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# Keysight i7090 Software

Single/Triple-Redundant Network License Server

# Notices

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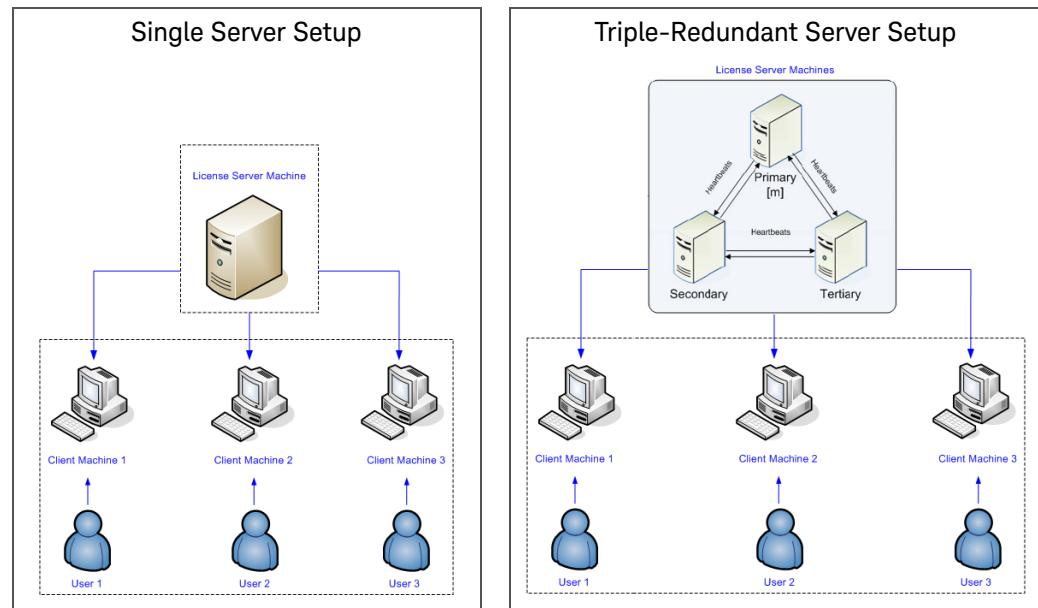
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## Overview

Floating licenses reside on a license server and are checked out for use on individual workstations, then returned when no longer needed so that they can be used on another workstation.

You can have a single server or triple server setup. Configuring triple-redundant license servers (three servers on the same network) allows your licensed products to continue to operate even if one of the servers goes down.

**Figure 1** License server setup



To set up the floating license server(s), you must have the appropriate license files issued for either single server or triple server machines, based on the host IDs that you provided when redeeming the licenses.

### Obtaining the Host ID

To obtain the host ID, type `getmac /v /fo list` in a Command Prompt window. The host ID is listed as the Physical Address of the Ethernet network adapter.

```
C:\>getmac /v /fo list
Connection Name: Ethernet
Network Adapter: Intel(R) Ethernet I210-T1 GbE NIC
Physical Address: 68-05-CA-8D-59-2B
Transport Name: \Device\Tcpip_{5A595A44-C6A9-4A79-A9E9-09BF2E4A599D}
```

# License Server Requirements

Identify the machine(s) to be set up as network license servers.

- Make sure they are stable.
- Do not use systems that are frequently rebooted or shut down.
- When setting up triple-redundant servers,
  - It is best to obtain host IDs of the same type for all three machines. Issues can arise if different host ID types are used in the license server configuration.
  - Ensure that the servers are able to communicate with each other. The setup will fail if machine communication cannot be established. (For example, you may need to check the firewall settings.)

## IMPORTANT

Be sure the machine is not already set up as a server machine for any other products. Do not use the same machine as a floating license server for different products.

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### Hardware requirements

- Minimum 4 GB memory
- Minimum 500 GB disk space

### Software requirements: Single server

Pathwave License Manager is supported on:

- Windows 11
- Windows 10 (x64), version 20H2 or later

### Software requirements: Triple servers

Keysight license server software (lmgrd.exe and agileesofd.exe) is supported on:

- Windows 11
- Windows 10 (x64, 64-bit)

## Installation Tips

- Do not put the license file on a network file server. If you do this, you lose the advantages of having failover protection because the file server becomes a possible single point of failure.
- The license server manager cannot start vendor daemons from multiple software publishers in a triple-redundant server setup. If any system must run more than one vendor daemon, then the license administrator must run separate instances of the license server to support the other vendor daemons. Make sure that the port numbers do not clash.

# Setting Up a Single License Server

## IMPORTANT

Be sure the machine is not already set up as a server machine for any other products. Do not use the same machine as a floating license server for different products.

## NOTE

If the Keysight Network License Manager is installed on the license server machine, be sure to uninstall it before you proceed.

- 1 Copy your i7090 license file(s) to a license folder on the server machine, for example, `C:\ProgramData\Keysight\Licensing\Licenses\Server`
- 2 Use a text editor to create an options file named `agileesofd.opt` in the same license folder. Enter the following command in the file and save it:  
`TIMEOUTALL 1800`
- 3 Install Keysight license server software:
  - a On the client PC where the i7090 software is installed, go to `C:\Program Files\Keysight\i7090\LicenseSoftware` and copy the file `agileesofd_2024.07.17_win64.zip`.
  - b On the server machine, extract the files to the folder `C:\Program Files\Common Files\Keysight\Licensing\Agileesofd`
- 4 Configure a Windows service to automatically start the Keysight license server software. Follow the procedure in [Step 3 Configure Windows service to start license server software](#).

Once the server setup is done, set up the client machines which will access the floating licenses. See the *i7090 Software License Installation* guide.

# Setting Up Triple-Redundant Servers

## IMPORTANT

Be sure the machine is not already set up as a server machine for any other products. Do not use the same machine as a floating license server for different products.

## NOTE

If the Keysight Network License Manager is installed on the license server machine, be sure to uninstall it before you proceed.

## Step 1: Copy license and options files

- 1 Edit each i7090 license file to change the following SERVER line properties:

- Hostname for the three servers.
- Port number, which can be changed if needed (between 0 and 64000). However, ensure that the same port number is specified for all three servers. If you have multiple license files for the product, also ensure that they all specify the same port number.

Example:

```
SERVER PrimaryServer 17003456 27009 PRIMARY_IS_MASTER
SERVER SecondaryServer 17004355 27009
SERVER TertiaryServer 17007ea8 27009
```

## NOTE

Do not change the host IDs as the license files are issued to the server machines based on their host IDs.

- 2 Use a text editor to create an options file named **agileesofd.opt**. Enter the following command in the file and save it:

```
TIMEOUTALL 1800
```

- 3 Copy the i7090 license files and the agileesofd.opt options file to a license folder on each of the three server machines, for example, in the folder  
**C:\ProgramData\Keysight\Licensing\Licenses\Server**

## Step 2: Install Keysight license server software

On the client PC where the i7090 software is installed, go to  
**C:\Program Files\Keysight\i7090\LicenseSoftware** and copy the file  
**agileesofd\_2024.07.17\_win64.zip**.

On the server machine, extract the files to the folder  
**C:\Program Files\Common Files\Keysight\Licensing\Agileesofd**

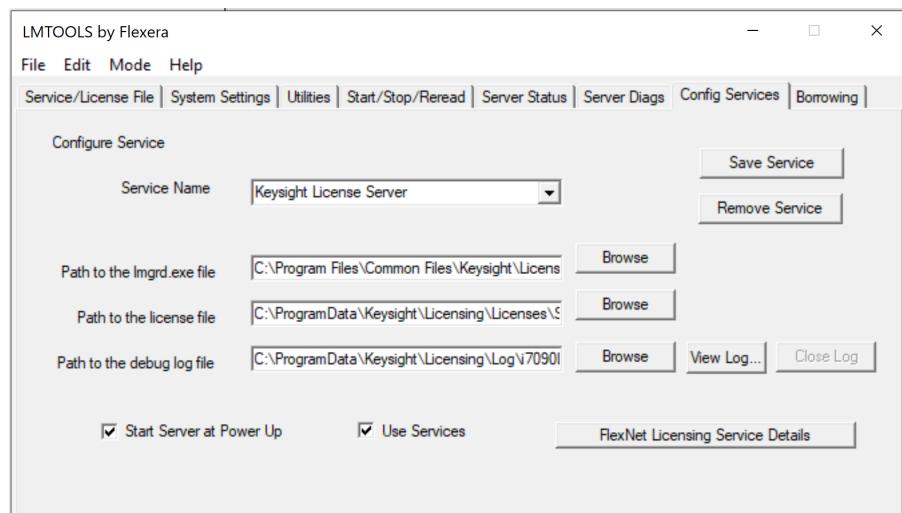
### Step 3: Configure Windows service to start license server software

This configures a Windows service to automatically start the license server manager (lmgrd) and Keysight vendor daemon (agileesofd). You must have administrator privileges to configure a Windows service. However, the service will run under the local system account as the special Local Server user, which does not have special system privileges. Therefore, ensure that:

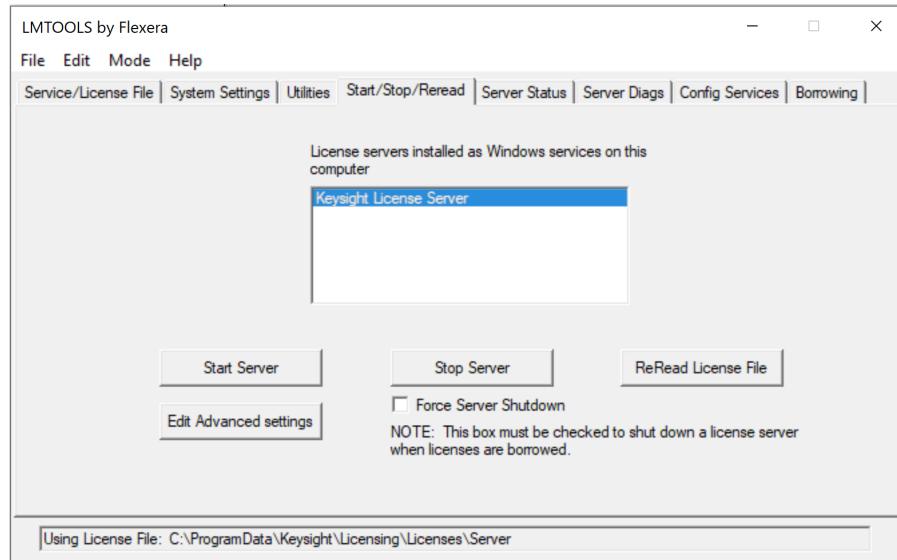
- The log file is in a location that is writable by all users. Otherwise, the service will immediately exit, and will not indicate any errors even when there are.
- The license files are in a location that is readable by all users. Otherwise the log file will contain an error indicating that the license file could not be found.

Follow these steps:

- 1 In a Command Prompt window, run `lmtools.exe` from  
`C:\Program Files\Common Files\Keysight\Licensing\Agileesofd`
- 2 On the **Service/License File** tab, select **Configuration using Services**.
- 3 On the **Config Services** tab, select a **Service Name**. Use the name **Keysight License Server**.
- 4 Click the **Browse** buttons to specify the paths to:
  - lmgrd.exe, for example,  
`C:\Program Files\Common Files\Keysight\Licensing\Agileesofd\lmgrd.exe`
  - license file, for example,  
`C:\ProgramData\Keysight\Licensing\Licenses\Server\license.lic`
  - debug log, for example,  
`C:\ProgramData\Keysight\Licensing\Log\i7090LicenseServer.log`
- 5 Also select the options **Start Server at Power Up** and **Use Services**.
- 6 Click **Save Service**.

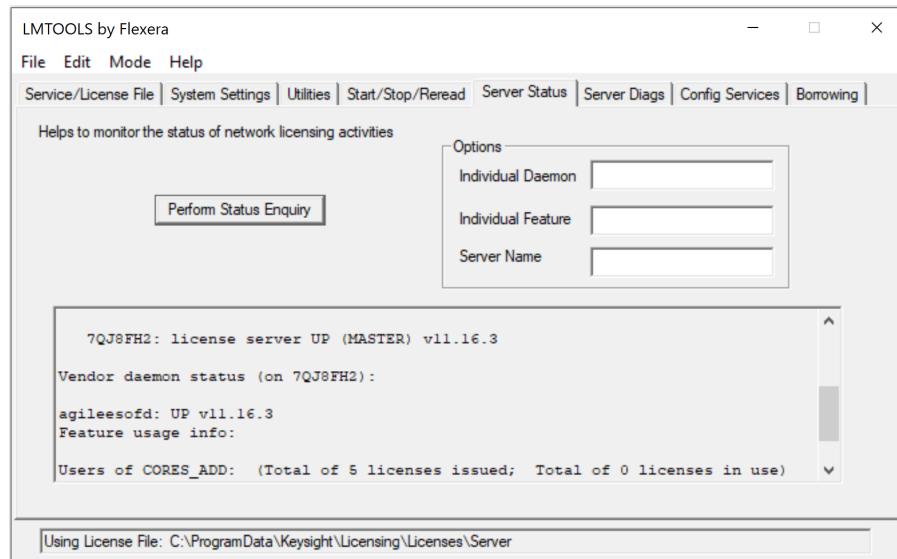


7 On the Start/Stop/Reread tab, check that the new license service is listed. Click **Start Server** to start it.



8 To verify that the license server manager and Keysight vendor daemon are running, select the **Config Services** tab again and click **View Log**. The log window will display the status.

9 To verify that the licenses have been successfully installed, select the **Server Status** tab. Click **Perform Status Enquiry**.



#### Step 4: Set up remaining servers

- 1 Repeat the setup procedure on the remaining server machines.
- 2 Start the license servers in the following order: primary, secondary, and then tertiary (that is, in the same order as they appear in the license files). Ensure that you start the designated primary server first.

Once the server setup is done, set up the client machines which will access the floating licenses. See the *i7090 Software License Installation* guide.

## Stopping the License Server

In a Command Prompt window, run the following command from  
`C:\Program Files\Common Files\Keysight\Licensing\Agileesofd:`

`lmutil lmdown -c <license folder>`  
where `<license folder>` is the location of the license files

For example:

`lmutil lmdown -c C:\ProgramData\Keysight\Licensing\Licenses\Server`

