

# Infiniium Oscilloscopes License Server

# Notices

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This document describes how to set up a license server for the Infiniium oscilloscopes software.

**See Also** For detailed 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 licenses involves specially configuring one PC or Infiniium oscilloscope as your license server, obtaining license files for it, and testing to verify that the server is working. Then, each Infiniium oscilloscope that will obtain licenses from this central server must be set up and tested.

Here are the high-level steps to follow. Each step is described in more detail in this document.

- 1** Set up the server:
  - a** Identify the server and get license files.
  - b** Install the License Server package.
  - c** Edit the registry key if necessary.
  - d** Install the server's license file.
  - e** Adjust the firewall so the license requests can get through.
  - f** Configure, start, and test the server.
- 2** Set up and test each client:
  - a** Add the license server using the Infiniium application.
  - b** Test to see that this client can get to the server.

After setup and testing are complete, you will be ready to run licensed Infiniium oscilloscope software.

## Setting Up the License Server

This section steps you through the installation and setup of the license server for Infiniium oscilloscopes.

### Server Step 1: Identify the server

- 1 Determine which PC or oscilloscope to use as the license server.
- 2 Redeem the certificates for the license files.

### Server Step 2: Install the license server software

- 1 Download the license server software from the Keysight website:  
"[www.keysight.com](http://www.keysight.com)"
- 2 Search for **N5435A**, select the **Trials & Licenses** tab, and select **Details & Download**.
- 3 Select **Download** to run the installation package on the designated server.

### Server Step 3: Add the server license file path to the registry key

Perform this step only if you are running the license server and the Infiniium application on the same instrument.

Add the server license file path to the AGILENT\_LICENSE\_FILE registry key. (When the Infiniium application starts up, it adds the node-locked license file path to the registry key.)

To locate the registry key, click **Start**, type **regedit.exe** in the search box, and press **[Enter]**.

In the Registry Editor, 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(x86)\Agilent Technologies\License Server - Infiniium\
LicenseFiles
```

### Server Step 4: Install the server license file

Install all license information into one file in the directory. The default location is:

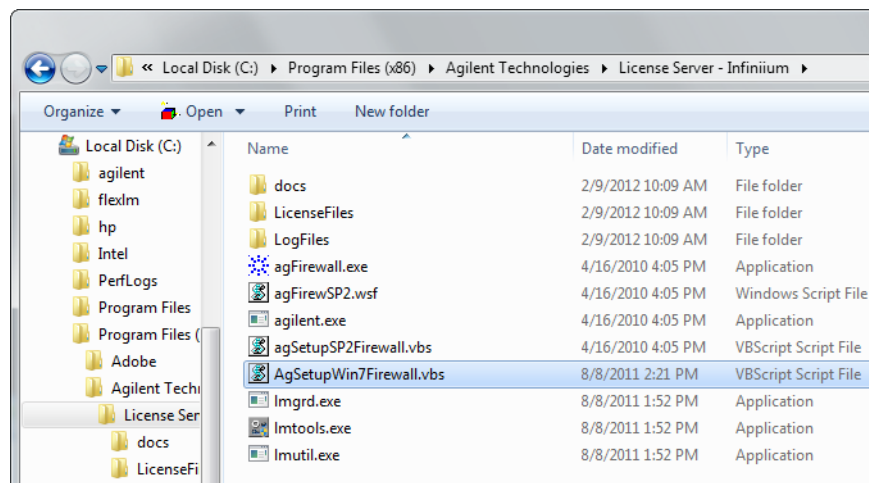
C:\Program Files(x86)\Agilent Technologies\License Server - Infiniium\  
LicenseFiles

### Server Step 5: Adjust the server firewall to allow license services

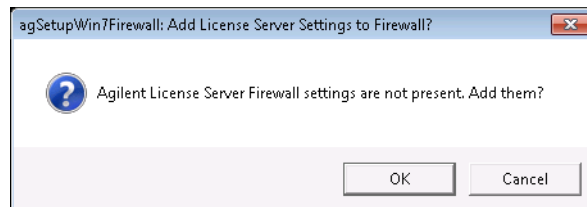
This section describes how to adjust the server firewall on PCs with Windows 7.

When the license server is on a PC, you must make sure that its firewall allows access to ports 27000 and 27009.

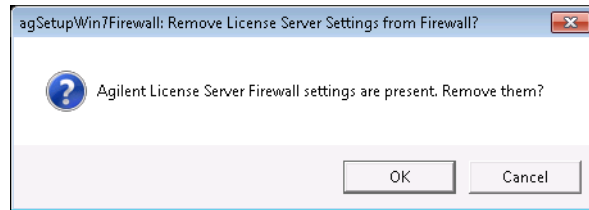
- 1 Navigate to the **LicenseServer - Infiniium** directory as shown below and double-click **agSetupWin7Firewall.vbs** to run the setup/remove firewall script.



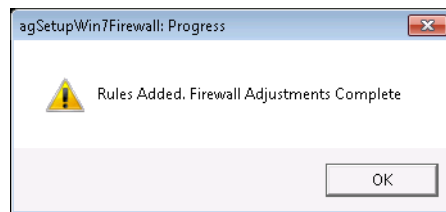
- 2 In the User Account Control dialog box, click **Yes** to allow permission.
- 3 When the following dialog box appears, click **OK**.



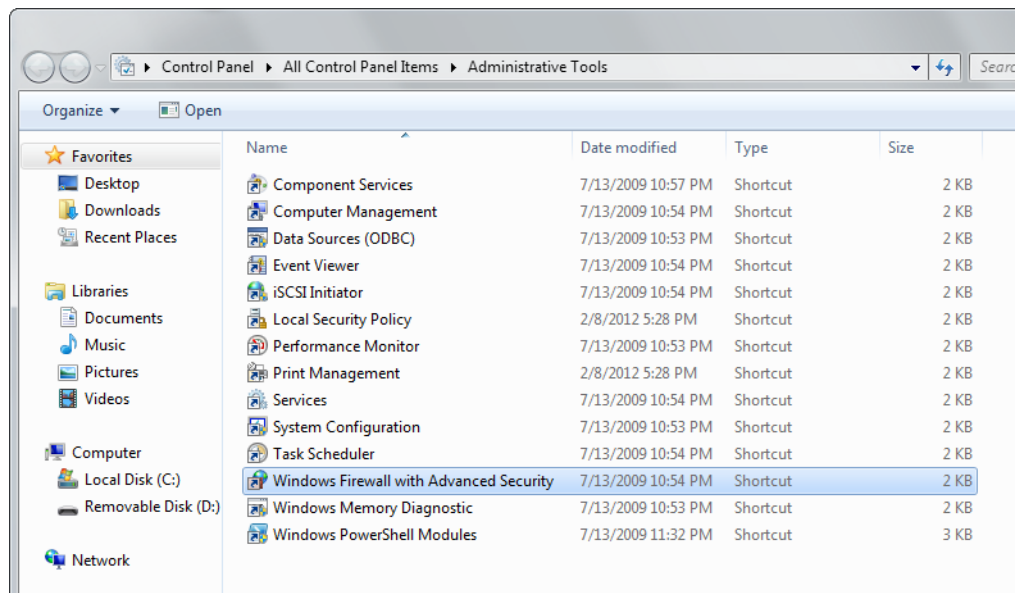
Click **Cancel** if the following screen appears. (The same script is used to both add and remove the license server firewall settings.)



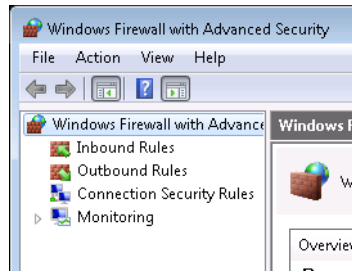
When the script completes, the following dialog box appears. Click **OK**.



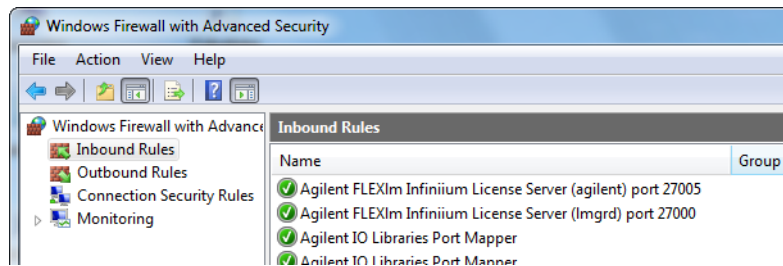
- 4 To verify the results of the script:
  - a Open the **Windows Firewall with Advanced Security** control panel applet:



- b In the User Account Control dialog box, click **Yes**.
    - c In the Windows Firewall with Advanced Security window, select **Inbound Rules**.



- d In the Inbound Rules list, make sure you see both of these entries:
- Agilent FLEXlm Infiniium License Server Component (agilent) port 27005.
  - Agilent FLEXlm Infiniium License Server Component (lmgrd) port 27000.



- e Close the Windows Firewall with Advanced Security window.

If you need to use different port numbers

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

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

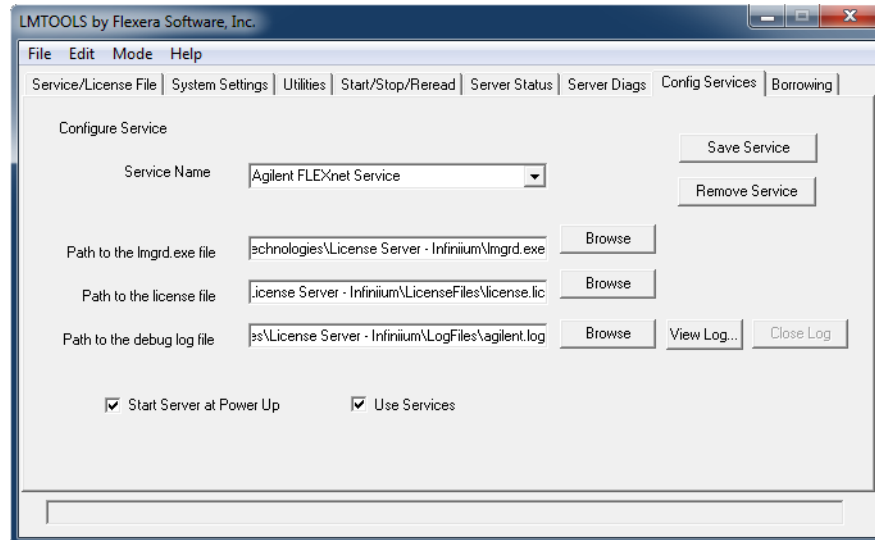
### Server Step 6: Configure and start the server

- 1 Run the `lmtools.exe` application by choosing **Start > All Programs > Agilent Infiniium Oscilloscope > License Server > LM Tools** from the Windows Start menu.
- 2 Select the **Config Services** tab.
- 3 Enter a distinguishing name in the **Service Name** field, such as FLEXnet Service.
- 4 In the **Path to the `lmgrd.exe` file** field, enter (or browse to):  
 C:\Program Files(x86)\Agilent Technologies\License Server - Infiniium\lmgrd.exe (default location)
- 5 In the **Path to the license file** field, enter (or browse to):  
 C:\Program Files(x86)\Agilent Technologies\License Server - Infiniium\LicenseFiles\`<filename>` (default location)
- 6 In the **Path to the debug log file** field, enter (or browse to):



C:\Program Files(x86)\Agilent Technologies\License Server - Infiniium\LogFiles\agilent.log (default location)

- 7 Check the **Use Services** box.
- 8 Check the **Start Server at Power Up** box if desired.



**Figure 1** LMTOOLS dialog box after filling in fields to set up 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 To verify that the server has been configured 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 Infiniium Oscilloscopes

This section steps you through configuration of the Infiniium application so that it can locate and use the new central license server. Follow the steps for each client Infiniium oscilloscope that will access the central server.

### NOTE

If the central license server is an oscilloscope, then you must also configure the Infiniium application on it by following the steps in this section.

### Client Step 1: Add the license server using the Infiniium application

- 1 In the Infiniium application, choose **Utilities > Install Legacy Licenses...**
- 2 In the Install Option License dialog box, select **Server License** and enter the license server name and port number in the **License Server** and **Port** fields.

### Client Step 2: Verify server access

If the oscilloscope is able to access the server, you will see the licenses in the **License to Borrow** drop-down list.



## Borrowing Licenses on a Client

You need to borrow a license from the server before you can use it.

To borrow licenses or return borrowed licenses early:

- 1 In the Infiniium application, choose **Utilities > Install Legacy Licenses...**
- 2 In the Install Option License dialog box, select **Server License** and enter the license server name and port number in the **License Server** and **Port** fields.
- 3 Select the license you want to borrow or return and click **Borrow License** or **Return License**.

## Installing New License Files After the Server is Running

After the License Server is up and running, you may want 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. The default location is:

C:\Program Files(x86)\Agilent Technologies\License Server - Infiniium\  
LicenseFiles

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 that the licenses are for the correct server); then copy the remaining license information to the existing file.

- 2 Run the lmtools.exe application by choosing **Start > All Programs > Agilent Infiniium Oscilloscope > License Server > LM Tools** from the Windows Start menu.
- 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 that the lmgrd.exe process is no longer running.
- 4 After the license server has been stopped, start it again by clicking **Start Server**.

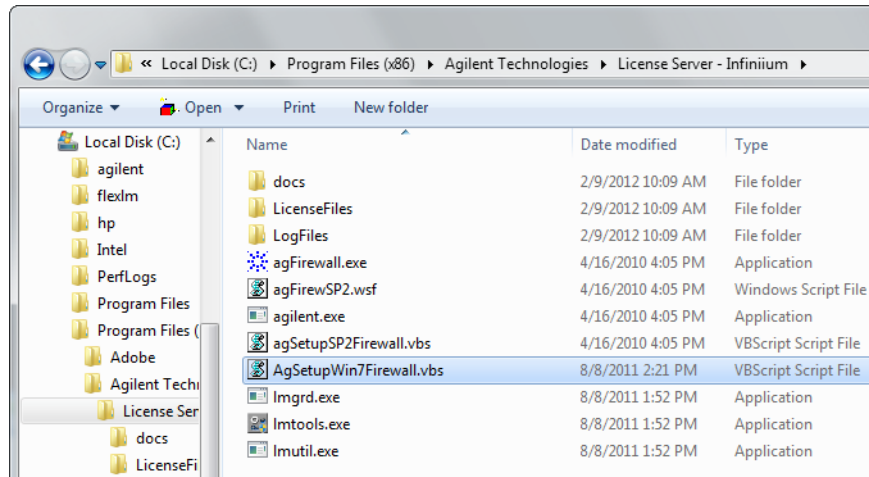
## Tearing Down a License Server

If you do not want to use a central license server any more, there are a few steps required to tear down the server and adjust the clients so they no longer attempt to get licenses from the server.

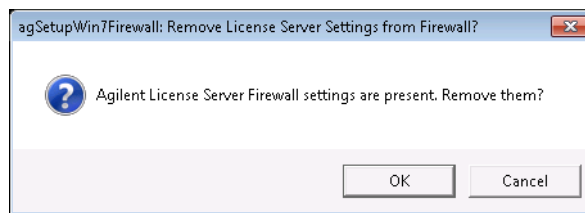
- 1 Shut down the Infiniium application running on all clients.
- 2 At the server, shut down and remove the license server by following the steps in the next section, "Uninstalling the License Server".
- 3 At each client, delete the license server using the Infiniium application:
  - a Choose **Utilities > Install Legacy Licenses...**
  - b In the Install Option License dialog box, select **Local License**.
  - c Click **Install License**.
- 4 Test licensing at each client that has its own license file.

## Uninstalling the License Server

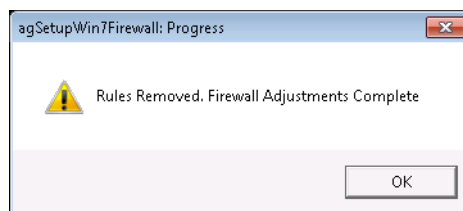
- 1 Undo the firewall changes for a license server
  - a Navigate to the LicenseServer - Infiniium directory as shown below and double-click **agSetupWin7Firewall.vbs** to run the setup/remove firewall script.



- b In the User Account Control dialogbox, click **Yes** to allow permission.
- c When the following dialog box appears, click **OK**.



When the script completes, the following dialog box appears. Click **OK**.



- 2 Run the Imtools.exe application, located here by default:  
 C:\Program Files(x86)\Agilent Technologies\LicenseServer - Infiniium\

- 3 Select the **Service/License File** tab.
- 4 Select the **Configuration using Services** option.
- 5 Select the service 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 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 **Infiniium Oscilloscope License Server**.

## Sample License Files

The default location for servers (with floating licenses) is:

C:\Program Files(x86)\Agilent Technologies\License Server - Infiniium\  
LicenseFiles

Node-locked license files on clients or servers are found in the Infiniium application install directory:

C:\scope\bin\license.dat

### Sample server file (3 Lines):

```
SERVER LABI-855A-QA11 003064015D9C 27000
VENDOR agilent PORT=27005
INCREMENT infinium_clock agilent 1.0 permanent 1 \
  vendor_info=DVD_RnD_Web.101407.845245 ISSUER=101407.798278 \
  BORROW=2184 SIGN=09D6318A69A2 V7.1_SIGN=41E141A04E8E
INCREMENT infinium_jitter agilent 1.0 permanent 1 \
  vendor_info=DVD_RnD_Web.101407.845245 ISSUER=101407.347717 \
  BORROW=2184 SIGN=C48EF70A6216 V7.1_SIGN=557E7396E966
INCREMENT infinium_pcieexpress agilent 1.0 permanent 1 \
  vendor_info=DVD_RnD_Web.101407.845245 ISSUER=101407.962310 \
  BORROW=2184 SIGN=0028C3421D8A V7.1_SIGN=1F25D78E1352
```

Notice that:

- The 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 choosing 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 infinium_jitter 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

By convention, ports 27000 and 27005 are used by the Infiniium application.