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How Can I Use Remote Front Panels With LabVIEW Executables?

Primary Software: LabVIEW Run-Time Engine

Primary Software Version: 2011

Primary Software Fixed Version: N/A

Secondary Software: N/A

Problem:

I want to view and control my LabVIEW built stand-alone application remotely. How can I use remote front panels to manipulate a LabVIEW built stand-alone application on a computer that does not have a LabVIEW Development System installed?

Solution:

Remote front panels allow client computers to view and control the front panel of a VI running on a server computer. If the VI is built into an executable, though, the steps below must be completed for remote front panels to function correctly:

1. Create a LabVIEW project.
2. Enable the Web Server by selecting **Tools»Options»Web Server** (or **Web Server: Configuration**).

LabVIEW 2009 and earlier:

Select **Enable Web Server** and click **OK**.

Allow access for **Remote front panels** under **Advanced Settings**.

Note that the default **HTTP port** is 80.

LabVIEW 2010 and later:

Select **Enable Remote Panel Server** and click **OK**.

Select **Remote front panels** under **Remote Panel Server**.

Note that the default **HTTP port** is 8000.

3. Add your source code to the project.
4. Build the web page for your VI:

Select **Tools»Web Publishing Tool...**

Select the VI to publish from the **VI name** drop down menu.

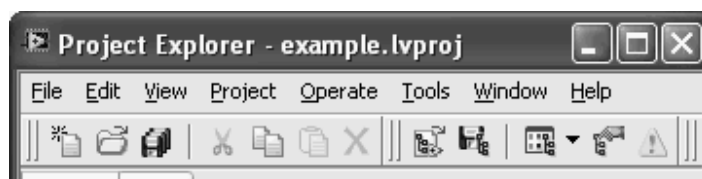
Configure the **Viewing Mode** as either **Embedded**, **Snapshot**, or **Monitor** and click **Next**.

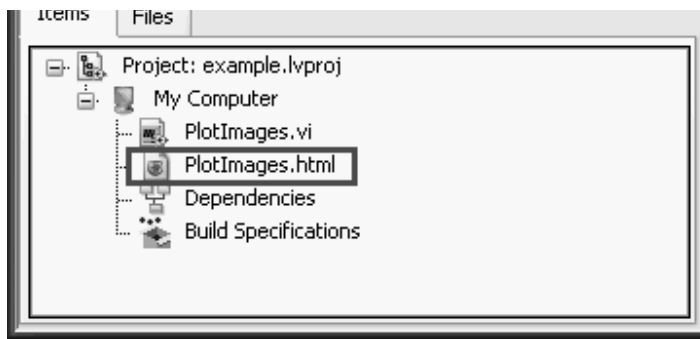
Edit the **Document title**, **Header**, and **Footer** and click **Next**.

Ensure that the HTML document is saved in your `\LabVIEW\www` directory and click **Save to Disk**.

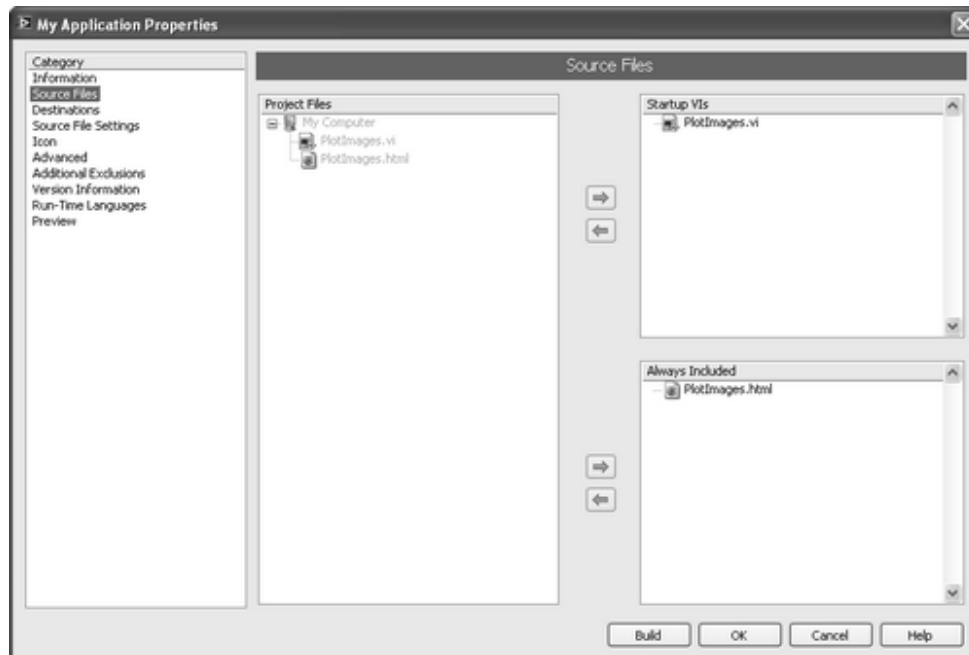
Note the Document URL for use in step 10.

5. Add the HTML document from step 3 to Project Explorer by right-clicking **My Computer** and selecting **Add»File** and then select the HTML file from your `\LabVIEW\www` directory.





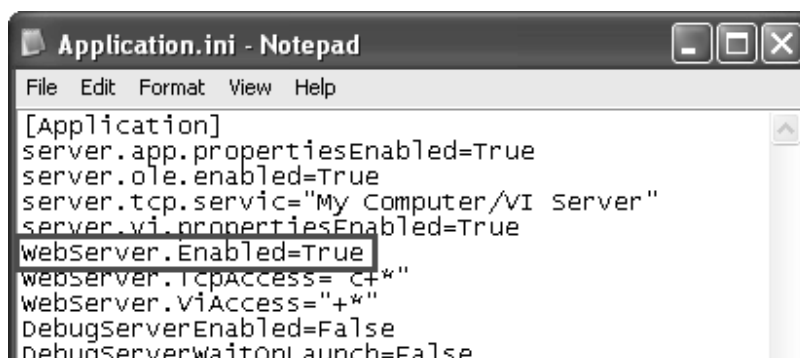
6. Save your project and build your executable by right-clicking **Build Specifications** and selecting **New»Application (EXE)**. Select the **Source Files** category. Then, place your top level VI under **Startup VIs** and your HTML file under **Always Included**. Click **Build** and then click **Done** when the build is complete.



7. Copy the executable and all of the generated files to your target computer.

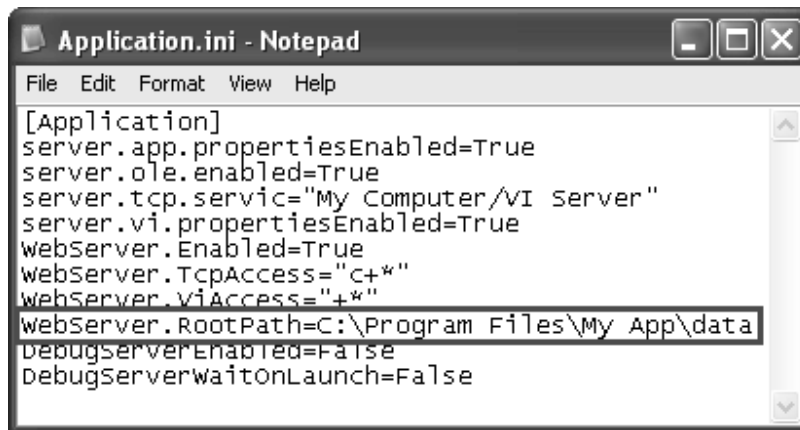
Note: The target computer must have the LabVIEW Run-Time Engine installed and it must match the version of LabVIEW used to develop the executable.

8. On the target computer, browse to the directory where you just copied your executable. Open the `.ini` file in a text editor. On a Mac OS, this will be the `.app x.x Preferences` file, where `x.x` is the Labview version. Perform the following:
 1. Verify the token **WebServer.Enabled=True** exists. If you cannot find it, add it to the end of the file.



Versions of LabVIEW released prior to 8.6:

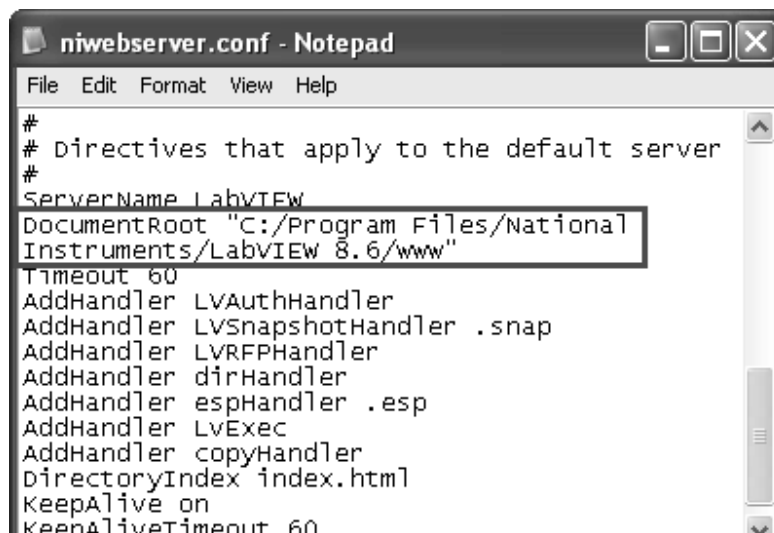
1. Add or modify the **WebServer.RootPath** so that its value is set to the directory where the HTML page currently resides (it should be located in the application's `data` directory).



2. Save the changes to the .ini file and close it.

LabVIEW 8.6 and later:

1. Close the .ini file and open **niwebserver.conf** in a text editor. This file was created to handle the new functionality provided by the LabVIEW web server in LabVIEW 8.6.
2. If you do not have **niwebserver.conf** file in your application directory launch your executable once and it should be created. After the .conf file is created shut down your executable.
3. In the second section labeled **Directives that apply to the default server** there is a **DocumentRoot** tag. Replace the default `LabVIEW\www` with the directory where the HTML page currently resides (it should be located in the application's `data` directory). Do not include the name of the html file.





9. Launch your executable.

Note: Running the executable on the development machine requires LabVIEW to be completely shutdown.

10. Replace the name of the development computer in the URL from step 4 with the IP address of the target computer and navigate to this address in a web browser. You can now view and control the LabVIEW executable remotely.

Troubleshooting:

Q. What steps can I take to resolve the `This page cannot be displayed` error?

A. Try changing the URL from `http://TargetComputerName:Port/Viname.html` to `http://TargetComputerIPAddress:Port/Viname.html`. Also, verify that your firewall allows access to the port that the LabVIEW web server is using. For LabVIEW 2009 and earlier, the default port is 80. For LabVIEW 2010 and later, the default port is 8000.

Q. Why do I receive an error stating

`Remote Panel Connection Refused by Specified Server ?`

A. Typically, this message results from a mismatch in LabVIEW versions. Ensure that the version of the LabVIEW Run-Time Engine on the target computer matches the version of LabVIEW used on the development machine.

Q. Do any other programs use the same default ports as LabVIEW?

A. Port 80 is the default port for many Web servers. Ensure other programs on your system have not already reserved this port.

Installers:

To enable remote front panels for an installer, the same ideas apply. Create a web page. Include the web page in your project. Build your executable and include your web page in the support files. Create an installer and include your executable in the installer under the source files setting of the installer. Build and deploy the installer. Lastly, change the .ini and `niwebserver.conf` files.

Licensing:

By default, versions of LabVIEW prior to 2011 include one remote front panel license. This means that one connection at a time can be made to the remote front panel of your executable. If you have LabVIEW Professional Edition you are entitled to five licenses for remote panels. In order to have access to these additional licenses (or any others that you may have purchased), you need to build an installer that contains your executable along with the LabVIEW Deployable License under Additional Installer. To purchase additional licenses for versions of LabVIEW prior to 2011, use part number 781841-3599. Versions of LabVIEW 2011 and later do not require any licenses for remote front panels, so there is no need to include licenses in the installer.

Note: A LabVIEW web server cannot permit more than one connection if Volume License Manager is in use on the same computer. This is due to the fact that remote front panel licenses share components with the Volume License Manager.

Related Links:

KnowledgeBase 33G91PI3: Can I Make My LabVIEW 7.0 Executable Use Remote Front Panels?

KnowledgeBase 3Q29F4QP: What Is The Build Specification Feature In Application Builder?

KnowledgeBase 2A6ECPG4: How can I Include Additional Installers with My LabVIEW Application Installer?

KnowledgeBase 2IDDCHB9: How Do I Enable LabVIEW Web Server or Use Remote Panels With an Executable Built in LabVIEW?

Attachments:

- ☐ application_ini.png
- ☐ application_ini_root_path.png
- ☐ application_props.png
- ☐ niwebserverconf.png
- ☐ project_explorer.png

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Document Quality? ☐ ☐ ☐ ☐ ☐ Answered Your Question? ☐ ☐

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