XMLmind XML Editor - Support of Cascading Style Sheets (W3C CSS)

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Abstract

This document describes the subset of CSS2 supported by XXE, as well as advanced ``proprietary extensions'' needed to style complex XML documents.

Part I. Guide

Chapter 1. Introduction

XMLmind XML Editor (XXE for short) supports a subset of CSS2 and a few CSS3 features.

The role of the CSS style sheet in XXE is to make the XML document easy to read (get rid of the tree view, no visible tags, etc) and to make its structure (chapter, section, list, list item, etc) easy to understand.

This is very different from the role of CSS style sheets in Web browsers, for which the CSS standard has been designed.

In practice, this means:

- You really need to design a CSS style sheet *specifically for XML authoring*. For that, no need to be WYSIWYG, that is,

  - you should not try to emulate what will be displayed in the browser after the conversion of the XML document to HTML;

  - you should not try to emulate what will be displayed in Acrobat™ Reader after conversion of the XML document to PDF.

  Note that XXE supports enough CSS to make your XML documents look WYSIRN (**W**hat **Y**ou **S**ee **I**s **R**eally **N**eat).

- Unless you are styling XML data (or a mix of XML document/XML data) rather than XML documents, you should restrict yourself from using XMLmind proprietary extensions. You can style 99% of any type of XML document using the subset of CSS2 supported by XXE. (The remaining 1% is solved by the image() [43] or the image-viewport() [44] content objects.)

Chapter 2. Restrictions

Important

The properties not listed in the following two tables are *not supported by XXE*.

The following properties can be inherited whether explicitly (**inherit** keyword) or implicitly (inherited property).

For all properties except line-height where the specified number is inherited (which is the correct behavior), the inherited value is the actual value not the computed value.

Property	Value	Restrictions
background-color	*color*|transparent |inherit	-
border	*width* [*style color*?]? |inherit	Order is strictly width, style, color
border-color	*side_value*{1,4}	-
border-bottom-color	*color*|transparent inherit	-
border-left-color	"	-
border-right-color	"	-
border-top-color	"	-
border-style	none|dotted|dashed |solid|double|groove |ridge|inset|outset	No hidden
border-width	thin|thick|medium |*length*|inherit	-
color	*color*|inherit	-
counter-reset, counter-increment	[*identifier integer*?]+ |none|inherit	-
display	none|inline|block |list-item|marker |table |inline-table |table-row-group |table-header-group |table-footer-group |table-row |table-column-group |table-column|table-cell |table-caption |inline-block|tree|inherit	No run-in, compact.
font	[*style weight*?]? *size family* |inherit	Order is strictly style then weight
font-family	[[*name*|*generic*] ,]* [*name*|*generic*] |inherit	font-family is expected to contain serif, sans-serif or monospace. Example: "`font-family: Helvetica, Arial, sans-serif;`". However a few well-know font families are mapped to the corresponding generic font families. Example: "`font-family: verdana;`" is understood to be sans-serif. All other cases will cause the serif font family to be used. Example: "`font-family: 'Nimbus Sans';`".
font-size	medium|small|large |x-small|x-large |xx-small|xx-large |smaller|larger |*length*|*percentage* |inherit	-
font-style	normal|italic|oblique |inherit	italic and oblique are aliases
font-weight	normal|bold|inherit	No *N*00, bolder, lighter

Property	Value	Restrictions
line-height	normal|*number*|inherit	No *length*, *percentage*
list-style-image	*URI* | none | |inherit	Also supports icon(*name*).
list-style-position	outside | inside| inherit	-
list-style-type	decimal | lower-alpha | upper-alpha | lower-roman | upper-roman | none | inherit	No decimal-leading-zero, hebrew, armenian, lower-greek, etc.
list-style	*type* [*position* [*image*]?]? | inherit	Order is strictly type then position then image.
margin	*side_value*{1,4}	-
margin-bottom	*length*|auto|inherit	No *percentage*
margin-left	"	-
margin-right	"	-
margin-top	"	-
padding	*side_value*{1,4}	-
padding-bottom	*length*|inherit	No *percentage*
padding-left	"	-
padding-right	"	-
padding-top	"	-
text-align	left|right|center |inherit	No justify
text-decoration	none|underline|overline |line-through|inherit	No blink
text-indent	*length*|inherit	No *percentage*
vertical-align	baseline|middle|sub |super|text-top|top |text-bottom|bottom |inherit	No *length*, *percentage*
white-space	normal|pre|nowrap |inherit	-

The following properties cannot be inherited whether explicitly (**inherit** keyword) or implicitly (inherited property).

Property	Value	Restrictions
border-spacing	*length length*?	-
caption-side	top|bottom	left, right, inherit are not supported.
content	*string*|*uri*|attr(*X*) |open-quote|close-quote |no-open-quote |no-close-quote |counter(*name*) |counter(*name*, *style*) |counters(*name*, *separ*) |counters(*name*, *separ*, *style*) |disc|circle|square |see extensions	No-open-quote, no-close-quote are ignored. Counter styles are limited to: decimal, lower-alpha, lower-latin, upper-alpha, upper-latin, lower-roman, upper-roman.
height	*length*|auto	No *percentage*. This property is currently ignored.
marker-offset	*length*|auto|fill	No *percentage*.
width	*length*|auto	No *percentage*. This property is currently only useful to specify the minimum width of a table cell.

Other restrictions:

- The CSS box decorations (**border**, **padding**, etc) are not supported for inlined elements. The **background-color** is the only property supported for such elements.
- Inserting block elements inside inlined elements is not supported. It will not crash the XML editor, but the result will be ugly. However inserting element having property `display: inline-block;` or property `display: inline-table;` inside inlined elements should work fine.
- The border properties, except **border-color**, cannot be specified individually for each side of the box.
- **:first-letter** and **:first-line** pseudo-elements are ignored.
- The **!important** specifier is ignored.

Chapter 3. Extensions related to generated content

Tip

Rules which use extensions specific to XMLmind XML Editor may be specified in `@media XMLmind-XML-Editor` constructs (identifier `XMLmind-XML-Editor` being case-insensitive). Example:

```
@media XMLmind-XML-Editor {
    img {
        content: image(attr(src));
    }
}
```

Elaborate examples of generated content can be found in *`XXE_install_dir`*`/demo/bugreport/bugreport.css` and in *`XXE_install_dir`*`/addon/config/common/css/xmldata.css`.

1. Replaced content

XXE not only supports generated content but also supports *replaced content*. This means that **content** may be used for any element and not only for **:before** and **:after** pseudo-elements. When used for an actual element, it replaces what is normally displayed for this element.

Therefore, in what follows, generated content generally means generated or replaced content.

2. Generated content

Extensions related to generated content fall in three categories:

- Content objects [32].

  Standard CSS only supports text and images. Example: `content: url(images/right.png) "foo=" attr(foo);`. XXE supports other ways of specifying text and images as well as using controls (buttons, comboboxes, etc) as generated content.

  Example:

  ```
  img {
      content: image(attr(src));
  }
  ```

- Content layouts [55].

  Standard CSS does not allow to structure and layout generated content. XXE allows for example to structure and layout generated content as an embedded table.

  Example:

  ```
  orderedProducts:before {
      display: table-row;
      content: row(cell("QUANTITY"),
                   cell("REFERENCE"),
                   cell("DESIGNATION"),
                   cell(content("PRICE\A", attr(currency))),
                   font-weight, bold,
                   color, white,
                   background-color, #0000A0,
                   border-width, 1,
                   border-style, solid,
  ```

```
                border-top-color, gray,
                border-bottom-color, gray,
                border-right-color, gray,
                border-left-color, gray);
}
```

- Display values supported for generated content [57].

  Standard CSS only supports inline, block, marker as the value of the display property of generated content, and generated content is limited to inline and block elements. XXE does much more than this.

  Example: table-row in the above example.

Chapter 4. Other extensions

Tip

Rules which use extensions specific to XMLmind XML Editor may be specified in `@media XMLmind-XML-Editor` constructs (identifier `XMLmind-XML-Editor` being case-insensitive). Example:

```
@media XMLmind-XML-Editor {
    img {
        content: image(attr(src));
    }
}
```

1. Built-in CSS rules

XMLmind XML Editor has built-in CSS rules mainly used to style comments and processing instructions. These built-in rules are always implicitly loaded before the rules found in a CSS file. However, nothing prevents you from overriding any of the following built-in rules.

```
*::comment,
*::processing-instruction {
    display: block;
    margin: 2px;
    white-space: pre;
    text-align: left;
    font-family: monospace;
    font-style: normal;
    font-weight: normal;
    font-size: small;
}

*::comment {
    background-color: #FFFFCC;
    color: #808000;
}

*::processing-instruction {
    background-color: #CCFFCC;
    color: #008000;
}

*::processing-instruction(xxe-formula) {
    content: gadget("com.xmlmind.xmleditapp.spreadsheet.Formula");
    display: inline;
}

*:read-only {
    background-color: #E0F0F0;
}

@namespace xi url(http://www.w3.org/2001/XInclude);

xi|include,
xi\:include {
    display: tree;
}

@media print {
    *::comment,
    *::processing-instruction,
    *::processing-instruction(xxe-formula) {
        display: none;
    }

    *:read-only {
```

```
        background-color: transparent;
    }
}
```

In practice, this just means that you have nothing special to do to style comments, processing instructions and spreadsheet formulas (processing instruction `xxe-formula`).

2. CSS3 selectors

In addition to all CSS2 selectors, XXE also supports the following CSS3 selectors:

Pattern	Meaning
`E:last-child`	an `E` element, last child of its parent
`E:first-of-type`	an `E` element, first sibling of its type
`E:last-of-type`	an `E` element, last sibling of its type
`E:root`	an `E` element which is the root element of a document
`E:empty`	an `E` element which does not contain child nodes of any type
`[att^=val]`	the `att` attribute whose value begins with the prefix "`val`"
`[att$=val]`	the `att` attribute whose value ends with the suffix "`val`"
`[att*=val]`	the `att` attribute whose value contains at least one instance of the substring "`val`"

3. Styling an element which contains a specific processing instruction

Use pseudo-class **:contains-processing-instruction(*`target`*)** where *`target`*, a CSS identifier or string, is the target of the processing instructions.

Example: display all XHTML `span`s containing one or more spreadsheet formulas with a yellow background.

```
span:contains-processing-instruction(xxe-formula) {
    background-color: yellow;
}
```

4. Styling an element which contains a specific child element

Use pseudo-class **:contains-element(*`element_name`*)** where *`element_name`*, a CSS identifier, string or qualified name, specifies the name of child element.

Note that:

```
p:contains-element(i) {
    color: red;
}
```

is very different from:

```
p > i {
    color: red;
}
```

In the first case, the target of the CSS rule, that is the element which is styled, is `p`. In the second case, it is `i`.

Examples:

```
/* No namespace declaration before this. */

p:contains-element(i) {1
    color: red;
}

p:contains-element(|b) {2
    color: green;
}

@namespace foo "http://foo.com";

p:contains-element(foo|hl) {3
    color: blue;
}

@namespace "http://bar.com";

p:contains-element(hl) {4
    color: yellow;
}

*|*:contains-element(*|hl) {5
    text-decoration: underline;
}

*|hl {
    display: inline;
}
```

1. Element with local name `p`, whatever is its namespace, containing a `i` whatever is its namespace, gets a red color.
2. Element with local name `p`, whatever is its namespace, containing a `{}b`, gets a green color.
3. Element with local name `p`, whatever is its namespace, containing a `{http://foo.com}hl`, gets a blue color.
4. Element `{http://bar.com}p`, containing a `{http://bar.com}hl`, gets a yellow color.
5. Any element having a child with local name `hl`, whatever is the namespace of this `hl`, is to be underlined.

5. Specifying namespaces

Namespace support in CSS3 style sheets is outlined in Selectors. In summary:

- `@namespace` rule declares a namespace prefix and associates it to the namespace URI. Examples:

  ```
  @namespace url(http://www.xmlmind.com/xmleditor/schema/configuration);

  @namespace html url(http://www.w3.org/1999/xhtml);
  ```

  Rule #1 specifies that element names (in selectors) without an explicit namespace component belong to the "`http://www.xmlmind.com/xmleditor/schema/configuration`" namespace.

  Rule #2 specifies that element or attribute names with a "`html`" prefix belong to the "`http://www.w3.org/1999/xhtml`" namespace.

- Notation for qualified names is *`prefix`*`|`*`local_name`*, where character `'|'` is used to separate the two parts of the qualified name.

  Example of element names:

  ```
  @namespace ns url(http://www.ns.com);

  ns|para { font-size: 8pt;  }
  ns|*    { font-size: 9pt;  }
  |para   { font-size: 10pt; }
  ```

```
*|para  { font-size: 11pt; }
para    { font-size: 11pt; }
```

Rule #1
: will match only `para` elements in the "`http://www.ns.com`" namespace.

Rule #2
: will match all elements in the "`http://www.ns.com`" namespace.

Rule #3
: will match only `para` elements without any declared namespace.

Rule #4
: will match `para` elements in any namespace (including those without any declared namespace).

Rule #5
: is equivalent to the rule #4 because no default namespace has been defined.

Examples of attribute names:

```
@namespace ns "http://www.ns.com";

[ns|role=minor] { font-size: 8pt; }
[*|role]        { font-size: 9pt; }
[|role]         { font-size: 10pt; }
[role]          { font-size: 10pt; }
```

Rule #1
: will match only elements with the attribute `role` in the "`http://www.ns.com`" namespace with the value "`minor`".

Rule #2
: will match only elements with the attribute `role` regardless of the namespace of the attribute (including no declared namespace).

Rule #3 and #4
: will match only elements with the attribute `role` where the attribute is not declared to be in a namespace.

  Note that default namespaces do not apply to attributes.

- The `attr()` pseudo-function also supports namespaces.

```
@namespace ns "http://www.ns.com";

para:before { content: attr(ns|role); }
```

The generated content inserted before "`para`" elements is the content of attribute `role` declared in the "`http://www.ns.com`" namespace.

Pitfall 1

In XXE, documents conforming to a DTD are *not namespace aware*, which means that:

- an attribute such as xlink:href is understood as being `{}xlink:href` and not `{http://www.w3.org/1999/xlink}href`,
- `xmlns` attributes have no special meaning.

When the target document is namespace aware, the xlink namespace must be declared using @namespace and the `xlink:href` attribute must be specified as "`xlink|href`" in the style sheet.

When the target document is not namespace aware, the xlink namespace must not be declared and the `xlink:href` attribute must be specified as "`xlink\:href`" in the style sheet.

Pitfall 2

The XML namespace, "http://www.w3.org/XML/1998/namespace", is always predefined and an attribute such as `xml:space` must always be defined as `xml|space`, even when used for target documents which are otherwise not namespace aware.

6. Inserting in generated content the name of the element which is the target of the CSS rule

Standard pseudo-function `attr()` can be used to insert in generated content the value of an attribute of the element which is the target of CSS rule.

Example:

```
xref {
    content: "xref=" attr(linkend) " ";
}
```

Pseudo functions `element-name()`, `element-local-name()`, `element-namespace-uri()`, `element-label()` are similar to `attr()` except that they insert strings related to the name of the element which is the target of CSS rule.

Example:

```
xref {
    content: element-name() "=" attr(linkend) " ";
}
```

Pseudo-function	Description	Example
element-name()	The fully qualified name of the element.	ns:myElement-1
element-local-name()	Local part of element name.	myElement-1
element-namespace-uri()	Namespace URI of element name.	http://acme.com/ns/foo/bar
element-label()	Local part of element name, made more readable.	My element 1

7. Dynamic evaluation of property values

7.1. Simple dynamic evaluation of property values

concatenate(*value*, ..., *value*) may be used to specify a dynamically evaluated property value anywhere a static property value is allowed.

A dynamic property value is evaluated just before building the view corresponding to the subject of the selector:

1. The *value* arguments are converted to strings and concatenated together.

2. The result of the evaluation is a string which is parsed as a property value.

Example 1 (XHTML), simple table formatting could be implemented using this feature:

```
td, th {
    display: table-cell;
    text-align: concatenate(attr(align));
    vertical-align: concatenate(attr(valign));
    row-span: concatenate(attr(rowspan));
    column-span: concatenate(attr(colspan));
    border: 1 inset gray;
```

```
    padding: 2;
}
```

Example 2 (custom DTD) image name is the concatenation of a basename obtained from attribute `name` and an extension obtained from attribute `format` (see above to have a description of pseudo-function `image()` [43]):

```
image {
    content: concatenate("image('", attr(name), ".", attr(format), "',-400,-200)");
}
```

7.2. Using custom code to extend the CSS style sheet

In the rare cases where Cascading Style Sheets (CSS) are not powerful enough to style certain elements of a class of documents, it is possible to use custom code written in the Java™ language to do so.

`@extension "`*`extension_class_name parameter ... parameter`*`";` must be used to declare the Java™ class implementing the CSS extension.

Example (XHTML):

```
@extension "com.xmlmind.xmleditapp.xhtml.TableSupport black 'rgb(238, 238, 224)'";
```

In the above example, `com.xmlmind.xmleditapp.xhtml.TableSupport` is a class which is used to style XHTML (that is, HTML 4) tables. The two parameters which follow the class name specify colors used to draw table and cell borders. Parameters are optional and can be quoted if they contain white spaces.

The same CSS style sheet can contain several `@extension` constructs. For example, an extension class may be used to style HTML tables and an other extension class may be used to localize generated content. If two `@extensions` reference the *same class name*, the last declared one will be used by the CSS engine. For example, redeclaring an extension class imported from another CSS style sheet may be useful to change its parameters.

How to write such extension class is explained in detail in the Chapter 8, Writing style sheet extensions in *XMLmind XML Editor - Developer's Guide*.

- The code of the extension class (contained in a `.jar` file) must have been loaded at XXE. This is done simply by copying the `.jar` file anywhere in one of the two `addons/` directories scanned by XXE during its startup. More information in the section called “Dynamic discovery of add-ons” in *XMLmind XML Editor - Configuration and Deployment*.

- Each time the style sheet containing the `@extension` rule is loaded, a new instance of the extension class is created.

- The extension class does not need to implement any specific interface but it must have a constructor with the following signature: *`Constructor`*`(java.lang.String[] parameters, com.xmlmind.xmledit.styledview.StyledViewFactory factory)`.

- Invoking the constructor of the extension class may have side effects such as registering intrinsic style specifications (`com.xmlmind.xmledit.stylesheet.StyleSpecs`, see Chapter 8, Writing style sheet extensions in *XMLmind XML Editor - Developer's Guide*) with the `com.xmlmind.xmledit.styledview.StyledViewFactory` passed as the second argument of the constructor.

The extension class may have methods which have been written to dynamically evaluate property values. These methods are invoked using the following syntax: `invoke(`*`method_name, parameter, ..., parameter`*`)`. Parameters are optional.

Example (Email schema used as an example in the Chapter 8, Writing style sheet extensions in *XMLmind XML Editor - Developer's Guide*):

```
from:before {
    content: invoke("localize", "From:");
}
```

In the above example, method `localize` of class `StyleExtension` is used to translate string "`From:`" to the language specified by the `xml:lang` attribute (if found on the `email` root element). For example, if `xml:lang` is set to `fr` (French), the generated content will contain "`De:`" instead of "`From:`".

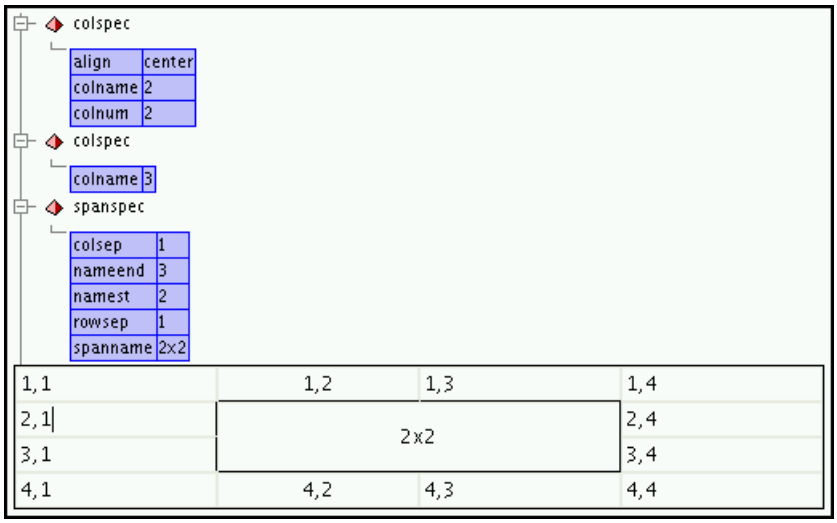
Methods used to dynamically evaluate property values must have the following signature (see Chapter 8, Writing style sheet extensions in *XMLmind XML Editor - Developer's Guide*): `com.xmlmind.xmledit.stylesheet.StyleValue` *`Method`*`(com.xmlmind.xmledit.stylesheet.StyleValue[] parameters, com.xmlmind.xmledit.doc.Node contextNode, com.xmlmind.xmledit.styledview.StyledViewFactory factory)`.

If several extensions classes have dynamic property value methods with identical names (even if this unlikely to happen), the method actually used by the CSS engine will be the method of the class first declared using `@extension`.

8. New values for the display property

- **display: tree** may be used to mix styled element views and non-styled (tree-like) element views. This is particularly useful for meta-information (such as DocBook's bookinfo, sectioninfo, indexterm, etc) for which a sensible style is hard to come up with.

  Example (DocBook):



- **display: inline-block** may be used to specify a rectangular block that participates in an inline formatting context. (This is similar to **inline-table**.)

9. Rendering repeating elements as a table

- Two properties **column-span** and **row-span** have been added to specify the column and row span of elements with a **table-cell display**. The value for these properties is a strictly positive integer number. The initial value is 1. These properties are not inherited.

- The low-level property **start-column** is generally used by style sheet extensions to specify the start column of a cell in the case of complex tables. For example, this property is used by the Java™ code that styles DocBook/CALS tables. *Note that first column is column #0, not column #1*. The initial value is -1, which means the normal column for the cell. This property is not inherited.

- In addition to what is specified by CSS2, the **:before** and **:after** pseudo-elements allow values of the **display** property as follows:

  - If the subject of the selector is a **table** element, allowed values are **block**, **marker**, **table-row-group** and **table-row**. If the value of **display** has any other value, the pseudo-element will behave as if the value was **block**.

- If the subject of the selector is a **table-row-group** element, allowed value is **table-row**. If the value of **display** has any other value, the pseudo-element will behave as if the value was **table-row**.
- If the subject of the selector is a **table-row** element, allowed value is **table-cell**. If the value of **display** has any other value, the pseudo-element will behave as if the value was **table-cell**.

These extensions are supported to add generated column and row headers to arbitrary XML data displayed as a table.

For example, with these styles, the select, optgroup and option XHTML elements are displayed as a table with automatically generated column and row headers:

```
select {
    display: table;
    border: 1 solid black;
    padding: 2;
    border-spacing: 2;
    background-color: silver;
}

select:before {
    display: table-row-group;
    content: row(cell("Category", width, 20ex), cell("Choice #1"),
                 cell("Choice #2"), cell("Choice #3"),
                 font-weight, bold, color, olive,
                 padding-top, 2, padding-right, 2,
                 padding-bottom, 2, padding-left, 2,
                 border-width, 1, border-style, solid);
}

optgroup {
    display: table-row;
}

optgroup:before {
    display: table-cell;
    content: attr(label);
}

option {
    display: table-cell;
    border: 1 solid black;
    padding: 2;
    background-color: white;
}
```

XHTML source:

```
<select>
  <optgroup label="Language">
    <option>Java</option>
    <option>C++</option>
    <option>Perl</option>
  </optgroup>
  <optgroup label="Editor">
    <option>Emacs</option>
    <option>Vi</option>
    <option>UltraEdit</option>
  </optgroup>
  <optgroup label="OS">
    <option>Linux</option>
    <option>Windows</option>
    <option>Solaris</option>
  </optgroup>
</select>
```

Rendered as:

Category	Choice #1	Choice #2	Choice #3
Language	Java	C++	Perl
Editor	Emacs	Vi	UltraEdit
OS	Linux	Windows	Solaris

10. Making a table look like a spreadsheet

Use property **show-row-column-labels: yes**|**no** to add/remove A1-style labels to tables. Specify this property for elements with **display**:**table**, otherwise it is ignored.

Example: note that in DocBook, `tgroup` has **display**:**table**, not `table` or `informaltable`:

```
informaltable[role=spreadsheet] > tgroup {
    show-row-column-labels: yes;
}
```

	A	B
1	Investment	ROI
2		
3		

11. Collapsible blocks and tables

Elements with `display: block` or `display: table` can be made collapsible/expandable by specifying property `collapsible: yes`.

Table 4.1. Properties used to parametrize the collapsibility of a block or table

Property	Value	Initial value	Description
collapsible	yes | no	no	yes block or table can be collapsed and expanded no block or table cannot be collapsed and expanded
collapsed	yes | no	no	yes block or table is initially collapsed no block or table is initially expanded
not-collapsible-head	*non-negative integer*	0	Number of graphical items (gadgets) at the beginning of the block or table which must be kept visible even if the block or table is collapsed.
not-collapsible-foot	*non-negative integer*	0	Number of graphical items (gadgets) at the end of the block or table which must be kept visible even if the block or table is collapsed.
collapsed-content	*same as property content*	*no content*	Content which must be displayed (in lieu of hidden graphical items) when the block or table is collapsed. Note that this content is transformed to an image before being used. Therefore this type of generated content cannot wrap at word boundaries.
collapsed-content-align	auto|left|center|right	auto	Specifies how the `collapsed-content` image is to be horizontally aligned. Special value `auto` means that the `collapsed-content` image must be horizontally aligned just like the normal content it represents.

The above properties cannot be inherited whether explicitly (**inherit** keyword) or implicitly (inherited property).

Examples:

```
section {
    collapsible: yes;
    not-collapsible-head: 1; /*keep title visible*/
}

table {
    collapsible: yes;
    not-collapsible-head: 1; /*keep title visible*/
    collapsed-content: url(../../icons2/table.gif);
}
```

Specifying `collapsible: yes` is not sufficient to be able to use collapsible blocks and tables. A special kind of toggle button called a *collapser* must be added to the generated content of the collapsible block or table or to the generated content of one of its descendants.

This toggle button is inserted in generated content using the `collapser()` pseudo-function [35].

Examples:

```
section > title:before {
    content: collapser() " " simple-counter(n-) " ";
}

table > title:before {
    content: collapser() " ";
}
```

The above examples show the most common case: A title or caption element is the mandatory first or last child of the collapsible block or table. This title or caption must always be kept visible (`not-collapsible-head: 1`). The collapser is inserted in the generated content of the title or caption.

The following example may be used to make a XHTML `div` collapsible. Note that a XHTML `div` has no mandatory first or last child. Therefore the collapser must be inserted in the generated content of the `div` itself.

```
div {
    display: block;
}

div[class=c3] {
    collapsible: yes;
}

div[class=c3]:before,
div[class=c3]:after {
    content: collapser();
    display: block;
    margin: 5 auto;
    text-align: center;
}

div[class=c3]:after {
    content: collapser(collapsed-icon, icon(collapsed-left),
                       expanded-icon, icon(expanded-up));
}
```

Limitations

- A block, marked as being collapsible, can be collapsed only if it contains other blocks or tables. In the above example, an XHTML div of class c3 which just contains text *cannot* be collapsed.
- An element styled using "`display:table;`" is not collapsible per se. The table needs to contain a caption or title of any kind ("`display:table-caption;`") in order to be made collapsible.

  In fact, only blocks containing other blocks or tables are potentially collapsible. Adding a caption to a table automatically creates an anonymous block containing both the caption and the table. It is this anonymous block which is collapsible.

12. Styling comments and processing instructions

The construct used for styling comments and processing instructions is similar to the standard construct used for styling the first line or the first letter of an element. Examples:

```
*:comment {
    background-color: yellow;
    display: block;
}

*:processing-instruction {
    background-color: green;
    display: block;
}

section > *:processing-instruction {
    content: icon(left-half-disc) processing-instruction-target() icon(right-half-disc);
    display: block;
}

para:processing-instruction(php) {
    color: red;
    display: inline;
}
```

Rule #1
: specifies that comments are formatted as blocks with a yellow background.

  The values allowed for the **display** property of comment and processing instruction pseudo-elements are: **inline**, **block**, **inline-block**.

Rule #2
: specifies that processing instructions are formatted as blocks with a green background.

  Note that the target of the processing instruction is treated like a pseudo-attribute (editable using Edit|Processing Instruction|Change Processing Instruction Target) and is not considered to be part of its textual content.

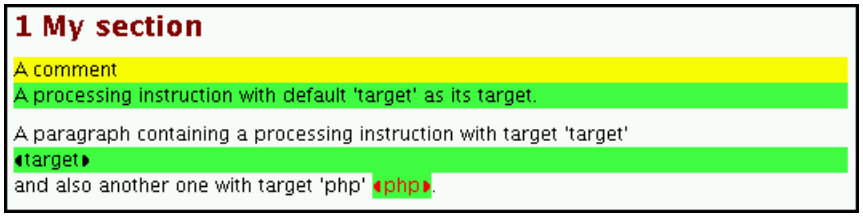
Rule #3
: specifies that processing instructions which are contained in direct children of section have replaced content.

  Comments and processing instructions may have replaced content but not generated content (**:before**, **:after**).

  The replaced content of a processing instruction pseudo-element may contain **processing-instruction-target()** which is replaced by the target of the processing instruction subject of the rule.

Rule #4
: matches processing instructions with target "`php`" contained in `para` elements.

Rendering of comments and processing instructions in a DocBook article using the above style sheet:



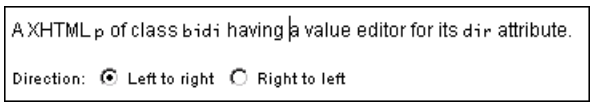
Note that it is also possible to use CSS3-like syntax `::comment` and `::processing-instruction` instead of CSS2-like syntax `:comment` and `:processing-instruction`.

13. Styling element attributes

An attribute can be rendered in the document view by inserting a value editor in the generated content.

XHTML example: a pair of radio buttons [50] are used to set the `dir` attribute of a `p` of class `bidi`.

```
p.bidi:after {
    display: block;
    content: "Direction: "
             radio-buttons(attribute, dir,
                           labels, "Left to right\A Right to left",
                           values, "ltr\A rtl");
    font-size: smaller;
}
```



This way of rendering attributes is fine but is too tedious to specify to be used on a large scale, for example to style XML data where most elements are empty but have several attributes.

In such case, it is recommended to use CSS rules where the selector contain the `:attribute()` non-standard pseudo-element.

Same example as above but using this type of rule:

```
p.bidi2:after {1
    display: block;
    content: attributes();
}

p.bidi2::attribute(dir) {2
    attribute-content-left: "Direction:";
    attribute-content-middle: radio-buttons(attribute, dir,
                                            labels,
                                            "Left to right\A Right to left",
                                            values, "ltr\A rtl");
    show-attribute: always;
    font-size: smaller;
}
```

1 First rule inserts an `attributes()` container [33] after each `p` of class `bidi2`.

A `attributes()` container is similar to a table with a row for each attribute. This table has 3 columns: left, middle, right. No border is drawn around its cells.

The content of an `attributes()` container is specified using CSS rules where the selector contain the `:attribute()` non-standard pseudo-element.

2 Second rule specifies that attribute `dir` must always be displayed for each `p` of class `bidi2`, whether this attribute is set or not.

`attribute-content-left` specifies the content of left column in the `attributes()` container. `attribute-content-middle` specifies the content of middle column in the `attributes()` container. `attribute-content-right` specifies the content of right column in the `attributes()` container.

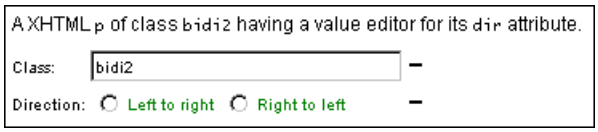
Table 4.2. Properties used to specify generated content for attributes

Property	Value	Initial value	Description
attribute-content-left	Any value allowed for the **content:** property plus `attribute-*()` pseudo functions (see below [22]).	"" (no content)	Generated content for the attribute which is the target of the `:attribute()` rule that goes to the left column of the `attributes()` container.
attribute-content-middle	Any value allowed for the **content:** property plus `attribute-*()` pseudo functions (see below [22]).	"" (no content)	Generated content for the attribute which is the target of the `:attribute()` rule that goes to the middle column of the `attributes()` container.
attribute-content-right	Any value allowed for the **content:** property plus `attribute-*()` pseudo functions (see below [22]).	"" (no content)	Generated content for the attribute which is the target of the `:attribute()` rule that goes to the right column of the `attributes()` container.
show-attribute	**never** | **always** | **when-added**	**when-added**	never Never display this attribute in the `attributes()` container. always Always display this attribute in the `attributes()` container even if the attribute has not yet been added to the element. when-added Display this attribute in the `attributes()` container if the attribute has been added to the element.

Same example as above with all attributes a `p` of class `bidi2`, displayed when they are added to this element, except for the `dir` attribute which is always displayed:

```
p.bidi2:after {
    display: block;
    content: attributes();
}

p.bidi2::attribute() {1
    attribute-content-left: attribute-label() ":";2
    attribute-content-middle: 3value-editor(attribute, attribute());4
    attribute-content-right: remove-attribute-button(attribute, attribute());5
    show-attribute: when-added;
    font-size: smaller;
}

p.bidi2::attribute(dir) {6
    attribute-content-left: "Direction:";
```

```
    attribute-content-middle: radio-buttons(attribute, dir,
                                            labels,
                                            "Left to right\A Right to left",
                                            values, "ltr\A rtl");
    show-attribute: always;
}
```



Note

Notice that in the above figure, the values of the `dir` attribute are displayed in green. This is because, unlike in first example, this `p` of class `bidi2` has no `dir` attribute yet.

By default (this can be specified [32]):

- A green foreground color means that attribute is not set.
- A red foreground color means that attribute value is invalid or that the value editor is not well suited to display this kind of values.

1 This rule specifies the generated content for all attributes of a `p` of class `bidi2`.
2 `attribute-label()` is only supported in the `attribute-content-left`, `attribute-content-middle`, `attribute-content-right` properties.

Similar generated content is:

Pseudo-function	Description	Example
attribute-name()	The fully qualified name of the attribute.	ns:myAttribute-1
attribute-local-name()	Local part of attribute name.	myAttribute-1
attribute-namespace-uri()	Namespace URI of attribute name.	http://acme.com/ns/foo/bar
attribute-label()	Local part of attribute name, made more readable.	My attribute 1

3 `value-editor()` [53] will automatically find a suitable value editor based on the data type of attribute which is the target of the rule.
4 `value-editor()` like all other value editors (such as `radio-buttons()`) can also be used to edit the value of an element. "`attribute, attribute()`" specifies that the value editor to be inserted in generated content will be used to edit the attribute which is the target of the rule.
5 See `remove-attribute-button()` [51].
6 This rule specializes the previous rule for the `dir` attribute. The `attribute-content-right` property not specified in this rule is inherited from the more general `:attribute()` rule.

14. :property() and :read-only extension pseudo classes

Application properties are similar to element attributes except that:

- They are not part of the document content.
- They are not persistent.
- Their values are not limited to strings but can be any Java™ object.

- They are not directly editable by the user. They are added to elements and to the document itself by the application (that is, XXE).

An example of application property is `LOCATION_INFO`, the location of the file from which an element has been loaded.

Example of CSS rule using the **:property()** pseudo class:

```
*:property("LOCATION_INFO"):before {
    display: block;
    color: red;
    font-size: small;
    text-align: center;
    content: "LOCATION_INFO=" property("LOCATION_INFO") "\A" icon(down);
}
```

The above rule inserts above any element having a `LOCATION_INFO` property, a block displaying the value of this property.

Note that pseudo-function **property**(*`property_name`*) can be used to insert the value of the property in generated content.

Read-only is a property which differs from other application properties by that fact that it is represented very efficiently (other properties are similar to hash table entries).

Example of CSS rule using the **:read-only** pseudo class:

```
*:read-only {
    background-color: #F0F0F0;
}
```

The above rule is used to display any element marked as being read-only with a light-gray background.

Pattern	Meaning
E:read-only	an E element, marked as being read-only
E:property("foo")	an E element, having a property named "foo"
E:property("foo", "bar") or E:property("foo", equals, "bar")	an E element, having a property named "foo" with a value whose string representation equals "bar"
E:property("foo", starts-with, "f")	an E element, having a property named "foo" with a value whose string representation starts with string "f".
E:property("foo", ends-with, "oo")	an E element, having a property named "foo" with a value whose string representation ends with string "oo".
E:property("foo", contains, "o")	an E element, having a property named "foo" with a value whose string representation contains substring "o".

15. url() is XML catalog aware

The URI specified using the standard `url()` pseudo-function may be resolved using XML catalogs.

For example, this feature can be used to customize the DocBook CSS style sheet bundled with XXE:

```
@import url(xxe-config:docbook/css/docbook.css);1
      .
      .
   my customization here
      .
```

1 Note that `@import "xxe-config:docbook/css/docbook.css";` works fine too. That is, in the case of `@import`, the `url()` pseudo-function is not strictly necessary for the XML catalogs to be used to resolve the URI.

This works because the XML catalog bundled with XXE, *XXE_install_dir*/addon/config/catalog.xml, contains the following rule:

```
<rewriteURI uriStartString="xxe-config:" rewritePrefix="." />
```

16. Modularizing a complex CSS style sheet using @property-group and @property-value

These extensions are useful when writing complex, modular, CSS style sheets. @property-value is especially useful when generating complex content such as embedded form controls.

16.1. @property-group

@property-group allows to define a named, possibly parametrized, group of properties. The syntax for defining such group is:

```
@property-group groupName( param1, ..., paramN ) {
    property;
    .
    .
    .
    property;
}
```

Including a @property-group in a rule is possible by using the following syntax:

```
selector {
    property;
    .
    .
    .
    property-group: groupName( argument1, ..., argumentN );
    .
    .
    .
    property;
}
```

Simple example:

```
@property-group title-style() {
    color: #004080;
    font-weight: bold;
}

@property-group standard-vmargins() {
    margin: 1.33ex 0;
}

title,
subtitle,
titleabbrev {
    display: block;
    property-group: title-style();
    property-group: standard-vmargins();
}
```

The above example is equivalent to:

```
title,
subtitle,
titleabbrev {
    display: block;
    color: #004080;
    font-weight: bold;
```

```
    margin: 1.33ex 0;
}
```

A @property-group can include other @property-groups. Example:

```
@property-group verbatim-style() {
    font-family: monospace;
    font-size: 0.83em;
}

@property-group verbatim-block-style() {
    display: block;
    white-space: pre;
    property-group: verbatim-style();
    property-group: standard-vmargins();
    border: thin solid gray;
    padding: 2px;
}

programlisting {
    property-group: verbatim-block-style();
}
```

The above example is equivalent to:

```
programlisting {
    display: block;
    white-space: pre;
    font-family: monospace;
    font-size: 0.83em;
    margin: 1.33ex 0;
    border: thin solid gray;
    padding: 2px;
}
```

@property-groups can have formal parameters. When a @property-group is included in a rule, these formal parameters are replaced by actual arguments. Example:

```
@property-group verbatim-block-style(border-color) {
    display: block;
    white-space: pre;
    property-group: verbatim-style();
    property-group: standard-vmargins();
    border: thin solid border-color;
    padding: 2px;
}

programlisting {
    property-group: verbatim-block-style(#E0E0E0);
}
```

The above example is equivalent to:

```
programlisting {
    display: block;
    white-space: pre;
    font-family: monospace;
    font-size: 0.83em;
    margin: 1.33ex 0;
    border: thin solid #E0E0E0;
    padding: 2px;
}
```

A @property-group can even include a reference to itself. This simply means that the new definition extends (or partly overrides) the old one. Example:

```
@property-group verbatim-block-style(border-color, background-color) {
    property-group: verbatim-block-style(border-color);
    background-color: background-color;
```

```
}

programlisting {
    property-group: verbatim-block-style(rgb(127,127,127), #EEEEEE);
}
```

The above example is equivalent to:

```
programlisting {
    display: block;
    white-space: pre;
    font-family: monospace;
    font-size: 0.83em;
    margin: 1.33ex 0;
    border: thin solid rgb(127,127,127);
    padding: 2px;
    background-color: #EEEEEE;
}
```

16.2. @property-value

@property-value allows to defined a named, possibly parametrized, property value. The syntax for defining such named property value is:

```
@property-value name( param1, ..., paramN ) value ... value;
```

Including a @property-value in a property is possible by using the usual pseudo-function syntax:

```
propertyName: value ... name( argument1, ..., argumentN ) ... value;
```

Simple example:

```
@property-value generated-icon-color() gray;

indexterm:after {
    content: icon(right-half-disc);
    color: generated-icon-color();
}

anchor {
    content: icon(right-target);
    color: generated-icon-color();
}
```

The above example is equivalent to:

```
indexterm:after {
    content: icon(right-half-disc);
    color: gray;
}

anchor {
    content: icon(right-target);
    color: gray;
}
```

A @property-value can have formal parameters. When a @property-value is included in a property, these formal parameters are replaced by actual arguments. Example:

```
@property-value attributes-editor(margin, bg)
    attributes(margin-top, margin,
               margin-bottom, margin,
               margin-left, margin,
               margin-right, margin,
               background-color, bg);

@namespace foo "http://foo.com/ns";
```

```
foo|target {
    content: attributes-editor(2, #C0E0E0);
}
```

The above example is equivalent to:

```
foo|target {
    content: attributes(margin-top, 2,
                        margin-bottom, 2,
                        margin-left, 2,
                        margin-right, 2,
                        background-color, #C0E0E0);
}
```

Using the argument-list() pseudo-function, it is possible to replace a single formal parameter by a sequence of several actual arguments. Example:

```
foo|target {
    content: attributes-editor(2, argument-list(#C0E0E0, color, navy));
}
```

The above example is equivalent to:

```
foo|target {
    content: attributes(margin-top, 2,
                        margin-bottom, 2,
                        margin-left, 2,
                        margin-right, 2,
                        background-color, #C0E0E0,
                        color, navy);
}
```

The argument-list() pseudo-function may have no arguments at all, which is sometimes useful to suppress a formal parameter. Example:

```
@property-value attributes-editor(margin, args)
    attributes(margin-top, margin,
               margin-bottom, margin,
               margin-left, margin,
               margin-right, margin,
               args);

@namespace bar "http://bar.com/ns";

bar|target {
    content: attributes-editor(2, argument-list());
}
```

The above example is equivalent to:

```
bar|target {
    content: attributes(margin-top, 2,
                        margin-bottom, 2,
                        margin-left, 2,
                        margin-right, 2);
}
```

A @property-value can include other @property-values. Example:

```
@property-value header(title, bg)
    division(content(paragraph(content(collapser(collapsed-icon,
                                                 icon(pop-right),
                                                 expanded-icon,
                                                 icon(pop-down)), " ",
                                       title,
                                       replace-button(), " ",
                                       insert-before-button(), " ",
                                       insert-button(), " ",
                                       insert-after-button(), " ",
```

```
                                    convert-button(), " ",
                                    delete-button(), "  ",
                                    add-attribute-button(
                                        check-has-attributes, yes,
                                        color, navy)),
                                background-color, bg,
                                padding-left, 4),
                        attributes-editor(2, bg)));

@namespace xs "http://www.w3.org/2001/XMLSchema";

xs|schema > xs|complexType:before,
xs|schema > xs|simpleType:before {
  content: header(argument-list(element-name(), "  "),
                  #C0E0E0);
}
```

The above example is equivalent to:

```
xs|schema > xs|complexType:before,
xs|schema > xs|simpleType:before {
  content: division(content(paragraph(content(collapser(collapsed-icon,
                                                        icon(pop-right),
                                                        expanded-icon,
                                                        icon(pop-down)), " ",
                                              element-name(), "  ",
                                              replace-button(), " ",
                                              insert-before-button(), " ",
                                              insert-button(), " ",
                                              insert-after-button(), " ",
                                              convert-button(), " ",
                                              delete-button(), "  ",
                                              add-attribute-button(
                                                  check-has-attributes, yes,
                                                  color, navy)),
                                        background-color, #C0E0E0,
                                        padding-left, 4),
                           attributes-editor(2, #C0E0E0)));
}
```

A @property-value can even include a reference to itself. This simply means that the new definition specializes the old one. Example:

```
@property-value header(bg)
    header(argument-list(element-name(), " ",
                         label(attribute, name, font-weight, bold), "  "),
           bg);

xs|schema > xs|element:before {
  content: header(#E0C0C0);
}
```

The above example is equivalent to:

```
xs|schema > xs|element:before {
  content: division(content(paragraph(content(collapser(collapsed-icon,
                                                        icon(pop-right),
                                                        expanded-icon,
                                                        icon(pop-down)), " ",
                                              element-name(), " ",
                                              label(attribute, name,
                                                    font-weight, bold), "  "
                                              replace-button(), " ",
                                              insert-before-button(), " ",
                                              insert-button(), " ",
                                              insert-after-button(), " ",
                                              convert-button(), " ",
                                              delete-button(), "  ",
                                              add-attribute-button(
```

```
                                                check-has-attributes, yes,
                                                color, navy)),
                                        background-color, #E0C0C0,
                                        padding-left, 4),
                                attributes-editor(2, #E0C0C0)));
}
```

17. marker-offset: fill

For a content generated at the beginning of an element, with `display: marker`, this property allows to align the generated content to the left.

For a content generated at the end of an element, with `display: marker`, this property allows to align the generated content to the right.

Example (excerpts from DocBook's structure.css):

```
set:before,
book:before,
part:before,
reference:before,
preface:before,
chapter:before,
article:before,
appendix:before,
section:before,
sect1:before,
sect2:before,
sect3:before,
sect4:before,
sect5:before {
    display: marker;
    marker-offset: fill;
    content: element-name();
    font-size: small;
    color: gray;
}
```

18. If needed, selectors can use default attribute values

By default, as mandated in CSS2, attribute selectors only consider attributes explicitly specified for an element. However, it is possible to force attribute selectors to also consider default attribute values defined in the DTD, W3C XML Schema or RELAX NG schema. To do this, simply add "`@use-default-attribute-values;`" at the top of the CSS file.

DITA example:

```
@use-default-attribute-values;

*[class~="topic/body"] {
    display: block;
    margin-left: 12pt;
}
```

19. Simple, fast, purely declarative counters

Standard CSS counters, that is `counter-reset`, `counter-increment`, `counter()` and `counters()`, are fully supported by XXE. However, for most uses, we also have a simpler, faster because purely declarative, alternative to standard CSS counters.

Proprietary `simple-counter()` and `simple-counters()` may be used everywhere you use `counter()` and `counters()` and this, with a similar syntax: `simple-counters(n, ".")`, `simple-counter(n, upper-roman)`,

etc. But, being purely declarative, you don't need to specify `simple-counter-reset` or `simple-counter-increment` in order to declare and update them.

Just like `counter` and `counters`, `simple-counter` and `simple-counters` are supported inside the `content` property. However their semantics are very different: *the name of the counter specifies the non-formatted value of the counter*.

Example 1 (XHTML):

```
ol > li:before {
    display: marker;
    content: simple-counter(n, decimal);
    font-weight: bold;
}
```

In the previous example, the counter name is `n` (single letter 'n', any letter is OK) which specifies that the counter value is the rank of `li` within its parent element (an `ol`).

Example 2 (DocBook):

```
sect3 > title:before {
    content: simple-counter(nnn-) " ";
}
```

In the previous example, the counter name is `nnn-` (3 letters followed by a dash) which specifies that the counter segmented value must be built as follows:

1. Skip (dash means skip) the rank of `title` within its parent element (a `sect3`).
2. Prepend (any letter means use) the rank of `title` parent (a `sect3`) within its parent (a `sect2`).
3. Prepend the rank of `title` grand-parent (a `sect2`) within its parent (a `sect1`).
4. Prepend the rank of `title` grand-grand-parent (a `sect1`) within its parent (an `article` or a `chapter`).

Part II. Reference

Chapter 5. Content objects

- *XXE_install_dir*/demo/form-sampler.xml is used to demo how standard controls such as buttons, check boxes, combo boxes, text fields, etc, can be embedded in the styled view. The CSS style sheets used by this demo are found in sub-directory *XXE_install_dir*/demo/form-sampler/.

- Most pseudo-functions create objects which can be styled at the object level. Styles are specified using *key*, *value* pairs where *key* is the name of a style property (example: **font-size**) and *value* is the value of a style property (example: **smaller**).

  Example:

```
text-field(columns, 10,
           background-color, white,
           color, black)
```

- *Shorthand properties* cannot be used to specify style parameters as described above.

  Example: **padding-top**, **padding-left**, **padding-bottom**, **padding-right** must be used rather than the single shorthand property **padding**.

- The above example is *conceptually* equivalent to (illegal CSS):

```
{ text-field(columns, 10);
  background-color: white;
  color: black; }
```

  It is important to keep this is mind because it explains why you can specify:

```
text-field(columns, attr(cols),
           background-color, white,
           color, black)
```

  but not:

```
text-field(columns, 10,
           background-color, white,
           color, attr(foreground))
```

  The attr() construct can only be used in the value of property content: therefore it is not possible to specify "color: attr(foreground);".

- All pseudo-functions generating controls (text-field [52], list [48], etc) also support the following color specifications:

Key	Value	Default	Description
missing-color	Color	rgb(0,128,128)	Foreground color used by the control when attribute or element value is missing. Therefore, this color is used when drawing default value.
missing-background-color	Color	None (no special background color)	Background color used by the control when attribute or element value is missing. Therefore, this color is used when drawing default value.
error-color	Color	rgb(128,0,0)	Foreground color used by the control when attribute or element value is invalid or when control is not well suited to edit this kind of value.
error-background-color	Color	None (no special background color)	Background color used by the control when attribute or element value is invalid or when

Key	Value	Default	Description
			control is not well suited to edit this kind of value.

Example:

```
text-field(columns, 10,
           missing-color, gray)
```

- All pseudo-functions generating content (except icon() [41] and xpath() [53]) accept attr() and xpath() values as well as literal values for their parameters.

  Example:

```
text-field(columns, 10)

text-field(columns, attr(cols))

text-field(columns, xpath("5 + 5"))
```

- Most pseudo-functions are shorthand notations for `gadget(`*`interface_name`*`)`. See gadget [41].

  For example, `collapser()` is a shorthand notation for `gadget("com.xmlmind.xmledit.form.Collapser")`, `command-button()` is a shorthand notation for `gadget("com.xmlmind.xmledit.form.CommandButton")`, etc.

1. add-attribute-button

Inserts a command-button [36] in generated content which can be used to add an attribute to the element for which the button has been generated.

Optional parameter **check-has-attributes** may be set to **yes** (other allowed value is **no**) to specify that no button is to be generated when target element has no attributes (attribute wildcards and `xsi`:* attributes are ignored).

Do not specify **command, parameter** or **menu** parameters for this type of command-button. A menu of `putAttribute` commands is built dynamically each time this button is clicked.

By default, this button has its icon set to `icon(plus)`.

Examples:

```
add-attribute-button()

add-attribute-button(text, "Add attr.",
                     check-has-attributes, yes)
```

2. attributes

attributes(*`key`*, *`value`*, ..., *`key`*, *`value`*)

Inserts in generated content a special purpose container. This special purpose container is populated with generated content for element attributes specified using **:attribute()** rules. See styling element attributes [20].

A `attributes()` container is similar to a table with a row for each attribute. This table has 3 columns: left, middle, right. No border is drawn around its cells.

Key	Value	Default	Description
wrap-rows	Boolean: yes|no, 1|0, "true"|"false", "on"|"off"	yes	Specifies whether the rows of this tabular container are wrapped or not when they are too wide for the document view.

Key, *value*, ..., *key*, *value* may specify optional style parameters [32].

Examples:

```
attributes()

attributes(margin-top, 2,
           margin-bottom, 2,
           margin-left, 2,
           margin-right, 2)

attributes(wrap-rows, no)
```

3. check-box

check-box(*key*, *value*, ..., *key*, *value*)

Inserts a check box control in generated content. This control can be used to edit the value of the element which is the target of the CSS rule. If "**attribute**, *attribute_name*" is specified, this control can be used to edit the value of an attribute of this target element.

Key	Value	Default	Description
attribute	Qualified name of attribute to be edited	No default	Without this parameter, the control is used to edit the value of the element for which the control has been generated.
label	String	None	Label used for the check box.
unchecked-value	String	None	In normal mode, unchecking the control assigns this value to the attribute or element value being edited.
checked-value	String	None	In normal mode, checking the control assigns this value to the attribute or element value being edited.
remove-value	Boolean: yes|no, 1|0, "true"|"false", "on"|"off"	no	Turns remove value mode on and off. In remove value mode, if unchecked-value is not specified, unchecking the control removes the attribute being edited. In remove value mode, if checked-value is not specified, checking the control removes the attribute being edited. If the value being edited is an element value rather than an attribute, this value is set to the empty string.

Key, *value*, ..., *key*, *value* may also specify style parameters [32].

Examples:

```
check-box(attribute, value,
          label, "On",
          unchecked-value, "false",
          checked-value, "true")

check-box(label, "Yes",
          unchecked-value, "no",
          checked-value, "yes")

check-box(attribute, value,
```

```
          label, "Disabled",
          checked-value, "disabled",
          remove-value, yes)

check-box(label, "Hidden",
          checked-value, "hidden",
          remove-value, yes)
```

4. collapser

collapser(*key*, *value*, ..., *key*, *value*)

Inserts a toggle button in generated content which can be used to collapse a collapsible block or table. See collapsible blocks and tables [16].

Key	Value	Default	Description
collapsed-icon	url(), disc, circle, square, icon()	icon(collapsed-right)	Icon of the button when block or table is collapsed.
expanded-icon	url(), disc, circle, square, icon()	icon(expanded-down)	Icon of the button when block or table is expanded.

Key, *value*, ..., *key*, *value* may also specify style parameters [32].

Examples:

```
collapser()

collapser(collapsed-icon, icon(pop-right),
          expanded-icon, icon(pop-down),
          color, navy)
```

5. combo-box

combo-box(*key*, *value*, ..., *key*, *value*)

Inserts a combobox control in generated content. This control can be used to edit the value of the element which is the target of the CSS rule. If "**attribute**, *attribute_name*" is specified, this control can be used to edit the value of an attribute of this target element.

Key	Value	Default	Description
attribute	Qualified name of attribute to be edited	No default	Without this parameter, the control is used to edit the value of the element for which the control has been generated.
labels	List of strings separated by new lines ("\A ")	None (use values as labels)	Labels used for the combobox items. The order of labels must match the order of values.
values	List of strings separated by new lines ("\A ")	None (*dynamically determined by examining the data type of value to be edited*)	Clicking on combobox item #N sets the element or attribute value being edited to value string #N.

Key, *value*, ..., *key*, *value* may also specify style parameters [32].

Examples:

```
combo-box(attribute, value)

combo-box(labels, "Green\A Blue\A Red",
          values, "green\A blue\A red")
```

6. command-button

command-button(*key*, *value*, ..., *key*, *value*)

Inserts a button in generated content which can be used to execute a command (see Chapter 6, Commands written in the Java™ programming language in *XMLmind XML Editor - Commands*) and/or to popup a menu of commands.

Key	Value	Default	Description
icon	url(), disc, circle, square, icon()	No default	Icon of the button. A button can have both a label and an icon.
text	String	No default	Label of the button. Can contain newlines ("`\A `" in CSS). `Element-*()` pseudo functions are allowed here (see element-name [12]).
command	String	No default	Name of command triggered by the button.
parameter	String	No default	Parameter of command triggered by the button.
menu	A menu of commands. See syntax below	No default	Menu of commands triggered by the button. A button can have both a command (Click-1) and a menu (Click-3).
icon-gap	Length (5px, 3em, etc)	4px	Distance between icon and label.
icon-position	right | top | bottom | left	left	Position of icon relative to the label.
select	none | element	element	By default, clicking a button selects the element having the generated content before attempting to execute the command. "`select, none`" disables this behavior.

Key, *value*, ..., *key*, *value* may also specify style parameters [32].

Menu syntax:

```
menu -> 'menu(' item+ ')'

item->   label ',' command ',' parameter|'0'
       | label ',' 'menu' ',' menu
       | EMPTY_STRING ',' EMPTY_STRING ',' EMPTY_STRING
```

- `0` specifies a null parameter.
- `"","",""` is a separator.

Examples:

```
command-button(text, "Say hello",
               command, "alert",
               parameter, "Hello!",
               select, none,
               font-style, italic)

command-button(icon, icon(pop-right),
               menu, menu("Insert tr Before",
                          "insertNode", "sameElementBefore",
                          "Insert tr After",
                          "insertNode", "sameElementAfter",
                          "", "", "",
                          "Delete tr", "delete", 0,
```

```
                          "", "", "",
                          "Clipboard", menu, menu(
                              "Copy tr", "copy", 0,
                              "Cut tr", "cut", 0,
                              "Paste Before tr", "paste", "before",
                               "Paste After tr", "paste", "after")))

command-button(text, "+",
               icon, disc,
               icon-position, right,
               icon-gap, 0,
               command, "insertNode",
               parameter, "sameElementAfter",
               menu, menu("Copy li", "copy", 0,
                          "Cut li", "cut", 0,
                          "Paste Before li", "paste", "before",
                          "Paste After li", "paste", "after"))
```

7. component

component(*className, param, ..., param***)**

Inserts a standard Java™ AWT Component or Swing JComponent in generated content.

className is the name of a Java class which implements the interface `com.xmlmind.xmledit.styledview.ComponentFactory` (see Chapter 8, Writing style sheet extensions in *XMLmind XML Editor - Developer's Guide*).

Example (XHTML - excerpt of bundled `xhtml-form.css`):

```
input {
    content: component("com.xmlmind.xmleditapp.xhtml.Input");
}
```

8. convert-button

Inserts a command-button [36] in generated content which can be used to convert the element for which the button has been generated.

Do not specify **command, parameter** or **menu** parameters for this type of command-button. A menu of `convert` commands is built dynamically each time this button is clicked.

By default, this button has its icon set to `icon(convert)`.

Example:

```
convert-button()
```

9. date-field

date-field(*`key`*, *`value`*, ..., *`key`*, *`value`*)

Inserts in generated content a text field control, configured for parsing and formatting dates. This control can be used to edit the value of the element which is the target of the CSS rule. If "**attribute**, *`attribute_name`*" is specified, this control can be used to edit the value of an attribute of this target element.

It is important to understand that a date-field does not validate what the user types in it. It is the schema of the document which is used for that. The date-field is just useful to convert formatted dates (example: 03/16/60) to/from the standard dates (example: 1960-03-16) which are stored in the document. In practice, this means that a date-field is unusable with DTDs which, unlike W3C XML Schema and Relax NG, cannot validate dates.

Key	Value	Default	Description
attribute	Qualified name of attribute to be edited	No default	Without this parameter, the control is used to edit the value of the element for which the control has been generated.
pattern	Pattern supported by java.text.DateFormat	A simple pattern which depends on **data-type**.	Specifies how date is to be parsed and formatted.
language	Lower-case, two-letter codes as defined by ISO-639. Example: "es".	Language of default locale.	Participates in specifying the locale to use.
country	Upper-case, two-letter codes as defined by ISO-3166. Example: "ES".	Country of default locale.	Participates in specifying the locale to use.
variant	Vendor or browser-specific code. Example: "Traditional_WIN".	Variant of default locale.	Participates in specifying the locale to use.
data-type	date | time | dateTime | gDay | gMonthDay | gMonth | gMonthYear | gYear	date	Base data type of attribute or element value being edited. Note that default pattern for **gMonthDay** is `MM/dd` and default pattern for **gYearMonth** is `yyyy/MM`.

`key`, *`value`*, ..., *`key`*, *`value`* may also specify style parameters [32].

Example:

```
date-field()

date-field(pattern, "yy/MM/dd hh:mm a Z",
           data-type, dateTime,
           language, en,
           country, "US")
```

10. delete-button

A convenient way of specifying `command-button [36](icon, icon(delete), command, "delete", parameter, 0)`.

11. drag-source

drag-source(*`key`*, *`value`*, ..., *`key`*, *`value`*)

Inserts a button in generated content which can be used to execute a command (see Chapter 6, Commands written in the Java™ programming language in *XMLmind XML Editor - Commands*). Identical to command-button [36] except that:

- A `drag-source` cannot be used to popup a menu.
- The user cannot click on a `drag-source`. He/she needs to drag the mouse over it to trigger the command. *This command must return a string*.

Example:

```
section[id] > title:after {
    display: inline;
    content: drag-source(icon, icon(right-link),
                         command, "dragHref");
}
```

where command `dragHref` is:

```
  <command name="dragHref">
    <macro xmlns:hrefu="java:com.xmlmind.xmleditapp.dita.HrefUtil">
      <sequence>
        <command name="selectNode" parameter="parent section" />
        <get expression="hrefu:get-href($selectedElement)" />
      </sequence>
    </macro>
  </command>
```

12. drop-site

drop-site(*key*, *value*, ..., *key*, *value*)

Inserts a button in generated content which can be used to execute a command (see Chapter 6, Commands written in the Java™ programming language in *XMLmind XML Editor - Commands*). Identical to command-button [36] except that:

- A `drop-site` cannot be used to popup a menu.
- The user cannot click on a `drop-site`. He/she needs to drop a string (typically a filename or an URL coming from a file manager or a Web browser) on it to trigger the command.
- The parameter of the command must contain variable `%{value}` which is substituted with the dropped *string*.

  If the object dropped from an external application is not a string (that is, some text), this object will be automatically converted to a string (when possible). For example, a file is converted to a string by using its absolute filename.

  In addition to `%{value}`, the following convenience variables are also supported:

  %{url}
  : If `%{value}` contains an URL or the absolute filename of a file or a directory, this variable contains the corresponding URL.

  %{file}
  : If `%{value}` contains a "`file:`" URL or the absolute filename of a file or a directory, this variable contains the corresponding filename.

Example:

```
br|date:after {
    display: block;
    content: drop-site(text, "Drop a screen shot here",
                       icon, url(drop.gif),
                       icon-position, right,
                       command, "paste",
                       parameter, "after <?xml version='1.0'?><screenShot \
                           xmlns='http://www.xmlmind.com/xmleditor/schema/bugreport' \
                           image='%{value}'/>");
}
```

13. file-name-field

file-name-field(*key*, *value*, ..., *key*, *value*)

Inserts in generated content both a text field control and a button which can be used to browse files. These controls can be used to edit the value of the element which is the target of the CSS rule. If "**attribute**, *attribute_name*" is specified, these controls can be used to edit the value of an attribute of this target element.

Key	Value	Default	Description
attribute	Qualified name of attribute to be edited	No default	Without this parameter, the control is used to edit the value of the element for which the control has been generated.
columns	Positive integer	None (the text field expands when the document view is resized)	Width of the control in characters.
absolute	Boolean: yes|no, 1|0, "true"|"false", "on"|"off"	no	Configures the file chooser dialog box. yes Dialog box returns an absolute path. no Dialog box returns a path which is relative to the entity containing the target element (when possible).
directory	Boolean: yes|no, 1|0, "true"|"false", "on"|"off"	no	Configures the file chooser dialog box. yes Dialog box can only select directories. no Dialog box can only select files.
save	Boolean: yes|no, 1|0, "true"|"false", "on"|"off"	no	Configures the file chooser dialog box. yes Dialog box can select existing files or directories, as well as files and directories to be created. no Dialog box can only select existing files or directories.
url	Boolean: yes|no, 1|0, "true"|"false", "on"|"off"	yes	Configures the file chooser dialog box. yes Dialog box returns URLs no Dialog box returns file names.

Key, *value*, ..., *key*, *value* may also specify style parameters [32].

Examples:

```
file-name-field(attribute, value,
                columns, 40,
                font-family, monospaced)

file-name-field(absolute, yes,
```

```
                directory, yes,
                save, yes,
                url, no,
                columns, 40,
                font-family, monospaced)
```

14. gadget

gadget(*className, param, ..., param***)**.

This pseudo-function is similar to the component [37] pseudo-function except that it creates flightweight *gadgets* instead of standard Java™ AWT Components or Swing JComponents.

className is the name of a Java class which implements the interface `com.xmlmind.xmledit.styledview.GadgetFactory` (see Chapter 8, Writing style sheet extensions in *XMLmind XML Editor - Developer's Guide*).

Example (APT - excerpt of `apt-collapsible.css`):

```
caption:before {
    content: gadget("com.xmlmind.xmledit.form.Collapser",
                    collapsed-icon, icon(collapsed-right),
                    expanded-icon, icon(expanded-up)) " ";
}
```

When gadget() is used to generate replaced content for a processing-instruction, the specified class must implement interface `com.xmlmind.xmledit.styledview.GadgetFactory2` (see Chapter 8, Writing style sheet extensions in *XMLmind XML Editor - Developer's Guide*). Example, the following rule is used to style spreadsheet formulas:

```
*::processing-instruction(xxe-formula) {
    content: gadget("com.xmlmind.xmleditapp.spreadsheet.Formula");
    display: inline;
}
```

15. icon

icon(*name*)

Inserts a built-in image in generated content.

Name must be one of the following identifiers: bookmark-left, bookmark-right, check-off, check-on, circle, collapsed-left, collapsed-right, convert, delete, diamond, disc, down, drop2, drop, expand-down, expanded-down, expanded-up, expand-up, external-link, external-link-small, filled-square, go-left, go-right, help, hollow-diamond, image, insert-after, insert-before, insert, invisible, launch, left, left-half-disc, left-link, left-target, line-break, minus-box, minus, no-image, pin-down, pin-left, pin-right, pin-up, plus-box, plus, pop-down, pop-left, pop-ne, pop-nw, pop-right, pop-se, pop-sw, pop-up, radio-off, radio-on, replace, return, right, right-half-disc, right-link, right-target, square-3, square-5, square, up.

16. indicator

indicator(*key*, *value*, ..., *key*, *value*)

Inserts in generated content an image (taken from specified set of images) which is determined using the value of specified attribute or XPath expression.

Similar to label [47] except that `indicator` is rendered using a set of images rather than text.

Key	Value	Default	Description
attribute	Qualified name of an attribute of the element which is the target of the rule	No default One of **attribute** or **xpath** must be specified.	The value of this attribute is compared to the values of the **state** arguments. If one of the **state** argument is found equal to this value, the corresponding icon is displayed. Otherwise first icon is displayed.
xpath	Literal string specifying an XPath expression using the target of the rule as its context node	No default One of **attribute** or **xpath** must be specified.	The value of this XPath expression is compared to the values of the **state** arguments. If one of the **state** argument is found equal to this value, the corresponding icon is displayed. Otherwise first icon is displayed.
state	Identifier or string	No default	Specifies one of the states of the indicator. Must be followed by corresponding **icon** argument. An indicator always contains several **state**/**icon** pairs.
icon	url(), disc, circle, square, icon()	No default	Specifies one of the images used to render the indicator. Corresponding **state** must precede this argument. An indicator always contains several **state**/**icon** pairs.

key, *value*, ..., *key*, *value* may also specify style parameters [32].

XHTML examples:

```
p.msg:before {
    content: indicator(attribute, title,
                       state, info, icon, url(info.gif),
                       state, warning, icon, url(warning.gif),
                       state, error, icon, url(error.gif));
    display: marker;
}

div.hotel span.with_stars:after {
    content: " "
             indicator(xpath,
                       "substring-after(ancestor::div[@class='hotel']/@title,\
                                        'stars')",
                       state, "not_rated", icon, icon(diamond),
                       color, gray,
                       state, "0", icon, url(0star.gif),
                       state, "1", icon, url(1star.gif),
                       state, "2", icon, url(2star.gif),
                       state, "3", icon, url(3star.gif),
                       state, "4", icon, url(4star.gif),
                       state, "5", icon, url(5star.gif));
    display: inline;
}
```

17. insert-after-button

Inserts a command-button [36] in generated content which can be used to insert an element or text node after the element for which the button has been generated.

Do not specify **command, parameter** or **menu** parameters for this type of command-button. A menu of "`insert after`" commands is built dynamically each time this button is clicked.

By default, this button has its icon set to `icon(insert-after)`.

Example:

```
insert-after-button()
```

18. insert-before-button

Inserts a command-button [36] in generated content which can be used to insert an element or text node before the element for which the button has been generated.

Do not specify **command, parameter** or **menu** parameters for this type of command-button. A menu of "`insert before`" commands is built dynamically each time this button is clicked.

By default, this button has its icon set to `icon(insert-before)`.

Example:

```
insert-before-button()
```

19. insert-button

Inserts a command-button [36] in generated content which can be used to insert an element or text node into the element for which the button has been generated.

Do not specify **command, parameter** or **menu** parameters for this type of command-button. A menu of `insert` commands is built dynamically each time this button is clicked.

By default, this button has its icon set to `icon(insert)`.

Example:

```
insert-button()
```

20. insert-same-after-button

A convenient way of specifying `command-button [36](icon, icon(insert-after), command, "insertNode", parameter, "sameElementAfter")`.

21. insert-same-before-button

A convenient way of specifying `command-button [36](icon, icon(insert-before), command, "insert-Node", parameter, "sameElementBefore")`.

22. image

image(*source, width, height*, **smooth**|**default**, *fallback_image***)**.

Inserts a user defined, possibly scaled, image in generated content.

source
: Mandatory.

  URL or path of an image file. Only GIF, JPEG, PNG files will be displayed by XXE but this must not prevent you from using other formats if your backend processor supports them.

A relative URL or path is relative to the location of the document being edited and not to the current working directory.

width, height
Optional.

Dimension of the image in pixels. A length may optionally be followed by a standard CSS unit such as **px, in, cm, mm, pt, pc, em, ex**.

A negative length is interpreted as a maximum size. This is useful to display images as thumbnails.

auto specifies intrinsic image size.

smooth|default
Optional.

The name of the algorithm used to change the image size: **smooth** means high-quality/slow and **default** means low-quality/fast.

fallback_image
Optional.

Specifies which fallback image to use when image specified by first argument cannot be loaded. All forms of image specification supported by XXE (except **image**()) can be used for this argument: **url**(), **icon**(), **circle**, etc.

Examples (XHTML):

```
img {
    content: image(attr(src));
}

img {
    content: image(attr(src), -600, -400);
}

img {
    content: image(attr(src), attr(width), attr(height), default, icon(no-image));
}
```

23. image-viewport

image-viewport(*key*, *value*, ..., *key*, *value*)

Inserts an image in generated content.

The image is displayed, possibly after being scaled, in a viewport (that is, a rectangle possibly larger than the displayed image).

This content object, functionally close to the XSL-FO `fo:external-graphic` element, is a sophisticated variant of image() [43].

Unless a **source** parameter is specified (see table below), the image-viewport is associated to an attribute or to an element (that is, the image-viewport is a ``view'' of the attribute or of the element). This attribute or this element may reference the URL of an external graphics file or may directly contain image data. In such case, the image-viewport object can also be used to edit this attribute or this element. To do this, the XXE user needs to double-click on the image-viewport and then specify a graphics file using a specialized dialog box. Alternatively the XXE user can also drag and drop a graphics file on the image-viewport.

Key	Value	Default	Description
source	url()	None. Image data comes from the element for which this image-viewport is a view.	Specifies the URL of graphics file to be displayed by the image-viewport. Rarely used. Most image-viewports are associated to attributes or to elements.
descendant	String evaluated as an XPath expression returning a node-set	None. Image data comes from the element for which this image-viewport is a view.	Specifies a descendant element of the element for which this image-viewport is a view. Example: DocBook 5's `imagedata/svg:svg` or `imagedata/mml:math`. Rarely used. Most image-viewports are associated to attributes or to elements.
attribute	Qualified name of attribute to be edited	None. Image data comes from the element for which this image-viewport is a view.	Specifies the name of the attribute containing the URL of graphics file to be displayed by the image-viewport (**data-type**=**anyURI**) or directly containing image data (**data-type**=**hexBinary** or **base64Binary**).
data-type	anyURI | hexBinary | base64Binary | XML	None. If the document is conforming to a W3C XML Schema or to a RELAX NG schema, this data-type can be found automatically. Otherwise (DTD, no grammar), specifying this parameter is mandatory.	Specifies how the image is ``stored'' in the attribute or in the element. **data-type**=**XML** is only allowed for elements (typically an `svg:svg` element).
gzip	Boolean: yes|no, 1|0, "true"|"false", "on"|"off"	no	Ignored unless **data-type**=**hexBinary** or **base64Binary**. If **true**, image data will be compressed with gzip before being encoded in **hexBinary** or in **base64Binary**.
viewport-width	Length (px, mm, em, etc) or percentage	None.	Specifies the width of the viewport. A percentage (ex. 50%) is a percentage of the available space.
viewport-height	Length (px, mm, em, etc) or percentage	None.	Specifies the height of the viewport. A percentage is a percentage of the available space. *This is currently not supported.*
content-width	Length (px, mm, em, etc) or percentage or scale-to-fit or a max. size	None.	Specifies the width of the image after rescaling it. A percentage is a percentage of the intrinsic width. **scale-to-fit** means change the width of the image to fit the viewport. A *max. size* is specified like this: `200max`. This means: at most 200 pixels. Therefore if the image is wider than 200 pixels, its width is scaled down to 200. Otherwise, the intrinsic width is used as is.

Key	Value	Default	Description
content-height	Length (px, mm, em, etc) or percentage or scale-to-fit or a max. size	None.	Specifies the height of the image after rescaling it. A percentage is a percentage of the intrinsic height. **scale-to-fit** means change the height of the image to fit the viewport. A *max. size* is specified like this: `400max`. This means: at most 400 pixels. Therefore if the image is taller than 400 pixels, its height is scaled down to 400. Otherwise, the intrinsic height is used as is.
preserve-aspect-ratio	Boolean: yes|no, 1|0, "true"|"false", "on"|"off"	yes	Ignored unless **content-width** and **content-height** are both set to **scale-to-fit** or are both set to a *max. size*. If **false**, the image is scaled non-uniformly (stretched) to fit the viewport.
smooth	Boolean: yes|no, 1|0, "true"|"false", "on"|"off"	no	If **true**, quality is favored over speed when rescaling the image.
horizontal-align	left | center | right	center	Specifies how the image is to be horizontally aligned in the viewport.
vertical-align	top | middle | bottom	middle	Specifies how the image is to be vertically aligned in the viewport.
fallback-image	url(), disc, circle, square, icon()	Automatically generated. May contain an error message displayed in red.	Specifies which image to display when the normal image cannot be displayed (image format not supported, file not found, corrupted image, etc)

`Key`, *`value`*, ..., *`key`*, *`value`* may also specify style parameters [32].

Simple example (XHTML):

```
img {
  display: inline;
  content: image-viewport(attribute, src,
                          data-type, anyURI,
                          content-width, attr(width),
                          content-height, attr(height));
}
```

Other example (DocBook 5, images displayed as thumbnails):

```
@namespace svg "http://www.w3.org/2000/svg";

imagedata:contains-element(svg|svg) {
  content: image-viewport(descendant, "./svg:svg",
                          data-type, XML,
                          content-width, 400max,
                          content-height, 100max);
}
```

Complex example (ImageDemo, see *`XXE_install_dir`*`/doc/configure/samples/imagedemo`):

```
image_ab {
  /*
```

```
   * No need to specify data-type. The image-viewport will find it by itself.
   */

  content: image-viewport(attribute, data, gzip, true,
    viewport-width, attr(width),
    viewport-height, attr(height),
    preserve-aspect-ratio, attr(preserve_aspect_ratio),

    content-width,
    xpath("if(@content_width='scale_to_fit',\
              'scale-to-fit',\
              @content_width)"),

    content-height,
    xpath("if(@content_height='scale_to_fit',\
              'scale-to-fit',\
              @content_height)"),

    horizontal-align
    xpath("if(@anchor='west' or @anchor='north_west' or @anchor='south_west',\
              'left',\
              @anchor='center' or @anchor='north' or @anchor='south',\
              'center',\
              @anchor='east' or @anchor='north_east' or @anchor='south_east',\
              'right',\
              'center')"),

    vertical-align,
    xpath("if(@anchor='north' or @anchor='north_east' or @anchor='north_west',\
              'top',\
              @anchor='center' or @anchor='east' or @anchor='west',\
              'middle',\
              @anchor='south' or @anchor='south_east' or @anchor='south_west',\
              'bottom',\
              'middle')")
    );
}
```

24. label

label(*key*, *value*, ..., *key*, *value*)

Inserts in generated content the value of specified attribute or XPath expression.

Difference with standard construct attr() and with extension xpath():

xpath() and attr() are evaluated *once* and this happens when the view of the element is built. This means that in some cases, manually refreshing the view of the element after a change in the document will be needed (use Select|Redraw or **Ctrl**-**L**).

Unlike xpath() and attr(), label() is automatically updated when the document is modified.

For efficiency reasons, the update of **label**(**xpath**, *XPath_expression*) is delayed until the editing context changes.

Key	Value	Default	Description
attribute	Qualified name of an attribute of the element which is the target of the rule	No default One of **attribute** or **xpath** must be specified.	Display the value of this attribute as styled text.

Key	Value	Default	Description
xpath	Literal string specifying an XPath expression using the target of the rule as its context node	No default One of **attribute** or **xpath** must be specified.	Display the value of this XPath expression as styled text.

key, *value*, ..., *key*, *value* may also specify style parameters [32].

XHTML examples:

```
p.msg:before {
    content: label(attribute, title,
                  text-decoration, underline);
    display: marker;
}

a.showtarget {
    content: icon(pop-right)
             label(xpath, "//a[@name = substring-after(current()/@href, '#')]",
                  text-decoration, underline);
}

caption.formal:before {
    content: "Table "
             label(xpath, "1 + count(../preceding::table[caption])")
             ": ";
    display: inline;
}
```

See also indicator [41] which is similar to `label` except that `indicator` rendered using a set of images rather than text.

25. list

list(*key*, *value*, ..., *key*, *value*)

Inserts a list control in generated content. This control can be used to edit the value of the element which is the target of the CSS rule. If "**attribute**, *attribute_name*" is specified, this control can be used to edit the value of an attribute of this target element.

Key	Value	Default	Description
attribute	Qualified name of attribute to be edited	No default	Without this parameter, the control is used to edit the value of the element for which the control has been generated.
labels	List of strings separated by new lines ("\A ")	None (use values as labels)	Labels used for the list items. The order of labels must match the order of values.
values	List of strings separated by new lines ("\A ")	None (*dynamically determined by examining the data type of value to be edited*)	In single selection mode, clicking on list item #N sets the element or attribute value being edited to value string #N. In multiple selection mode clicking on list item #N adds/removes value string #N to/from the selected set. The value strings in the selected set are then joined using the character specified by separator (' ' by default).

Key	Value	Default	Description
			The resulting string is assigned to the element or attribute value being edited.
rows	Positive integer	max(10, number of values)	Maximum number of rows displayed by the list control.
selection	single | multiple	single	Specifies single or multiple selection mode.
separator	Single character string	None (values are separated by any type of white space characters)	Character used to join selected value strings in multiple selection mode. The resulting string is assigned to the element or attribute value being edited.

key, *value*, ..., *key*, *value* may also specify style parameters [32].

Examples:

```
list(rows, 3)

list(attribute, value,
     labels, "Cyan\A Yellow\A Magenta\A Black")

list(rows, 3,
     selection, multiple)

list(attribute, value,
     labels, "Cyan\A Yellow\A Magenta\A Black",
     values, "cyan\A yellow\A magenta\A black",
     selection, multiple,
     separator, ",")
```

26. number-field

number-field(*key*, *value*, ..., *key*, *value*)

Inserts in generated content a text field control, configured for parsing and formatting numbers. This control can be used to edit the value of the element which is the target of the CSS rule. If "**attribute**, *attribute_name*" is specified, this control can be used to edit the value of an attribute of this target element.

It is important to understand that a number-field does not validate what the user types in it. It is the schema of the document which is used for that. The number-field is just useful to convert formatted numbers (example: 1,000,000.00) to/from the standard numbers (example: 1000000.0) which are stored in the document. In practice, this means that a number-field is unusable with DTDs which, unlike W3C XML Schema and Relax NG, cannot validate numbers.

Key	Value	Default	Description
attribute	Qualified name of attribute to be edited	No default	Without this parameter, the control is used to edit the value of the element for which the control has been generated.
pattern	Pattern supported by java.text.DecimalFormat	A simple pattern which depends on **data-type**.	Specifies how number is to be parsed and formatted.
language	Lower-case, two-letter codes as defined by ISO-639. Example: "es".	Language of default locale.	Participates in specifying the locale to use.
country	Upper-case, two-letter codes as defined by	Country of default locale.	Participates in specifying the locale to use.

Key	Value	Default	Description
	ISO-3166. Example: "ES".		
variant	Vendor or browser-specific code. Example: "Traditional_WIN".	Variant of default locale.	Participates in specifying the locale to use.
data-type	byte | short | int | long | float | double	double	Base data type of attribute or element value being edited.

key, *value*, ..., *key*, *value* may also specify style parameters [32].

Example:

```
number-field()

number-field(data-type, float,
             pattern, "0.0#####",
             language, en,
             country, "US")
```

27. radio-buttons

radio-buttons(*key*, *value*, ..., *key*, *value*)

Inserts in generated content a panel containing radio button controls (single selection) or check box controls (multiple selection). These controls can be used to edit the value of the element which is the target of the CSS rule. If "**attribute**, *attribute_name*" is specified, these controls can be used to edit the value of an attribute of this target element.

Key	Value	Default	Description
attribute	Qualified name of attribute to be edited	No default	Without this parameter, the control is used to edit the value of the element for which the control has been generated.
labels	List of strings separated by new lines ("\A ")	None (use values as labels)	Labels used for the radio buttons or the check boxes. The order of labels must match the order of values.
values	List of strings separated by new lines ("\A ")	None (*dynamically determined by examining the data type of value to be edited*)	In single selection mode, clicking on radio button #N sets the element or attribute value being edited to value string #N. In multiple selection mode clicking on check box #N adds/removes value string #N to/from the selected set. The value strings in the selected set are then joined using the character specified by separator (' ' by default). The resulting string is assigned to the element or attribute value being edited.
columns	Positive integer	max(10, number of values)	Maximum number of columns used to layout the panel containing the radio buttons or check boxes. Do not specify **rows** and **columns** for the same control.

Key	Value	Default	Description
rows	Positive integer	None	Maximum number of rows used to layout the panel containing the radio buttons or check boxes. Do not specify **rows** and **columns** for the same control.
selection	single | multiple	single	Specifies single or multiple selection mode.
separator	Single character string	None (values are separated by any type of white space characters)	Character used to join selected value strings in multiple selection mode. The resulting string is assigned to the element or attribute value being edited.

Key, *value*, ..., *key*, *value* may also specify style parameters [32].

Examples:

```
radio-buttons(rows, 2)

radio-buttons(attribute, value,
              labels, "Cyan\A Yellow\A Magenta\A Black")

radio-buttons(attribute, value,
              labels, "Cyan\A Yellow\A Magenta\A Black",
              values, "cyan\A yellow\A magenta\A black",
              selection, multiple,
              separator, ",")
```

28. remove-attribute-button

remove-attribute-button(**attribute**, *attribute_name*, *key*, *value*, ..., *key*, *value*)

Inserts a command-button [36] in generated content which can be used to remove specified attribute.

Optional parameter **check-required** may be set to **yes** (other allowed value is **no**) to specify that no button is to be generated when specified attribute is required.

By default, this button has its icon set to `icon(minus)`.

Example:

```
remove-attribute-button(text, "Remove id",
                        attribute, id,
                        check-required, yes)
```

29. replace-button

Inserts a command-button [36] in generated content which can be used to replace the element for which the button has been generated.

Do not specify **command, parameter** or **menu** parameters for this type of command-button. A menu of `replace` commands is built dynamically each time this button is clicked.

By default, this button has its icon set to `icon(replace)`.

Example:

```
replace-button()
```

30. set-attribute-button

set-attribute-button(**attribute**, *attribute_name*, *key*, *value*, ..., *key*, *value*)

Inserts a command-button [36] in generated content which can be used to give a value to specified attribute. A pop-up menu listing all possible values is displayed when this button is clicked.

This pop-up menu cannot be displayed if the type of the specified attribute is not an enumerated type or is not IDREF or IDREFS. Moreover, when the type of the specified attribute is IDREF or IDREFS, the pop-up menu cannot be displayed if no attributes of type ID have been added to elements in the document.

Optional parameter **unset-attribute** may be set to **yes** (other allowed value is **no**) to specify that a remove attribute command is to be added at the end of the pop-up menu.

By default, this button has its icon set to `icon(pop-down)`.

Example:

```
set-attribute-button(attribute, for,
                     unset-attribute, yes,
                     icon, icon(pop-right));
```

31. text-area

text-area(*key*, *value*, ..., *key*, *value*)

Inserts in generated content a (multi-line) text area control. This control can be used to edit the value of the element which is the target of the CSS rule. If "**attribute**, *attribute_name*" is specified, this control can be used to edit the value of an attribute of this target element.

Key	Value	Default	Description
attribute	Qualified name of attribute to be edited	No default	Without this parameter, the control is used to edit the value of the element for which the control has been generated.
columns	Positive integer	None (the text field expands when the document view is resized)	Width of the control in characters.
rows	Positive integer	3	Number of lines displayed by the control
wrap	none | line | word	none	Specifies how text lines are wrapped.

Key, *value*, ..., *key*, *value* may also specify style parameters [32].

Example:

```
text-area(attribute, value,
          columns, 40,
          rows, 2,
          wrap, word)
```

32. text-field

text-field(*key*, *value*, ..., *key*, *value*)

Inserts in generated content a (single line) text field control. This control can be used to edit the value of the element which is the target of the CSS rule. If "**attribute**, *attribute_name*" is specified, this control can be used to edit the value of an attribute of this target element.

Key	Value	Default	Description
attribute	Qualified name of attribute to be edited	No default	Without this parameter, the control is used to edit the value of the element for which the control has been generated.

Key	Value	Default	Description
columns	Positive integer	None (the text field expands when the document view is resized)	Width of the control in characters.

Key, *value*, ..., *key*, *value* may also specify style parameters [32].

Example:

```
text-field(columns, 10)
```

33. value-editor

value-editor(*key*, *value*, ..., *key*, *value*)

Inserts a control in generated content. *Which control to insert is found by examining the grammar constraining the document.* This control can be used to edit the value of the element which is the target of the CSS rule. If "**attribute**, *attribute_name*" is specified, this control can be used to edit the value of an attribute of this target element.

Note that if value-editor is used to generate an editor for an element value and the content type of the target element is not data (XML-Schema examples: `xs:date`, `xs:double`), *no control is generated at all*. A generic style sheet such as xmldata.css takes advantage of this feature.

Key	Value	Default	Description
attribute	Qualified name of attribute to be edited	No default	Without this parameter, the control is used to edit the value of the element for which the control has been generated.

Key, *value*, ..., *key*, *value* may also specify style parameters [32].

Examples:

```
value-editor()

value-editor(attribute, attribute())
```

34. xpath

xpath(*XPath_expression*)

Generalization of standard construct **attr**(*attribute_name*). Inserts in generated content the value of *XPath_expression*, an XPath expression (XPath 1 is fully supported, including id() and document()) using the target of the CSS rule (element, comment or processing instruction) at its context node.

Example:

```
xpath("id(@linkend)/@xreflabel")
```

Note that xpath(), like attr(), is evaluated *once* and this happens when the view of the element is built. This means that in most cases, manually refreshing the view of the element after a change in the document will be needed (use Select|Redraw or **Ctrl-L**).

Specifying **attr**(*foo*) in a CSS rule implicitly creates a dependency between the value of attribute *foo* and the element which is the target of the CSS rule: the view of the element is automatically rebuilt when the value of its attribute *foo* is changed.

Similarly, specifying **xpath**(*whatever*) in a CSS rule implicitly creates a dependency between the element which is the target of the CSS rule and *all* its attributes: the view of the element is automatically rebuilt when the value

of any of its attributes is changed (which too much or not enough depending on the value of the *whatever* XPath expression!).

See also label() [47].

Chapter 6. Content layouts

1. division

division(*content*, *key*, *value*, ..., *key*, *value*)

Layout *content* vertically like in a XHTML `div`.

Content is either a single content object such as a string or a list of content objects. In the latter case, special syntax **content**(*content*, ..., *content*) must be used.

Key, *value*, ..., *key*, *value* specify optional style parameters [32].

Example:

```
division(content(icon(down), "generated content", icon(up)),
         border-width, 1,
         border-style, solid)
```

2. paragraph

paragraph(*content*, *key*, *value*, ..., *key*, *value*)

Layout *content* horizontally like in a XHTML `p`.

Content is either a single content object such as a string or a list of content objects. In the latter case, special syntax **content**(*content*, ..., *content*) must be used.

Key, *value*, ..., *key*, *value* specify optional style parameters [32].

Example:

```
paragraph(content(icon(right), "generated content", icon(left)),
          border-width, 1,
          border-style, solid)
```

3. rows

rows(*row_spec*, ..., *row_spec*, *key*, *value*, ..., *key*, *value*)

row(*cell_spec*, ..., *cell_spec*, *key*, *value*, ..., *key*, *value*)

cell(*content*, *key*, *value*, ..., *key*, *value*)

Layout *content* in a tabular way like in a XHTML `tbody`. See also rendering repeating elements as a table [14].

Content is either a single content object such as a string or a list of content objects. In the latter case, special syntax **content**(*content*, ..., *content*) must be used.

Key, *value*, ..., *key*, *value* specify optional style parameters [32]. Specifying such pairs at the row level is equivalent to specifying them for each cell contained in the row. Specifying such pairs at the rows level allows even more factoring.

Therefore *key*, *value*, ..., *key*, *value* specify optional style parameters [32] for cells *but not for rows and row*. This is different from the behavior of division [55] and paragraph [55] because unlike division and paragraph which are true containers, rows and row are just constructs used to group cells.

Example:

```
row(cell("Category", width, 20ex), cell("Choice #1"),
    cell("Choice #2"), cell("Choice #3"),
    font-weight, bold, color, olive,
    padding-top, 2, padding-right, 2,
    padding-bottom, 2, padding-left, 2,
    border-width, 1, border-style, solid);
```

Chapter 7. Display values supported for generated content

This section contain the answer to the following question: given the display of normal content (example: `display: block;`),

- which types of display (example: `display: inline;`),
- which types of content layout (example: `content: paragraph(content(icon(left), "left"));`),

are supported for **:before** and **:after** generated content?

About *replaced* content

- Replaced content supports all types of content layouts.
- Using generated content for an element having replaced content will give unspecified results.

Content such as `content: icon(left) "middle" attr(foo) circle collapser();` which does not use an explicit layout is said using a *list layout*.

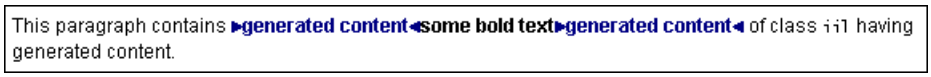
Generated content not described in this section should not be used in XXE.

1. display: inline

Displays supported for **:before** and **:after** generated content:

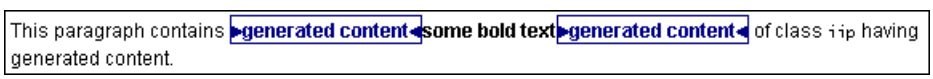
- display: inline. Supported layouts:
  - list.

```
b.iil:before,
b.iil:after {
    display: inline;
    content: icon(right) "generated content" icon(left);
    color: navy;
}
```



  - paragraph.

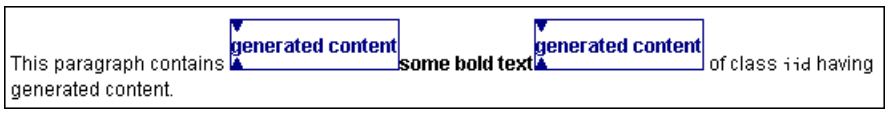
```
b.iip:before,
b.iip:after {
    display: inline;
    content: paragraph(content(icon(right), "generated content", icon(left)),
                       border-width, 1,
                       border-style, solid);
    color: navy;
}
```



  - division.

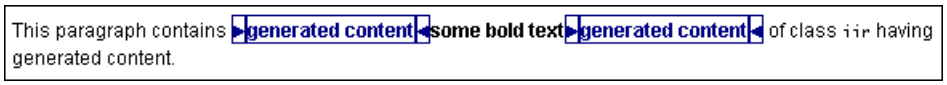
```
b.iid:before,
b.iid:after {
    display: inline;
```

```
    content: division(content(icon(down), "generated content", icon(up)),
                      border-width, 1,
                      border-style, solid);
    color: navy;
}
```



- rows, row or cell (all three give a table).

```
b.iir:before,
b.iir:after {
    display: inline;
    content: row(cell(icon(right)),
                 cell("generated content"),
                 cell(icon(left)),
                 border-width, 1,
                 border-style, solid);
    color: navy;
}
```



- Other display values are ignored and processed like display: inline.

2. display: block

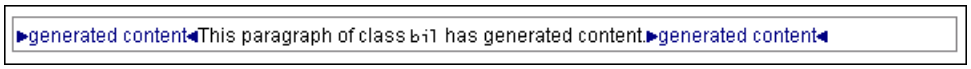
Displays supported for **:before** and **:after** generated content:

- display: inline. Supported layouts:

  (The gray frame is used to show that generated content is *inside* the p block.)

  - list.

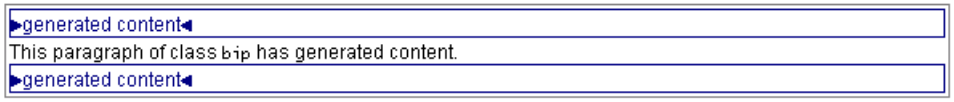
```
p.bil {
    border: 1 solid gray;
    padding: 2;
}

p.bil:before,
p.bil:after {
    display: inline;
    content: icon(right) "generated content" icon(left);
    color: navy;
}
```



  - paragraph.

```
p.bip {
    border: 1 solid gray;
    padding: 2;
}

p.bip:before,
p.bip:after {
    display: inline;
    content: paragraph(content(icon(right), "generated content", icon(left)),
                       border-width, 1,
```

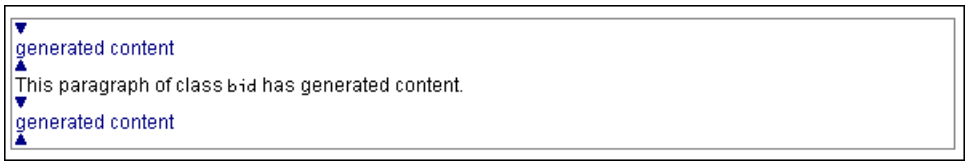
```
                        border-style, solid);
    color: navy;
}
```



Display: inline, content: paragraph is treated as a special case. The generated paragraph is added before/after normal content but *inside* the whole block. This contrasts with what is done for a generated paragraph with display: block.

- division.

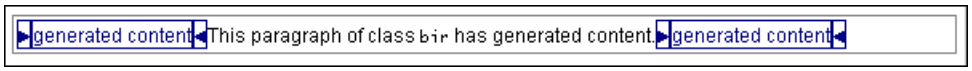
```
p.bid {
    border: 1 solid gray;
    padding: 2;
}

p.bid:before,
p.bid:after {
    display: inline;
    content: division(content(icon(down), "generated content", icon(up)),
                     border-width, 1,
                     border-style, solid);
    color: navy;
}
```



Display: inline, content: division is treated as a special case. The generated division is discarded as a container and all the ``paragraphs'' it contains are added before/after normal content but *inside* the whole block. This contrasts with what is done for a generated division with display: block.

- rows, row or cell (all three give a table).

```
p.bir {
    border: 1 solid gray;
    padding: 2;
}

p.bir:before,
p.bir:after {
    display: inline;
    content: row(cell(icon(right)),
                 cell("generated content"),
                 cell(icon(left)),
                 border-width, 1,
                 border-style, solid);
    color: navy;
}
```

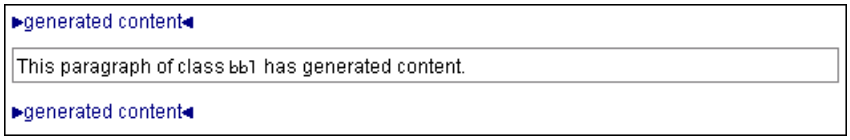


- display: block. Supported layouts:

  (The gray frame is used to show that generated content is *outside* the p block.)

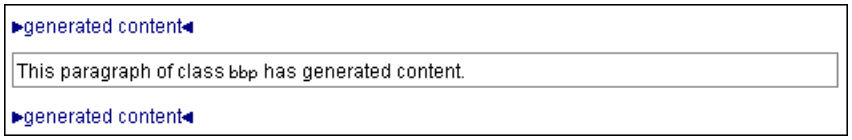
  - list.

```
p.bbl {
    border: 1 solid gray;
    padding: 2;
}

p.bbl:before,
p.bbl:after {
    display: block;
    content: icon(right) "generated content" icon(left);
    color: navy;
    margin-top: 1.33ex;
    margin-bottom: 1.33ex;
}
```



- paragraph.

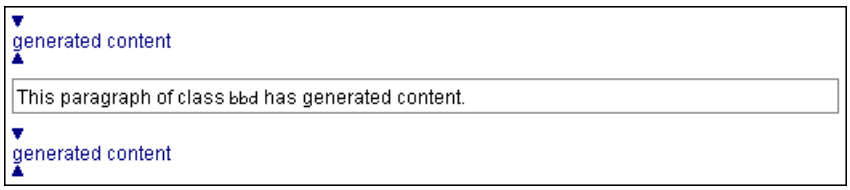
```
p.bbp {
    border: 1 solid gray;
    padding: 2;
}

p.bbp:before,
p.bbp:after {
    display: block;
    content: paragraph(content(icon(right), "generated content", icon(left)),
                       border-width, 1,
                       border-style, solid);
    color: navy;
    margin-top: 1.33ex;
    margin-bottom: 1.33ex;
}
```



Note that border around generated paragraph is not drawn. It should have been drawn: this is a known deficiency of XXE styling engine. In order to draw this border, move border styles outside `paragraph()`, inside the rule itself.

- division.

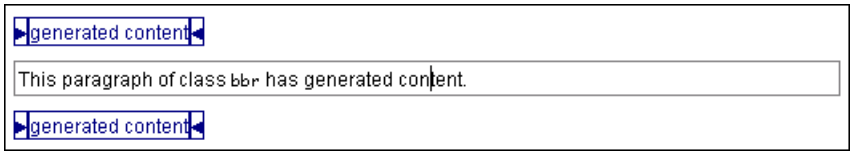
```
p.bbd {
    border: 1 solid gray;
    padding: 2;
}

p.bbd:before,
p.bbd:after {
    display: block;
    content: division(content(icon(down), "generated content", icon(up)),
                      border-width, 1,
                      border-style, solid);
    color: navy;
    margin-top: 1.33ex;
    margin-bottom: 1.33ex;
}
```



Note that border around generated division is not drawn. It should have been drawn: this is a known deficiency of XXE styling engine. In order to draw this border, move border styles outside `division()`, inside the rule itself.

- rows, row or cell (all three give a table).

```
p.bbr {
    border: 1 solid gray;
    padding: 2;
}

p.bbr:before,
p.bbr:after {
    display: block;
    content: row(cell(icon(right)),
                 cell("generated content"),
                 cell(icon(left)),
                 border-width, 1,
                 border-style, solid);
    color: navy;
    margin-top: 1.33ex;
    margin-bottom: 1.33ex;
}
```

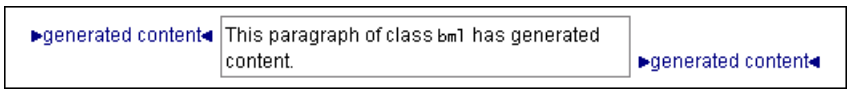


- display: marker. Supported layouts:

  (The gray frame is used to show that generated content is *outside* the `p` block.)

  - list.

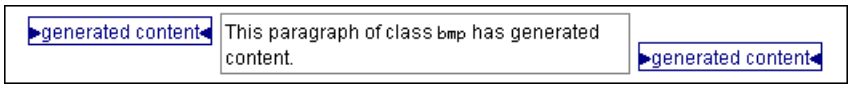
```
p.bml {
    border: 1 solid gray;
    padding: 2;
    margin-left: 20ex;
    margin-right: 20ex;
}

p.bml:before,
p.bml:after {
    display: marker;
    content: icon(right) "generated content" icon(left);
    color: navy;
}
```



  - paragraph.

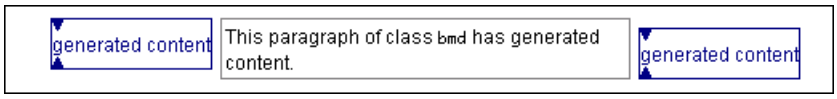
```
p.bmp {
    border: 1 solid gray;
    padding: 2;
```

```
    margin-left: 20ex;
    margin-right: 20ex;
}

p.bmp:before,
p.bmp:after {
    display: marker;
    content: paragraph(content(icon(right), "generated content", icon(left)),
                       border-width, 1,
                       border-style, solid);
    color: navy;
}
```



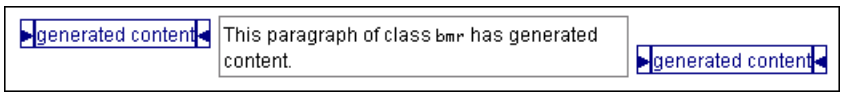
- division.

```
p.bmd {
    border: 1 solid gray;
    padding: 2;
    margin-left: 20ex;
    margin-right: 20ex;
}

p.bmd:before,
p.bmd:after {
    display: marker;
    content: division(content(icon(down), "generated content", icon(up)),
                      border-width, 1,
                      border-style, solid);
    color: navy;
}
```



- rows, row or cell (all three give a table).

```
p.bmr {
    border: 1 solid gray;
    padding: 2;
    margin-left: 20ex;
    margin-right: 20ex;
}

p.bmr:before,
p.bmr:after {
    display: marker;
    content: row(cell(icon(right)),
                 cell("generated content"),
                 cell(icon(left)),
                 border-width, 1,
                 border-style, solid);
    color: navy;
}
```



- Other display values are ignored and processed like display: block.

3. display: list-item

Display: list-item behaves exactly as display: block [58], except that a content containing the list marker is automatically generated before the list item. Properties list-style-type, list-style-position, list-style-image are used to parametrize the generation of this content.

Example:

```
li {
    display: list-item;
    list-style-type: disc;
}
```

is equivalent to:

```
li {
    display: block;
    margin-left: N; /*make room for the bullet*/
}

li:before {
    display: marker;
    content: disc;
}
```

Note that if the CSS style sheet explicitly specifies a generated content before the list item, display: list-item is strictly equivalent to display: block [58] because, in such case, no content is automatically generated.

4. display: table

Displays supported for **:before** and **:after** generated content:

- display: block. Same behavior as display: block [58].
- display: marker. Same behavior as display: block [58].
- display: table-row-group or display: table-row. Supported layouts:
  - list.

    ```
    table.trl:before,
    table.trl:after {
        display: table-row;
        content: icon(right) "generated content" icon(left);
        color: navy;
    }
    ```

    Table of class trl

    ▶generated content◀

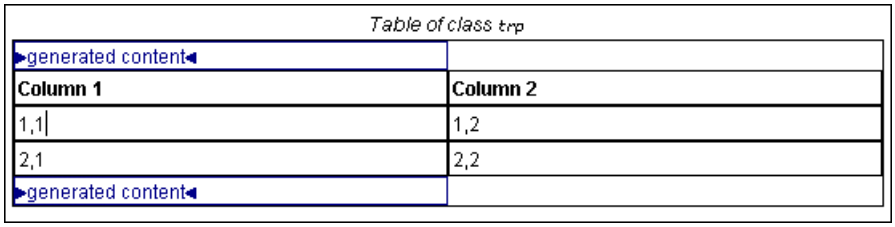
Column 1	Column 2
1,1	1,2
2,1	2,2

    ▶generated content◀

  - paragraph.

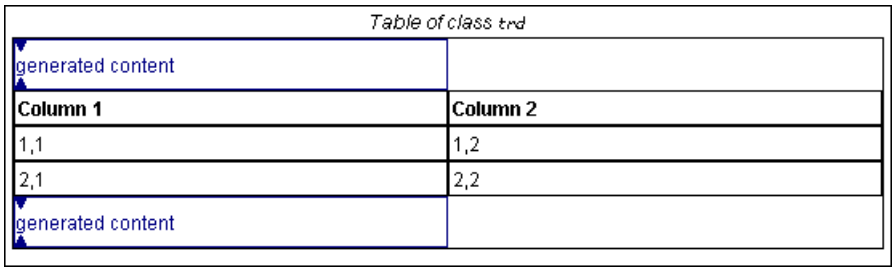
    ```
    table.trp:before,
    table.trp:after {
        display: table-row;
        content: paragraph(content(icon(right), "generated content", icon(left)),
                           border-width, 1,
                           border-style, solid);
    ```

```
    color: navy;
}
```



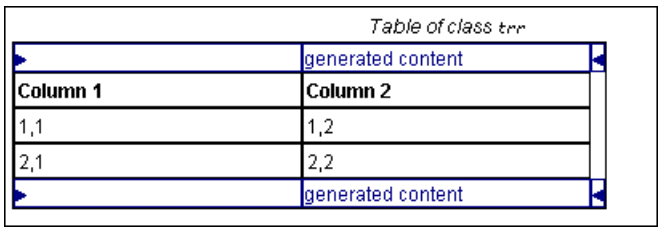
- division

```
table.trd:before,
table.trd:after {
    display: table-row;
    content: division(content(icon(down), "generated content", icon(up)),
                      border-width, 1,
                      border-style, solid);
    color: navy;
}
```



- rows, row or cell (all three give one or several rows).

```
table.trr:before,
table.trr:after {
    display: table-row;
    content: row(cell(icon(right)),
                 cell("generated content"),
                 cell(icon(left)),
                 border-width, 1,
                 border-style, solid);
    color: navy;
}
```



Note that generated row has been merged to normal content. See also rendering repeating elements as a table [14].

- Other display values are ignored and processed like display: block.

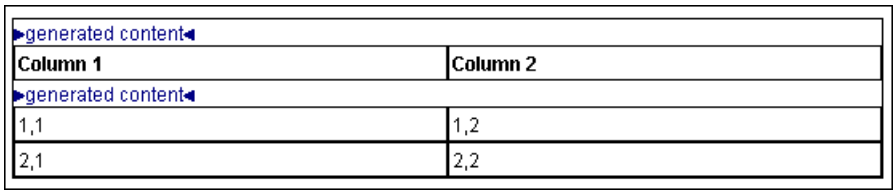
5. display: table-row-group

Displays supported for **:before** and **:after** generated content:

- display: table-row. Supported layouts:

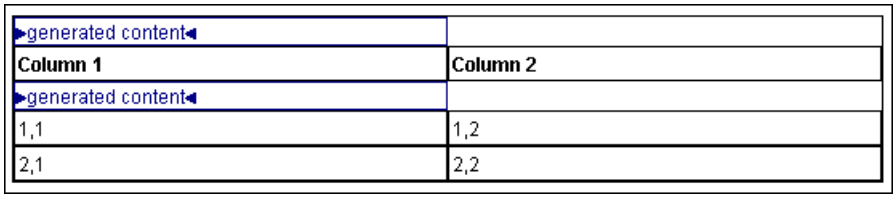
- list.

```
thead.grl:before,
thead.grl:after {
    display: table-row;
    content: icon(right) "generated content" icon(left);
    color: navy;
}
```



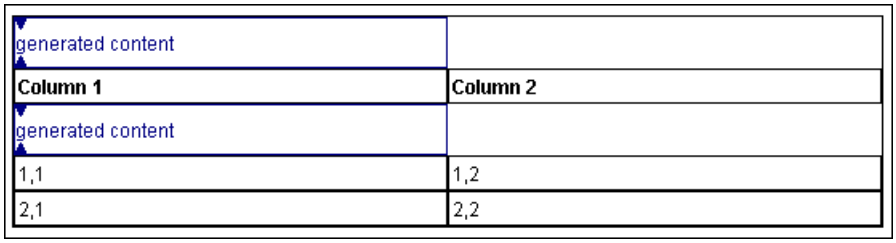
- paragraph.

```
thead.grp:before,
thead.grp:after {
    display: table-row;
    content: paragraph(content(icon(right), "generated content", icon(left)),
                       border-width, 1,
                       border-style, solid);
    color: navy;
}
```



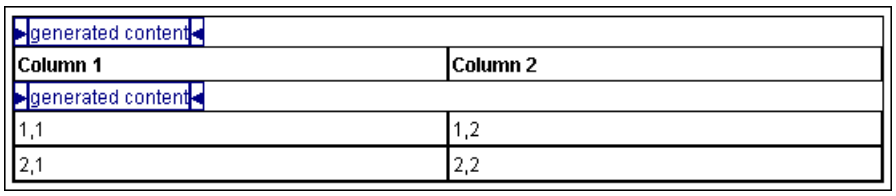
- division

```
thead.grd:before,
thead.grd:after {
    display: table-row;
    content: division(content(icon(down), "generated content", icon(up)),
                      border-width, 1,
                      border-style, solid);
    color: navy;
}
```



- rows, row or cell (all three give one or several rows).

```
thead.grr:before,
thead.grr:after {
    display: table-row;
    content: row(cell(icon(right)),
                 cell("generated content"),
                 cell(icon(left)),
                 border-width, 1,
                 border-style, solid);
    color: navy;
}
```



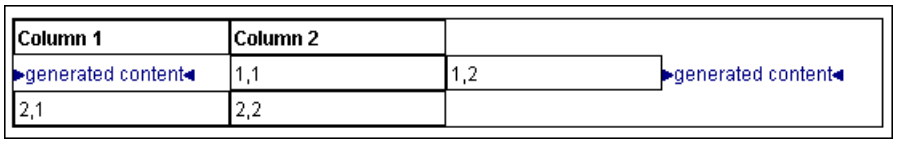
- Other display values are ignored and processed like display: table-row.

6. display: table-row

Displays supported for **:before** and **:after** generated content:

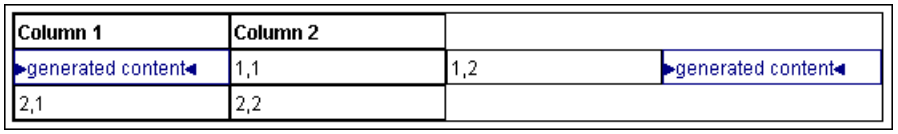
- display: table-cell. Supported layouts:
  - list.

```
tr.rcl:before,
tr.rcl:after {
    display: table-cell;
    content: icon(right) "generated content" icon(left);
    color: navy;
}
```



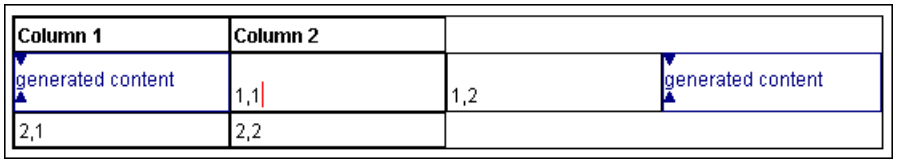
  - paragraph.

```
tr.rcp:before,
tr.rcp:after {
    display: table-cell;
    content: paragraph(content(icon(right), "generated content", icon(left)),
                       border-width, 1,
                       border-style, solid);
    color: navy;
}
```



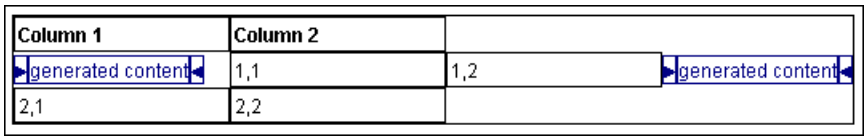
  - division

```
tr.rcd:before,
tr.rcd:after {
    display: table-cell;
    content: division(content(icon(down), "generated content", icon(up)),
                      border-width, 1,
                      border-style, solid);
    color: navy;
}
```



  - rows, row or cell (all three give a table).

```
tr.rcr:before,
tr.rcr:after {
    display: table-cell;
    content: row(cell(icon(right)),
                 cell("generated content"),
                 cell(icon(left)),
                 border-width, 1,
                 border-style, solid);
    color: navy;
}
```



- Other display values are ignored and processed like display: table-cell.

7. display: table-cell

Same behavior as display: block [58].