



# CSS Media Queries

This appendix provides the following information:

- ① Overview of CSS Media Queries
- ① Supported media types
- ① Media features

CSS3 introduces Media Queries, an expansion on the concept of media types in CSS2. With media types you could specify different style rules for different types of destination media, such as screen or print, without changing the content for each device. Media types are commonly supported by all browsers and let you specify different styles for common destination media, such as *print* or *screen*. Media Queries let you create much more precise rules for different types of destination media.

## Overview of CSS Media Queries

A Media Query contains both a media type and optional expressions that check conditions called media features. The media features include characteristics such as the width or height of the destination device. For example you could specify a certain font when a device screen width is 480 pixels, the screen width of the iPhone, or create a separate style sheet for color or monochrome printers.



Media Queries are not evenly supported by the major browsers. Test carefully to make sure the queries you write work across all browsers.

## Media Query Syntax

Media Queries combine a media type and a media feature. In the following example the media type is *screen* and the media feature is *max-device-width*. The media feature is set to a value of 480 pixels. The syntax for the Media Query is like the standard CSS property syntax.

```
media="screen and (max-device-width: 480px)"
```

You can add multiple media features with the *and* keyword, as shown in the following code:

```
media="screen and (min-width:800px) and (max-width:1280px)"
```

## Applying Media Queries

There are three ways to apply Media Queries to specify style rules. In this first example, the link element specifies an external style sheet named *mobile-device.css* that will be applied if the device is a screen with a maximum width of 480 pixels.

```
<link rel="stylesheet" type="text/css" media="screen and  
  (max-device-width: 480px)"  
  href="mobile_device.css" />
```

The next example uses an `at-import` rule to specify an external style sheet named `mobile-device.css` that will be applied if the device is a screen with a maximum width of 480 pixels.

```
@import url("mobile-device.css") screen and (max-device-width: 480px);
```

This final example uses the `@media` rule within a `<style>` element. Notice the external curly brackets that contain all of the style rules.

```
<style type="text/css">
@media screen and (max-device-width: 480px) {
    ...style rules..
}
</style>
```

## Supported Media Types

CSS3 supports the media types listed in Table C-1.

Media Type	Description
all	Suitable for all devices
braille	Intended for braille tactile feedback devices
embossed	Intended for paged braille printers
handheld	Intended for handheld devices (typically small screen, limited bandwidth)
print	Intended for paged material and for documents viewed on screen in print preview mode
projection	Intended for projected presentations, for example projectors
screen	Intended primarily for color computer screens
speech	Intended for speech synthesizers <i>Note: CSS2 had a similar media type called <i>aural</i> for this purpose</i>
tty	Intended for media using a fixed-pitch character grid (such as teletypes, terminals, or portable devices with limited display capabilities) Authors should not use pixel units with the <i>tty</i> media type
tv	Intended for television-type devices (low resolution, color, limited-scrollability screens, sound available)

**Table C-1** CSS3 Media Types

## Media Features

CSS3 supports the media features listed in Table C-2. Notice that many of the features have `min-` and `max-` prefixes to express constraints. These descriptions are courtesy of the W3C ([www.w3.org/TR/css3-mediaqueries/#media1](http://www.w3.org/TR/css3-mediaqueries/#media1)).

Feature	Description	Value
Width Min-Width Max-Width	Width of the targeted display area of the output device For print this is the printable width of the page; for devices this is the width of the viewport	Length
Height Min- Height-width Max- Height-width	Height of the targeted display area of the output device For print this is the printable height of the page; for devices this is the height of the viewport	Length
Device-width Min- Device-width Max- Device-width	Width of the screen of the output device For print this is the width of the page; for devices this is the width of the viewport	Length
Device-height Min- Device-height Max- Device-height	Height of the screen of the output device For print this is the height of the page; for devices this is the height of the viewport	Length
Orientation	Value is <i>portrait</i> when the length of the <i>height</i> media feature is greater than or equal to the length of the <i>width</i> media feature; otherwise the value is <i>landscape</i> .	Portrait   Landscape
Aspect-ratio Min- Aspect-ratio Max- Aspect-ratio	Ratio of the value of the <i>width</i> media feature to the value of the <i>height</i> media feature	Ratio For example, 16/9
Device-aspect-ratio Min- Device-aspect-ratio Max- Device-aspect-ratio	Ratio of the value of the 'device-width' media feature to the value of the 'device-height' media feature	Ratio
Color Min- Color Max- Color	Number of bits per color component of the output device If the device is not a color device, the value is zero	Integer
Color-index Min- Color-index Max- Color-index	Number of entries in the color lookup table of the output device If the device does not use a color lookup table, the value is zero	Integer
Monochrome Min- Monochrome Max- Monochrome	Number of bits per pixel in a monochrome frame buffer If the device is not a monochrome device, the output device value will be 0	Integer

**Table C-2** Supported Media Features (*continues*)

(continued)

Feature	Description	Value
Resolution Min- Resolution Max- Resolution	Screen resolution of the output device	Resolution For example, 1024 x 768
Scan	Describes the scanning process of “tv” output devices	Progressive   Interlace
Grid	Query whether the output device is grid or bitmap If the output device is grid-based (e.g., a tty terminal, or a phone display with only one fixed font), the value will be 1; otherwise, the value will be 0	Integer

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**Table C-2** Supported Media Features

## Examples of CSS Media Features

The font for screen output is sans-serif.

```
@media screen {
  body { font-family: sans-serif }
}
```

The font for print output is serif and the color is black.

```
@media print {
  body { font-family: serif; color; #000; }
}
```

The following link elements select different external style sheets based on the media type .

```
<link rel="stylesheet" type="text/css" media="screen"
  href="screen.css">
<link rel="stylesheet" type="text/css" media="print"
  href="print.css">
```

The style will apply if the screen is 800 pixels wide.

```
@media screen and (device-width: 800px) { ... }
```

The style will apply if the device has a landscape orientation.

```
@media screen and (orientation: landscape) { ... }
```