

16 Frames

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16.1 Introduction to frames

HTML frames allow authors to present documents in multiple views, which may be independent windows or subwindows. Multiple views offer designers a way to keep certain information visible, while other views are scrolled or replaced. For example, within the same window, one frame might display a static banner, a second a navigation menu, and a third the main document that can be scrolled through or replaced by navigating in the second frame.

Here is a simple frame document:

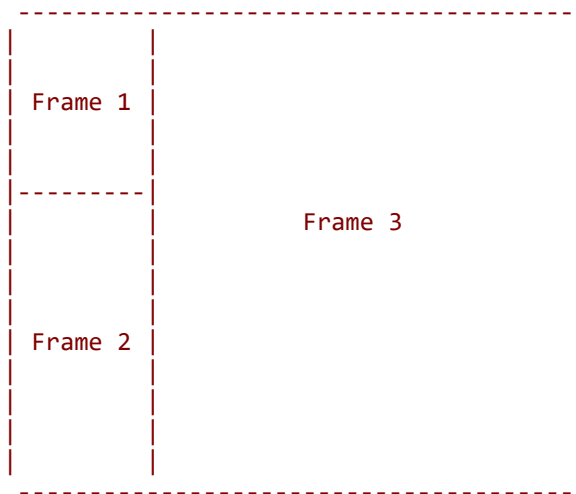
```
<!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 4.01 Frameset//EN"
"http://www.w3.org/TR/html4/frameset.dtd">
<HTML>
<HEAD>
<TITLE>A simple frameset document</TITLE>
</HEAD>
<FRAMESET cols="20%, 80%">
  <FRAMESET rows="100, 200">
    <FRAME src="contents_of_frame1.html">
    <FRAME src="contents_of_frame2.gif">
  </FRAMESET>
  <FRAME src="contents_of_frame3.html">
</NOFRAMES>
  <P>This frameset document contains:
  <UL>
    <LI><A href="contents_of_frame1.html">Some neat contents</A>
    <LI><IMG src="contents_of_frame2.gif" alt="A neat image">
```

```

<LI><A href="contents_of_frame3.html">Some other neat contents</A>
</UL>
</NOFRAMES>
</FRAMESET>
</HTML>

```

that might create a frame layout something like this:



If the user agent can't display frames or is configured not to, it will render the contents of the [NOFRAMES](#) element.

16.2 Layout of frames

An HTML document that describes frame layout (called a *frameset document*) has a different makeup than an HTML document without frames. A standard document has one [HEAD](#) section and one [BODY](#). A frameset document has a [HEAD](#), and a [FRAMESET](#) in place of the [BODY](#).

The [FRAMESET](#) section of a document specifies the layout of views in the main user agent window. In addition, the [FRAMESET](#) section can contain a [NOFRAMES](#) element to provide [alternate content](#) for user agents that do not support frames or are configured not to display frames.

Elements that might normally be placed in the [BODY](#) element must not appear before the first [FRAMESET](#) element or the [FRAMESET](#) will be ignored.

16.2.1 The FRAMESET element

```

<![ %HTML.Frameset; [
<!ELEMENT FRAMESET - - ((FRAMESET|FRAME)+ & NOFRAMES?) -- window subdivision-->
<!ATTLIST FRAMESET
  %coreattrs;                -- id, class, style, title --
  rows      %MultiLengths; #IMPLIED -- list of lengths,
                                     default: 100% (1 row) --
  cols      %MultiLengths; #IMPLIED -- list of lengths,
                                     default: 100% (1 col) --
  onload    %Script;         #IMPLIED -- all the frames have been loaded --
  onunload  %Script;         #IMPLIED -- all the frames have been removed --
>
]]>

```

Attribute definitions

rows = [multi-length-list \[CN\]](#)

This attribute specifies the layout of horizontal frames. It is a comma-separated list of pixels, percentages, and relative lengths. The default value is 100%, meaning one row.

cols = [multi-length-list \[CN\]](#)

This attribute specifies the layout of vertical frames. It is a comma-separated list of pixels, percentages, and relative lengths. The default value is 100%, meaning one column.

Attributes defined elsewhere

- [id](#), [class](#) ([document-wide identifiers](#))
- [title](#) ([element title](#))
- [style](#) ([inline style information](#))
- [onload](#), [onunload](#) ([intrinsic events](#))

The [FRAMESET](#) element specifies the layout of the main user window in terms of rectangular subspaces.

Rows and columns

Setting the [rows](#) attribute defines the number of horizontal subspaces in a frameset. Setting the [cols](#) attribute defines the number of vertical subspaces. Both attributes may be set simultaneously to create a grid.

If the [rows](#) attribute is not set, each column extends the entire length of the page. If the [cols](#) attribute is not set, each row extends the entire width of the page. If neither attribute is set, the frame takes up exactly the size of the page.

Frames are created left-to-right for columns and top-to-bottom for rows. When both attributes are specified, views are created left-to-right in the top row, left-to-right in the second row, etc.

The first example divides the screen vertically in two (i.e., creates a top half and a bottom half).

```
<FRAMESET rows="50%, 50%">
...the rest of the definition...
</FRAMESET>
```

The next example creates three columns: the second has a fixed width of 250 pixels (useful, for example, to hold an image with a known size). The first receives 25% of the remaining space and the third 75% of the remaining space.

```
<FRAMESET cols="1*,250,3*">
...the rest of the definition...
</FRAMESET>
```

The next example creates a 2x3 grid of subspaces.

```
<FRAMESET rows="30%,70%" cols="33%,34%,33%">
...the rest of the definition...
</FRAMESET>
```

For the next example, suppose the browser window is currently 1000 pixels high. The first view is allotted 30% of the total height (300 pixels). The second view is specified to be exactly 400 pixels high. This leaves 300 pixels to be divided between the other two frames. The fourth frame's height is specified as "2*", so it is twice as high as the third frame, whose height is only "*" (equivalent to 1*). Therefore the third frame will be 100 pixels high and the fourth will be 200 pixels high.

```
<FRAMESET rows="30%,400,*,2*">
...the rest of the definition...
```

</FRAMESET>

Absolute lengths that do not sum to 100% of the real available space should be adjusted by the user agent. When underspecified, remaining space should be allotted proportionally to each view. When overspecified, each view should be reduced according to its specified proportion of the total space.

Nested frame sets

Framesets may be nested to any level.

In the following example, the outer [FRAMESET](#) divides the available space into three equal columns. The inner [FRAMESET](#) then divides the second area into two rows of unequal height.

```
<FRAMESET cols="33%, 33%, 34%">
  ...contents of first frame...
  <FRAMESET rows="40%, 50%">
    ...contents of second frame, first row...
    ...contents of second frame, second row...
  </FRAMESET>
  ...contents of third frame...
</FRAMESET>
```

Sharing data among frames

Authors may share data among several frames by including this data via an [OBJECT](#) element. Authors should include the [OBJECT](#) element in the [HEAD](#) element of a frameset document and name it with the [id](#) attribute. Any document that is the contents of a frame in the frameset may refer to this identifier.

The following example illustrates how a script might refer to an [OBJECT](#) element defined for an entire frameset:

```
<!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 4.01 Frameset//EN"
  "http://www.w3.org/TR/html4/frameset.dtd">
<HTML>
<HEAD>
<TITLE>This is a frameset with OBJECT in the HEAD</TITLE>
<!-- This OBJECT is not rendered! -->
<OBJECT id="myobject" data="data.bar"></OBJECT>
</HEAD>
<FRAMESET>
  <FRAME src="bianca.html" name="bianca">
</FRAMESET>
</HTML>

<!-- In bianca.html -->
<HTML>
<HEAD>
<TITLE>Bianca's page</TITLE>
</HEAD>
<BODY>
  ...the beginning of the document...
  <P>
  <SCRIPT type="text/javascript">
    parent.myobject.myproperty
  </SCRIPT>
  ...the rest of the document...
</BODY>
</HTML>
```

16.2.2 The `FRAME` element

```
<![ %HTML.Frameset; [
<!-- reserved frame names start with "_" otherwise starts with letter -->
<!ELEMENT FRAME - 0 EMPTY          -- subwindow -->
<!ATTLIST FRAME
  %coreattrs;          -- id, class, style, title --
  longdesc    %URI;      #IMPLIED -- link to long description
                                   (complements title) --
  name        CDATA      #IMPLIED -- name of frame for targetting --
  src         %URI;      #IMPLIED -- source of frame content --
  frameborder (1|0)      1       -- request frame borders? --
  marginwidth %Pixels;    #IMPLIED -- margin widths in pixels --
  marginheight %Pixels;   #IMPLIED -- margin height in pixels --
  noresize    (noresize)  #IMPLIED -- allow users to resize frames? --
  scrolling   (yes|no|auto) auto   -- scrollbar or none --
>
]]>
```

Attribute definitions

name = [CDATA](#) [C]

This attribute assigns a name to the current frame. This name may be used as the target of subsequent links.

longdesc = [URI](#) [CT]

This attribute specifies a link to a long description of the frame. This description should supplement the short description provided using the [title](#) attribute, and may be particularly useful for non-visual user agents.

src = [URI](#) [CT]

This attribute specifies the location of the initial contents to be contained in the frame.

noresize [C]

When present, this boolean attribute tells the user agent that the frame window must not be resizable.

scrolling = auto|yes|no [C]

This attribute specifies scroll information for the frame window. Possible values

- auto: This value tells the user agent to provide scrolling devices for the frame window when necessary. This is the default value.
- yes: This value tells the user agent to always provide scrolling devices for the frame window.
- no: This value tells the user agent not to provide scrolling devices for the frame window.

frameborder = 1|0 [CN]

This attribute provides the user agent with information about the frame border. Possible values:

- 1: This value tells the user agent to draw a separator between this frame and every adjoining frame. This is the default value.
- 0: This value tells the user agent not to draw a separator between this frame and every adjoining frame. Note that separators may be drawn next to this frame nonetheless if specified by other frames.

marginwidth = [pixels](#) [CN]

This attribute specifies the amount of space to be left between the frame's contents in its left and right margins. The value must be greater than zero (pixels). The default value depends on the user agent.

marginheight = [pixels](#) [CN]

This attribute specifies the amount of space to be left between the frame's contents in its top and bottom margins. The value must be greater than zero (pixels). The default value depends on the user agent.

Attributes defined elsewhere

- [id, class](#) ([document-wide identifiers](#))
- [title](#) ([element title](#))
- [style](#) ([inline style information](#))

The [FRAME](#) element defines the contents and appearance of a single frame.

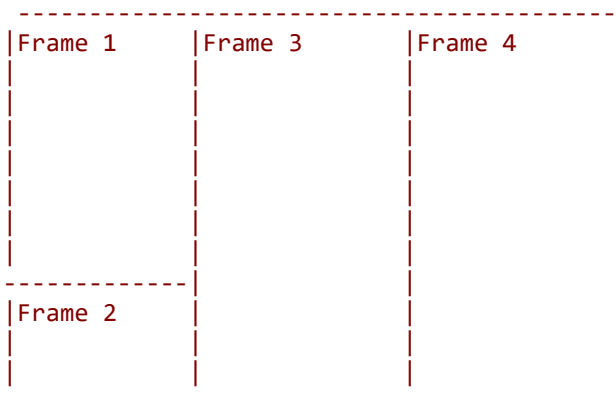
Setting the initial contents of a frame

The [src](#) attribute specifies the initial document the frame will contain.

The following example HTML document:

```
<!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 4.01 Frameset//EN"
"http://www.w3.org/TR/html4/frameset.dtd">
<HTML>
<HEAD>
<TITLE>A frameset document</TITLE>
</HEAD>
<FRAMESET cols="33%,33%,33%">
  <FRAMESET rows="*,200">
    <FRAME src="contents_of_frame1.html">
    <FRAME src="contents_of_frame2.gif">
  </FRAMESET>
  <FRAME src="contents_of_frame3.html">
  <FRAME src="contents_of_frame4.html">
</FRAMESET>
</HTML>
```

should create a frame layout something like this:



and cause the user agent to load each file into a separate view.

The contents of a frame must not be in the same document as the frame's definition.

ILLEGAL EXAMPLE:

The following frameset definition is not legal HTML since the contents of the second frame are in the same document as the frameset.

```
<!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 4.01 Frameset//EN"
"http://www.w3.org/TR/html4/frameset.dtd">
<HTML>
<HEAD>
<TITLE>A frameset document</TITLE>
</HEAD>
<FRAMESET cols="50%,50%">
  <FRAME src="contents_of_frame1.html">
  <FRAME src="#anchor_in_same_document">
  <NOFRAMES>
  ...some text...
  <H2><A name="anchor_in_same_document">Important section</A></H2>
  ...some text...
  </NOFRAMES>
</FRAMESET>
</HTML>
```

Visual rendering of a frame

The following example illustrates the usage of the decorative [FRAME](#) attributes. We specify that frame 1 will allow no scroll bars. Frame 2 will leave white space around its contents (initially, an image file) and the frame will not be resizeable. No border will be drawn between frames 3 and 4. Borders will be drawn (by default) between frames 1, 2, and 3.

```
<!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 4.01 Frameset//EN"
"http://www.w3.org/TR/html4/frameset.dtd">
<HTML>
<HEAD>
<TITLE>A frameset document</TITLE>
</HEAD>
<FRAMESET cols="33%,33%,33%">
  <FRAMESET rows="*,200">
    <FRAME src="contents_of_frame1.html" scrolling="no">
    <FRAME src="contents_of_frame2.gif"
      marginwidth="10" marginheight="15"
      noresize>
  </FRAMESET>
  <FRAME src="contents_of_frame3.html" frameborder="0">
  <FRAME src="contents_of_frame4.html" frameborder="0">
</FRAMESET>
</HTML>
```

16.3 Specifying target frame information

Note. For information about current practice in determining the target of a frame, please consult the [notes on frames in the appendix](#).

Attribute definitions

target = [frame-target \[CI\]](#)

This attribute specifies the name of a frame where a document is to be opened.

By assigning a name to a frame via the [name](#) attribute, authors can refer to it as the "target" of links defined by other elements. The [target](#) attribute may be set for elements that create links ([A](#), [LINK](#)), image maps ([AREA](#)), and forms ([FORM](#)).

Please consult the section on [target frame names](#) for information about recognized frame names.

This example illustrates how targets allow the dynamic modification of a frame's contents. First we define a frameset in the document `frameset.html`, shown here:

```
<!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 4.01 Frameset//EN"
"http://www.w3.org/TR/html4/frameset.dtd">
<HTML>
<HEAD>
<TITLE>A frameset document</TITLE>
</HEAD>
<FRAMESET rows="50%,50%">
  <FRAME name="fixed" src="init_fixed.html">
  <FRAME name="dynamic" src="init_dynamic.html">
</FRAMESET>
</HTML>
```

Then, in `init_dynamic.html`, we link to the frame named "dynamic".

```
<!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 4.01 Transitional//EN"
"http://www.w3.org/TR/html4/loose.dtd">
<HTML>
<HEAD>
<TITLE>A document with anchors with specific targets</TITLE>
</HEAD>
<BODY>
...beginning of the document...
<P>Now you may advance to
  <A href="slide2.html" target="dynamic">slide 2.</A>
...more document...
<P>You're doing great. Now on to
  <A href="slide3.html" target="dynamic">slide 3.</A>
</BODY>
</HTML>
```

Activating either link opens a new document in the frame named "dynamic" while the other frame, "fixed", maintains its initial contents.

Note. A frameset definition never changes, but the contents of one of its frames can. Once the initial contents of a frame change, the frameset definition no longer reflects the current state of its frames.

There is currently no way to encode the entire state of a frameset in a URI. Therefore, many user agents do not allow users to assign a bookmark to a frameset.

Framesets may make navigation forward and backward through your user agent's history more difficult for users.

16.3.1 Setting the default target for links

When many links in the same document designate the same target, it is possible to specify the target once and dispense with the `target` attribute of each element. This is done by setting the `target` attribute of the `BASE` element.

We return to the previous example, this time factoring the target information by defining it in the `BASE` element and removing it from the `A` elements.

```
<!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 4.01 Transitional//EN"
"http://www.w3.org/TR/html4/loose.dtd">
<HTML>
<HEAD>
<TITLE>A document with BASE with a specific target</TITLE>
```

```

<BASE href="http://www.mycom.com/Slides" target="dynamic">
</HEAD>
<BODY>
...beginning of the document...
<P>Now you may advance to <A href="slide2.html">slide 2.</A>
...more document...
<P>You're doing great. Now on to
    <A href="slide3.html">slide 3.</A>
</BODY>
</HTML>

```

16.3.2 Target semantics

User agents should determine the target frame in which to load a linked resource according to the following precedences (highest priority to lowest):

1. If an element has its [target](#) attribute set to a known frame, when the element is activated (i.e., a link is followed or a form is processed), the resource designated by the element should be loaded into the target frame.
2. If an element does not have the [target](#) attribute set but the [BASE](#) element does, the [BASE](#) element's [target](#) attribute determines the frame.
3. If neither the element nor the [BASE](#) element refers to a target, the resource designated by the element should be loaded into the frame containing the element.
4. If any [target](#) attribute refers to an unknown frame *F*, the user agent should create a new window and frame, assign the name *F* to the frame, and load the resource designated by the element in the new frame.

User agents may provide users with a mechanism to override the [target](#) attribute.

16.4 Alternate content

Authors should supply alternate content for those user agents that do not support frames or are configured not to display frames.

16.4.1 The NOFRAMES element

```

<![ %HTML.Frameset; [
<!ENTITY % noframes.content "(BODY) -(NOFRAMES)">
]]>

<!ENTITY % noframes.content "(<a href=>)">

<!ELEMENT NOFRAMES - - %noframes.content;
-- alternate content container for non frame-based rendering -->
<!-- ATTLIST NOFRAMES
    %attrs; -- %coreattrs, %i18n, %events --
-->

```

Attributes defined elsewhere

- [id](#), [class](#) ([document-wide identifiers](#))
- [lang](#) ([language information](#)), [dir](#) ([text direction](#))
- [title](#) ([element title](#))
- [style](#) ([inline style information](#))
- [onclick](#), [ondblclick](#), [onmousedown](#), [onmouseup](#), [onmouseover](#), [onmousemove](#), [onmouseout](#), [onkeypress](#), [onkeydown](#), [onkeyup](#) ([intrinsic events](#))

The [NOFRAMES](#) element specifies content that should be displayed only by user agents that do not support frames or are configured not to display frames. User agents that support frames must only display the contents of a [NOFRAMES](#) declaration when configured not to display frames. User agents that do not support frames must display the contents of [NOFRAMES](#) in any case.

The [NOFRAMES](#) element is part of both the [transitional and frameset DTDs](#). In a document that uses the frameset DTD, [NOFRAMES](#) may be used at the end of the FRAMESET section of the document.

For example:

```
<!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 4.01 Frameset//EN"
"http://www.w3.org/TR/html4/frameset.dtd">
<HTML>
<HEAD>
<TITLE>A frameset document with NOFRAMES</TITLE>
</HEAD>
<FRAMESET cols="50%, 50%">
  <FRAME src="main.html">
  <FRAME src="table_of_contents.html">
  <NOFRAMES>
    <P>Here is the <A href="main-noframes.html">
      non-frame based version of the document.</A>
  </NOFRAMES>
</FRAMESET>
</HTML>
```

[NOFRAMES](#) may be used, for example, in a document that is the source of a frame and that uses the transitional DTD. This allows authors to explain the document's purpose in cases when it is viewed out of the frameset or with a user agent that doesn't support frames.

16.4.2 Long descriptions of frames

The [longdesc](#) attribute allows authors to make frame documents more accessible to people using non-visual user agents. This attribute designates a resource that provides a long description of the frame. Authors should note that long descriptions associated with frames are attached to the *frame*, not the frame's contents. Since the contents may vary over time, the initial long description is likely to become inappropriate for the frame's later contents. In particular, authors should not include an image as the sole content of a frame.

The following frameset document describes two frames. The left frame contains a table of contents and the right frame initially contains an image of an ostrich:

```
<!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 4.01 Frameset//EN"
"http://www.w3.org/TR/html4/frameset.dtd">
<HTML>
<HEAD>
<TITLE>A poorly-designed frameset document</TITLE>
</HEAD>
<FRAMESET cols="20%, 80%">
  <FRAME src="table_of_contents.html">
  <FRAME src="ostrich.gif" longdesc="ostrich-desc.html">
</FRAMESET>
</HTML>
```

Note that the image has been included in the frame independently of any HTML element, so the author has no means of specifying alternate text other than via the [longdesc](#) attribute. If the contents of the right frame change (e.g., the user selects a rattlesnake from the table of contents), users will have no textual access to the frame's new content.

Thus, authors should not put an image directly in a frame. Instead, the image should be specified in a separate HTML document, and therein annotated with the appropriate alternate text:

```
<!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 4.01 Frameset//EN"
"http://www.w3.org/TR/html4/frameset.dtd">
<HTML>
<HEAD>
<TITLE>A well-designed frameset document</TITLE>
</HEAD>
<FRAMESET cols="20%, 80%">
  <FRAME src="table_of_contents.html">
  <FRAME src="ostrich-container.html">
</FRAMESET>
</HTML>

<!-- In ostrich-container.html: -->
<HTML>
<HEAD>
<TITLE>The fast and powerful ostrich</TITLE>
</HEAD>
<P>
<OBJECT data="ostrich.gif" type="image/gif">
These ostriches sure taste good!
</OBJECT>
</HTML>
```

16.5 Inline frames: the IFRAME element

```
<!ELEMENT IFRAME - - (%flow;)*          -- inline subwindow -->
<!ATTLIST IFRAME
  %coreattrs;                          -- id, class, style, title --
  longdesc    %URI;                    #IMPLIED -- link to long description
                                                (complements title) --
  name        CDATA                    #IMPLIED -- name of frame for targeting --
  src         %URI;                    #IMPLIED -- source of frame content --
  frameborder (1|0)                   1        -- request frame borders? --
  marginwidth %Pixels;                 #IMPLIED -- margin widths in pixels --
  marginheight %Pixels;                #IMPLIED -- margin height in pixels --
  scrolling   (yes|no|auto)            auto      -- scrollbar or none --
  align       %IAAlign;                #IMPLIED -- vertical or horizontal alignment --
  height      %Length;                 #IMPLIED -- frame height --
  width       %Length;                 #IMPLIED -- frame width --
>
```

Attribute definitions

longdesc = [uri](#) [CT]

This attribute specifies a link to a long description of the frame. This description should supplement the short description provided using the [title](#) attribute, and is particularly useful for non-visual user agents.

name = [cdata](#) [CI]

This attribute assigns a name to the current frame. This name may be used as the target of subsequent links.

width = [length](#) [CN]

The width of the inline frame.

height = [length](#) [CN]

The height of the inline frame.

Attributes defined elsewhere

- [id](#), [class](#) ([document-wide identifiers](#))
- [title](#) ([element title](#))
- [style](#) ([inline style information](#))
- [name](#), [src](#), [frameborder](#), [marginwidth](#), [marginheight](#), [scrolling](#) ([frame controls and decoration](#))
- [align](#) ([alignment](#))

The [IFRAME](#) element allows authors to insert a frame within a block of text. Inserting an inline frame within a section of text is much like inserting an object via the [OBJECT](#) element: they both allow you to insert an HTML document in the middle of another, they may both be aligned with surrounding text, etc.

The information to be inserted inline is designated by the [src](#) attribute of this element. The *contents* of the [IFRAME](#) element, on the other hand, should only be displayed by user agents that do not support frames or are configured not to display frames.

For user agents that support frames, the following example will place an inline frame surrounded by a border in the middle of the text.

```
<IFRAME src="foo.html" width="400" height="500"
        scrolling="auto" frameborder="1">
[Your user agent does not support frames or is currently configured
not to display frames. However, you may visit
<A href="foo.html">the related document.</A>]
</IFRAME>
```

Inline frames may not be resized (and thus, they do not take the [noresize](#) attribute).

Note. *HTML documents may also be embedded in other HTML documents with the [OBJECT](#) element. See the section on [embedded documents](#) for details.*

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