Frequently Asked Questions About Developing Web Pages Using ActiveX Controls

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What is an ActiveX control?

ActiveX controls are reusable software components created by a variety of software vendors. These controls can be used to quickly add specialized functionality to Web sites, desktop applications, and development tools. For example, a stock ticker control could be used to add a live stock ticker to a Web page, or an animation control could be used to add animation features to a Web page.

Today there are more than 1,000 commercially available ActiveX controls ActiveX controls can be created using a variety of programming languages such as C, C++, the next version of Visual Basic®, and Java. Once created, ActiveX Controls can be used by designers and developers as prefabricated components to quickly create custom applications. Using ActiveX controls in such a manner does not require knowledge of how the component was created, and in many cases requires no programming whatsoever. The Internet Explorer 3.0 Web browser is the first Web browser to support ActiveX controls in Web pages. ActiveX controls can also be viewed in Mosaic and in the Netscape Navigator using the ActiveX Plug-in for Netscape (see http://www.ncompass.com).

Can the Netscape Navigator Display ActiveX Controls?

Yes, the Netscape Navigator can display ActiveX Controls using the ActiveX plug-in for Netscape. This plug-in is available in beta from Ncompass Labs at http://www.ncompass.com. Also, the Internet Explorer 3.0 Web browser and the Mosaic Web browser can display ActiveX Controls.

Which tools are available today for designing Web pages using ActiveX controls?

You can use the ActiveX Control Pad to easily insert ActiveX controls into your HTML Web pages. You can download a free beta copy of the ActiveX Control Pad from the Control Pad pages on this site. To learn how to use this tool, follow the ActiveX Control Pad tutorial, also provided on that page. SoftQuad's HoTMetaL Pro also offers support for working with ActiveX Controls in HTML pages, and over the coming months many other Web authoring tools from Microsoft and third parties will support authoring Web pages with ActiveX controls

Do I need to be a programmer to use ActiveX controls?

Knowledge of a scripting language such as Visual Basic Scripting Edition (VBScript) or JavaScript™ is helpful, but not required. Some controls require some amount of in order to be fully integrated into a Web page, but many others do not. The ActiveX Control Pad allows even non-programmers to insert many controls by simply pointing and clicking, without requiring any programming.

When I create a Web page that includes an ActiveX control, how does that control get installed and displayed on a user's machine when they browse my page?

When Internet Explorer 3.0 encounters a Web page with an ActiveX control (or multiple controls), it first checks the user's local system registry to find out if that component is available on their machine. If it is, it will display the Web page by activating the control within the Web page. If the control is not already installed on the user's computer, Internet Explorer 3.0 will automatically find and install the component over the Web, based on a location specified by the developer creating the page.

How do I specify a location on the Web so a control will be automatically downloaded to a user's computer when they browse my page?

The Web page developer provides this information by setting the CODEBASE property for the control. When using the ActiveX Control Pad, this property can be easily set using the visual property table in the Object Editor. The developer can specify a URL location or set of locations where the control can be found and downloaded on the Internet. Internet Explorer will then use this information to locate the control, and download the component automatically. After the download, the Web page will be displayed. See the "Safe Web Surfing with the Internet Component Download Service" article in the July 1996 edition of the *Microsoft Systems Journal* for detailed information on how this works.

Is the user notified that a component is being downloaded?

Yes. When a component needs to be downloaded, Internet Explorer, by default, will display a message notifying the user of the download. The user can choose to cancel the download or proceed. In addition, if the control has been digitally signed, a digital certificate will be displayed with the name of the software vendor supplying the control, and verifying that the control has not been tampered with. Controls can be digitally signed by the software developer when the control is created. The information is carried by the control itself. Thus the digital certificate will be displayed automatically before downloading with no development work required by the person who creates the Web page(s) that utilize the control. (See the Code Signing page on this site for more information on digital signatures.)

Where are controls installed when they are downloaded?

By default, controls are downloaded into an ActiveX control cache located in the \windows\occache directory.

What if a new version of the control is created? How will Internet Explorer know to download the new version if the user already has the previous version of the control on their computer?

The Component Download Service in Internet Explorer 3.0 supports versioning, so that new versions of the control can be detected and automatically downloaded as required. See "Safe Web Surfing with the Internet Component Download Service" article in the July 1996 edition of the *Microsoft Systems Journal* for detailed information on how this works.

What about licensing of ActiveX controls? Once users download a control, can they use it in their own Web pages as well?

ActiveX controls include a mechanism to prevent the unlicensed use of controls in Web pages. Today, this mechanism is supported in development tools such as Visual Basic and Microsoft Access, and is also supported in the beta 2 release of the Internet Explorer 3.0. The licensing

mechanism works by allowing controls to be distributed with either a *developer license*, or with a *run-time license*. With a developer license, a user can use the control for development purposes in developer tools such as Visual Basic, the ActiveX Control Pad, and similar tools. With a run-time license, the user can only view the control within an existing application or Web page, but cannot insert the control into a tool for further development purposes. Supporting the licensing mechanism is up to the individual control vendor. Some control vendors choose not to implement the licensing mechanism, so their controls can be used for development purposes by anyone once they are installed on the computer. Other control vendors permit royalty-free redistribution of the run-time version of the control only, while charging for the developer license. Users should read the license agreement provided with the control to understand how they can distribute a control on the Web.

I cannot get some of the controls, including those that come with Visual Basic 4.0, to be displayed in Web pages using the Internet Explorer 3.0.

Many controls, such as those supplied with Visual Basic 4.0, implement licensing. To distribute these controls over the Web, you must generate the appropriate runtime license file and include it with your Web page, otherwise the controls will not display on users' machines. Only people with a valid developer license for a given control can generate a runtime license for that control. For detailed instructions on including runtime-licensed controls in your Web pages, see the latest version of the ActiveX SDK on the Microsoft Web site. Note that Microsoft and third parties are also supplying many ActiveX controls for royalty-free run-time use on the Web. No runtime license file is necessary to include these controls in a Web page. Check the Internet Explorer controls page for details.

What controls are available today from Microsoft, which ones are included with the ActiveX Control Pad and IE 3.0?

To see a more complete list of available controls, visit the ActiveX Component Gallery on the Microsoft Web site. (need URL here). The following controls will ship with the Internet Explorer 3.0 final release. Others may be included as well. Those marked with a * will be included in "typical" and "complete" installs of IE 3.0.

Controls that ship with Internet Explorer 3.0 and ActiveX Control Pad (see the Internet Explorer page):

Control Name	Description
Web Browser Control	A Web browser control that can display HTML pages and other ActiveX documents.
Timer	A control that can be programmed to execute actions/scripts at set time intervals.
Marquee control	A control that can scroll text messages at a developer-defined speed.
Microsoft Forms 2.0 Label*	A control used for creating basic text labels.
Microsoft Forms 2.0 Textbox*	A multiline text entry and text display window.
Microsoft Forms 2.0 Combo Box*	A control that allows users to choose from a drop-down list of options.
Microsoft Forms 2.0 List Box*	A control that allows users to choose from a scrollable list of options.
Microsoft Forms 2.0 CheckBox*	A control that allows user to check an option.

Microsoft Forms 2.0 Option Button*	A control that allows users to choose between multiple options.
Microsoft Forms 2.0 Toggle Button*	A button that has a toggle state (for example, on/off).
Microsoft Forms 2.0 Command Button*	A basic pushbutton control.
Microsoft Forms 2.0 Tabstrip*	A control that provides multiple pages that can be selected via tabs.
Microsoft Forms 2.0 ScrollBar*	Basic horizontal and vertical scroll bars.
Microsoft Forms 2.0 Spin Button*	A button that can be pushed up or down.
The Microsoft Image Control*	A control that can display progressively rendered images in metafile, .JPG, .GIF, .BMP or wavelet formats.
The HTML Layout Control*	A control that can display 2-D HTML regions inside of Internet Explorer 3.0 using new W3C extensions to HTML.

Note this list is not yet final, and other controls will be by made available on an ongoing basis from Microsoft and third parties.

Where can I get these controls?

The controls can be downloaded online. The controls listed above that ship with Internet Explorer will be installed when you install Internet Explorer 3.0. The controls marked with a * are also included with the ActiveX Control Pad download. Controls that are available separately in the ActiveX Component Gallery can be downloaded from that Web page.

Which ActiveX controls are available today from third-party software vendors?

There are over 1,000 commercially available controls from third-party software vendors. See the online ActiveX Component Gallery for a listing of companies developing Internet-enhanced ActiveX controls.

Once I install these controls, how can I develop ActiveX Web pages that use them?

Use the ActiveX Control Pad to insert these controls into your HTML Web pages. Follow the ActiveX Control Pad tutorial to learn how to use this tool. (See the ActiveX Control Pad pages on this Web site.)

How does the HTML Layout Control enhance my ability to create pages using ActiveX controls?

The HTML Layout Control supports new HTML extensions published by the WorldWide Web Consortium (W3C) that allow objects to be positioned exactly on a Web page. Previously, HTML did not allow Web developers to exactly position elements on a page using specific x,y coordinates, and did not allow overlapping objects. These "2-D" layout capabilities help developers create more sophisticated designs and Web applications for their users. By implementing these new W3C HTML extensions, the HTML Layout Control provides advanced

layout options for ActiveX Controls displayed in Internet Explorer 3.0. The HTML Layout Control is an add-on for Internet Explorer 3.0 and will be fully integrated into the final release of the browser. The ActiveX Control Pad can be used in conjunction with the HTML Layout Control, since it provides a full frame-based WYSIWYG page editor that makes it easy to create advanced, 2-D-style HTML designs using ActiveX controls.