block.
-ah-overflow-condense	Specifies how to condense the overflowed text within the region.
-ah-overflow-condense-limit-font-size	Specifies the minimum font size when axf:overflow-condense="font-size" is specified.
-ah-overflow-condense-limit-font-stretch	Specifies the minimum font size when axf:overflow-condense="font-stretch" is specified.
-ah-overflow-replace	Specifies the alternative character string of the overflow text.
-ah-padding-after	[XSL1.1] 7.8.32 padding-after
-ah-padding-before	[XSL1.1] 7.8.31 padding-before
-ah-padding-end	[XSL1.1] 7.8.34 padding-end
-ah-padding-start	[XSL1.1] 7.8.33 padding-start
-ah-printer-bin-selection	Selects the printer tray. <small>no-LT</small>
-ah-printer-duplex	Specifies to print in duplex mode. <small>no-LT</small>
-ah-printer-marks-line-color	Specifies the line color of the printer marks. <small>no-LT</small>
-ah-printer-marks-line-length	Specifies the line length of the printer marks. <small>no-LT</small>
-ah-printer-marks-line-width	Specifies the line width of the printer marks. <small>no-LT</small>
-ah-printer-marks-zero-margin	Specifies the margin between the page and the printer marks when bleed is 0. <small>no-LT</small>
-ah-punctuation-spacing	Specifies the width of adjacent full width punctuations.
-ah-reference-orientation	[XSL1.1] 7.21.3 reference-orientation
-ah-repeat-cell-content-at-break	Specifies whether to copy the contents of a cell when a cell breaks.
-ah-repeat-footnote-in-table-footer	Specifies whether to repeat the fo:footnote in the fo:table-footer that is repeated by fo:table-omit-footer-at-break="false".

Property name	Description
-ah-repeat-footnote-in-table-header	Specifies whether to repeat the fo:footnote in the fo:table-header that is repeated by fo:table-omit-header-at-break="false".
-ah-reverse-diagonal-border-color	Specifies the color of the reverse diagonal border.
-ah-reverse-diagonal-border-style	Specifies the style of the reverse diagonal border.
-ah-reverse-diagonal-border-width	Specifies the width of the reverse diagonal border.
-ah-reverse-page	Outputs pages in reverse order. [no-LT]
-ah-ruby-align	Specifies the alignment of ruby. [V6.0]
-ah-ruby-color	Specifies the color of ruby. [V6.0]
-ah-ruby-condense	Specifies the font condense when ruby is longer than its base. [V6.0]
-ah-ruby-font-family	Specifies the font family of ruby. [V6.0]
-ah-ruby-font-size	Specifies the font size of ruby. [V6.0]
-ah-ruby-font-stretch	Specifies the font stretching of ruby. [V6.0]
-ah-ruby-font-style	Specifies whether ruby is made Italic. [V6.0]
-ah-ruby-font-weight	Specifies the font weight of ruby. [V6.0]
-ah-ruby-limit-overhang	Specifies the limit of the amount that ruby overhangs the adjacent base character when ruby is longer than its own base character. [V6.0]
-ah-ruby-limit-space	Specifies the limit of the amount of the space before and after the ruby when ruby is shorter than its base characters. [V6.0]
-ah-ruby-minimum-font-size	Specifies the minimum font size of ruby. [V6.0]
-ah-ruby-offset	Specifies the spacing between ruby and its base character. [V6.0]
-ah-ruby-overhang	Specifies how ruby overhangs the adjacent base character. [V6.0]
-ah-ruby-position	Specifies on which side of base characters ruby overhangs. [V6.0]
-ah-ruby-small-kana	Specifies whether to allow using small kana for ruby. [V6.0]
-ah-scaling	[XSL1.1] 7.15.12 scaling
-ah-script	[XSL1.1] 7.10.3 script
-ah-soft-hyphen-treatment	Specifies to output SOFT HYPHEN.
-ah-table-omit-footer-at-break	[XSL1.1] 7.28.17 table-omit-footer-at-break
-ah-table-omit-header-at-break	[XSL1.1] 7.28.18 table-omit-header-at-break
-ah-text-align-first	Specifies the text alignment of the first line.
-ah-text-align-string	Specifies the text alignment when text-align="<string>".
-ah-text-autospace-width	Specifies the width for axf:text-autospace.
-ah-text-emphasis-color	Specifies the color of emphasis marks. [V6.0]
-ah-text-emphasis-font-family	Specifies the font family of emphasis marks. [V6.0]
-ah-text-emphasis-font-size	Specifies the font size of emphasis marks. [V6.0]
-ah-text-emphasis-font-stretch	Specifies the font stretching of emphasis marks. [V6.0]
-ah-text-emphasis-font-style	Specifies whether emphasis marks are made Italic. [V6.0]
-ah-text-emphasis-font-weight	Specifies the font weight of emphasis marks. [V6.0]
-ah-text-emphasis-offset	Specifies the space between emphasis marks and the base characters. [V6.0]
-ah-text-emphasis-position	Specifies on which side of base characters emphasis marks are applied. [V6.0]
-ah-text-emphasis-skip	Specifies the character to which emphasis marks are not applied. [V6.0]
-ah-text-emphasis-style	Specifies the style of emphasis marks [V6.0]
-ah-text-kashida-space	Specifies the percentage of Kashida in Arabic.
-ah-text-line-width	Specifies the width of underline, strikethrough, and overline.

Property name	Description
<a href="#">-ah-vertical-underline-side</a>	Specifies the side for underline in vertical writing-mode.
<a href="#">-ah-white-space-collapse</a>	[XSL1.1] 7.16.12 white-space-collapse
<a href="#">-ah-white-space-treatment</a>	[XSL1.1] 7.16.8 white-space-treatment
<a href="#">-ah-wrap-option</a>	[XSL1.1] 7.16.13 wrap-option

## CSS Selectors

Selector name	Description
Grouping (,)	[CSS2.1] 5.2.1 Grouping
Universal selector (*)	[CSS2.1] 5.3 Universal selector
Type selectors (E)	[CSS2.1] 5.4 Type selectors
Descendant selectors (E F)	[CSS2.1] 5.5 Descendant selectors
Child selector (E > F)	[CSS2.1] 5.6 Child selectors
Adjacent sibling selectors (E + F)	[CSS2.1] 5.7 Adjacent sibling selectors
Matching attributes and attribute values ([att], [att=val], [att~=val], [att =val])	[CSS2.1] 5.8.1 Matching attributes and attribute values
Class selectors (.class)	[CSS2.1] 5.8.3 Class selectors
ID selectors (#id)	[CSS2.1] 5.9 ID selectors
::after	[CSS3-Selectors] The ::before and ::after pseudo-elements
:after	[CSS2.1] 5.12.3 The :before and :after pseudo-elements
::before	[CSS3-Selectors] The ::before and ::after pseudo-elements
:before	[CSS2.1] 5.12.3 The :before and :after pseudo-elements
:blank (@page)	[CSS3-GCPM] Styling blank pages
:empty	[CSS3-Selectors] Structural pseudo-classes
:first (@page)	[CSS2.1] 13.2.2 Page selectors: selecting left, right, and first pages [CSS3-Page] Left, right, and first pages
:first-child	[CSS2.1] 5.11.1 :first-child pseudo-class
:first-child	[CSS3-Selectors] Structural pseudo-classes
:first-letter	[CSS2.1] 5.12.2 :first-letter pseudo-element
:first-of-type	[CSS3-Selectors] Structural pseudo-classes
::footnote-call	[CSS3-GCPM] Footnote calls
::footnote-marker	[CSS3-GCPM] Footnote markers
:lang	[CSS2.1] 5.11.4 The language pseudo-class
:last-child	[CSS3-Selectors] Structural pseudo-classes
:last-of-type	[CSS3-Selectors] Structural pseudo-classes
:left (@page)	[CSS2.1] 13.2.2 Page selectors: selecting left, right, and first pages [CSS3-Page] Left, right, and first pages
:link	[CSS2.1] 5.11.2 The link pseudo-classes
::marker	[CSS3-Lists] Markers
:not	[CSS3-Selectors] The negation pseudo-class

Selector name	Description
:nth-child()	[CSS3-Selectors] Structural pseudo-classes
:nth-last-child()	[CSS3-Selectors] Structural pseudo-classes
:nth-last-of-type()	[CSS3-Selectors] Structural pseudo-classes
:nth-of-type()	[CSS3-Selectors] Structural pseudo-classes
:only-child	[CSS3-Selectors] Structural pseudo-classes
:only-of-type	[CSS3-Selectors] Structural pseudo-classes
:right (@page)	[CSS2.1] 13.2.2 Page selectors: selecting left, right, and first pages [CSS3-Page] Left, right, and first pages
:root	[CSS3-Selectors] Structural pseudo-classes
::sidenote-call	[CSS3-GCPM] Sidenotes
::sidenote-marker	[CSS3-GCPM] Sidenotes

## CSS Rules

Rule name	Description
@bottom-center	[CSS3-Page] Margin Boxes
@bottom-left	[CSS3-Page] Margin Boxes
@bottom-left-corner	[CSS3-Page] Margin Boxes
@bottom-right	[CSS3-Page] Margin Boxes
@bottom-right-corner	[CSS3-Page] Margin Boxes
@footnote	[CSS3-GCPM] Footnotes
@font-face	[CSS3-Fonts] Font resources
@import	[CSS2.1] 6.3 The @import rule
@left-bottom	[CSS3-Page] Margin Boxes
@left-middle	[CSS3-Page] Margin Boxes
@left-top	[CSS3-Page] Margin Boxes
@media	[CSS2.1] 7.2.1 The @media rule
@namespace	[CSS3-Namespace] Declaring namespaces
@page	[CSS2.1] 13.2 Page boxes: the @page rule
@sidenote	[CSS3-GCPM] Sidenotes
@right-bottom	[CSS3-Page] Margin Boxes
@right-middle	[CSS3-Page] Margin Boxes
@right-top	[CSS3-Page] Margin Boxes
@top-center	[CSS3-Page] Margin Boxes
@top-left	[CSS3-Page] Margin Boxes
@top-left-corner	[CSS3-Page] Margin Boxes
@top-right	[CSS3-Page] Margin Boxes
@top-right-corner	[CSS3-Page] Margin Boxes

## CSS Functions

Function name	Description
attr(ident,type,value)	[CSS3-Values] The 'attr' function

Function name	Description
calc(expr)	[CSS3-Values] The 'calc' function
cmyk(c,m,y,k)	[CSS3-GCPM] CMYK colors
counter(ident,list-style-type)	[CSS2.1] 4.3.5 Counters <a href="#">☞ CSS Counters</a>
counters(ident,string,list-style-type)	[CSS2.1] 4.3.5 Counters
inset-rect(top,right,bottom,left)	[CSS3-Content] Replaced content
leader(ident)	[CSS3-GCPM] Leaders
rect(top,right,bottom,left)	[CSS3-Content] Replaced content
rgb(r,g,b)	[CSS2.1] 4.3.6 Colors
string(value)	[CSS3-GCPM] Using named strings
target-counter(attr,ident,string,list-style-type)	[CSS3-GCPM] The 'target-counter' and 'target-counters' values
target-counters(attr,ident,string,list-style-type)	[CSS3-GCPM] The 'target-counter' and 'target-counters' values
target-text(attr,value)	[CSS3-GCPM] The 'target-text' value
url(string)	[CSS2.1] 4.3.4 URLs and URIs
<a href="#">-ah-attr-from(from,ident,type,value)</a>	It is an extended function of attr().
<a href="#">-ah-rgb-icc(r,g,b,name,num,num)</a>	[XSL1.1] 5.10.2 Color Functions
element(value)	[CSS3-GCPM] Running elements
running(value)	[CSS3-GCPM] Running elements

## CSS Keywords

Keyword	Description
default	[CSS3-Values] Keywords
!important	[CSS2.1] 6.4.2 !important rules
inherit	[CSS2.1] 6.2.1 The 'inherit' value
initial	[CSS3-Values] Keywords
page	[CSS3-Pages] Page-based counters
pages	[CSS3-Pages] Page-based counters

## CSS Units

Unit name	Description
%	[CSS2.1] 4.3.3 Percentages
cm	[CSS2.1] 4.3.2 Lengths
em	[CSS2.1] 4.3.2 Lengths
in	[CSS2.1] 4.3.2 Lengths
mm	[CSS2.1] 4.3.2 Lengths
pc	[CSS2.1] 4.3.2 Lengths
pt	[CSS2.1] 4.3.2 Lengths
px	[CSS2.1] 4.3.2 Lengths
rem	[CSS3-Values] 6.3.2.4. The 'rem' unit
vw	[CSS3-Values] 6.3.2.5. The 'vw' unit
vh	[CSS3-Values] 6.3.2.5. The 'vh' unit
ch	[CSS3-Values] 6.3.2. Relative length units

Unit name	Description
wch	<a href="#">Units Extension</a>

## CSS Specification

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This section provides the explanation of the CSS3 main specifications which **AH Formatter V6.0** currently supports and extensions only for CSS which don't have the properties corresponding to XSL specification or XSL extension specification.

### CSS3 Properties

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#### (-ah-)alignment-adjust

---

[CSS3-Line] Baseline alignment

*Value:* auto | baseline | before-edge | text-before-edge | middle | central | after-edge | text-after-edge | ideographic | alphabetic | hanging | mathematical | <percentage> | <length>  
*Initial:* auto  
*Applies to:* inline-level elements  
*Inherited:* no  
*Percentages:* refer to line-height of element

[alignment-adjust](#)

#### (-ah-)alignment-baseline

---

[CSS3-Line] Baseline alignment

*Value:* auto | baseline | before-edge | text-before-edge | middle | central | after-edge | text-after-edge | ideographic | alphabetic | hanging | mathematical  
*Initial:* auto  
*Applies to:* inline-level elements  
*Inherited:* no  
*Percentages:* N/A

[alignment-baseline](#)

#### (-ah-)background-clip

---

[CSS3-Background] Background properties

*Value:* [border-box | padding-box | content-box | no-clip] [ , [border-box | padding-box | content-box | no-clip] ]\*  
*Initial:* border-box  
*Applies to:* all elements  
*Inherited:* no  
*Percentages:* N/A

#### (-ah-)background-image-resolution

---

[CSS3-GCPM] Image resolution

*Value:* normal | [ from-image || <dpi>]  
*Initial:* normal  
*Applies to:* background images  
*Inherited:* yes  
*Percentages:* N/A

[axf.background-image-resolution](#)

#### (-ah-)background-origin

---

[CSS3-Background] Background properties

*Value:* [border-box | padding-box | content-box] [ , [border-box | padding-box | content-box]]\*  
*Initial:* padding-box  
*Applies to:* all elements  
*Inherited:* no  
*Percentages:* N/A

**(-ah-)baseline-shift**

---

[CSS3-Line] Baseline alignment

*Value:* baseline | sub | super | <percentage> | <length>  
*Initial:* baseline  
*Applies to:* inline-level elements  
*Inherited:* no  
*Percentages:* refer to line-height of parent element

☞ [baseline-shift](#)**(-ah-)bleed**

---

[CSS3-GCPM] Page marks and bleed area

*Value:* <length>  
*Initial:* 6pt  
*Applies to:* page context  
*Inherited:* no  
*Percentages:* refer to width of page box

☞ [axf:bleed](#)**(-ah-)block-progression**

---

[CSS3-Text-Layout] Text flow

*Value:* tb | rl | lr  
*Initial:* tb  
*Applies to:* block-level elements  
*Inherited:* yes  
*Percentages:* N/A

**(-ah-)bookmark-label**

---

[CSS3-GCPM] Bookmarks

*Value:* content | <attr> | <string>  
*Initial:* content  
*Applies to:* all elements  
*Inherited:* no  
*Percentages:* N/A

☞ [axf.outline-title](#)**(-ah-)bookmark-level**

---

[CSS3-GCPM] Bookmarks

*Value:* none | <integer>  
*Initial:* none  
*Applies to:* all elements  
*Inherited:* no  
*Percentages:* N/A

☞ [axf.outline-level](#)**(-ah-)bookmark-state**

---

[CSS3-GCPM] Bookmarks

*Value:* open | closed  
*Initial:* open  
*Applies to:* block-level elements  
*Inherited:* no  
*Percentages:* N/A

☞ [axf.outline-expand](#)**(-ah-)border-break**

---

[CSS3-Background] Border properties

*Value:* none | close  
*Initial:* none  
*Applies to:* elements with a border  
*Inherited:* no  
*Percentages:* N/A

## (-ah-)border-length

---

[CSS3-GCPM] The 'border-length' property

*Value:* <length> | auto  
*Initial:* auto  
*Applies to:* all elements  
*Inherited:* no  
*Percentages:* refer to width of element

## (-ah-)border-radius

---

[CSS3-Background] Border properties

*Value:* <length>{1,4} [ / <length>{1,4} ]?  
*Initial:* 0  
*Applies to:* all elements, except table element when 'border-collapse' is 'collapse'  
*Inherited:* no  
*Percentages:* N/A

☞ [axf:border-radius](#)

## (-ah-)border-top-left-radius

## (-ah-)border-top-right-radius

## (-ah-)border-bottom-left-radius

## (-ah-)border-bottom-right-radius

---

[CSS3-Background] Border properties

*Value:* <length> <length>?  
*Initial:* 0  
*Applies to:* all elements, except table element when 'border-collapse' is 'collapse'  
*Inherited:* no  
*Percentages:* N/A

☞ [axf:border-radius](#)

## (-ah-)box-shadow

---

[CSS3-Background] Border properties

*Value:* none | <shadow> [ , <shadow> ]\*  
*Initial:* none  
*Applies to:* all elements  
*Inherited:* no  
*Percentages:* N/A

☞ [axf:box-shadow](#)

## box-sizing

---

[CSS3-UI] Box Model addition

*Value:* content-box | border-box  
*Initial:* content-box  
*Applies to:* all elements that accept width or height  
*Inherited:* no  
*Percentages:* N/A

## (-ah-)break-after

---

[CSS3-Multicol] Column breaks

*Value:* auto | always | page | column | avoid | avoid-page | avoid-column | left | right  
*Initial:* auto  
*Applies to:* block-level elements



*Inherited:* no  
*Percentages:* N/A

### **(-ah-)break-before**

---

[CSS3-Multicol] Column breaks

*Value:* auto | always | page | column | avoid | avoid-page | avoid-column | left | right  
*Initial:* auto  
*Applies to:* block-level elements  
*Inherited:* no  
*Percentages:* N/A

### **(-ah-)break-inside**

---

[CSS3-Multicol] Column breaks

*Value:* auto | avoid | avoid-page | avoid-column  
*Initial:* auto  
*Applies to:* block-level elements  
*Inherited:* no  
*Percentages:* N/A

### **(-ah-)change-bar-class**

---

[CSS3-GCPM] Change bars

*Value:* <name>  
*Initial:* N/A  
*Applies to:* all elements  
*Inherited:* no  
*Percentages:* N/A

☞ [fo:change-bar-class](#)

### **(-ah-)change-bar-color**

---

[CSS3-GCPM] Change bars

*Value:* <color>  
*Initial:* the value of the 'color' property  
*Applies to:* all elements  
*Inherited:* no  
*Percentages:* N/A

☞ [fo:change-bar-color](#)

### **(-ah-)change-bar-offset**

---

[CSS3-GCPM] Change bars

*Value:* <length>  
*Initial:* 6pt  
*Applies to:* all elements  
*Inherited:* no  
*Percentages:* N/A

☞ [fo:change-bar-offset](#)

### **(-ah-)change-bar-side**

---

[CSS3-GCPM] Change bars

*Value:* start | end | left | right | inside | outside | alternate  
*Initial:* start  
*Applies to:* all elements  
*Inherited:* no  
*Percentages:* N/A

☞ [fo:change-bar-placement](#)

**(-ah-)change-bar-style**

---

[CSS3-GCPM] Change bars

*Value:* <border-style>  
*Initial:* none  
*Applies to:* all elements  
*Inherited:* no  
*Percentages:* N/A

☞ [fo:change-bar-style](#)**(-ah-)change-bar-width**

---

[CSS3-GCPM] Change bars

*Value:* <border-width>  
*Initial:* medium  
*Applies to:* all elements  
*Inherited:* no  
*Percentages:* N/A

☞ [fo:change-bar-width](#)**(-ah-)column-count**

---

[CSS3-Multicol] The number and width of columns

*Value:* <integer> | auto  
*Initial:* auto  
*Applies to:* block-level elements  
*Inherited:* no  
*Percentages:* N/A

**(-ah-)column-fill**

---

[CSS3-Multicol] Filling columns

*Value:* auto | balance  
*Initial:* balance  
*Applies to:* multi-column elements  
*Inherited:* no  
*Percentages:* N/A

**(-ah-)column-gap**

---

[CSS3-Multicol] Column gaps and rules

*Value:* <length> | normal  
*Initial:* normal  
*Applies to:* multi-column elements  
*Inherited:* no  
*Percentages:* N/A

**(-ah-)column-rule**

---

[CSS3-Multicol] Column gaps and rules

*Value:* <border-width> || <border-style> || [ <color> | transparent ]  
*Initial:* see individual properties  
*Applies to:* multi-column elements  
*Inherited:* no  
*Percentages:* N/A

**(-ah-)column-rule-color**

---

[CSS3-Multicol] Column gaps and rules

*Value:* <color>  
*Initial:* currentColor  
*Applies to:* multi-column elements  
*Inherited:* no

*Percentages:* N/A

☞ [axf:column-rule-color](#)

---

### **(-ah-)column-rule-style**

[CSS3-Multicol] Column gaps and rules

*Value:* <border-style>  
*Initial:* none  
*Applies to:* multi-column elements  
*Inherited:* no  
*Percentages:* N/A

☞ [axf:column-rule-style](#)

---

### **(-ah-)column-rule-width**

[CSS3-Multicol] Column gaps and rules

*Value:* <border-width>  
*Initial:* medium  
*Applies to:* multi-column elements  
*Inherited:* no  
*Percentages:* N/A

☞ [axf:column-rule-width](#)

---

### **(-ah-)column-span**

[CSS3-Multicol] Spanning columns

*Value:* 1 | all  
*Initial:* 1  
*Applies to:* static, non-floating elements  
*Inherited:* no  
*Percentages:* N/A

---

### **(-ah-)column-width**

[CSS3-Multicol] The number and width of columns

*Value:* <length> | auto  
*Initial:* auto  
*Applies to:* block-level elements  
*Inherited:* no  
*Percentages:* N/A

---

### **(-ah-)columns**

[CSS3-Multicol] The number and width of columns

*Value:* [ [ <integer> | auto ] || [ <length> | auto ]  
*Initial:* see individual properties  
*Applies to:* block-level elements  
*Inherited:* no  
*Percentages:* N/A

---

### **(-ah-)crop**

[CSS3-Content] Replaced content

*Value:* <shape> | auto  
*Initial:* auto  
*Applies to:* replaced elements  
*Inherited:* no  
*Percentages:* relative to intrinsic size

---

### **(-ah-)dominant-baseline**

[CSS3-Line] Baseline alignment

*Value:* auto | use-script | no-change | reset-size | ideographic | alphabetic | hanging | mathematical | central | middle | text-after-edge | text-before-edge  
*Initial:* auto  
*Applies to:* inline-level elements  
*Inherited:* no  
*Percentages:* N/A

☞ [dominant-baseline](#)

## (-ah-)float

[CSS2.1] 9.5.1 Positioning the float  
 [CSS3-GCPM] Page floats

*Value:* [[left | right | inside | outside] || [top | bottom | before | after ] || page ] | footnote | sidenote | none  
*Initial:* none  
*Applies to:* all (but restricted)  
*Inherited:* no  
*Percentages:* N/A

The following values are supported.

- left
- right
- inside
- outside
- top
- bottom
- before
- after
- top page
- bottom page
- before page
- after page
- footnote
- sidenote

"next" is not supported. The value combined with "page" has restrictions.

## (-ah-)font-size-adjust

[CSS3-Fonts] Font specification

*Value:* none | <number> | <string>  
*Initial:* none  
*Applies to:* all elements and generated content  
*Inherited:* yes  
*Percentages:* N/A

☞ [font-size-adjust](#)

## (-ah-)font-stretch

[CSS3-Fonts] Font specification

*Value:* normal | wider | narrower | ultra-condensed | extra-condensed | condensed | semi-condensed | semi-expanded | expanded | extra-expanded | ultra-expanded | <percentage> | <number>  
*Initial:* normal  
*Applies to:* all elements and generated content  
*Inherited:* yes  
*Percentages:* font size

☞ [font-stretch](#)

## (-ah-)hanging-punctuation

[CSS3-Text] Edge Effects

*Value:* none | [start || [end || end-auto] || first || last ]

*Initial:* none  
*Applies to:* block-level, inline-block elements and table cells  
*Inherited:* yes  
*Percentages:* N/A

 [axf:hanging-punctuation](#)

---

### **(-ah-)hyphenate-after**

[CSS3-GCPM] Hyphenation

*Value:* <integer> | auto  
*Initial:* auto  
*Applies to:* all elements  
*Inherited:* yes  
*Percentages:* N/A

---

### **(-ah-)hyphenate-before**

[CSS3-GCPM] Hyphenation

*Value:* <integer> | auto  
*Initial:* auto  
*Applies to:* all elements  
*Inherited:* yes  
*Percentages:* N/A

---

### **(-ah-)hyphenate-character**

[CSS3-GCPM] Hyphenation

*Value:* auto | <string>  
*Initial:* auto  
*Applies to:* all elements  
*Inherited:* yes  
*Percentages:* N/A

---

### **(-ah-)hyphenate-lines**

[CSS3-GCPM] Hyphenation

*Value:* no-limit | <integer>  
*Initial:* no-limit  
*Applies to:* all elements  
*Inherited:* yes  
*Percentages:* N/A

---

### **(-ah-)hyphens**

[CSS3-GCPM] Hyphenation

*Value:* none | manual | auto  
*Initial:* manual  
*Applies to:* all elements  
*Inherited:* yes  
*Percentages:* N/A

---

### **(-ah-)image-resolution**

[CSS3-GCPM] Image resolution

*Value:* normal | [ from-image || <dpi>]  
*Initial:* normal  
*Applies to:* replaced elements  
*Inherited:* yes  
*Percentages:* N/A

 [axf.image-resolution](#)

---

### **(-ah-)list-style-type**

[CSS2.1] 12.5.1 Lists

[CSS3-Lists] List Content: The 'list-style-type' property

[CSS3-GCPM] The 'super-decimal' list-style-type

*Value:* <glyph> | <algorithmic> | <numeric> | <alphabetic> | <symbolic> | <non-repeating> | normal | none  
*Initial:* disc  
*Applies to:* all elements with 'display: list-item'  
*Inherited:* yes  
*Percentages:* N/A

The following <list-style-type> are supported. [☞ axf:number-transform, format](#)

- none
- normal
- <glyph>
  - box Generates U+25FD. The generated character can be changed by the [Option Setting File](#).
  - check Generates U+2713. The generated character can be changed by the [Option Setting File](#).
  - circle Generates U+25E6. The generated character can be changed by the [Option Setting File](#).
  - diamond Generates U+25C6. The generated character can be changed by the [Option Setting File](#).
  - disc Generates U+2022. The generated character can be changed by the [Option Setting File](#).
  - hyphen Generates U+2043. The generated character can be changed by the [Option Setting File](#).
  - square Generates U+25FE. The generated character can be changed by the [Option Setting File](#).
- <algorithmic>
  - upper-roman It is the same as format="I". Use LATIN CAPITAL LETTER, such as U+0049, U+0058 etc. Numerical values up to 39999 can be expressed.
  - lower-roman It is the same as format="i". Use LATIN SMALL LETTER, such as U+0069, U+0078 etc. Numerical values up to 3999 can be expressed.
  - armenian, lower-armenian Same as format="&#x0561;".
  - upper-armenian Same as format="&#x0531;".
  - georgian Same as format="&#x10D0;".
  - ethiopic-numeric Same as format="&#x1369;".
  - tamil Same as format="&#x0BE7;".
  - hebrew Same as format="&#x05D0;".
  - cjk-ideographic, japanese-informal Same conversion as:
 

```
axf:number-transform="kansuji"
axf:kansuji-style="readable"
axf:kansuji-letter="kanji"
```
  - japanese-formal Same conversion as:
 

```
axf:number-transform="kansuji"
axf:kansuji-style="readable"
axf:kansuji-letter="〇壹貳參"
axf:kansuji-grouping-letter="拾"
```
  - japanese-formal-obsolete Same conversion as:
 

```
axf:number-transform="kansuji"
axf:kansuji-style="readable"
axf:kansuji-letter="〇壹貳參肆伍陸柒捌玖"
axf:kansuji-grouping-letter="拾佰阡萬"
```
- <numeric>
  - decimal Same as format="1".
  - decimal-leading-zero Same as format="01".
  - super-decimal Same as format="&#x00B9;".
  - arabic-indic Same as format="&#x0661;".
  - bengali Same as format="&#x09E7;".
  - cambodian, khmer Same as format="&#x17E1;".
  - devanagari Same as format="&#x0967;".
  - gujarati Same as format="&#x0AE7;".
  - gurmukhi Same as format="&#x0A67;".
  - kannada Same as format="&#x0CE7;".
  - lao Same as format="&#x0ED1;".
  - malayalam Same as format="&#x0D67;".

- mongolian Same as format="&#x1811;".
- myanmar Same as format="&#x1041;".
- oriya Same as format="&#x0B67;".
- persian, urdo Same as format="&#x06F1;".
- telugu Same as format="&#x0C67;".
- tibetan Same as format="&#x0F21;".
- thai Same as format="&#x0E51;".
- cjk-decimal Same as format="&#x4E00;".
- fullwidth-decimal Same as format="&#xFF11;".
- binary Generates binary numbers. It cannot be specified by format.
- octal Generates octal numbers. It cannot be specified by format.
- upper-hexadecimal Generates upper-case hexadecimal numbers. It cannot be specified by format.
- lower-hexadecimal Generates lower-case hexadecimal numbers. It cannot be specified by format.
- <alphabetic>
  - lower-alpha, lower-latin Same as format="a".
  - upper-alpha, upper-latin Same as format="A".
  - lower-greek Same as format="&#x03B1".
  - upper-greek Same as format="&#x0391".
  - lower-norwegian Same as format="&#x00C5;".
  - upper-norwegian Same as format="&#x00E5;".
  - cjk-earthly-branch Same as format="&#x5B50;".
  - cjk-heavenly-stem Same as format="&#x7532;".
  - hiragana Same as format="&#x3042;".
  - hiragana-iroha Same as format="&#x3044;".
  - katakana Same as format="&#x30A2;".
  - katakana-iroha Same as format="&#x30A4;".
  - hangul Same as format="&#xAC00;".
  - hangul-consonant Same as format="&#x3131;".
  - fullwidth-lower-roman Same as format="&#xFF49;".
  - fullwidth-upper-roman Same as format="&#xFF29;".
  - fullwidth-lower-alpha, fullwidth-lower-latin Same as format="&#xFF41;".
  - fullwidth-upper-alpha, fullwidth-upper-latin Same as format="&#xFF21;".
  - halfwidth-katakana Same as format="&#xFF71;".
  - halfwidth-katakana-iroha Same as format="&#xFF72;".
- <symbolic>
  - asterisks Same as format="\*\*\*". Numerical values up to 999 can be expressed.
  - footnotes Same as format="&#x002A;&#x2051;&#x2020;&#x2021;". Numerical values up to 999 can be expressed.
- <non-repeating>
  - circled-decimal Same as format="&#x2460;". Numerical values of 0 to 20 can be expressed.
  - dotted-decimal Same as format="&#x2488;". Numerical values of 1 to 20 can be expressed.
  - double-circled-decimal Same as format="&#x24F5;". Numerical values of 1 to 10 can be expressed.
  - filled-circled-decimal Same as format="&#x24EB;". Numerical values of 11 to 20 can be expressed.
  - parenthesised-decimal Same as format="&#x2474;". Numerical values of 1 to 20 can be expressed.
  - circled-lower-latin Same as format="&#x24D0;". Numerical values of 1 to 26 can be expressed.
  - circled-upper-latin Same as format="&#x24B6;". Numerical values of 1 to 26 can be expressed.
  - parenthesised-lower-latin Same as format="&#x249C;". Numerical values of 1 to 26 can be expressed.

## (-ah-)marks

[CSS3-GCPM] Page marks and bleed area

*Value:* [ crop || cross ] | none  
*Initial:* none  
*Applies to:* page context  
*Inherited:* no  
*Percentages:* N/A

 [axf.printer-marks](#)

**(-ah-)page**

---

[CSS3-Page] Using named pages

[CSS3-GCPM] Named page lists

*Value:* auto | [ <identifier> ]+ auto?  
*Initial:* auto  
*Applies to:* block-level elements  
*Inherited:* no  
*Percentages:* N/A

**(-ah-)page-break-after**

---

[CSS3-Page] Break before/after elements

*Value:* auto | always | avoid | left | right | column | **avoid-page**  
*Initial:* auto  
*Applies to:* block-level elements  
*Inherited:* no  
*Percentages:* N/A

Following value is extended.

**avoid-page****avoid-page** prohibits only the page break though **avoid** prohibits the column break and the page break.**(-ah-)page-break-before**

---

[CSS3-Page] Break before/after elements

*Value:* auto | always | avoid | left | right | column | **avoid-page**  
*Initial:* auto  
*Applies to:* block-level elements  
*Inherited:* no  
*Percentages:* N/A

Following value is extended.

**avoid-page****avoid-page** prohibits only the page break though **avoid** prohibits the column break and the page break.**(-ah-)page-break-inside**

---

[CSS3-Page] Break before/after elements

*Value:* auto | avoid | **avoid-page**  
*Initial:* auto  
*Applies to:* block-level elements  
*Inherited:* yes  
*Percentages:* N/A

Following value is extended.

**avoid-page****avoid-page** prohibits only the page break though **avoid** prohibits the column break and the page break.**(-ah-)punctuation-trim**

---

[CSS3-Text] Spacing

*Value:* none | [start || [end || end-auto || end-except-fullstop] || adjacent] | all | auto  
*Initial:* auto  
*Applies to:* all elements and generated content  
*Inherited:* yes  
*Percentages:* N/A

☞ [axf:punctuation-trim](#)**(-ah-)ruby-align**

---

[CSS3-Ruby] Ruby [:V6.0](#)



*Value:* auto | [[distribute-space | distribute-letter] || [center | start | end | start-if-vertical]]  
*Initial:* auto  
*Applies to:* ruby elements  
*Inherited:* yes  
*Percentages:* N/A

[axf.ruby-align](#)

## (-ah-)ruby-overhang

[CSS3-Ruby] Ruby V6.0

*Value:* none | auto | [start || end || except-kanji || except-katakana || except-start-open-parenthesis || except-end-close-parenthesis]  
*Initial:* auto  
*Applies to:* ruby elements  
*Inherited:* yes  
*Percentages:* N/A

[axf.ruby-overhang](#)

## (-ah-)ruby-position

[CSS3-Ruby] Ruby V6.0

*Value:* before | after  
*Initial:* before  
*Applies to:* ruby elements  
*Inherited:* yes  
*Percentages:* N/A

[axf.ruby-position](#)

## (-ah-)size

[CSS3-Page] Page size

*Value:* <length>{1,2} | auto | [ <page-size> || [ portrait | landscape ] ]  
*Initial:* auto  
*Applies to:* page context  
*Inherited:* N/A  
*Percentages:* N/A

The following can be specified to <page-size>. Case insensitive.

<page-size>	Short×Long
A3	297×420mm
A4	210×297mm
A5	148×210mm
A6	105×148mm
B4	250×353mm
ISO-B4	250×353mm
JIS-B4	257×364mm
B5	176×250mm
ISO-B5	176×250mm
JIS-B5	182×257mm
B6	125×176mm
ISO-B6	125×176mm
JIS-B6	128×182mm
Letter	8.5×11in
Legal	8.5×14in
Ledger	11×17in

<b>&lt;page-size&gt;</b>	<b>Short×Long</b>
Statement	5.5×8.5in
Executive	7.25×10.5in
Folio	210×330mm
Quarto	8.5×10.83in
C	17×22in
D	22×34in
E	34×44in
ISO-Designated	110×220mm
ISO-C3	324×458mm
ISO-C4	229×324mm
ISO-C5	162×229mm
ISO-C6	114×162mm
Hagaki	100×148mm

### **(-ah-)string-set**

---

[CSS3-GCPM] Named strings

*Value:* [[ <identifier> <content-list>] [, <identifier> <content-list>]\* ] | none  
*Initial:* none  
*Applies to:* all elements  
*Inherited:* no  
*Percentages:* N/A

### **(-ah-)table-column-span**

---

[CSS3-Tables] table-column-span and table-row-span properties

*Value:* <number> | attr(...)  
*Initial:* 1  
*Applies to:* table cells  
*Inherited:* no  
*Percentages:* N/A

### **(-ah-)table-row-span**

---

[CSS3-Tables] table-column-span and table-row-span properties

*Value:* <number> | attr(...)  
*Initial:* 1  
*Applies to:* table cells  
*Inherited:* no  
*Percentages:* N/A

### **(-ah-)text-align**

---

[CSS2.1] 16.2 Alignment

[CSS3-Text] Alignment and Justification

*Value:* start | end | left | right | center | justify | <string>  
*Initial:* start  
*Applies to:* all elements  
*Inherited:* yes  
*Percentages:* N/A

### **(-ah-)text-align-last**

---

[CSS3-Text] Alignment and Justification

*Value:* start | end | left | right | center | justify  
*Initial:* start

*Applies to:* all elements  
*Inherited:* yes  
*Percentages:* N/A

### **(-ah-)text-autospace**

---

[CSS3-Text] Spacing

*Value:* none | [ ideograph-numeric || ideograph-alpha || ideograph-space || ideograph-parenthesis || ideograph-punctuation ] | auto  
*Initial:* auto  
*Applies to:* all elements and generated content  
*Inherited:* yes  
*Percentages:* N/A

☞ [axf.text-autospace](#)

### **(-ah-)text-decoration**

---

[CSS2.1] 16.3.1 Underlining, overlining, striking, and blinking  
 [CSS3-Text] Text Decoration

*Value:* <text-decoration-line> || <text-decoration-color> || <text-decoration-style>  
*Initial:* none  
*Applies to:* all elements and generated content  
*Inherited:* no  
*Percentages:* N/A

### **(-ah-)text-decoration-color**

---

[CSS3-Text] Text Decoration

*Value:* <color>  
*Initial:* currentColor  
*Applies to:* all elements and generated content  
*Inherited:* no  
*Percentages:* N/A

☞ [axf.text-line-color](#)

### **(-ah-)text-decoration-line**

---

[CSS3-Text] Text Decoration

*Value:* none | [ underline || overline || line-through ]  
*Initial:* none  
*Applies to:* all elements and generated content  
*Inherited:* no (but see prose)  
*Percentages:* N/A

### **(-ah-)text-decoration-style**

---

[CSS3-Text] Text Decoration

*Value:* <border-style>  
*Initial:* solid  
*Applies to:* all elements and generated content  
*Inherited:* no  
*Percentages:* N/A

☞ [axf.text-line-style](#)

### **(-ah-)text-emphasis-color**

---

[CSS3-Text] Text Decoration V6.0

*Value:* <color>  
*Initial:* currentColor  
*Applies to:* all elements  
*Inherited:* yes  
*Percentages:* N/A

☞ [axf.text-text-emphasis-color](#)

**(-ah-)text-emphasis-position**

---

[CSS3-Text] Text Decoration V6.0

*Value:* before | after  
*Initial:* before  
*Applies to:* all elements  
*Inherited:* yes  
*Percentages:* N/A

☞ [axf.text-text-emphasis-position](#)**(-ah-)text-emphasis-skip**

---

[CSS3-Text] Text Decoration V6.0

*Value:* none | [spaces || punctuation || symbols || narrow]  
*Initial:* spaces  
*Applies to:* all elements  
*Inherited:* yes  
*Percentages:* N/A

☞ [axf.text-text-emphasis-skip](#)**(-ah-)text-emphasis-style**

---

[CSS3-Text] Text Decoration V6.0

*Value:* none | [[filled | open] || [dot | circle | double-circle | triangle | sesame]] | <string>  
*Initial:* none  
*Applies to:* all elements  
*Inherited:* yes  
*Percentages:* N/A

☞ [axf.text-text-emphasis-style](#)**(-ah-)text-justify-trim**

---

[CSS3-Text] Spacing

*Value:* none | [punctuation | punctuation-except-fullstop] || [kana | ideograph] || inter-word | auto  
*Initial:* none  
*Applies to:* all elements and generated content  
*Inherited:* yes  
*Percentages:* N/A

☞ [axf.text-justify-trim](#)**(-ah-)text-replace**

---

[CSS3-GCPM] Character substitution

*Value:* [<string> <string>]+ | none  
*Initial:* none  
*Applies to:* all elements  
*Inherited:* no  
*Percentages:* N/A

☞ [axf.text-replace](#)**(-ah-)text-underline-position**

---

[CSS3-Text] Text Decoration

*Value:* auto | before-edge | alphabetic | after-edge  
*Initial:* auto  
*Applies to:* all elements and generated content  
*Inherited:* yes  
*Percentages:* N/A

☞ [axf.text-underline-position](#)

**(-ah-)vertical-align**

---

[CSS3-Line] Baseline alignment

*Value:* baseline | sub | super | top | text-top | middle | central | bottom | text-bottom | <percentage> | <length>  
*Initial:* baseline  
*Applies to:* inline-level and table-cell elements  
*Inherited:* no  
*Percentages:* refer to the line-height

**(-ah-)word-break**

---

[CSS3-Text] Line Breaking and Word Boundaries

*Value:* normal | break-all  
*Initial:* normal  
*Applies to:* all elements and generated content  
*Inherited:* yes  
*Percentages:* N/A

**(-ah-)word-wrap**

---

[CSS3-Text] Text Wrapping

*Value:* normal | break-word  
*Initial:* normal  
*Applies to:* all elements and generated content  
*Inherited:* yes  
*Percentages:* N/A

**(-ah-)writing-mode**

---

[CSS3-Text-Layout] Text flow

*Value:* lr-tb | rl-tb | tb-rl  
*Initial:* lr-tb  
*Applies to:* all elements and generated content  
*Inherited:* yes  
*Percentages:* N/A

bt-rl, tb-lr and bt-lr are not supported.

**CSS Extended Properties**

---

**-ah-ignore-leading-newline**

---

Specifies whether the line break right after the start tag is disregarded or not.

*Value:* false | true | auto  
*Initial:* false  
*Applies to:* <pre> element  
*Inherited:* no  
*Percentages:* N/A

Values have the following meanings.

**false**

The line break right after the start tag is not disregarded.

**true**

The line break right after the start tag is disregarded.

**auto**

The line break right after the start tag is disregarded with HTML, not disregarded with XHTML.

This is effective with the element that does not disregard the line break like <pre>.

**-ah-link**

---

Generates a hyper-link.

*Value:* <uri-specification> | none  
*Initial:* N/A  
*Applies to:* all inline elements  
*Inherited:* no  
*Percentages:* N/A

☞ [XSL1.1] [7.23.6 external-destination](#), [7.23.8 internal-destination](#), [xlink:href](#)

---

### **-ah-margin-after**

Specifies the margin of the after region.

*Value:* <length> | <percentage>  
*Initial:* 0  
*Applies to:* all elements except elements with table display types other than table-caption, table and inline-table  
*Inherited:* no  
*Percentages:* refer to width of containing block

☞ [XSL1.1] [7.11.6 space-after](#)

---

### **-ah-margin-before**

Specifies the margin of the before region.

*Value:* <length> | <percentage>  
*Initial:* 0  
*Applies to:* all elements except elements with table display types other than table-caption, table and inline-table  
*Inherited:* no  
*Percentages:* refer to width of containing block

☞ [XSL1.1] [7.11.5 space-before](#)

---

### **-ah-margin-break**

Specifies how to treat the margin when the page breaks.

*Value:* [ auto | discard | keep ] keep?  
*Initial:* auto  
*Applies to:* block elements  
*Inherited:* no  
*Percentages:* N/A

Values have the following meanings.

#### **auto**

Retains the margin on the before side of the block placed at the start of the document or right after the forced page break. Except for that, it is the same as discard.

#### **discard**

Discards the margin.

#### **keep**

Retains the margin on the before side. When the second keep is specified, the margin on the after side is also retained.

---

### **-ah-margin-end**

Specifies the margin of the end region.

*Value:* <length> | <percentage>  
*Initial:* 0  
*Applies to:* all elements except elements with table display types other than table-caption, table and inline-table  
*Inherited:* no  
*Percentages:* refer to width of containing block

☞ [XSL1.1] [7.11.8 end-indent](#), [7.12.5 space-end](#)

---

### **-ah-margin-start**

Specifies the margin of the start region.

*Value:* <length> | <percentage>  
*Initial:* 0

*Applies to:* all elements except elements with table display types other than table-caption, table and inline-table  
*Inherited:* no  
*Percentages:* refer to width of containing block

 [XSL1.1] [7.11.7 start-indent](#), [7.12.6 space-start](#)

## CSS Extended Functions

---

### **-ah-attr-from(from,ident,type,value)**

---

CSS3 Values and Units : It is an extension of 'attr' function. Specify the element of the ancestor which applies attr() to the first parameter.

## CSS Counters

---

Although any counter name can be specified to the ident argument in counter(ident,list-style-type), there are some counter names defined already. page and pages among them are names that exist in the CSS specification. The others are names extended by **AH Formatter V6.0**. Counters with these same names cannot be defined.

- page  
Counters apply to pages (@page). This is useful for page numbers defined in [CSS3-Pages] Page-based counters.
- pages  
Counters apply to pages (@page). This is useful for page numbers defined in [CSS3-Pages] Page-based counters.
- footnote  
Counters apply to footnotes (@footnote). This is useful for footnote numbers.
- sidenote  
Counters apply to sidenotes (@sidenote). This is useful for sidenote numbers.





## XSL-CSS Corresponding Table

The following table shows mainly XSL-FO elements, properties and the corresponding CSS properties. A blank column or a content enclosed with parentheses in XSL means that the element or property of XSL corresponding to CSS are not implemented. See also [XSL-FO 1.1 Conformance](#) or [CSS Conformance](#) to learn what the current implementation status is. As for abbreviated expressions, such as [CSS3-GCPM] etc. in the table, please refer to [CSS Conformance](#).

Some of the correspondences do not mean that the specification is completely the same with XSL and CSS. Some of them address to the specification which is functionally the same or similar. A property with the >> mark means that XSL property is made as the CSS extension property as is, a property with the << mark means that CSS property is made as the XSL extension property as is. The specification matches respectively. However, the initial value may differ by XSL and CSS.

XSL		CSS	Comments
		[CSS3-Background] (-ah-)background-clip	
		[CSS3-Background] (-ah-)background-origin	
		[CSS3-GCPM] (-ah-)border-length	
		[CSS3-Content] (-ah-)crop	
7.6.1 absolute-position		[CSS2.1] position: absolute   fixed	
axf:action-type	>>	-ah-action-type	
7.14.1 alignment-adjust		[CSS3-Line] (-ah-)alignment-adjust [CSS2.1] vertical-align: <percentage>   <length>	
7.14.2 alignment-baseline		[CSS3-Line] (-ah-)alignment-baseline [CSS2.1] vertical-align: top   text-top   middle   bottom   text-bottom	
7.15.1 allowed-height-scale	>>	-ah-allowed-height-scale	
7.15.2 allowed-width-scale	>>	-ah-allowed-width-scale	
axf:alt-glyph	>>	-ah-alt-glyph	
axf:alttext	>>	-ah-alttext [HTML] alt	
axf:annotation-color	>>	-ah-annotation-color	
axf:annotation-contents	>>	-ah-annotation-contents	
axf:annotation-file-attachment	>>	-ah-annotation-file-attachment	
axf:annotation-flags	>>	-ah-annotation-flags	
axf:annotation-font-family	>>	-ah-annotation-font-family	
axf:annotation-font-size	>>	-ah-annotation-font-size	
axf:annotation-font-style	>>	-ah-annotation-font-style	
axf:annotation-font-weight	>>	-ah-annotation-font-weight	
axf:annotation-height	>>	-ah-annotation-height	
axf:annotation-icon-name	>>	-ah-annotation-icon-name	
axf:annotation-open	>>	-ah-annotation-open	
axf:annotation-position-horizontal	>>	-ah-annotation-position-horizontal	
axf:annotation-position-vertical	>>	-ah-annotation-position-vertical	
axf:annotation-text-align	>>	-ah-annotation-text-align	
axf:annotation-text-color	>>	-ah-annotation-text-color	
axf:annotation-title	>>	-ah-annotation-title	
axf:annotation-type	>>	-ah-annotation-type	
axf:annotation-width	>>	-ah-annotation-width	
axf:append-non-end-of-line-characters	>>	-ah-append-non-end-of-line-characters	

XSL		CSS	Comments
axf:append-non-starter-characters	>>	-ah-append-non-starter-characters	
axf:assumed-page-number			
axf:avoid-widow-words	>>	-ah-avoid-widow-words	
7.31.1 background		[CSS2.1] background	
7.8.1 background-attachment		[CSS2.1] background-attachment	
7.8.2 background-color axf:background-color		[CSS2.1] background-color	
axf:background-content-height	>>	-ah-background-content-height	
axf:background-content-type	>>	-ah-background-content-type	
axf:background-content-width	>>	-ah-background-content-width	
7.8.3 background-image axf:background-image		[CSS2.1] background-image	
axf:background-image-resolution	<<	[CSS3-GCPM] (-ah-)background-image-resolution	
7.31.2 background-position		[CSS2.1] background-position	
7.8.5 background-position-horizontal axf:background-position-horizontal		[CSS2.1] background-position	
7.8.6 background-position-vertical axf:background-position-vertical		[CSS2.1] background-position	
7.8.4 background-repeat axf:background-repeat		[CSS2.1] background-repeat	
axf:background-scaling	>>	-ah-background-scaling	
axf:base-uri	>>	-ah-base-uri [XML] xml:base [HTML] <base href>	
7.14.3 baseline-shift		[CSS3-Line] (-ah-)baseline-shift [CSS2.1] vertical-align: sub   super	
7.27.1 blank-or-not-blank		[CSS3-GCPM] :blank	
axf:bleed		[CSS3-GCPM] (-ah-)bleed	
axf:bleed-bottom	>>	-ah-bleed-bottom	
axf:bleed-left	>>	-ah-bleed-left	
axf:bleed-right	>>	-ah-bleed-right	
axf:bleed-top	>>	-ah-bleed-top	
7.15.3 block-progression-dimension	>>	-ah-block-progression-dimension	
axf:bookmark-include			
7.31.3 border		[CSS2.1] border	
7.8.10 border-after-color	>>	-ah-border-after-color	
7.28.1 border-after-precedence	>>	-ah-border-after-precedence	
7.8.11 border-after-style	>>	-ah-border-after-style	
7.8.12 border-after-width	>>	-ah-border-after-width	
7.8.7 border-before-color	>>	-ah-border-before-color	
7.28.2 border-before-precedence	>>	-ah-border-before-precedence	
7.8.8 border-before-style	>>	-ah-border-before-style	
7.8.9 border-before-width	>>	-ah-border-before-width	
7.31.4 border-bottom		[CSS2.1] border-bottom	
7.8.22 border-bottom-color		[CSS2.1] border-bottom-color	

XSL		CSS	Comments
axf:border-bottom-left-radius		[CSS3-Background] (-ah-)border-bottom-left-radius	
axf:border-bottom-right-radius		[CSS3-Background] (-ah-)border-bottom-right-radius	
7.8.23 border-bottom-style		[CSS2.1] border-bottom-style	
7.8.24 border-bottom-width		[CSS2.1] border-bottom-width	
7.28.3 border-collapse		[CSS2.1] border-collapse	
7.31.5 border-color		[CSS2.1] border-color	
7.8.16 border-end-color	>>	-ah-border-end-color	
7.28.4 border-end-precedence	>>	-ah-border-end-precedence	
7.8.17 border-end-style	>>	-ah-border-end-style	
7.8.18 border-end-width	>>	-ah-border-end-width	
7.31.6 border-left		[CSS2.1] border-left	
7.8.25 border-left-color		[CSS2.1] border-left-color	
7.8.26 border-left-style		[CSS2.1] border-left-style	
7.8.27 border-left-width		[CSS2.1] border-left-width	
axf:border-radius		[CSS3-Background] (-ah-)border-radius	
7.31.7 border-right		[CSS2.1] border-right	
7.8.28 border-right-color		[CSS2.1] border-right-color	
7.8.29 border-right-style		[CSS2.1] border-right-style	
7.8.30 border-right-width		[CSS2.1] border-right-width	
7.28.5 border-separation		[CSS2.1] border-spacing	
7.31.9 border-spacing		[CSS2.1] border-spacing	
7.8.13 border-start-color	>>	-ah-border-start-color	
7.28.6 border-start-precedence	>>	-ah-border-start-precedence	
7.8.14 border-start-style	>>	-ah-border-start-style	
7.8.15 border-start-width	>>	-ah-border-start-width	
7.31.8 border-style		[CSS2.1] border-style	
7.31.10 border-top		[CSS2.1] border-top	
7.8.19 border-top-color		[CSS2.1] border-top-color	
axf:border-top-left-radius		[CSS3-Background] (-ah-)border-top-left-radius	
axf:border-top-right-radius		[CSS3-Background] (-ah-)border-top-right-radius	
7.8.20 border-top-style		[CSS2.1] border-top-style	
7.8.21 border-top-width		[CSS2.1] border-top-width	
7.31.11 border-width		[CSS2.1] border-width	
7.6.4 bottom		[CSS2.1] bottom	
axf:box-shadow		[CSS3-Background] (-ah-)box-shadow	
		[CSS3-UI] box-sizing	
7.20.1 break-after		[CSS2.1] page-break-after [CSS3-Multicol] (-ah-)break-after	
7.20.2 break-before		[CSS2.1] page-break-before [CSS3-Multicol] (-ah-)break-before	
7.28.7 caption-side		[CSS2.1] caption-side	
7.30.1 change-bar-class	>>	[CSS3-GCPM] (-ah-)change-bar-class	
7.30.2 change-bar-color	>>	[CSS3-GCPM] (-ah-)change-bar-color	

XSL		CSS	Comments
7.30.3 change-bar-offset	>>	[CSS3-GCPM] (-ah-)change-bar-offset	
7.30.4 change-bar-placement	>>	[CSS3-GCPM] (-ah-)change-bar-side	
7.30.5 change-bar-style	>>	[CSS3-GCPM] (-ah-)change-bar-style	
7.30.6 change-bar-width	>>	[CSS3-GCPM] (-ah-)change-bar-width	
7.17.1 character			
7.19.1 clear		[CSS2.1] clear	
7.21.1 clip		[CSS2.1] clip	
7.18.1 color		[CSS2.1] color	
7.18.2 color-profile-name			
7.27.2 column-count axf:column-count		[CSS3-Multicol] (-ah-)column-count	
axf:column-fill	<<	[CSS3-Multicol] (-ah-)column-fill	
7.27.3 column-gap axf:column-gap		[CSS3-Multicol] (-ah-)column-gap	
7.28.8 column-number			
axf:column-number-format			
axf:column-rule-align	>>	-ah-column-rule-align	
axf:column-rule-color		[CSS3-Multicol] (-ah-)column-rule-color	
axf:column-rule-display	>>	-ah-column-rule-display	
axf:column-rule-length	>>	-ah-column-rule-length	
axf:column-rule-style		[CSS3-Multicol] (-ah-)column-rule-style	
axf:column-rule-width		[CSS3-Multicol] (-ah-)column-rule-width	
7.28.9 column-width		[CSS2.1] width [CSS3-Multicol] (-ah-)column-rule-width	
7.15.4 content-height	>>	-ah-content-height	
7.30.7 content-type	>>	-ah-content-type	
7.15.5 content-width	>>	-ah-content-width	
7.10.1 country	>>	-ah-country	
axf:crop-area-visibility	>>	-ah-crop-area-visibility	
axf:crop-offset	>>	-ah-crop-offset	
axf:crop-offset-bottom	>>	-ah-crop-offset-bottom	
axf:crop-offset-left	>>	-ah-crop-offset-left	
axf:crop-offset-right	>>	-ah-crop-offset-right	
axf:crop-offset-top	>>	-ah-crop-offset-top	
axf:destination-type	>>	-ah-destination-type	
axf:diagonal-border-color	>>	-ah-diagonal-border-color	
axf:diagonal-border-style	>>	-ah-diagonal-border-style	
axf:diagonal-border-width	>>	-ah-diagonal-border-width	
7.29.1 direction		[CSS2.1] direction	
7.14.4 display-align		-ah-display-align [CSS2.1] vertical-align	
7.14.5 dominant-baseline		[CSS3-Line] (-ah-)dominant-baseline	
(7.28.10 empty-cells)			

XSL		CSS	Comments
7.11.8 end-indent		-ah-margin-end	
7.28.11 ends-row			
axf:except-non-end-of-line-characters	>>	-ah-except-non-end-of-line-characters	
axf:except-non-starter-characters	>>	-ah-except-non-starter-characters	
7.27.4 extent			
7.23.6 external-destination	>>	-ah-link [XML] xlink:href [HTML] href	
axf:field-apply-signature			
axf:field-button-face			
axf:field-button-face-down			
axf:field-button-face-rollover			
axf:field-button-icon			
axf:field-button-icon-down			
axf:field-button-icon-rollover			
axf:field-button-layout			
axf:field-checked			
axf:field-checked-style			
axf:field-default-text			
axf:field-description			
axf:field-editable			
axf:field-maxlen			
axf:field-multiline			
axf:field-multiple			
axf:field-name			
axf:field-password			
axf:field-readonly			
axf:field-required			
axf:field-scroll			
axf:field-submit-coordinates			
axf:field-submit-method			
axf:field-top-index			
axf:field-type			
axf:field-value			
7.19.2 float		[CSS2.1][CSS3-GCPM] (-ah-)float	
7.27.18 flow-map-name			
7.27.19 flow-map-reference			
7.27.5 flow-name			
7.27.20 flow-name-reference			
7.31.13 font		[CSS2.1] font	
<axf:font-face>		[CSS3-Fonts] @font-face	
7.9.2 font-family		[CSS2.1] font-family	
7.9.3 font-selection-strategy	>>	-ah-font-selection-strategy	

XSL		CSS	Comments
7.9.4 font-size		[CSS2.1] font-size	
7.9.6 font-size-adjust		[CSS3-Fonts] (-ah-)font-size-adjust	
7.9.5 font-stretch		[CSS3-Fonts] (-ah-)font-stretch	
7.9.7 font-style		[CSS2.1] font-style	
7.9.8 font-variant		[CSS2.1] font-variant	
7.9.9 font-weight		[CSS2.1] font-weight	
axf:footnote-align		[CSS3-GCPM] @footnote	
axf:footnote-keep			
<axf:footnote-number-citation>		[CSS3-GCPM] ::footnote-call	
axf:footnote-number-format		[CSS3-GCPM] counter(footnote, <list-style-type>)	
axf:footnote-number-initial		[CSS3-GCPM] counter-rest: footnote	
axf:footnote-number-reset		[CSS3-GCPM] counter-rest: footnote	
<axf:footnote-number>		[CSS3-GCPM] ::footnote-marker	
axf:footnote-position		[CSS3-GCPM] @footnote	
axf:footnote-stacking		[CSS3-GCPM] @footnote	
7.27.6 force-page-count			
7.26.1 format		[CSS2.1][CSS3-Lists] (-ah-)list-style-type	
7.29.2 glyph-orientation-horizontal	>>	-ah-glyph-orientation-horizontal	
7.29.3 glyph-orientation-vertical	>>	-ah-glyph-orientation-vertical	
7.26.2 grouping-separator			
7.26.3 grouping-size			
axf:hanging-punctuation		[CSS3-Text] (-ah-)hanging-punctuation	
7.15.6 height		[CSS2.1] height	
7.10.4 hyphenate		[CSS3-GCPM] (-ah-)hyphens	
7.10.5 hyphenation-character		[CSS3-GCPM] (-ah-)hyphenate-character	
7.16.1 hyphenation-keep	>>	-ah-hyphenation-keep	
7.16.2 hyphenation-ladder-count		[CSS3-GCPM] (-ah-)hyphenate-lines	
axf:hyphenation-minimum-character-count	>>	-ah-hyphenation-minimum-character-count	
7.10.6 hyphenation-push-character-count		[CSS3-GCPM] (-ah-)hyphenate-after	
7.10.7 hyphenation-remain-character-count		[CSS3-GCPM] (-ah-)hyphenate-before	
axf:hyphenation-zone	>>	-ah-hyphenation-zone	
7.30.8 id		[XML][HTML] id	
axf:image-resolution	<<	[CSS3-GCPM] (-ah-)image-resolution	
7.24.1 index-class			
7.24.2 index-key			
7.27.7 initial-page-number		[CSS3-Page] counter-reset: page	
axf:initial-volume-number			
7.15.7 inline-progression-dimension	>>	-ah-inline-progression-dimension	
7.23.8 internal-destination	>>	-ah-link [XML] xlink:href [HTML] href	
7.30.9 intrinsic-scale-value			
7.19.3 intrusion-displace	>>	-ah-intrusion-displace	

XSL		CSS	Comments
axf:justify-nbsp	>>	-ah-justify-nbsp	
axf:kansuji-grouping-letter			
axf:kansuji-letter			
axf:kansuji-style			
7.20.3 keep-together		[CSS2.1] page-break-inside [CSS3-Multicol] (-ah-)break-inside	
7.20.4 keep-with-next		[CSS2.1] page-break-after [CSS3-Multicol] (-ah-)break-after	
7.20.5 keep-with-previous		[CSS2.1] page-break-before [CSS3-Multicol] (-ah-)break-before	
axf:kerning-mode	>>	-ah-kerning-mode	
7.10.2 language	>>	-ah-language	
7.16.3 last-line-end-indent	>>	-ah-last-line-end-indent	
7.22.1 leader-alignment	>>	-ah-leader-alignment	
axf:leader-expansion	>>	-ah-leader-expansion	
7.22.4 leader-length			
7.22.2 leader-pattern		[CSS3-GCPM] content: leader()	
7.22.3 leader-pattern-width			
7.6.5 left		[CSS2.1] left	
7.17.2 letter-spacing		[CSS2.1] letter-spacing	
7.26.4 letter-value			
axf:ligature-mode	>>	-ah-ligature-mode	
axf:line-break	>>	-ah-line-break	
axf:line-continued-mark	>>	-ah-line-continued-mark	
axf:line-continued-mark-background-color	>>	-ah-line-continued-mark-background-color	
axf:line-continued-mark-color	>>	-ah-line-continued-mark-color	
axf:line-continued-mark-font-family	>>	-ah-line-continued-mark-font-family	
axf:line-continued-mark-font-size	>>	-ah-line-continued-mark-font-size	
axf:line-continued-mark-font-style	>>	-ah-line-continued-mark-font-style	
axf:line-continued-mark-font-weight	>>	-ah-line-continued-mark-font-weight	
axf:line-continued-mark-offset	>>	-ah-line-continued-mark-offset	
7.16.4 line-height		[CSS2.1] line-height	
7.16.5 line-height-shift-adjustment	>>	-ah-line-height-shift-adjustment	
axf:line-number			
axf:line-number-background-color			
axf:line-number-color			
axf:line-number-display-align			
axf:line-number-font-family			
axf:line-number-font-size			
axf:line-number-font-style			
axf:line-number-font-weight			
axf:line-number-format			
axf:line-number-initial			

XSL		CSS	Comments
axf:line-number-interval			
axf:line-number-offset			
axf:line-number-position			
axf:line-number-prefix			
axf:line-number-reset			
axf:line-number-start			
axf:line-number-text-align			
axf:line-number-text-decoration			
axf:line-number-width			
7.16.6 line-stacking-strategy	>>	-ah-line-stacking-strategy	
7.16.7 linefeed-treatment	>>	-ah-linefeed-treatment [CSS2.1] white-space	
7.31.14 margin		[CSS2.1] margin	
7.11.2/7.12.2 margin-bottom		[CSS2.1] margin-bottom	
7.11.3/7.12.3 margin-left		[CSS2.1] margin-left	
7.11.4/7.12.4 margin-right		[CSS2.1] margin-right	
7.11.1/7.12.1 margin-top		[CSS2.1] margin-top	
7.25.1 marker-class-name			
7.27.8 master-name		[CSS3-Page] @page <name>	
7.27.9 master-reference		[CSS3-Page][CSS3-GCPM] (-ah-)marks	
7.15.8 max-height		[CSS2.1] max-height	
7.15.9 max-width		[CSS2.1] max-width	
7.27.10 maximum-repeats			
7.24.6 merge-pages-across-index-key-references			
7.24.4 merge-ranges-across-index-key-references			
7.24.5 merge-sequential-page-numbers			
7.15.10 min-height		[CSS2.1] min-height	
7.15.11 min-width		[CSS2.1] min-width	
7.28.12 number-columns-repeated			
7.28.13 number-columns-spanned		[CSS3-Table] (-ah-)table-column-span [HTML] colspan	
7.28.14 number-rows-spanned		[CSS3-Table] (-ah-)table-row-span [HTML] rowspan	
axf:number-transform	>>	-ah-number-transform	
axf:number-type			
7.27.12 odd-or-even		[CSS2.1][CSS3-Page] :left, :right	
axf:origin-id			
7.20.6 orphans		[CSS2.1] orphans	
axf:outline-color	>>	-ah-outline-color	
axf:outline-expand		[CSS3-GCPM] (-ah-)bookmark-state	
axf:outline-external-destination	>>	-ah-outline-external-destination	
axf:outline-font-style	>>	-ah-outline-font-style	
axf:outline-font-weight	>>	-ah-outline-font-weight	



XSL		CSS	Comments
axf:outline-group	>>	-ah-outline-group	
axf:outline-internal-destination	>>	-ah-outline-internal-destination	
axf:outline-level		[CSS3-GCPM] (-ah-)bookmark-level	
axf:outline-title		[CSS3-GCPM] (-ah-)bookmark-label	
axf:output-volume-break			
axf:output-volume-filename			
7.21.2 overflow		[CSS2.1] overflow	
axf:overflow-align	>>	-ah-overflow-align	
axf:overflow-condense	>>	-ah-overflow-condense	
axf:overflow-condense-limit-font-size	>>	-ah-overflow-condense-limit-font-size	
axf:overflow-condense-limit-font-stretch	>>	-ah-overflow-condense-limit-font-stretch	
axf:overflow-replace	>>	-ah-overflow-replace	
7.31.15 padding		[CSS2.1] padding	
7.8.32 padding-after	>>	-ah-padding-after	
7.8.31 padding-before	>>	-ah-padding-before	
7.8.36 padding-bottom		[CSS2.1] padding-bottom	
7.8.34 padding-end	>>	-ah-padding-end	
7.8.37 padding-left		[CSS2.1] padding-left	
7.8.38 padding-right		[CSS2.1] padding-right	
7.8.33 padding-start	>>	-ah-padding-start	
7.8.35 padding-top		[CSS2.1] padding-top	
7.31.16 page-break-after		[CSS2.1] page-break-after	
7.31.17 page-break-before		[CSS2.1] page-break-before	
7.31.18 page-break-inside		[CSS2.1] page-break-inside	
7.30.10 page-citation-strategy			
7.27.13 page-height		[CSS3-Page] (-ah-)size	
axf:page-number-prefix			
7.24.3 page-number-treatment			
7.27.14 page-position		[CSS2.1][CSS3-Page] :first	
7.27.15 page-width		[CSS3-Page] (-ah-)size	
axf:pdftag	>>	-ah-pdftag	
axf:physical-page-number			
7.31.20 position		[CSS2.1] position	
7.27.16 precedence			
axf:printer-bin-selection	>>	-ah-printer-bin-selection	
axf:printer-duplex	>>	-ah-printer-duplex	
axf:printer-marks		[CSS3-GCPM] (-ah-)marks	
axf:printer-marks-line-color	>>	-ah-printer-marks-line-color	
axf:printer-marks-line-length	>>	-ah-printer-marks-line-length	
axf:printer-marks-line-width	>>	-ah-printer-marks-line-width	
axf:printer-marks-zero-margin	>>	-ah-printer-marks-zero-margin	
7.30.12 provisional-distance-between-starts			

XSL		CSS	Comments
7.30.11 provisional-label-separation			
axf:punctuation-spacing	>>	-ah-punctuation-spacing	
axf:punctuation-trim		[CSS3-Text] (-ah-)punctuation-trim	
7.30.13 ref-id		[CSS3-GCPM] target-counter(), etc	
7.24.7 ref-index-key			
7.21.3 reference-orientation	>>	-ah-reference-orientation	
7.27.17 region-name			
7.27.21 region-name-reference			
7.14.6 relative-align		[CSS2.1] vertical-align: top   baseline	
(7.13.5 relative-position)		[CSS2.1] position: relative	
axf:repeat-cell-content-at-break	>>	-ah-repeat-cell-content-at-break	
axf:repeat-footnote-in-table-footer	>>	-ah-repeat-footnote-in-table-footer	
axf:repeat-footnote-in-table-header	>>	-ah-repeat-footnote-in-table-header	
axf:repeat-page-sequence-master			
7.25.5 retrieve-boundary			
7.25.2 retrieve-boundary-within-table			
7.25.3 retrieve-class-name			
7.25.4 retrieve-position			
7.25.6 retrieve-position-within-table			
axf:reverse-diagonal-border-color	>>	-ah-reverse-diagonal-border-color	
axf:reverse-diagonal-border-style	>>	-ah-reverse-diagonal-border-style	
axf:reverse-diagonal-border-width	>>	-ah-reverse-diagonal-border-width	
axf:revision-bar-color	>>	-ah-revision-bar-color	
axf:revision-bar-offset	>>	-ah-revision-bar-offset	
axf:revision-bar-position	>>	-ah-revision-bar-position	
axf:revision-bar-style	>>	-ah-revision-bar-style	
axf:revision-bar-width	>>	-ah-revision-bar-width	
7.6.3 right		[CSS2.1] right	
7.5.2 role			
7.22.5 rule-style			
7.22.6 rule-thickness			
7.30.14 scale-option			
7.15.12 scaling	>>	-ah-scaling	
7.10.3 script	>>	-ah-script	
7.23.9 show-destination	>>	-ah-show-destination	
7.31.21 size		[CSS3-Page] (-ah-)size	
axf:soft-hyphen-treatment	>>	-ah-soft-hyphen-treatment	
7.5.1 source-document			
7.11.6 space-after		-ah-margin-after	
7.11.5 space-before		-ah-margin-before	
7.12.5 space-end		-ah-margin-end	
7.12.6 space-start		-ah-margin-start	

XSL		CSS	Comments
7.21.4 span		[CSS3-Multicol] (-ah-)column-span	
7.30.16 src		[CSS2.1][CSS3-Content] content: <uri>	
7.11.7 start-indent		-ah-margin-start	
7.28.15 starts-row			
axf:suppress-duplicate-page-number			
axf:suppress-if-first-on-page		-ah-suppress-if-first-on-page	
7.28.16 table-layout		[CSS2.1] table-layout	
7.28.17 table-omit-footer-at-break	>>	-ah-table-omit-footer-at-break	
7.28.18 table-omit-header-at-break	>>	-ah-table-omit-header-at-break	
7.16.9 text-align		[CSS2.1] (-ah-)text-align	
axf:text-align-first	>>	-ah-text-align-first	
7.16.10 text-align-last		[CSS3-Text] (-ah-)text-align-last	
axf:text-align-string	>>	-ah-text-align-string	
7.29.4 text-altitude	>>	-ah-text-altitude	
axf:text-autospace		[CSS3-Text] (-ah-)text-autospace	
axf:text-autospace-width	>>	-ah-text-autospace-width	
7.17.4 text-decoration		[CSS2.1] (-ah-)text-decoration	
7.29.5 text-depth	>>	-ah-text-depth	
7.16.11 text-indent		[CSS2.1] text-indent	
axf:text-justify-trim		[CSS3-Text] (-ah-)text-justify-trim	
axf:text-kashida-space	>>	-ah-text-kashida-space	
axf:text-line-color		[CSS3-Text] (-ah-)text-decoration-color	
axf:text-line-style		[CSS3-Text] (-ah-)text-decoration-style	
axf:text-line-width	>>	-ah-text-line-width	
axf:text-replace	<<	[CSS3-GCPM] (-ah-)text-replace	
7.17.6 text-transform		[CSS2.1] text-transform	
axf:text-underline-position		[CSS3-Text] (-ah-)text-underline-position	
7.6.2 top		[CSS2.1] top	
7.29.6 unicode-bidi		[CSS2.1] unicode-bidi	
7.31.22 vertical-align		[CSS2.1] vertical-align	
axf:vertical-underline-side	>>	-ah-vertical-underline-side	
7.30.17 visibility		[CSS2.1] visibility	
7.31.23 white-space		[CSS2.1] white-space	
7.16.12 white-space-collapse	>>	-ah-white-space-collapse [CSS2.1] white-space	
7.16.8 white-space-treatment	>>	-ah-white-space-treatment [CSS2.1] white-space	
7.20.7 widows		[CSS2.1] widows	
7.15.14 width		[CSS2.1] width	
axf:word-break	<<	[CSS3-Text] (-ah-)word-break	
7.17.8 word-spacing		[CSS2.1] word-spacing	
axf:word-wrap	<<	[CSS3-Text] (-ah-)word-wrap	
7.16.13 wrap-option	>>	-ah-wrap-option	

XSL		CSS	Comments
7.16.13 <a href="#">wrap-option</a>	>>	[CSS2.1] white-space	
7.29.7 <a href="#">writing-mode</a>		[CSS3-Text-Layout] (-ah-) <a href="#">writing-mode</a>	
7.31.24 <a href="#">xml:lang</a>	>>	-ah-lang [XML] <a href="#">xml:lang</a> [HTML] <a href="#">lang</a>	
7.30.18 <a href="#">z-index</a>		[CSS2.1] z-index	



## SVG Conformance

**AH Formatter V6.0** conforms to W3C [Scalable Vector Graphics \(SVG\) 1.1](#) and supports to display SVG images with a newly developed engine. This makes it possible to output high quality SVG images as vectors in the PDF. The basic SVG drawing elements have been implemented. See also [Graphics](#) to learn how to utilize SVG.

The below table shows the implemented SVG elements.

- [yes] in the list means that the formatting object or property is implemented.
- [partial] means that the formatting object or property is partially implemented.
- [no] means not implemented.

**CAUTION:** This conformance is not for [SVG Output](#).

Element	Current conditions	Comments / Attributes
<a>	yes	The format such as #nameddest=Chapter6 in <a href="#">Making Link</a> can also be specified. The hotspot region is a rectangle. This element is not available with GUI.
<altGlyph>	no	
<altGlyphDef>	no	
<altGlyphItem>	no	
<animate>	no	
<animatecolor>	no	
<animateMotion>	no	
<animateTransform>	no	
<circle>	yes	stroke, stroke-width, fill, cx, cy, r stroke-dasharray, stroke-dashoffset
<clipPath>	yes	clip-rule clipPathUnits
<color-profile>	no	
<cursor>	no	
<definition-src>	no	
<defs>	yes	
<desc>	no	
<ellipse>	yes	stroke, stroke-width, fill, cx, cy, rx, ry stroke-dasharray, stroke-dashoffset
<feBlend>	no	
<feColorMatrix>	no	
<feComponentTransfer>	no	
<feComposit>	no	
<feConvolveMatrix>	no	
<feDiffuseLighting>	no	
<feDisplacementMap>	no	
<feDistantLight>	no	
<feFlood>	no	
<feFuncA>	no	
<feFuncB>	no	
<feFuncG>	no	
<feFuncR>	no	

Element	Current conditions	Comments / Attributes
<feGaussianBlur>	no	
<feImage>	no	
<feMarge>	no	
<feMargeNote>	no	
<feMorphology>	no	
<feOffset>	no	
<fePointLight>	no	
<feTile>	no	
<feTurbulance>	no	
<filter>	no	
<font>	no	
<font-face>	no	
<font-face-format>	no	
<font-face-name>	no	
<font-face-src>	no	
<font-face-uri>	no	
<foreignObject>	no	
<g>	yes	
<glyph>	no	
<glyphRef>	no	
<hkem>	no	
<image>	yes	xlink:href, x, y, width, height
<line>	yes	stroke, stroke-width, stroke-linecap, x1, y1, x2, y2 stroke-dasharray, stroke-dashoffset, marker-start, marker-end
<linearGradient>	yes	gradientUnits, x1, y1, x2, y2, spreadMethod, gradientTransform
<marker>	yes	markerUnits, markerWidth, markerHeight, viewBox, refX, refY, orient
<mask>	no	
<metadata>	no	
<missing-glyph>	no	
<mpath>	no	
<path>	yes	stroke, stroke-width, stroke-linecap, stroke-linejoin, stroke-miterlimit, fill, fill-rule, d stroke-dasharray, stroke-dashoffset, marker-start, marker-mid, marker-end
<pattern>	yes	id, patternUnits, xlink:href, x, y, width, height, viewBox, patternContentUnits, patternTransform
<polygon>	yes	stroke, stroke-width, stroke-linecap, stroke-linejoin, stroke-miterlimit, fill, fill-rule, points stroke-dasharray, stroke-dashoffset, marker-start, marker-mid, marker-end
<polyline>	yes	stroke, stroke-width, stroke-linecap, stroke-linejoin, stroke-miterlimit, points, fill, fill-rule
<radialGradient>	yes	gradientUnits, cx, cy, r, fx, fy, spreadMethod, gradientTransform
<rect>	yes	stroke, stroke-width, stroke-linecap, stroke-linejoin, stroke-miterlimit, fill, x, y, width, height, rx, ry stroke-dasharray, stroke-dashoffset
<script>	no	

Element	Current conditions	Comments / Attributes
<set>	no	
<stop>	yes	stop-color, offset(, stop-opacity)
<style>	partial	type
<svg>	yes	xmlns="http://www.w3.org/2000/svg"
<switch>	partial	The child element which has the "requiredFeatures" or the "requiredExtensions" attribute is ignored. The child element with the "systemLanguage" attribute that matches to the language of running environment, or the first element which doesn't have the "systemLanguage" attribute is effective.
<symbol>	yes	
<text>	yes	stroke, stroke-width, stroke-linecap, stroke-linejoin, stroke-miterlimit, fill, x, y, dx, dy, rotate, text-anchor, font-family, writing-mode, font-weight, font-style, font-variant(, font-size-adjust), font-size, letter-spacing, word-spacing, xml:space, baseline-shift stroke-dasharray, stroke-dashoffset, font-stretch
<textPath>	no	
<title>	no	
<tref>	yes	
<tspan>	yes	The same as <text>
<use>	yes	xlink:href, x, y, width, height
<view>	no	
<vkern>	no	

The attributes in parentheses are not implemented. The following attributes/functions are implemented and commonly used.

- transform
- viewBox(width, height)
- preserveAspectRatio
- clip-path
- icc-color()

SVG in [gzip](#) file format is also supported.

**AH Formatter V6.0** supports the following scripts. Processes BIDI strings correctly.

- Arabic
- Hebrew
- Thai
- Devalagari

## Restrictions

- Supports fill-opacity and stroke-opacity of the transparency (the opacity attribute). stop-opacity is not supported.
- The values that can be described in the stroke-dasharray attribute are up to 10.
- Some elements cannot be displayed in GUI although they can be outputted to PDF. Especially <linearGradient> is not displayed in GUI. Moreover, as for the transparency, only fill-opacity is supported with GUI.
- Strokes with complicated gradation (more than or equal to 3 colors, repeat, reflect) are not supported.
- Transparency is not supported in PDF 1.3.





## CGM Conformance

CGM option is implemented based on the ISO/IEC 8632 CGM, W3C [WebCGM 2.0](#) specification.

The legends of element, attribute condition column are as follows.

- [yes] means that the element or attribute is implemented.
- [partial] means that the element or attribute is partially implemented.
- [no] means not implemented.
- Blank means that the element has no attribute.

The number in the ISO/IEC 8632 and WebCGM column refers to the CGM version. Other legends of ISO/IEC 8632 and WebCGM column are as follows.

- [required] means that the element is essential.
- [permitted] means that the element is permitted.
- [prohibit] means that the element should not be implemented.

### Delimiter

No.	Element	Elem cond.	Attribute	Attr cond.	Notes	ISO/IEC 8632		WebCGM	
						Ver		Ver	
1	BEGIN METAFILE	yes	metafile name	yes	When CGM contains multiple METAFILES, only the first one is converted, others are ignored. The metafile name is used for referencing a library, but it is not used in rendering.	1	required	1	required
2	END METAFILE	yes				1	required	1	required
3	BEGIN PICTURE	yes	picture name	yes		1	permitted	1	required
4	BEGIN PICTURE BODY	yes				1	permitted	1	required
5	END PICTURE	yes				1	permitted	1	required
6	BEGIN SEGMENT	no	segment identifier	no		2	permitted	1	prohibit
7	END SEGMENT	no				2	permitted	1	prohibit
8	BEGIN FIGURE	partial			Depending on the combination of figure elements, occasionally rendition and filling is not accurately accomplished.	2	permitted	1	permitted
9	END FIGURE	yes				2	permitted	1	permitted
10	BEGIN PROTECTION REGION	partial	region index	yes	Depending on the combination of figure elements, Occasionally an area shape is not accurately accomplished.	3	permitted	2	permitted
11	END PROTECTION REGION	yes				3	permitted	2	permitted
12	BEGIN COMPOUND LINE	no				3	permitted	1	permitted
13	END COMPOUND LINE	no				3	permitted	1	permitted
14	BEGIN COMPOUND TEXT PATH	no				3	permitted	1	permitted

No.	Element	Elem cond.	Attribute	Attr cond.	Notes	ISO/IEC 8632		WebCGM	
						Ver		Ver	
15	END COMPOUND TEXT PATH	no				3	permitted	1	permitted
16	BEGIN TILE ARRAY	partial	position	yes	This element is implemented when the TILE is specified as rectangle only. When the TILE is specified as parallelogram, it is outputted as rectangle.	3	permitted	1	permitted
			cell path direction	partial					
			line progrssion direction	partial					
			number of tiles in path direction	yes					
			number of tiles in line direction	yes					
			number of cells/tile in path direction	yes					
			number of cells/tile in line direction	yes					
			cell size in path direction	yes					
			cell size in line direction	yes					
			image offset in path direction	yes					
			image offset in line direction	yes					
			image number of cells in path sirection	yes					
image number of cells in line direction	yes								
17	END TILE ARRAY	yes				3	permitted	1	permitted
18	BEGIN APPLICATION STRUCTURE	no	application structure identifier	no		4	permitted	1	permitted
			application structure type	no					
			inhetitance flag	no					
19	BEGIN APPLICATION STRUCTURE BODY	no				4	permitted	1	permitted
20	END APPLICATION STRUCTURE	no				4	permitted	1	permitted

No.	Element	Elem cond.	Attribute	Attr cond.	Notes	ISO/IEC 8632		WebCGM	
						Ver		Ver	
21	NOP	yes				1	permitted	1	permitted

## Metafile Descriptor

No.	Element	Elem cond.	Attribute	Attr cond.	Notes	ISO/IEC 8632		WebCGM	
						Ver		Ver	
22	METAFILE VERSION	yes	metafile version number	yes	Program checks the version number. But element is not limited by version number.	1	required	1	required
23	METAFILE DESCRIPTION	yes	metafile description string	no		1	required	1	required
24	VDC TYPE	yes	VDC TYPE	yes		1	permitted	1	permitted
25	INTEGER PRECISION	yes	integer precision	yes		1	permitted	1	permitted
26	REAL PRECISION	yes	form of representation for real value	yes		1	permitted	1	permitted
			field width for exponent or whole part	yes					
			field width for fraction or frantion part	yes					
27	INDEX PRECISION	yes	index precision	yes		1	required	1	required
28	COLOUR PRECISION	yes	colour precision	yes		1	permitted	1	permitted
29	COLOUR INDEX PRECISION	yes	index precision	yes		1	permitted	1	permitted
30	MAXMUM COLOUR INDEX	yes	maximum colour index that may be encountered in the model	yes		1	permitted	1	permitted
31	COLOUR VALUE EXTENT	partial	minumum colour value	yes	Color spaces other than RGB are not implemented.	1	permitted	1	permitted
			maximum colour value	yes					
			scale and offset pair for first component	yes					
			sacle and offset for second compornent	yes					
			scale nad offset for third component	yes					
32	METAFILE ELEMENT LIST	yes	number of elements specified	yes		1	required	2	required
			list of metafile elements in metafile	yes					
33	METAFILE DEFAULTS REPLACEMENT	yes	parameter that itself contains metafile elements	yes		1	permitted	1	permitted
34	FONT LIST	partial	font names	yes	Sometimes font name is incorrectly interpreted when it is not encoded with 8bit.	1	permitted	1	permitted

No.	Element	Elem cond.	Attribute	Attr cond.	Notes	ISO/IEC 8632		WebCGM	
						Ver		Ver	
35	CHARACTER SET LIST	yes	CHARACTER SET TYPE	yes		1	permitted	1	permitted
			designation sequence tail	yes					
36	CHARACTER CODING ANNOUNCER	yes	character coding announcer	yes		1	permitted	1	required
37	NAME PRECISION	yes	name precision	yes		2	permitted	1	prohibit
38	MAXMUM VDC EXTENT	yes	first coner	yes		2	permitted	1	permitted
			second coner	yes					
39	SEGMENT PRIORITY EXTENT	no	minimum segment priority value	no		2	permitted	1	prohibit
			maximum segment priority value	no					
40	COLOUR MODEL	partial	colour model	partial	Color spaces other than RGB are not implemented.	3	permitted	1	permitted
41	COLOUR CALIBRATION	no	calibration selection	no		3	permitted	1	prohibit
			reference white value X component	no					
			reference white value Y component	no					
			reference white value Z component	no					
			3x3 RGB calibration matrix	no					
			3x3 ABC transformation matrix	no					
			number of lookup table entries(=n)	no					
			2n red lookup table entries: R, R'	no					
			2n green lookup table entries: G, G'	no					
			2n blue lookup table entries: B, B'	no					
			number of grid locations (=m)	no					
m CMYK grid locations	no								
m XYZ grid locations, each being	no								
42	FONT PROPERTIES	no	property indicator	no		3	permitted	1	permitted
			priority	no					
			property value record	no					
43	GLYPH MAPPING	no	character set index	no		3	permitted	1	prohibit
			basis set character set type	no					

No.	Element	Elem cond.	Attribute	Attr cond.	Notes	ISO/IEC 8632		WebCGM	
						Ver		Ver	
43	GLYPH MAPPING	no	basis set designation sequence tail	no		3	permitted	1	prohibit
			octets per code (=m)	no					
			glyph source	no					
			glyph-code associations	no					
44	SYMBOL LIBRARY LIST	no	n symbol library names	no		3	prohibit	1	prohibit
45	PICTURE DIRECTORY	no	location data type selector	no		4	permitted	1	prohibit
			list of 3-tuples	no					

## Picture Descriptor

No.	Element	Elem cond.	Attribute	Attr cond.	Notes	ISO/IEC 8632		WebCGM	
						Ver		Ver	
46	SCALING MODE	yes	scaling mode	yes		1	permitted	1	permitted
			metric scaling factor	yes					
47	COLOUR SELECTION MODE	yes	colour selection mode	yes		1	permitted	1	permitted
48	LINE WIDTH SPECIFICATION MODE	yes	line width specification mode	yes		1	permitted	1	permitted
49	MARKER SIZE SPECIFICATION MODE	yes	marker size specification mode	yes		1	permitted	1	permitted
50	EDGE WIDTH SPECIFICATION MODE	yes	edge width specification mode	yes		1	permitted	1	permitted
51	VDC EXTENT	yes	first corner	yes		1	permitted	1	permitted
			second corner	yes					
52	BACKGROUND COLOUR	yes	background colour	yes		1	permitted	1	permitted
53	DEVICE VIEWPORT	no	first corner	no		2	prohibit	1	prohibit
			second corner	no					
54	DEVICE VIEWPORT SPECIFICATION MODE	no	VC specifier	no		2	prohibit	1	prohibit
			metric scale factor	no					
55	DEVICE VIEWPORT MAPPING	no	isotropy flag	no		2	prohibit	1	prohibit
			horizontal alignment flag	no					
			vertical alignment flag	no					
56	LINE REPRESENTATION	yes	line bundle index	yes	If the line type is out of range or implementation-defined, it is outputted as solid.	2	permitted	1	prohibit
			line type	yes					
			line width	yes					

No.	Element	Elem cond.	Attribute	Attr cond.	Notes	ISO/IEC 8632		WebCGM	
						Ver		Ver	
56	LINE REPRESENTATION	yes	line colour	yes	If the line type is out of range or implementation-defined, it is outputted as solid.	2	permitted	1	prohibit
57	MARKER REPRESENTATION	yes	marker bundle index	yes	If the marker type is out of range or implementation-defined, it is outputted as asterisk.	2	permitted	1	prohibit
			marker type	yes					
			marker size	yes					
			marker colour	yes					
58	TEXT REPRESENTATION	partial	text bundle index	yes	Color spaces other than RGB are not implemented. Italic and oblique are not supported.	2	permitted	1	prohibit
			text font index	partial					
			text precision	yes					
			character spacing	yes					
			character expansion factor	yes					
			text colour	partial					
59	FILL REPRESENTATION	partial	fill area bundle index	yes	Occasionally fill for some FIGURE element combinations is incorrect. Color spaces other than RGB are not implemented. Interior style that is out of range is outputted as solid. A hatch index that is out of range is outputted as horizontal. Sometimes the pattern size is incorrect with patterned fill.	2	permitted	1	prohibit
			interior style	yes					
			fill colour	partial					
			hatch index	yes					
			pattern index	partial					
60	EDGE REPRESENTATION	partial	edge bundle index	yes	Color spaces other than RGB are not implemented.	2	permitted	1	prohibit
			edge type	yes					
			edge width	yes					
			edge colour	partial					
61	INTERIOR STYLE SPECIFICATION MODE	no	style specification mode	no		3	permitted	1	permitted
62	LINE AND EDGE TYPE DEFINITION	yes	line type	yes		3	permitted	1	permitted
			dash cycle repeat length	yes					
			list of n dash elements	yes					
63	HATCH STYLE DEFINITION	partial	hatch index	partial		3	permitted	1	permitted
			style indicator	partial					
			hatch direction vectors specifier (x,y,x,y)	partial					
			duty cycle length	partial					

No.	Element	Elem cond.	Attribute	Attr cond.	Notes	ISO/IEC 8632		WebCGM	
						Ver		Ver	
63	HATCH STYLE DEFINITION	partial	number of hatch lines (=n)	partial		3	permitted	1	permitted
			list of n gap widths	partial					
			list of n line types	partial					
64	GEOMETRIC PATTERN DEFINITION	no	geometric pattern index	no		3	permitted	1	prohibit
			segment identifier	no					
			first corner point	no					
			second corner point	no					
65	APPLICATION STRUCTURE DIRECTORY	no	location data type selector	no		4	permitted	1	prohibit
			list of pairs consisting	no					

## Control

No.	Element	Elem cond.	Attribute	Attr cond.	Notes	ISO/IEC 8632		WebCGM	
						Ver		Ver	
66	VDC INTEGER PRECISION	yes	VDC integer precision	yes		1	permitted	1	permitted
67	VDC REAL PRECISION	yes	form of representation for real values	yes		1	permitted	1	permitted
			field width for exponent or whole part	yes					
			field width for fraction or fractional part	yes					
68	AUXILIARY COLOUR	partial	auxiliary colour	partial	Color spaces other than RGB are not implemented.	1	permitted	1	permitted
69	TRANSPARENCY	partial	on-off indicator	yes	This is not effective for CELL ARRAY element.	1	permitted	1	permitted
70	CLIP RECTANGLE	yes	first corner	yes		1	permitted	1	permitted
			second corner	yes					
71	CLIP INDICATOR	yes	clip indicator	yes		1	permitted	1	permitted
72	LINE CLIPPING MODE	partial	clipping mode	partial	Sometimes locus then shape mode is not processed correctly.	2	permitted	1	prohibit
73	MARKER CLIPPING MODE	partial	clipping mode	partial	Sometimes locus then shape mode is not processed correctly.	2	permitted	1	prohibit



No.	Element	Elem cond.	Attribute	Attr cond.	Notes	ISO/IEC 8632		WebCGM	
						Ver		Ver	
74	EDGE CLIPPING MODE	partial	clipping mode	partial	Sometimes locus then shape mode is not processed correctly.	2	permitted	1	prohibit
75	NEW REGION	yes				2	permitted	1	permitted
76	SAVE PRIMITIVE CONTEXT	yes	context name	yes		2	permitted	1	prohibit
77	RESTORE PRIMITIVE CONTEXT	yes	context name	yes		2	permitted	1	prohibit
78	PROTECTION REGION INDICATOR	yes	region index	yes		3	permitted	1	permitted
			region indicator	yes					
79	GENERALIZED TEXT PATH MODE	no	text path mode	no		3	permitted	1	permitted
80	MITRE LIMIT	yes	mitre limit	yes		3	permitted	1	permitted
81	TRANSPARENT CELL COLOUR	partial	transparency indicator	yes	Color spaces other than RGB are not implemented.	3	permitted	1	permitted
			transparent cell colour specifier	partial					

## Graphical Primitive

No.	Element	Elem cond.	Attribute	Attr cond.	Notes	ISO/IEC 8632		WebCGM	
						Ver		Ver	
82	POLYLINE	yes	n (X,Y) polyline vertices	yes		1	permitted	1	permitted
83	DISJOINT POLYLINE	yes	n (X,Y) line segment endpoints	yes		1	permitted	1	permitted
84	POLYMARKER	yes	n (X,Y) marker positions	yes		1	permitted	1	permitted
85	TEXT	yes	text position	yes		1	permitted	1	permitted
			final/not-final flag	yes					
			text string	yes					
86	RESTRICTED TEXT	yes	delta width	yes		1	permitted	1	permitted
			delta height	yes					
			text position	yes					
			final/not-final flag	yes					
			text string	yes					
87	APPEND TEXT	yes	final/not-final flag	yes		1	permitted	1	permitted
			text string	yes					
88	POLYGON	yes	n (X,Y) polygon vertices	yes		1	permitted	1	permitted
89	POLYGON SET	yes	(X,Y) polygon vertex	yes		1	permitted	1	permitted
			edge out flag	yes					

No.	Element	Elem cond.	Attribute	Attr cond.	Notes	ISO/IEC 8632		WebCGM	
						Ver		Ver	
90	CELL ARRAY	partial	corner point P	partial	This element is implemented only when CELL form is rectangle. If a CELL is specified as parallelogram, the CELL is outputted as rectangle. Color spaces other than RGB are not implemented. Occasionally a CELL ARRAY element that is described as run-length form is not read correctly.	1	permitted	1	permitted
			corner point Q	partial					
			corner point R	partial					
			nx	yes					
			ny	yes					
			local colour precision	yes					
			cell representation mode	yes					
			array of cell colour values	partial					
91	GENERALIZED DRAWING PRIMITIVE	no	GDP identifier	no		1	prohibit	1	prohibit
			n, number of points in 'list of points	no					
			list of points	no					
			GDP data record	no					
92	RECTANGLE	yes	first corner	yes		1	permitted	1	permitted
			second corner	yes					
93	CIRCLE	yes	centre of circle	yes		1	permitted	1	permitted
			radius of circle	yes					
94	CIRCULAR ARC 3 POINT	yes	starting point	yes		1	permitted	1	permitted
			intermediate point	yes					
			ending point	yes					
95	CIRCULAR ARC 3 POINT CLOSE	yes	starting point	yes		1	permitted	1	permitted
			intermediate point	yes					
			ending point	yes					
			type of arc closure	yes					
96	CIRCULAR ARC CENTRE	yes	centre of circle	yes		1	permitted	1	permitted
			delta X for start vector	yes					
			delta Y for start vector	yes					
			delta X for end vector	yes					
			delta Y for end vector	yes					
			radius of circle	yes					
97	CIRCULAR ARC CENTRE CLOSE	yes	centre of circle	yes		1	permitted	1	permitted
			delta X for start vector	yes					

No.	Element	Elem cond.	Attribute	Attr cond.	Notes	ISO/IEC 8632		WebCGM	
						Ver		Ver	
97	CIRCULAR ARC CENTRE CLOSE	yes	delta Y for start vector	yes		1	permitted	1	permitted
			delta X for end vector	yes					
			delta Y for end vector	yes					
			radius of circle	yes					
			type of arc closure	yes					
98	ELLIPSE	yes	centre of ellipse	yes		1	permitted	1	permitted
			endpoint of first conjugate diameter	yes					
			endpoint of second conjugate diameter	yes					
99	ELLIPTICAL ARC	yes	centre of ellipse	yes		1	permitted	1	permitted
			endpoint of first conjugate diameter	yes					
			endpoint of second conjugate diameter	yes					
			delta X for start vector	yes					
			delta Y for start vector	yes					
			delta X for end vector	yes					
			delta Y for end vector	yes					
100	ELLIPTICAL ARC CLOSE	yes	centre of ellipse	yes		1	permitted	1	permitted
			endpoint of first conjugate diameter	yes					
			endpoint of second conjugate diameter	yes					
			delta X for start vector	yes					
			delta Y for start vector	yes					
			delta X for end vector	yes					
			delta Y for end vector	yes					
			type of arc closure	yes					

No.	Element	Elem cond.	Attribute	Attr cond.	Notes	ISO/IEC 8632		WebCGM	
						Ver		Ver	
101	CIRCULAR ARC CENTRE REVERSED	yes	centre of circle	yes		2	permitted	1	permitted
			delta X for start vector	yes					
			delta Y for start vector	yes					
			delta X for end vector	yes					
			delta Y for end vector	yes					
			radius of circle	yes					
102	CONNECTING EDGE	yes				2	permitted	1	permitted
103	HYPERBOLIC ARC	no	centre point	no		3	permitted	1	prohibit
			transverse radius end point	no					
			conjugate radius end point	no					
			start vector x component	no					
			start vector y component	no					
			end vector x component	no					
			end vector y component	no					
104	PARABOLIC ARC	no	tangent intersection point	no		3	permitted	1	prohibit
			start point	no					
			end point	no					
105	NON-UNIFORM B-SPLINE	no	spline order (=m)	no		3	permitted	1	permitted
			number of control points (=n)	no					
			array of control points	no					
			list of knots, of length n+m	no					
			parameter start value	no					
			parameter end value	no					
106	NON-UNIFORM RATIONAL B- SPLINE	no	spline order (=m)	no		3	permitted	1	permitted
			number of control points (=n)	no					
			array of control points	no					

No.	Element	Elem cond.	Attribute	Attr cond.	Notes	ISO/IEC 8632		WebCGM	
						Ver		Ver	
106	NON-UNIFORM RATIONAL B-SPLINE	no	list of knots, of length n+m	no		3	permitted	1	permitted
			parameter start value	no					
			parameter end value	no					
			list of weights, of length n	no					
107	POLYBEZIER	yes	continuity indicator	yes		3	permitted	1	permitted
			list of point sequences	yes					
108	POLYSYMBOL	no	symbol index	no		3	prohibit	1	prohibit
			n symbol position points	no					
109	BITONAL TILE	partial	compression type	partial	Compression Type Supported 0: null background yes 1: null foreground yes 2: T6 yes 3: T4 1-dimensional no 4: T4 2-dimensional no 5: bitmap (compressed) yes 6: run length yes 7: baseline JPEG yes 8: LZW PNG no 9: compression method 0 yes	3	permitted	1	permitted
			row padding indicator	yes					
			cell background colour	yes					
			cell foreground colour	yes					
			method-specific parameters	yes					
			compressed cell colour specifiers	yes					
110	TILE	partial	compression type	partial	Same as BITONAL TILE.	3	permitted	1	permitted
			row padding indicator	yes					
			cell colour precision	yes					
			method-specific parameters	yes					
			compressed cell colour specifiers	yes					

**Attribute**

No.	Element	Elem cond.	Attribute	Attr cond.	Notes	ISO/IEC 8632		WebCGM	
						Ver		Ver	
111	LINE BUNDLE INDEX	yes	line bundle index	yes		1	permitted	1	prohibit
112	LINE TYPE	yes	line type	yes		1	permitted	1	prohibit
113	LINE WIDTH	yes	line width	yes		1	permitted	1	permitted
114	LINE COLOUR	partial	line colour	partial	Color spaces other than RGB are not implemented.	1	permitted	1	permitted

No.	Element	Elem cond.	Attribute	Attr cond.	Notes	ISO/IEC 8632		WebCGM	
						Ver		Ver	
115	MARKER BUNDLE INDEX	yes	marker bundle index	yes		1	permitted	1	prohibit
116	MARKER TYPE	yes	marker type	yes		1	permitted	1	permitted
117	MARKER SIZE	yes	marker size	yes		1	permitted	1	permitted
118	MARKER COLOUR	partial	marker colour	partial	Color spaces other than RGB are not implemented.	1	permitted	1	permitted
119	TEXT BUNDLE INDEX	partial	text bundle index	yes	Occasionally character width becomes incorrect.	1	permitted	1	prohibit
120	TEXT FONT INDEX	yes	text font index	yes		1	permitted	1	permitted
121	TEXT PRECISION	yes	text precision	yes		1	permitted	1	permitted
122	CHARACTER EXPANSION FACTOR	yes	character expansion factor	yes		1	permitted	1	permitted
123	CHARACTER SPACING	yes	additional inter-character space	yes		1	permitted	1	permitted
124	TEXT COLOUR	yes	text colour	yes		1	permitted	1	permitted
125	CHARACTER HEIGHT	yes	character height	yes		1	permitted	1	permitted
126	CHARACTER ORIENTATION	yes	X character up component	yes	This element is fully implemented.	1	permitted	1	permitted
			Y character up component	yes					
			X character base component	yes					
			Y character base component	yes					
127	TEXT PATH	yes	text path	yes		1	permitted	1	permitted
128	TEXT ALIGNMENT	yes	horizontal alignment	yes		1	permitted	1	permitted
			vertical alignment	yes					
			continuous horizontal alignment	yes					
			continuous vertical alignment	yes					
129	CHARACTER SET INDEX	yes	character set index	yes		1	permitted	1	permitted
130	ALTERNATE CHARACTER SET INDEX	yes	alternate character set index	yes		1	permitted	1	permitted
131	FILL BUNDLE INDEX	yes	fill bundle index	yes		1	permitted	1	prohibit
132	INTERIOR STYLE	partial	interior style	partial	Interior style is not implemented when it is a geometric pattern or interpolated.	1	permitted	1	permitted
133	FILL COLOUR	partial	fill colour	partial	Color spaces other than RGB are not implemented.	1	permitted	1	permitted
134	HATCH INDEX	yes	hatch index	yes		1	permitted	1	permitted
135	PATTERN INDEX	yes	pattern index	yes		1	permitted	1	permitted

No.	Element	Elem cond.	Attribute	Attr cond.	Notes	ISO/IEC 8632		WebCGM	
						Ver		Ver	
136	EDGE BUNDLE INDEX	yes	edge bundle index	yes		1	permitted	1	prohibit
137	EDGE TYPE	yes	edge type	yes		1	permitted	1	permitted
138	EDGE WIDTH	yes	edge width	yes		1	permitted	1	permitted
139	EDGE COLOUR	partial	edge colour	partial	Color spaces other than RGB are not implemented.	1	permitted	1	permitted
140	EDGE VISIBILITY	yes	edge visibility	yes		1	permitted	1	permitted
141	FILL REFERENCE POINT	yes	fill reference point	yes		1	permitted	1	permitted
142	PATTERN TABLE	yes	pattern table index	yes		1	permitted	1	permitted
			nx	yes					
			ny	yes					
			local colour precision	yes					
			pattern definition	yes					
143	PATTERN SIZE	partial	pattern height vector, x component	partial	This element is not implemented when pattern is specified as parallelogram	1	permitted	1	permitted
			pattern height vector, y component	partial					
			pattern width vector, x component	partial					
			pattern width vector, y component	partial					
144	COLOUR TABLE	partial	starting colour table index	partial	Color spaces other than RGB are not implemented.	1	permitted	1	permitted
			list of direct colour values	yes					
145	ASPECT SOURCE FLAGS	yes	18 parameter-pairs, corresponding to each attribute that may be bundled	yes		1	permitted	1	prohibit
146	PICK IDENTIFIR	no	pick identifier	no		2	permitted	1	prohibit
147	LINE CAP	partial	line cap indicator	partial	This element is not implemented when line cap is specified as a projecting square or diamond.	3	permitted	1	permitted
			dash cap indicator	no					
148	LINE JOIN	yes	line join indicator	yes		3	permitted	1	permitted
149	LINE TYPE COTINUATION	no	continuation mode	no		3	permitted	1	permitted
150	LINE TYPE INITIAL OFFSET	no	line pattern offset	no		3	permitted	1	permitted
151	TEXT SCORE TYPE	no	list of score type	no		3	permitted	1	permitted
152	RESTRICTED TEXT TYPE	yes	restriction type	yes		3	permitted	1	permitted
153	INTERPOLATED INTERIOR	no	style	no		3	permitted	1	permitted
			reference geometry	no					
			number of stages (=m)	no					

No.	Element	Elem cond.	Attribute	Attr cond.	Notes	ISO/IEC 8632		WebCGM	
						Ver		Ver	
153	INTERPOLATED INTERIOR	no	array of m stage designators	no		3	permitted	1	permitted
			array of k colour specifiers: k=3 for triangular, m+1 otherwise	no					
154	EDGE CAP	partial	edge cap indicator	partial	This element is not implemented when edge cap is specified as projecting square or triangle.	3	permitted	1	permitted
			dash cap indicator	no					
155	EDGE JOIN	yes	edge join indicator	yes		3	permitted	1	permitted
156	EDGE TYPE CONTINUATION	no	continuation mode	no		3	permitted	1	permitted
157	EDGE TYPE INITIAL OFFSET	no	edge pattern	no		3	permitted	1	permitted
158	SYMBOL LIBRARY INDEX	no	symbol library index	no		3	prohibit	1	prohibit
159	SYMBOL COLOUR	no	symbol colour	no		3	prohibit	1	prohibit
160	SYMBOL SIZE	no	scale indicator	no		3	prohibit	1	prohibit
			symbol height	no					
			symbol width	no					
161	SYMBOL ORIENTATION	no	up vector x component	no		3	prohibit	1	prohibit
			up vector y component	no					
			base vector x component	no					
			base vector y component	no					

## Escape

No.	Element	Elem cond.	Attribute	Attr cond.	Notes	ISO/IEC 8632		WebCGM	
						Ver		Ver	
162	ESCAPE	no	escape identifier	no		1	permitted	1	permitted
			escape data record	no					

## External

No.	Element	Elem cond.	Attribute	Attr cond.	Notes	ISO/IEC 8632		WebCGM	
						Ver		Ver	
163	MESSAGE	no	action-required flag	no		1	permitted	1	prohibit
			message string	no					
164	APPLICATION DATA	no	identifier	no		1	permitted	1	prohibit
			application data record	no					



## Segment Control and Segment Attribute

No.	Element	Elem cond.	Attribute	Attr cond.	Notes	ISO/IEC 8632		WebCGM	
						Ver		Ver	
165	COPY SEGMENT	no	segment identifier	no		2	permitted	1	prohibit
			transformation matrix	no					
			segment transformation application	no					
166	INHERITANCE FILTER	no	list of attribute or group designators	no		2	permitted	1	prohibit
			setting	no					
167	CLIP INHENTANCE	no	clip inheritance	no		2	permitted	1	prohibit
168	SEGMENT TRANSFORMATION	no	segment identifier	no		2	permitted	1	prohibit
			transformation matrix	no					
169	SEGMENT HIGHLIGHTING	no	segment identifier	no		2	permitted	1	prohibit
			highlighting	no					
170	SEGMENT DISPLAY PRIORITY	no	segment identifier	no		2	permitted	1	prohibit
			segment display priority	no					
171	SEGMENT PICK PRIORITY	no	segment identifier	no		2	permitted	1	prohibit
			segment pick priority	no					

## Application Structure Descriptor

No.	Element	Elem cond.	Attribute	Attr cond.	Notes	ISO/IEC 8632		WebCGM	
						Ver		Ver	
172	APPLICATION STRUCTURE ATTRIBUTE	no	application structure attribute type	no		4	permitted	1	permitted
			data record	no					



## MathML Conformance

**AH Formatter V6.0** enables to draw [Mathematical Markup Language \(MathML\) 2.0 Second Edition](#) defined by W3C utilizing its originally developed engine. For that reason it's possible to draw high resolution images in PDF. See also [Graphics](#) to learn how to utilize MathML.

**AH Formatter V6.0 Lite** ☞ Customers must purchase "AH Formatter MathML Option" to draw MathML originally. See also [Antenna House website](#) for more details.

The below table shows the implemented MathML elements.

- [yes] in the list means that the formatting object or property is implemented.
- [partial] means that the formatting object or property is partially implemented.
- [no] means not implemented.

### General

Element	Current conditions	Comments / Attributes
<math>	yes	xmlns="http://www.w3.org/1998/Math/MathML"

### Presentation / Token Elements

Element	Current conditions	Comments / Attributes
<mi>	yes	
<mn>	yes	
<mo>	yes	
<mtext>	yes	
<mspace>	partial	The linebreak attribute is effective only when the value is "newline". Other values are not processed.
<ms>	yes	
<mglyph>	no	

### Presentation / General Layout

Element	Current conditions	Comments / Attributes
<mrow>	yes	
<mfrac>	yes	
<msqrt>	yes	
<mroot>	yes	
<mstyle>	yes	
<merror>	yes	
<mpadded>	partial	When the size attribute has negative value, the size might not be processed correctly.
<mphantom>	yes	
<mfenced>	yes	
<menclase>	yes	

### Presentation / Scripts and Limits

Element	Current conditions	Comments / Attributes
<msub>	yes	
<msup>	yes	

Element	Current conditions	Comments / Attributes
<msubsup>	yes	
<munder>	yes	
<mover>	yes	
<munderover>	yes	
<mmultiscripts>	yes	

### Presentation / Tables and Matrices

Element	Current conditions	Comments / Attributes
<mtable>	partial	The alignmentscope attribute is not processed correctly.
<mtr>	yes	
<mlabeldtr>	yes	
<mtd>	partial	The rowspan attribute and the colspan attribute are not processed correctly.
<maligngrop>	yes	
<maligngmark>	no	

### Presentation / Dynamic Expressions

Element	Current conditions	Comments / Attributes
<maction>	partial	Supports only actiontype="toggle". When the other attribute value is specified, it will be processed in the same way as actiontype="toggle" selection="1" is specified.

### Content / Token Elements

Element	Current conditions	Comments / Attributes
<cn>	yes	
<ci>	yes	
<csymbol>	yes	

### Content / Basic Content Elements

Element	Current conditions	Comments / Attributes
<apply>	partial	Parentheses might not be displayed correctly due to the operator element and the argument element.
<reln>	yes	
<fn>	yes	
<interval>	yes	
<inverse>	yes	
<condition>	yes	
<declare>	no	
<lambda>	yes	
<compose>	yes	
<ident>	yes	
<domain>	yes	
<codomain>	yes	
<image>	yes	

Element	Current conditions	Comments / Attributes
<domainofapplication>	yes	
<piecewise>	yes	

## Content / Arithmetic, Algebra and Logic

Element	Current conditions	Comments / Attributes
<quotient>	yes	
<factorial>	yes	
<divide>	yes	
<max>	yes	
<min>	yes	
<minus>	yes	
<plus>	yes	
<power>	yes	
<rem>	yes	
<times>	yes	
<root>	yes	
<gcd>	yes	
<and>	yes	
<or>	yes	
<xor>	yes	
<not>	yes	
<implies>	yes	
<forall>	yes	
<exists>	yes	
<abs>	yes	
<conjugate>	yes	
<arg>	yes	
<real>	yes	
<imaginary>	yes	
<lcm>	yes	
<floor>	yes	
<ceiling>	yes	

## Content / Relations

Element	Current conditions	Comments / Attributes
<eq>	yes	
<neq>	yes	
<gt>	yes	
<lt>	yes	
<geq>	yes	
<leq>	yes	

Element	Current conditions	Comments / Attributes
<equivalent>	yes	
<approx>	yes	
<factorof>	yes	

## Content / Calculus and Vector Calculus

Element	Current conditions	Comments / Attributes
<int>	yes	
<diff>	yes	
<partialdiff>	yes	
<lowlimit>	yes	
<uplimit>	yes	
<bvar>	yes	
<degree>	yes	
<divergence>	yes	
<grad>	yes	
<curl>	yes	
<laplacian>	yes	

## Content / Theory of Sets

Element	Current conditions	Comments / Attributes
<set>	yes	
<list>	yes	
<union>	partial	When the element of bvar, domainofapplication, condition, etc., are specified, there may be a case that the method of rendering is unknown.
<intersect>	partial	When the element of bvar, domainofapplication, condition, etc., are specified, there may be a case that the method of rendering is unknown.
<in>	yes	
<notin>	yes	
<subset>	partial	When the element of bvar, domainofapplication, condition, etc., are specified, there may be a case that the method of rendering is unknown.
<prsubset>	partial	When the element of bvar, domainofapplication, condition, etc., are specified, there may be a case that the method of rendering is unknown.
<notsubset>	yes	
<notprsubset>	yes	
<setdiff>	yes	
<card>	yes	
<cartesianproduct>	yes	

## Content / Sequences and Series

Element	Current conditions	Comments / Attributes
<sum>	yes	
<product>	yes	
<limit>	yes	

Element	Current conditions	Comments / Attributes
<tendsto>	yes	

## Content / Elementary Functions

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Element	Current conditions	Comments / Attributes
<exp>	yes	
<ln>	yes	
<log>	yes	
<sin>	yes	
<cos>	yes	
<tan>	yes	
<sec>	yes	
<csc>	yes	
<cot>	yes	
<sinh>	yes	
<cosh>	yes	
<tanh>	yes	
<sech>	yes	
<csch>	yes	
<coth>	yes	
<arcsin>	yes	
<arccos>	yes	
<arctan>	yes	
<arcsec>	yes	
<arccsc>	yes	
<arccot>	yes	
<arcsinh>	yes	
<arccosh>	yes	
<arctanh>	yes	
<arcsech>	yes	
<arccsch>	yes	
<arccoth>	yes	

## Content / Statistics

---

Element	Current conditions	Comments / Attributes
<mean>	yes	
<sdev>	yes	
<variance>	yes	
<median>	yes	
<mode>	yes	
<moment>	yes	
<momentabout>	yes	

**Content / Linear Algebra**

Element	Current conditions	Comments / Attributes
<vector>	yes	
<matrix>	yes	
<matrixrow>	yes	
<determinant>	yes	
<transpose>	yes	
<selector>	yes	
<vectorproduct>	yes	
<acalarproduct>	yes	
<outerproduct>	yes	

**Content / Semantic Mapping Elements**

Element	Current conditions	Comments / Attributes
<semantics>	yes	
<annotation>	no	
<annotation-xml>	no	

**Content / Constants and Symbol Elements**

Element	Current conditions	Comments / Attributes
<integers>	yes	
<reals>	yes	
<rational>	yes	
<naturalnumbers>	yes	
<complexes>	yes	
<primes>	yes	
<exponentiale>	yes	
<imaginaryi>	yes	
<notanumber>	yes	
<>true>	yes	
<>false>	yes	
<emptyset>	yes	
<pi>	yes	
<eulergamma>	yes	
<infinity>	yes	

**Restrictions**

- The id attribute, the xref attribute, the class attribute and the style attribute specified in the stylesheet are not processed.
- The arrow, etc. might not be able to be extended in the place which should be extended according to the position to be used.
- The mathematical check is not done. Also if there is a difference in the number of arguments, an error doesn't occur by allocating as much as possible.







# Hyphenation

AH Formatter V6.0 can hyphenate over 40 languages. There is no need to prepare the dictionary.

## Languages

AH Formatter V6.0 supports the hyphenation for the following languages.

Code		Language	Hyphenation Limited To
af	afr	Afrikaans	Latin characters and Apostrophe
bg	bul	Bulgarian	Cyrillic characters
ca	cat	Catalan	Latin characters and Apostrophe and Decimal point (Full stop or Middle dot)
cs	ces	Czech	Latin characters
cy	cym	Welsh	Latin characters and Apostrophe
da	dan	Danish	Latin characters and Apostrophe
de	deu	German / Swiss German	Latin characters and Apostrophe
el	ell	Greek	Greek characters
en	eng	English	Latin characters and Apostrophe
en-US	eng-US	American	Latin characters and Apostrophe
eo	epo	Esperanto	Latin characters
es	spa	Spanish	Latin characters
et	est	Estonian	Latin characters
eu	eus	Basque	Latin characters
fi	fin	Finnish	Latin characters
fr	fra	French / Canadian French	Latin characters and Apostrophe
ga	gle	Irish (Erse or Gaelic)	Latin characters and Apostrophe
hr	hrv	Croatian	Cyrillic characters or Latin characters
hu	hun	Hungarian	Latin characters
id	ind	Indonesian	Latin characters and Apostrophe and Digit 2
is	isl	Icelandic	Latin characters
it	ita	Italian	Latin characters and Apostrophe
la	lat	Latin	Latin characters
lt	lit	Lithuanian	Latin characters
lv	lav	Latvian	Latin characters
ms	msa	Bahasa Malay	Latin characters and Apostrophe and Digit 2
mt	mlt	Maltese	Latin characters and Apostrophe
nl	nld	Dutch / Flemish	Latin characters and Apostrophe
no	nor	Norwegian	Latin characters and Apostrophe
pl	pol	Polish	Latin characters
pt	por	Portuguese / Brazilian	Latin characters
ro	ron	Romanian / Moldavian	Latin characters and Apostrophe
ru	rus	Russian	Cyrillic characters
sk	slk	Slovak	Latin characters and Apostrophe
sl	slv	Slovenian	Latin characters and Apostrophe

Code		Language	Hyphenation Limited To
sr	srp	Serbian	Cyrillic characters or Latin characters
sv	swe	Swedish	Latin characters and Apostrophe
sw	swa	Swahili	Latin characters and Apostrophe
th	tha	Thai	Thai characters
tr	tur	Turkish	Latin characters
uk	ukr	Ukrainian	Cyrillic characters

**AH Formatter V6.0** hyphenates a word considering the character string composed of characters listed in the table above to be a word. If a word contains the other characters, it is not considered to be a word. If you need hyphenation for unsupported characters you will need to use a [TeX dictionary](#).

## Example

To use Czech hyphenation the following is placed in the fo file:

```
<fo:block hyphenate="true" language="ces">
Všichni lidé rodí se svobodní a sobě rovní co do důstojnosti a práv. Jsou nadáni rozumem a
svědomím a mají spolu jednat v duchu bratrství.
</fo:block>
```

## Exception Dictionary

It's not necessary to prepare the dictionary with **AH Formatter V6.0**. However, there may be a case that you want to treat the unexpected hyphenated words as exceptions. In such case, it is possible to register the words in the exception dictionary.

The exception dictionary is stored in the `hyphenation` folder in the **AH Formatter V6.0** installation folder or in the folder where the ( for 64bit version) environment variable indicates. The name of the dictionary file conforms to the following rules, which is same as [TeX dictionary](#).

- The file name is made from the Language Tag defined in [RFC1766](#). To make a file name a hyphen is changed to an under bar and the ".xml" extension is added. The Language Tag is made by joining the language code of [ISO 639-2](#) and the country code of ISO 3166 with a hyphen. Sometimes it consists of only the language code. Please be sure that an under bar used in the file name and not a hyphen.
- The language code should be specified by 2-letter code when it exists, and if not, specify it by Terminology code. Also specify the country code by 2-letter code when it exists.

For example: de.xml, en\_US.xml and so on. When `xml:lang="nl-BE"` is specified, dictionaries are detected in the following order.

1. nl-BE.xml
2. nl\_BE.xml
3. nl.xml

The following shows the content of exception dictionary.

Element	Location	Description
<hyphenation-info>	root element	
<hyphen-char>	child of <hyphenation-info>	The element that indicates the hyphenation character alternative to <hyphen/> in the exception element. Hyphenation character is expressed by the value attribute. The initial value is "-" (U+002D).
<exceptions>	child of <hyphenation-info>	A data of exception dictionary. The text of the exception element is a collection of hyphenated words divided by white space. The hyphen information is indicated by the hyphen element, however the character specified by the hyphen-char element can also be used.
<hyphen>	child of <exceptions>	A full functional hyphen equivalent to TeX's \discretionary. Hyphen element has the pre, post and no attributes. The pre attribute indicates the strings inserted before the hyphenation character when a hyphenation break occurs, The post attribute indicates the strings inserted after the hyphenation character when a hyphenation break occurs, the no attribute indicates the strings appearing when a hyphenation break does not occur. Hyphen element is used when the spelling changes when a hyphenation break occurs.

Element	Location	Description
<non-eol-words>	child of <hyphenation-info>	Specifies non-end-of-line words by dividing with white space. The word specified here is adjusted not to placed at the end of line, however in some case it's inevitable. The non-end-of-line process is effective all the time, independent of the hyphenate property in FO.

The DTD of Exception Dictionary is simple as follows:

```
<!ELEMENT hyphenation-info (hyphen-char?, exceptions?, non-eol-words?) >

<!ELEMENT hyphen-char EMPTY >
<!ATTLIST hyphen-char value CDATA #REQUIRED >

<!ELEMENT exceptions (#PCDATA|hyphen)* >

<!ELEMENT hyphen EMPTY >
<!ATTLIST hyphen pre CDATA #IMPLIED >
<!ATTLIST hyphen no CDATA #IMPLIED >
<!ATTLIST hyphen post CDATA #IMPLIED >

<!ELEMENT non-eol-words #PCDATA >
```

Suppose the following exception dictionary is prepared.

```
<hyphenation-info>
<exceptions>
ta-ble
present
ba<hyphen pre="k" no="c"/>ken
</exceptions>
</hyphenation-info>
```

The word table has a possibility of being hyphenated only as ta-ble, the word present never be hyphenated. The word backen is hyphenated as bak-ken. And ta<hyphen/>ble is quite equivalent for ta-ble in this example.

Possible to specify the hyphenation by the hyphen element that change the spelling of the word.

Settings for Exception Dictionary	Word	Hyphenation
ab<hyphen/>def	abdef	ab-def
ab<hyphen no="c"/>def	abcdef	ab-def
ab<hyphen pre="x"/>def	abdef	abx-def
ab<hyphen pre="x" no="c"/>def	abcdef	abx-def
ab<hyphen post="z"/>def	abdef	ab-zdef
ab<hyphen no="c" post="z"/>def	abcdef	ab-zdef
ab<hyphen pre="x" post="z"/>def	abdef	abx-zdef
ab<hyphen pre="x" no="c" post="z"/>def	abcdef	abx-zdef

## TeX Dictionary

It's also available to do hyphenate using the TeX dictionary with **AH Formatter V6.0**. To hyphenate by TeX dictionary, it's necessary to specify `HyphenationOption="false"` in the [Option Setting File](#). Dictionaries will be required for all the necessary languages. Dictionaries are XML files that are the same format as FOP. See also the [Apache Website](#). Only the hyphenation dictionary for English (en.xml) is ready and provided with XSL Formatter V4.0.

## Dictionary Name and Location

Hyphenation Dictionaries are stored in the "hyphenation" folder where **AH Formatter V6.0** is installed. The file name of Hyphenation Dictionary follows the rules shown below.

- The file name is made from the Language Tag defined in [RFC1766](#). To make a file name a hyphen is changed to an under bar and the ".xml" extension is added. The Language Tag is made by joining the 2 letter language code of [ISO 639-2](#) and the country code of ISO 3166 with a hyphen. Sometimes it consists of only the language code. Please be sure that an under bar used in the file name and not a hyphen.

For example : de.xml, en\_GB.xml The 3 letter language code in FO is converted to the 2 letter language code automatically. When the country code is also specified in the language setting as below, first the hyphenation dictionary en\_GB.xml is detected, then if it's not found, the hyphenation dictionary en.xml is detected. In this case the country code is ignored.

```
<fo:block hyphenate="true" xml:lang="en-GB">
```

## Contents of Hyphenation Dictionary

The contents of Hyphenation Dictionary are defined in the `hyphenation.dtd`. `hyphenation.dtd` is included in FOP distribution. In **AH Formatter V6.0**, it is installed in the `hyphenation` folder where **AH Formatter V6.0** is installed. Below is a brief explanation of the DTD. Refer to `hyphenation.dtd` for more details.

Element	Location	Description
<code>&lt;hyphenation-info&gt;</code>	root element	
<code>&lt;hyphen-char&gt;</code>	child of <code>&lt;hyphenation-info&gt;</code>	This element expresses hyphenation characters in the exception dictionary data. Hyphenation character is expressed by the value attribute. Initial value is "-" (U+002D). But the hyphenation characters in the actual formatted result are given by the hyphenation-character property in the XSL specification.
<code>&lt;hyphen-min&gt;</code>	child of <code>&lt;hyphenation-info&gt;</code>	When hyphenation break occurs, before and after attributes give the minimum number of characters in a hyphenated word before or after the hyphenation character. Before attribute is mapped to XSL hyphenation-remain-character-count property, after is mapped to XSL hyphenation-push-character-count. <b>AH Formatter V6.0</b> uses these properties and the hyphen-min element in the dictionary is ignored.
<code>&lt;classes&gt;</code>	child of <code>&lt;hyphenation-info&gt;</code>	Defined as character equivalent class. Text of classes' element is white space-separated list of character groups, all characters in a group are to be treated equivalent. Actually each group consists of lowercase and uppercase characters. Following is a sample of English dictionary (en.xml).  <pre>aA bB cC dD eE fF gG hH iI jJ kK lL mM nN oO pP qQ rR sS tT uU vV wW xX yY zZ</pre>
<code>&lt;pattern&gt;</code>	child of <code>&lt;hyphenation-info&gt;</code>	The hyphenation patterns, space separated. A pattern consists of character and digits. Character is the beginning characters of classes groups. (normally lowercase). Digits between characters indicate the strength of hyphenation potential (hyphenation value).
<code>&lt;exceptions&gt;</code>	child of <code>&lt;hyphenation-info&gt;</code>	Data of hyphenation exception dictionary. Text of exceptions element consists of space-separated list of hyphenated words. A hyphen is indicated by the hyphen element, but you can use character defined in hyphen-char element. Exceptions element is used when hyphenation points determined by hyphenation-pattern dictionary are not appropriate or you want to use special hyphenation patterns of your own.
<code>&lt;hyphen&gt;</code>	child of <code>&lt;exceptions&gt;</code>	A full functional hyphen equivalent to TeX's <code>\discretionary</code> . Hyphen element has the pre, post and no attributes. The pre attribute indicates the strings inserted before the hyphenation character when a hyphenation break occurs, The post attribute indicates the strings inserted after the hyphenation character when a hyphenation break occurs, the no attribute indicates the strings appearing when a hyphenation break does not occur. Hyphen element is used when the spelling changes when a hyphenation break occurs.

## Restrictions

If the sentence is placed in the narrow region and there occurs plural hyphenation for one word, sometimes the result does not follow the exception dictionary.



# PANTONE® Option

By using AH Formatter PANTONE® Option, the name of color listed in Color Names can be specified to the `rgb-icc()` function. For example, specify as follows in FO:



```
rgb-icc(#Separation, 'PANTONE 131 PC')
rgb-icc(#Separation, 'PANTONE Reflex Blue U')
```

The inc type can be specified to PC or U that comes after the color name by either of the following.

<b>C</b>	Solid coated	RGB
<b>U</b>	Solid uncoated	
<b>M</b>	Solid matte	
<b>PC</b>	Process coated	CMYK
<b>EC</b>	Euro coated	

Specified color names and other alphabets are case insensitive.

## Color Names

PANTONE Color				
Black	Black 2	Black 3	Black 4	Black 5
Black 6	Black 7			
Cool Gray 1	Cool Gray 2	Cool Gray 3	Cool Gray 4	Cool Gray 5
Cool Gray 6	Cool Gray 7	Cool Gray 8	Cool Gray 9	Cool Gray 10
Cool Gray 11				
Warm Gray 1	Warm Gray 2	Warm Gray 3	Warm Gray 4	Warm Gray 5
Warm Gray 6	Warm Gray 7	Warm Gray 8	Warm Gray 9	Warm Gray 10
Warm Gray 11				
Blue 072	Reflex Blue			
Green				
Orange 021				
Purple				
Red 032	Rhodamine Red	Rubine Red	Warm Red	
Violet				
Yellow	Yellow 012			
Process Black	Process Blue	Process Cyan	Process Magenta	Process Yellow
HEXACHROME Black	HEXACHROME Cyan	HEXACHROME Green	HEXACHROME Magenta	HEXACHROME Orange
HEXACHROME Yellow				
100	101	102	103	104
105	106	107	108	109
110	111	112	113	114
115	116	117	118	119
120	121	122	123	124
125	126	127	128	129
130	131	132	133	134
135	136	137	138	139

PANTONE Color				
140	141	142	143	144
145	146	147	148	149
150	151	152	153	154
155	156	157	158	159
160	161	162	163	164
165	166	167	168	169
170	171	172	173	174
175	176	177	178	179
180	181	182	183	184
185	186	187	188	189
190	191	192	193	194
195	196	197	198	199
200	201	202	203	204
205	206	207	208	209
210	211	212	213	214
215	216	217	218	219
220	221	222	223	224
225	226	227	228	229
230	231	232	233	234
235	236	237	238	239
240	241	242	243	244
245	246	247	248	249
250	251	252	253	254
255	256	257	258	259
260	261	262	263	264
265	266	267	268	269
270	271	272	273	274
275	276	277	278	279
280	281	282	283	284
285	286	287	288	289
290	291	292	293	294
295	296	297	298	299
300	301	302	303	304
305	306	307	308	309
310	311	312	313	314
315	316	317	318	319
320	321	322	323	324
325	326	327	328	329
330	331	332	333	334
335	336	337	338	339
340	341	342	343	344
345	346	347	348	349



PANTONE Color				
350	351	352	353	354
355	356	357	358	359
360	361	362	363	364
365	366	367	368	369
370	371	372	373	374
375	376	377	378	379
380	381	382	383	384
385	386	387	388	389
390	391	392	393	394
395	396	397	398	399
400	401	402	403	404
405	406	407	408	409
410	411	412	413	414
415	416	417	418	419
420	421	422	423	424
425	426	427	428	429
430	431	432	433	434
435	436	437	438	439
440	441	442	443	444
445	446	447	448	449
450	451	452	453	454
455	456	457	458	459
460	461	462	463	464
465	466	467	468	469
470	471	472	473	474
475	476	477	478	479
480	481	482	483	484
485	486	487	488	489
490	491	492	493	494
495	496	497	498	499
500	501	502	503	504
505	506	507	508	509
510	511	512	513	514
515	516	517	518	519
520	521	522	523	524
525	526	527	528	529
530	531	532	533	534
535	536	537	538	539
540	541	542	543	544
545	546	547	548	549
550	551	552	553	554
555	556	557	558	559

PANTONE Color				
560	561	562	563	564
565	566	567	568	569
570	571	572	573	574
575	576	577	578	579
580	581	582	583	584
585	586	587	600	601
602	603	604	605	606
607	608	609	610	611
612	613	614	615	616
617	618	619	620	621
622	623	624	625	626
627	628	629	630	631
632	633	634	635	636
637	638	639	640	641
642	643	644	645	646
647	648	649	650	651
652	653	654	655	656
657	658	659	660	661
662	663	664	665	666
667	668	669	670	671
672	673	674	675	676
677	678	679	680	681
682	683	684	685	686
687	688	689	690	691
692	693	694	695	696
697	698	699	700	701
702	703	704	705	706
707	708	709	710	711
712	713	714	715	716
717	718	719	720	721
722	723	724	725	726
727	728	729	730	731
732	801	802	803	804
805	806	807	808	809
810	811	812	813	814
871	872	873	874	875
876	877	1205	1215	1225
1235	1245	1255	1265	1345
1355	1365	1375	1385	1395
1405	1485	1495	1505	1525
1535	1545	1555	1565	1575
1585	1595	1605	1615	1625

PANTONE Color				
1635	1645	1655	1665	1675
1685	1765	1767	1775	1777
1785	1787	1788	1795	1797
1805	1807	1815	1817	1895
1905	1915	1925	1935	1945
1955	2365	2375	2385	2395
2405	2415	2425	2562	2563
2567	2572	2573	2577	2582
2583	2587	2592	2593	2597
2602	2603	2607	2612	2613
2617	2622	2623	2627	2635
2645	2655	2665	2685	2695
2705	2706	2707	2708	2715
2716	2717	2718	2725	2726
2727	2728	2735	2736	2738
2745	2746	2747	2748	2755
2756	2757	2758	2765	2766
2767	2768	2905	2915	2925
2935	2945	2955	2965	2975
2985	2995	3005	3015	3025
3035	3105	3115	3125	3135
3145	3155	3165	3242	3245
3248	3252	3255	3258	3262
3265	3268	3272	3275	3278
3282	3285	3288	3292	3295
3298	3302	3305	3308	3375
3385	3395	3405	3415	3425
3435	3935	3945	3955	3965
3975	3985	3995	4485	4495
4505	4515	4525	4535	4545
4625	4635	4645	4655	4665
4675	4685	4695	4705	4715
4725	4735	4745	4755	4975
4985	4995	5005	5015	5025
5035	5115	5125	5135	5145
5155	5165	5175	5185	5195
5205	5215	5225	5235	5245
5255	5265	5275	5285	5295
5305	5315	5395	5405	5415
5425	5435	5445	5455	5463
5467	5473	5477	5483	5487
5493	5497	5503	5507	5513

PANTONE Color				
5517	5523	5527	5535	5545
5555	5565	5575	5585	5595
5605	5615	5625	5635	5645
5655	5665	5743	5747	5753
5757	5763	5767	5773	5777
5783	5787	5793	5797	5803
5807	5815	5825	5835	5845
5855	5865	5875	7401	7402
7403	7404	7405	7406	7407
7408	7409	7410	7411	7412
7413	7414	7415	7416	7417
7418	7419	7420	7421	7422
7423	7424	7425	7426	7427
7428	7429	7430	7431	7432
7433	7434	7435	7436	7437
7438	7439	7440	7441	7442
7443	7444	7445	7446	7447
7448	7449	7450	7451	7452
7453	7454	7455	7456	7457
7458	7459	7460	7461	7462
7463	7464	7465	7466	7467
7468	7469	7470	7471	7472
7473	7474	7475	7476	7477
7478	7479	7480	7481	7482
7483	7484	7485	7486	7487
7488	7489	7490	7491	7492
7493	7494	7495	7496	7497
7498	7499	7500	7501	7502
7503	7504	7505	7506	7507
7508	7509	7510	7511	7512
7513	7514	7515	7516	7517
7518	7519	7520	7521	7522
7523	7524	7525	7526	7527
7528	7529	7530	7531	7532
7533	7534	7535	7536	7537
7538	7539	7540	7541	7542
7543	7544	7545	7546	7547
8003	8021	8062	8100	8201
8281	8321			



## Barcode Generator Option

Barcode Generator Option enables you to embed barcodes directly in the document as images. Barcode fonts are not necessary. Customers must purchase "AH Formatter AH Formatter Barcode Generator Option" to generate Barcodes. See also [Antenna House website](#) for more details.

Barcode Generator Option supports the following barcode formats.

- [QR / MicroQR](#)
- [Japan Post Customer Barcode](#)
- [Intelligent Mail® Barcode](#)
- [POSTNET](#)
- [EAN / JAN](#)
- [UPC \(UPC-A, UPC-E\)](#)
- [Interleaved 2of5 \(ITF\)](#)
- [Codabar / NW-7](#)
- [Code 39](#)
- [Code 128](#)
- [GS1-128 / EAN-128](#)

The barcode can be specified by using `data: scheme` as follows;

```
<fo:external-graphic src="data:application/vnd.ah-barcode;type=QR;scale=2,Hello%20World!"/>
```

`application/vnd.ah-barcode` is a special media type of its own use. The barcode content you want to output can be specified directly as strings as shown above. Note that at this time, an improper character as URI should be expressed by the % encode. You can also specify it with base64.

```
<fo:external-graphic src="data:application/vnd.ah-barcode;type=QR;base64,PD94bWwgdmVyc2lv..."/>
```

The barcode output is controlled by the parameter of the media type. The parameter is not case-sensitive. The type parameter is indispensable and indicates the types of the barcode to output.

The barcode is always enforced by `axf:image-smoothing="false"`.

**CAUTION:** The specification of the barcode is not dwelled in this document. Please refer to the specification of the associated barcode.

**CAUTION:** Barcode Generator Option is an another option and different from the old Barcode Option that utilizes the barcode font.

### QR / MicroQR

QR codes comply with the international standard of ISO/IEC 18004:2006. Barcode Generator Option only supports QR Model2, does not support Model1. The following parameters can be specified.



Parameter	Value		Default value	Contents
type	QR	MicroQR	Required	
ver	auto 1 to 40	auto 1 to 4	auto	Version
ecl	auto L M Q H		auto	Error correction level
enc	auto N A B K		auto	Encoding auto Equivalent to NABK N Numbers 0123456789 A Alphanumeric 0123456789ABCDEFGHIJKLMNPOQRSTUVWXYZ\$%*+-./: space B Bytes K Kanji Shift JIS

Parameter	Value		Default value	Contents
mpr	auto 0 to 7	auto 0 to 3	auto	Mask pattern reference
out	svg png		png	Output formats
dpi	Non-negative numbers		0	The png image resolution. (0, if nothing specified)
scale	Positive numbers		1	Output size in module unit
charset	Arbitrary character strings		UTF-8	Encoding by the direct character string specification

Multiple values can be specified to enc excluding auto. For instance, suppose enc=NAB is specified, these three are mixed and outputted appropriately. If failed to output with the specified encoding, an error will be generated.

Some sort of masking is given to QR so that a monochrome pattern may become even as much as possible. The mpr specification by the mask pattern reference enforces this processing to one particular pattern. It may be less uniformity than the pattern automatically selected, but it doesn't mean the wrong QR.

The dpi specification for image resolution is effective only with png and the value of a real number can be specified. The unit should not be included.

Values that can be specified to scale, the output size in module unit, differ between svg and png.

- svg  
The positive real number with a unit can be specified. 0 or less cannot be specified. Enter a value and choose a unit option (em, ex, px, pt, pc, and in, cm or mm.) If the unit is omitted, it is considered as px.
- png  
The integral value greater than or equal to 1 can be specified. The unit should not be included. When the value of a real number is specified, below the decimal point will be dropped.

The charset specification indicates the encoding outputted to QR when the character string is specified directly and it's not base64. This setting is applied when kanji (Chinese character) is not specified to the encoding or specified kanji (Chinese character) is not converted into Shift JIS. The data specified by base64 is outputted as is with no conversion.

## Customer Barcode

The customer barcode indicates Japan Post Customer Barcode or Intelligent Mail® Barcode, etc. The following parameters can be specified.

Parameter	Value	Default Value	Contents
type	JPCBC	Required	Japan Post Customer Barcode
	IMBC		Intelligent Mail® Barcode
	POSTNET		
l	Positive numbers	Described later	Length of long bar/full bar
t	Positive numbers	Described later	Length of timing bar/tracker bar
h	Positive numbers	Described later	Length of half bar (POSTNET only)
w	Positive numbers	Described later	Width of bar
p	Positive numbers	Described later	Pitch of bar
hsp	Non-negative numbers	Described later	Horizontal margin
vsp	Non-negative numbers	Described later	Vertical margin
out	svg png	svg	Output format
dpi	Positive numbers	384	png image resolution

The length and width of the bar, and the margin, etc should be the values with units. Enter a value and choose a unit option (pt, pc, in, cm or mm.) The default values are as follows;

Parameters	JPCBC	IMBC	POSTNET
l	3.6mm	0.15in	0.125in

Parameters	JPCBC	IMBC	POSTNET
t	1.2mm	0.05in	
h			0.05in
w	0.6mm	0.02in	0.02in
p	1.2mm	0.045in	0.0416in
hsp	2.0mm	0.125in	0
vsp	2.0mm	0.028in	0

When outputting png, the length and the width of the bar are rounded to the number of pixels by the dpi specification. Therefore, the output may differ slightly from the specified length. When a low resolution is specified, the barcode may not be correctly read.

The dpi specification for image resolution is effective only with png and the value of a real number can be specified. The unit should not be included.

### Japan Post Customer Barcode

Japan Post Customer Barcode can be specified by the JPCBC value and the following characters can be specified. The first seven characters indicates the ZIP code. Then the numbers that show postal address will follow afterwards. If the postal address numbers indicates greater than 13 characters, by counting 2 alphabets as 1 character, then the latter parts greater than 13 characters will be discarded. Lower case will be converted into upper case.

0123456789ABCDEFGHIJKLMNPOQRSTUVWXYZ-

### Intelligent Mail® Barcode

Intelligent Mail® Barcode can be specified by the IMBC value and only numbers with the determined digit numbers can be specified. The allowed digit numbers are 20, 25, 29 or 31. In addition, the second digit must be 0 to 4.

### POSTNET

Only numbers with the determined digit numbers can be specified to POSTNET. The allowed digit numbers are 5, 9, or 11.

### Linear Barcode

Linear barcodes indicate 1 dimensional barcodes. The following parameters can be specified.

Parameter	Value	Default value	Contents
type	EAN JAN	Required	
	UPC		UPC-A, UPC-E
	ITF		Interleaved 2of5
	Codabar NW-7		
	Code39		
	Code128		
	GS1-128 EAN-128		
w	Positive numbers	0.33mm	Width of thin bar
r	Positive numbers	2.5	Width ratio between thin and wide bars It's not used with EAN JAN UPC Code128 GS1-128 EAN-128
h	Positive numbers	22.86mm	Width of bar
qz	Non-negative numbers	10	Specifies the horizontal margin (quiet zone) by the number of thin bars.
scale	Positive numbers	1	Display magnification
out	svg png	svg	Output format
dpi	Positive numbers	384	png image resolution
text	none	none	Specifies how the text of an original code is displayed under the barcode.
	auto		



Parameter	Value	Default value	Contents
text	center	none	Specifies how the text of an original code is displayed under the barcode.
	justify		

The length and width of the bar, and the margin, etc should be the values with units. Enter a value and choose a unit option (pt, pc, in, cm or mm.)

When outputting png, the length and the width of the bar are rounded to the number of pixels by the dpi specification. Therefore, the output may differ slightly from the specified length. When a low resolution is specified, the barcode may not be correctly read.

The dpi specification for image resolution is effective only with png and the value of a real number can be specified. The unit should not be included.

You can display the text of an original code under the barcode by specifying values to text. Only the typical display format can be specified. This is effective only with SVG output. Specify the font you want to use by `barcode-text-font` in [Option Setting File](#).

- none  
Does not display text.
- auto  
With JAN/EAN/UPC, the standard output, like drawing out a part of bar and pushing the beginning character toward left, will be performed. With other than JAN/EAN/UPC, it is treated as center.
- center  
Displays centered text.
- justify  
Displays justified text by fitting the right and left edge of the text on the width of the barcode.

## EAN / JAN

EAN complies with the international standard of ISO/IEC 15420:2009. JAN is the same as EAN. In EAN/JAN, the allowed digit numbers are 13 or 8 only by the figure. The last digit is the check digit. It is acceptable to input 12 digits or 7 digits excluding the check digit. When 13 digits or 8 digits are given, the last digit will be ignored, calculated and replaced correctly when outputted.

## UPC

In UPC, the allowed digit numbers are 12 or 8 only by the figure. 12 digits are UPC-A, and eight digits are UPC-E. In UPC-E, the first digit must be 0 or 1. The last digit is the check digit. It is acceptable to input 11 digits or 7 digits excluding the check digit. When 12 digits or 8 digits are given, the last digit will be ignored, calculated and replaced correctly when outputted. UPC-D is not supported.

## Interleaved 2of5

Interleaved 2of5 complies with the international standard of ISO/IEC 16390:2007. Interleaved 2of5 can be specified with ITF. In ITF, only the figure in the even number digit can be specified.

## Codabar / NW-7

In Codabar/NW-7, the beginning of a string must be one of ABCD. The end character must be one of ABCD or TN\*E. The character in the middle can be specified from the followings in any arbitrary digit. The lower case of the beginning and end of English letters will be converted into the upper case.

0123456789-\$/:.+

You can specify whether to add the check digit or not. When the check digit is added, there may be a limit on characters that can be used.

Parameter	Value	Default value	Contents	Limitations
cd	none	none	None	
	m10w2		Modulus 10 weight 2	Only figures available except for the beginning and end of characters.
	m10w2r		Modulus 10 weight 2 runes	Only figures available except for the beginning and end of characters.
	m10w3		Modulus 10 weight 3	Only figures available except for the beginning and end of characters.

Parameter	Value	Default value	Contents	Limitations
cd	m11	none	Modulus 11	Only figures with greater than or equal to 6 digits available except for the beginning and end of characters.
	wm11		Weight modulus 11	Only figures with less or equal to 12 digits available except for the beginning and end of characters.
	m16		Modulus 16	
	7dr 7dsr		7 check DR/DSR	Only figures available except for the beginning and end of characters.
	9dr 9dsr		9 check DR/DSR	Only figures available except for the beginning and end of characters.

### Code39

Code39 complies with the international standard of ISO/IEC 16388:2007. In Code39, the following characters can be specified in any arbitrary digit. The lower case of the beginning and end of English letters will be converted into the upper case.

0123456789ABCDEFGHIJKLMNPOQRSTUVWXYZ- . \$ / + % space

You can specify whether to add the check digit or not.

Parameter	Value	Default value	Contents
cd	none	m43	None
	m43		Modulus 43

### Code128

Code128 complies with the international standard of ISO/IEC 15417:2007. In Code128, three types of code sets, CODE-A, CODE-B, and CODE-C can be specified by parameters.

Parameter	Value	Default value
code	A B C	B

In Code128, any arbitrary characters of U+0000 to U+007F can be expressed. Among these, U+0000 to U+001F, U+007F, and the control code will be substituted by another codes.

Input character	CODE-A	CODE-B	CODE-C
U+0020	SPACE	SPACE	N/A
U+0021	!	!	N/A
U+0022	"	"	N/A
U+0023	#	#	N/A
U+0024	\$	\$	N/A
U+0025	%	%	N/A
U+0026	&	&	N/A
U+0027	'	'	N/A
U+0028	(	(	N/A
U+0029	)	)	N/A
U+002A	*	*	N/A
U+002B	+	+	N/A
U+002C	,	,	N/A
U+002D	-	-	N/A
U+002E	.	.	N/A

Input character	CODE-A	CODE-B	CODE-C
U+0040	@	@	N/A
U+0041	A	A	N/A
U+0042	B	B	N/A
U+0043	C	C	N/A
U+0044	D	D	N/A
U+0045	E	E	N/A
U+0046	F	F	N/A
U+0047	G	G	N/A
U+0048	H	H	N/A
U+0049	I	I	N/A
U+004A	J	J	N/A
U+004B	K	K	N/A
U+004C	L	L	N/A
U+004D	M	M	N/A
U+004E	N	N	N/A

Input character	CODE-A	CODE-B	CODE-C
U+0060	U+0000	`	N/A
U+0061	U+0001	a	N/A
U+0062	U+0002	b	N/A
U+0063	U+0003	c	N/A
U+0064	U+0004	d	N/A
U+0065	U+0005	e	N/A
U+0066	U+0006	f	N/A
U+0067	U+0007	g	N/A
U+0068	U+0008	h	N/A
U+0069	U+0009	i	N/A
U+006A	U+000A	j	N/A
U+006B	U+000B	k	N/A
U+006C	U+000C	l	N/A
U+006D	U+000D	m	N/A
U+006E	U+000E	n	N/A

Input character	CODE-A	CODE-B	CODE-C
U+002F	/	/	N/A
U+0030	0	0	0
U+0031	1	1	1
U+0032	2	2	2
U+0033	3	3	3
U+0034	4	4	4
U+0035	5	5	5
U+0036	6	6	6
U+0037	7	7	7
U+0038	8	8	8
U+0039	9	9	9
U+003A	:	:	N/A
U+003B	;	;	N/A
U+003C	<	<	N/A
U+003D	=	=	N/A
U+003E	>	>	N/A
U+003F	?	?	N/A

Input character	CODE-A	CODE-B	CODE-C
U+004F	O	O	N/A
U+0050	P	P	N/A
U+0051	Q	Q	N/A
U+0052	R	R	N/A
U+0053	S	S	N/A
U+0054	T	T	N/A
U+0055	U	U	N/A
U+0056	V	V	N/A
U+0057	W	W	N/A
U+0058	X	X	N/A
U+0059	Y	Y	N/A
U+005A	Z	Z	N/A
U+005B	[	[	N/A
U+005C	\	\	N/A
U+005D	]	]	N/A
U+005E	^	^	N/A
U+005F	_	_	N/A

Input character	CODE-A	CODE-B	CODE-C
U+006F	U+000F	o	N/A
U+0070	U+0010	p	N/A
U+0071	U+0011	q	N/A
U+0072	U+0012	r	N/A
U+0073	U+0013	s	N/A
U+0074	U+0014	t	N/A
U+0075	U+0015	u	N/A
U+0076	U+0016	v	N/A
U+0077	U+0017	w	N/A
U+0078	U+0018	x	N/A
U+0079	U+0019	y	N/A
U+007A	U+001A	z	N/A
U+007B	U+001B	{	N/A
U+007C	U+001C		N/A
U+007D	U+001D	}	N/A
U+007E	U+001E	~	N/A
U+00BF	U+001F	U+007F	N/A
U+00C0	FNC3	FNC3	N/A
U+00C1	FNC2	FNC2	N/A
U+00C2	SHIFT	SHIFT	N/A
U+00C3	CODE-C	CODE-C	N/A
U+00C4	CODE-B	FNC4	CODE-B
U+00C5	FNC4	CODE-A	CODE-A
U+00C6	FNC1	FNC1	FNC1

The following characters are available to input.

<b>CODE-A</b>	U+0020 to U+007E, U+00BF to U+00C6
<b>CODE-B</b>	U+0020 to U+007E, U+00BF to U+00C6
<b>CODE-C</b>	Figures with even number digits, U+00C4 to U+00C6

## GS1-128 / EAN-128

GS1-128/EAN-128 is Code128 with some kind of restriction. Barcode Generator Option will check the following points (or may not). The restrictions other than these are the same as Code128.

- It is necessary to start with FNC1.
- Characters that can be used excluding the control code are as follows. (white space is not included.)  
!"%&'()\*+,-./0123456789:;<=>?  
ABCDEFGHIJKLMNOPQRSTUVWXYZ\_  
abcdefghijklmnopqrstuvwxyz
- FNC2 and FNC4 cannot be used.
- Recognizes the already-known application identifier (AI) and check the number of characters. Does not check the character format.
- Does not check FNC1 in case of the fixed length even if is a necessary format.

The following shows the already registered AI. If you want to change the format or AI is not listed here, It is available to add changes in [Option Setting File](#). The last digit of AI, \* shows any arbitrary figures. For instance, 310\* indicates 3100 to 3109. Format has the following meanings. The last F of the format shows that FNC1 is required.

- n3 : 3-digit numbers
- x3 : 3-digit arbitrary characters
- n-10 : Numbers with greater than or equal to 1 and less than or equal to 10 digits.
- x3-10 : Arbitrary characters with greater than or equal to 3 and less than or equal to 10 digits.

AI	format
00	n18
01	n14
02	n14
03	n14
04	n16
10	x-20 F
11	n6
12	n6
13	n6
14	n6
15	n6
16	n6
17	n6
18	n6
19	n6
20	n2
21	x-20 F
22	x-29 F
23*	x-19 <a href="#">Note</a>
240	x-30 F
241	x-30 F
242	x-6 F
250	x-30 F
251	x-30 F
252	n27
253	n14-30 F
254	x-20 F

AI	format
30	n-8
310*	n6
311*	n6
312*	n6
313*	n6
314*	n6
315*	n6
316*	n6
320*	n6
321*	n6
322*	n6
323*	n6
324*	n6
325*	n6
326*	n6
327*	n6
328*	n6
329*	n6
330*	n6
331*	n6
332*	n6
333*	n6
334*	n6
335*	n6
336*	n6
337*	n6

AI	format
340*	n6
341*	n6
342*	n6
343*	n6
344*	n6
345*	n6
346*	n6
347*	n6
348*	n6
349*	n6
350*	n6
351*	n6
352*	n6
353*	n6
354*	n6
355*	n6
356*	n6
357*	n6
360*	n6
361*	n6
362*	n6
363*	n6
364*	n6
365*	n6
366*	n6
367*	n6
368*	n6
369*	n6

AI	format
37	n-8 F
390*	n-15 F
391*	n4-18 F
392*	n-15 F
393*	n4-18 F
400	x-30 F
401	x-30 F
402	n17 F
403	x-30 F
410	n13
411	n13
412	n13
413	n13
414	n13
415	n13
420	x-20 F
421	x4-12 F
422	n3 F
423	n4-15 F
424	n3 F
425	n3 F
426	n3 F
7001	n13 F
7002	x-30 F
7003	n10 F
7004	n-4 F
703*	x4-30 F

AI	format
8001	n14 F
8002	x-20 F
8003	x15-30 F
8004	x-30 F
8005	n6 F
8006	n18 F
8007	x-30 F
8008	n9-12 F
8018	n18 F
8020	x-25 F
8100	n6 F
8101	n10 F
8102	n2 F
8110	x-30 F
90	x-30 F
91	x-30 F
92	x-30 F
93	x-30 F
94	x-30 F
95	x-30 F
96	x-30 F
97	x-30 F
98	x-30 F
99	x-30 F


Note: The format of 23\* is the fixed length of digit number 2\*+1 against the number \* of the last digits. For instance, if it is 234, it becomes x9.



## Environment Variables

**AH Formatter V6.0** refers to the following environment variables before running. In the Windows version, the installation program sets the initial value of the variables that are marked with an asterisk \*. The environment variables that have "AHF60\_64\_" prefix are for Windows x64 version and the Linux 64bit version. In the non-Windows versions the environment variables have to be set by the user. When [running command-line program from shell script \(run.sh\)](#) on non-Windows versions, after the necessary environment variables are set, the **AH Formatter V6.0** Command line program is executed.

Env-Variable	Description
AHF60_HOME * AHF60_64_HOME *	The directory where <b>AH Formatter V6.0</b> is installed. The description <a href="#">[Install directory]</a> in this manual indicates the value of this environment variable.
AHF60_XSLT_COMMAND AHF60_64_XSLT_COMMAND	Command strings for invoking external XSLT processor. See "XSLT Setting" for more details. This setting is equal to the <code>&lt;xslt-settings command&gt;</code> . In the Windows version, MSXML4 or MSXML3 is adopted as the default if this setting is omitted. In the other version, you cannot invoke XSLT conversion without setting "Option Setting File". In GUI, this environment variable is not referred.
AHF60_XSLT_PARAM AHF60_64_XSLT_PARAM	Parameter format of the command for invoking external XSLT processor. See "XSLT Setting" for more details. This setting is equal to the <code>&lt;xslt-settings param&gt;</code> . In GUI, this environment variable is not referred.
AHF60_LIC_PATH * AHF60_64_LIC_PATH *	The directory where the license key files are located. In the Windows version the initial values are located in the same place as the <code>XfoEngine60.dll</code> . In the other versions, the license files must be installed in the <a href="#">[Install directory]/etc</a> .
AHF60_HYPDIC_PATH * AHF60_64_HYPDIC_PATH *	The directory where the hyphenation dictionary exists. In the Windows version, initial value for the hyphenation directory is where <code>XfoEngine60.dll</code> exists. In the other versions, it's necessary that hyphenation dictionary is installed in <a href="#">[Install directory]/etc</a> .
AHF60_DEFAULT_HTML_CSS * AHF60_64_DEFAULT_HTML_CSS *	<b>Default CSS for HTML</b> . In the Windows version, the initial value is <code>html.css</code> located in the directory where <code>XfoEngine60.dll</code> exists. In other version, it's necessary that the Default CSS for HTML is installed in <a href="#">[Install directory]/etc</a> .
AHF60_DMC_TBLPATH * AHF60_64_DMC_TBLPATH *	The directory where data for character code conversion is located. In the Windows version, the initial value is <code>base2</code> where <code>AHDMC10.dll</code> is located. In the other version, data for character code conversion must be installed in <a href="#">[Install directory]/sdata/base2</a> .
AHF60_BROKENIMG AHF60_64_BROKENIMG	Specifies the substitute image displayed when the image specified in FO does not exist. Sample image such as <a href="#">[Install directory]/samples/Broken.png</a> can be also specified.
AHFS10_FONT_CONFIGFILE * AHFS10_64_FONT_CONFIGFILE *	Font Configuration File. In the Windows version, the initial value is <code>font-config.xml</code> located in the same directory as <code>AHFontService10.dll</code> . In other versions, the Font Configuration File must be installed in the <a href="#">[Install directory]/etc</a> .
PATH *	In the Windows version, <a href="#">[Install directory]</a> is added to PATH environment.
LD_LIBRARY_PATH	When using the Command-line and Java Interface, the directory where <code>*.so</code> is located should be included. When operating the Solaris / Linux version, it's also necessary to set the directory where the <code>*.so</code> files are installed in the <a href="#">[Install directory]/lib</a> .
DYLD_LIBRARY_PATH	When using the Command-line Interface or the Java Interface with the Macintosh version, the place (directory) of <code>*.dylib</code> and <code>*.jnilib</code> must be included. Only the Macintosh version requires this setting. With the Macintosh version, <code>*.dylib</code> and <code>*.jnilib</code> files are installed in <a href="#">[Install directory]/lib</a> .
LIBPATH	When using the Command-line Interface or the Java Interface with the AIX version, the place (directory) of <code>*.so</code> and <code>*.a</code> must be included. Only the AIX version requires this setting. With the AIX version, <code>*.so</code> and <code>*.a</code> files are installed in <a href="#">[Install directory]/lib</a> .
CLASSPATH	When using the Java Interface, the directory where <code>*.jar</code> exists should be included. <code>*.jar</code> is installed in the <a href="#">[Install directory]/lib</a> .

 \ or / are not placed at the end of directory strings.

## Symbolic Links

It is necessary to create the Symbolic Links of the library appropriately with the non-Windows versions of **AH Formatter V6.0**. These are automatically generated by the installation program. However if you need to generate them, please refer to the following:

```
$ cd [Install directory]/lib
$ rm -f libXfoEngine.so
$ ln -s libXfoEngine.so.6.0 libXfoEngine.so
$ chmod 755 libXfoEngine.so
$ rm -f libXfoEngine.so.6
$ ln -s libXfoEngine.so.6.0 libXfoEngine.so.6
$ chmod 755 libXfoEngine.so.6
```

### Solaris / Linux

Module	SymLink 1	SymLink 2
libXfoCommon.so.6.0	libXfoCommon.so.6	libXfoCommon.so
libXfoEngine.so.6.0	libXfoEngine.so.6	libXfoEngine.so
libXfoFont.so.6.0	libXfoFont.so.6	libXfoFont.so
libXfoGraphic.so.6.0	libXfoGraphic.so.6	libXfoGraphic.so
libXfoHyphen.so.6.0	libXfoHyphen.so.6	libXfoHyphen.so
libXfoRender.so.6.0	libXfoRender.so.6	libXfoRender.so
libXfoText.so.6.0	libXfoText.so.6	libXfoText.so
libXfoTrans.so.6.0	libXfoTrans.so.6	libXfoTrans.so
libXfoJavaCtl60.so		
libXfoInterface.so.6.0	libXfoInterface.so.6	libXfoInterface.so
libPDFCreator.so.6.0	libPDFCreator.so.6	libPDFCreator.so
libPDFRes.so.6.0	libPDFRes.so.6	libPDFRes.so
libPDFToolPage.so.6.0	libPDFToolPage.so.6	libPDFToolPage.so
libPDFLinearizer.so.6.0	libPDFLinearizer.so.6	libPDFLinearizer.so
libINXCreator.so.6.0	libINXCreator.so.6	libINXCreator.so
libPSCreator.so.6.0	libPSCreator.so.6	libPSCreator.so
libSVGCreator.so.6.0	libSVGCreator.so.6	libSVGCreator.so
libXPSCreator.so.6.0	libXPSCreator.so.6	libXPSCreator.so
libMIFCreator.so.6.0	libMIFCreator.so.6	libMIFCreator.so
libMODCACreator.so.6.0	libMODCACreator.so.6	libMODCACreator.so
libAHFontService.so.1.0	libAHFontService.so.1	libAHFontService.so
libAHGraphicService.so.1.0	libAHGraphicService.so.1	libAHGraphicService.so
libAHDMC.so.1.0	libAHDMC.so.1	libAHDMC.so
libAHCommon.so.1.0	libAHCommon.so.1	libAHCommon.so
libAHPDFLib.so.1.0	libAHPDFLib.so.1	libAHPDFLib.so
libcudata.so.40.1	libcudata.so.40	libcudata.so
libcui18n.so.40.1	libcui18n.so.40	libcui18n.so
libcui.so.40.1	libcui.so.40	libcui.so
libcule.so.40.1	libcule.so.40	libcule.so
libculx.so.40.1	libculx.so.40	libculx.so

Module	SymLink 1	SymLink 2
libicutu.so.40.1	libicutu.so.40	libicutu.so
libicuuc.so.40.1	libicuuc.so.40	libicuuc.so

## Macintosh

Module	SymLink 1	SymLink 2
libXfoCommon.6.0.dylib	libXfoCommon.6.dylib	libXfoCommon.dylib
libXfoEngine.6.0.dylib	libXfoEngine.6.dylib	libXfoEngine.dylib
libXfoFont.6.0.dylib	libXfoFont.6.dylib	libXfoFont.dylib
libXfoGraphic.6.0.dylib	libXfoGraphic.6.dylib	libXfoGraphic.dylib
libXfoHyphen.6.0.dylib	libXfoHyphen.6.dylib	libXfoHyphen.dylib
libXfoRender.6.0.dylib	libXfoRender.6.dylib	libXfoRender.dylib
libXfoText.6.0.dylib	libXfoText.6.dylib	libXfoText.dylib
libXfoTrans.6.0.dylib	libXfoTrans.6.dylib	libXfoTrans.dylib
libXfoJavaCtl60.jnilib		
libXfoInterface.6.0.dylib	libXfoInterface.6.dylib	libXfoInterface.dylib
libPDFCreator.6.0.dylib	libPDFCreator.6.dylib	libPDFCreator.dylib
libPDFRes.6.0.dylib	libPDFRes.6.dylib	libPDFRes.dylib
libPDFToolPage.6.0.dylib	libPDFToolPage.6.dylib	libPDFToolPage.dylib
libPDFLinearizer.6.0.dylib	libPDFLinearizer.6.dylib	libPDFLinearizer.dylib
libINXCreator.6.0.dylib	libINXCreator.6.dylib	libINXCreator.dylib
libPSCreator.6.0.dylib	libPSCreator.6.dylib	libPSCreator.dylib
libSVGCreator.6.0.dylib	libSVGCreator.6.dylib	libSVGCreator.dylib
libXPSCreator.6.0.dylib	libXPSCreator.6.dylib	libXPSCreator.dylib
libMIFCreator.6.0.dylib	libMIFCreator.6.dylib	libMIFCreator.dylib
libMODCACreator.6.0.dylib	libMODCACreator.6.dylib	libMODCACreator.dylib
libAHFontService.1.0.dylib	libAHFontService.1.dylib	libAHFontService.dylib
libAHGraphicService.1.0.dylib	libAHGraphicService.1.dylib	libAHGraphicService.dylib
libAHDMC.1.0.dylib	libAHDMC.1.dylib	libAHDMC.dylib
libAHCommon.1.0.dylib	libAHCommon.1.dylib	libAHCommon.dylib
libAHPDFLib.1.0.dylib	libAHPDFLib.1.dylib	libAHPDFLib.dylib
libcudata.dylib.40.1	libcudata.dylib.40	libcudata.dylib
libcui18n.dylib.40.1	libcui18n.dylib.40	libcui18n.dylib
libcui.dylib.40.1	libcui.dylib.40	libcui.dylib
libcule.dylib.40.1	libcule.dylib.40	libcule.dylib
libculx.dylib.40.1	libculx.dylib.40	libculx.dylib
libicutu.dylib.40.1	libicutu.dylib.40	libicutu.dylib
libicuuc.dylib.40.1	libicuuc.dylib.40	libicuuc.dylib

## AIX

Module	SymLink
libcudata.40.1.a	libcudata.40.a



<b>Module</b>	<b>SymLink</b>
libicui18n.40.1.a	libicui18n.40.a
libicuio.40.1.a	libicuio.40.a
libicule.40.1.a	libicule.40.a
libiculx.40.1.a	libiculx.40.a
libicutu.40.1.a	libicutu.40.a
libicuuc.40.1.a	libicuuc.40.a



## Installed Modules

AH Formatter V6.0 installs the following modules.

- [Windows version](#)
- [Solaris version](#)
- [Linux version](#)
- [Macintosh version](#)
- [AIX version](#)

### Windows version

AH Formatter	
AHFormatter.exe	Graphical User interface
AHFCmd.exe	Command-line Interface
AHFDev.exe	Printer setting utility
XfoEngine60.dll	Formatting engine
XfoRender60.dll	Rendering engine
XfoGdiCtl60.dll	GDI control
XfoText60.dll	Text control
XfoFont60.dll	Font control
XfoGraphic60.dll	Graphic control
XfoTrans60.dll	XSLT filter
XfoCommon60.dll	Formatting engine common library
XfoHyphen60.dll	Hyphenation
hyphenation/en.xml	Hyphenation dictionary
hyphenation/hyphenation.dtd	Hyphenation dictionary DTD
XfoDotNet40Ctl60.dll	.NET Interface
XfoDotNet20Ctl60.dll	
XfoComCtl60.dll	COM Interface
XfoJavaCtl60.dll	Java Interface
lib/XfoJavaCtl.jar	
lib/java1.4/XfoJavaCtl.jar	(for Java 1.4, only included Windows 32bit version)
include/xfo*.h	C/C++ interface
lib/XfoInterface.lib	
XfoInterface60.dll	Common Interface library
Output engines	
PDFCreator60.dll	PDF output engine
PDFRes60.dll	
PDFToolPage60.dll	
PDFLinearizer60.dll	
PSCreator60.dll	PostScript output engine
SVGCreator60.dll	SVG output engine
INXCreator60.dll	INX output engine
XPSCreator60.dll	XPS output engine

MIFCreator60.dll	MIF output engine
MODCACreator60.dll	MO:DCA output engine
<b>Miscellaneous libraries etc.</b>	
AHFontService10.dll	Font service module
font-config.xml	Font configuration file
AHGraphicService10.dll	Graphic service module
AHDMC10.dll	Character code conversion library
AHCommon10.dll	Common library
AHPDFLib10.dll	PDF library
base2/*	Character code conversion tables
html.css	Default stylesheet for (X)HTML
UserStylesheets/*.css	User stylesheet samples
icu*40.dll	ICU libraries
pthreadVSE2.dll	POSIX thread library
<b>Windows redistribution modules</b>	
msvcm80.dll	These are installed under the [Windows System Directory] or [Windows System Directory] WinSxS directory, when required
msvcp80.dll	
msvcr80.dll	
mfc80.dll	
mfc80u.dll	
mfc80.dll	
mfc80u.dll	
atl80.dll	
<b>License</b>	
AHFormatter.lic	License key for Evaluation
<b>Documents and etc.</b>	
EULA.txt	License Agreement text
ReadMe.txt	Read me text
docs/*	Online Manual
docs/javadoc/*	Java Interface manual
docs/cppdoc/*	C/C++ interface manual
samples/*	Samples
license/*	Third-Party Copyright Notices

## Solaris / Linux version

<b>AH Formatter</b>	
bin/AHFCmd	Command-line Interface
lib/libXfoEngine.so.6.0	Formatting engine
lib/libXfoRender.so.6.0	Rendering engine
lib/libXfoText.so.6.0	Text control
lib/libXfoFont.so.6.0	Font control
lib/libXfoGraphic.so.6.0	Graphic control

lib/libXfoTrans.so.6.0	XSLT filter
lib/libXfoCommon.so.6.0	Formatting engine common library
lib/libXfoHyphen.so.6.0	Hyphenation
etc/hyphenation/en.xml	Hyphenation dictionary
etc/hyphenation/hyphenation.dtd	Hyphenation dictionary DTD
lib/libXfoJavaCtl60.so	Java Interface
lib/XfoJavaCtl.jar	
include/xfo*.h	C/C++ interface
lib/libXfoInterface.so.6.0	Common interface library
<b>Output engines</b>	
lib/libPDFCreator.so.6.0	PDF output engine
lib/libPDFRes.so.6.0	
lib/libPDFToolPage.so.6.0	
lib/libPDFLinearizer.so.6.0	
lib/libPSCreator.so.6.0	PostScript output engine
lib/libSVGCreator.so.6.0	SVG output engine
lib/libINXCreator.so.6.0	INX output engine
lib/libXPSCreator.so.6.0	XPS output engine
lib/libMIFCreator.so.6.0	MIF output engine
lib/libMODCACreator.so.6.0	MO:DCA output engine
<b>Miscellaneous libraries etc.</b>	
lib/libAHFontService.so.1.0	Font service module
fonts/*	PDF Standard 14 Fonts AFM files and glyph-name list file for ZapfDingbats font
etc/font-config.xml	Font configuration file
lib/libAHGraphicService.so.1.0	Graphic service module
lib/libAHDMC.so.1.0	Character code conversion library
lib/libAHCommon.so.1.0	Common library
lib/libAHPDFLib.so.1.0	PDF library
sdata/base2/*	Character code conversion tables
etc/html.css	Default stylesheet for (X)HTML
etc/UserStylesheets/*.css	User stylesheet samples
lib/libicu*.so.40.1	ICU libraries
<b>License</b>	
etc/AHFormatter.lic	License key for Evaluation
<b>Documents and etc.</b>	
EULA.txt	License Agreement text
ReadMe.txt	Read me text
docs/*	Online Manual
docs/javadoc/*	Java Interface manual
docs/cppdoc/*	C/C++ interface manual
run.sh	Sample shell script for running command line interface
samples/*	Samples
license/*	Third-Party Copyright Notices

## Macintosh version

<b>AH Formatter</b>	
bin/AHFCmd	Command-line Interface
lib/libXfoEngine.6.0.dylib	Formatting engine
lib/libXfoRender.6.0.dylib	Rendering engine
lib/libXfoText.6.0.dylib	Text control
lib/libXfoFont.6.0.dylib	Font control
lib/libXfoGraphic.6.0.dylib	Graphic control
lib/libXfoTrans.6.0.dylib	XSLT filter
lib/libXfoCommon.6.0.dylib	Formatting engine common library
lib/libXfoHyphen.6.0.dylib	Hyphenation
etc/hyphenation/en.xml	Hyphenation dictionary
etc/hyphenation/hyphenation.dtd	Hyphenation dictionary DTD
lib/libXfoJavaCtl60.jnilib	Java Interface
lib/XfoJavaCtl.jar	
include/xfo*.h	C/C++ interface
lib/libXfoInterface.6.0.dylib	Common interface library
<b>Output engines</b>	
lib/libPDFCreator.6.0.dylib	PDF output engine
lib/libPDFRes.6.0.dylib	
lib/libPDFToolPage.6.0.dylib	
lib/libPDFLinearizer.6.0.dylib	
lib/libPSCreator.6.0.dylib	PostScript output engine
lib/libSVGCreator.6.0.dylib	SVG output engine
lib/libINXCreator.6.0.dylib	INX output engine
lib/libXPSCreator.6.0.dylib	XPS output engine
lib/libMIFCreator.6.0.dylib	MIF output engine
lib/libMODCACreator.6.0.dylib	MO:DCA output engine
<b>Miscellaneous libraries etc.</b>	
lib/libAHFontService.1.0.dylib	Font service module
fonts/*	PDF Standard 14 Fonts AFM files and glyph-name list file for ZapfDingbats font
etc/font-config.xml	Font configuration file
lib/libAHGraphicService.1.0.dylib	Graphic service module
lib/libAHDMC.1.0.dylib	Character code conversion library
sdata/base2/*	Character code conversion tables
lib/libAHCommon.1.0.dylib	Common library
lib/libAHPDFLib.1.0.dylib	PDF library
etc/html.css	Default stylesheet for (X)HTML
etc/UserStylesheets/*.css	User stylesheet samples
lib/libicu*.40.1.dylib	ICU libraries
<b>License</b>	
etc/AHFormatter.lic	License key for Evaluation

<b>Documents and etc.</b>	
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docs/*	Online Manual
docs/javadoc/*	Java Interface manual
docs/cppdoc/*	C/C++ interface manual
run.sh	Sample shell script for running command line interface
samples/*	Samples
license/*	Third-Party Copyright Notices

## AIX version

<b>AH Formatter</b>	
bin/AHFCmd	Command-line Interface
lib/libXfoEngine60.so	Formatting engine
lib/libXfoRender60.so	Rendering engine
lib/libXfoText60.so	Text control
lib/libXfoFont60.so	Font control
lib/libXfoGraphic60.so	Graphic control
lib/libXfoTrans60.so	XSLT filter
lib/libXfoCommon60.so	Formatting engine common library
lib/libXfoHyphen60.so	Hyphenation
etc/hyphenation/en.xml	Hyphenation dictionary
etc/hyphenation/hyphenation.dtd	Hyphenation dictionary DTD
lib/libXfoJavaCtl60.so	Java Interface
lib/XfoJavaCtl.jar	
include/xfo*.h	C/C++ interface
lib/libXfoInterface60.so	Common interface library
<b>Output engines</b>	
lib/libPDFCreator60.so	PDF output engine
lib/libPDFRes60.so	
lib/libPDFToolPage60.so	
lib/libPDFLinearizer60.so	
lib/libPSCreator60.so	PostScript output engine
lib/libSVGCreator60.so	SVG output engine
lib/libINXCreator60.so	INX output engine
lib/libXPSCreator60.so	XPS output engine
lib/libMIFCreator60.so	MIF output engine
lib/libMODCACreator60.so	MO:DCA output engine
<b>Miscellaneous libraries etc.</b>	
lib/libAHFontService10.so	Font service module
fonts/*	PDF Standard 14 Fonts AFM files and glyph-name list file for ZapfDingbats font
etc/font-config.xml	Font configuration file

lib/libAHGraphicService10.so	Graphic service module
lib/libAHDMC10.so	Character code conversion library
sdata/base2/*	Character code conversion tables
lib/libAHCommon10.so	Common library
lib/libAHPDFLib10.so	PDF library
etc/html.css	Default stylesheet for (X)HTML
etc/UserStylesheets/*.css	User stylesheet samples
lib/libicu*40.1.a	ICU libraries
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docs/cppdoc/*	C/C++ interface manual
run.sh	Sample shell script for running command line interface
samples/*	Samples
license/*	Third-Party Copyright Notices







## Error Messages

AH Formatter V6.0 shows the following error messages.

Error code	Error level	Error message	Comments
3 (0003)	4	SYSTEM ERROR: XXXXX is null.	System error
4 (0004)	4	SYSTEM ERROR: Argument is out of range.	System error
6 (0006)	4	SYSTEM ERROR: XXXXX arg is created from a different document.	System error
7 (0007)	4	SYSTEM ERROR: XXXXX is not an XFAAttr object.	System error
8 (0008)	4	SYSTEM ERROR: XFAAttr is an XFAAttr that is already an attribute of another XFEElement.	System error
9 (0009)	4	SYSTEM ERROR: XXXXX is not a child of this node.	System error
11 (000B)	4	SYSTEM ERROR: Cannot set a value on node type: XXXXX	System error
12 (000C)	4	SYSTEM ERROR: startDocument() must be called just after setOutput().	System error
13 (000D)	4	SYSTEM ERROR: attribute() must be called just after startTag().	System error
14 (000E)	4	SYSTEM ERROR: Unexpected endTag().	System error
15 (000F)	4	SYSTEM ERROR: End tag 'XXXXX' does not match the start tag 'XXXXX'.	System error
16 (0010)	4	SYSTEM ERROR: Unexpected docdecl().	System error
18 (0012)	4	SYSTEM ERROR: Unsupported node type.	System error
67 (0043)	4	Cannot open file: XXXXX	
68 (0044)	4	Unexpected end of input stream.	
69 (0045)	4	Output stream is not set.	
70 (0046)	4	Input stream error.	
71 (0047)	4	Output stream error.	
77 (004D)	4	Cannot remove temporary file: XXXXX	
78 (004E)	4	Cannot create temporary file: XXXXX	
113 (0071)	4	MSXML CreateInstance is failed.	
114 (0072)	4	MSXML COM interfase exception. Description : XXXXX	
115 (0073)	4	MSXML parse error. Reason : XXXXX	
129 (0081)	4	Missing end tag.	
130 (0082)	4	Only one top level element is allowed.	
131 (0083)	4	Invalid root tag name after '<!DOCTYPE'.	
132 (0084)	4	Invalid start tag name.	
133 (0085)	4	Invalid end tag name.	
134 (0086)	4	End tag 'XXXXX' does not match the start tag 'XXXXX'	
135 (0087)	4	Undeclared namespace prefix: XXXXX	
136 (0088)	4	Duplicate attribute: XXXXX	
137 (0089)	4	Invalid attribute name: XXXXX	
138 (008A)	4	Missing '=' after attribute name.	
139 (008B)	4	Missing whitespace between attributes.	
140 (008C)	4	Unexpected character: XXXXX	
141 (008D)	4	Unexpected whitespace after 'XXXXX'.	
142 (008E)	4	Unexpected text at top level of the document.	
143 (008F)	4	Unexpected '<!XXXXX'.	

Error code	Error level	Error message	Comments
144 (0090)	4	Unexpected ']]>'. 	
145 (0091)	4	Unexpected end of input while looking for CDATA section terminator ']]>'. 	
146 (0092)	4	Unexpected end of input while looking for comment terminator '-->'. 	
147 (0093)	4	Unexpected character after -- in comment 	
148 (0094)	4	Unexpected DOCTYPE declaration outside of prolog. 	
149 (0095)	4	Cannot have multiple DOCTYPE declarations. 	
150 (0096)	4	Missing whitespace after 'XXXXX'. 	
151 (0097)	4	ExternalID is expected after 'XXXXX'. 	
152 (0098)	4	PubidLiteral is expected after 'XXXXX'. 	
153 (0099)	4	SystemLiteral is expected after 'XXXXX'. 	
154 (009A)	4	Unexpected end of input in XXXXX declaration. 	
155 (009B)	4	Empty entity name. 	
156 (009C)	4	Invalid character in entity reference: %XXXXX; 	
159 (009F)	4	Entity name is expected after 'XXXXX'. 	
160 (00A0)	4	NDATA is expected after 'XXXXX'. 	
161 (00A1)	4	Unexpected XML declaration. 	
162 (00A2)	4	Missing 'version=' after '<?xml ' in XML declaration. 	
163 (00A3)	4	Missing '=' after 'XXXXX' in XML declaration. 	
164 (00A4)	4	Missing whitespace after 'XXXXX' in XML declaration. 	
165 (00A5)	4	Missing whitespace before 'XXXXX' in XML declaration. 	
166 (00A6)	4	Unsupported XML version: X.X 	
167 (00A7)	4	Invalid standalone declaration in XML declaration. 	
168 (00A8)	4	Invalid syntax in CDATA section. 	
169 (00A9)	4	Invalid syntax in comment. 	
170 (00AA)	4	Unexpected '<!XXXXX'. 	
171 (00AB)	4	The name 'xml' must be lower case: <?XML 	
172 (00AC)	4	Missing whitespace after PI target: <?XXXXX 	
173 (00AD)	4	Unexpected end of input while looking for PI terminator '?>'. 	
174 (00AE)	4	Missing quotation character (' or "). 	
175 (00AF)	4	Unexpected end of input while looking for literal terminator X. 	
176 (00B0)	4	Unexpected '<' in attribute value. 	
177 (00B1)	4	Unexpected whitespace in character reference: &#XXXXX; 	
178 (00B2)	4	Invalid character in character reference: &#XXXXX; 	
179 (00B3)	4	Invalid unicode character: &#XXXXX; 	
180 (00B4)	4	Invalid character. 	
181 (00B5)	4	Unknown or unsupported encoding: XXXXX 	
185 (00B9)	4	Conflict encoding: XXXXX 	
513 (0201)	2	End tag 'XXXXX' does not match the start tag 'XXXXX' 	
514 (0202)	2	Reference to undefined entity: %XXXXX; 	
515 (0203)	2	Reference to undefined entity: &XXXXX; 	
1025 (0401)	4	XXXXXX is not specified. 	
1026 (0402)	4	FontConfig file is not found: XXXXX 	

Error code	Error level	Error message	Comments
1027 (0403)	4	No <font-folder> in XXXXX	
1028 (0404)	4	Unexpected start tag: <XXX> in XXXXX	
1029 (0405)	4	Unexpected end tag: </XXX> in XXXXX	
1030 (0406)	4	Invalid value: <XXX XXX="XXX"> in XXXXX	
1031 (0407)	4	Empty value: <XXX XXX> in XXX	
1032 (0408)	4	No-file path is not allowed: <XXX XXX="XXX"> in XXXXX	
1033 (0409)	4	Relative path is not allowed: <XXX XXX="XXX"> in XXXXX	
1034 (040A)	4	Already registered value: <XXX XXX="XXX"> in XXXXX	
1035 (040B)	4	Invalid font file extension: <XXX XXX="XXX"> in XXXXX	
1036 (040C)	4	Font file must be base file name: <XXX XXX="XXX"> in XXXXX	
1037 (040D)	4	Not an integer value: <XXX XXX="XXX"> in XXXXX	
1921 (0781)	1	Font read error: XXXXX	
1923 (0783)	1	Glyph-list open error: XXXXX	
1924 (0784)	1	Glyph-list read error: XXXXX	
1925 (0785)	1	Cannot read printer font: XXXXX	
1926 (0786)	1	Cannot read font information: XXXXX	
1928 (0788)	1	Font file error: XXXXX	
1929 (0789)	1	Font file error: XXXXX	
1930 (078A)	1	Already registered font: XXXXX	
1931 (078B)	1	Cannot open font: XXXXX	
1932 (078C)	1	Cannot create font: XXXXX	
1933 (078D)	1	Cannot read font information: XXXXX	
8193 (2001)	4	XSLT Processor is not given.	
8194 (2002)	4	No XSL Stylesheet is specified.	
8195 (2003)	4	FO transformation is failed.	
8196 (2004)	4	Cannot find MSXML.	
8197 (2005)	4	Cannot load file to XMLDomDocument.	
8198 (2006)	4	Cannot load XSL Stylesheet.	
8199 (2007)	4	Invalid XSL Stylesheet.	
8200 (2008)	4	Cannot find <fo:root> in FO.	
8201 (2009)	4	Invalid name space in FO.	
8202 (200A)	4	Cannot execute external XSLT processor.	
8205 (200D)	4	Transformed FO is invalid.	
8206 (200E)	4	FO transformation is failed.	
8208 (2010)	4	FO transformation by MSXML DOM is failed.	
8209 (2011)	4	Cannot create the pipe for XSLT processor.	
8210 (2012)	4	Cannot read from the pipe for XSLT processor.	
9103 (238F)	1	XXXXXX.	xsl:message output
10241 (2801)	4	XXXXXX is not given.	
10242 (2802)	4	Next page-master with master-name="XXXXXX" is not found.	
10243 (2803)	4	Page-master with master-name="XXXXXX" is not found.	

Error code	Error level	Error message	Comments
10244 (2804)	4	fo:flow is not assigned on page: master-name="XXXXX".	
10245 (2805)	4	Unassigned flow: flow-name="XXXXX"	
10246 (2806)	4	fo:flow-map with flow-map-name="XXXXX" is not found.	
10247 (2807)	4	Incorrect flow-map (mixture of fo:static-content and fo:flow): flow-map-name="XXXXX".	
10248 (2808)	4	Incorrect flow-map (same flow-name): flow-map-name="XXXXX", flow-name="XXXXX".	
10249 (2809)	4	Incorrect flow-map (same region-name): flow-map-name="XXXXX", region-name="XXXXX".	
10250 (280A)	4	Duplicated change-bar-class: 'XXXXX'.	
10251 (280B)	4	Missing region-body flow: master-name="XXXXX".	
10753 (2A01)	2	Unknown FO element: 'XXXXX'.	
10754 (2A02)	2	Unknown property name: 'XXXXX'.	
10755 (2A03)	2	Unexpected FO element: 'XXXXX'.	
10756 (2A04)	2	Unexpected FO element: 'XXXXX'.	
10757 (2A05)	2	Unknown extension element: 'XXXXX'.	
10758 (2A06)	2	Unexpected element: 'XXXXX'.	
10759 (2A07)	2	Unexpected element: 'XXXXX'.	
10760 (2A08)	2	Unexpected text: 'XXXXX'.	
10761 (2A09)	2	Invalid property value: XXXXX="XXXXX"	
10762 (2A0A)	2	Invalid compound property name: 'XXXXX'	
10763 (2A0B)	2	Unknown extension property name: 'XXXXX'	
10764 (2A0C)	2	Missing required property value: 'XXXXX'.	
10765 (2A0D)	2	Satisfied conditional-page-master-reference is not found in fo:page-sequence-master master-name="XXXXX".	
10767 (2A0F)	2	Sub-sequence-specifiers in fo:page-sequence-master master-name="XXXXX" are exhausted.	
10768 (2A10)	2	Duplicate id value: id="XXXXX".	
10769 (2A11)	2	Unresolved id value: "XXXXX".	
10771 (2A13)	2	Not yet supported: XXXXX.	
10772 (2A14)	2	Duplicate color-profile-name: XXXXX.	
10774 (2A16)	2	Expected FO element: 'XXXXX'.	
10775 (2A17)	2	Ambiguous conditional-page-master-references are found in fo:page-sequence-master master-name="XXXXX", master-reference="XXXXX" and "XXXXX".	
10776 (2A18)	2	Duplicate master-name: "XXXXX".	
10777 (2A19)	2	Unresolved index-key value: "XXXXX".	
10778 (2A1A)	2	Empty contents: 'XXXXX'.	
10779 (2A1B)	2	Expected element: 'XXXXX'.	
11009 (2B01)	3	fo:change-bar-begin with change-bar-class="XXXXX" is not found.	
11010 (2B02)	3	fo:change-bar-end with change-bar-class="XXXXX" is not found.	
11141 (2B85)	1	No color value given in rgb-icc separation: 'XXXXX'.	
11144 (2B88)	1	Invalid fo:xxxxx with ref-id="XXXXX".	
11145 (2B89)	1	Unresolved internal-destination: "XXXXX".	
11146 (2B8A)	1	Unknown extension element: 'XXXXX'.	

Error code	Error level	Error message	Comments
11148 (2B8C)	1	Overwrapped table cell: row=XX col=XX.	
11151 (2B8F)	1	Deprecated property name: 'XXXXX'.	
11152 (2B90)	1	Deprecated property value: 'XXXXX'.	
11154 (2B92)	1	Obsoleted property name: 'XXXXX'.	
11155 (2B93)	1	Obsoleted property value: 'XXXXX'.	
11156 (2B94)	1	Unknown language: 'XXXXX'.	
11157 (2B95)	1	Unknown script: 'XXXXX'.	
12802 (3202)	2	Missing declaration separator ';': 'XXXXX'.	
12803 (3203)	2	Invalid pseudo element: 'XXXXX'.	
12804 (3204)	2	Unexpected token: 'XXXXX'.	
12805 (3205)	2	Invalid class attribute: 'XXXXX'.	
12806 (3206)	2	Missing attribute name: 'XXXXX'.	
12807 (3207)	2	Missing closing parenthesis 'X': 'XXXXX'.	
12808 (3208)	2	Missing opening parenthesis 'X': 'XXXXX'.	
12810 (320A)	2	Invalid lang value: 'XXXXX'.	
12811 (320B)	2	Invalid positional condition: 'XXXXX'.	
12812 (320C)	2	Unknown property: 'XXXXX'.	
12813 (320D)	2	Invalid property value: XXXXX: XXXXX	
12814 (320E)	2	Invalid @charset value: 'XXXXX'.	
12815 (320F)	2	Invalid @import url: 'XXXXX'.	
12816 (3210)	2	Invalid @media value: 'XXXXX'.	
12820 (3214)	2	Invalid @namespace url: 'XXXXX'.	
12821 (3215)	2	Missing style in selector: 'XXXXX'.	
12822 (3216)	2	Invalid declaration: 'XXXXX'.	
12823 (3217)	2	Cannot load stylesheet: 'XXXXX'.	
12824 (3218)	2	Insufficient function parameter: 'XXXXX'.	
12825 (3219)	2	Too many function parameters: 'XXXXX'.	
12826 (321A)	2	Invalid function parameter type: function 'XXXXX', parameter 'XXXXX'.	
12827 (321B)	2	@import rules must precede all other rules.	
12828 (321C)	2	Invalid color value: 'XXXXX'.	
14337 (3801)	4	Invalid option settings file. XXXXX	
14338 (3802)	4	Unsupported formatter type: XXX.	
14339 (3803)	4	No AreaTree: XXXXXXX	
14340 (3804)	4	Unsupported AreaTree version 'XXX.X': XXXXXXX	
14341 (3805)	4	Start formatting failure: XXXXXXX	
14850 (3A02)	2	Area overflow: XXXX (Page XX).	
16385 (4001)	4	Printing is cancelled.	
16386 (4002)	4	Printer is not found: XXXXX	
16387 (4003)	4	StartPage() is failed or cancelled.	
16388 (4004)	4	EndPage() is failed.	
16390 (4006)	4	PDF output error.	
16391 (4007)	4	PDF output : Font embedding error.	

Error code	Error level	Error message	Comments
16392 (4008)	4	PDF output : Encryption error.	
16393 (4009)	4	Cannot open TEXT file.	
16394 (400A)	4	Cannot write TEXT file.	
16403 (4013)	4	Unsupported PDF version: XXXXX	
16406 (4016)	4	Digital Signature error: XXXXX	
16407 (4017)	4	Unsupported encoding: XXXXX	
16408 (4018)	4	XPS output error: XXXXX	
16409 (4019)	4	Digital Signature: Cannot open PDF file: XXXXX	
16411 (401B)	4	MIF output error: XXXXX	
16412 (401C)	4	MO:DCA output error: XXXXX	
16413 (401D)	4	AHPDF error: XXXXX	
16900 (4204)	2	Cannot embed the image: XXXXX	
16901 (4205)	2	No icc color profile specified: XXXXX	
16904 (4208)	2	Unsupported PDF Blend Mode: XXXXX	
16905 (4209)	2	Unsupported PDF Shading Type: XXXXX	
16906 (420A)	2	Unsupported PDF Soft Mask: XXXXX	
16907 (420B)	2	Transparency is not allowed.	
16908 (420C)	2	PDF output error.	
17281 (4381)	1	Invalid printer bin number/name: XXXXX	
17282 (4382)	1	Invalid printer duplex: XXXXX	
18433 (4801)	4	Cannot remove temporary file: XXXXX	
18434 (4802)	4	PDF file is protected by a password	
18435 (4803)	4	Cannot read PDF: XX	System error
18436 (4804)	4	Excel file is protected by a password.	
18439 (4807)	4	CGM parser error XXXXX	
18440 (4808)	4	CGM renderer error XXXXX	
18441 (4809)	4	MathML parse error: XXXXX	
18442 (480A)	4	PDF reading error: XXXXX	
18945 (4A01)	2	Cannot create temporary file for image.	
18946 (4A02)	2	Graphic file name is not specified.	
18947 (4A03)	2	Cannot load graphic file: XXXXX	
18948 (4A04)	2	Graphic file is not found: XXXXX	
18949 (4A05)	2	Graphic file is broken: XXXXX	
18950 (4A06)	2	Unknown or unsupported graphic file format: XXXXX	
18952 (4A08)	2	SVG parse error: XXXXX	
18953 (4A09)	2	MathML parse error. Reason : XXXXX	
18954 (4A0A)	2	Cannot create temporary stream for image.	
18956 (4A0C)	2	CGM parser error XXXXX	
18957 (4A0D)	2	CGM renderer error XXXXX	
18958 (4A0E)	2	Cannot create Distiller instance.	
18959 (4A0F)	2	Cannot create Ghostscript instance.	
18960 (4A10)	2	Distiller processing was failed: XXXXX	

Error code	Error level	Error message	Comments
18961 (4A11)	2	Ghostscript processing was failed: XXXXX	
18964 (4A14)	2	Missing barcode type.	
18965 (4A15)	2	Unsupported barcode type: XXXXX.	
18966 (4A16)	2	Barcode generation error: XXXXX.	
18967 (4A17)	2	PDF reading error: XXXXX	
19329 (4B81)	1	Graphic file has no EPS preview: XXXXX	
19330 (4B82)	1	Conflict media-type: XXXXX actually XXXXX	
19331 (4B83)	1	Unknown media-type: XXXXX	
19332 (4B84)	1	Unknown content-type: XXXXX	
19333 (4B85)	1	SVG parse error. Reason : XXXXX	
19334 (4B86)	1	Missing EOI in JPEG: XXXXX	
19335 (4B87)	1	Joboptions does not exist: XXXXX	
19336 (4B88)	1	Joboptions is not a file: XXXXX	
19337 (4B89)	1	CGM parser error XXXXX	
19338 (4B8A)	1	CGM renderer error XXXXX	
19339 (4B8B)	1	PDF reading error: XXXXX	
21377 (5381)	1	Invalid exception word: XXXXX	
21442 (53C2)	1	U+XXXX cannot be placed after U+XXXX.	
22529 (5801)	4	Create font error: XXXXX	
22530 (5802)	4	Select font error: XXXXX	
23041 (5A01)	2	Missing font family: 'XXXXX'.	☞ missing-font
23042 (5A02)	2	Missing glyph U+XXXX (X) in 'XXXXX'.	☞ missing-glyph
23043 (5A03)	2	Fallbacked glyph U+XXXX (X) to 'XXXXX'.	☞ fallback-glyph
23425 (5B81)	1	Missing font family: 'XXXXX'.	☞ missing-font
23426 (5B82)	1	Missing glyph U+XXXX (X) in 'XXXXX'.	☞ missing-glyph
23428 (5B84)	1	Cannot find script-font: XXXXX	☞ script-font
24582 (6006)	4	Cannot find license file: XXXXX	
24583 (6007)	4	Invalid license file: XXXXX	
24584 (6008)	4	Invalid license data: XXXXX	
24585 (6009)	4	Cannot load license file: XXXXX	
24586 (600A)	4	Invalid license file: XXXXX	
24587 (600B)	4	Invalid license file: XXXXX	
24588 (600C)	4	Invalid license file: XXXXX	
24589 (600D)	4	Invalid license file: XXXXX	
24590 (600E)	4	Invalid license date: XXXXX	
24591 (600F)	4	Evaluation license is expired: XXXXX	
24592 (6010)	4	Invalid license date: XXXXX	
24594 (6012)	4	No license for command line interface: XXXXX	
24595 (6013)	4	No license for program interface: XXXXX	
24596 (6014)	4	Invalid license type: XXXXX	



Error code	Error level	Error message	Comments
24597 (6015)	4	Invalid license version: XXXXX	
32770 (8002)	4	Cannot open work file: XXXXX	
32771 (8003)	4	Cannot create work file: XXXXX	
32772 (8004)	4	Invalid printer name: XXXXX	
32773 (8005)	4	Cannot read printer setting file: XXXXX	
32774 (8006)	4	Invalid Printer setting file: XXXXX	
32776 (8008)	4	PDF output failed.	System error
32777 (8009)	4	Printing failed.	System error
32778 (800A)	4	Formatting failed.	System error
32779 (800B)	4	No page is available to print.	
32782 (800E)	4	No volume is available to print.	
32783 (800F)	4	Cannot separate to multi volumes.	
32784 (8010)	4	Cannot output multi volumes to stream.	
32785 (8011)	4	TEXT output failed.	System error
32786 (8012)	4	NUL output failed.	System error
32787 (8013)	4	Printer name is required.	
32788 (8014)	4	SVG output failed.	System error
32789 (8015)	4	Empty document.	
32794 (801A)	4	AreaTree output failed.	System error
32796 (801C)	4	Invalid XfoCommon version.	
32799 (801F)	4	Output file same as input file: XXXXX	
32800 (8020)	4	PostScript output failed.	System error
32801 (8021)	4	INX output failed.	System error
32802 (8022)	4	No licensed printer name: XXXXX	
32803 (8023)	4	Invalid license.	
32804 (8024)	4	XPS output failed.	System error
32805 (8025)	4	Cannot create formatting thread (XX).	
32806 (8026)	4	Formatting exception: XXXX	
32807 (8027)	4	No rendering page XX is given.	System error
32810 (802A)	4	MIF output failed.	System error
32812 (802C)	4	MO:DCA output failed.	System error
34818 (8802)	4	Memory access failed.	System error (COM Interface)
34819 (8803)	4	Cannot open work file.	(COM Interface)
34820 (8804)	4	Cannot read work file.	(COM Interface)
34821 (8805)	4	ASP Response data output failed.	(COM Interface)
36865 (9001)	4	Parameter error: XXXXX	(Command-line)
36866 (9002)	4	Cannot transform to FO: XXXXX	(Command-line)
36867 (9003)	4	Printing error: XXXXX	(Command-line)
38913 (9801)	4	XSL Stylesheet is not given.	(.NET Interface)
38914 (9802)	4	Attribute index is out of range.	(.NET Interface)
40962 (A002)	4	Interface instance is not given.	System error (Java Interface)

The message which is not shown here might be outputted from a lower-level library. The error level is 4 (fatal) although the error code doesn't map to these messages. In case a system error occurs, please [contact us](#).



## Technical Notes

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### Formatting HTML

---

**AH Formatter V6.0** can format HTML designed for Web (except for HTML using a frame). However, there may not be much HTML that can obtain a good result without adding adjustment after formatting. The reasons are as follows:

- HTML is designed especially for the browser, the printing media is not taken into consideration.
- HTML does not follow the specification.
- CSS may not be used exactly as the specification.

For example, if an HTML is printed from a Web browser without dropping out the right side part, an appropriate result will be obtained even if it is formatted by **AH Formatter V6.0**. However, in order to obtain a better result, HTML must be designed both for the browser and printing. In CSS, probably the style is finely specified by the rule like:

```
@media print { ... }
@page { ... }
```

Moreover, there is a big difference in the CSS implementation level between the present Web browsers. If the HTML contains the grammar mistakes by thinking of the appearance with a specific browser, or the HTML uses inaccurate CSS, probably a good result could not be obtained.

The concrete font is not specified to many of (X)HTML on the Web. (It is desirable considering the character of Web.) Since the font setting for every script in the [Option Setting File](#) is always effective in **AH Formatter V6.0** GUI in Windows version, a suitable font is chosen. However, there is no such thing except GUI of the Windows versions, such as the UNIX version. Please set `<script-font>` appropriately in the option setting file and specify the Option Setting File when executing the format.

**CAUTION:** Since **AH Formatter V6.0** formats the document for printing purpose, `@media screen` is not applied even if it is a screen of GUI.

#### HTML saved from the web browser

**CAUTION:** Many web browsers have the feature to save (X)HTML currently referred to. However, XHTML saved by this function may not turn into the right XHTML. When Such XHTML is formatted by **AH Formatter V6.0**, it will become an error and formatting fails. In such a case, please specify HTML as a formatting type. In addition, there maybe a case when a white space is inserted into Japanese text without notice. Such a text cannot be formatted finely.

### Cascading Order of CSS Stylesheet

---

The cascading order of the CSS stylesheet is defined in the [CSS2 Specification](#) as follows.

1. user agent declarations
2. user normal declarations
3. author normal declarations
4. author important declarations
5. user important declarations

**AH Formatter V6.0** corresponds to the followings.

- user agent declarations

It is html.css. See also [Default CSS for HTML](#).

- user declarations

This can be specified by `<usercss>`, in the [Option Setting File](#) and by the command line of `-css` or `-s`. (As for the .NET, Java interface, etc, they are equivalent to the corresponding command line.) These are applied in the following order.

1. Applies CSS specified by the Option Setting File and `-css` in the appearance order.
2. Applies CSS specified by `-s`.

Only the Option Setting File is applied in GUI. What is specified on the [CSS page](#) of the [Format Option Setting dialog](#) will be reflected in the Option Setting File.

- author declarations

This can be specified by `<link>` or `<style>` inside HTML, by the processing instruction of `<?xml-stylesheet .. ?>`. These are applied in the following order.

1. Applies the processing instruction in XML in the appearance order. (XML or XHTML)
2. Applies `<link>` or `<style>` inside HTML in the appearance order. (XML or XHTML)

## Default CSS for HTML

Default CSS for HTML is used as the first stylesheet (user agent declarations) when formatting (X)HTML. This is html.css which is placed in the directory indicated by the environment variable, `AHF60_DEFAULT_HTML_CSS`. (When html.css does not exist, it is formatted as all the elements are inline.

This stylesheet is created based on the display of a web browser, the style specified by CSS, etc. However, there may be specification which cannot be well displayed depending on the environment. Probably, there is also a difference of taste. Users are required to optimize the default CSS according to their own environment etc. Some examples are shown below.

- `<q>`

It is specified as follows by default CSS.

```
q:before { content: '\201C' }
q:after  { content: '\201D' }
```

The current **AH Formatter V6.0** cannot change the quotation marks depending on the language. The following specification may be preferable.

```
q:before { content: '\22' }
q:after  { content: '\22' }
```

- footnote

A footnote number is specified to be placed in the margin of the left page. If you don't want to make it overflow into the margin, please specify `padding-left` or specify `list-style-position:inside` to `@footnote`. `decimal` is specified for numbering. Although it is written that `super-decimal` is used in [CSS3 GCPM](#), since there are many fonts without `super-decimal`, it is not adopted with default CSS. Probably, it is good to correct as follows when you want to use `super-decimal`.

```
::footnote-call {
  content: counter(footnote, super-decimal);
}
::footnote-marker {
  content: counter(footnote, super-decimal);
  -ah-margin-end: 0.5em;
  text-indent: 0;
}
```

## Detection of Formatting Type

When the formatting starts by setting the detection of formatting type automatically, the formatting type will be determined in the following procedures.

1. When MIME is specified, **AH Formatter V6.0** will follow its settings. That is, if `text/html` is specified, it will be detected as HTML. When `application/xhtml+xml` is specified, it will be detected as XHTML.
2. When `auto-formatter-type="html"` is specified in the Option Setting File and the extension of the input document is known, **AH Formatter V6.0** will follow its setting. That is, when the extension is for HTML such as `.htm` or `.html`, it will be detected as HTML. If the extension is for XHTML, such as `.xht` or `.xhtml`, it will be detected as XHTML.
3. When there is no XML declaration and DOCTYPE is for HTML, it will be detected as HTML.

4. When `auto-formatter-type="xhtml"` is specified in the Option Setting File and the name space is for XHTML, it will be detected as XHTML.
5. When there is no XML declaration and name space does not exist and the root element is `<HTML>` with case insensitive, it will be detected as HTML.
6. When CSS which is not XSLT is specified (to the internal or external document), it will be detected as XML+CSS.
7. When the name space is for XSL-FO, it will be detected as XSL-FO.
8. Other than these will be detected as XML+CSS.

Although the document does not need to be XML if it's HTML formatting, it is required except HTML that the document should be well formed XML.

## Difference in Formatting with AH Formatter V5

There are some differences in formatting between **AH Formatter V6.0** and **AH Formatter V5** as listed below.

- span

In **AH Formatter V6.0**, the behavior of the span specified in the nested FO under `fo:flow` is different from that of AH Formatter V5. In **AH Formatter V5**, the span specified inside of the nested FO, that generates reference-area such as `fo:block-container` is also effective. However, in **AH Formatter V6.0**, the span specified in FO nested inside of FO that generates reference-area is invalid. For instance,

```
<fo:block-container>
<fo:block span="all">
<fo:block>ABC</fo:block>
</fo:block>
</fo:block-container>
```

In V5, `span="all"` was effective with `<fo:block>ABC</fo:block>`. However it's invalid in **AH Formatter V6.0**. In addition, when `"span="all"` is specified to `fo:block` in the column of `fo:block-container`, that uses `axf:column-count`, it is considered that the span is specified to the column of the block-container.

In order to keep the same result as V5, please specify `span="all"` to the parent's `fo:block-container`.

- Position of underline and overline

In **AH Formatter V5**, there were the following problems with the position of underline and overline.

- `axf:vertical-underline-side` doesn't work when `axf:text-underline-position` is specified.
- It is always interpreted as an offset from base-line when the numerical value is specified to `axf:text-underline-position`.
- Even if the position of the underline is changed by `axf:vertical-underline-side`, the position of the overline is not changed.
- In CSS, the position of underline and overline differs between `-ah-line-stacking-strategy:line-height` and `ah-line-stacking-strategy:max-height` specified.
- When the underline etc. are drawn in horizontal writing mode, the line becomes uneven when there are `baseline-shift="super"`, etc. though the line becomes straight in vertical writing mode.

In **AH Formatter V6.0**, these are improved as follows.

- `axf:vertical-underline-side` is effective even if `axf:text-underline-position` is specified.
- The standard position can also be described in the numerical value specified for `axf:text-underline-position`.
- The overline is always positioned on the opposite side of the underline.
- In CSS, the line is drawn at the same position without depending on the value of `ah-line-stacking-strategy`.
- When the underline etc. are drawn in horizontal writing mode, it is aligned in a straight line even if there are `baseline-shift="super"`, etc.

Please specify `text-underline-mode="5"` in the [Option Setting File](#) when you want to make it the same as V5.

- intrusion-displace

In **AH Formatter V6.0**, the behavior of the intrusion-displace is revised and different from that of AH Formatter V5.

- `text-indent` no longer disappears when `intrusion-displace="line"` or `"auto"`.
- `intrusion-displace="indent"` ensures that relative indents by `start-indent` and `end-indent` are preserved. In **AH Formatter V5**, only `text-indent` was preserved when `intrusion-displace="indent"`.

Please specify `intrusion-displace-mode="5"` in the [Option Setting File](#) when you want to make it the same as V5.

- Width of vertical-text block

The behavior of the 'auto' value of the width of vertical-text block within horizontal-text flow (or the height of horizontal-text block within vertical-text flow) is changed with **AH Formatter V6**.

In **AH Formatter V5**, the width of vertical-text block was given by the width of the outer area. In **AH Formatter V6**, the 'auto' width of vertical-text block shrinks to fit the content. If you don't want this behavior you should specify the width explicitly such as `width="100%"`. Also the same behavior will be applied to the height of horizontal-text block within vertical-text flow.

Please specify `vertical-block-width-mode="5"` in the [Option Setting File](#) when you want to make it the same as V5.

## Difference in Formatting with XSL Formatter V4

There are some differences in formatting between **AH Formatter V6.0** and **XSL Formatter V4** as listed below.

- capitalize

For example, V4 formats the following

```
<fo:block text-transform="capitalize">
HELLO world!
</fo:block>
```

as follows.

```
Hello World!
```

**AH Formatter V6.0** formats as follows.

```
HELLO World!
```

That is, although V4 changes the letters except the initial letter into lower case, V5 does nothing. In order to make it the same as V4, please specify as follows.

```
<fo:block text-transform="capitalize-lowercase">
```

☞ [text-transform](#)

- bidi-override

The implementation of `<fo:bidi-override>` by **AH Formatter V6.0** slightly differs from **XSL Formatter V4**. For example, V4 formats the following specification

```
<fo:bidi-override direction="rtl">
This is a <fo:bidi-override unicode-bidi="embed">test</fo:bidi-override>
</fo:bidi-override>
```

as follows.

```
This is a test
```

**AH Formatter V6.0** formats as follows.

```
test This is a
```

When you want to make it the same as V4, please specify `bidi-override-mode="4"` in the [Option Setting File](#). In addition, when the following is specified,

```
<fo:bidi-override direction="rtl">
This is a &#x202B;test&#x202C;
</fo:bidi-override>
```

there is no need to consider the influence.

- otf-metrics-mode

With **AH Formatter V6.0**, the initial value of `otf-metrics-mode` is changed from "windows" to "typographic". The baseline may slightly change depending on fonts. Especially, a difference will be clear with MORISAWA font.

- Trimming a line of text

**AH Formatter V6.0** improves the processing of trimming a line of text. Although finer control was attained by `axf:text-justify-trim` with this enhancement, a difference may arise in the number of characters included in one line with **XSL Formatter V4**. When you want to make it the same as V4 by FO which does not use `text-justify-mode="4"`, please specify `text-justify-mode="4."` in the [Option Setting File](#).

- Determining a base line

**AH Formatter V6.0** improves the processing when putting fonts with different baselines like a mixture of Western and Japanese text. For example,

```
<fo:block>Latin 漢字</fo:block>
<fo:block>漢字 Latin</fo:block>
<fo:block>Latin</fo:block>
<fo:block>漢字</fo:block>
```

like the above, you may specify `font-family=""Times New Roman', 'MS Mincho'"` so that Japanese fonts are not applied to Latin. Since the first font specified as `font-family` determines a baseline by **XSL Formatter V4** at this time, a difference may arise in the height of a line. Since **AH Formatter V6.0** selects the font in the font-family by the script or the language specifi-

ation, a suitable baseline will be applied by specifying `language="jpn"` in the example above. When you want to make it the same as V4, please specify `baseline-mode="4"` in the [Option Setting File](#).

- Font selection

`font-selection-strategy="character-by-character"` is supported from **AH Formatter V6.0**. In addition, `auto-fallback-font` in the [Option Setting File](#) makes it possible to control the fallback. See also [Font Selection](#).

## Incompatibility of XSL1.0 and XSL1.1

---

Some incompatible changes from XSL1.0 are made to XSL1.1.

- `from-page-master-region()`

In XSL1.1, even if `writing-mode` or `reference-orientation` are specified to `fo:region-*`, these are ignored and not effective. In order to make these specifications effective in XSL1.1, it is necessary to specify the followings to `fo:page-sequence`.

```
writing-mode="from-page-master-region()"
reference-orientation="from-page-master-region()"
```

In order to evaluate it as well as XSL 1.0 without making any changes in FO, specify `default-from-page-master-region="true"` in the [Option Setting File](#).

- `fo:table`

In XSL1.0, `fo:table` is supposed to generate a reference area (see 5.6 in XSL1.0). However, in XSL1.1, it was corrected that this was an error. The difference is mainly generated when converting from `margin-*` to `start-indent` and `end-indent` specified in `fo:table`. For example:

```
<fo:block margin-left="10pt">
  <fo:table margin-left="0pt">
    ...
```

In the table like above, left margins may differ between XSL1.0 and XSL1.1. If `start-indent` etc. are used instead of `margin-*`, such incompatibility will not be generated.

In order to evaluate it as well as XSL 1.0 without making any changes in FO, specify `table-is-reference-area="true"` in the [Option Setting File](#).

## Shorthand

---

Since the shorthand in the property of XSL has succeeded the definition of CSS, the value is evaluated like CSS. That is,

```
margin="0pt -10pt"
```

is evaluated as 2 values instead of one formula. However, when it's not a shorthand, this is evaluated as one formula. For example, the following is one formula.

```
margin-left="0pt -10pt"
```

XSL Formatter V4.2 processes such an ambiguous expression by the shorthand as follows.

- If the expression cannot be one formula like `"0pt 10pt"`, then it is counted as 2 values.
- If the mark and the numerical value have adhered like `"0pt -10pt"`, it is counted as two values.
- If a white space is included between a mark and a numerical value like `"0pt - 10pt"`, it is counted as one formula.
- `"0pt-10pt"` is an error. ( Refer to 5.9.5 Numerics in XSL specification).

When using a formula in the shorthand, it can be enclosed with parentheses, etc.

With CSS, when a function of `calc()` is written as `calc(10pt-5pt)`, `-` is evaluated as a operator. It is because there is no description of whether to separate `-` from `<length-unit>` in `calc()` of the CSS3 specification. Syntactically, It is allowed to use `<length-unit>` with `-` in succession.

## URI

---

`<uri-specification>` in XSL specification is supposed to specify the character string which fulfills IRI ([RFC3987](#)) specification in `url()`. IRI is called URI for convenience in this document. Schemes which can actually be specified in **AH Formatter V6.0** are as follows:

- `http:`
- `https:`
- `file:`
- `data:` ([RFC2397](#))



- jar: (JarURLConnection)

When a bare string is specified without using url() and it doesn't match to either of other values, it is considered that URI is specified. For example, the following two are the same.

```
<fo:external-graphic src="url('http://localhost/image.png')"/>
<fo:external-graphic src="http://localhost/image.png"/>
```

Moreover, it's possible to specify the relative URI without specifying the scheme name.

```
<fo:external-graphic src="url('image.png')"/>
<fo:external-graphic src="image.png"/>
```

**AH Formatter V6.0** allows specifying the file name on a local file system instead of URI for user's convenience. However, generally there is no compatibility between URI and a local file name. For example, while a white space is not allowed for URI, a white space may be available for a local file name. Moreover, since the direct use of the % may be available to use, a character string called `foo%20bar.png` will point out a different resource between the two cases, evaluating as URI and evaluating as a local file name.

**AH Formatter V6.0** solves this problem as follows:

- When the scheme is specified, it is adopted as is.
- When the scheme is not specified and surrounded by url(), it is processed as follows:
  1. If URI is correct, it will be adopted as is.
  2. If URI is incorrect, % escape processing is done.
- When the scheme is not specified explicitly and specified barely, it is processed as follows:
  1. In the Windows environment, \ is changed into /.
  2. % escape processing is done.

The relative URI is combined with base-uri and transformed into the absolute URI. All local file names are transformed into a file: scheme at this time. For example, in the Windows environment, when base-uri is `C:\dir\`, it is transformed as follows:

<code>foobar.png</code>	<code>file:///C:/dir/foobar.png</code>
<code>url('foobar.png')</code>	<code>file:///C:/dir/foobar.png</code>
<code>url('url(foobar.png)')</code>	<code>file:///C:/dir/url(foobar.png)</code>
<code>subdir\foobar.png</code>	<code>file:///C:/dir/subdir/foobar.png</code>
<code>url('subdir\foobar.png')</code>	<code>file:///C:/dir/subdir%5Cfoobar.png</code>
<code>url('subdir/foobar.png')</code>	<code>file:///C:/dir/subdir/foobar.png</code>
<code>foo bar.png</code>	<code>file:///C:/dir/foo%20bar.png</code>
<code>url('foo bar.png')</code>	<code>file:///C:/dir/foo%20bar.png</code>
<code>foo%20bar.png</code>	<code>file:///C:/dir/foo%2520bar.png</code>
<code>url('foo%20bar.png')</code>	<code>file:///C:/dir/foo%20bar.png</code>
<code>foo%%20bar.png</code>	<code>file:///C:/dir/foo%25%2520bar.png</code>
<code>url('foo%%20bar.png')</code>	<code>file:///C:/dir/foo%25%2520bar.png</code>
<code>foo#bar.png</code>	<code>file:///C:/dir/foo#bar.png</code>
<code>url('foo#bar.png')</code>	<code>file:///C:/dir/foo#bar.png</code>
<code>foo%23bar.png</code>	<code>file:///C:/dir/foo%2523bar.png</code>
<code>url('foo%23bar.png')</code>	<code>file:///C:/dir/foo%23bar.png</code>

A local file name cannot be written directly into url(). For example:

```
url('C:\My Document\foobar.png')
```

The string above will not operate as expected. Please specify a local file name without surrounding by url().

# is a separator of fragmentation. In `file:///C:/dir/foo#bar.png`, the resource actually accessed is `file:///C:/dir/foo`. Please specify `url('foo%23bar.png')` to access a resource called `foo#bar.png`.

UNC (Universal Naming Convention) in Windows, for example, `\\host\My Document\foobar.png` is transformed into `file://host/My%20Document/foobar.png`.

☞ Please refer to [Graphics](#) for the data: scheme and the jar: scheme.

## Table Auto Layout

The table (fo:table) has the attribute, `table-layout="fixed"` and `table-layout="auto"`. The former specifies the fixed layout which has the fixed column width, and the latter is a specification of the automatic layout which calculates the column width automatically. When the value is omitted, the default value is `table-layout="auto"`. In the XSL specification, the automatic layout serves as implementation-independent. We will explain the implementation of **AH Formatter V6.0** in this document.

An automatic layout takes time not a little for calculating the width of columns. Please specify `table-layout="fixed"`, if a high-speed formatting is desired.

In **AH Formatter V6.0**, the processing method of the table differs between the specification of `table-layout` and the specification of the width to `fo:table`. When the width of all columns is specified, even if `table-layout="auto"` is specified, it is treated as `table-layout="fixed"`. Moreover, `proportional-column-width()` is supposed to be available to specify only in the case of `table-layout="fixed"` according to the XSL specification. In **AH Formatter V6.0**, when a column with `proportional-column-width()` and a column without the width specification are intermingled, it is considered that `column-width="proportional-column-width(1)"` is specified to the column without the width specification. In addition, it is considered and processed that `table-layout="fixed"` is specified. That is, in such case, all columns will have the width specification.

table-layout	Width of fo:table	Processing Method
fixed	Yes	The width is divided equally and assigned to the column as which width is not specified. When the content exceeds the width, it will overflow.
	No	The table width becomes 100%. The width is divided equally and assigned to the column where the width is not specified. When the content exceeds the width, it will overflow.
auto	Yes	The content of the column are calculated and the width is assigned to the column where the width is not specified. When the table width exceeds its specified width even if the minimum width of a column is adopted, the table width expands to the exceeded width.
	No	The content of the column are calculated and the width is assigned to the column where the width is not specified. When the table width does not fill to 100% even if the maximum width of a column is adopted, it will become the table width. When the table width exceeds 100% even if the width of a column is adopted, it will become the table width. Otherwise, the width of a table becomes 100%.

When `table-layout="auto"` is specified, the content of the column where the width is not specified are investigated. More desirable column width can be determined if all rows are investigated, but it takes too much time for a big table. **AH Formatter V6.0** usually investigates the contents only to the column for 100 rows at the maximum and determines the width of a column. This number of rows can be changed by `table-auto-layout-limit` of [Option Setting File](#).

When `table-layout="fixed"` is specified, since the contents of the column are not investigated, the processing speed is always high.

## Line Breaking

**AH Formatter V6.0** processes the line breaking according to [UAX#14: Line Breaking Properties](#). There are some cases that the processing differs from UAX#14.

- Nonstarter Japanese characters defined in JIS X 4051:2004 can be controlled by `axf:line-break`.
- The rule LB30 was deleted in UAX#14 Revision 2.2. This was made by considering Japanese etc., but it is a problem that the word breaks before (s) in the case like `person(s)`. **AH Formatter V6.0** permits the line breaking for full-width parentheses. The target punctuations are closing parenthesis, opening parenthesis and full-width punctuation marks indicated in `axf:punctuation-trim`. As for the half-width parentheses in European languages, the line breaks by interpreting LB30 as follows.

```
(AL | NU) x OP
CL x (AL | NU)
```

- The line breaking class AI in a CJK script is processed as ID. However, U+2015 (HORIZONTAL BAR) is processed as IN since it is non-breaking character in JIS X 4051:2004.
- The line breaking class of half-width kana is AL. Unless it leaves a space between words as well as the alphabet, line breaking is not done. **AH Formatter V6.0** treats half-width kana as full-width kana and processes the line breaking.
- UAX#14 allows a line break immediately after U+002F (SOLIDUS), then a line break occurs with abbreviations such as km/h and w/o. It is described clearly that such breaks are undesirable in UAX#14. **AH Formatter V6.0** makes it possible to control the breaking of the word, such as abbreviations by `axf:abbreviation-character-count`.

## Variation Sequence

**AH Formatter V6.0** supports the Unicode Character 'Variation Sequence'. When the OpenType font has the capability of Variation Sequence (`cmap Format14`), it is processed appropriately. For example, Variant Sequences can be expressed as follows.

葛&#xE0100;城市 葛城市  
葛&#xE0101;飾区 葛飾区

Even when it is applied to a CID font which has the capability of Variation Sequence, CID is selected according to the following IVD ([UTS#37: Ideographic Variation Database](#)).

- 2007-12-14 Combined registration of the Adobe-Japan1 collection and of sequences in that collection

&#xE0100;, etc. will be disregarded when it is not a CID font or there is no corresponded CID, or the specified Variation Sequence is beyond the range.

**CAUTION:** Variation Sequences other than Ideographic are not supported.

## Font Selection

Fonts in FO or CSS are specified by the font-family property. There are various cases in settings when the candidates of the font are enumerated like font-family="Courier New, serif", or when there is no specification of font-family, **AH Formatter V6.0** determines which font should be applied to a character string as follows.

1. The character strings in the region are divided into the character strings with the same character by the script information corresponding to the character defined by Unicode, the language specified in FO or CSS, or the script information, etc. and the script of the divided character string is determined. This method of determination is complicated because of the reason that there contains the ambiguous characters to determine if it's a full width character or not in Unicode. Or from only the Chinese character as a character string, the language is being unable to determine.
2. When font-selection-strategy="auto" is specified, for the first character of the string, whether font-family specified in FO or CSS supports the range or script of Unicode is investigated in order. The supported font which is found first is adopted. When no font-family is specified, it is considered that the generic font family specified in the [default font family](#) is specified. When font-selection-strategy="character-by-character" is specified, each character of this character string is investigated in order whether the font-family specified by FO or CSS has its glyph. Then re-divides a character string per the supported fonts. When no font-family is specified, it is considered that the generic font family as the [standard font family](#) is specified.

In XSL or CSS, the following five can be used as the generic font family.

- serif
- sans-serif
- cursive
- fantasy
- monospace

**AH Formatter V6.0** has the information of which font is actually made to correspond to these for every script. Moreover, the default generic font which does not belong to any script can also be defined now. These can be specified in the [Font Setting page](#) of the [Option Setting dialog](#) in GUI, and also can be specified with `<script-font>` in the [Option Setting File](#).

1. When the generic font classified by the script corresponding to the script of the target character string is specified, whether it supports the character string is investigated.
2. When the corresponding generic font classified by the script is not specified, the default generic font is investigated.
3. When `auto-fallback-font="true"` is specified in the [Option Setting File](#) and any fonts specified in the font-family don't support the target character string, the following fallback processing will be performed.
  - a. The font specified to the fallback associated with the corresponding script is investigated.
  - b. The font specified to the fallback of the standard generic font is investigated.
  - c. Even then any fonts don't support the target character string, the following fonts are investigated in order.
    - Windows version
      - i. Lucida Sans Unicode
      - ii. Microsoft Sans Serif
      - iii. IPAGothic
      - iv. Code2000
      - v. MS PGothic
      - vi. Arial Unicode MS
    - Non-Windows version
      - i. Helvetica
      - ii. IPAGothic
      - iii. Code2000
4. It is an error even then the font which supports the target character string is not found.

The settings in the [Option Setting dialog](#) is reflected on the [Option Setting File](#). For example, it is written like

```
<script-font script="Hans" serif="SimSun" sans-serif="SimHei" monospace="SimSun"/>
```

Since there is no specification of cursive here, cursive in the default generic font is adopted to Hans. Like immediately after the installation, when `<script-font script="Hans"/>` itself is not specified, it is considered that the default group is specified.

The following default group is set up with the Windows version. No scripts which are not specified here are set up. Moreover, it is not set up when the font does not actually exist.

Script	serif	sans-serif	cursive	fantasy	monospace
<b>Standard</b>	Times New Roman	Arial	Segeo Script or Comic Sans MS or Monotype Corsiva	Impact	Courier New
<b>Jpan</b>	MS Mincho or MS Gothic	MS Gothic	MS Mincho or MS Gothic	MS Mincho or MS Gothic	MS Gothic or MS Mincho
<b>Hans</b>	SimSun or MS Song	SimHei or MS Hei or MS Song	SimSun or MS Song	SimSun or MS Song	>SimHei or MS Hei or MS Song
<b>Hant</b>	MingLiU	MingLiU	MingLiU	MingLiU	MingLiU
<b>Hang</b>	Batang or BatangChe	Gulim or BatangChe	Batang or BatangChe	Batang or BatangChe	BatangChe
<b>Arab</b>	Arabic Typesetting	Arabic Typesetting	Arabic Typesetting	Arabic Typesetting	Arabic Typesetting
<b>Hebr</b>	FrankRuehl	FrankRuehl	FrankRuehl	FrankRuehl	FrankRuehl
<b>Thai</b>	Angsana New	Angsana New	Angsana New	Angsana New	Angsana New
<b>Deva</b>	Mangal	Mangal	Mangal	Mangal	Mangal

The following default group is set up with the Macintosh version.

Script	serif	sans-serif	cursive	fantasy	monospace
<b>Standard</b>	Times or Times New Roman	Helvetica or Arial	Monaco or Chalkboard	Monaco or Chalkboard	Courier
<b>Jpan</b>	HiraMinPro W3	HiraKakuPro W3	HiraMaruPro W3 or HiraKakuPro W3	HiraMaruPro W3 or HiraKakuPro W3	HiraKakuPro W3
<b>Hans</b>	STXihei	STSong	STXihei	STXihei	STSong
<b>Hant</b>	LiHeiPro	LiSongPro	LiHeiPro	LiHeiPro	LiSongPro
<b>Hang</b>	AppleMyungjo	AppleGothic	AppleMyungjo	AppleMyungjo	AppleGothic
<b>Arab</b>	Geeza Pro	Geeza Pro	Geeza Pro	Geeza Pro	Geeza Pro
<b>Hebr</b>	NewPeninimMT	NewPeninimMT	NewPeninimMT	NewPeninimMT	NewPeninimMT
<b>Thai</b>	Thonburi	Thonburi	Thonburi	Thonburi	Thonburi
<b>Deva</b>	DevanagariMT	DevanagariMT	DevanagariMT	DevanagariMT	DevanagariMT

The following default group is set up with the other UNIX version.

Script	serif	sans-serif	cursive	fantasy	monospace
<b>Standard</b>	Times	Helvetica	Times	Times	Courier

## Formatting Large Document

For example, when formatting the simple FO (or HTML etc.) without `<fo:page-number-citation>` and outputting PDF, since **AH Formatter V6.0** outputs PDF by throwing away pages which has already been formatted, no matter how huge the document is, **AH Formatter V6.0** can process without consuming more than memory for 1 page (except for the formatting from GUI). However, if the page refers to the back page by `<fo:page-number-citation>` we cannot know what page number the currently referenced page will be until the page is actually being formatted. For that reason, if the page containing the unsolved `<fo:page-number-citation>` appears, XSL Formatter V4.2 will suspend the output, storing the result on the memory in the middle of formatting. When the document has a table of contents at the start, the output will not be performed until all the page number that appears in a table of contents is solved. A limit arises in the number of formatting pages and this means that the formatting of a large-scale document is impossible because of the memory consumption in large quantities.

In order to solve this problem, **AH Formatter V6.0** makes it possible to process the document with 2-pass format. With the first path, the formatting is processed only for the purpose of the solution of `<fo:page-number-citation>`, and all the required page number information is collected. With the second pass, the formatting starts again from the start of the page. Since all `<fo:page-number-citation>` is solved at this time, **AH Formatter V6.0** can output the document by throwing away the already formatted pages.

Although the processing time will increase, most memories are not consumed and the it becomes available to format the large-scale of document. The following shows how to perform 2 path formatting.

The following shows how to perform 2-path formatting.

- Specify `-2pass` with the [Command-line Interface](#).
- Specify `TwoPassFormatting=true` with the [.NET Interface](#).
- Specify `TwoPassFormatting=true` with the [COM Interface](#).
- Specify `setTwoPassFormatting(true)` with the [JAVA Interface](#).
- Specify `setTwoPassFormatting(true)` with the [C/C++ Interface](#).
- Specify `<formatter-settings two-pass-formatting="true">` in the [Option Setting File](#).

**CAUTION:** It's not available to process the 2-pass formatting from [GUI](#).

**CAUTION:** It's not available to process the 2-pass formatting with [AH Formatter V6.0 Lite](#).

## Temporary File

---

**AH Formatter V6.0** does not make the temporary file for work except for the case of being inescapable. Followings are the cases that **AH Formatter V6.0** makes the temporary file for work.

- With the [COM interface](#), PDF of a formatted result is saved to a temporary file when outputting PDF to a Web browser directly.
- An XML document passed by using DOM with the [COM interface](#) is processed using a temporary file. However, when FO is specified as the formatting type, the temporary file is not generated because DOM is processed directly.
- When outputting a file while printing, a temporary file is generated.
- When a file interface is required in the XSLT transformation using external XSLT and, a temporary file is generated.
- When the transformation from XML+XSL is required in the render method of a [Java interface](#), the result FO is generated as a temporary file.
- In Windows version, when embedding the image that is not embeddable in PDF, a temporary file is generated in the conversion process.
- In Windows version, a temporary file is generated when processing [MathML](#) using MathPlayer.
- A temporary file is generated when converting EPS to PDF using Distiller or Ghostscript.
- When processing EPS using Distiller, if joboptions is not specified, default joboption will be generated as a temporary file.
- A temporary file is generated when outputting to a [XPS](#) file.
- In GUI of Windows version, a temporary file is suitably generated by Windows System.

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