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Document Revision History  131
All Safari web browsers use the WebKit engine to display webpages. WebKit is an open source framework in Mac OS X that lets developers embed web browser functionality into applications. In providing this browser functionality, WebKit implements a number of extensions to HTML, CSS, and JavaScript. This document covers support of cascading style sheets (CSS) in WebKit.

You can use Cascading Style Sheets (CSS) in conjunction with HTML-based web content to fine-tune the style of the content. The goal of CSS is to separate the structure provided by HTML from the style provided by CSS. Taking style information out of the structure allows designers to independently tune a page’s style for a variety of audiences and readers (such as desktops, hand-held devices like iPhone, and text-based browsers).

You should read this document if you are creating web content for any version of Safari or any other WebKit-based application such as Dashboard.

Organization of This Document

This document contains the following articles:

- “Explanation of Terms” (page 11) explains terminology used in this reference.
- “Supported CSS Properties” (page 15) describes all of the CSS properties supported by Safari and provides information about which web standards (as defined by the World Wide Web Consortium, or W3C) include those properties, where applicable.
- “Supported CSS Rules” (page 119) describes CSS rules supported by Safari, including media rules, downloadable font rules, and so on.
- “CSS Property Functions” (page 123) describes functions used by CSS transform properties.
Explanation of Terms

This reference uses CSS-specific terminology in its headings within a property description. This article describes these terms and explains their meanings and possible values.

Syntax

Syntax describes the syntax of a CSS property. If a property can have multiple forms, each form appears in its own line.

Types Allowed

Types Allowed contains information about what numeric types are allowed in a given property. This field is omitted from properties that do not have a single numeric type, such as properties that take multiple values or use nonnumeric constants exclusively.

The Types Allowed field does not present the complete story, however, because a property may also take additional types specific to its subproperties.

Constants

Constants contains a list of special nonnumeric values that you can assign to a specific property. For example, the border-width property can take the value caption.

The Constants field does not present the complete story, however, because a property may also take additional values specific to its subproperties.

Subproperties

Subproperties provides a list of properties that make up a larger property.

There are three basic types of properties: simple properties, convenience properties, and composite properties.

- Simple properties take a single value of a single type (or a single named constant, such as thin).
- Convenience properties (border-width, for example) combine multiple properties of the same type into a single value. Many also allow you to optionally set distinct values for each of the included properties.
- Composite properties (border, for example) take multiple values of different types.
Convenience properties, such as `border-width`, have related subproperties with finer granularity. For example, instead of setting the `border-width` property, you could set the `border-bottom-width`, `border-top-width`, `border-left-width`, and `border-right-width` properties to the same value and achieve the same result.

Because these convenience properties can be broken down into subproperties of the same basic type, any value that is legal for all of the subproperties is also legal for the convenience property as a whole if the property has a single-value form, and for the individual parts if the property has a multiple-value form. For example, the `border-width` property can accept the value `thin` even though it is listed only in related subproperties such as `border-bottom-width`. Similarly, you could use a multiple-value form, such as `border-width: thin thin thin thin`.

Composite properties also have related subproperties. For example, the second parameter in the `border` property is equivalent to the `border-width` property. Thus, any value that is appropriate for the `border-width` property is also appropriate for the width portion of the `border` composite property.

Similarly, the types allowed for a subproperty are also allowed for convenience properties and the appropriate portions of composite properties that contain them.

Availability

Availability gives the version of Safari in which the property first appeared.

Support Level

Support Level specifies the revision of the W3C standard in which a given property is defined, where applicable, and provides the overall status of the property for properties that are not part of a W3C standard. The possible values are:

- CSS 2.1—properties in CSS 2.1 and earlier revisions. These properties are fully supported across most major browsers, including Safari and other applications that use WebKit.
- Stable CSS 3—properties new in CSS version 3 but believed to be stable. Apple is committed to supporting these properties going forward and does not expect their syntax or names to change. Unlike more experimental CSS 3 properties, these properties are not prefixed by `-webkit-`, and many are supported by other browsers such as Internet Explorer or Firefox.
- Apple extension—properties defined by Apple. These properties are fully supported by WebKit and Safari. A few of these extensions, where noted, are specific to Dashboard widgets or Safari on iPhone. Some of these extensions may have been submitted to the W3C CSS working group for standardization, but are not currently part of the latest draft standard.
- Experimental CSS 3—properties new in CSS 3. The syntax for these properties may change, but because they are prefixed by `-webkit-`, Apple believes that the current syntax can be supported going forward. You still need to update these properties to the final CSS 3 syntax (as needed) and remove the `-webkit-` prefix if you need to use them on other browsers.
- Under development—new CSS 3 or Apple extension properties that are likely to change in syntax. Although it is OK to use these, support for these properties may change in incompatible ways in the future.
Properties may be upgraded to more stable categories as time passes, particularly as tags are added to relevant standards. Go to http://webkit.org/specs for current W3C proposals.
Explanation of Terms
Safari and WebKit implement a large subset of the CSS 2.1 Specification defined by the World Wide Web Consortium (W3C), along with portions of the CSS 3 Specification. This reference describes the supported properties and provides Safari availability information. If a property is not listed here, it is not implemented by Safari and WebKit.

The CSS attributes in this article are divided according to the groups defined by the W3C CSS Specification:

- **“Box Model”** (page 15) describes properties specific to the bounding boxes of block elements, including borders, padding, and margins. Additional box-related properties specific to tables are described separately in “Tables” (page 99).
- **“Visual Formatting Model”** (page 40) describes properties that set the position and size of block elements.
- **“Visual Effects”** (page 50) describes properties that adjust the visual presentation of block elements, including overflow behavior, resizing behavior, visibility, animation, transforms, and transitions.
- **“Generated Content, Automatic Numbering, and Lists”** (page 67) describes properties that allow you to change the contents of an element, create automatically numbered sections and headings, and manipulate the style of list elements.
- **“Paged Media”** (page 71) describes properties associated with controlling appearance attributes specific to printed versions of a web page, such as page break behavior.
- **“Colors and Backgrounds”** (page 73) describes properties that control the background of block-level elements and the color of text content within elements.
- **“Fonts”** (page 79) describes properties specific to font selection for text within an element. It also describes properties used in downloadable font definitions.
- **“Text”** (page 84) describes properties specific to text styles, spacing, and automatic scrolling (marquee).
- **“Tables”** (page 99) describes layout and styling properties specific to table elements.
- **“User Interface”** (page 108) describes properties that relate to user interface elements in the browser, such as scrolling text areas, scroll bars, and so on. It also describes properties that are outside the scope of the page content, such as cursor style and the callout shown when you touch and hold a touch target such as a link on iPhone.

### Box Model

**border**

Defines a variety of border properties for an element within one declaration.

**Syntax**

`border: border_width  border_style  border_color;`
Parameters

\( \text{border-width} \)

The width of the border on all sides.

\( \text{border-style} \)

The style of the border.

\( \text{border-color} \)

The color of the border.

Subproperties

\( \text{border-color} \)
\( \text{border-style} \)
\( \text{border-width} \)

Availability

Available in Safari 1.0 and later. Available in iPhone OS 1.0 and later.

Support Level

CSS 2.1.

border-bottom

Defines a variety of properties for an element’s bottom border within one declaration.

Syntax

\( \text{border-bottom: border-width border-style border-color;} \)

Parameters

\( \text{border-width} \)

The width of the bottom border.

\( \text{border-style} \)

The style of the border.

\( \text{border-color} \)

The color of the border.

Subproperties

\( \text{border-bottom-color} \)
\( \text{border-bottom-style} \)
\( \text{border-bottom-width} \)

Availability

Available in Safari 1.0 and later. Available in iPhone OS 1.0 and later.

Support Level

CSS 2.1.
**border-bottom-color**

Defines the color of the bottom border of an element.

**Syntax**

```
border-bottom-color: color
```

**Parameters**

```
color
```

The color of the bottom border.

**Constants**

- activeborder, activecaption, appworkspace, aqua, background, black, blue, buttonface, buttonhighlight, buttonshadow, butontext, captiontext, fuchsia, gray, graytext, green, grey, highlight, highlighttext, inactiveborder, inactivecaption, inactivecaptiontext, infobackground, infotext, lime, maroon, match, menu, menutext, navy, olive, orange, purple, red, scrollbar, silver, teal, threeddarkshadow, threedface, threedhighlight, threedlightshadow, threedshadow, transparent, -webkit-activelink, -webkit-focus-ring-color, -webkit-link, -webkit-text, white, window, windowframe, windowtext, yellow

**Discussion**

Changes to this property can be animated using transitions.

**Availability**

Available in Safari 1.0 and later. Available in iPhone OS 1.0 and later.

**Support Level**

CSS 2.1.

---

**border-bottom-style**

Defines the style of the bottom border of an element.

**Syntax**

```
border-bottom-style: style;
```

**Parameters**

```
style
```

The style of the bottom border.

**Constants**

- dashed, dotted, double, groove, hidden, inset, none, outset, ridge, solid

**Availability**

Available in Safari 1.0 and later. Available in iPhone OS 1.0 and later.

**Support Level**

CSS 2.1.
border-bottom-width

Defines the width of the bottom border of an element.

Syntax

border-bottom-width: width;

Parameters

width

The width of the bottom border.

Types Allowed

Length units

Constants

medium, thick, thin

Discussion

Changes to this property can be animated using transitions.

Availability

Available in Safari 1.0 and later. Available in iPhone OS 1.0 and later.

Support Level

CSS 2.1.

border-color

Defines the color of an element’s border.

Syntax

border-color: color;

Parameters

color

The color of the border.

Subproperties

border-bottom-color
border-left-color
border-right-color
border-top-color

Availability

Available in Safari 1.0 and later. Available in iPhone OS 1.0 and later.

Support Level

CSS 2.1.
**border-left**

Defines a variety of properties for an element's left border within one declaration.

**Syntax**

\[\text{border-left: border-width\ border-style\ border-color}\]

**Parameters**

- **border-width**
  The width of the left border.

- **border-style**
  The style of the left border.

- **border-color**
  The color of the left border.

**Subproperties**

- **border-left-color**
- **border-left-style**
- **border-left-width**

**Availability**

Available in Safari 1.0 and later. Available in iPhone OS 1.0 and later.

**Support Level**

CSS 2.1.

**border-left-color**

Defines the color of the left border of an element.

**Syntax**

\[\text{border-left-color: color;}\]

**Parameters**

- **color**
  The color of the left border.

**Constants**

- activeborder, activecaption, appworkspace, aqua, background, black, blue, buttonface, buttonhighlight, buttonshadow, buttontext, captiontext, fuchsia, gray, graytext, green, grey, highlight, highlighttext, inactiveborder, inactivecaption, inactivecaptiontext, infobackground, infotext, lime, maroon, match, menu, menutext, navy, olive, orange, purple, red, scrollbar, silver, teal, threeddarkshadow, threedface, threedhighlight, threedlightshadow, threedshadow, transparent, -webkit-activelink, -webkit-focus-ring-color, -webkit-link, -webkit-text, white, window, windowframe, windowtext, yellow
**Discussion**
Changes to this property can be animated using transitions.

**Availability**
Available in Safari 1.0 and later. Available in iPhone OS 1.0 and later.

**Support Level**
CSS 2.1.

---

**border-left-style**

Defines the style of the left border of an element.

**Syntax**

```
border-left-style: style;
```

**Parameters**

- `style`
  The style of the left border.

**Constants**

dashed, dotted, double, groove, hidden, inset, none, outset, ridge, solid

**Availability**

Available in Safari 1.0 and later. Available in iPhone OS 1.0 and later.

**Support Level**

CSS 2.1.

---

**border-left-width**

Defines the width of the left border of an element.

**Syntax**

```
border-left-width: width;
```

**Parameters**

- `width`
  The width of the left border.

**Types Allowed**

Length units

**Constants**

medium, thick, thin

**Discussion**
Changes to this property can be animated using transitions.

**Availability**

Available in Safari 1.0 and later. Available in iPhone OS 1.0 and later.
Support Level
CSS 2.1.

border-right

Defines a variety of properties for an element’s right border within one declaration.

Syntax
border-right: border-width border-style border-color;

Parameters

border-width
The width of the right border.

border-style
The style of the right border.

border-color
The color of the right border.

Subproperties
border-right-color
border-right-style
border-right-width

Availability
Available in Safari 1.0 and later. Available in iPhone OS 1.0 and later.

Support Level
CSS 2.1.

border-right-color

Defines the color of the right border of an element.

Syntax
border-right-color: color;

Parameters

color
The color of the right border.

Constants
activeborder, activecaption, appworkspace, aqua, background, black, blue, buttonface, buttonhighlight, buttonshadow, buttontext, captiontext, fuchsia, gray, graytext, green, grey, highlight, highlighttext, inactiveborder, inactivecaption, inactivecaptiontext, infobackground, infotext, lime, maroon, match, menu, menutext, navy, olive, orange, purple, red, scrollbar, silver, teal, threeddarkshadow, threedface, threedhighlight,
border-right-style

Defines the style of the right border of an element.

Syntax

border-right-style: style;

Parameters

style

The style of the right border.

Constants

dashed, dotted, double, groove, hidden, inset, none, outset, ridge, solid

Availability

Available in Safari 1.0 and later. Available in iPhone OS 1.0 and later.

Support Level

CSS 2.1.

border-right-width

Defines the width of the right border of an element.

Syntax

border-right-width: width;

Parameters

width

The width of the right border.

Types Allowed

Length units

Constants

medium, thick, thin

Discussion

Changes to this property can be animated using transitions.
**Availability**
Available in Safari 1.0 and later. Available in iPhone OS 1.0 and later.

**Support Level**
CSS 2.1.

---

**border-style**

Defines the style for an element’s border.

**Syntax**
```
border-style: style;
```

**Parameters**

- **style**
  The style of the border.

**Subproperties**
- border-bottom-style
- border-left-style
- border-right-style
- border-top-style

**Availability**
Available in Safari 1.0 and later. Available in iPhone OS 1.0 and later.

**Support Level**
CSS 2.1.

---

**border-top**

Defines a variety of properties for an element’s top border within one declaration.

**Syntax**
```
border-top: border_width border_style border_color;
```

**Parameters**

- **border_width**
  The width of the top border.

- **border_style**
  The style of the top border.

- **border_color**
  The color of the top border.

**Subproperties**
- border-top-color
Supported CSS Properties

```
border-top-style
border-top-width
```

**Availability**
Available in Safari 1.0 and later. Available in iPhone OS 1.0 and later.

**Support Level**
CSS 2.1.

---

**border-top-color**

Defines the color of the top border of an element.

**Syntax**
```
border-top-color: color;
```

**Parameters**
```
color
The color of the top border.
```

**Constants**
```
activeborder, activecaption, appworkspace, aqua, background, black, blue, buttonface, buttonhighlight, buttonshadow, buttontext, captiontext, fuchsia, gray, graytext, green, grey, highlight, highlighttext, inactiveborder, inactivecaption, inactivecaptiontext, infobackground, infotext, lime, maroon, match, menu, menutext, navy, olive, orange, purple, red, scrollbar, silver, teal, threeddarkshadow, threedface, threedhighlight, threedlightshadow, threedshadow, transparent, -webkit-activelink, -webkit-focus-ring-color, -webkit-link, -webkit-text, white, window, windowframe, windowtext, yellow
```

**Discussion**
Changes to this property can be animated using transitions.

**Availability**
Available in Safari 1.0 and later. Available in iPhone OS 1.0 and later.

**Support Level**
CSS 2.1.

---

**border-top-style**

Defines the style of the top border of an element.

**Syntax**
```
border-top-style: style;
```

**Parameters**
```
style
The style of the top border.
```
Constants

dashed, dotted, double, groove, hidden, inset, none, outset, ridge, solid

Availability

Available in Safari 1.0 and later. Available in iPhone OS 1.0 and later.

Support Level

CSS 2.1.

border-top-width

Defines the width of the top border of an element.

Syntax

border-top-width: width;

Parameters

width

The width of the top border.

Types Allowed

Length units

Constants

medium, thick, thin

Discussion

Changes to this property can be animated using transitions.

Availability

Available in Safari 1.0 and later. Available in iPhone OS 1.0 and later.

Support Level

CSS 2.1.

border-width

Defines the width of the border of an element.

Syntax

border-width: width;

Parameters

width

The width of the border.

Subproperties

border-bottom-width
border-left-width
border-right-width
border-top-width

Box Model

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**Availability**
Available in Safari 1.0 and later. Available in iPhone OS 1.0 and later.

**Support Level**
CSS 2.1.

---

**margin**

Defines the width of an element’s outer-element margin.

**Syntax**
```
margin: value;
margin: margin_top margin_right margin_bottom margin_left
```

**Parameters**
- `value`
  The width of the margin.
- `margin_top`
  The width of the top margin.
- `margin_right`
  The width of the right margin.
- `margin_bottom`
  The width of the bottom margin.
- `margin_left`
  The width of the left margin.

**Subproperties**
- margin-bottom
- margin-left
- margin-right
- margin-top

---

**Availability**
Available in Safari 1.0 and later. Available in iPhone OS 1.0 and later.

**Support Level**
CSS 2.1.

---

**margin-bottom**

Defines the width of the bottom margin of an element.

**Syntax**
```
margin-bottom: value;
```
Parameters

    value

The width of the bottom margin.

Types Allowed
Numbers as a percentage, length units

Constants
    auto

Discussion
Changes to this property can be animated using transitions.

Availability
Available in Safari 1.0 and later. Available in iPhone OS 1.0 and later.

Support Level
CSS 2.1.

margin-left

Defines the width of the left margin of an element.

Syntax
    margin-left: value;

Parameters

    value

The width of the left margin.

Types Allowed
Numbers as a percentage, length units

Constants
    auto

Discussion
Changes to this property can be animated using transitions.

Availability
Available in Safari 1.0 and later. Available in iPhone OS 1.0 and later.

Support Level
CSS 2.1.

margin-right

Defines the width of the right margin of an element.

Syntax
    margin-right: value;
Parameters

\[ value \]

The width of the right margin.

Types Allowed

Numbers as a percentage, length units

Constants

auto

Discussion

Changes to this property can be animated using transitions.

Availability

Available in Safari 1.0 and later. Available in iPhone OS 1.0 and later.

Support Level

CSS 2.1.

**margin-top**

Defines the width of the top margin of an element.

Syntax

```
margin-top: value;
```

Parameters

\[ value \]

The width of the top margin.

Types Allowed

Numbers as a percentage, length units

Constants

auto

Discussion

Changes to this property can be animated using transitions.

Availability

Available in Safari 1.0 and later. Available in iPhone OS 1.0 and later.

Support Level

CSS 2.1.

**padding**

Defines the width of an element’s inner-element padding.

Syntax

```
padding: value;
padding: padding_top padding_right padding_bottom padding_left
```
Parameters

\[ \text{value} \]

The width of the padding on all sides.

\[ \text{padding}_\text{top} \]

The width of the top padding.

\[ \text{padding}_\text{right} \]

The width of the right padding.

\[ \text{padding}_\text{bottom} \]

The width of the bottom padding.

\[ \text{padding}_\text{left} \]

The width of the left padding.

Subproperties

\[ \text{padding}_\text{bottom} \]
\[ \text{padding}_\text{left} \]
\[ \text{padding}_\text{right} \]
\[ \text{padding}_\text{top} \]

Availability

Available in Safari 1.0 and later. Available in iPhone OS 1.0 and later.

Support Level

CSS 2.1.

padding-bottom

Defines the width of the bottom padding of an element.

Syntax

padding-bottom: \text{value};

Parameters

\[ \text{value} \]

The width of the bottom padding.

Types Allowed

Numbers as a percentage, length units

Discussion

Changes to this property can be animated using transitions.

Availability

Available in Safari 1.0 and later. Available in iPhone OS 1.0 and later.

Support Level

CSS 2.1.
padding-left

Defines the width of the left padding of an element.

**Syntax**

```
padding-left: value;
```

**Parameters**

`value`

The width of the left padding.

**Types Allowed**

Numbers as a percentage, length units

**Discussion**

Changes to this property can be animated using transitions.

**Availability**

Available in Safari 1.0 and later. Available in iPhone OS 1.0 and later.

**Support Level**

CSS 2.1.

padding-right

Defines the width of the right padding of an element.

**Syntax**

```
padding-right: value;
```

**Parameters**

`value`

The width of the right padding.

**Types Allowed**

Numbers as a percentage, length units

**Discussion**

Changes to this property can be animated using transitions.

**Availability**

Available in Safari 1.0 and later. Available in iPhone OS 1.0 and later.

**Support Level**

CSS 2.1.

padding-top

Defines the width of the top padding of an element.
Supported CSS Properties

**Syntax**

```
padding-top: value;
```

**Parameters**

```
value
```

The width of the top padding.

**Types Allowed**

Numbers as a percentage, length units

**Discussion**

Changes to this property can be animated using transitions.

**Availability**

Available in Safari 1.0 and later. Available in iPhone OS 1.0 and later.

**Support Level**

CSS 2.1.

---

**-webkit-border-bottom-left-radius**

Specifies that the bottom-left corner of a box be rounded with the specified radius.

**Syntax**

```
-webkit-border-bottom-left-radius: radius;
-webkit-border-bottom-left-radius: horizontal_radius vertical_radius;
```

**Parameters**

```
radius
```

The radius of the rounded corner.

```
horizontal_radius
```

The horizontal radius of the rounded corner.

```
vertical_radius
```

The vertical radius of the rounded corner.

**Types Allowed**

Length units

**Subproperties**

- `-webkit-border-bottom-right-radius`
- `-webkit-border-radius`
- `-webkit-border-top-left-radius`
- `-webkit-border-top-right-radius`

**Discussion**

This property takes either one or two parameters. If one parameter is specified, it controls both the horizontal and vertical radii of a quarter ellipse. If two parameters are specified, the first parameter normally represents the horizontal radius and the second parameter represents the remaining radius.
(Compatibility note: In Internet Explorer, if writing-mode is specified as tb-rl, these parameters are reversed.)
Changes to this property can be animated using transitions.

Availability
Available in Safari 3.0 and later. Available in iPhone OS 1.0 and later.

Support Level
Experimental CSS 3.

-webkit-border-bottom-right-radius

Specifies that the bottom-right corner of a box be rounded with the specified radius.

Syntax
-webkit-border-bottom-right-radius: radius;
-webkit-border-bottom-right-radius: horizontal_radius vertical_radius;

Parameters
radius
The radius of the rounded corner.

horizontal_radius
The horizontal radius of the rounded corner.

vertical_radius
The vertical radius of the rounded corner.

Types Allowed
Length units

Subproperties
-webkit-border-bottom-left-radius
-webkit-border-radius
-webkit-border-top-left-radius
-webkit-border-top-right-radius

Discussion
This property takes either one or two parameters. If one parameter is specified, it controls both the horizontal and vertical radii of a quarter ellipse. If two parameters are specified, the first parameter normally represents the horizontal radius and the second parameter represents the remaining radius. (Compatibility note: In Internet Explorer, if writing-mode is specified as tb-rl, these parameters are reversed.)
Changes to this property can be animated using transitions.

Availability
Available in Safari 3.0 and later. Available in iPhone OS 1.0 and later.

Support Level
Experimental CSS 3.
-webkit-border-image

Specifies an image as the border for a box.

**Syntax**

```
border-image: uri top right bottom left x_repeat y_repeat
```

```
border-image: uri top right bottom left / border x_repeat y_repeat
```

```
border-image: uri top right bottom left / top_border right_border bottom_border left_border x_repeat y_repeat
```

**Parameters**

- **uri**
  The location of the image.

- **top**
  The distance from the top edge of the image.

- **right**
  The distance from the right edge of the image.

- **bottom**
  The distance from the bottom edge of the image.

- **left**
  The distance from the left edge of the image.

- **x_repeat**
  The horizontal repeat style.

- **y_repeat**
  The vertical repeat style.

- **border**
  The width of the border on all sides.

- **top_border**
  The width of the top border.

- **right_border**
  The width of the right border.

- **bottom_border**
  The width of the bottom border.

- **left_border**
  The width of the left border.

**Constants**

```
repeat
round
stretch
```
Discussion

The specified image is cut into nine pieces according to the length values given. This property applies to any box, including inline elements, but does not apply to table cells if the border-collapse property is set to collapse.

The first five fields are required. The uri field contains the URI for the image. The four inset values that follow represent distances from the top, right, bottom, and left edges of the image. If no unit is specified, they represent actual pixels in the original image (assuming a raster image). If a unit (such as px) is specified, they represent CSS units (which may or may not be the same thing). The values may also be specified as a percentage of the size of the image.

After the required fields, you can optionally include a slash (/) followed by a border width field or fields. You can specify all four border widths individually or specify a single value that applies to all four fields. If these values are not the same size as the inset values, the slices of the original image are scaled to fit.

Finally, you can specify a repeat style in each direction. These values affect how the top, bottom, left, right, and center portions are altered to fit the required dimensions, and can be any of the following: repeat (tiled), stretch, or round (the round style is like tiling, except that it stretches all nine pieces slightly so that there is no partial tile at the end).

Availability

Available in Safari 3.0 and later. Available in iPhone OS 1.0 and later.

Support Level

Experimental CSS 3.

-webkit-border-radius

Specifies that the corners of a box be rounded with the specified radius.

Syntax

-webkit-border-radius: radius;
-webkit-border-radius: horizontal_radius vertical_radius;

Parameters

radius

The radius of the rounded corners.

horizontal_radius

The horizontal radius of the rounded corners.

vertical_radius

The vertical radius of the rounded corners.

Types Allowed

Length units

Subproperties

-webkit-border-bottom-left-radius
-webkit-border-bottom-right-radius
-webkit-border-top-left-radius
-webkit-border-top-right-radius
Discussion
This property takes either one or two parameters. If one parameter is specified, it controls both the horizontal and vertical radii of a quarter ellipse. If two parameters are specified, the first parameter normally represents the horizontal radius and the second parameter represents the remaining radius. (Compatibility note: In Internet Explorer, if writing-mode is specified as tb-rl, these parameters are reversed.)

Availability
Available in Safari 3.0 and later. Available in iPhone OS 1.0 and later.

Support Level
Experimental CSS 3.

-webkit-border-top-left-radius

Specifies that the top-left corner of a box be rounded with the specified radius.

Syntax
-webkit-border-top-left-radius: radius;
-webkit-border-top-left-radius: horizontal_radius vertical_radius;

Parameters
radius
The radius of the rounded corner.

horizontal_radius
The horizontal radius of the rounded corner.

vertical_radius
The vertical radius of the rounded corner.

Types Allowed
Length units

Subproperties
-webkit-border-bottom-left-radius
-webkit-border-bottom-right-radius
-webkit-border-radius
-webkit-border-top-right-radius

Discussion
This property takes either one or two parameters. If one parameter is specified, it controls both the horizontal and vertical radii of a quarter ellipse. If two parameters are specified, the first parameter normally represents the horizontal radius and the second parameter represents the remaining radius. (Compatibility note: In Internet Explorer, if writing-mode is specified as tb-rl, these parameters are reversed.)

Changes to this property can be animated using transitions.

Availability
Available in Safari 3.0 and later. Available in iPhone OS 1.0 and later.

Support Level
Experimental CSS 3.
-webkit-border-top-right-radius

Specifies that the top-right corner of a box be rounded with the specified radius.

Syntax
-webkit-border-top-right-radius: radius;
-webkit-border-top-right-radius: horizontal_radius vertical_radius;

Parameters
radius
The radius of the rounded corner.

horizontal_radius
The horizontal radius of the rounded corner.

vertical_radius
The vertical radius of the rounded corner.

Types Allowed
Length units

Subproperties
-webkit-border-bottom-left-radius
-webkit-border-bottom-right-radius
-webkit-border-radius
-webkit-border-top-left-radius

Discussion
This property takes either one or two parameters. If one parameter is specified, it controls both the horizontal and vertical radii of a quarter ellipse. If two parameters are specified, the first parameter normally represents the horizontal radius and the second parameter represents the remaining radius.

(Compatibility note: In Internet Explorer, if writing-mode is specified as tb-rl, these parameters are reversed.)

Changes to this property can be animated using transitions.

Availability
Available in Safari 3.0 and later. Available in iPhone OS 1.0 and later.

Support Level
Experimental CSS 3.

-webkit-box-sizing

Specifies that the size of a box be measured according to either its content (default) or its total size including borders.

Syntax
-webkit-box-sizing: sizing_model;
**Parameters**

\[ \text{sizing\_model} \]

The model by which the size of the box is measured.

**Constants**

- `border-box`
- `content-box`

**Availability**

Available in Safari 3.0 and later. Available in iPhone OS 1.1 and later. (Called `box-sizing` in iPhone OS 1.0.)

**Support Level**

Experimental CSS 3.

---

**-webkit-box-shadow**

Applies a drop shadow effect to the border box of an object.

**Syntax**

\[-webkit-box-shadow: \text{hoff} \text{voff} \text{blur} \text{color};\]

**Parameters**

- `hoff`
  - The horizontal offset of the shadow.
- `voff`
  - The vertical offset of the shadow.
- `blur`
  - The blur radius of the shadow.
- `color`
  - The color of the shadow.

**Constants**

- `none`

**Discussion**

This property takes four parameters. The first two are horizontal and vertical offsets—down for horizontal, and to the right for vertical. The third value is a blur radius. The fourth value is the color of the shadow. Changes to this property can be animated using transitions.

**Availability**

Available in Safari 3.0 and later. Available in iPhone OS 2.0 and later.

**Support Level**

Experimental CSS 3.
-webkit-margin-bottom-collapse

Specifies the behavior of an element's bottom margin if it is adjacent to an element with a margin. Elements can maintain their respective margins or share a single margin between them.

Syntax

```
-webkit-margin-bottom-collapse: collapse_behavior;
```

Parameters

```
collapse_behavior
    The behavior of the bottom margin.
```

Constants

collapse, discard, separate

Discussion

This property allows you to emulate the behavior of some browsers in quirks mode where table cell margins are collapsed into the borders of vertically adjacent cells.

Availability

Available in Safari 3.0 and later. (Called -khtml-margin-bottom-collapse in Safari 2.0.) Available in iPhone OS 1.0 and later.

Support Level

Apple extension.

-webkit-margin-collapse

Specifies the behavior of an element's vertical margins if it is adjacent to an element with a margin. Elements can maintain their respective margins or share a single margin between them.

Syntax

```
-webkit-margin-collapse: collapse_behavior;
```

Parameters

```
collapse_behavior
    The behavior of the vertical margins.
```

Subproperties

-webkit-margin-bottom-collapse
-webkit-margin-top-collapse

Discussion

This property allows you to emulate the behavior of some browsers in quirks mode where table cell margins are collapsed into the borders of vertically adjacent cells.

Availability

Available in Safari 3.0 and later. (Called -khtml-magnin-collapse in Safari 2.0.) Available in iPhone OS 1.0 and later.

Support Level

Apple extension.
-webkit-margin-start

Provides the width of the starting margin.

Syntax

-webkit-margin-start: width;

Parameters

width

The width of the starting margin.

Types Allowed

Numbers as a percentage, length units

Constants

auto

Discussion

If the writing direction is left-to-right, this value overrides margin-left. If the writing direction is right-to-left, this value overrides margin-right.

Availability

Available in Safari 3.0 and later. (Called it is -khtml-margin-start in Safari 2.0.) Available in iPhone OS 1.0 and later.

Support Level

Apple extension.

-webkit-margin-top-collapse

Specifies the behavior of an element’s top margin if it is adjacent to an element with a margin. Elements can maintain their respective margins or share a single margin between them.

Syntax

-webkit-margin-top-collapse: collapse_behavior;

Parameters

collapse_behavior

The behavior of the top margin.

Constants

collapse,discard,separate

Discussion

This property allows you to emulate the behavior of some browsers in quirks mode where table cell margins are collapsed into the borders of vertically adjacent cells.

Availability

Available in Safari 3.0 and later. (Called -khtml-margin-top-collapse in Safari 2.0.) Available in iPhone OS 1.0 and later.

Support Level

Apple extension.
-webkit-padding-start

Provides the width of the starting padding.

**Syntax**

```css
-webkit-padding-start: width;
```

**Parameters**

- `width`
  
  The width of the starting padding.

**Types Allowed**

Numbers as a percentage, length units

**Discussion**

If the writing direction is left-to-right, this value overrides `padding-left`. If the writing direction is right-to-left, this value overrides `padding-right`.

**Availability**

Available in Safari 3.0 and later. (Called `-khtml-padding-start` in Safari 2.0.) Available in iPhone OS 1.0 and later.

**Support Level**

Apple extension.

---

**Visual Formatting Model**

**bottom**

Defines the location of the bottom edge of the element for both absolute and relative positioning.

**Syntax**

```css
bottom: position;
```

**Parameters**

- `position`
  
  The location of the bottom edge of the element.

**Types Allowed**

Numbers as a percentage, length units

**Constants**

- `auto`

**Discussion**

Changes to this property can be animated using transitions.

**Availability**

Available in Safari 1.0 and later. Available in iPhone OS 1.0 and later.
clear

Defines the sides of an element on which no floating elements are permitted to be displayed.

Syntax

clear: value;

Parameters

value

The sides of the element on which no floating elements can be displayed.

Constants

both, left, none, right

Availability

Available in Safari 1.0 and later. Available in iPhone OS 1.0 and later

Support Level

CSS 2.1.

direction

Sets the direction in which text is rendered.

Syntax

direction: value;

Parameters

value

The direction of the text.

Constants

ltr, rtl

Availability

Available in Safari 1.0 and later. Available in iPhone OS 1.0 and later

Support Level

CSS 2.1.

display

Defines how an element is displayed onscreen.

Syntax

display: mode;
Parameters

mode

The display mode.

Constants

block, compact, inline, inline-block, inline-table, list-item, none, run-in, table, table-caption, table-cell, table-column, table-column-group, table-footer-group, table-header-group, table-row, table-row-group, -webkit-box, -webkit-inline-box

Availability

Available in Safari 1.0 and later. Available in iPhone OS 1.0 and later

Support Level

CSS 2.1.

float

Indicates whether an element (often a graphic) should be pulled out of the normal text flow and floated toward a particular horizontal position within its enclosing element.

Syntax

float: position;

Parameters

position

The position for the element to be floated toward.

Constants

center, left, none, right

Discussion

If float is set to none, the element is displayed inline wherever it appears within the text flow.

If float is set to a positional value, the element is laid out as it normally would be within the flow, then is moved as far as possible towards the specified position. If an element is vertically positioned such that it would run into another element that is part of the same float, it stops at the point of contact. Thus, in effect, this causes these floating elements to stack up at the specified horizontal position.

If the width of a series of stacked floating elements exceeds the width of the enclosing box, further elements wrap to a new row. You can force an element to always wrap to a new row by setting the clear property on that element. (See “clear” (page 41) for more information.)

Note: With the exception of elements with intrinsic width (an img tag, for example), you should always set the width property on floating elements to ensure consistent behavior across browsers.

Availability

Available in Safari 1.0 and later. Available in iPhone OS 1.0 and later

Support Level

CSS 2.1.
height

Defines the height of a structural element.

Syntax

```css
height: value;
```

Parameters

- `value`
  
  The height of the element.

Types Allowed

- Numbers as a percentage, length units, nonnegative values

Constants

- `auto`
- `intrinsic`
- `min-intrinsic`

Discussion

This property has no effect on inline elements. Changes to this property can be animated using transitions.

Availability

Available in Safari 1.0 and later. Available in iPhone OS 1.0 and later

Support Level

CSS 2.1.

left

Defines the location of the left edge of the element for both absolute and relative positioning.

Syntax

```css
left: position;
```

Parameters

- `position`
  
  The location of the left edge of the element.

Types Allowed

- Numbers as a percentage, length units

Constants

- `auto`

Discussion

Changes to this property can be animated using transitions.

Availability

Available in Safari 1.0 and later. Available in iPhone OS 1.0 and later

Support Level

CSS 2.1.
line-height

Defines the vertical interline spacing of lines within the text of an element.

Syntax

```
line-height: height;
```

Parameters

- `height`:
  - The interline spacing value.

Types Allowed

- Floating-point numbers, Numbers as a percentage, length units

Constants

- `normal`

Discussion

Changes to this property can be animated using transitions.

Availability

Available in Safari 1.0 and later. Available in iPhone OS 1.0 and later

Support Level

CSS 2.1.

max-height

Defines the maximum height of a structural element.

Syntax

```
max-height: height;
```

Parameters

- `height`:
  - The maximum height.

Constants

- `intrinsic`, `min-intrinsic`, `none`

Availability

Available in Safari 1.3 and later. (Positioned elements require Safari 2.0.2 and later.) Available in iPhone OS 1.0 and later.

Support Level

CSS 2.1.

max-width

Defines the maximum width of a structural element.
Supported CSS Properties

Syntax
max-width: width;

Parameters

width
The maximum width.

Constants
intrinsic, min-intrinsic, none

Availability
Available in Safari 1.0 and later. (Positioned elements require Safari 2.0.2 and later.) Available in iPhone OS 1.0 and later.

Support Level
CSS 2.1.

min-height

Defines the minimum height of a structural element.

Syntax
min-height: height;

Parameters

height
The minimum height.

Types Allowed
Numbers as a percentage, length units, nonnegative values

Constants
intrinsic, min-intrinsic

Availability
Available in Safari 1.3 and later. (Positioned elements require Safari 2.0.2 and later.) Available in iPhone OS 1.0 and later.

Support Level
CSS 2.1.

min-width

Defines the minimum width of a structural element.

Syntax
min-width: width;
Supported CSS Properties

Parameters

width

The minimum width.

Types Allowed
Numbers as a percentage, length units, nonnegative values

Constants
intrinsic, min-intrinsic

Availability
Available in Safari 1.0 and later. (Positioned elements require Safari 2.0.2 and later.) Available in iPhone OS 1.0 and later.

Support Level
CSS 2.1.

opacity

Specifies how to blend the offscreen rendering into the current composite rendering.

Syntax
opacity: value;

Parameters

value

The opacity.

Types Allowed
Floating-point numbers

Discussion
Changes to this property can be animated using transitions.

Availability
Available in Safari 2.0 and later. (Called -khtml-opacity in Safari 1.1.) Available in iPhone OS 1.0 and later.

Support Level
CSS 2.1.

position

Specifies how an element is positioned.

Syntax
position: positioning_model;
Parameters

positioning_model

The positioning model for the element.

Constants

absolute, fixed, relative, static

Discussion

This property affects the behavior of positional properties such as float and left/right/top/bottom.

Availability

Available in Safari 1.0 and later. Available in iPhone OS 1.0 and later.

Support Level

CSS 2.1.

right

Defines the location of the right edge of the element for both absolute and relative positioning.

Syntax

right: position;

Parameters

position

The location of the right edge of the element.

Types Allowed

Numbers as a percentage, length units

Constants

auto

Availability

Available in Safari 1.0 and later. Available in iPhone OS 1.0 and later.

Discussion

Changes to this property can be animated using transitions.

Support Level

CSS 2.1.

top

Defines the location of the top edge of the element for both absolute and relative positioning.

Syntax

top: position;
Parameters

position

The opacity.

Types Allowed

The location of the top edge of the element.

Constants

auto

Discussion

Changes to this property can be animated using transitions.

Availability

Available in Safari 1.0 and later. Available in iPhone OS 1.0 and later.

Support Level

CSS 2.1.

unicode-bidi

Defines the Unicode bidirectional text algorithm used to display text.

Syntax

unicode-bidi: algorithm;

Parameters

algorithm

The bidirectional text algorithm.

Constants

bidi-override, embed, normal

Discussion

This property must be set if you intend to change the direction of inline text.

Availability

Available in Safari 1.3 and later. Available in iPhone OS 1.0 and later.

Support Level

CSS 2.1.

vertical-align

Defines the vertical alignment of text in an element.

Syntax

vertical-align: position;
Parameters

position

The vertical alignment of the text.

Types Allowed
Numbers as a percentage, length units

Constants
baseline, bottom, middle, sub, super, text-bottom, text-top, top, -webkit-baseline-middle

Availability
Available in Safari 1.0 and later. Available in iPhone OS 1.0 and later.

Support Level
CSS 2.1.

width

Defines the width of a structural element.

Syntax
width: value;

Parameters

value

The width of the element.

Types Allowed
Numbers as a percentage, length units, nonnegative values

Constants
auto, intrinsic, min-intrinsic

Discussion
This property has no effect on inline elements. Changes to this property can be animated using transitions.

Availability
Available in Safari 1.0 and later. Available in iPhone OS 1.0 and later.

Support Level
CSS 2.1.

z-index

Overrides the default stacking order of elements.

Syntax
z-index: distance;
Parameters

distance

The z-index of the element.

Constants

auto

Discussion

Formally, the z-index property sets the height of an element above the drawing plane (in pixels). Its primary use is to override the default stacking order of elements.

By default, elements are stacked in the order in which they appear within the DOM tree; later elements appear on top of earlier elements. If you set a z-index value for an element, that element is displayed on top of all elements with a lower z-index value, underneath all elements with a higher z-index value, and stacked according to its position in the DOM tree relative to all elements with the same z-index value.

By default, elements are assigned a z-index value of auto, which is equivalent to zero (0).

Changes to this property can be animated using transitions.

Availability

Available in Safari 1.0 and later. Available in iPhone OS 1.0 and later.

Support Level

CSS 2.1.

Visual Effects


clip

Defines the clipping region.

Syntax

clip: shape;

Parameters

shape

The clipping region.

Constants

auto

Discussion

A clipping region is the portion of an element in which its content will be rendered. The default is to render content within the entire element size.

If you do not use the constant auto, the value should be in the form of a supported shape (currently limited to rect).

For example, clip: rect(3px 20px 5px 8px); defines a rectangular clip region with a top edge 3 pixels from the top of the element, a right edge 20 pixels from the left edge of the element, a bottom border 5 pixels from the top of the element, and a left border 8 pixels from the left edge of the element.
overflow

Defines the treatment of content that overflows the element's bounds.

Syntax
overflow: behavior;

Parameters

behavior
The overflow behavior.

Subproperties
overflow-x
overflow-y

Discussion
This property allows you to choose the behavior for content that overflows the element bounds, such as providing scroll bars or hiding the overflowed content.

Availability
Available in Safari 1.0 and later. Available in iPhone OS 1.0 and later.

Support Level
CSS 2.1.

overflow-x

Defines the treatment of content that overflows the element's horizontal bounds.

Syntax
overflow-x: behavior;

Parameters

behavior
The overflow behavior.

Constants
auto, hidden, overlay, scroll, visible, -webkit-marquee

Availability
Available in Safari 3.0 and later. Available in iPhone OS 1.0 and later.

Support Level
Stable CSS 3.
overflow-y

Defines the treatment of content that overflows the element’s vertical bounds.

Syntax
overflow-y: behavior;

Parameters

behavior
The overflow behavior.

Constants
auto, hidden, overlay, scroll, visible, -webkit-marquee

Availability
Available in Safari 3.0 and later. Available in iPhone OS 1.0 and later.

Support Level
Stable CSS 3.

resize

Specifies the directions in which resizing is allowed.

Syntax
resize: direction;

Parameters

direction
The directions in which resizing is allowed.

Constants
auto, both, horizontal, none, vertical

Availability
Available in Safari 3.0 and later. Available in iPhone OS 1.0 and later.

Support Level
Stable CSS 3.

visibility

Defines whether or not an element is visible onscreen.

Syntax
visibility: value;

Constants
collapse, hidden, visible
Discussion
Note that elements made invisible using this property still take up space onscreen. Changes to this property can be animated using transitions.

Availability
Available in Safari 1.0 and later. (All supported except for collapse.) Available in iPhone OS 1.0 and later.

Support Level
CSS 2.1.

-webkit-animation

Combines common animation properties into a single property.

Syntax
-webkit-animation: name duration timing_function delay iteration_count direction [, ... ];

Parameters

name
See “-webkit-animation-name” (page 55) for details.

duration
See “-webkit-animation-duration” (page 55) for details.

timing_function
See “-webkit-animation-timing-function” (page 57) for details.

delay
See “-webkit-animation-delay” (page 53) for details.

iteration-count
See “-webkit-animation-iteration-count” (page 55) for details.

direction
See “-webkit-animation-direction” (page 54) for details.

Discussion
Refer to the respective property for details of each property and default values.

Availability
Available in iPhone OS 2.0 and later.

Support Level
Apple extension.

-webkit-animation-delay

Defines when an animation starts.
**-webkit-animation-delay**

**Syntax**

```css
-webkit-animation-delay: time [ . . . ];
```

**Parameters**

`time`

The time to begin executing an animation after it is applied. If 0, the animation executes as soon as it is applied. If positive, it specifies an offset from the moment the animation is applied, and the animation delays execution by that offset. If negative, the animation executes the moment the property changes but appears to begin at the specified negative offset—that is, begins part-way through the animation. Nonzero values must specify a unit: s for seconds, ms for milliseconds. The default value is 0.

**Discussion**

This property allows an animation to begin execution some time after it is applied.

**Availability**

Available in iPhone OS 2.0 and later.

**Support Level**

Apple extension.

---

**-webkit-animation-direction**

Determines whether the animation should play in reverse on alternate iterations.

**Syntax**

```css
-webkit-animation-direction: direction [ . . . ]
```

**Parameters**

`direction`

The direction to play. The default value is `normal`.

**Constants**

`normal`

Play each iteration of the animation in the forward direction.

`alternate`

Play even-numbered iterations of the animation in the forward direction and odd-numbered iterations in the reverse direction.

When an animation is played in reverse, the timing functions are also reversed. For example, when played in reverse, an ease-in animation appears as an ease-out animation.

**Availability**

Available in iPhone OS 2.0 and later.

**Support Level**

Apple extension.
-webkit-animation-duration

Specifies the length of time that an animation takes to complete one iteration.

Syntax

-webkit-animation-duration: time [, ...]

Parameters

  time

  The duration of an animation. If 0, the animation iteration is immediate (there is no animation). A negative value is treated as 0. The default value is 0.

Availability

  Available in iPhone OS 2.0 and later.

Support Level

  Apple extension.

-webkit-animation-iteration-count

Specifies the number of times an animation iterates.

Syntax

-webkit-animation-iteration-count: number [, ...]

Parameters

  number

  The number of iterations. If 1, the animation plays from beginning to end once. A value of infinite causes the animation to repeat forever. Noninteger values cause the animation to end partway through an iteration. Negative values are invalid. The default value is 1.

Constants

  infinite

  Repeats the animation forever.

Discussion

  This property is often used with a -webkit-animation-direction property set to alternate, which causes the animation to play in reverse on alternate iterations.

Availability

  Available in iPhone OS 2.0 and later.

Support Level

  Apple extension.

-webkit-animation-name

Specifies the name of an animation.
Syntax
-webkit-animation-name: name [, ...]

Parameters

name
The name of the animation.

The name is used to select the -webkit-keyframe at-rule that provides the keyframes and property values for the animation. If the name does not match any -webkit-keyframe at-rule, there are no properties to be animated and the animation is not executed. See “@-webkit-keyframes” (page 121) for a description of this rule.

If "none", no animation is executed even if there is a -webkit-keyframe at-rule with that name. Setting this property to "none" explicitly disables animations.

The default value is "".

Availability
Available in iPhone OS 2.0 and later.

Support Level
Apple extension.

-webkit-animation-play-state

Determines whether the animation is running or paused.

Syntax
-webkit-animation-play-state: play_state [, ...]

Parameters

play_state
The state of an animation.

Constants

running
Plays the animation.

paused
Pauses the animation.

Discussion
A running animation can be paused by setting this property to paused. Set this property to running to continue running a paused animation. A paused animation continues to display the current value of the animation in a static state. When a paused animation is resumed, it restarts from the current value, not from the beginning of the animation.

The default value is running.

Availability
Available in iPhone OS 2.0 and later.
-webkit-animation-timing-function

Defines how an animation progresses between keyframes.

Syntax

-webkit-animation-timing-function: function [, ...]

Parameters

function

The function to apply between keyframes. The default value is ease.

Constants

eease

Equivalent to cubic-bezier(0.25, 0.1, 0.25, 1.0).

linear

Equivalent to cubic-bezier(0.0, 0.0, 1.0, 1.0).

ease-in

Equivalent to cubic-bezier(0.42, 0, 1.0, 1.0).

ease-out

Equivalent to cubic-bezier(0, 0, 0.58, 1.0).

ease-in-out

Equivalent to cubic-bezier(0.42, 0, 0.58, 1.0).

Discussion

The timing function is specified using a cubic Bezier curve. Use the constants to specify preset points of the curve or the cubic-bezier function to specify your own points. See cubic-bezier for a description of the parameters for this function. See “-webkit-animation-timing-function and -webkit-transition-timing-function Functions” (page 123) for additional information about timing functions.

This property applies between keyframes, not over the entire animation. For example, for an ease-in-out timing function, an animation eases in at the start of the keyframe and eases out at the end of the keyframe. A -webkit-animation-timing-function defined within a keyframe block applies to that keyframe; otherwise, the timing function specified for the animation is used.

Availability

Available in iPhone OS 2.0 and later.

Support Level

Apple extension.
-webkit-backface-visibility

Determines whether or not a transformed element is visible when it is not facing the screen.

Syntax
-webkit-backface-visibility: visibility;

Parameters

visibility

Determines whether or not the back face of a transformed element is visible. The default value is visible.

Constants

visible
The element is always visible even when it is not facing the screen.

hidden
The element is invisible if it is not facing the screen.

Discussion
Use this property to specify whether or not an element is visible when it is not facing the screen. For example, if the identity transform is set, an element faces the screen; otherwise, it may face away from the screen. For example, applying a rotation about y of 180 degrees in the absence of any other transforms causes an element to face away from the screen.

This property is useful when you place two elements back to back, as you would do to create a playing card. Without this property, the front and back elements could at times switch places during an animation to flip the card. Another example is creating a box out of six elements whose outside and inside faces can be viewed. This is useful when creating the backdrop for a three-dimensional stage.

Availability
Available in iPhone OS 2.0 and later.

Support Level
Apple extension.

-webkit-perspective

Gives depth to a scene, causing elements farther away from the viewer to appear smaller.

Syntax
-webkit-perspective: value;

Parameters

value
The distance in pixels from the viewer's position to the z=0 plane. The default value is none.
Constants

none

No perspective transform is applied.

Discussion
The `webkit-perspective` property applies the same transform as the `perspective(<number>)` transform function, except that it applies only to the children of the element, not to the transform on the element itself.

The use of this property with any value other than `none` establishes a stacking context. It also establishes a containing block (somewhat similar to `position:relative`), just as the `webkit-transform` property does.

This transform alters the effect of other transforms. In the absence of additional transforms, this transform has no effect.

Availability
Available in iPhone OS 2.0 and later.

Support Level
Apple extension.

-webkit-perspective-origin

Sets the origin of the `-webkit-perspective` property described in “-webkit-perspective” (page 58).

Syntax
```
-webkit-perspective-origin: posx posy;
```

Parameters

`posx`

The x-origin as a percentage or value.

`posy`

The y-origin as a percentage or value.
Constants

top

Sets the y-origin to the top of the element’s border box.

center

Sets the x or y origin to the center of the element’s border box. If this constant appears before left or right, specifies the y-origin. If it appears after top or bottom, specifies the x-origin. If it appears alone, centers both the x and y origin.

bottom

Sets the y-origin to the bottom of the element’s border box.

left

Sets the x-origin to the left side of the border box.

right

Sets the x-origin to the right side of the border box.

Discussion

This property effectively sets the x and y position at which the viewer appears to be looking at the children of the element. The default value is 50% for both x and y coordinates.

Availability

Available in iPhone OS 2.0 and later.

Support Level

Apple extension.

-webkit-transform

Specifies transformations to be applied to an element.

Syntax

-webkit-transform: function ... ;

Parameters

function

A transform function. Possible values are described in “-webkit-transform Functions” (page 123).

Constants

none

Discussion

The -webkit-transform property specifies a list of transformations, separated by whitespace, to be applied to an element, such as rotation, scaling, and so on.

The set of transform functions is similar to those allowed by SVG, although there are additional functions to support 3D transformations. If multiple transforms are applied, the transform is generated by performing a matrix concatenation of each transform in the list.

For example, the following div element is rotated 45 degrees clockwise:
If a list of transforms is provided, the net effect is as if each transform is specified separately in the order provided.

The default value is none (no transforms applied).

Changes to this property can be animated using transitions.

**Availability**

Available in Safari 3.1 and later. Available in iPhone OS 2.0 and later.

**Support Level**

Apple extension.

---

**-webkit-transform-origin**

Sets the origin for the “-webkit-transform” (page 60) property.

**Syntax**

```
-webkit-transform-origin: posx
-webkit-transform-origin: posx posy
```

**Parameters**

- **posx**
  
The x origin as a percentage or value.

- **posy**
  
The y origin as a percentage or value.

**Constants**

- **top**
  
  Sets the y origin to the top of the element’s border box.

- **center**
  
  Sets the x or y origin to the center of the element’s border box. If this constant appears before left or right, specifies the y origin. If this constant appears after top or bottom, specifies the x origin. If it appears alone, centers both the x and y origin.

- **bottom**
  
  Sets the y origin to the bottom of the element’s border box.

- **left**
  
  Sets the x origin to the left side of the border box.

- **right**
  
  Sets the x origin to the right side of the border box.
Discussion
The `-webkit-transform-origin` property establishes the origin for transforms applied to an element with respect to its border box.

The values may be expressed either as a CSS length unit or as a percentage of the element’s size. For example, a value of 50% 50% causes transformations to occur around the element’s center. Changing the origin to 100% 0% causes transformation to occur around the top-right corner of the element.
The default value is 50% 50%

If only one argument is provided, it is interpreted as the horizontal position.

Availability
Available in Safari 3.1 and Later. Available in iPhone OS 2.0 and later.

Support Level
Apple extension.

-webkit-transform-origin-x

The x coordinate of the origin for transforms applied to an element with respect to its border box.

Syntax
`-webkit-transform-origin-x: posx`

Parameters

`posx`

The x origin as a percentage or value.

Discussion
The values may be expressed either as a CSS length unit or as a percentage of the element’s size. For example, a value of 50% 50% causes transformations to occur around the element’s center. Changing the origin to 100% 0% causes transformation to occur around the top-right corner of the element.
The default value is 50% 50%

Changes to this property can be animated using transitions.

Availability
Available in Safari 3.1 and Later. Available in iPhone OS 2.0 and later.

Support Level
Apple extension.

-webkit-transform-origin-y

The y coordinate of the origin for transforms applied to an element with respect to its border box.

Syntax
`-webkit-transform-origin-y: posy`

Parameters

`posy`

The y origin as a percentage or value.
Discussion
The values may be expressed either as a CSS length unit or as a percentage of the element's size. For example, a value of 50% 50% causes transformations to occur around the element's center. Changing the origin to 100% 0% causes transformation to occur around the top-right corner of the element. The default value is 50% 50%.
Changes to this property can be animated using transitions.

Availability
Available in Safari 3.1 and Later. Available in iPhone OS 2.0 and later.

Support Level
Apple extension.

-webkit-transform-origin-z
The z coordinate of the origin for transforms applied to an element with respect to its border box.

Syntax
-webkit-transform-origin-z: posz

Parameters
posz
The z origin as a percentage or value.

Discussion
The values may be expressed either as a CSS length unit or as a percentage of the element's size. For example, a value of 50% 50% causes transformations to occur around the element's center. Changing the origin to 100% 0% causes transformation to occur around the top-right corner of the element. The default value is 50% 50%.
Changes to this property can be animated using transitions.

Availability
Available in iPhone OS 2.0 and later.

Support Level
Apple extension.

-webkit-transform-style
Defines how nested, transformed elements are rendered in 3D space.

Syntax
-webkit-transform-style: style;

Parameters
style
The transform style.
Constants

flat

Flatten all children of this element into the 2D plane.

preserve-3d

Preserve the 3D perspective.

Discussion

If `-webkit-transform-style` is `flat`, all children of this element are rendered flattened into the 2D plane of the element. Therefore, rotating the element about the x or y axes causes children positioned at positive or negative z positions to appear on the element’s plane, rather than in front of or behind it. If `-webkit-transform-style` is `preserve-3d`, this flattening is not performed, so children maintain their position in 3D space.

This flattening takes place at each element, so preserving a hierarchy of elements in 3D space requires that each ancestor in the hierarchy have the value `preserve-3d` for `-webkit-transform-style`. But `-webkit-transform-style` affects only an element’s children; the leaf nodes in a hierarchy do not require the `preserve-3d` style.

The default value is `flat`.

Availability

Available in iPhone OS 2.0 and later.

Support Level

Apple extension.

-webkit-transition

Combines `-webkit-transition-delay`, `-webkit-transition-duration`, `-webkit-transition-property`, and `-webkit-transition-timing-function` into a single property.

Syntax

-webkit-transition: property duration timing_function delay [, ...]

Parameters

property

See “-webkit-transition-property” (page 65) for details.

duration

See “-webkit-transition-duration” (page 65) for details.

timing_function

See “-webkit-transition-timing-function” (page 66) for details.

delay

See “-webkit-transition-delay” (page 65) for details.

Availability

Available in Safari 3.1 and Later. Available in iPhone OS 2.0 and later.
Support Level
Apple extension.

-webkit-transition-delay

Defines when the transition starts.

Syntax
-webkit-transition-delay: time [, ...]

Parameters

  time

  The time to begin executing a transition after it is applied. If 0, the transition executes as soon as the property changes. Otherwise, the value specifies an offset from the moment the property changes, and the transition delays execution by that offset. If the value is negative, the transition executes the moment the property changes but appears to begin at the specified negative offset—that is, begins part-way through the transition. Nonzero values must specify a unit: s for seconds, ms for milliseconds. Negative values are invalid. The default value is 0.

Availability
Available in iPhone OS 2.0 and later.

Support Level
Apple extension.

-webkit-transition-duration

Defines how long the transition from the old value to the new value should take.

Syntax
-webkit-transition-duration: time [, ...]

Parameters

  time

  If 0, the transition is immediate (there is no animation). A negative value is treated as 0. Nonzero values must specify a unit: s for seconds, ms for milliseconds. Negative values are invalid. The default value is 0.

Availability
Available in Safari 3.1 and Later. Available in iPhone OS 2.0 and later.

Support Level
Apple extension.

-webkit-transition-property

Specifies the name of the CSS property to which the transition is applied.
Syntax

-webkit-transition-property: name;

Parameters

name

The name of the transition. You can list multiple properties. Property names should be bare, unquoted names. The default value is all.

Constants

none

No transition specified.

all

The default transition name.

Availability

Available in Safari 3.1 and Later. Available in iPhone OS 2.0 and later.

Support Level

Apple extension.

-webkit-transition-timing-function

Specifies how the intermediate values used during a transition are calculated.

Syntax

-webkit-transition-timing-function: timing_function [, ...]

Parameters

timing_function

The timing function.

Constants

ease

Equivalent to cubic-bezier(0.25, 0.1, 0.25, 1.0).

linear

Equivalent to cubic-bezier(0.0, 0.0, 1.0, 1.0).

ease-in

Equivalent to cubic-bezier(0.0, 0.0, 0.0, 1.0).

ease-out

Equivalent to cubic-bezier(0.0, 0.58, 0.0, 1.0).

ease-in-out

Equivalent to cubic-bezier(0.42, 0.58, 0.42, 1.0).
Discussion

This property allows for a transition to change speed over its duration. These effects, commonly called easing functions, are mathematical functions that produce a smooth curve.

The timing function is specified using a cubic Bezier curve. Use the constants to specify preset points of the curve or the cubic-bezier function to specify your own points. See cubic-bezier for a description of the parameters for this function.

The timing function takes as its input the current elapsed percentage of the transition duration and outputs a percentage that determines how close the transition is to its goal state.

The default value is ease.

Availability

Available in Safari 3.1 and Later. Available in iPhone OS 2.0 and later.

Support Level

Apple extension.

Generated Content, Automatic Numbering, and Lists

content

Embeds an arbitrary batch of content (such as a movie or a specially formatted string) to be embedded alongside a CSS property.

Syntax

content: value;

Parameters

value

The location of the content.

Availability

Available in Safari 1.0 and later. Available in iPhone OS 1.0 and later.

Support Level

CSS 2.1.

counter-increment

Increments a numerical counter for auto-numbering.

Syntax

counter-increment: counter_name increment_by;
Parameters

counter_name

The name of the counter.

increment_by

The amount by which the counter increments.

Constants

none

Discussion

This property is commonly used in conjunction with the “content” (page 67) property to create section numbers or other auto-numbered containers. For example:

```html
<style>
  p#top {
    counter-reset: section;
  }

  h1:before {
    content: "Section " counter(section) " ";
    counter-increment: section 1;
  }
</style>

<p id="top">This resets the counter.</p>

<h1>First section</h1>
<h1>Next section</h1>

This snippet inserts “Section 1:” at the beginning of the first heading, “Section 2:” at the beginning of the second, and so on.

Important: You must use the “counter-reset” (page 68) property to reset the counter on some element that appears in the DOM tree prior to the first element where you use counter-increment on that counter. Otherwise, this call increments a nonexistent counter and all of your sections will be numbered “Section 1.”

Availability

Available in Safari 3.0 and later. Available in iPhone OS 1.0 and later.

Support Level

CSS 2.1.

counter-reset

Resets a counter used by the “counter-increment” (page 67) property and the counter function.

Syntax

counter-reset: counter_name
Parameters

\[ \text{counter\_name} \]

The name of the counter.

Constants

\[ \text{none} \]

Discussion

For an example of this property, see the documentation for “counter\-increment” (page 67).

Availability

Available in Safari 3.0 and later.

Support Level

CSS 2.1.

\[ \text{list\_style} \]

Defines the display style for a list and list elements.

Syntax

\[ \text{list\_style: type position image;} \]

Parameters

\[ \text{type} \]

The type of list.

\[ \text{position} \]

The position of the list marker.

\[ \text{image} \]

The location of an image to be used as the list marker.

Subproperties

\[ \text{list\_style\_image} \]
\[ \text{list\_style\_position} \]
\[ \text{list\_style\_type} \]

Discussion

As with most composite properties, all arguments are optional.

Availability

Available in Safari 1.0 and later. Available in iPhone OS 1.0 and later.

Support Level

CSS 2.1.

\[ \text{list\_style\_image} \]

Defines an image to use as the opening symbol of a list element.
list-style-image: value

value

The location of the image.

Availability
Available in Safari 1.0 and later. Available in iPhone OS 1.0 and later.

Support Level
CSS 2.1.

list-style-position

Defines the position of the marker of a list element.

Syntax
list-style-position: value

Parameters

value

The position of the marker.

Constants

inside

The marker is placed inside the text. Wrapping text appears directly below the marker.

outside

The text of the list item is indented from the marker.

Availability
Available in Safari 1.0 and later. Available in iPhone OS 1.0 and later.

Support Level
CSS 2.1.

list-style-type

Defines the type of marker of a list element.

Syntax
list-style-type: value

Parameters

value

The type of marker.
Supported CSS Properties

Constants
  armenian, circle, cjk-ideographic, decimal, decimal-leading-zero, disc, georgian, hebrew, hiragana, hiragana-iroha, katakana, katakana-iroha, lower-alpha, lower-greek, lower-latin, lower-roman, none, square, upper-alpha, upper-latin, upper-roman

Availability
  Available in Safari 1.0 and later. Available in iPhone OS 1.0 and later.

Support Level
  CSS 2.1.

Paged Media

orphans

Defines the minimum number of lines in a paragraph that must be left at the bottom of a page (before a page break).

Syntax
  orphans: number_of_lines

Parameters

  number_of_lines
    The number of lines.

Types Allowed
  Integers

Availability
  Available in Safari 1.3 and later.

Support Level
  CSS 2.1.

page-break-after

Defines the page break behavior following an element's definition.

Syntax
  page-break-after: behavior

Parameters

  behavior
    The page break behavior.

Constants
  always, auto, avoid, left, right
Supported CSS Properties

**Availability**
   Safari 1.2 and later.

**Support Level**
   CSS 2.1.

---

### page-break-before

Defines the page break behavior before an element's definition.

**Syntax**

```
page-break-before: behavior
```

**Parameters**

- `behavior`
  
  The page break behavior.

**Constants**

- `always`, `auto`, `avoid`, `left`, `right`

**Availability**

   Safari 1.2 and later.

**Support Level**

   CSS 2.1.

---

### page-break-inside

Defines the page break behavior within an element.

**Syntax**

```
page-break-inside: behavior
```

**Parameters**

- `behavior`
  
  The page break behavior.

**Constants**

- `auto`, `avoid`

**Availability**

   Safari 1.3 and later.

**Support Level**

   CSS 2.1.
widows

Defines the minimum number of lines in a paragraph that must be left at the top of a page (after a page break).

Syntax

widows: number_of_lines

Parameters

number_of_lines

The number of lines.

Types Allowed

Integers

Availability

Safari 1.3 and later.

Support Level

CSS 2.1.

Colors and Backgrounds

background

Defines a variety of background properties within one declaration.

Syntax

background: background_color background_image background_repeat background_attachment background_position;

Parameters

background_color

The background color.

background_image

The location of the background image.

background_repeat

The repeating behavior of the background image.

background_attachment

If fixed, the background image does not move when the page scrolls; if scroll, the image moves when the page scrolls.

background_position

The position of the background image.
Discussion
As with most composite properties, all arguments are optional.

Availability
Available in Safari 1.0 and later. Available in iPhone OS 1.0 and later.

Support Level
CSS 2.1.

background-attachment

Defines the scrolling or fixed nature of the page background.

Syntax
background-attachment: behavior

Parameters

background_attachment
If fixed, the background image does not move when the page scrolls; if scroll, the image moves when the page scrolls.

Constants
scroll, fixed

Availability
Available in Safari 1.0 and later. Available in iPhone OS 1.0 and later.

Support Level
CSS 2.1.

background-color

Defines an element’s background color.

Syntax
background-color: color

Parameters

color
The background color.

Constants
activeborder, activecaption, appworkspace, aqua, background, black, blue, buttonface, buttonhighlight, buttonshadow, buttontext, captiontext, fuchsia, gray, graytext, green, grey, highlight, highlighttext, inactiveborder, inactivecaption, inactivecaptiontext, infobackground, infotext, lime, maroon, match, menu, menutext, navy, olive, orange, purple, red, scrollbar, silver, teal, threeddarkshadow, threedface, threedhighlight, threedlightshadow, threedshadow, transparent, -webkit-activelink, -webkit-focus-ring-color, -webkit-link, -webkit-text, white, window, windowframe, windowtext, yellow
Discussion
Changes to this property can be animated using transitions.

Availability
Available in Safari 1.0 and later. Available in iPhone OS 1.0 and later.

Support Level
CSS 2.1.

background-image

Defines an element's background image.

Syntax
background-image: value

Parameters

value
The location of the image.

Availability
Available in Safari 1.0 and later. Available in iPhone OS 1.0 and later.

Support Level
CSS 2.1.

background-position

Defines the origin of a background image.

Syntax
background-position: xpos
brightness-background-position: xpos ypos

Parameters

xpos
The x-coordinate of the origin of the background image.

ypos
The y-coordinate of the origin of the background image.

Discussion
Position can be specified in terms of pixels or percentages of the viewport width or using the keywords top, left, center, right, or bottom.

Availability
Available in Safari 1.0 and later. Available in iPhone OS 1.0 and later.

Support Level
CSS 2.1.
background-position-x

Defines the x-coordinate of the origin of a background image.

Syntax
background-position-x: value

Parameters

value
The x-coordinate of the origin of the background image.

Availability
Available in Safari 1.0 and later. Available in iPhone OS 1.0 and later.

Support Level
Apple extension.

background-position-y

Defines the y-coordinate of the origin of a background image.

Syntax
background-position-y: value

Parameters

value
The y-coordinate of the origin of the background image.

Availability
Available in Safari 1.0 and later. Available in iPhone OS 1.0 and later.

Support Level
Apple extension.

background-repeat

Defines the repeating qualities of the background image.

Syntax
background-repeat: value

Parameters

value
The repeating behavior of the background image.

Discussion
This property controls whether tiling of an element’s background image should occur in the x direction, the y direction, both, or neither.
color

Defines the color of the text of an element.

Syntax

color: value

Parameters

value

The color. Colors can be specified with a constants, an RGB value, or a hexadecimal value.

Constants

activeborder, activecaption, appworkspace, aqua, background, black, blue, buttonface, buttonhighlight, buttonshadow, buttontext, captiontext, fuchsia, gray, graytext, green, grey, highlight, highlighttext, inactiveborder, inactivecaption, inactivecaptiontext, infobackground, infotext, lime, maroon, match, menu, menutext, navy, olive, orange, purple, red, scrollbar, silver, teal, threeddarkshadow, threedface, threedhighlight, threedlightshadow, threedshadow, transparent, -webkit-activelink, -webkit-focus-ring-color, -webkit-link, -webkit-text, white, window, windowframe, windowtext, yellow

Discussion

Changes to this property can be animated using transitions.

Availability

Available in Safari 1.0 and later. Available in iPhone OS 1.0 and later.

Support Level

CSS 2.1.
-webkit-background-composite

Sets a compositing style for background images and colors.

Syntax

-webkit-background-composite: compositing_style

Parameters

compositing_style

The compositing style of the background.

Discussion

The default value is border, which means that the background extends into the border area. Specifying a value of padding limits the background so that it extends only into the padding area enclosed by the border.

Availability

Available in Safari 3.0 and later. Available in iPhone OS 1.0 and later.

Support Level

Under development.

-webkit-background-origin

Determines where the background-position property is anchored.

Syntax

-webkit-background-origin: origin

Parameters

origin

The origin of the background position.

Discussion

The background position can be anchored at the upper-left corner of the border, the upper-left corner of the padding area inside the border, or the upper-left corner of the content inside the padding area.

Availability

Available in Safari 3.0 and later. Available in iPhone OS 1.0 and later.

Support Level

Experimental CSS 3.

-webkit-background-size

Overrides the size of a background image.
Syntax

- `webkit-background-size: length`
- `webkit-background-size: length_x length_y`

Parameters

`length`
The width and height of the background image.

`length_x`
The width of the background image.

`length_y`
The height of the background image.

Availability
Available in Safari 3.0 and later. Available in iPhone OS 1.0 and later.

Support Level
Experimental CSS 3.

Fonts

`font`

Defines a variety of properties for an element's text font within one declaration.

Syntax

`font: font_style font_variant font_weight font_size / line_height`

`font: ui_style`

`font: `
Parameters

font_style
  The style of the font.

font_variant
  The variant of the font.

font_weight
  The weight, or boldness, of the font.

font_size
  The size of the font.

line_height
  The distance between lines.

font_family
  The family of the font.

ui_style
  The user interface style to replicate.

Constants

caption, icon, menu, message-box, small-caption, status-bar, -webkit-control,
-webkit-mini-control, -webkit-small-control

Discussion

In addition to declaring a font style explicitly by characteristics, you can also specify a user interface style using constants such as caption. These constants represent the default font style for the specified user interface element, and as such, their specific values are dependent on the browser, the operating system, and user configuration options.

Using the font property resets all related font properties that are not explicitly specified.

Availability

Available in Safari 1.0 and later. Available in iPhone OS 1.0 and later.

Support Level

CSS 2.1.

font-family

Defines a list of fonts for element styling or downloadable font definitions.

Syntax

font-family: family [. . .]

Parameters

family
  The family of the font.
Discussion
The font-family property has two different meanings, depending on context.
In the context of an element style, it defines a font to use for text within an element. Because not all
computers have the same fonts available, this property to specify multiple acceptable fonts in
descending order of preference. In addition, constants such as serif or sans-serif provide generic
fallback fonts in case a browser does not have any of the listed fonts available.
In the context of a downloadable font definition, this property provides the name of the font that the
font definition describes. In this form, you may specify multiple family names for the font, but generally
only a single family name (optionally, specify that it should match against generic font names like serif).
For more information about downloadable font definitions, see “@font-face” (page 119).

Availability
Available in Safari 1.0 and later. Downloadable fonts supported in Safari 3.1 and later. Available in
iPhone OS 1.0 and later.

Support Level
CSS 2.1.

font-size

Defines the font size for the text in an element or in a downloadable font definition.

Syntax
font-size: value

Parameters
value
The size of the font.

Types Allowed
Numbers as a percentage, length units

Constants
large, larger, medium, small, smaller, -webkit-xxx-large, x-large, x-small, xx-large, xx-small

Discussion
For more information about downloadable font definitions, see “@font-face” (page 119).

Availability
Available in Safari 1.0 and later. Downloadable fonts supported in Safari 3.1 and later. Available in
iPhone OS 1.0 and later.

Support Level
CSS 2.1.

font-style

Defines the font style for the text in an element or a downloadable font definition.
Supported CSS Properties

Syntax
font-style: value

Parameters

value

The style of the font.

Constants
italic, normal, oblique

Availability
Available in Safari 1.0 and later. Downloadable fonts supported in Safari 3.1 and later. Available in iPhone OS 1.0 and later.

Support Level
CSS 2.1.

font-variant

Defines special font properties for the text in an element or for a downloadable font definition.

Syntax
font-variant: value

Parameters

value

The variant of the font.

Constants
normal, small-caps

Discussion
For more information about downloadable font definitions, see “@font-face” (page 119).

Availability
Available in Safari 1.0 and later. (The value small-caps is not supported.) Downloadable fonts supported in Safari 3.1 and later. Available in iPhone OS 1.0 and later.

Support Level
CSS 2.1.

font-weight

Defines the font weight of the text in an element or for a downloadable font definition.

Syntax
font-weight: value
**Parameters**

*value*

The weight, or boldness, of the font.

**Types Allowed**

Integers, nonnegative values

**Constants**

100, 200, 300, 400, 500, 600, 700, 800, 900, bold, bolder, lighter, normal

**Discussion**

For more information about downloadable font definitions, see “@font-face” (page 119).

**Availability**

Available in Safari 1.0 and later. Downloadable fonts supported in Safari 3.1 and later. Available in iPhone OS 1.0 and later.

**Support Level**

CSS 2.1.

---

**src**

Provides a list of locations for a downloadable font definition.

**Syntax**

src: local("Times New Roman"),
    URL(http://... format("truetype"),
    URL(http://...).

**Discussion**

This property takes a comma-delimited list of font locations which may be locally installed font family names or HTTP URLs.

For more information about downloadable font definitions, see “@font-face” (page 119).

**Availability**

Available in Safari 3.1 and later.

**Support Level**

CSS 3.

---

**unicode-range**

Describes the unicode characters supported by a downloadable font definition.

**Syntax**

unicode-range: range [, ...];
unicode-range: start_character-end_character [, ...];
Parameters

range
The range of supported characters.

start_character
The first character in a range of supported characters.

depend_character
The last character in a range of supported characters.

Discussion
This property takes a comma-delimited list of Unicode character ranges. There are two supported formats: singleton ranges and pair ranges.

A singleton range is in the form \texttt{U+xxxx} where \texttt{xxxx} is a hexadecimal number. For example, the range \texttt{U+2150} indicates that Unicode character \texttt{0x2150} is supported. Leading zeroes may be omitted, so \texttt{U+300} is the same as \texttt{U+0300}. The following snippet shows a singleton range: \texttt{unicode-range: U+2150;}

A singleton range may also contain wildcards in the form of a question-mark character. For example, \texttt{U+36??} contains two wildcard characters. This range matches any value in which the first two digits are \texttt{36}, without regard to the value for the last two digits. The following snippet shows a wildcard range that represents the Unicode characters \texttt{0x2160} through \texttt{0x216f}, inclusive: \texttt{unicode-range: U+216?;}

A pair range is in the form of a hyphen-separated pair of hexadecimal values in the form \texttt{U+xxxx-yyyy} where \texttt{xxxx} and \texttt{yyyy} are hexadecimal numbers. For example, the following pair range represents the Unicode characters from \texttt{0x2164} through \texttt{0x2156}, inclusive: \texttt{unicode-range: U+2154-2156;}

For more information about downloadable font definitions, see “@font-face” (page 119).

Availability
Available in Safari 3.1 and later.

Support Level
CSS 3.

Text

letter-spacing

Defines the horizontal interletter spacing of characters within the text of an element.

Syntax
letter-spacing: length

Parameters

length
The size of the character spacing.
Supported CSS Properties

**text-align**

Defines the alignment for inline content within an element.

**Syntax**
```
text-align: position
```

**Parameters**

`position`

The inline content alignment.

**Constants**
`center, end, justify, left, right, start, -webkit-auto, -webkit-center, -webkit-left, -webkit-right`

**Availability**
Available in Safari 1.0 and later. Available in iPhone OS 1.0 and later.

**Support Level**
CSS 2.1.

**text-decoration**

Defines special styling for text, such as underlines.

**Syntax**
```
text-decoration: style
```

**Parameters**

`style`

The type of decoration.

**Constants**
`line-through, none, overline, underline`

**Availability**
Available in Safari 1.0 and later. Available in iPhone OS 1.0 and later.
text-indent

Defines the amount to indent the first line of text within an element.

**Syntax**

text-indent: length;

**Parameters**

- `length`
  - The amount to indent.

**Types Allowed**
- Numbers as a percentage, length units

**Availability**
- Available in Safari 1.0 and later. Available in iPhone OS 1.0 and later.

**Support Level**
- CSS 2.1.

---

text-overflow

Controls overflow of non-wrapped text.

**Syntax**

text-overflow: behavior;

**Parameters**

- `behavior`
  - The overflow behavior.

**Constants**
- `clip`, `ellipsis`

**Discussion**

This property controls how Safari displays text that exceeds the specified width of the enclosing paragraph if the "overflow" (page 51) property is set to hidden and style rules or nowrap tags prevent the text from wrapping (or if a single word is too long to fit by itself).

**Availability**
- Available in Safari 1.0 and later. Available in iPhone OS 1.0 and later.

**Support Level**
- CSS 3.
text-shadow

Defines a variety of properties for an element's text shadow within one declaration.

**Syntax**

text-shadow: color x_offset y_offset blur_radius

**Parameters**

- **color**
  The color of the shadow.

- **x_offset**
  The horizontal offset of the shadow.

- **y_offset**
  The vertical offset of the shadow.

- **blur_radius**
  The blur radius of the shadow.

**Constants**

- none

**Discussion**

Although the CSS specification allows it, multiple shadows are not supported in Safari. Changes to this property can be animated using transitions.

**Availability**

Available in Safari 1.1 and later. Available in iPhone OS 1.0 and later.

**Support Level**

CSS 2.1.

text-transform

Defines a capitalization transformation for the text in an element.

**Syntax**

text-transform: transformation

**Parameters**

- **transformation**
  The capitalization transformation.

**Constants**

- capitalize, lowercase, none, uppercase

**Availability**

Available in Safari 1.0 and later. Available in iPhone OS 1.0 and later.

**Support Level**

CSS 2.1.
white-space

Defines how whitespace characters in an element are handled onscreen.

Syntax
white-space: policy

Parameters

policy
The policy for displaying whitespace in the element.

Constants
normal, nowrap, pre, pre-line, pre-wrap

Availability
Available in Safari 1.0 and later. Available in iPhone OS 1.0 and later.

Support Level
CSS 2.1.

word-break

Specifies the level of strictness when breaking lines of text in ideographic languages such as Chinese, Japanese, and Korean.

Syntax
word-break: strictness

Parameters

strictness
The level of strictness.

Constants
break-all, break-word, normal

Availability
Available in Safari 3.0 and later. Available in iPhone OS 2.0 and later.

Support Level
Stable CSS 3.

word-spacing

Defines the amount of space between words.

Syntax
word-spacing: length
Supported CSS Properties

Parameters

\( length \)

The amount of spacing.

Types Allowed
Length units

Constants
normal

Discussion
Changes to this property can be animated using transitions.

Availability
Available in Safari 1.0 and later. Available in iPhone OS 1.0 and later.

Support Level
CSS 2.1.

---

word-wrap

Specifies word-splitting behavior for wrapping lines that are too long for the enclosing box and contain no spaces.

Syntax
word-wrap: behavior

Parameters

behavior

The wrapping behavior.

Constants
break-word, normal

Availability
Available in Safari 2.0 and later. Available in iPhone OS 1.0 and later.

Support Level
Stable CSS 3.

---

-webkit-marquee

Defines properties for showing content as though displayed on an electronic marquee sign.

Syntax
-webkit-marquee: direction increment repetition style speed
Parameters

- **direction**
  The direction of the marquee.

- **increment**
  The distance the marquee moves in each increment

- **repetition**
  The number of times the marquee repeats.

- **style**
  The style of the marquee's motion.

- **speed**
  The scroll or slide speed of the marquee.

Subproperties

- `-webkit-marquee-direction`
- `-webkit-marquee-increment`
- `-webkit-marquee-repetition`
- `-webkit-marquee-speed`
- `-webkit-marquee-style`

Availability

- Available in Safari 3.0 and later. (Called `-khtml-marquee` in Safari 2.0.) Available in iPhone OS 1.0.

Support Level

- Under development.

---

**-webkit-marquee-direction**

Specifies the direction of motion for a marquee box.

**Syntax**

`-webkit-marquee-direction: direction`

**Parameters**

- **direction**
  The direction of the marquee.

**Constants**

- ahead, auto, backwards, down, forwards, left, reverse, right, up

**Availability**

- Available in Safari 3.0 and later. (Called `-khtml-marquee-direction` in Safari 2.0.) Available in iPhone OS 1.0 and later.

**Support Level**

- Under development.
-webkit-marquee-increment

Defines the distance the marquee moves in each increment.

Syntax
-webkit-marquee-increment: distance

Parameters

\[ distance \]

The distance the marquee moves in each increment

Types Allowed
Numbers as a percentage, length units

Constants
large, medium, small

Availability
Available in Safari 3.0 and later. (Called -khtml-marquee-increment in Safari 2.0.) Available in iPhone 1.0 and later.

Support Level
Under development.

-webkit-marquee-repetition

Specifies the number of times a marquee box repeats (or infinite).

Syntax
-webkit-marquee-repetition: iterations

Parameters

\[ iterations \]

The number of times the marquee repeats.

Types Allowed
Integers, nonnegative values

Constants
infinite

Discussion
The marquee box will repeat infinitely if infinite is specified.

Availability
Available in Safari 3.0 and later. (Called -khtml-marquee-repetition in Safari 2.0.) Available in iPhone OS 1.0.

Support Level
Under development.
-webkit-marquee-speed

Defines the scroll or slide speed of a marquee box.

Syntax

-webkit-marquee-speed: speed
-webkit-marquee-speed: distance / time

Parameters

speed

The scroll or slide speed of the marquee.

distance

The distance term in the speed equation.

time

The time term in the speed equation.

Types Allowed

Integers, time units, nonnegative values

Constants

fast, normal, slow

Discussion

This property can either take one speed parameter (slow, for example) or a measure of distance and a measure of time separated by a slash (/).

Availability

Available in Safari 3.0 and later. (Called -khtml-marquee-speed in Safari 2.0.) Available in iPhone OS 1.0 and later.

Support Level

Under development.

-webkit-marquee-style

Specifies the style of marquee motion.

Syntax

-webkit-marquee-style: style

Parameters

style

The style of the marquee's motion.

Constants

alternate, none, scroll, slide

Discussion

The values scroll and slide both cause the content to start outside the box and move into the box, but if the value scroll is specified, the content stops moving once the last content is visible.
The value `alternate` causes the content to shift back and forth within the box in the specified direction.

**Availability**

Available in Safari 3.0 and later. *(Called `-khtml-marquee-style` in Safari 2.0.)* Available in iPhone OS 1.0 and later.

**Support Level**

Under development.

### -webkit-text-fill-color

Specifies a fill color for text.

**Syntax**

```
-webkit-fill-color: color
```

**Parameters**

`color`

The fill color. Colors can be specified with a constant, an RGB value, or a hexadecimal value.

**Constants**

`activeborder`, `activecaption`, `appworkspace`, `aqua`, `background`, `black`, `blue`, `buttonface`, `buttonhighlight`, `buttonshadow`, `buttontext`, `captiontext`, `fuchsia`, `gray`, `graytext`, `green`, `grey`, `highlight`, `highlighttext`, `inactiveborder`, `inactivecaption`, `inactivecaptiontext`, `infobackground`, `infotext`, `lime`, `maroon`, `match`, `menu`, `menutext`, `navy`, `olive`, `orange`, `purple`, `red`, `scrollbar`, `silver`, `teal`, `threeddarkshadow`, `threedface`, `threedhighlight`, `threedlightshadow`, `threedshadow`, `transparent`, `-webkit-activelink`, `-webkit-focus-ring-color`, `-webkit-link`, `-webkit-text`, `white`, `window`, `windowframe`, `windowtext`, `yellow`

**Discussion**

If not specified, the color specified by the `color` property is used. `-webkit-fill-color` is commonly used in combination with `-webkit-text-stroke`. Changes to this property can be animated using transitions.

**Availability**

Available in Safari 3.0 and later. Available in iPhone OS 2.0 and later.

**Support Level**

Apple extension.

### -webkit-text-security

Specifies the shape to use in place of letters in a password input field.

**Syntax**

```
-webkit-text-security: shape
```

**Discussion**

If not specified, the color specified by the `color` property is used. `-webkit-fill-color` is commonly used in combination with `-webkit-text-stroke`. Changes to this property can be animated using transitions.
Supported CSS Properties

Parameters

shape
The shape to use in place of letters.

Constants
circle, disc, none, square

Availability
Available in Safari 3.0 and later. Available in iPhone OS 1.0 and later.

Support Level
Apple extension.

-webkit-text-size-adjust

Specifies a size adjustment for displaying text content in Safari on iPhone.

Syntax
-webkit-text-size-adjust: percentage

Parameters

percentage
The size at which to display text in Safari on iPhone.

Constants
auto, none

Availability
Available in iPhone OS 1.0 and later.

Support Level
Apple extension—iPhone OS only.

-webkit-text-stroke

Specifies the width and color of the outline (stroke) of text.

Syntax
-webkit-text-stroke: width color

Parameters

width
The width of the stroke.

color
The color of the stroke.

Subproperties
-webkit-text-stroke-color
-webkit-text-stroke-width

Discussion
This property is commonly used in combination with -webkit-text-fill-color.

Availability
Available in Safari 3.0 and later. Available in iPhone OS 2.0 and later.

Support Level
Apple extension.

-webkit-text-stroke-color

Specifies the color of the outline (stroke) of text.

Syntax
-webkit-text-stroke-color: color

Parameters

color
The color of the stroke.

Constants
activeborder, activecaption, appworkspace, aqua, background, black, blue, buttonface, buttonhighlight, buttonshadow, buttontext, captiontext, fuchsia, gray, graytext, green, grey, highlight, highlighttext, inactiveborder, inactivecaption, inactivecaptiontext, infobackground, infotext, lime, maroon, match, menu, menutext, navy, olive, orange, purple, red, scrollbar, silver, teal, threeddarkshadow, threedface, threedhighlight, threedlightshadow, threedshadow, transparent, -webkit-activelink, -webkit-focus-ring-color, -webkit-link, -webkit-text, white, window, windowframe, windowtext, yellow

Discussion
If not specified, the color specified by the color property is used. -webkit-text-stroke-color is commonly used in combination with -webkit-text-fill-color. Changes to this property can be animated using transitions.

Availability
Available in Safari 3.0 and later. Available in iPhone OS 2.0 and later.

Support Level
Apple extension.

-webkit-text-stroke-width

Specifies the width for the text outline.

Syntax
-webkit-text-stroke-width: width
Parameters

width

The width of the stroke.

Types Allowed
Length units

Constants
medium, thick, thin

Discussion
This property is significant only in combination with -webkit-text-stroke-color.

Availability
Available in Safari 3.0 and later. Available in iPhone OS 2.0 and later.

Support Level
Apple extension.

-webkit-line-break


Syntax
-webkit-line-break: setting

Parameters

setting

The line-breaking setting.

Constants
after-white-space, normal

Availability
Available in Safari 3.0 and later. (Called -khtml-line-break in Safari 2.0.) Available in iPhone OS 1.0 and later.

Support Level
Apple extension.

-webkit-appearance

Changes the appearance of buttons and other controls to resemble native controls.

Syntax
-webkit-appearance: appearance

Parameters

appearance

The appearance of the control.
Supported CSS Properties

Constants
button, button-bevel, caret, checkbox, listbox, listitem, media-fullscreen-button, media-mute-button, media-play-button, media-seek-back-button, media-seek-forward-button, media-slider, media-sliderthumb, menulist, menulist-button, menulist-text, menulist-textfield, none, push-button, radio, scrollbarbutton-down, scrollbarbutton-left, scrollbarbutton-right, scrollbarbutton-up, scrollbargripper-horizontal, scrollbargripper-vertical, scrollbarthumb-horizontal, scrollbarthumb-vertical, scrollbartrack-horizontal, scrollbartrack-vertical, searchfield, searchfield-cancel-button, searchfield-decoration, searchfield-results-button, searchfield-results-decoration, slider-horizontal, slider-vertical, sliderthumb-horizontal, sliderthumb-vertical, square-button, textarea, textfield

Availability
Available in Safari 3.0 and later. Available in iPhone OS 1.0 and later.

Support Level
Experimental CSS 3.

-webkit-nbsp-mode

Defines the behavior of nonbreaking spaces within text.

Syntax
-webkit-nbsp-mode: behavior;

Parameters
behavior

The behavior of nonbreaking spaces.

Constants
normal, space

Discussion
If this property is set to space, nonbreaking spaces in the element’s contents are treated like normal spaces. If it is set to normal, nonbreaking spaces are treated as nonbreaking.

Availability
Available in Safari 3.0 and later. (Called -khtml-nbsp-mode in Safari 2.0.) Available in iPhone OS 1.0 and later.

Support Level
Apple extension.

-webkit-rtl-ordering

Overrides ordering defaults for right-to-left content.

Syntax
-webkit-rtl-ordering: order;

Discussion
Supported CSS Properties

Parameters

order

The order of the content.

Constants

logical, visual

Discussion

There are two ways to order content that mixes left-to-right and right-to-left text: logical, in which the raw content is in mixed order (requiring a bidirectional renderer), and visual, in which the right-to-left content is encoded in reverse order so that the entire line of text can be rendered from left to right in a unidirectional fashion. The distinction between these two character orders is normally handled automatically as a side effect of character set. This property allows you to override whether the browser should treat the content as being in logical or visual order.

Availability

Available in Safari 3.0 and later. Available in iPhone OS 2.0 and later.

Support Level

Apple extension.

-webkit-user-drag

Specifies that an entire element should be draggable instead of its contents.

Syntax

-webkit-user-drag: behavior;

Parameters

behavior

The dragging behavior of the element.

Constants

auto, element, none

Availability

Available in Safari 3.0 and later. (Called -khtml-user-drag in Safari 2.0.)

Support Level

Apple extension.

-webkit-user-modify

Determines whether a user can edit the content of an element.

Syntax

-webkit-user-modify: policy:
**Parameters**

`policy`

The user modification policy.

**Constants**

`read-only`, `read-write`, `read-write-plaintext-only`

**Discussion**

This is closely related to the `contentEditable` attribute.

**Availability**

Safari 3.0 and later. (Called `-khtml-user-modify` in Safari 2.0.)

**Support Level**

Apple extension.

---

**-webkit-user-select**

Determines whether a user can select the content of an element.

**Syntax**

`-webkit-user-select: policy;`

**Parameters**

`policy`

The user selection policy.

**Constants**

`auto`, `none`, `text`

**Availability**

Available in Safari 3.0 and later. (Called `-khtml-user-select` in Safari 2.0.)

**Support Level**

Apple extension.

---

**Tables**

---

**border-collapse**

Defines the model of an element’s border.

**Syntax**

`border-collapse: behavior;`

**Constants**

`collapse`, `separate`

**Availability**

Available in Safari 1.2 and later. Available in iPhone OS 1.0 and later.
border-spacing

Defines the spacing between an element’s border and the content within.

**Syntax**

```css
border-spacing: length;
```

**Parameters**

- `length`
  The size of the spacing.

**Subproperties**

- `-webkit-border-horizontal-spacing`
- `-webkit-border-vertical-spacing`

**Availability**

Available in Safari 1.2 and later. Available in iPhone OS 1.0 and later.

**Support Level**

CSS 2.1.

caption-side

Defines the side of a table on which its caption appears.

**Syntax**

```css
caption-side: side;
```

**Parameters**

- `side`
  The side of the table that will have a caption.

**Constants**

- `bottom`, `left`, `right`, `top`

**Availability**

Available in Safari 1.0 and later. Available in iPhone OS 1.0 and later.

**Support Level**

CSS 2.1.

empty-cells

Sets the border behavior for cells with no content.
**empty-cells**

Syntax

```
empty-cells: behavior;
```

Parameters

```
behavior
```

The behavior for cells with no content.

Constants

```
hide, show
```

Availability

Available in Safari 1.2 and later. Available in iPhone OS 1.0 and later.

Support Level

CSS 2.1.

---

**table-layout**

Specifies whether to use automatic or fixed table layout.

Syntax

```
table-layout: behavior;
```

Parameters

```
behavior
```

If `auto`, layout is determined by all cells in the table; if `fixed`, layout is determined by the first row of content only.

Constants

```
auto, fixed
```

Discussion

Automatic table layout, specified by the value `auto`, is the default table layout behavior. In this mode, the table layout is calculated based on the contents of every cell in every row of the table.

Fixed table layout, specified by the value `fixed`, is a faster (but more restrictive) layout behavior. In this layout mode, the layout of the table is calculated based only on the first row of tabular content (not including any heading rows). This mode allows the layout to be calculated much earlier in the page load process and greatly simplifies the calculations, but can cause content in later rows to overflow the table’s boundaries.

Availability

Available in Safari 1.0 and later. Available in iPhone OS 1.0 and later.

Support Level

CSS 2.1.

---

**-webkit-border-horizontal-spacing**

Defines the spacing between the horizontal portion of an element's border and the content within.
Supported CSS Properties

Syntax
-webkit-border-horizontal-spacing: value;

Parameters

value
The amount of horizontal spacing.

Types Allowed
Length units, nonnegative values

Discussion
Equivalent to the horizontal portion of the border-spacing property. Changes to this property can be animated using transitions.

Availability
Available in Safari 3.0 and later. (Called -khtml-border-horizontal-spacing in Safari 2.0.) Available in iPhone OS 1.0 and later.

Support Level
Apple extension.

-webkit-border-vertical-spacing

Defines the spacing between the vertical portion of an element's border and the content within.

Syntax
-webkit-border-vertical-spacing: value;

Parameters

value
The amount of vertical spacing.

Types Allowed
Length units, nonnegative values

Discussion
Equivalent to the vertical portion of the border-spacing property. Changes to this property can be animated using transitions.

Availability
Available in Safari 3.0 and later. (Called -khtml-border-vertical-spacing in Safari 2.0.) Available in iPhone OS 1.0 and later.

Support Level
Apple extension.

-webkit-column-break-after

Determines whether a column break can and should occur after an element in a multicoloum flow layout.

Syntax
-webkit-column-break-after: policy;
Parameters

\(policy\)

The column break policy.

Constants

\(\text{always, auto, avoid, left, right}\)

Availability

Available in Safari 3.0 and later. Available in iPhone OS 2.0 and later.

Support Level

Under development.

-webkit-column-break-before

Determines whether a column break can and should occur before an element in a multicolumn flow layout.

Syntax

-\(\text{-webkit-column-break-before: policy;}\)

Parameters

\(policy\)

The column break policy.

Constants

\(\text{always, auto, avoid, left, right}\)

Availability

Available in Safari 3.0 and later. Available in iPhone OS 2.0 and later.

Support Level

Under development.

-webkit-column-break-inside

Determines whether a column break should be avoided within the bounds of an element in a multicolumn flow layout.

Syntax

-\(\text{-webkit-column-break-inside: policy;}\)

Parameters

\(policy\)

The column break policy.

Constants

\(\text{auto, avoid}\)

Availability

Available in Safari 3.0 and later. Available in iPhone OS 2.0 and later.
**-webkit-column-count**

Specifies the number of columns desired in a multicolumn flow.

**Syntax**
-webkit-column-count: number_of_columns;

**Parameters**

    number_of_columns

    The number of columns in the multicolumn flow.

**Types Allowed**
Integers, nonnegative values

**Constants**
auto

**Discussion**
Changes to this property can be animated using transitions.

**Availability**
Available in Safari 3.0 and later. Available in iPhone OS 2.0 and later.

**Support Level**
Under development.

**-webkit-column-gap**

Specifies the space between columns in a multicolumn flow.

**Syntax**
-webkit-column-gap: width;

**Parameters**

    width

    The width of the gap.

**Types Allowed**
Length units

**Constants**
normal

**Discussion**
Changes to this property can be animated using transitions.

**Availability**
Available in Safari 3.0 and later. Available in iPhone OS 2.0 and later.
Support Level
Under development.

-webkit-column-rule

Specifies the color, style, and width of the column rule.

Syntax
-webkit-column-rule: width style color;

Parameters

width
The width of the column rule.

style
The style of the column rule.

color
The color of the column rule.

Subproperties
-webkit-column-rule-color
-webkit-column-rule-style
-webkit-column-rule-width

Discussion
The column rule appears in the middle of the column gap in a multicolumn flow layout.

Availability
Available in Safari 3.0 and later. Available in iPhone OS 2.0 and later.

Support Level
Under development.

-webkit-column-rule-color

Specifies the color of the column rule.

Syntax
-webkit-column-rule-color: color;

Parameters

color
The color of the column rule.

Constants
activeborder, activecaption, appworkspace, aqua, background, black, blue, buttonface, buttonhighlight, buttonshadow, buttontext, captiontext, fuchsia, gray, graytext, green, grey, highlight, highlighttext, inactiveborder, inactivecaption, inactivecaptiontext,
Discussion
Changes to this property can be animated using transitions.

Availability
Available in Safari 3.0 and later. Available in iPhone OS 2.0 and later.

Support Level
Under development.

-webkit-column-rule-style

Specifies the style of the column rule.

Syntax
-webkit-column-rule-style: style;

Parameters

style

The style of the column rule.

Constants
dashed, dotted, double, groove, hidden, inset, none, outset, ridge, solid

Availability
Available in Safari 3.0 and later. Available in iPhone OS 2.0 and later.

Support Level
Under development.

-webkit-column-rule-width

Specifies the width of the column rule.

Syntax
-webkit-column-rule-width: width;

Parameters

width

The width of the column rule.

Types Allowed
Length units

Constants
medium, thick, thin
Discussion
Changes to this property can be animated using transitions.

Availability
Available in Safari 3.0 and later. Available in iPhone OS 2.0 and later.

Support Level
Under development.

-webkit-column-width

Specifies the width of the column in a multicolumn flow.

Syntax
-webkit-column-width: width;

Parameters

width
The width of the column.

Types Allowed
Length units

Constants
auto

Discussion
Changes to this property can be animated using transitions.

Availability
Available in Safari 3.0 and later. Available in iPhone OS 2.0 and later.

Support Level
Under development.

-webkit-columns

A composite property that specifies the width and number of columns in a multicolumn flow layout.

Syntax
-webkit-columns: width count

Parameters

width
The width of each column.

count
The number of columns.

Subproperties

-webkit-column-count
Available in Safari 3.0 and later. Available in iPhone OS 2.0 and later.

Support Level
Under development.

User Interface

Cursor

Defines the cursor to display onscreen when the pointer is over an element.

Syntax
cursor: style;

Parameters

style

The type of cursor.

Constants

alias, all-scroll, auto, cell, col-resize, context-menu, copy, crosshair, default, e-resize, ew-resize, hand, help, move, n-resize, ne-resize, nesw-resize, no-drop, none, not-allowed, ns-resize, nw-resize, nwse-resize, pointer, progress, row-resize, s-resize, se-resize, sw-resize, text, vertical-text, w-resize, wait, -webkit-zoom-in, -webkit-zoom-out

Discussion
Although the CSS specification allows it, Safari does not support custom cursors.

Availability
Available in Safari 1.2 and later.

Support Level
CSS 2.1.

Outline

Defines a variety of properties for an element’s outline (drawn outside the element’s border) within one declaration.

Syntax

outline: color style width;
Parameters

- **color**
  The color of the outline.

- **style**
  The style of the outline.

- **width**
  The width of the outline.

Subproperties

- outline-color
- outline-style
- outline-width

Availability

Available in Safari 1.2 and later. Available in iPhone OS 1.0 and later.

Support Level

CSS 2.1.

---

**outline-color**

Defines the color of an element’s outline.

**Syntax**

```
outline-color: color;
```

**Parameters**

- **color**
  The color of the outline.

**Constants**

- `invert`, `-webkit-focus-ring-color`

**Discussion**

Changes to this property can be animated using transitions.

**Availability**

Available in Safari 1.2 and later. Available in iPhone OS 1.0 and later.

Support Level

CSS 2.1.

---

**outline-offset**

Defines the offset of an element’s outline from its border.

**Syntax**

```
outline-offset: length;
```
Parameters

\textit{length}

The size of the offset.

\textbf{Types Allowed}
Length units

\textbf{Discussion}
Changes to this property can be animated using transitions.

\textbf{Availability}
Available in Safari 1.2 and later. Available in iPhone OS 1.0 and later.

\textbf{Support Level}
CSS 2.1.

\textbf{outline-style}

Defines the style of an element’s outline.

\textbf{Syntax}
\texttt{outline-style: value;}

\textbf{Parameters}

\textit{value}

The style of the outline.

\textbf{Constants}
\textit{auto}

\textbf{Availability}
Available in Safari 1.2 and later. Available in iPhone OS 1.0 and later.

\textbf{Support Level}
CSS 2.1.

\textbf{outline-width}

Defines the width of an element’s outline.

\textbf{Syntax}
\texttt{outline-width: value;}

\textbf{Parameters}

\textit{value}

The width of the outline.

\textbf{Types Allowed}
Length units
Constants
medium, thick, thin

Discussion
Changes to this property can be animated using transitions.

Availability
Available in Safari 1.2 and later. Available in iPhone OS 1.0 and later.

Support Level
CSS 2.1.

-webkit-box-align

Specifies the alignment of nested elements within an outer flexible box element.

Syntax
-webkit-box-align: alignment;

Parameters
alignment
The alignment of nested elements.

Constants
baseline, center, end, start, stretch

Discussion
This property specifies the horizontal alignment if the box direction is vertical, and vice versa. This property applies only to flexible box layouts. For more information about flexible boxes, see http://www.w3.org/TR/css3-layout/.

Availability
Available in Safari 3.0 and later. (Called -khtml-box-align in Safari 1.1 through Safari 2.0.) Available in iPhone OS 1.0 and later.

Support Level
Under development.

-webkit-box-direction

Specifies the direction in which child elements of a flexible box element are laid out.

Syntax
-webkit-box-direction: layout_direction;

Parameters
layout_direction
The layout direction.

Constants
normal, reverse
**Discussion**

This applies only to flexible box layouts. For more information about flexible boxes, see http://www.w3.org/TR/css3-layout/.

**Availability**

Available in Safari 3.0 and later. (Called -khtml-box-direction in Safari 1.1 through Safari 2.0.) Available in iPhone OS 1.0 and later.

**Support Level**

Under development.

---

**-webkit-box-flex**

Specifies an element’s flexibility.

**Syntax**

-webkit-box-flex: flex_value;

**Parameters**

* flex_value
  The flexibility of the element.

**Types Allowed**

Floating-point numbers

**Discussion**

Flexible elements can stretch or shrink to fit the size of the bounding box of their parent element. The amount of stretching or shrinkage of an element is determined by its flex value relative to the flex values of other elements within the same parent element.

This property applies only to flexible box layouts. For more information about flexible boxes, see http://www.w3.org/TR/css3-layout/.

**Availability**

Available in Safari 3.0 and later. (Called -khtml-box-flex in Safari 1.1 through Safari 2.0.) Available in iPhone OS 1.0 and later.

**Support Level**

Under development.

---

**-webkit-box-flex-group**

Specifies groups of dynamically resizing elements that are adjusted to be the same size.

**Syntax**

-webkit-box-flex-group: group_number;

**Parameters**

* group_number
  The group number of the flexible element.
**Types Allowed**
Integers, nonnegative values

**Discussion**
During size adjustment of flex boxes, any boxes with the same group number are adjusted to be the same size.

This property applies only to flexible box layouts. For more information about flexible boxes, see [http://www.w3.org/TR/css3-layout/](http://www.w3.org/TR/css3-layout/).

**Availability**
Available in Safari 3.0 and later. (Called `-khtml-box-flex-group` in Safari 1.1 through Safari 2.0.) Available in iPhone OS 1.0 and later. Safari 3.0 and later.

**Support Level**
Under development.

---

**-webkit-box-lines**

Specifies whether a flexible box should contain multiple lines of content.

**Syntax**
```
-webkit-box-lines: behavior;
```

**Parameters**
- **behavior**
  - If `multiple`, the flexible box can contain multiple lines of content; if `single`, only one line is allowed.

**Constants**
multiple, single

**Discussion**
This property applies only to flexible box layouts. For more information about flexible boxes, see [http://www.w3.org/TR/css3-layout/](http://www.w3.org/TR/css3-layout/).

**Availability**
Available in Safari 3.0 and later. (Called `-khtml-box-lines` in Safari 1.1 through Safari 2.0.) Available in iPhone OS 1.0 and later.

**Support Level**
Under development.

---

**-webkit-box-ordinal-group**

Specifies a rough ordering of elements in a flexible box.

**Syntax**
```
-webkit-box-ordinal-group: group_number;
```
Parameters

group_number

The ordinal group number of the element.

Types Allowed

Integers, nonnegative values

Discussion

Elements with lower ordinal group values are displayed first.

This property applies only to flexible box layouts. For more information about flexible boxes, see http://www.w3.org/TR/css3-layout/.

Availability

Available in Safari 3.0 and later. (Called -khtml-box-ordinal-group in Safari 1.1 through Safari 2.0.) Available in iPhone OS 1.0 and later.

Support Level

Under development.

-webkit-box-orient

Specifies the layout of elements nested within a flexible box element.

Syntax

-webkit-box-orient: orientation;

Parameters

orientation

The orientation of elements nested in the flexible box.

Constants

block-axis, horizontal, inline-axis, vertical

Discussion

This property applies only to flexible box layouts. For more information about flexible boxes, see http://www.w3.org/TR/css3-layout/.

Availability

Available in Safari 3.0 and later. (Called -khtml-box-orient in Safari 1.1 through Safari 2.0.) Available in iPhone OS 1.0 and later.

Support Level

Under development.

-webkit-box-pack

Specifies alignment of child elements within the current element in the direction of orientation.

Syntax

-webkit-box-pack: alignment;
Parameters

alignment

The alignment of child elements.

Constants

center, end, justify, start

Discussion

For elements whose children are aligned horizontally, a packing value of start indicates left alignment with extra space towards the right side, a value of end indicates right alignment with extra space to the left, a value of center indicates center alignment with extra space split evenly on either side, and a value of justify indicates that the outer elements should be aligned on the left and right, with space added evenly between the elements.

Similarly, for elements whose children are aligned vertically, a value of start indicates that the elements should be aligned to the top, a value of end indicates that the elements should be aligned to the bottom, and so on.

This property is similar to “-webkit-box-align” (page 111), which specifies alignment in the opposite direction from the direction of orientation.

This property applies only to flexible box layouts. For more information about flexible boxes, see http://www.w3.org/TR/css3-layout/.

Availability

Available in Safari 3.0 and later. (Called -khtml-box-pack in Safari 1.1 through Safari 2.0.) Available in iPhone OS 1.0 and later.

Support Level

Under development.

-webkit-touch-callout

Disables the default callout shown when you touch and hold a touch target.

Syntax

-webkit-touch-callout: behavior;

Parameters

behavior

The touch callout behavior.

Discussion

On iPhone OS, when you touch and hold a touch target such as a link, Safari displays a callout containing information about the link. This property allows you to disable that callout.

The current allowable values are none and inherit.

Availability

Available in iPhone OS 2.0 and later.

Support Level

Apple extension—iPhone OS only.
-webkit-dashboard-region

Specifies the behavior of regions in a Dashboard widget.

Syntax

-webkit-dashboard-region:
  dashboard-region( ... )
  [...]  

Constants

  none

Discussion

  This property is described in more detail in Declaring Control Regions in Dashboard Programming Topics.

Availability

  Available in Safari 3.0 and later. (Called -apple-dashboard-region in Safari 2.0.)

Support Level

  Apple extension—Dashboard only.

-webkit-tap-highlight-color

 Overrides the highlight color shown when the user taps a link or a JavaScript clickable element in Safari on iPhone.

Syntax

-webkit-tap-highlight-color: color;

Parameters

  color

  The tapped link color.

Discussion

  This property obeys the alpha value, if specified. If you don't specify an alpha value, Safari on iPhone applies a default alpha value to the color. To disable tap highlighting, set the alpha value to 0 (invisible). If you set the alpha value to 1.0 (opaque), the element is not visible when tapped.

Availability

  Available in iPhone OS 1.1.1 and later.

Support Level

  Apple extension—iPhone OS only.

Additional Unsupported Properties

WebKit provides partial support for a number of properties that are not supported for developer use. This list may include:
Properties designed for Apple internal use, such as properties specific to the way Mail and other applications use WebKit.
Properties that are in a very early stage of development and are not really usable yet.
Properties that are used within WebKit itself and cannot be parsed in a CSS file.
Properties that are parsed for historical reasons, but that are not actually used.

Because these properties are unsupported, they are not documented in detail. However, they are listed here so that if you find them in the source code, in test cases, and so on, you will be able to determine their status.

**WebKit-Specific Unsupported Properties**

- `-webkit-border-fit`
- `-webkit-font-size-delta`
- `-webkit-highlight`
- `-webkit-line-clamp`
- `-webkit-match-nearest-mail-blockquote-color`
- `-webkit-text-decorations-in-effect`
- `-webkit-transition-repeat-count`

**Unsupported Properties from the CSS Specification**

- `font-size-adjust` — Describes the font aspect ratio to preserve proportionality in the event of font substitution. Unsupported CSS 2 property; removed in CSS 2.1; reintroduced in CSS 3.
- `font-stretch` — Selects a normal, condensed, or extended variant of a font in an element or describes availability of these variants in a font definition. Declared in CSS 2.1/CSS 3.
- `marker-offset` — Sets the offset of a marker (a bullet in a bulleted list, for example). Unsupported CSS 2 property; removed in CSS 2.1.
- `marks` — Sets what type of crop marks to use on paged media. Unsupported CSS 2 property; removed in CSS 2.1.
- `page` — Used for named page support. Unsupported CSS 2 property; removed in CSS 2.1.
- `quotes` — Sets the quotation mark characters used for nested `<q>` tags.
- `size` — Sets page dimensions for paged media. Unsupported CSS 2 property; removed in CSS 2.1.
- `speak-header` — Sets whether a browser should speak the contents of the corresponding table heading cell before speaking the contents of each cell. Unsupported CSS 2 aural media property. Aural media deprecated in CSS 2.1. Property reintroduced in CSS 3.
- `text-line-through` — Composite property describing overstrike color, style, and mode.Declared in CSS 3.
- `text-line-through-color` — Describes color for overstrike. Declared in CSS 3.
- `text-line-through-mode` — Describes the mode for overstrike. Declared in CSS 3.
- `text-line-through-style` — Describes the style for overstrike. Declared in CSS 3.
- `text-line-through-width` — Describes the width for overstrike. Declared in CSS 3.
- `text-overline` — Composite property describing overline color, style, mode, and width (like underline, but above the text). Declared in CSS 3.
- `text-overline-color` — Describes the color of overline (like underline, but above the text). Declared in CSS 3.
text-overline-mode—Describes the mode of overline (like underline, but above the text). Declared in CSS 3.
text-overline-style—Describes the style of overline (like underline, but above the text). Declared in CSS 3.
text-overline-width—Describes the width of overline (like underline, but above the text). Declared in CSS 3.
text-underline—Composite property describing underline color, style, mode, and width. Declared in CSS 3.
text-underline-color—Describes the color of underline. Declared in CSS 3.
text-underline-mode—Describes the mode of underline. Declared in CSS 3.
text-underline-style—Describes the style of underline. Declared in CSS 3.
text-underline-width—Describes the width of underline. Declared in CSS 3.

Unsupported Properties Specific to Other Browsers

scrollbar-3dlight-color—Microsoft Internet Explorer property.
scrollbar-arrow-color—Microsoft Internet Explorer property.
scrollbar-darkshadow-color—Microsoft Internet Explorer property.
scrollbar-face-color—Microsoft Internet Explorer property.
scrollbar-highlight-color—Microsoft Internet Explorer property.
scrollbar-shadow-color—Microsoft Internet Explorer property.
scrollbar-track-color—Microsoft Internet Explorer property.
This chapter describes selected CSS rules supported by Safari. This is not intended to be an exhaustive list. The CSS rules described here are limited to rules that are either new or are not broadly supported by other browsers (including some specific to WebKit).

@font-face

Enables the use of downloadable web fonts (among other things). A downloadable web font definition looks like this:

```css
@font-face {
  font-family: "MyFamilyname", cursive [, ...];
  font-style: normal [, ...];
  font-variant: normal[, ...];
  font-weight: bold[, ...];
  font-stretch: condensed[, ...]; /* Not supported */
  font-size: 12pt[, ...] /* Not supported */
  src: local("Font Family Name"),
       url(http://..../fontfile.ttf) format("truetype"),
       url(http://..../fontfile.ttf) [, ...];
}
```

The only required properties are font-family and src. For each of these properties, you can specify either a single value or a comma-separated list containing multiple values.

In the src property, you can specify any number of local font family names and any number of URLs (provided that you include at least one local name or URL, of course).

For each URL, you can also specify a format hint if desired. This hint is intended to help the browser avoid downloading fonts in formats that it does not support.

The remaining properties tell the browser how to choose between multiple variants in the same font family. For example:

```html
<style> <!--
  @font-face {
      font-family: Geo;
      font-style: normal;
      src: url(fonts/geo_sans_light/GeosansLight.ttf);
  }
  @font-face {
      font-family: Geo;
      font-style: oblique;
      src: url(fonts/geo_sans_light/GeosansLight-Oblique.ttf);
  }
</style>
```
Because the `font-style` property is specified for both font definitions, the browser uses the first entry for normal text and the second entry for oblique text, and thus, the text “This is a test.” is displayed normally (vertically). If you remove these properties, the last font definition is used and the text appears in an oblique font (slanted).

For a list of specific values allowed for each of these properties, see the description for the property in question.

**Availability**
Safari 3.1 and later. iPhone OS 1.1.4 and earlier. Deprecated in iPhone OS 2.0.

**Support Level**
CSS 3

---

@media

Specifies CSS properties specific to a given output medium. For example, you might have styles specific to print media. Here is the syntax for these queries:

```css
@media print {
  div.chapernumber {
    /* A new chapter should begin at the top of a printed page, slightly below normal text. */
    page-break-before: always;
    margin-top: .25 in;
  }
}
```

Safari supports the following media types:

<table>
<thead>
<tr>
<th>Media Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>all</td>
<td>Applies to all devices, regardless of medium. Equivalent to listing no media type.</td>
</tr>
<tr>
<td>print</td>
<td>Applies only to printed copies of the document.</td>
</tr>
<tr>
<td>screen</td>
<td>Applies only to content displayed on a screen.</td>
</tr>
</tbody>
</table>

**Note:** The `aural` media type is deprecated in CSS 2.1. The CSS 2.1 specification reserves the `speech` media type, but does not define which properties do or do not apply to it.

**Availability**
Safari 1.0 and later. iPhone OS 1.0 and later.

**Support Level**
CSS 3
@-webkit-keyframes

Specifies keyframes for CSS visual effect animation properties.

Syntax
keyframes-rule: '@-webkit-keyframes' [ IDENT | STRING ] '{' keyframes-blocks '}'
keyframes-blocks: [ keyframe-selectors block ]*
keyframe-selectors: [ 'from' | 'to' | PERCENTAGE ] [ ',' [ 'from' | 'to' | PERCENTAGE ] ]*

Discussion
The @-webkit-keyframes keyword is followed by the name of the target animation and a set of style rules following the syntax above. You set the animation name using the -webkit-animation-name property.

The keyframes selector consists of a list of percentage values or the keywords from or to. The selector is used to specify the percentage along the duration of the animation or transition that the keyframes represent. The keyframes are specified by the block of property values declared for the selector. The keyword from is equivalent to the value 0. The keyword to is equivalent to the value 100.

The keyframe declaration consists of properties and values. Properties that are not animating are ignored in this rule, with the exception of the -webkit-animation-timing-function property.

This rule is the last rule encountered in sorted rules order that matches the name of the transition. This rule does not cascade; therefore, an animation never derives keyframes from more than one @-webkit-keyframes rule.

All of the values in selectors are sorted in increasing order by time. If there are any duplicates, the last keyframe specified inside the @-webkit-keyframes rule is used to provide the keyframe information for that time. There is no cascading within a @-webkit-keyframes rule if multiple keyframes specify the same keyframe selector value.

For example, the following @-webkit-keyframes rule contains keyframes for a transition or animation named "wobble." In the first keyframe, shown at the beginning of the animation cycle, the left value of the animation is 100 pixels. After 40% of the animation duration, the value of left is 150 pixels. After 60% of the animation duration, the left value is 75 pixels. At the end of the animation cycle, the left value returns to 100 pixels.

@-webkit-keyframes 'wobble' {
    0 {
        left: 100px;
    }
    40% {
        left: 150px;
    }
    60% {
        left: 75px;
    }
    100% {
        left: 100px;
    }
}
You can also use a keyframes rule to set a timing function to animate or transition from one keyframe to another. You set the timing function for a keyframe within its block using the `-webkit-animation-timing-function` property.

For example, the following `@-webkit-keyframes` rule defines keyframes for a transition or animation named "bounce." Between the first and second keyframes—between 0 and 25%—an `ease-out` timing function is used. Between the second and third keyframes—between 25% and 50%—an `ease-in` timing function is used. As a result, the element moves up the page by 50 pixels, slowing down as it reaches its highest point, then speeds up as it falls back to 100 pixels. The second half of the animation behaves in a similar manner, but moves the element only 25 pixels up the page.

```css
@-webkit-keyframes 'bounce' {
    from {
        top: 100px;
        -webkit-animation-timing-function: ease-out;
    }

    25% {
        top: 50px;
        -webkit-animation-timing-function: ease-in;
    }

    50% {
        top: 100px;
        -webkit-animation-timing-function: ease-out;
    }

    75% {
        top: 75px;
        -webkit-animation-timing-function: ease-in;
    }

    to {
        top: 100px;
    }
}
```

**Availability**

iPhone OS 2.0 and later.

**Support Level**

Apple extension
This chapter describes the functions you can use with supported CSS properties.

Visual Effects Timing Functions

cubic-bezier

Specifies a cubic Bézier curve.

cubic-bezier(P1x, P1y, P2x, P2y)

Parameters

P1x, P1y
First point in the Bézier curve.

P2x, P2y
Second point in the Bézier curve.

Discussion
A cubic Bézier curve is defined by four control points, P0 through P3. P0 and P3 are always set to (0,0) and (1,1). This function is used to set the values for the points in between, points P1 and P2. Each point is specified by both an x and y value.

Availability
Available in Safari 3.1 and later. Available in iPhone OS 2.0 and later.

Visual Effects Transform Functions

matrix

Specifies a 2D transformation in the form of a transformation matrix of six values.

matrix(m11, m12, m21, m22, tX, tY)

Parameters

m11, m12, m21, m22
Elements of a 2 x 2 matrix in column-major order.
The x and y translation elements.

**Discussion**
Passing $\text{matrix}(a,b,c,d,e,f)$ is equivalent to applying the transformation matrix $\begin{bmatrix} a & b & c & d & e \\ f \end{bmatrix}$.

**Availability**
Available in Safari 3.1 and later. Available in iPhone OS 2.0 and later.

### matrix3d

Specifies a 3D transformation as a $4 \times 4$ matrix.

$\text{matrix3d}(m00, m01, m02, m03, m10, m11, m12, m13, m20, m21, m22, m23, m30, m31, m31, m33)$

**Parameters**

$m00, m01, m02, m03, m10, m11, m12, m13, m20, m21, m22, m23, m30, m31, m31, m33$

Defines a $4 \times 4$ homogeneous matrix of 16 values in column-major order ($0.0; 0.1; 0.2; ...$).

**Availability**
Available in Safari 3.1 and later. Available in iPhone OS 2.0 and later.

### perspective

Specifies a perspective projection matrix.

$\text{perspective}(\text{depth})$

**Parameters**

$\text{depth}$

The distance, in pixels, of the $z=0$ plane from the viewer.
Discussion
This matrix maps a viewing cube onto a pyramid whose base is infinitely far away from the viewer and whose peak represents the viewer's position.

The viewable area is the region bounded by the four edges of the viewport (the portion of the browser window used for rendering the webpage between the viewer's position and a point at a distance of infinity from the viewer).

Lower values for this property give a more flattened pyramid and therefore a more pronounced perspective effect. A value of 1000 pixels gives a moderate amount of foreshortening, and a value of 200 pixels gives an extreme amount.

Availability
Available in Safari 3.1 and later. Available in iPhone OS 2.0 and later.

rotate

Specifies a 2D rotation around the origin of the element.

rotate(angle)

Parameters

angle
The rotation angle. The angle may be specified using deg, rad or grad units.

Discussion
The rotation operation corresponds to the matrix \[
\begin{bmatrix}
\cos(angle) & \sin(angle) & -\sin(angle) \\
-\sin(angle) & \cos(angle) & 0 \\
0 & 0 & 1
\end{bmatrix}
\]. The origin of the element is specified using the -webkit-transform-origin property.

Availability
Available in Safari 3.1 and later. Available in iPhone OS 2.0 and later.

rotate3d

Specifies a clockwise 3D rotation.

rotate3d(x, y, z, angle)

Parameters

x, y, z
The \([x,y,z]\) direction vector for the rotation.

If the direction vector is not of unit length, it will be normalized. If the direction vector cannot be normalized, such as \([0, 0, 0]\), the rotation will not be applied.

angle
The rotation angle. The angle may be specified using deg, rad or grad units.

Availability
Available in iPhone OS 2.0 and later.
rotateX

Specifies a clockwise rotation by the given angle about the x-axis.

rotateX(angle)

Parameters

angle

The rotation angle. The angle may be specified using deg, rad or grad units.

Availability

Available in Safari 3.1 and later. Available in iPhone OS 2.0 and later.

rotateY

Specifies a clockwise rotation by the given angle about the y-axis.

rotateY(angle)

Parameters

angle

The rotation angle. The angle may be specified using deg, rad or grad units.

Availability

Available in Safari 3.1 and later. Available in iPhone OS 2.0 and later.

rotateZ

Specifies a clockwise rotation by the given angle about the z-axis.

rotateZ(angle)

Parameters

angle

The angle of the rotation. The angle may be specified using deg, rad or grad units.

Availability

Available in iPhone OS 2.0 and later.

scale

Specifies a 2D scale operation.

scale(scaleX [, scaleY])
Parameters

scaleX

The scaling factor to apply in the x direction.

scaleY

The scaling factor to apply in the y direction. If not specified, defaults to scaleX.

Availability
Available in Safari 3.1 and later. Available in iPhone OS 2.0 and later.

scale3d

Specifies a 3D scale operation.

cscale3d(scaleX, scaleY, scaleZ)

Parameters

scaleX

The scaling factor to apply in the x direction.

scaleY

The scaling factor to apply in the y direction.

scaleZ

The scaling factor to apply in the z direction.

Availability
Available in Safari 3.1 and later. Available in iPhone OS 2.0 and later.

scaleX

Scales in the x direction.

scaleX(sx)

Parameters

sx

The scaling factor to apply to the x direction.

Discussion
This function specifies a scale operation using the [sx, 1, 1] scaling vector.

Availability
Available in Safari 3.1 and later. Available in iPhone OS 2.0 and later.
scaleY

Scales in the y direction.

scaleY(sy)

Parameters

sy

The scaling factor to apply to the y direction.

Discussion

This function specifies a scale operation using the \([1, sy, 1]\) scaling vector.

Availability

Available in Safari 3.1 and later. Available in iPhone OS 2.0 and later.

scaleZ

Scales in the z direction.

scaleZ(sz)

Parameters

sz

The scaling factor to apply to the z direction.

Discussion

This function specifies a scale operation using the \([1, 1, sz]\) scaling vector.

Availability

Available in iPhone OS 2.0 and later.

skewX

Specifies a skew transformation along the x-axis by the given angle.

skewX(angle)

Parameters

angle

The angle of the skew. The angle may be specified using deg, rad or grad units.

Availability

Available in Safari 3.1 and later. Available in iPhone OS 2.0 and later.
skewY

Specifies a skew transformation along the x-axis by the given angle.

skewY(angle)

Parameters

angle
The angle of the skew. The angle may be specified using deg, rad or grad units.

Availability
Available in Safari 3.1 and later. Available in iPhone OS 2.0 and later.

translate

Specifies a 2D translation vector.

translate(deltaX [, deltaY])

Parameters

deltaX
The number of units to translate along the x-axis. This value may be a percentage or a length.

deltaY
The number of units to translate along the y-axis. If not specified, the y translation defaults to 0. This value may be a percentage or a length.

Availability
Available in Safari 3.1 and later. Available in iPhone OS 2.0 and later.

translate3d

Specifies a 3D translation vector.

translate3d(deltaX, deltaY, deltaZ)

Parameters

deltaX
The number of units to translate along the x-axis. This value may be a percentage or a length.

deltaY
The number of units to translate along the y-axis. This value may be a percentage or a length.

deltaZ
The number of units to translate along the z-axis. This value may be a percentage or a length.
availability
Available in iPhone OS 2.0 and later.

**translateX**

Specifies a translation in the x direction.

\[
\text{translateX}(\text{deltaX})
\]

**Parameters**

\[
\text{deltaX}
\]

The number of units to translate along the x-axis. This value may be a percentage or a length.

**Availability**
Available in Safari 3.1 and later. Available in iPhone OS 2.0 and later.

**translateY**

Specifies a translation in the y direction.

\[
\text{translateY}(\text{deltaY})
\]

**Parameters**

\[
\text{deltaY}
\]

The number of units to translate along the y-axis. This value may be a percentage or a length.

**Availability**
Available in Safari 3.1 and later. Available in iPhone OS 2.0 and later.

**translateZ**

Specifies a translation in the z direction.

\[
\text{translateZ}(\text{deltaZ})
\]

**Parameters**

\[
\text{deltaZ}
\]

The number of units to translate along the z-axis. This value may be a percentage or a length.

**Availability**
Available in iPhone OS 2.0 and later.
### Document Revision History

This table describes the changes to *Safari CSS Reference*.

<table>
<thead>
<tr>
<th>Date</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>2008-11-19</td>
<td>Added animatable and iPhone OS availability information to CSS properties.</td>
</tr>
<tr>
<td>2008-10-15</td>
<td>Fixed typographical errors, improved consistency.</td>
</tr>
<tr>
<td>2008-09-09</td>
<td>Added iPhone OS 2.0 visual effects properties.</td>
</tr>
<tr>
<td>2008-07-11</td>
<td>Updated for iPhone 2.0.</td>
</tr>
<tr>
<td>2008-06-09</td>
<td>Updated for Safari 3.1.</td>
</tr>
<tr>
<td>2008-01-15</td>
<td>Made changes to terminology.</td>
</tr>
<tr>
<td>2007-12-11</td>
<td>Incorporated additional information about iPhone-specific properties.</td>
</tr>
<tr>
<td>2007-10-31</td>
<td>Added property-specific availability information and made minor edits throughout.</td>
</tr>
<tr>
<td>2007-09-07</td>
<td>Added availability, types, and special values and reformatted the content.</td>
</tr>
<tr>
<td>2007-06-06</td>
<td>Updated documentation to reflect CSS support added in Safari and Web Kit 1.3.</td>
</tr>
<tr>
<td>2005-06-04</td>
<td>New document that describes the CSS properties supported by Safari and the Web Kit.</td>
</tr>
</tbody>
</table>