

The Applet Object

Java applets let experienced programmers design interactive elements that go way beyond what HTML, the document object model, and JavaScript can do. Applets occupy their segregated rectangular spaces on the page (even if those spaces are each no larger than one pixel square for what I call “faceless” applets) and generally operate only within that rectangle. But JavaScript can interact with the applet, because an applet becomes an object — an *applet object* — when it finishes loading into the browser. The most complete interaction is possible in Navigator (from Version 3 onward), although some connectivity is possible in Internet Explorer 3 and up.

No Java Required

What I like about this connectivity is you don’t have to be a Java programmer to let your JavaScript use the applet’s powers. In most cases the applet needs to be constructed in anticipation of being accessed from JavaScript, but once the applet has been compiled, we scripters can blend it into our pages as we like without having to learn Java.

Applet Object

<i>Properties</i>	<i>Methods</i>	<i>Event Handlers</i>
name (Applet variables)	(Applet methods)	(None)

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CHAPTER



In This Chapter

How to add a Java applet to a Web page

Introduction to LiveConnect

How to access applet variables and methods



Syntax

Creating an applet:

```
<APPLET
  CODE="AppletURL"
  NAME="AppletName"
  HEIGHT="PixelCount"
  WIDTH="PixelCount"
  [CODEBASE="classFileDirectory"]
  [ALT="alternateTextDisplay"]
  [ALIGN="alignmentLocation"]
  [HSPACE="marginPixelCount"]
  [VSPACE="marginPixelCount"]>
    <PARAM NAME="appletParameterName" VALUE="parameterValue">
      ...
    <PARAM NAME="appletParameterName" VALUE="parameterValue">
</APPLET>
```

Accessing applet properties or methods:

```
document.appletName.property | method([parameters])

document.applets[index].property | method([parameters])
```

About this object

Starting with Navigator 3, Java applets are treated as scriptable objects. The two-way connection between JavaScript and Java in Navigator browsers is called *LiveConnect*. This Netscape technology also encompasses plug-ins and is covered in more detail in Chapter 38. Here I merely introduce you to the capabilities applets have as JavaScript objects. By and large the information in this short chapter also applies to Internet Explorer 3 and later.

Applets typically have what are called *public instance variables* (sort of like JavaScript global variables) and *public methods* (like JavaScript functions). You can access these items using JavaScript just as if they were properties and methods of any JavaScript object. The key, of course, is you must know the variables and methods of the applet to access them. If you're writing your own applets, the task is easy enough; but if you are relying on a ready-made applet, scripting it may be difficult without examining the source code or having some instruction from the applet's author.

The most common way to interact with an applet is via one of its methods. You can pass parameters to methods as you would to a JavaScript function:

```
document.appletName.methodName(parameterValue)
```

Similarly, some methods may return values, which you can capture in JavaScript:

```
var returnValue = document.appletName.methodName()
```

For more about the value types that can be exchanged between applets and JavaScript, see Chapter 38.

Perhaps the most important point to remember about accessing applets is you must have them loaded and running before you can address them as objects. Although you cannot query an applet to find out whether it's loaded (as with an image), you can rely on the `onLoad=` event handler of a window to fire only when all applets in the window are loaded and running (with the occasional version- or platform-specific bug in frames, as described in the `window.onLoad=` event handler discussion in Chapter 14). Therefore, you won't be able to use an applet embedded in a document to help you create the HTML content of that page as it loads, but an applet can provide content for new documents or for those few modifiable elements of a page.

Example

See Chapter 38 for examples of accessing applet objects in documents from JavaScript and how applets can communicate with scripts.

