

Lab 9: Using ActiveX Components on a Web Page

For background information on this lab, click each of these topics:

Objectives

In this lab, you will use an ActiveX control on a Web page.

After completing this lab, you will be able to:

- ◆ Package an ActiveX control for Internet setup.
- ◆ Download an ActiveX control to a Web page.
- ◆ Set the behavior of a control behavior using Visual Basic Scripting Edition.
- ◆ Use a licensed control on the Internet.

Prerequisites

Before working on this lab, you should be familiar with the following concepts:

- ◆ Creating ActiveX code componentscode_component.
- ◆ The contents of this chapter.

Lab Setup

To complete this lab, you should have the following setup:

- ◆ Visual Basic 5.0 or later
- ◆ Internet Explorer 3.0 or later
- ◆ Access to a Web server (optional)

To see a demonstration of the completed lab solution, click this icon.



Estimated time to complete this lab: **90 minutes**

Note There are project and solution files associated with each lab. If you installed the labs during Setup, these files are in the folder <Install Folder>\Labs on your hard disk. If you did not install the labs during Setup, you can find them in the \Labs folder of the *Mastering Microsoft Visual Basic 5* CD-ROM.

Exercises

The following exercises provide practice working with the concepts and techniques covered in Chapter 9.

Exercise 1: Creating a Setup Package

In this exercise, you will use the Application Setup Wizard for the Stock project to package an ActiveX control for downloading to the Internet.

Exercise 2: Scripting a Control

In this exercise, you will modify the HTML file created by the Application Setup Wizard. You will set an initial property for the control, and add scripting to automate the control.

Exercise 3: (Optional) Adding Licensing.

In this exercise, you will add licensing support to your control, and create a licensing package file so the control can be downloaded from a Web page.

Exercise 1: Creating a Setup Package

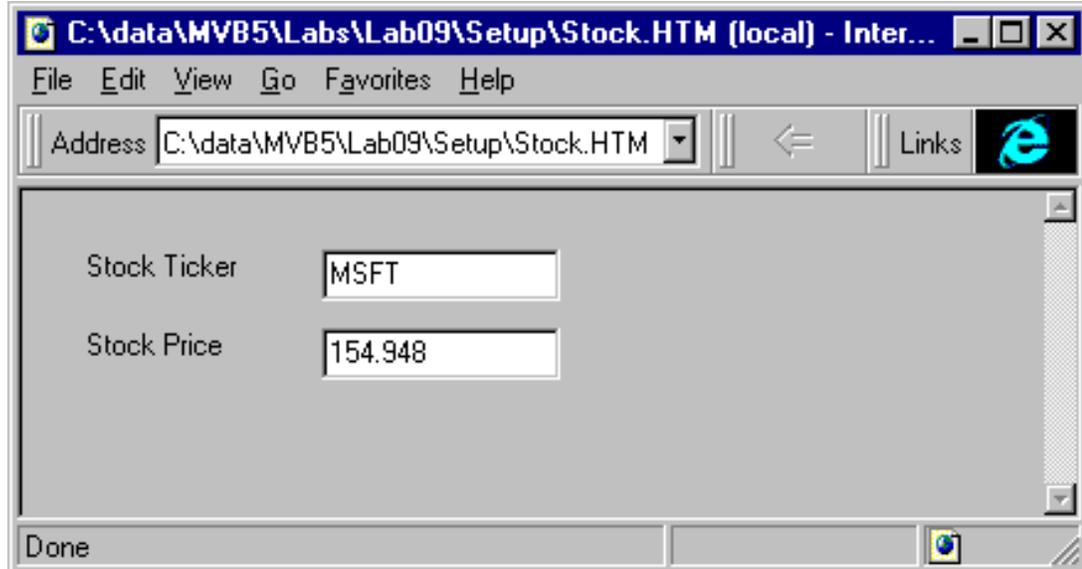
In this exercise, you will use the Application Setup Wizard for the Stock project to package an ActiveX control for downloading to the Internet.

► Package the control

1. Run the Application Setup Wizard in Visual Basic.
2. Select the **Rebuild the Project** option.
3. When prompted for a project, select Stock.vbp, which is located in the *<Install Directory>\Labs\Lab09* directory.
4. In the **Setup Options** group, click **Create Internet Download Setup**.
5. When prompted for a distribution location, specify the *<Install Directory>\Labs\Lab09\Setup*.
6. When prompted for a location for the run-time components, click **Download from the Microsoft Web Site**.
7. Mark the **Stock** control by clicking **Safe for initialization** and **Safe for scripting**.
8. When prompted to include the Property Page DLL, click **No**.
For more information about marking code as safe, see Code Safety.
9. To complete the download setup process, click **Finish**.

► Test the control locally

1. Using Internet Explorer, open the file Stock.htm created by the Application Setup Wizard.
2. In the **Stock Ticker** text box, type **MSFT** (all caps).
The text box control should display a random number that updates at frequent intervals, as shown in the following illustration.



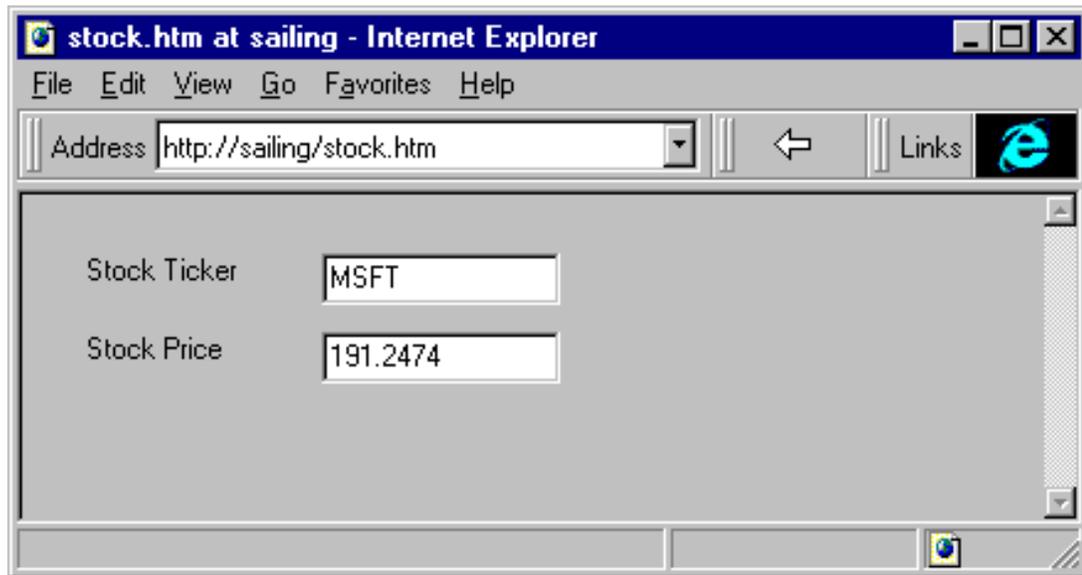
3. To display the HTML that was created by the Application Setup Wizard, click **Source** on the **View** menu.

► Test the download for the control

These steps require access to a Web server. If you do not have access to a Web server, you can complete the steps by using the files on a local computer.

1. Copy Stock.htm and Stock.cab to a directory on your Web server.
2. Download Stock.htm from your Web server.

The following illustration shows how the Stock.htm page is downloaded from a Web server.

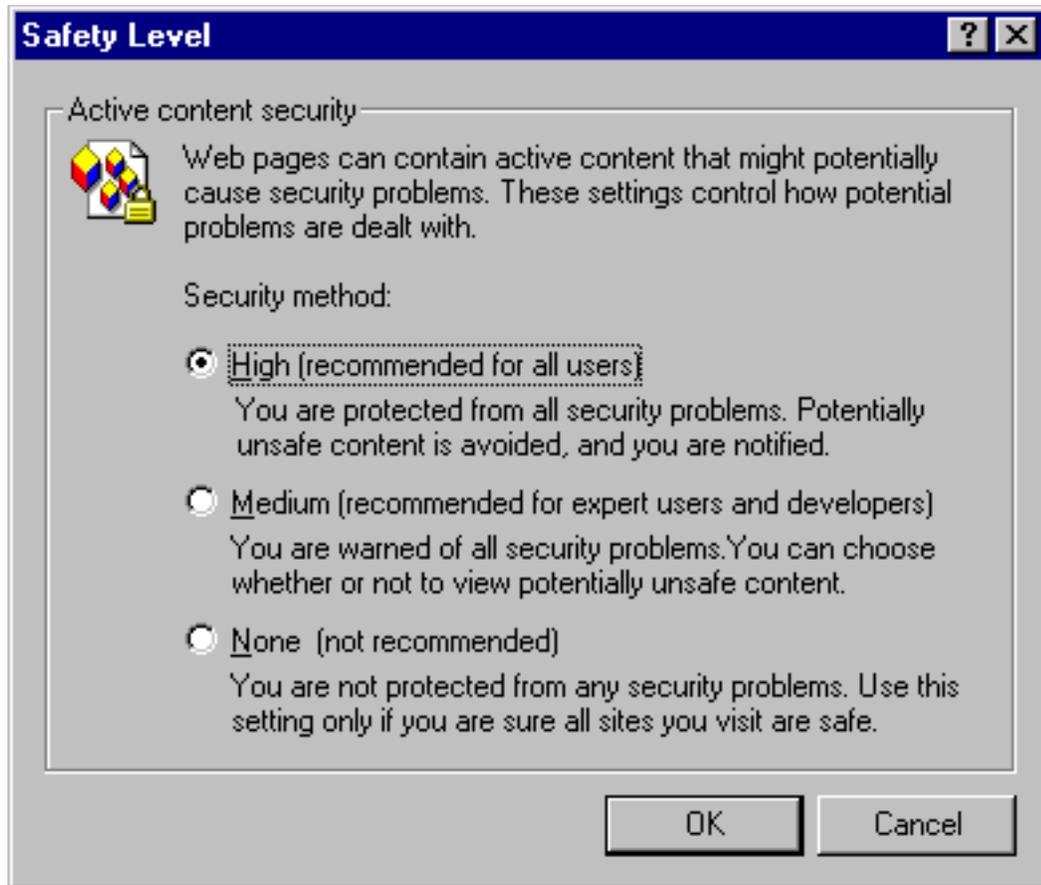


3. Download the **Stock** control from your Web server with Internet Explorer by using Regsvr32.exe to unregister the control. Use the following command line:

```
Regsvr32.exe /u C:\MVB5\Labs\Lab09\Stock.ocx
```

The application Regsvr32.exe is located on the *Mastering Microsoft Visual Basic 5.0* CD-ROM in the \Tools\Regutils directory.

4. In Internet Explorer, make sure that security is set to the highest level.
 - a. On the **View** menu, click **Options**, and then click the **Security** tab.
 - b. Click the **Safety Level** button, and then click **High**, as shown in the following illustration.



5. Refresh the Stock.htm page.

Because the **Stock** control has not been signed and guaranteed to be safe, you will get an error message that your control could not be displayed.

6. Set Security to **Medium**, and refresh the page again.

7. When given the option of downloading the control, click **Yes**.

8. Make sure that the control is properly installed and operates correctly.

Exercise 2: Scripting a Control

In this exercise, you will modify the HTML file created by the Application Setup Wizard. You will set an initial property for the control, and add scripting to automate the control.

► Set the initial control property

1. Use Notepad (or any other text editor) to open the local copy of Stock.htm.

2. Using the <PARAM> tag, set the initial **Active** property of the **Stock** control to zero (which is **False**).

For more information about setting initial properties, see Setting Initial Control Properties.

3. Save the HTML file.

4. Load Stock.htm in Internet Explorer. (If it is open, reload the page.)

The **Stock** control should no longer update automatically.

To see the HTML code from this lab exercise, click this icon.

```
<HTML>
```

```
<!--If any of the controls on this page require licensing, you must
```

create a license package file. Run LPK_TOOL.EXE to create the required LPK file. LPK_TOOL.EXE can be found on the ActiveX SDK, <http://www.microsoft.com/intdev/sdk/sdk.htm>. If you have the Visual

Basic 5.0 CD, it can also be found in the \Tools\LPK_TOOL directory.

The following is an example of the Object tag:

```
<OBJECT CLASSID="clsid:5220cb21-c88d-11cf-b347-00aa00a28331">
  <PARAM NAME="LPKPath" VALUE="LPKfilename.LPK">
</OBJECT>
-->
<OBJECT ID="StockPrice" WIDTH=226 HEIGHT=76
  classid="clsid:6A7A58F2-3DFC-11D0-A520-0080C776418A"
  codebase="Stock.CAB#version=1,0,0,0">
  <PARAM NAME="Active" VALUE="0">
</OBJECT>
</HTML>
```

► Add the HTML input controls

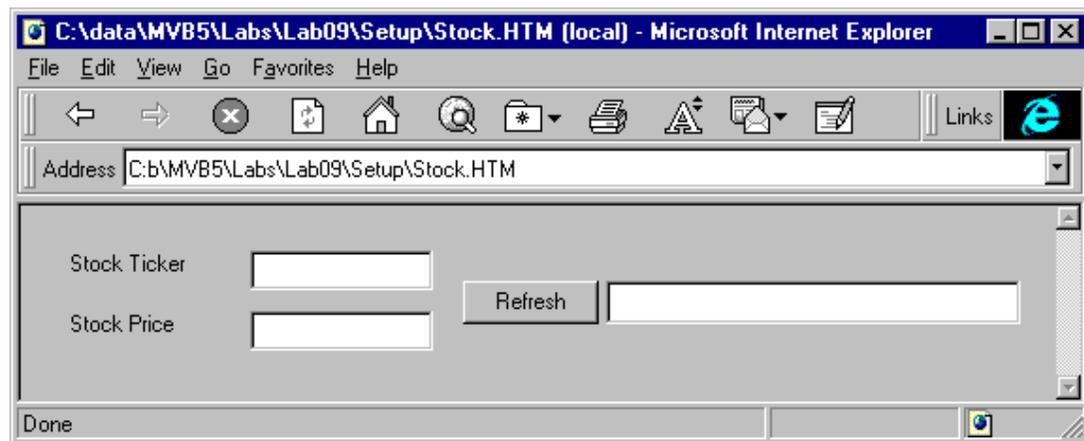
By following these steps, you will add the HTML text box and command button controls to the Stock.htm page. These controls will be used to interact with the **Stock** ActiveX control.

1. After the StockPrice <OBJECT> tag, add the following lines of HTML code.

```
<INPUT TYPE=button VALUE="Refresh" NAME="cmdRefresh">
<INPUT TYPE=txt NAME="txtLastUpdate" SIZE="40">
```

2. Save the HTML file.
3. Load Stock.htm in Internet Explorer. (If it is open, reload the page.)

The Stock.htm page should resemble the following illustration.



► Use VBScript to add code to the HTML input controls

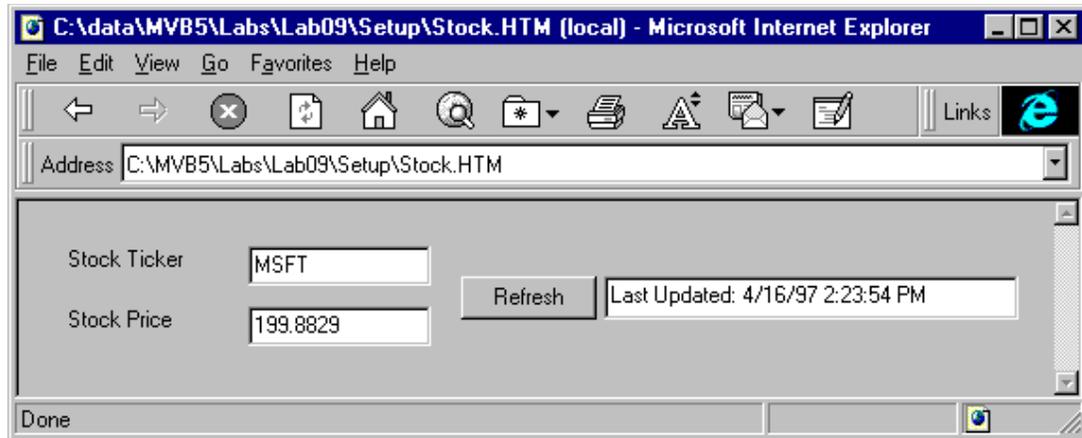
1. After the <HTML> tag at the beginning of the HTML file, add <SCRIPT> tags for Visual Basic Scripting Edition.
2. Add an OnClick event procedure for the **cmdRefresh** button.
3. To update the stock price, call the **Refresh** method in the event procedure of the **StockPrice** object.
4. Add the PriceUpdated event procedure for the Visual Basic **StockPrice** control.

5. To display the date and time the stock price was updated, set the **Value** property of the **txtLastUpdate** text box in the event procedure by using the following code:

```
"Last Updated: " & Now
```

6. Save the HTML file.
7. Load Stock.htm in Internet Explorer. (If it is open, reload the page.)
8. In the **Stock Ticker** text box, type **MSFT** (all caps), and then click **Refresh**.

The stock price should update, and the current date and time should be entered in the text box, as shown in the following illustration.



To see the HTML code for this exercise, click this icon

```
<HTML>
<SCRIPT LANGUAGE="VBScript">
<!--
Sub cmdRefresh_OnClick()
    StockPrice.Refresh
End Sub
Sub StockPrice_PriceUpdated()
    txtLastUpdate.Value = "Last Updated: " & Now
end sub
-->
</SCRIPT>
<!--If any of the controls on this page require licensing, you must
create a license package file. Run LPK_TOOL.EXE to create the
required LPK file. LPK_TOOL.EXE can be found on the ActiveX SDK,
http://www.microsoft.com/intdev/sdk/sdk.htm. If you have the
Visual
Basic 5.0 CD, it can also be found in the \Tools\LPK_TOOL
directory.
The following is an example of the Object tag:
<OBJECT CLASSID="clsid:5220cb21-c88d-11cf-b347-00aa00a28331">
    <PARAM NAME="LPKPath" VALUE="LPKfilename.LPK">
</OBJECT>
-->
<OBJECT ID="StockPrice" WIDTH=226 HEIGHT=76
    classid="clsid:6A7A58F2-3DFC-11D0-A520-0080C776418A"
    codebase="Stock.CAB#version=1,0,0,0">
    <PARAM NAME="Active" VALUE="0">
</OBJECT>
```

```
<INPUT TYPE=button VALUE="Refresh" NAME="cmdRefresh">
<INPUT TYPE=txt NAME="txtLastUpdate" SIZE="40">
</HTML>
```

Exercise 3: (Optional) Adding Licensing

In this exercise, you will add licensing support to your control, and create a licensing package file so the control can be downloaded from a Web page.

► Add licensing to the control

1. In the *<Install Directory>*\Labs\Lab09\License folder, open the Stock.vbp project.
2. In the **Project Properties** dialog box, click the **Require License Key** property.
3. Recompile the Stock.ocx file.

You should now see a licensing file with the extension .vbl in the *<Install Directory>*\Labs\Lab09\License for the Stock project folder.

► Package the control

1. Use the Application Setup Wizard to create a new Internet download setup for the Stock.ocx file.
2. Save the download setup in the *<Install Directory>*\Labs\Lab09\License\Setup folder.
3. When prompted by the Application Setup Wizard to add the licensing file, click **No**, and then complete the setup.

► Create the licensing file

1. Using the application Lpk_tool.exe, create a licensing package file named Stock.lpk for the Stock.ocx control.

Lpk_tool.exe is located on the *Mastering Microsoft Visual Basic 5.0* CD-ROM in the \Tools\Lpk_tool directory. (This file is not installed with Visual Basic.)

 - a. From the list of **Available Controls**, select **StockLicense.StockPrice**, and then click **Add** to add it to **Controls in License Package**.
 - b. Save Stock.lpk in the *<Install Directory>*\Labs\Lab09\License\Setup directory.

► Test the download of the control

1. Delete the control license key from the registry.

When you compile a control, the license information from the control is written to the registry. To test Internet licensing, you need to delete that licensing information from the registry.
2. To make sure that the control is installed from the .cab file, unregister the control.
3. Open the Stock.htm page.

The control should not display because the licensing package file has not been specified in the HTML code.
4. Use Notepad (or any other text editor) to edit the Stock.htm page and change the licensing object tag so that it points to the Stock.lpk package file.
5. Uncomment the licensing object tag (--) by moving it above the <OBJECT> tag, and then reload the Stock.htm page.
6. Reload the Stock.htm page.

The Stock control should now load correctly.