
Chapter

14

The background family of properties enables Web authors to tile background images with precision. Prior to the advent of the CSS3 specification, various color-related properties used to be part of the same family as the background properties, but as both have been expanded and grown more specialized, they have now been separated into families of properties.

14.1 background-color Property

The `background-color` property sets the background color of an HTML element, and for the most part functions in exactly the same way as the `bgcolor` attribute associated with the body element under the HTML 4.0 specification.

What makes this property so versatile is that it can be added to virtually any Web element. It can take on any type of CSS color value, ranging from standard name values (such as “green” and “aqua”) to standard hexadecimals (“#ff0000”, which equals red) to rgb color values — in short, any type of color value that the `color` property can take (see Chapter 13, “Color”). It can also take on a transparent value, which is designed to let the immediate “parent” color show through. It can also take on an `inherit` value, which adopts whatever parent value may be available. The code

depicted in Listing 14.1 shows some examples of how it can be added to many different Web page elements, and is shown in Figure 14–1.

Listing 14.1 *background-color Example Code*

```
<html>
<head>
<title>background-color</title>
<style>
.demo {background-color: rgb(255,255,255)}
body {font-size: large}
</style>
</head>
<body style="background-color: rgb(0,0,0)">
<h1 style="background-color: aqua">A Light Blue Header</h1>
<em style="background-color: #ffff00">Italicized text on a yellow
background.</em>
<em style="background-color: green">Text with a green background.
<strong style="background-color: transparent">This should be in
green too.</strong>
More text with a green background.</em>
<table border="2" cellpadding="5" style="background-color: lime">
<tr>
<td>A small lime-colored table</td>
</tr>
</table>
<ul style="background-color: yellow">
<li>List item #1 with a yellow background</li>
<li style="background-color: #f0f">List item #2 showing cascading
effect (purple background)</li>
<li>List item #3 with a yellow background</li>
</ul>
<span class="demo">Span using a white background</span>
</body>
</html>
```

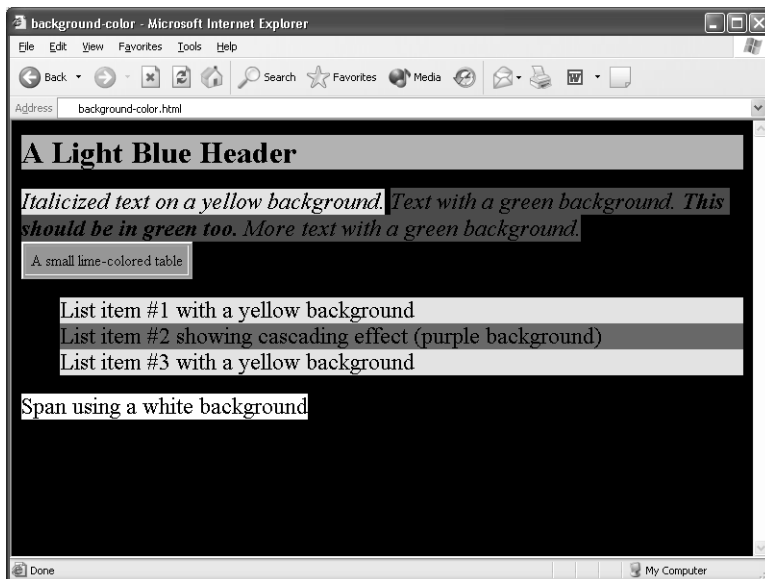


Figure 14-1 background-color example code as depicted in Internet Explorer 6.0.

Browser Compatibility

This property has been widely adopted, and works properly in all but the earliest browsers.

- Internet Explorer 3.0: Unsafe
- Internet Explorer 4.0: Safe
- Internet Explorer 4.0 – 4.5 (Mac): Safe
- Internet Explorer 5.0: Safe
- Internet Explorer 5.1 – 5.2 (Mac): Safe
- Internet Explorer 5.5: Safe
- Internet Explorer 6.0: Safe
- Netscape Navigator 4.0 – 4.79: Partial. All values supported with the exception of `transparent`.
- Netscape Navigator 4.0 (Mac & UNIX): Partial. Ditto above.
- Netscape Navigator 6.0-7.0: Safe. Note that it also sets a background color for spaces leading up to individual list elements. This is within the range of interpretation for the specification. See Figure 14-2 for an example of this behavior.
- Netscape Navigator 7.0: Safe. Ditto above.

- Mozilla 1.0: Safe, though displays same behavior as Netscape Navigator 6.0 when it comes to individual list elements.
- Opera 3.6 – 4.0: Safe.
- Opera 5.0 – 6.0: Safe.
- Konqueror: Safe.

Internet Explorer beginning with version 4.0 fully supports `background-color`.

Netscape Navigator began implementing this feature beginning with version 4.x, but its results have been problematic. The 4.x version of this browser is rated Partial since it does not implement the `transparent` value which is supposed to let the underlying color “show through.” In Figure 14–1 (which uses Internet Explorer 6.0), the code that uses `transparent` is displayed as black (the color set to the `body` element) instead of the green value (set to the `em` element, its immediate parent element) that should be displayed instead. Netscape Navigator 6.0 and 7.0 as well as Mozilla 1.0 remedy this problem, though it should be noted that the color value is added to `ul` and `ol` elements when present, a behavior which does not occur in any other browser, though this is within the range of interpretation for the specification. See Figure 14–2 for an example of this behavior.

Opera began implementing the `background-color` property beginning with version 3.6.

Konqueror also implements this property.

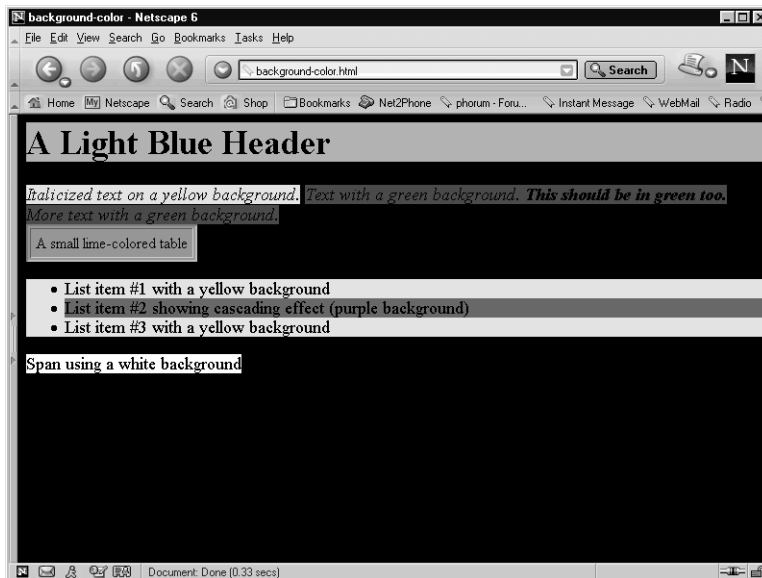


Figure 14–2 `background-color` example code as depicted in Netscape Navigator 6.0; note the difference in the way the background color is applied to the `ul` element.

14.2 background-image Property

`background-image` enables a Web author to set a graphic image as the background image for an element on a Web page. It works in much the same manner as does the `background` attribute to the `body` element, but its CSS counterpart allows `background` to be set for pretty much any element on a Web page.

It can take a URL value (or an `inherit` value if it points to an image file), which points to the background image. The browser then takes the image and begins tiling it “under” the element it is associated with. The following code snippet shows how it can be added to a sample Web element (in this case the `body` element):

```
<body style="background-image: url(picture.gif)">
```

If you want to specify an image contained on a different Web server (or just want to point to it in absolute terms), you have to add the full URL, as depicted in the following code snippet:

```
<body style="background-image:
url(http://www.corecss.com/images/picture.gif)">
```

The `background-image` property can be associated with any Web page element that can be displayed on screen. For example, the following Web page (illustrated in Figure 14–3) gives you an idea of how it can be used:

Listing 14.2 *background-image Example Code*

```
<html>
<head>
<title>background-image</title>
<style>
.commodus {background-image: url(commodus.jpg); font-size: large;
color: black}
.claudius {background-image: url(claudius.jpg); font-size: large;
color: silver}
</style>
</head>
<body class="claudius">
The body of this page is tiled using a coin depicting Roman Emperor
Claudius. He was a grandson of the first Roman Emperor Augustus,
and he reigned from 41-54 A.D. The fictional work <cite>I,
Claudius</cite> is based on his life.
```

Listing 14.2 *background-image Example Code (continued)*

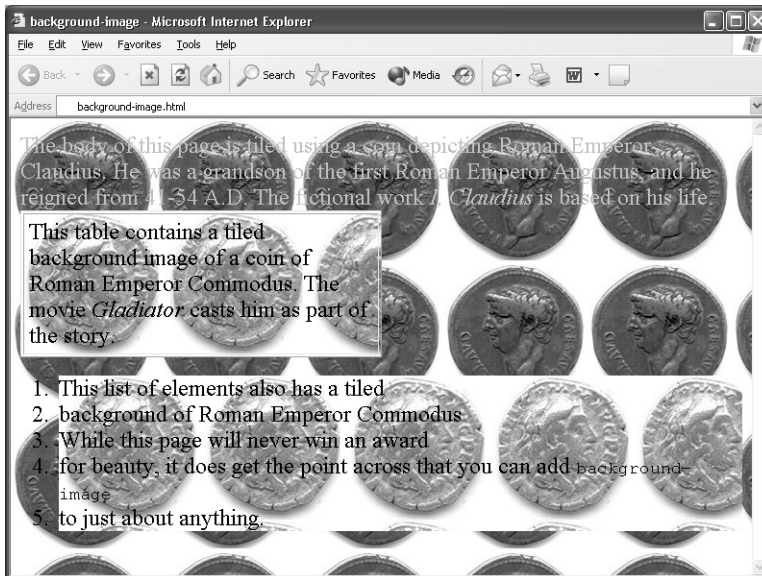
```

<table border width="50%" cellpadding="5" class="commodus">
<tr>
<td>This table contains a tiled background image of a coin of
Roman Emperor Commodus. The movie <cite>Gladiator</cite> casts him
as part of the story.</td>
</tr>
</table>

<ol class="commodus">
<li>This list of elements also has a tiled</li>
<li>background of Roman Emperor Aurian</li>
<li>While this page will never win an award</li>
<li>for beauty, it does get the point across that you can add
<code>background-image</code></li>
<li>to just about anything.</li>
</ol>

</body>
</html>

```

**Figure 14-3** background-image example code as depicted in Internet Explorer 6.0.

This property can be thought of as the “foundation” property of the background family of CSS properties, as all of the other properties in this family (with the sole exception of `background-color`) are used to modify its behavior. All of these other properties are treated separately in this chapter.

Browser Compatibility

This property is fully supported in the more recent versions of both Internet Explorer and Netscape Navigator, so it is considered safe to use.

- Internet Explorer 3.0: Unsafe.
- Internet Explorer 4.0: Safe.
- Internet Explorer 4.0 – 4.5 (Mac): Safe.
- Internet Explorer 5.0: Safe.
- Internet Explorer 5.1 – 5.2 (Mac): Safe.
- Internet Explorer 5.5: Safe
- Internet Explorer 6.0: Safe
- Netscape Navigator 4.0 – 4.79: Safe, but quirky.
- Netscape Navigator 4.0 (Mac & UNIX): Safe, but quirky. Ditto above.
- Netscape Navigator 6.0: Safe.
- Netscape Navigator 7.0: Safe.
- Mozilla 1.0: Safe.
- Opera 3.6: Safe.
- Opera 5.0: Safe.
- Opera 6.0: Safe.
- Konqueror: Safe.

Internet Explorer has implemented this property since version 4.0, and is safe to use within this browser.

Netscape Navigator started implementing this feature beginning with version 4.x, but it does have one quirk: if you are using a universal style sheet, you must use an `http` reference for the file, as a relative URL will “break” when the CSS page is accessed from a Web page at a lower level (in other words, Netscape Navigator looks at the relative URL in relation to the current page, instead of to the universal style sheet). This can cause problems if you are trying to demonstrate pages run locally without the use of a Web server. It is otherwise completely safe to use (and this problem was fixed in subsequent versions of this browser)

Opera was an early adopter of this property, and it has been implemented since version 3.6.

Konqueror also properly implements this property.

14.3 background-repeat Property

The `background-repeat` property is always used in conjunction with the `background-image` property, and it determines how an image will be tiled on a Web page. The default value is `repeat`, which works the same way that `<body background="image.gif">` or `<body style="background-image: url(image.gif)">` does by simply repeating the background image both across and down the Web page. The `background-repeat` property comes with four other values:

- `repeat-x` tiles the image horizontally,
- `repeat-y` tiles the image vertically,
- `no-repeat` tells the browser not to tile the image at all, and
- `inherit` takes on any parent value that may be present.

As an example, Listing 14.3 tiles the image file in a strip that runs down right side of the Web page, and also across the top of a table.

Listing 14.3 *background-repeat*

```
<html>
<head>
<title>background-repeat example</title>
<style>
body {background-image: url(aurelian.jpg); background-repeat:
repeat-y}
table {background-image: url(aurelian.jpg); background-repeat:
repeat-x}
em {font-size: x-large; color: lime}
table {position: absolute; top: 0; left: 0}
</style>
</head>
<body>

<table>
<tr>
<td>
<em>This page contained tiled images of a coin of the ancient
Roman emperor Aurelian, who reigned from 270 - 275 AD. He managed
to drive the barbarians out of Italy, and restored many provinces
back into the empire. He was murdered by his own guards, the fate
of many Roman emperors.</em>
```


Listing 14.3 *background-repeat (continued)*

```

<p>
<em>Note how the image of the coin is tiled down the left side of
the Web page, while it is tiled across the top of this table. Neat,
eh?</em>
</p>
</em>
</td>
</tr>
</table>

</body>
</html>

```

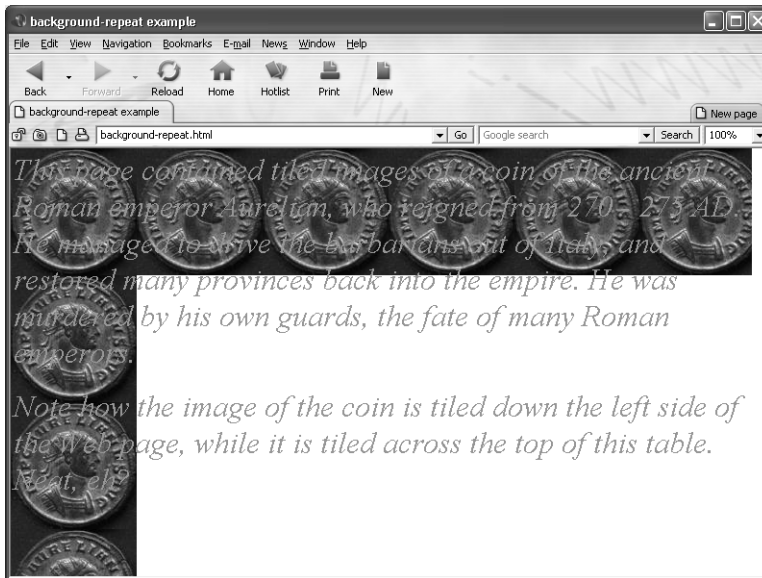


Figure 14-4 The effects of background-repeat as seen within Opera 6.0.

Browser Compatibility

This property is supported fully in the most recent versions of Internet Explorer and Netscape Navigator, though it is worth noting that Netscape Navigator 4.x is given only a “Partial” rating.

- Internet Explorer 3.0: Unsafe.
- Internet Explorer 4.0: Safe.
- Internet Explorer 4.0 – 4.5 (Mac): Safe.
- Internet Explorer 5.0: Safe.
- Internet Explorer 5.1 – 5.2 (Mac): Safe.
- Internet Explorer 5.5: Safe.
- Internet Explorer 6.0: Safe.
- Netscape Navigator 4.0 – 4.79: Partial.
- Netscape Navigator 4.0 (Mac & UNIX): Partial.
- Netscape Navigator 6.0: Safe.
- Netscape Navigator 7.0: Safe.
- Mozilla 1.0: Safe.
- Opera 3.6: Safe.
- Opera 5.0: Safe.
- Opera 6.0: Safe.
- Konqueror: Safe.

Internet Explorer has implemented this property properly since version 4.0.

Netscape 4.x gets a Partial rating. It is safe when only a single background image is used, but if multiple images are displayed, this version of the browser has problems when the page is scrolled. Figure 14–5 displays the effects you can expect to see when multiple background images are used. In some instances it can crash the browser. This also one of those rare occasions when the Macintosh and UNIX versions of this browser diverge from the behavior seen in the Windows version — while it does not have the same problem as the Windows version, it *can* display a background image, its behavior can be quirky, especially when `background-repeat` is combined with `background-position` and the latter is set to a percentage value. These problems were fixed by the time Netscape Navigator 6.0 (and Mozilla 1.0) came on the scene.

Opera adopted this property fully beginning with version 3.6.

Konqueror properly implements this property.

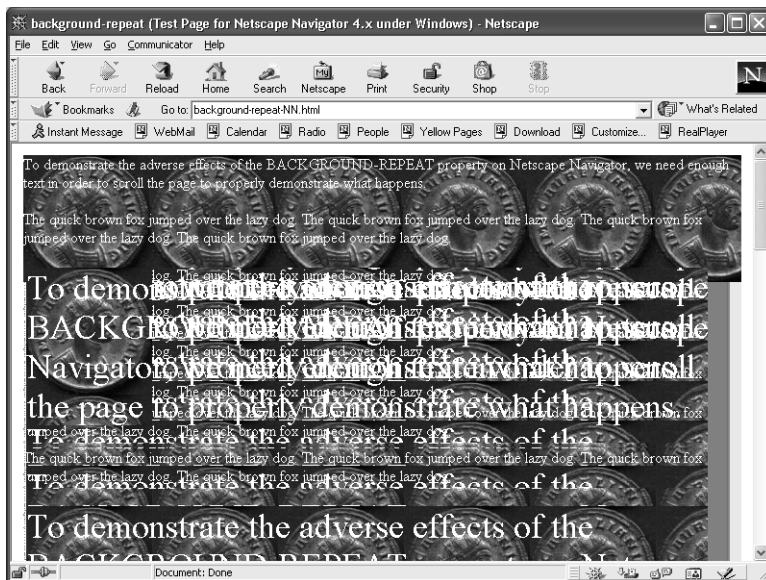


Figure 14-5 The effects of multiple images set to background-repeat as seen within Netscape Navigator 4.79 for Windows.

14.4 background-attachment Property

The `background-attachment` property is designed to set how the background image should move when the browser window is scrolled. When you scroll a page in a browser, the typical behavior for the background is that it, the text and any other elements on the Web page scroll in unison. With the `background-attachment` property, you have another choice.

The `background-attachment` property is always associated with `background-image` and it can take one of two possible values: `scroll` and `fixed`. The `scroll` value is the default, and is what you typically see when you scroll any Web page with a background image — the background scrolls with you. The `fixed` value is supposed to keep the background in place while the browser moves the text and other elements of the Web page instead. It can also take on an `inherit` value, which adopts whatever parent value may be available. You can see the effect of this in Figure 14-6, derived from the code in Listing 14.4: the text in Internet Explorer scrolls, but the

background does not. The effect makes it seem as though the text is “floating” above the background image.

Listing 14.4 *background-attachment: fixed Example*

```
<html>
<head>
<title>A PRINCESS OF MARS by Edgar Rice Burroughs
(background-attachment Example)</title>
<style>
body {background-image: url(mars-surface.jpg);
background-attachment: fixed}
p {color: white; font-weight: bold}
</style>
</head>
<body>
<h1>A PRINCESS OF MARS by Edgar Rice Burroughs</h1>
<h2>CHAPTER III</h2>
<h3>MY ADVENT ON MARS</h3>
<p>
I opened my eyes upon a strange and weird landscape. I knew that
I was on Mars; not once did I question either my sanity or my
wakefulness. I was not asleep, no need for pinching here; my inner
consciousness told me as plainly that I was upon Mars as your
conscious mind tells you that you are upon Earth. You do not
question the fact; neither did I.
</p>
<p>
I found myself lying prone upon a bed of yellowish, mosslike
vegetation which stretched around me in all directions for
interminable miles. I seemed to be lying in a deep, circular
basin, along the outer verge of which I could distinguish the
irregularities of low hills.
</p>
<p>
It was midday, the sun was shining full upon me and the heat of it
was rather intense upon my naked body, yet no greater than would
have been true under similar conditions on an Arizona desert.
Here and there were slight outcroppings of quartz-bearing rock
which glistened in the sunlight; and a little to my left, perhaps
a hundred yards, appeared a low, walled enclosure about four feet
in height. No water, and no other vegetation than the moss was in
evidence, and as I was somewhat thirsty I determined to do a little
exploring.
</p>
```

Listing 14.4 *background-attachment: fixed Example (continued)*

```
<p>
Springing to my feet I received my first Martian surprise, for the
effort, which on Earth would have brought me standing upright,
carried me into the Martian air to the height of about three yards.
I alighted softly upon the ground, however, without appreciable
shock or jar. Now commenced a series of evolutions which even then
seemed ludicrous in the extreme. I found that I must learn to walk
all over again, as the muscular exertion which carried me easily
and safely upon Earth played strange antics with me upon Mars.
</p>
<p>
Instead of progressing in a sane and dignified manner, my attempts
to walk resulted in a variety of hops which took me clear of the
ground a couple of feet at each step and landed me sprawling upon
my face or back at the end of each second or third hop. My
muscles, perfectly attuned and accustomed to the force of gravity
on Earth, played the mischief with me in attempting for the first
time to cope with the lesser gravitation and lower air pressure on
Mars.
</p>
etc...
</body>
</html>
```

Although it has been around for awhile, the `bgproperties="fixed"` attribute for the `body` element is little used, so many users are initially surprised when they see the effect in action. When put into effect (using either HTML or CSS) this “trick” can actually be a little unsettling to the viewer, so it is best used sparingly. In addition, as when choosing any background image, make sure that you are choosing one that will not interfere with the readability of your text.

While it is possible to add this property to other elements on a Web page, it really only makes sense to add the `background-attachment` property to any property where scrolling is involved, such as the `body` and `textarea` elements.



Figure 14-6 background-attachment: fixed example code as displayed within Internet Explorer 6.0 as the page is scrolled.

Browser Compatibility

Beginning as early as Internet Explorer 2.0, there was a browser-specific HTML equivalent for this CSS property: `<body bgproperties="fixed">`. As it was an attribute of the body element introduced into Internet Explorer, it was not supported in versions of Netscape Navigator (or any other browser for that matter). Not surprisingly then, up until the most recent versions of Netscape Navigator, this CSS equivalent property only supported the default `fixed` value.

- Internet Explorer 3.0: Unsafe
- Internet Explorer 4.0: Safe
- Internet Explorer 4.0 – 4.5 (Mac): Safe
- Internet Explorer 5.0: Safe
- Internet Explorer 5.1 – 5.2 (Mac): Safe.
- Internet Explorer 5.5: Safe
- Internet Explorer 6.0: Safe
- Netscape Navigator 4.0 – 4.79: Partial. Only supports the default `fixed` value; `scroll` is not supported, and it behaves as if the value were `fixed`.
- Netscape Navigator 4.0 (Mac & UNIX): Partial. Same as above.
- Netscape Navigator 6.0: Safe.

- Netscape Navigator 7.0: Safe.
- Mozilla 1.0: Safe.
- Opera 3.6: Safe
- Opera 5.0: Safe
- Opera 6.0: Safe
- Konqueror: Safe.

The `background-attachment` property has been implemented in Internet Explorer since version 4.0.

Netscape Navigator is rated as Partial because it only supports the default `fixed` value; `scroll` is not supported, and it behaves as if the value were set to `fixed`. While it is rated only as Partial here, strictly speaking its behavior does not have to implement this feature according to the specification — so while it is not necessarily in error, it does not perform as some Web authors might expect, hence the Partial rating. This situation was taken care of with the release of Netscape Navigator 6.0 (and Mozilla 1.0), which now displays the effects of the `scroll` value.

Opera has correctly interpreted this property since version 3.6.

Konqueror also correctly interprets this property.

14.5 background-position Property

The `background-position` property provides a feature that is otherwise impossible in regular HTML: the exact positioning of a background image on a Web page. It is always used in conjunction with the `background-image` property, and can take either a precise X,Y pixel value, a percentage value or a special keyword value.

You can set an X,Y value that tells the background image where it should be initially displayed. X is the value in pixels the image will appear from the left of the browser window, and Y is the number of pixels the image will appear from the top of the browser window. It can also take on an `inherit` value, which adopts whatever parent value may be available. The code example Listing 14.5, depicted in Figure 14–7, shows this in action.

Listing 14.5*background-position Example Set to Specific X and Y Values*

```
<html>
<head>
<title>background-position Example</title>
<style>
body {background-image: url(annie.jpg); background-position: 160px
160px; background-repeat: no-repeat; font-size: x-large}
</style>
</head>
<body>
This background image is positioned 160 pixels from the top of the
browser window and 160 pixels from the left of the browser window.
It does not tile because <code>background-repeat</code> is set to
<code>no-repeat</code>.
</body>
</html>
```

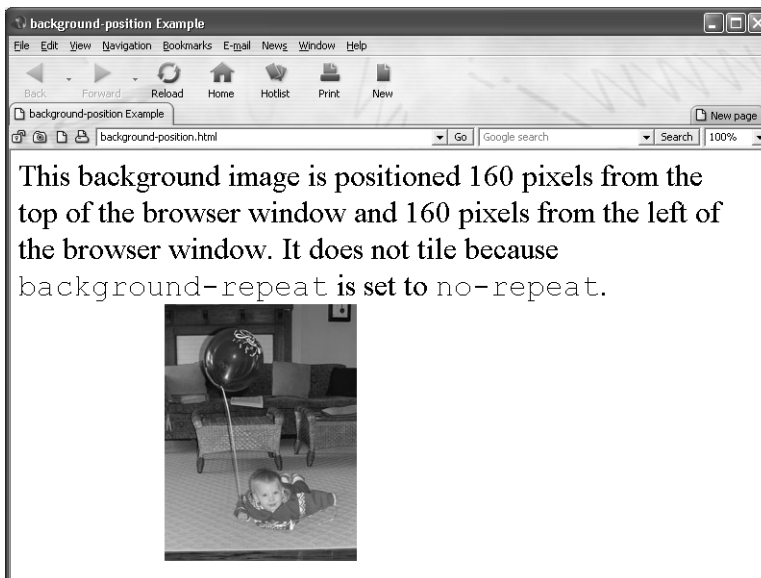


Figure 14-7 background-position example set to a specific X,Y pixel value, with background-repeat set to no-repeat, as seen within Opera 6.0.

What this code does is position the image called `annie.jpg` and begin tiling it 160 pixels from the right and 160 pixels from the top. Notice that the additional property `background-repeat: no-repeat` has been set; this has been done to show off the

effect more clearly. When it is removed, the image is simply tiled over the whole of the Web page, with the first image offset by the value determined by `background-position`, as can be seen in Figure 14–8. (Note that the color of the text has been changed as well in order to make it visible.)



Figure 14–8 background-position example set to a specific X,Y pixel value, with no background-repeat value set, as seen within Netscape Navigator 6.0.

The `background-position` property can also take a percentage value, where the X and Y values are set relative to the width of the browser's window. If it is set to a value of 50% for both values (as it is in Listing 14.6) the image will be centered in the middle of the browser window.

Listing 14.6*background-position Example with X and Y Values Set to Percentages*

```
<html>
<head>
<title>background-position Example 3</title>
<style>
body {background-image: url(annie.jpg); background-position: 50%
50%; font-size: x-large; color: white}
</style>
</head>
<body>
This background image is positioned using a value of 50% of the
browser window's height by 50% of the browser's height, which
means it should be centered in the middle of the screen.
<code>background-repeat: no-repeat</code> been added to make the
effect stand out more.
</body>
</html>
```

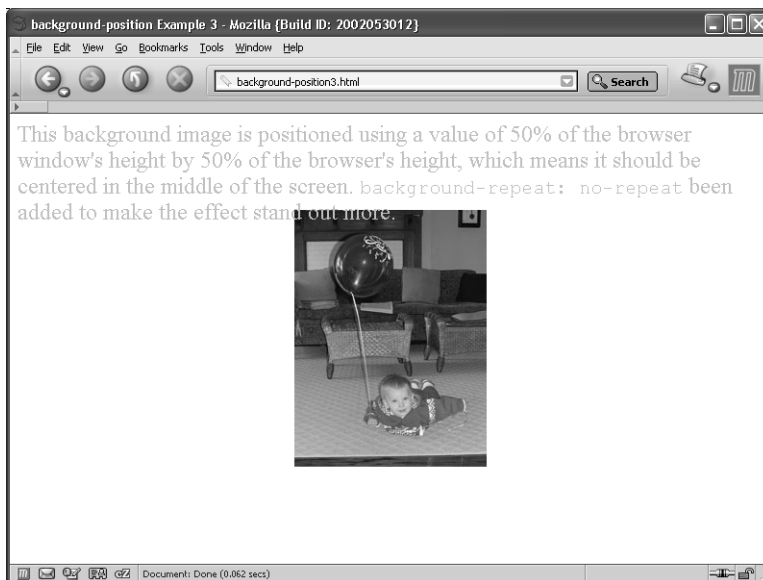


Figure 14-9 background-position set to a value of 50% for both X and Y, centering the background image in the browser's window, as seen within Mozilla 1.0.

A number of keyword values can also be used to position a background image with the `background-position` property. The keywords `left`, `center` and `right` can be used for the X value, and `top`, `center` and `bottom` can be used for the Y value.

These keyword values offer a simple shortcut for Web authors who want to ensure that a background image always begins in any of the corners of a browser window or aligned within its center. This has an edge over percentage or pixel values, as you can never be sure how wide your users will size their browser's window. Listing 14.7, depicted in Figure 14–10, shows the X and Y values set to `right` and `bottom`, respectively (again, using `background-repeat: no-repeat` to clearly show the effect).

Listing 14.7*background-position Example with X and Y Values Set to Percentages*

```
<html>
<head>
<title>background-position Example 4</title>
<style>
body {background-image: url(annie.jpg); background-position: right
bottom; background-repeat: no-repeat; font-size: x-large}
</style>
</head>
<body>
This background image is positioned with the X and Y values set to
<code>right</code> and <code>bottom</code> respectively.
<code>background-repeat: no-repeat</code> has been added to make
the effect stand out more.
</body>
</html>
```

This property is arguably most effective (or at least most distinct) when combined with the `background-repeat` property set to `no-repeat`, as can be seen in the many code examples in this section. If you want the background image to stand out on your Web page, you can use the `background-position` and `background-repeat` properties effectively for this purpose.

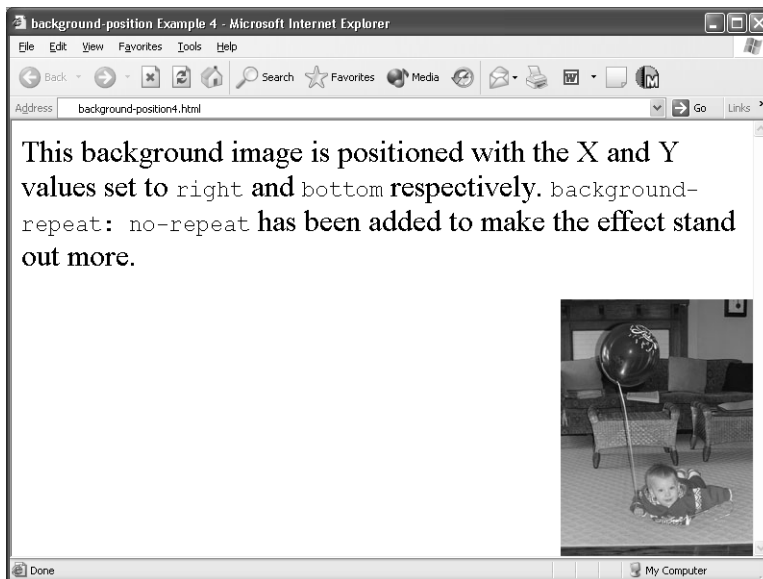


Figure 14-10 background-position set to bottom and right, with no background-repeat set to no-repeat, as seen with Internet Explorer 6.0.

Browser Compatibility

This is another property that was first implemented fully within Internet Explorer (and Opera) well before it was adopted within Netscape Navigator. Versions of Netscape Navigator including and prior to 4.79 should be considered unsafe for using this property.

- Internet Explorer 3.0: Unsafe.
- Internet Explorer 4.0: Safe.
- Internet Explorer 4.0 – 4.5 (Mac): Safe.
- Internet Explorer 5.0: Safe
- Internet Explorer 5.1 – 5.2 (Mac): Safe.
- Internet Explorer 5.5: Safe
- Internet Explorer 6.0: Safe
- Netscape Navigator 4.0 – 4.79: Unsafe. Image is tiled as if background-position were not present.
- Netscape Navigator 4.0 (Mac & UNIX): Unsafe. Ditto above.
- Netscape Navigator 6.0: Safe.
- Netscape Navigator 7.0: Safe.
- Mozilla 1.0: Safe.

- Opera 3.6: Safe
- Opera 5.0: Safe
- Opera 6.0: Safe
- Konqueror: Safe.

Internet Explorer began implementing this property beginning with version 4.0.

This property is not safe to use in Netscape Navigator 4.x, as the image is tiled as if `background-position` were not present. This problem was corrected by the launch of Netscape Navigator 6.0 (and Mozilla 1.0).

Opera was an early adopter of this property, first incorporating it within version 3.6.

Konqueror implements this property fully.

14.6 background Property

The `background` property is a “shortcut” property, allowing Web authors quick access to all of the values contained in the rest of the background family of properties, namely `background-color`, `background-image`, `background-repeat`, `background-attachment` and `background-position`. It works in much the same manner as the `font` property in providing quick access to all of the values contained in the font family. It should also be noted that when the background-related properties that appear in the CSS3 specification begin to be adopted within popular browsers, they will also be applicable to this shortcut property.

All of the values associated with `background` property have already been discussed in detail with each of the other background family properties. `background` is a handy shortcut for setting all of the values you need quickly. The following two code samples are equivalent to each other, and are depicted in Figure 14–11:

Listing 14.8 *background Put to Use as a “Shortcut” Property*

```
<html>
<head>
<title>background Example</title>
<style>
body {background: silver url(rufus_s-202.jpg) repeat-y fixed top
right; font-size: large; margin-right: 55%}
</style>
</head>
```

Listing 14.8 *background Put to Use as a “Shortcut” Property*

This page presents a coin of Senator Rufus, who issued coins during the Republican period of the ancient Roman state (prior to the advent of the first Roman emperor Augustus).

<p>

The head of Sol the sun god is depicted on one side, and the other side shows him in a chariot being pulled across the sky by four horses.

</p>

</body>

</html>

Listing 14.9 *Various Background Properties the Equivalent of the Previous Background Code Example*

<html>

<head>

<title>background Example 2 (Long form)</title>

<style>

body {background: silver; background-image: url(rufus_s-202.jpg);
background-repeat: repeat-y; background-attachment: fixed;
background-position: top right; font-size: large; margin-right:
55%}

</style>

</head>

<body>

This page presents a coin of Senator Rufus, who issued coins during the Republican period of the ancient Roman state (prior to the advent of the first Roman emperor Augustus).

<p>

The head of Sol the sun god is depicted on one side, and the other side shows him in a chariot being pulled across the sky by four horses.

</p>

</body>

</html>

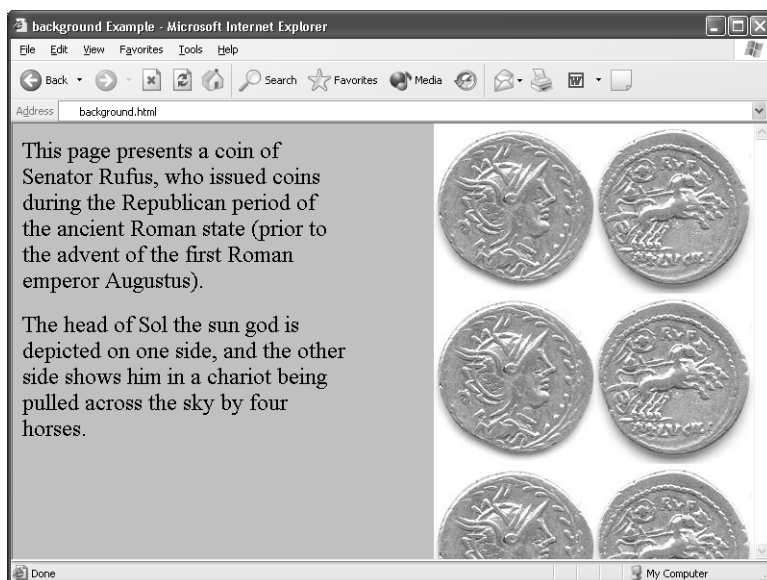


Figure 14-11 The background property “in action,” as seen with Internet Explorer 6.0.

As you can easily see, the first code sample using only the `background` property is much more concise.

Unlike the somewhat finicky `font` shortcut property, it is possible to rearrange the ordering of the various values for `background` without interfering with the presentation of the elements displayed on screen.

Browser Compatibility

Given the fact that this property is a shortcut property for all of the other properties in the `background` family, it necessarily inherits all of the functionality (or lack thereof) supported by a particular browser.

- Internet Explorer 3.0: Unsafe.
- Internet Explorer 4.0: Partial.
- Internet Explorer 4.0 – 4.5 (Mac): Safe.
- Internet Explorer 5.0: Safe
- Internet Explorer 5.1 – 5.2 (Mac): Safe.
- Internet Explorer 5.5: Safe
- Internet Explorer 6.0: Safe
- Netscape Navigator 4.0 – 4.79: Partial. Only supports the values associated with `background-image` fully.

- Netscape Navigator 4.0 (Mac & UNIX): Partial. Same as above.
- Netscape Navigator 6.0: Safe.
- Netscape Navigator 7.0: Safe.
- Mozilla 1.0: Safe.
- Opera 3.6: Safe.
- Opera 5.0: Safe.
- Opera 6.0: Safe.
- Konqueror: Safe.

Internet Explorer has fully implemented the `background` property since version 4.0.

Netscape Navigator 4.x only rates a Partial as it only supports the values associated with `background-image` fully. Netscape Navigator 6.0 (and Mozilla 1.0) on up support all of the attributes for the `background` property.

This property has been fully implemented since version 3.6 of Opera.

It is also fully supported within Konqueror.

14.7 background-position-x and background-position-y Properties

In order to provide Web authors with greater control over exactly where background images can begin tiling themselves as a background, Microsoft introduced two new, browser-specific background properties with the release of version 5.5 of Internet Explorer: `background-position-x` and `background-position-y`. Both properties are used in conjunction with the `background-image` property, and are used to set the position where the background image begins to start tiling. Note that this does not mean that you can set exactly where the background-image is to start tiling within an element on a Web page; instead they position the background image relative to *itself* — so a setting of 0,0 does not refer to the top-leftmost portion of the background element, but the top-leftmost position of the image itself.

Both `background-position-x` and `background-position-y` can take percentage and specific length measures. A value of 50% means that the background image should start tiling at exactly half of its vertical (or horizontal) dimension. When a length measure — such as pixels — is used, Internet Explorer begins tiling the

background image at the point specified. Listing 14.10 shows how these values can be applied using the `background-position-x` property:

Listing 14.10*Various Background Properties the Equivalent of the Previous Background Code Example*

```
<html>
<title>background-position-x Example 1</title>
<style>
div.fixed-length {background-image: url(antony_rsc-12.jpg);
background-position-x: 0 px; height: 140px; width: 400px; font:
large Arial, Helvetica, sans-serif; color: navy}
div.percentage {background-image: url(antony_rsc-12.jpg);
background-position-x: 50%; height: 140px; width: 400px; font:
large Arial, Helvetica, sans-serif; color: navy}
div.negative-value {background-image: url(antony_rsc-12.jpg);
background-position-x: -100px; height: 140px; width: 400px; font:
large Arial, Helvetica, sans-serif; color: navy}
code {font: large Arial, Helvetica, sans-serif; color: navy;
background-color: white}
</style>
</head>
<body>
<p>
<div class="fixed-length">This image is positioned using
<code>background-position-x: 0 pixels</code> (so it appears as it
would normally be tiled).</div>
</p>
<p>
<div class="percentage">This image is positioned using
<code>background-position-x: 50%</code>.</div>
</p>
<p>
<div class="negative-value">This image is positioned using
<code>background-position-x: -100 pixels</code>.</div>
</p>
</body>
</html>
```

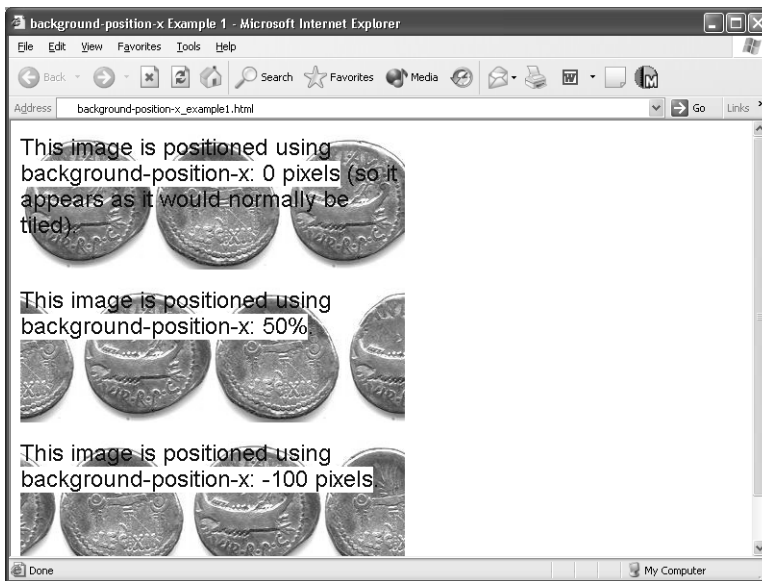


Figure 14–12 The background-position-x property using fixed-length, percentage and negative values, as seen with Internet Explorer 6.0.

As this example shows, it is also possible to set a negative value to `background-position-x` (and `background-position-y`). In this case the negative value tells the browser to start tiling the image beginning 100 pixels “in” to the left side of the image.

Both `background-position-x` and `background-position-y` also have specific named values as well: `background-position-x` can take on `left`, `center` and `right`; `background-position-y` can take `top`, `center` and `bottom`. These values behave slightly different than the percentage and length values — these values do not refer to a coordinate within the image, but how the background image is initially positioned within a Web element containing the background image. So a value of `right` tells the browser to put the “first” background image on the right-hand side, and begin tiling leftward and down from there. A value of “`bottom`” tells the browser to put the initial background image at the bottom of the element to tile up from there. Figure 14–13 shows how the three values for `background-position-x` can be used.

Listing 14.11*background-position-x Example Using the left, center and right Values*

```
<html>
<head>
<title>background-position-x Example 2 (left, center and right
values)</title>
<style>
div.left {background-image: url(antony_rsc-12.jpg);
background-position-x: left; height: 140 px; width: 400 px; font:
large Arial, Helvetica, sans-serif; color: navy}
div.center {background-image: url(antony_rsc-12.jpg);
background-position-x: center; height: 140 px; width: 400 px;
font: large Arial, Helvetica, sans-serif; color: navy}
div.right {background-image: url(antony_rsc-12.jpg);
background-position-x: right; height: 140 px; width: 400 px; font:
large Arial, Helvetica, sans-serif; color: navy}
code {font: large Arial, Helvetica, sans-serif; color: navy;
background-color: white}
</style>
</head>
<body>
<p>
<div class="left">This image is positioned using
<code>background-position-x: left</code> (the default
setting).</div>
</p>
<p>
<div class="center">This image is positioned using
<code>background-position-x: center</code>.</div>
</p>
<p>
<div class="right">This image is positioned using
<code>background-position-x: right</code>.</div>
</p>
</body>
</html>
```

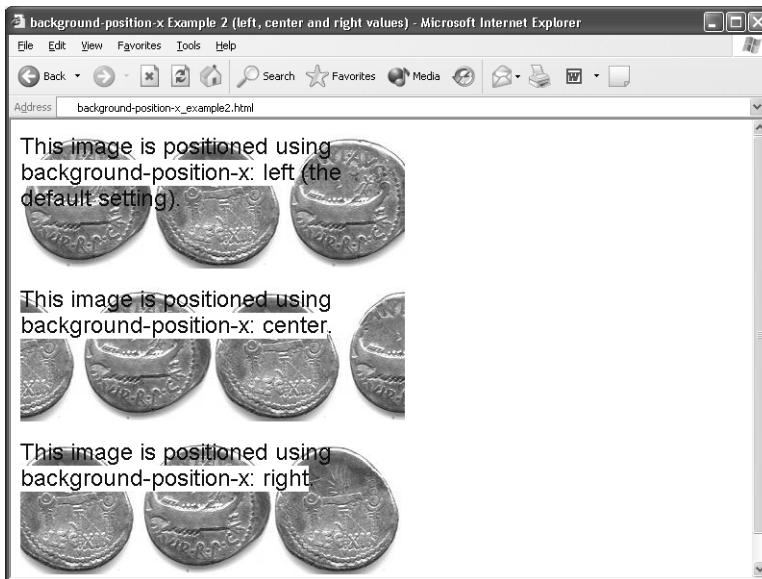


Figure 14-13 The background-position-x property using left, center and right values, as seen with Internet Explorer 6.0.



Core Tip

There's one other little trick you have to know about if you intend to use these properties — ensure that you are using the proper `<!doctype>` statement. When using `background-position-x` or `background-position-y` make sure you do not use the standard XHTML `<!doctype>` declaration — these properties will only work when the document is set as a transitional or frameset HTML 4.0 document (i.e., `<!doctype html public "-//W3C//DTD HTML 4.0 Transitional//EN">` or `<!doctype html public "-//W3C//DTD HTML 4.0 Frameset//EN">`). If `<!doctype>` is set to strict HTML 4.0 or XHTML 1.0, the effect of these properties will be “turned off” when viewed under Internet Explorer 6.0, as it has the ability to process the contents of a Web page in accordance with the `<!doctype>` setting.

14.8 CSS3 Properties

The CSS3 specification introduces several new properties that give even greater control to Web authors seeking to control backgrounds contained within elements on a Web page. The CSS3 specification adds an additional five properties to the background family. They are:

- `background-clip`
- `background-origin`
- `background-size`
- `background-quantity`
- `background-spacing`

All of these new properties are there to support existing CSS properties (notably, `background-image`), providing further “fine tuning” over the placement and display of images.

14.9 background-clip Property

This property is designed to control whether a background extends into the border area — meaning the natural “padding” value that most browsers by default will indent the content of a Web page — or not.

This property comes with two values: `border` and `padding`. By default the value is `border`, which means that the browser tiles the image beginning at the top-left position of the Web page (coordinates 0,0 of the element in absolute terms). If the value is set to `padding`, the background is clipped (not repositioned) so that the border area around the page is transparent. The following code snippet shows how it might be used:

```
<style>
table.example1 {background-image: url("caligula.jpg")
background-clip: padding}
table.example2 {background-image: url("caligula.jpg")
background-clip: border}
</style>
```

The primary purpose for this property would seem to be to enable Web authors to retain a transparent border setting even when a background image has been applied. While this would make the element “stand-out,” it would be particularly useful when applied to block elements that display a visible border, as the lines demarking the

object would be clear, making individual elements contained within the border (such as cells in a table) more distinct. The following mock-up illustration (Figure 14–14) makes this feature of the property clear.

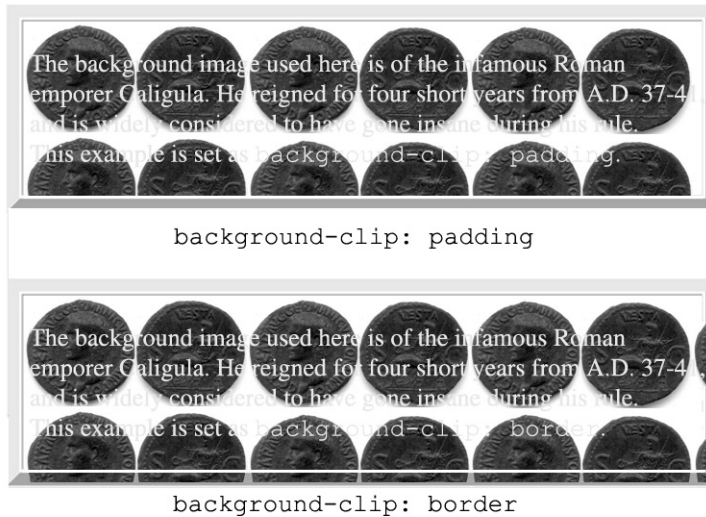


Figure 14–14 Mock-up illustrating the possible effects of the `background-clip` property.

In the mock-up example illustrated in Figure 14–14, you can clearly see the difference between the `border` and `padding` values: with `border` the background image extends into the border area, and with `padding` it is clipped at the border edge.

14.10 background-origin

This property will be used to set the initial status for how the `background-position` property will be calculated. Like `background-clip`, it takes the `border` and `padding` values, plus one additional value: `content`. The default value is `padding`, telling `background-position` that any background image will begin within the padding zone (i.e., the top-left, or coordinates 0,0 of a given element). When `border` is used, the browser is supposed to start tiling an image within the border zone. Finally, the `content` value tells the browser to position the background image so that it starts at the top-left of the content contained within an element, which is typically indented slightly from the outside edges of the “box” it is contained within.

The following code snippet shows how it might be used:

```
<style>
table.example1 {background-image: url("caligula.jpg")
background-clip: padding; background-origin: padding}

table.example2 {background-image: url("caligula.jpg")
background-clip: padding; background-origin: content}

table.example3 {background-image: url("caligula.jpg")
background-clip: padding; background-origin: border}
</style>
```

Figure 14–15 is a mock-up that shows how this sample code might be rendered in a compliant browser.

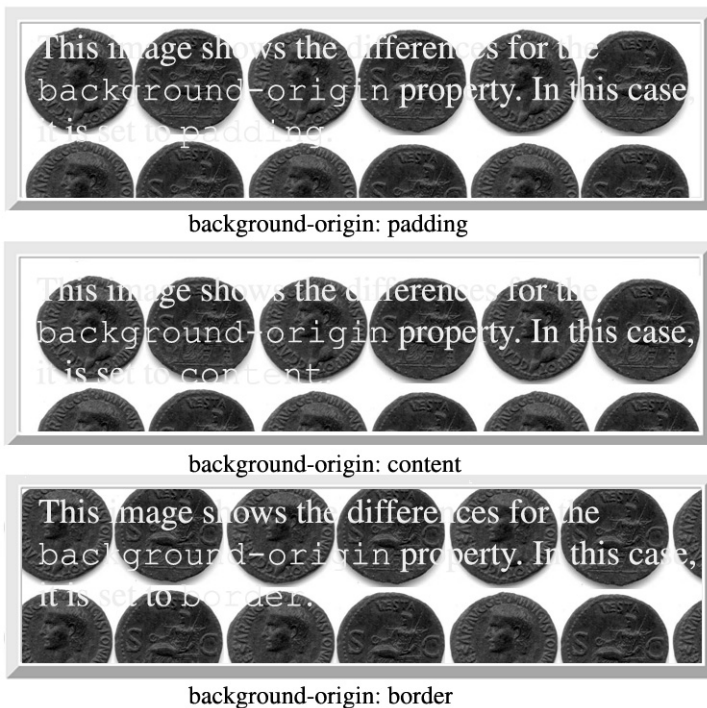


Figure 14–15 Mock-up illustrating the intended effects of the background-origin property.

The mock-up shows the intended effects clearly: with `padding` the image begins tiling within the area of the border; with `content` the background only begins to tile at the beginning of the text content of the table, and with `border` the background image begins to tile within the border of the table.

14.11 background-size

The `background-size` property is intended to give the Web author more control over the exact sizing of a background image. This is a much welcomed property as it enables the Web author to precisely size the image under the intended space in which it is to serve as a background.

It can take three types of value. `auto`, a specific set of numerical values or a percentage value. The `auto` value is the default, and sets the image to display at its normal size. The property can also take either a single or a pair of specific length values; if a single value is specified it is applied to both the width and height, and if two values are supplied they specify the width and height, respectively. So a value of `50px` sets the image to a square 50 pixels on a side, whereas a value of `50px 100px` sets the background image to a size of 50 pixels in width by 100 pixels in height. The `background-size` property can also take a percentage value, which is applied relative to the box containing the image. A setting of `100%` stretches the image to fit the height and width of the box it is contained within. A setting of `50%` ensures that two background images fill the space, a setting of `25%` gives you four background images and so on. The following code snippet shows how this property could be used (its effects illustrated in Figure 14–16):

```
<style>
table.example1 {background-image: url("caligula.jpg")
background-size: auto}
table.example2 {background-image: url("caligula.jpg")
background-size: 100px}
table.example3 {background-image: url("caligula.jpg")
background-size: 50%}
</style>
```

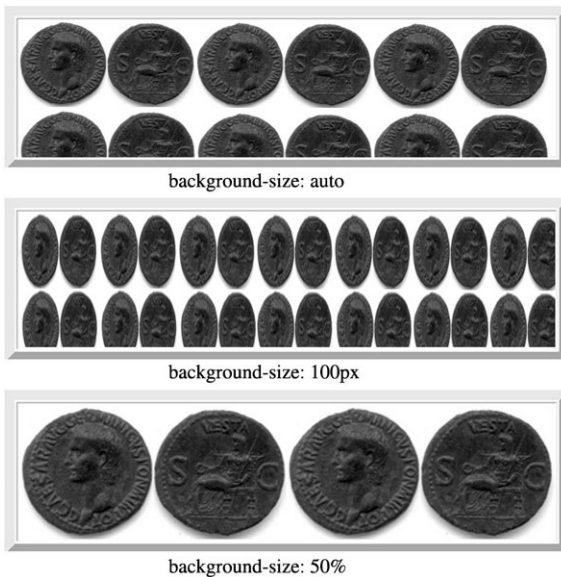



Figure 14-16 Mock-up illustrating several effects of the background-size property.

As you can see from Figure 14-16, the `auto` value depicts the original size of the image, a value of `100px` sets the image to a size of 100 pixels square, and then begins to tile it, and finally, a value of `50%` puts two sets of the coin image stretched across the background of the table.

14.12 background-quantity

The `background-quantity` property is designed to be used in conjunction with the `background-image` property to set how many times the background image repeats. It can take one of three values: `infinite`, a specific numeric value and `inherit`. The `infinite` value is the default value, which tiles the background image over the entire area selected. The numeric value tells the browser how many times the image should tile, which can lead to some interesting looking effects. Interestingly enough, there is an `inherit` value, which is particularly useful in this case, as it is easy to think of a case where you'd want to ensure that the background image tiles the same number of times across different Web elements. The following code snippet shows how this property could be used (its effects illustrated in Figure 14-17):

```
<style>
table.example1 {background-image: URL(caligula.jpg);
background-quantity: infinite}
table.example2 {background-image: URL(caligula.jpg);
background-quantity: 3}
table.example3 {background-image: URL(caligula.jpg);
background-quantity: 5}
</style>
```

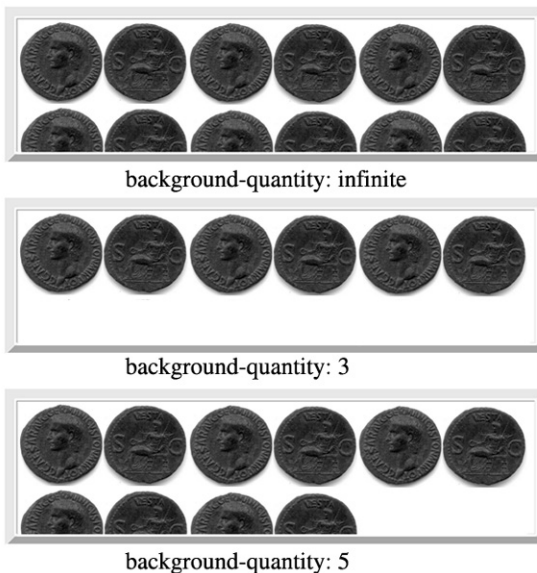


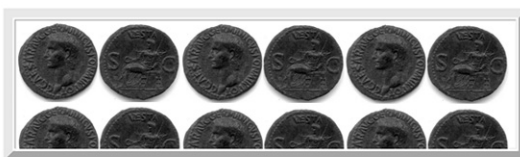
Figure 14-17 Mock-up illustrating several values attached to the `background-quantity` property.

14.13 background-spacing

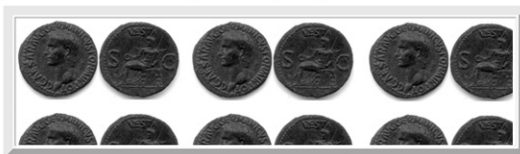
This new property is designed to work in conjunction with the `background-image` property to set the spacing between individual background images as they are tiled across the background of an element. By default, there is no spacing value between background images, so this property finally gives the Web author some control over this. It can take either one or two numeric values as well as `inherit`. If a single numerical value is specified, it sets the distance between adjacent background images both vertically and horizontally. If two numeric values are used, the first applies to the horizontal dimension, the second to the vertical. The following code

snippet shows how this property could be used (its effects illustrated in Figure 14–18):

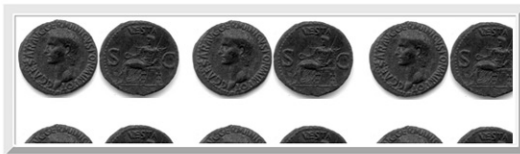
```
<style>
table.example1 {background-image: url(caligula.jpg)}
table.example2 {background-image: url(caligula.jpg);
background-spacing: 20px}
table.example3 {background-image: url(caligula.jpg); background-
spacing: 20px 30px}
</style>
```



no background-spacing value set



background-spacing: 20px



background-spacing: 20px 30px

Figure 14–18 Mock-up illustrating several spacing values set to the background-spacing property.