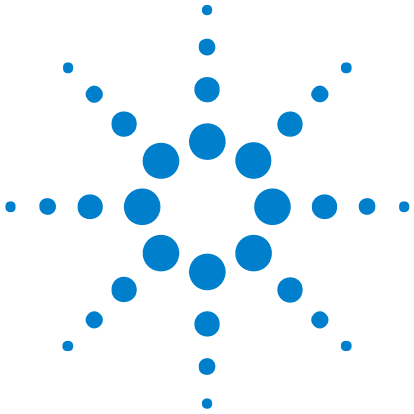

Agilent Logic Analyzers License Server

Administration Guide

Agilent Technologies

Notices

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WARNING

A WARNING notice denotes a hazard. It calls attention to an operating procedure, practice, or the like that, if not correctly performed or adhered to, could result in personal injury or death. Do not proceed beyond a WARNING notice until the indicated conditions are fully understood and met.

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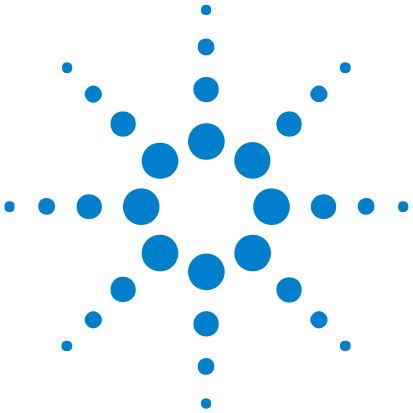

1 License Server Administration

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Starting with the *Agilent Logic Analyzer* application version 3.20 release, you are able to order floating (also known as *counted*) licenses for tools and other add-in software. (Previously, all licenses were *node-locked*.)

Before you can use floating licenses, you need to set up a license server.

This document describes how to set up a license server for the Agilent Logic Analyzer software.

See Also For more information on FLEXnet licensing, see the *FLEXnet Publisher Licensing Toolkit 11.8 License Administration Guide* included with the license server software as: "LicenseAdministration.pdf".

Overview

Setting up for centrally managed floating licenses is a fairly simple procedure. It involves specially configuring one PC or logic analyzer as your license server, obtaining license files for it, and testing to see that the server is working. Then, each logic analyzer or PC that will be obtaining licenses from this central server must be set up and tested.

In general, here are the steps you'll be following:

1. Set up the server:
   a. Identify the server and get license files customized to the server.
   b. Install the License Server package.
   c. Install the server's license file.
   d. Adjust the firewall so the license requests can get through.
   e. Start the server.
   f. Test the running server.
2. Set up and test each client:
   a. Add the license server using the *Agilent Logic Analyzer* application.
   b. Test to see that this client can get to the server.
3. After set up and testing is complete, you will be ready to run licensed logic analysis software.

The remainder of this document provides detailed instructions for accomplishing these steps.

Setting Up the License Server

This section walks you through the installation and setup of the license server for Agilent logic analyzers.

Server Step 1: Installation of License Server Software

1 Be sure to use the license server software that comes with the version of *Agilent Logic Analyzer* application software you are using.

If you installed the application from CD or DVD, you can find the appropriate license server installation package on the same CD or DVD (the file name is: SetupLALicenseServer.exe).

2 Run the installation package on the designated server.

Server Step 2: Add the Server License File Path to Registry Key

If you are running the license server and the *Agilent Logic Analyzer* application on the same instrument or PC, you need to add the server license file path to the AGILENT_LICENSE_FILE registry key. (When the *Agilent Logic Analyzer* application starts up, it adds the node-locked license file path to the registry key.)

For information on editing the registry, see:

- "http://support.microsoft.com/kb/322756"

The registry key location is:

- My Computer\HKEY_LOCAL_MACHINE\SOFTWARE\FLEXlm License Manager\AGILENT_LICENSE_FILE

Use the semicolon ';' delimiter to separate the server license file path from any other content in the key.

The default server license file path is:

- C:\Program Files\Agilent Technologies\LicenseServer\LicenseFiles

Server Step 3: Install the Server License File

- Install all license information into one file in the directory:

  C:\Program Files\Agilent Technologies\LicenseServer\LicenseFiles (default location)

NOTE If the license server is running the Windows 2000 operating system, please ensure that the license file in this directory has a filename of 8.3 (11 chars in length or shorter). There is a FLEXnet issue with longer names, and at least one license file must be no longer than 8.3. When you browse to the license file in Server Step 5 – Item 5, below, select this short filename.

Server Step 4: Adjust the Server Firewall to Allow License Services

NOTE The steps for adjusting the server firewall are different depending on the server's operating system and service pack level. Perform only the steps appropriate for your server's operating system and service pack level.

This section describes how to adjust the server firewall on these types of server hardware and operating systems:

- "On Logic Analyzers with Windows XP Service Pack 2 (or later)" on page 10
- "On Logic Analyzers with Windows XP Service Pack 1" on page 12
- "On PCs with Windows XP Service Pack 2 (or later)" on page 13
- "On PCs with Windows Vista" on page 16
- "On PCs with Windows 7" on page 19

When the license server is on a PC (or a logic analyzer with Windows 2000, which does not have built-in firewall software), you must make sure that its firewall allows access to ports 27000 and 27005.

If you need to use different port numbers

If the port numbers 27000 and 27005 are already in use, you can use different port numbers. Port numbers from 27000 through 27009 are recommended, but you can use any unused port number from 0 through 64000.

If you use different port numbers, be sure to change the port numbers specified in the license file as well.

On Logic Analyzers with Windows XP Service Pack 2 (or later)

1. Open a Command Prompt window by choosing **Start>All Programs>Accessories>Command Prompt** from the Windows Start menu.
2. In the Command Prompt window, change to the directory where the license server software was installed. For example, if you installed to the default location, enter the command:

   ```
   cd "C:\Program Files\Agilent Technologies\LicenseServer"
   ```

3. Define the license server firewall ports by entering the following command (with both options):

```
agFirewSP2.wsf /licserver /setup
```

Click **OK** in the confirmation dialog.

NOTE Because the logic analyzer's environment is well-defined (known operating system, firewall, etc.), the agFirewSP2.wsf command resets the current firewall settings to those that are appropriate for the logic analyzer.

After running agFirewSP2.wsf, the Windows Firewall is set up as shown in Figure 1.

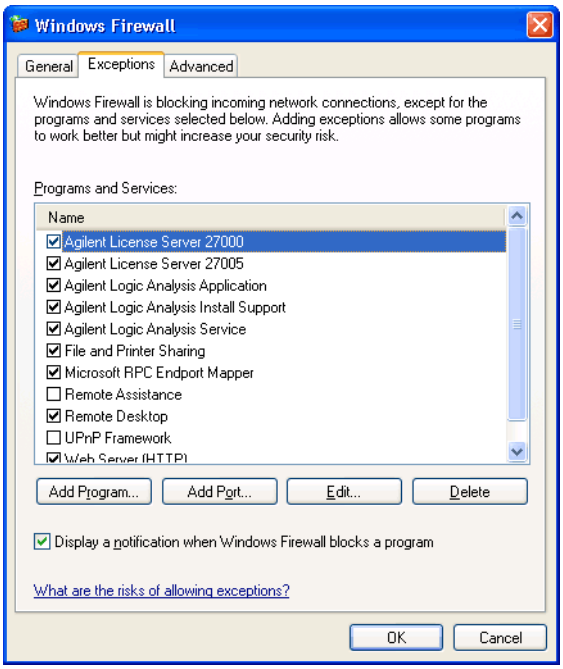


Figure 1 Windows Firewall setup for license server

On Logic Analyzers with Windows XP Service Pack 1

On your intended license server frame only, please ensure that the firewall is enabled on the network interface that is connected to the corporate LAN. You also do not want the firewall enabled on any IEEE 1394 FireWire interface (if present) or the 1GB LAN interface.

1 Open the **Network Connections** control panel applet.

2 The padlock icon should appear on only the LAN interface to which your corporate LAN is connected. If there is no padlock icon, then no firewall is enabled on any interface. If there is more than one icon with a padlock, then the firewall is enabled on more LAN interfaces than you really need.

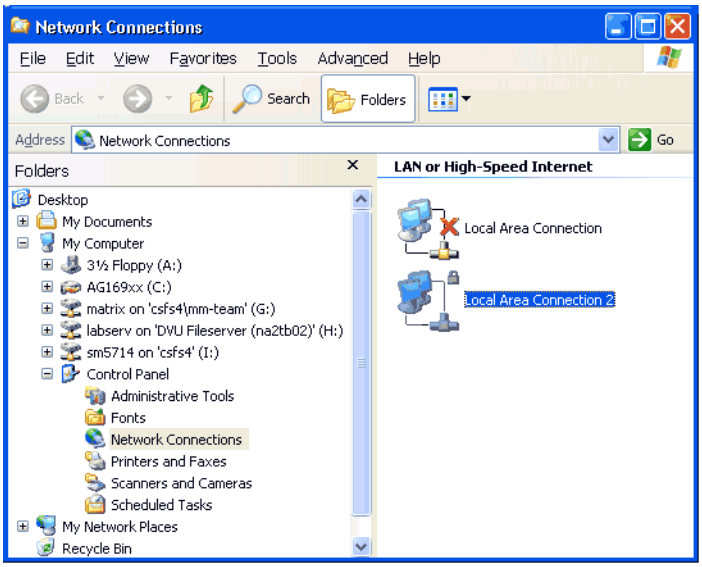


Figure 2 Network connections, one with firewall enabled

NOTE

The padlock icon is made to appear by right mousing on one of the network interface icons and selecting **properties**. From the properties page select the **Advanced** tab. Check the **Protect my computer...** checkbox to make the padlock appear or remove the check to remove the padlock.

3 Define the license server firewall ports by running agFirewall.exe, which is located in:

C:\Program Files\Agilent Technologies\LicenseServer\ (by default)

NOTE When agFirewall.exe is run, it will put up a term window and a dialog. You must press **Yes** on the dialog to allow the utility to make its changes. When it has completed, the term window will close. (Takes about a minute or so.)

4 Enable the server specific ports (two of them):

- **a** Open the **Network Connections** control panel applet.
- **b** Open the **properties...** dialog for the firewalled interface.
- **c** From the **Advanced** tab, press the **Settings...** button to get to a list of ports.
- **d** Scroll down in the list to locate two lines starting with "License Server".
- **e** Enable both of these lines (place a check mark in each).

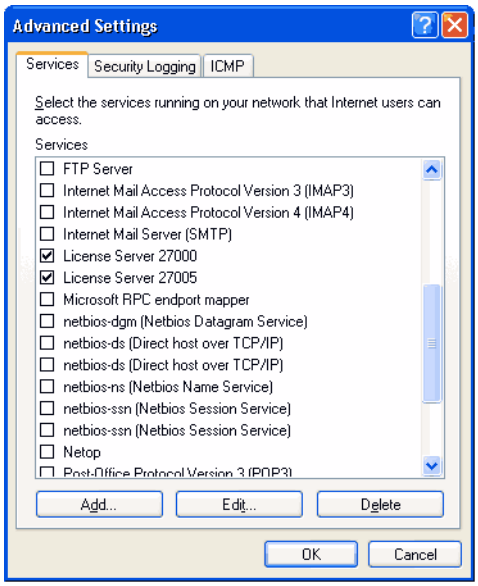


Figure 3 Firewall port settings showing License Sever ports enabled

- **f** Press **OK** on both open dialogs to make the changes.
- **g** Close the Network Connections Applet.

On PCs with Windows XP Service Pack 2 (or later)

On a PC with the Windows XP SP2 operating system using the Windows Firewall, you would follow these steps:

1 Open the **Windows Firewall** control panel applet.

2 Select the **Exceptions** tab, and click **Add Port...**.

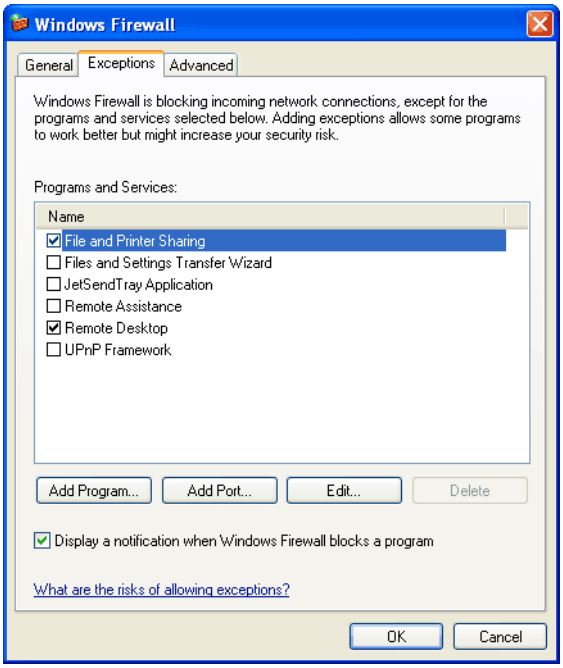


Figure 4 Adding a port to the Windows Firewall exceptions

3 In the **Edit a Port** dialog, enter the name of the port and the TCP port number.

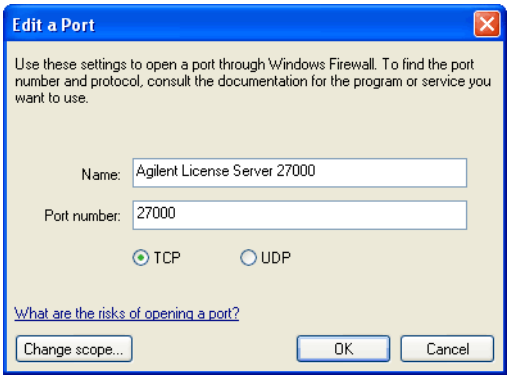


Figure 5 Adding the first port to the Windows Firewall exceptions

4 Click **OK**.

5 Click **Add Port...** again, and add the second port number.

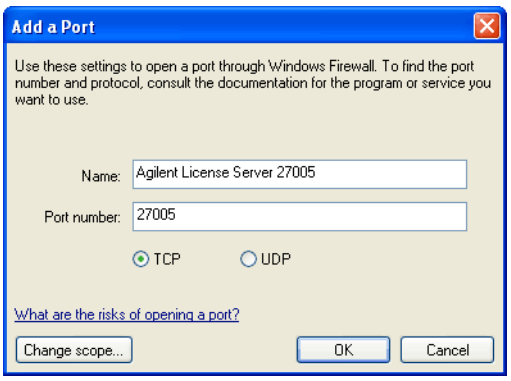


Figure 6 Adding the second port to the Windows Firewall exceptions

6 Click **OK**.

After adding the port exceptions, the Windows Firewall is set up as shown in Figure 7.

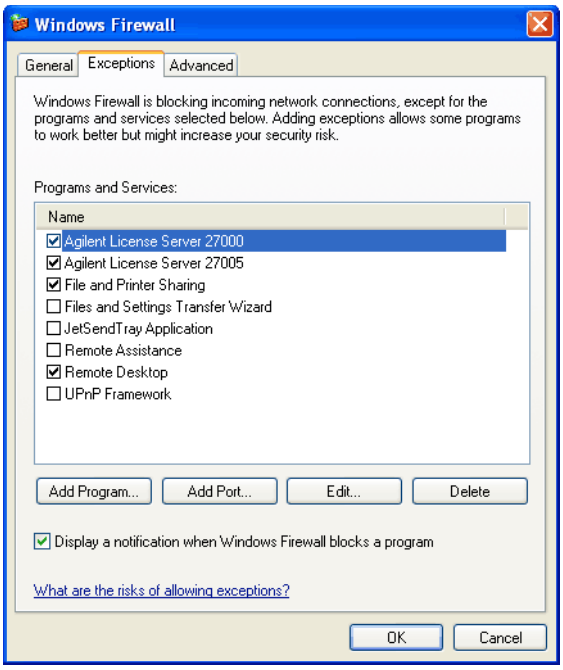


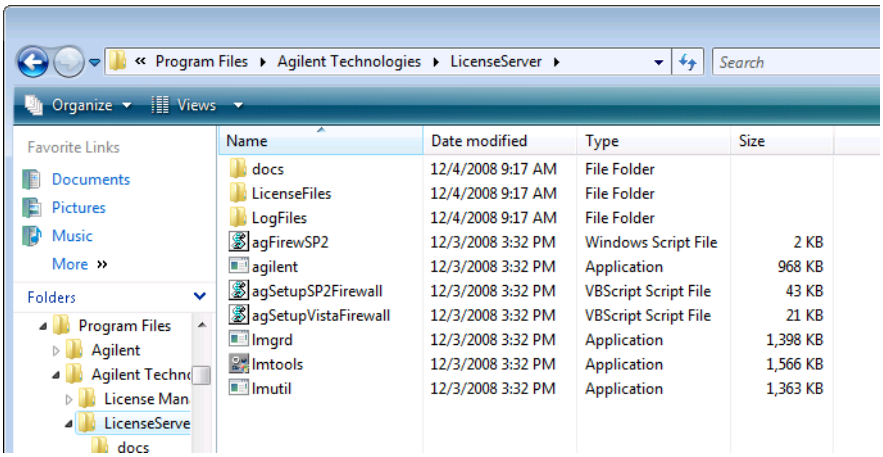
Figure 7 Ports added to the Windows Firewall exceptions

7 Click **OK** to close the Windows Firewall dialog.

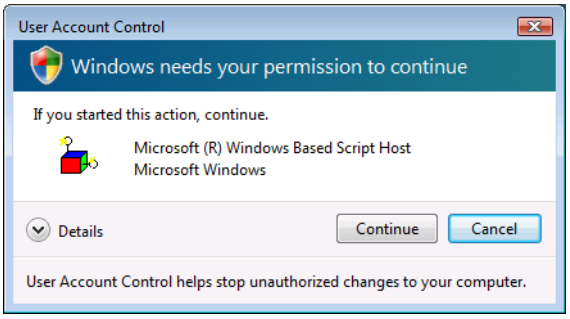
On PCs with Windows Vista

On a PC with the Windows Vista business or enterprise operating system, follow these steps:

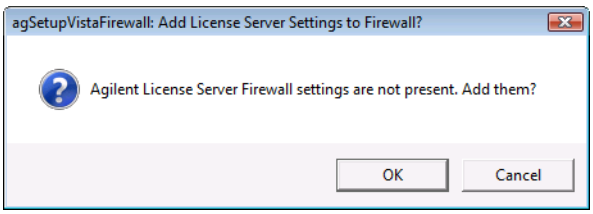
1 Navigate to the LicenseServer directory (the default install location is C:/Program Files/Agilent Technologies/) and double-click the "agSetupVistaFirewall.vbs" to run the script.



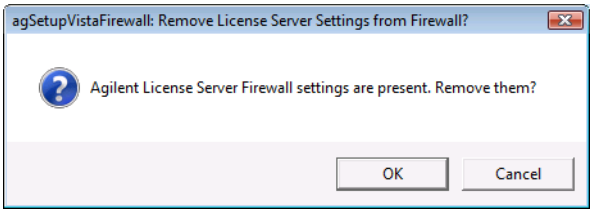
2 In the User Account Control dialog, click **Continue**.



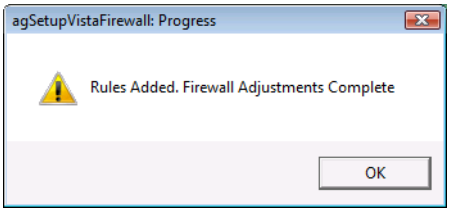
3 In the agSetupVistaFirewall dialog, if you see "Add License Server Settings to Firewall?", click **OK**.



If you see "Remove License Server Settings from Firewall?", click **Cancel**. (The same script is also used to remove the license server firewall settings.)

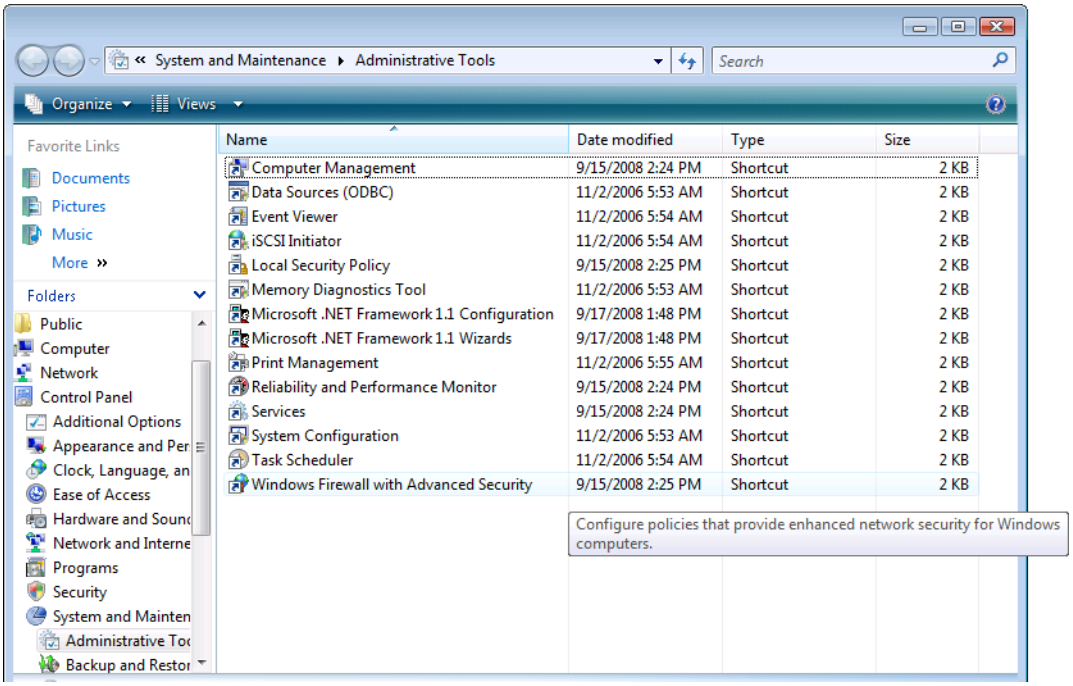


After the script completes, you see the following dialog. Click **OK**.



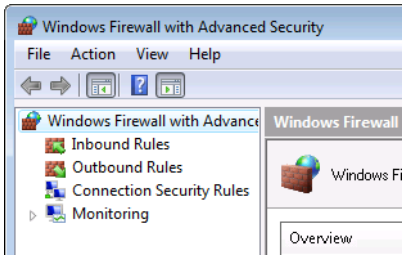
4 To verify the results of the script:

a Open the **Windows Firewall with Advanced Security** control panel applet (under **Control Panel>System and Maintenance>Administrative Tools>**).



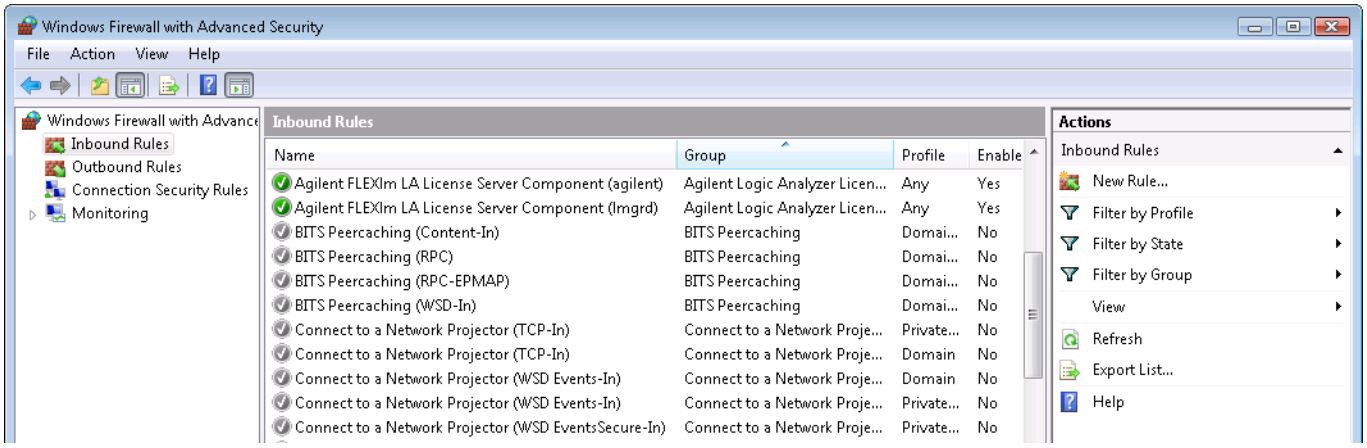
b In the User Account Control dialog, click **Continue**.

c In the Windows Firewall with Advanced Security window, select **Inbound Rules**.



d In the Inbound Rules list, make sure you see both:

- Agilent FLEXlm LA License Server Component (agilent).
- Agilent FLEXlm LA License Server Component (lmgrd).



e Close the Windows Firewall with Advanced Security window.

If you need to use different port numbers in Windows Vista

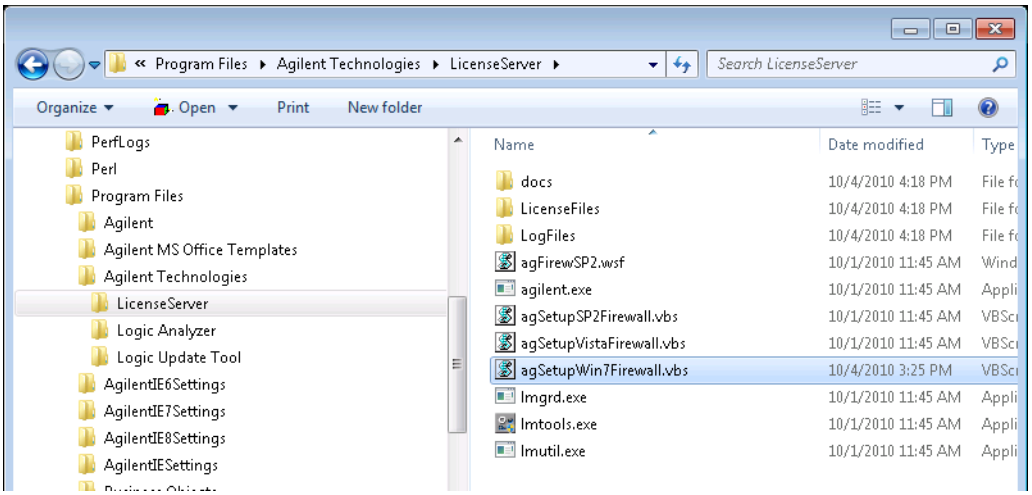
To use different port numbers in Windows Vista, simply change the port numbers specified in the license file and restart the license server service.

Again, port numbers from 27000 through 27009 are recommended, but you can use any unused port number from 0 through 64000.

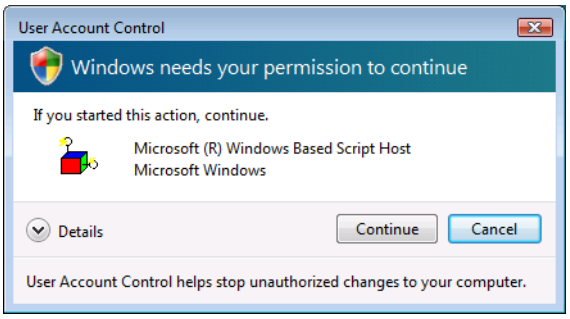
On PCs with Windows 7

On a PC with the Windows 7 business or enterprise operating system, follow these steps:

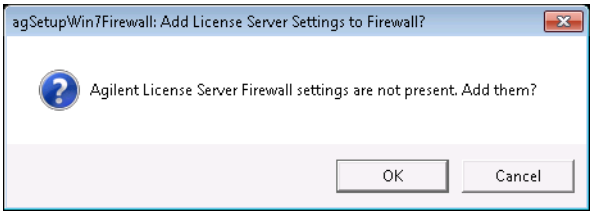
1 Navigate to the LicenseServer directory (the default install location is C:/Program Files/Agilent Technologies/) and double-click the "agSetupWin7Firewall.vbs" to run the script.



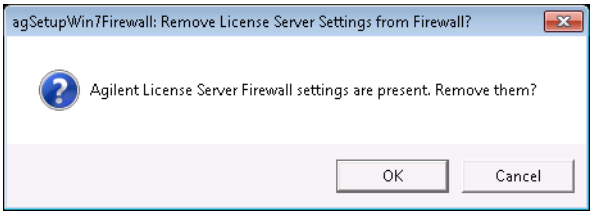
2 In the User Account Control dialog, click **Continue**.



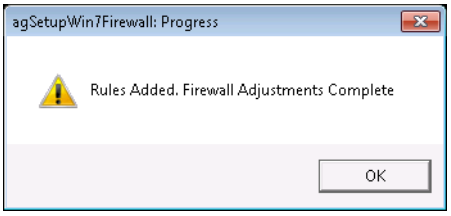
3 In the agSetupWin7Firewall dialog, if you see "Add License Server Settings to Firewall?", click **OK**.



If you see "Remove License Server Settings from Firewall?", click **Cancel**. (The same script is also used to remove the license server firewall settings.)

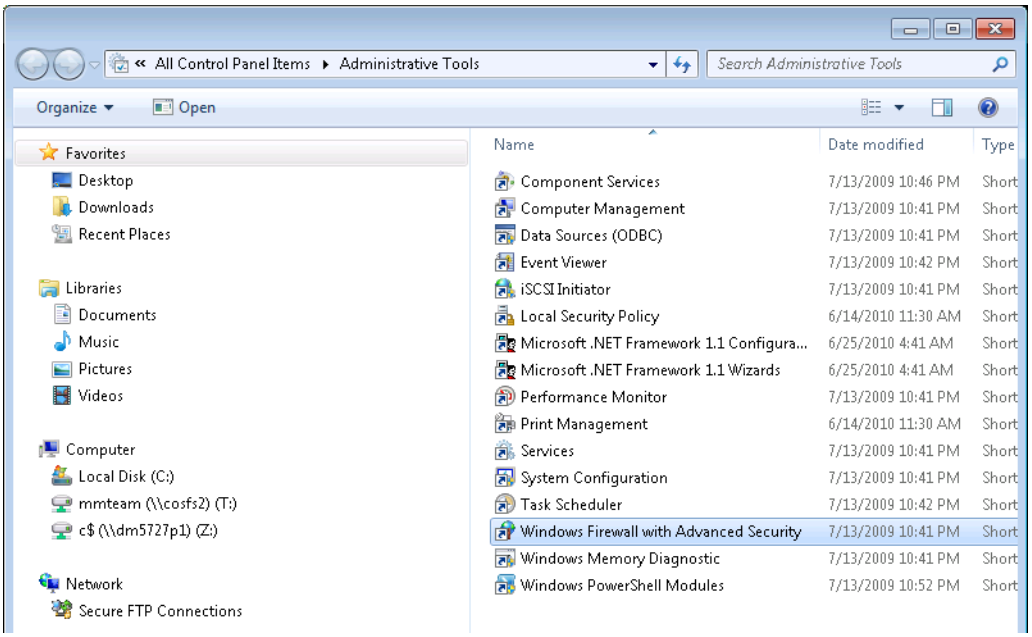


After the script completes, you see the following dialog. Click **OK**.



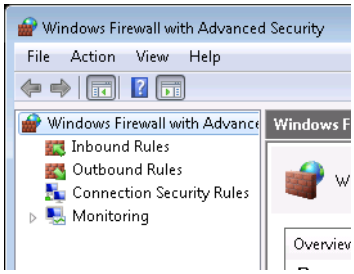
4 To verify the results of the script:

a Open the **Windows Firewall with Advanced Security** control panel applet (under **Control Panel>Administrative Tools>**).



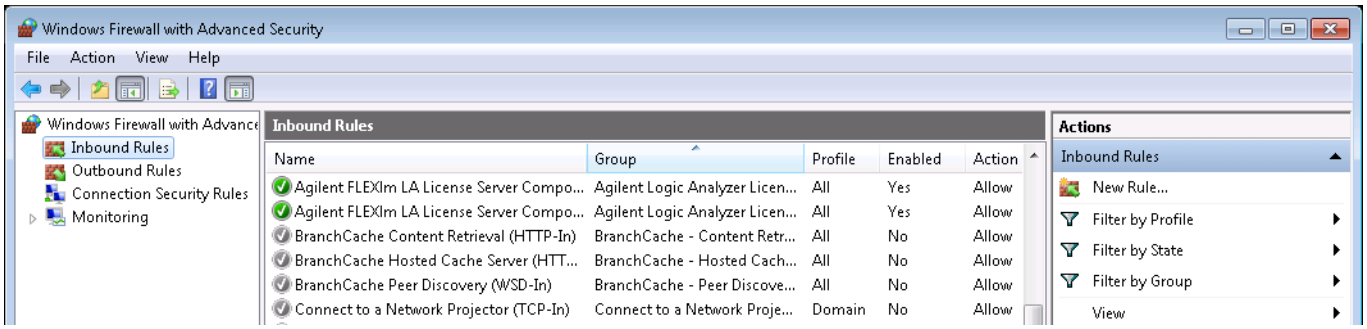
b In the User Account Control dialog, click **Continue**.

c In the Windows Firewall with Advanced Security window, select **Inbound Rules**.



d In the Inbound Rules list, make sure you see both:

- Agilent FLEXlm LA License Server Component (agilent).
- Agilent FLEXlm LA License Server Component (lmgrd).



e Close the Windows Firewall with Advanced Security window.

If you need to use different port numbers in Windows 7

To use different port numbers in Windows 7, simply change the port numbers specified in the license file and restart the license server service.

Again, port numbers from 27000 through 27009 are recommended, but you can use any unused port number from 0 through 64000.

Server Step 5: Configure and Start the Server

1 Run the lmtools.exe application by choosing **Start>All Programs>Agilent Logic Analyzer>Utilities>License Server>LM Tools** from the Windows Start menu.

2 Select the **Config Services** tab.

3 Enter a name in the **Service Name** field, use something to distinguish this, such as "Agilent FLEXnet Service".

4 In the **Path to lmgrd.exe file** field, enter (or browse to):

C:\Program Files\Agilent Technologies\LicenseServer\lmgrd.exe (default location)

5 In the **Path to license file** field, enter (or browse to):

C:\Program Files\Agilent Technologies\LicenseServer\LicenseFiles\<filename> (default location)

6 In the **Path to the debug log file** field, enter (or browse to):

C:\Program Files\Agilent Technologies\LicenseServer\LogFiles\agilent.log (default location)

7 Check the **Use Services** box.

8 Check the **Start Server at Powerup** box if desired.

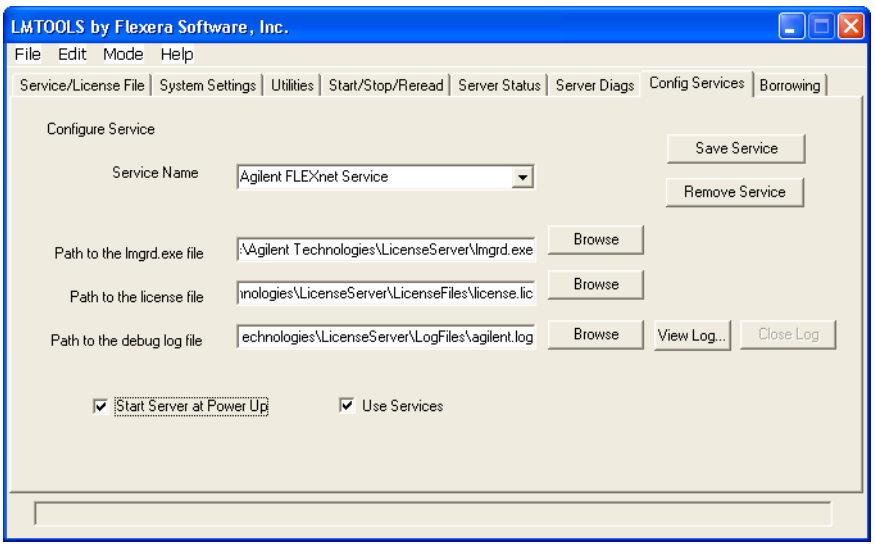


Figure 8 LMTOOLS dialog after filling in fields to setup server

9 Click the **Save Service** button.

10 Select **Yes** when asked if you would like to save the service.

11 Select the **Service/License File** tab.

12 Select the **Configuration using Services** option.

13 Select the service you just created in the list.

14 Select the **Start/Stop/Reread** tab.

15 Press the **Start Server** button.

16 Select the **Server Status** tab.

17 Press the **Perform Status Enquiry** button.

18 At this point, if set up correctly, you should see that the main (lmgrd) server is up and that the vendor daemons (agilent, futureplus) are up. Also, you should see a list of licenses available on the server.

If there are problems, see the *FLEXnet Publisher Licensing Toolkit 11.8 License Administration Guide* included with the license server software as: "LicenseAdministration.pdf".

Setting Up Client Logic Analyzers or PCs

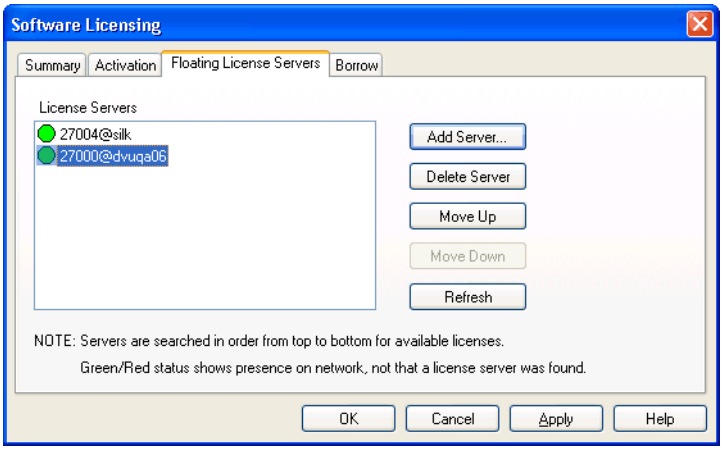
This section walks you through configuration of the logic analysis software so that it can locate and use the new central license server. This section must be accomplished for each client logic analyzer or PC that will access the central server.

NOTE With the 3.20 release of the *Agilent Logic Analyzer* application, you had to set up the LM_LICENSE_FILE environment variable to access floating license servers. Starting with the 3.30 release, license servers are accessed from within the *Agilent Logic Analyzer* application, and you must not use the LM_LICENSE_FILE environment variable any more.

NOTE If the central license server is a logic analyzer (typical in multi-frame configurations), then you must also configure the logic analysis software on it by following the steps in this section.

Client Step 1: Add the license server using the Agilent Logic Analyzer application

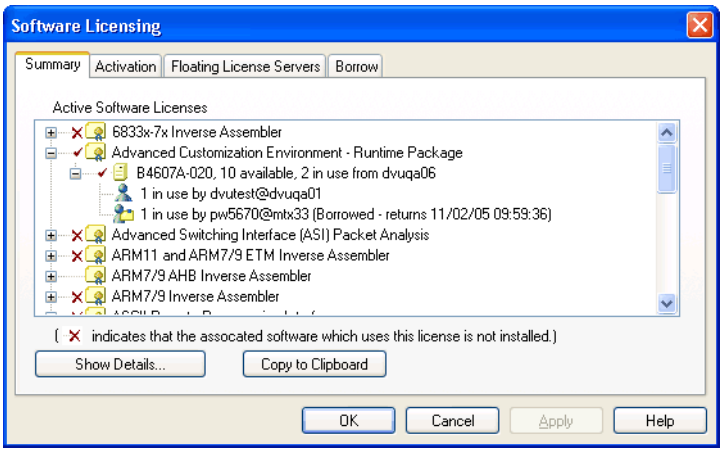
1 See "To access floating license servers" in the *Agilent Logic Analyzer* application's online help. This topic is under the "Managing Software Licenses" topic.



Client Step 2: Verification of Server Access

1 To verify that all expected licenses are available, see "To view active software license information" in the *Agilent Logic Analyzer*

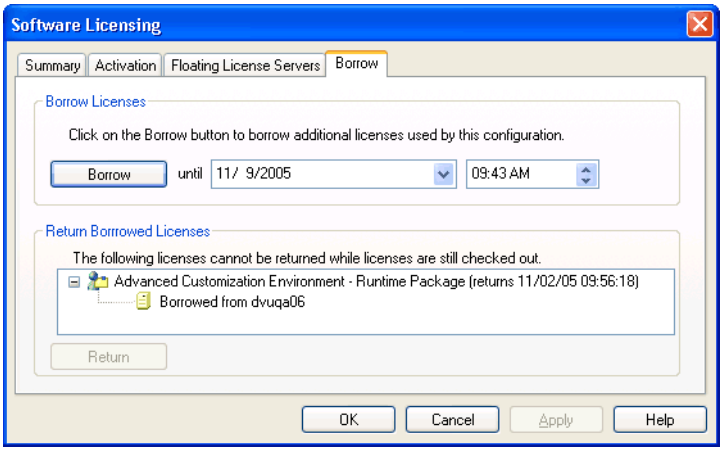
application's online help. This topic is under the "Managing Software Licenses" topic.



Borrowing Licenses on a Client

If you need to "check out" a licence, for example, for a laptop that will be off the network for a period of time, you can borrow a floating license from the server.

1 To borrow licenses or return borrowed licenses early, see "To borrow floating licenses and return them early" in the *Agilent Logic Analyzer* application's online help. This topic is under the "Managing Software Licenses" topic.



Installing New License Files After the Server is Running

After the License Server is up and running, you may find yourself wanting to add licenses for new features or to support more simultaneous users. Follow these steps to adjust available licenses:

1 Install all license information into one file in the directory:

C:\Program Files\Agilent Technologies\LicenseServer\LicenseFiles (default location)

When copying license information from new license files, make sure the first two lines in the new license file (SERVER and VENDOR) are the same as the existing license file (to verify the licenses are for the correct server); then, copy the remaining license information to the existing file.

2 Start the lmtools.exe application:

C:\Program Files\Agilent Technologies\LicenseServer\lmtools.exe (default location)

3 Stop the license server:

- **a** Select the **Start/Stop/Reread** tab.
- **b** Select the correct license service in the list.
- **c** Check the **Force Server Shutdown** checkbox.
- **d** Click **Stop Server**.
- **e** Use the Windows Task Manager to verify the "lmgrd.exe" process is no longer running.

4 After the license server has been stopped, start it again by clicking **Start Server**.

Tearing Down a License Server

If you wish to no longer use a central license server, there are a small number of things you need to do to tear down the server and to adjust the clients so that they no longer attempt to get licenses from the server.

1. Shut down the logic analysis application software running on all clients.
2. At the server, shut down and remove the License Server (follow Teardown Step 1, below).
3. At each client, delete the license server using the *Agilent Logic Analyzer* application. See "To access floating license servers" in the *Agilent Logic Analyzer* application's online help. This topic is under the "Managing Software Licenses" topic.
4. Test licensing at each client that has its own license file.

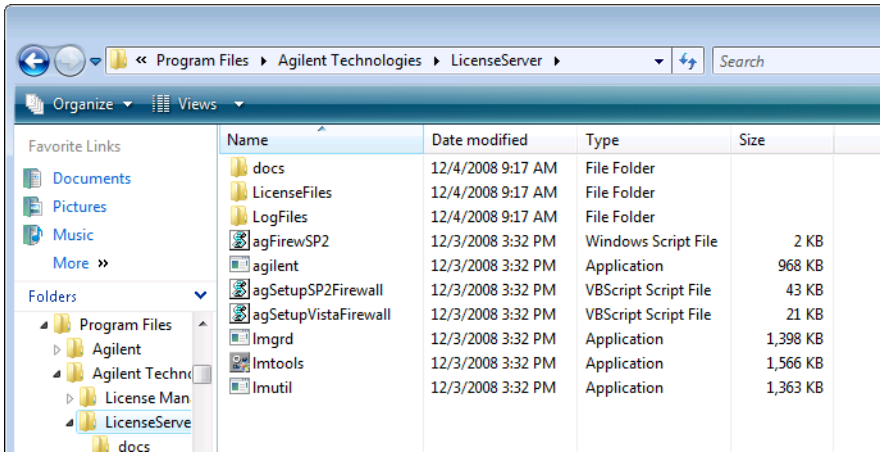
Teardown Step 1: Uninstalling the License Server

1. Undo the firewall changes for a license server:
   - For license servers on logic analyzers with Windows XP Service Pack 2, run:

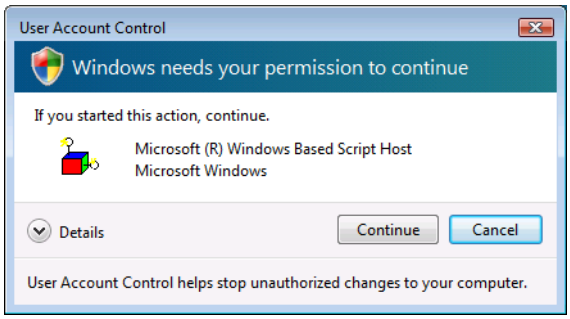
     ```
     agFirewSP2.wsf /licserver /teardown
     ```

     The agFirewSP2.wsf file is located in:

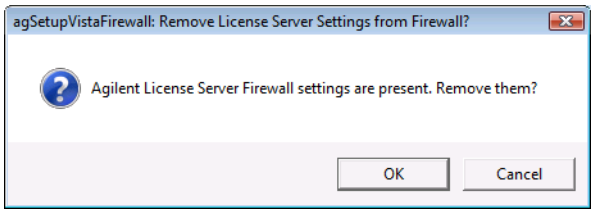
     C:\Program Files\Agilent Technologies\LicenseServer\ (by default)
   - For license servers on PCs, or on logic analyzers running Windows XP SP1 or Windows 2000, change the firewall settings to disallow access to ports 27000 and 27005.
   - For license servers on PCs with the Windows Vista business or enterprise operating system:
     i. Navigate to the LicenseServer directory (the default install location is C:/Program Files/Agilent Technologies/) and double-click the "agSetupVistaFirewall.vbs" to run the script.



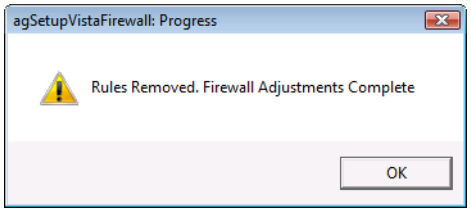
ii In the User Account Control dialog, click **Continue**.



iii In the agSetupVistaFirewall: Remove License Server Settings from Firewall? dialog, click **OK**.

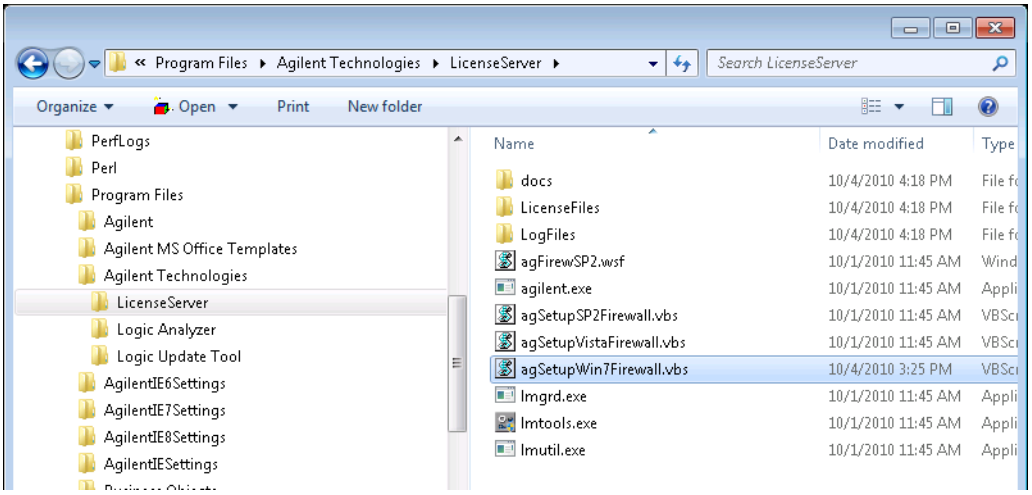


After the script completes, you see the following dialog. Click **OK**.

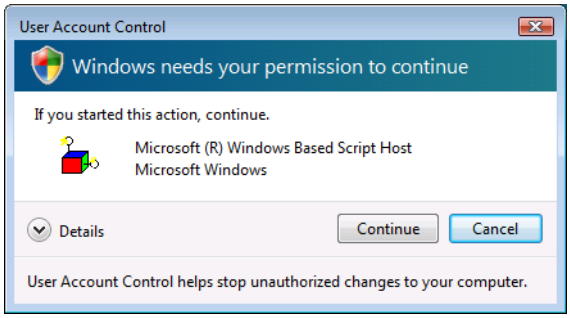


- For license servers on PCs with the Windows 7 business or enterprise operating system:

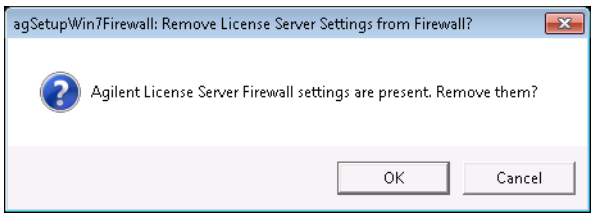
  i Navigate to the LicenseServer directory (the default install location is C:/Program Files/Agilent Technologies/) and double-click the "agSetupWin7Firewall.vbs" to run the script.



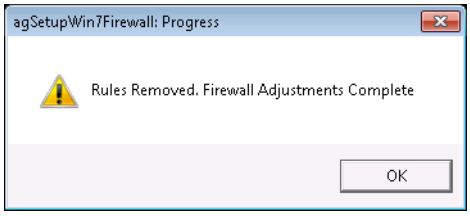
  ii In the User Account Control dialog, click **Continue**.



  iii In the agSetupWin7Firewall: Remove License Server Settings from Firewall? dialog, click **OK**.



  After the script completes, you see the following dialog. Click **OK**.



2 Run the lmtools.exe application; this is also located in:

C:\Program Files\Agilent Technologies\LicenseServer\ (by default)

3 Select the **Service/License File** tab.

4 Select the **Configuration using Services** option.

5 Select the Service that you are going to remove.

6 Select the **Start/Stop/Reread** tab.

7 Press the **Stop Server** button.

8 Select the **Config Services Tab**.

9 Select the Service that you are going to remove.

10 Press the **Remove Service** button.

11 Exit the lmtools.exe application.

12 Go to the Add/Remove Programs selection from the Control Panel.

13 Select **Remove** for the "Agilent Logic Analyzer License Server".

Sample License Files

License files for servers (with floating licenses) are found in the directory:

C:\Program Files\Agilent Technologies\LicenseServer\LicenseFiles (default location)

Node-locked license files on clients or servers are found in the *Agilent Logic Analyzer* application install directory:

C:\Program Files\Agilent Technologies\Logic Analyzer\License\ (by default)

Sample Server File (3 Lines):

```
SERVER MTXSPECIAL2 0010b57596f3 27000
VENDOR agilent PORT=27005
INCREMENT Protocol_PCI_Express agilent 1.0 permanent 6 \
   BORROW SIGN=000000000000
```

Notice that:

- Last value on the right edge of the SERVER line is the port number which tells the license server to listen at this port number instead of randomly chosen one within the 27000-27009 range.
- PORT=27005 on the VENDOR line does the same for the vendor daemon. It forces it to listen on port 27005 instead of a randomly picked one.
- These port assignments are necessary so that the specific port numbers can be allowed through the firewall (while blocking the remaining port numbers).

Sample Node-Locked File:

```
FEATURE ARM_Inverse_Assembler agilent 1.0 permanent uncounted \
   HOSTID=DISK_SERIAL_NUM=3b97ad4d SIGN=CCDB37F05880
```

Notice that:

- The SERVER line is identical to that in the server license file.
- Port number 27000 is required so that the client can find the server.
- No VENDOR line is required.

NOTE Currently, by convention, the ports 27000 and 27005 are used by the *Agilent Logic Analyzer* application.

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