Keysight Licensing

Quick Start Guide

Notices

Copyright Notice

© Keysight Technologies 2024-2025

No part of this manual may be reproduced in any form or by any means (including electronic storage and retrieval or translation into a foreign language) without prior agreement and written consent from Keysight Technologies, Inc. as governed by United States and international copyright laws.

Manual Part Number

Published By

Keysight Technologies
900 South Taft
Loveland CO
80538 United States

Edition

Edition 2.0, June, 2025
Printed in USA

Regulatory Compliance

This product has been designed and tested in accordance with accepted industry standards, and has been supplied in a safe condition. To review the Declaration of Conformity, go to http://www.keysight.com/go/conformity.

Warranty

THE MATERIAL CONTAINED IN THIS DOCUMENT IS PROVIDED "AS IS," AND IS SUBJECT TO BEING CHANGED, WITHOUT NOTICE, IN FUTURE EDITIONS. FURTHER, TO THE MAXIMUM EXTENT PERMITTED BY APPLICABLE LAW, KEYSIGHT DISCLAIMS ALL WARRANTIES, EITHER EXPRESS OR IMPLIED, WITH REGARD TO THIS MANUAL AND ANY INFORMATION CONTAINED HEREIN, INCLUDING BUT NOT LIMITED TO THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. KEYSIGHT SHALL NOT BE LIABLE FOR ERRORS OR FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES IN CONNECTION WITH THE FURNISHING, USE, OR PERFORMANCE OF THIS DOCUMENT OR OF ANY INFORMATION CONTAINED HEREIN. SHOULD KEYSIGHT AND THE USER HAVE A SEPARATE WRITTEN AGREEMENT WITH WARRANTY TERMS COVERING THE MATERIAL IN THIS DOCUMENT THAT CONFLICT WITH THESE TERMS, THE WARRANTY TERMS IN THE SEPARATE AGREEMENT SHALL CONTROL.

KEYSIGHT TECHNOLOGIES DOES NOT WARRANT THIRD-PARTY SYSTEM-LEVEL (COMBINATION OF CHASSIS, CONTROLLERS, MODULES, ETC.) PERFORMANCE, SAFETY, OR REGULATORY COMPLIANCE, UNLESS SPECIFICALLY STATED.

Technology Licenses

The hardware and/or software described in this document are furnished under a license and may be used or copied only in accordance with the terms of such license.

U.S. Government Rights

The Software is "commercial computer software," as defined by Federal Acquisition Regulation ("FAR") 2.101. Pursuant to FAR 12.212 and 27.405-3 and Department of Defense FAR Supplement ("DFARS") 227.7202, the U.S. government acquires commercial computer software under the same terms by which the software is customarily provided to the public. Accordingly, Keysight provides the Software to U.S. government customers under its standard commercial license, which is embodied in its End User License Agreement (EULA), a copy of which can be found at http://www.keysight.com/find/sweula. The license set forth in the EULA represents the exclusive authority by which the U.S. government may use, modify, distribute, or disclose the Software. The EULA and the license set forth therein, does not require or permit, among other things, that Keysight: (1) Furnish technical information related to commercial computer software or commercial computer software documentation that is not customarily provided to the public; or (2) Relinquish to, or otherwise provide, the government rights in excess of these rights customarily provided to the public to use, modify, reproduce, release, perform, display, or disclose commercial computer software or commercial computer software documentation. No additional government requirements beyond those set forth in the EULA shall apply, except to the extent that those terms, rights, or licenses are explicitly required from all providers of commercial computer software pursuant to the FAR and the DFARS and are set forth specifically in writing elsewhere in the EULA. Keysight shall be under no obligation to update, revise or otherwise modify the Software. With respect to any technical data as defined by FAR 2.101, pursuant to FAR 12.211 and 27.404.2 and DFARS 227.7102, the U.S. government acquires no greater than Limited Rights as defined in FAR 27.401 or DFAR 227.7103-5 (c), as applicable in any technical data.

Safety Notices

CAUTION

A CAUTION 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 damage to the product or loss of important data. Do not proceed beyond a CAUTION notice until the indicated conditions are fully understood and met.

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.

The following safety precautions should be observed before using this product and any associated instrumentation.

This product is intended for use by qualified personnel who recognize shock hazards and are familiar with the safety precautions required to avoid possible injury. Read and follow all installation, operation, and maintenance information carefully before using the product.

WARNING

If this product is not used as specified, the protection provided by the equipment could be impaired. This product must be used in a normal condition (in which all means for protection are intact) only.

The types of product users are:

- Responsible body is the individual or group responsible for the use and maintenance of equipment, for ensuring that the equipment is operated within its specifications and operating limits, and for ensuring operators are adequately trained.
- Operators use the product for its intended function. They must be trained in electrical safety procedures and proper use of the instrument. They must be protected from electric shock and contact with hazardous live circuits.
- Maintenance personnel perform routine procedures on the product to keep it operating properly (for example, setting the line voltage or replacing consumable materials). Maintenance procedures are described in the user documentation. The procedures explicitly state if the operator may perform them. Otherwise, they should be performed only by service personnel.
- Service personnel are trained to work on live circuits, perform safe installations, and repair products. Only properly trained service personnel may perform installation and service procedures.

WARNING

Operator is responsible to maintain safe operating conditions. To ensure safe operating conditions, modules should not be operated beyond the full temperature range specified in the Environmental and physical specification. Exceeding safe operating conditions can result in shorter lifespans, improper module performance and user safety issues. When the modules are in use and operation within the specified full temperature range is not maintained, module surface temperatures may exceed safe handling conditions which can cause discomfort or burns if touched. In the event of a module exceeding the full temperature range, always allow the module to cool before touching or removing modules from chassis.

Keysight products are designed for use with electrical signals that are rated Measurement Category I and Measurement Category II, as described in the International Electrotechnical Commission (IEC) Standard IEC 60664. Most measurement, control, and data I/O signals are Measurement Category I and must not be directly connected to mains voltage or to voltage sources with high transient over-voltages. Measurement Category II connections require protection for high transient over-voltages often associated with local AC mains connections. Assume all measurement, control, and data I/O connections are for connection to Category I sources unless otherwise marked or described in the user documentation.

Exercise extreme caution when a shock hazard is present. Lethal voltage may be present on cable connector jacks or test fixtures. The American National Standards Institute (ANSI) states that a shock hazard exists when voltage levels greater than 30V RMS, 42.4V peak, or 60VDC are present. A good safety practice is to expect that hazardous voltage is present in any unknown circuit before measuring.

Operators of this product must be protected from electric shock at all times. The responsible body must ensure that operators are prevented access and/or insulated from every connection point. In some cases, connections must be exposed to potential human contact. Product operators in these circumstances must be trained to protect themselves from the risk of electric shock. If the circuit is capable of operating at or above 1000V, no conductive part of the circuit may be exposed.

Do not connect switching cards directly to unlimited power circuits. They are intended to be used with impedance-limited sources. NEVER connect switching cards directly to AC mains. When connecting sources to switching cards, install protective devices to limit fault current and voltage to the card.

Before operating an instrument, ensure that the line cord is connected to a properly-grounded power receptacle. Inspect the connecting cables, test leads, and jumpers for possible wear, cracks, or breaks before each use.

When installing equipment where access to the main power cord is restricted, such as rack mounting, a separate main input power disconnect device must be provided in close proximity to the equipment and within easy reach of the operator.

For maximum safety, do not touch the product, test cables, or any other

instruments while power is applied to the circuit under test. ALWAYS remove power from the entire test system and discharge any capacitors before: connecting or disconnecting cables or jumpers, installing or removing switching cards, or making internal changes, such as installing or removing jumpers.

Do not touch any object that could provide a current path to the common side of the circuit under test or power line (earth) ground. Always make measurements with dry hands while standing on a dry, insulated surface capable of withstanding the voltage being measured.

The instrument and accessories must be used in accordance with its specifications and operating instructions, or the safety of the equipment may be impaired.

Do not exceed the maximum signal levels of the instruments and accessories, as defined in the specifications and operating information, and as shown on the instrument or test fixture panels, or switching card.

When fuses are used in a product, replace with the same type and rating for continued protection against fire hazard.

Chassis connections must only be used as shield connections for measuring circuits, NOT as safety earth ground connections.

If you are using a test fixture, keep the lid closed while power is applied to the device under test. Safe operation requires the use of a lid interlock.

Instrumentation and accessories shall not be connected to humans.

Before performing any maintenance, disconnect the line cord and all test cables.

To maintain protection from electric shock and fire, replacement components in mains circuits – including the power transformer, test leads, and input jacks – must be purchased from Keysight. Standard fuses with applicable national safety approvals may be used if the rating and type are the same. Other components that are not safety-related may be purchased from other suppliers as long as they are equivalent to the original component (note that selected parts should be purchased only through Keysight to maintain accuracy and functionality of the product). If you are unsure about the applicability of a replacement component, call an Keysight office for information.

WARNING

No operator serviceable parts inside. Refer servicing to qualified personnel. To prevent electrical shock do not remove covers. For continued protection against fire hazard, replace fuse with same type and rating.

PRODUCT MARKINGS:

The CE mark is a registered trademark of the European Community.

Australian Communication and Media Authority mark to indicate regulatory compliance as a registered supplier.

This symbol indicates product compliance with the Canadian Interference-Causing Equipment Standard (ICES-001). It also identifies the product is an Industrial Scientific and Medical Group 1 Class A product (CISPR 11, Clause 4).

South Korean Class A EMC Declaration. This equipment is Class A suitable for professional use and is for use in electromagnetic environments outside of the home. A 급 기기 (업무용 방송통신기자재) 이 기기는 업무용 (A 급) 전자파적합기기로서 판 매자 또는 사용자는 이 점을 주 의하시기 바라 며 , 가정외의 지역에서 사용하는 것을 목적으 로 합니다.

This product complies with the WEEE Directive marketing requirement. The affixed product label (above) indicates that you must not discard this electrical/electronic product in domestic household waste.
Product Category: With reference to the

equipment types in the WEEE directive Annex 1, this product is classified as “Monitoring and Control instrumentation” product. Do not dispose in domestic household waste. To return unwanted products, contact your local Keysight office, or for more information see http://-about.key-sight.-com/en/companyinfo/environment/takeback.shtml.

This symbol indicates the instrument is sensitive to electrostatic discharge (ESD). ESD can damage the highly sensitive components in your instrument. ESD damage is most likely to occur as the module is being installed or when cables are connected or disconnected. Protect the circuits from ESD damage by wearing a grounding strap that provides a high resistance path to ground. Alternatively, ground yourself to discharge any built-up static charge by touching the outer shell of any grounded instrument chassis before touching the port connectors.

This symbol on an instrument means caution, risk of danger. You should refer to the operating instructions located in the user documentation in all cases where the symbol is marked on the instrument.

This symbol indicates the time period during which no hazardous or toxic substance elements are expected to leak or deteriorate during normal use. Forty years is the expected useful life of the product.

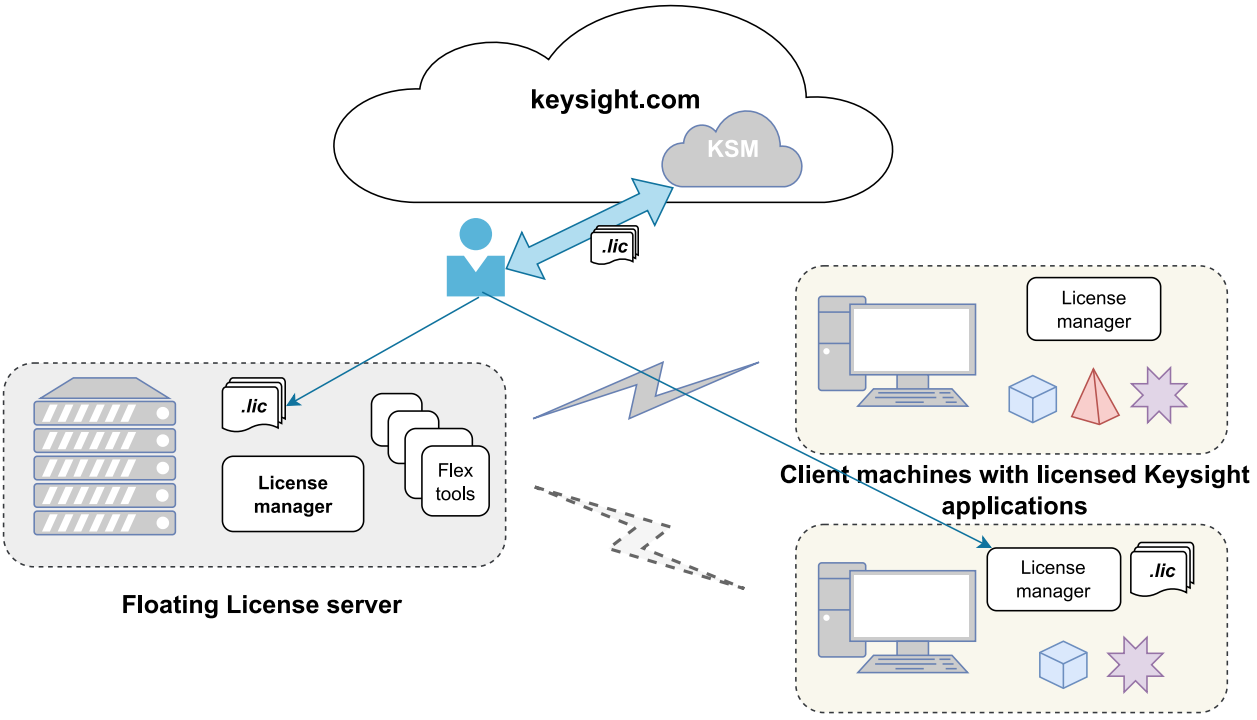
Contents

Licensing Quick Start Guide 9
Install node-locked, transportable, and USB portable licenses on your client machine 12
Install floating licenses 15
Set Up a New License Server 18
Migrating from a KLM 6 floating license server 24
Easy Activation 28
License Managers 30

Licensing Quick Start Guide

Overview of Keysight Licensing

This illustration shows an example Keysight licensing installation with a floating license server and two client machines:



The floating license server, on the left, provides licenses for the two clients at the right; the second client also has node-locked licenses for use on that machine only. When the applications (shapes) are run, they request licenses, which are provided from any available location by the licensing software. When users install new Keysight software, they also get a license manager utility that helps them install and manage their licenses.

The connection to the floating license server is optional for the second client, which has its own node-locked licenses. If connected, the client will use either node-locked or floating licenses, whichever are available; if disconnected from the server and/or from the internet, the client will still be able to use its local node-locked licenses.

A license server process, which can be running remotely (on the floating license server) or locally (on the clients) consists of the two executables *lmgrd* and *agileesofd*. The *lmgrd* executable is the FlexNet license server manager, and *agileesofd* is Keysight's vendor daemon (lmgrd is responsible for

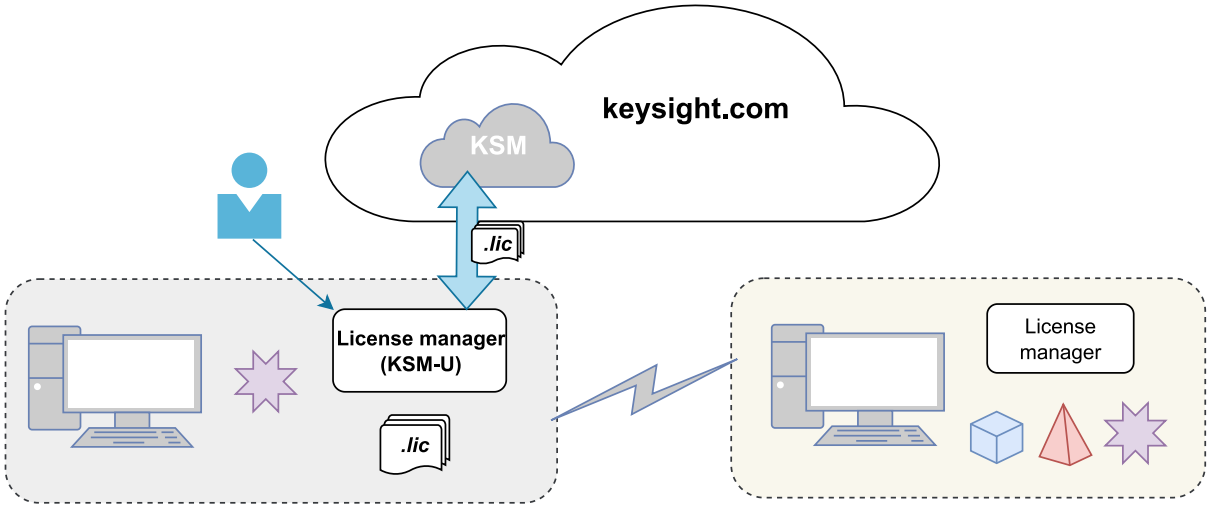
starting agileesofd). Some other Keysight products use the *agilent* vendor daemon, similar sounding but not to be confused with *agileesofd*.

The user requests license files from the Keysight Software Manager (KSM) website (part of www.keysight.com) and manually installs the floating licenses on the floating license server and uses the license manager utility to install the node-locked licenses on the client.

Overview of Easy Activation (available with select Keysight products)

Some Keysight software products now offer *Easy Activation*, where a user activates licenses using Keysight Software Manager Utility (KSM-U). With this there is no need for the user to manually obtain license files from KSM.

This illustration shows an example of what Easy Activation looks like.



Client machine with licensed application (also floating license server with licenses)

Client machine with licensed Keysight applications

With Easy Activation the user enters an activation code from their Keysight entitlement certificate into the activation wizard in KSM-U. That triggers a license request between KSM-U and the KSM website. Assignment of a host ID to the license is handled automatically, as is installation of the activated license on the host machine.

The floating licenses on the left machine are installed using Easy Activation--note that these are available to its own local licensed software and can be served to the same product software on the right client machine as well. When the applications (shapes) are run, they request licenses, which are provided by the license manager running on the server machine.

See the section in this guide on Easy Activation for step-by-step instructions.

Quick Start

Choose the machine where you will install your license(s)

In the case of node-locked, transportable, or USB portable licenses, whether counted or uncounted, you'll install or activate your license *on the machine where you will run the licensed software*.

- Steps to install node-locked, transportable, and USB portable licenses on your client machine
- Steps to use Easy Activation to install licenses on your client machine (available with select products).

If you have purchased floating licenses, you'll often choose to install those licenses on a *floating (network) license server,* rather than on the machines where you run the licensed software.

- Steps to install floating licenses on a floating license server – note you may need to update your floating license server(s) whether or not you are installing new licenses (because the server must be running a version of the licensing software the same as, or newer than, any client that is requesting a floating license).

When you activate a floating license with Easy Activation using Keysight Software Manager Utility (KSM-U) the floating license is installed on the machine running KSM-U, which becomes the license server for that floating license. That machine can also serve the floating license, as well as other activated or manually installed floating licenses, to remote clients.

- Steps to activate floating licenses using KSM-U (available with select products).

Keep in Mind

- If you have several Keysight software products installed, you might have more than one license manager utility. To license each of your products, use the license manager installed with that product. See the License Managers section of this document for detail.
- If you use floating licenses, *whether or not you are installing newly generated licenses*, you may need to update the floating license server software to work with your new products. The licensing server must be running a version of the licensing software the same as, or newer than, any client that is requesting a floating license. See the Keysight Licensing Administrator's Guide for detail.
- If you need help, contact Keysight: https://www.keysight.com/find/contactus.

Resources

To learn more about Keysight licensing, see the following resources.

Information about Keysight Licensing:

- Keysight Licensing landing page on keysight.com — https://www.keysight.com/find/licensing also check additional topics/pages shown on that page.

Licensing software downloads:

- Keysight Software Manager Utility (formerly PathWave License Manager) download — https://www.keysight.com/find/ksmu
- Keysight License Server download — https://www.keysight.com/find/licenseserver
- Additional tools listed as **Related Links** on https://www.keysight.com/find/licensingtools

To obtain license files and manage your Keysight software:

- Keysight Software Manager — https://www.keysight.com/find/ksm
- Easy Activation using KSM-U – https://www.keysight.com/find/easyactivation

Troubleshooting:

- Keysight Licensing Administrator's Guide — https://www.keysight.com/find/licensingdoc
- The Admin Guide provides help for solving network connectivity issues (such as communication with a license server through a firewall):
  - Accessing Floating Licenses through a Firewall - Keysight Licensing Administrator's Guide - Confluence
  - Flexera Communication Problems - Keysight Licensing Administrator's Guide - Confluence

Additional documentation:

- Each licensing tool has help available from its **Help** menu.

Install node-locked, transportable, and USB portable licenses on your client machine

The procedure on this page assumes that you will be adding your new licenses to the machine you want to license which can be a networked or non-networked machine.

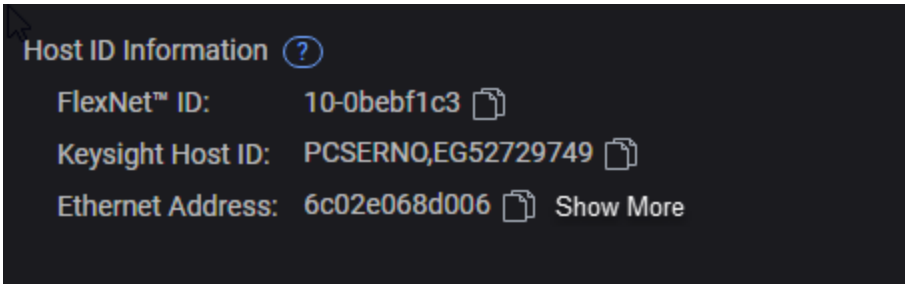
NOTE If the entitlement certificate you received from Keysight has the words "Easy Activation" in the title, see the instructions in this document Easy Activation using KSM-U

Step 1: Install your software and get your host ID

If it is appropriate for your product, your Keysight software installation will include Keysight Software Manager Utility (KSM-U), formerly named PathWave License Manager. KSM-U is also available for download from https://www.keysight.com/find/ksmu.

On the machine you want to license,

a. If the software to be licensed is not installed, install it.
b. If you're using USB portable (dongle) licenses, install a driver from https://www.keysight.com/find/licensingusbdriver.
c. Start Keysight Software Manager Utility (KSM-U).
d. Copy this machine's **host ID**:



You need a host ID to get your license from the Keysight Software Manager website (described in Step 2 below).
When choosing among host IDs (as in the image above, where there are three), choose the appropriate host ID type to identify your machine. Note that KSM-U shows the recommended Ethernet MAC address host ID; clicking on **Show More** will show any alternatives. Avoid using Ethernet addresses that are tied to docking stations or removable/USB network adapters. Although the machine does not need to be connected to a network to use node-locked licenses, the network adapter associated with the host ID must be enabled.
Check the Keysight Software Manager Utility Help FAQ section for updated information and assistance in choosing a host ID or navigate to www.keysight.com/find/hostid.

Step 2: Get your license

On any machine with internet access,

a. Find your **entitlement certificate** for the purchased product.
Typically, your entitlement certificate is emailed to you, but in some cases a paper copy is shipped with the purchased product.
b. Find the host ID of the machine to license – see Step 1 above.

c. Visit Keysight Software Manager (KSM) www.keysight.com/find/softwaremanager and follow the steps to request a license. If you don't have a KSM account, you will be guided to create one.

d. You'll receive your license file via email or download. Save it to a location that can be accessed by all accounts, such as *C:\Users\public,* or save it on the non-networked machine that you want to license.

Step 3: Install your license

On the machine you want to license,

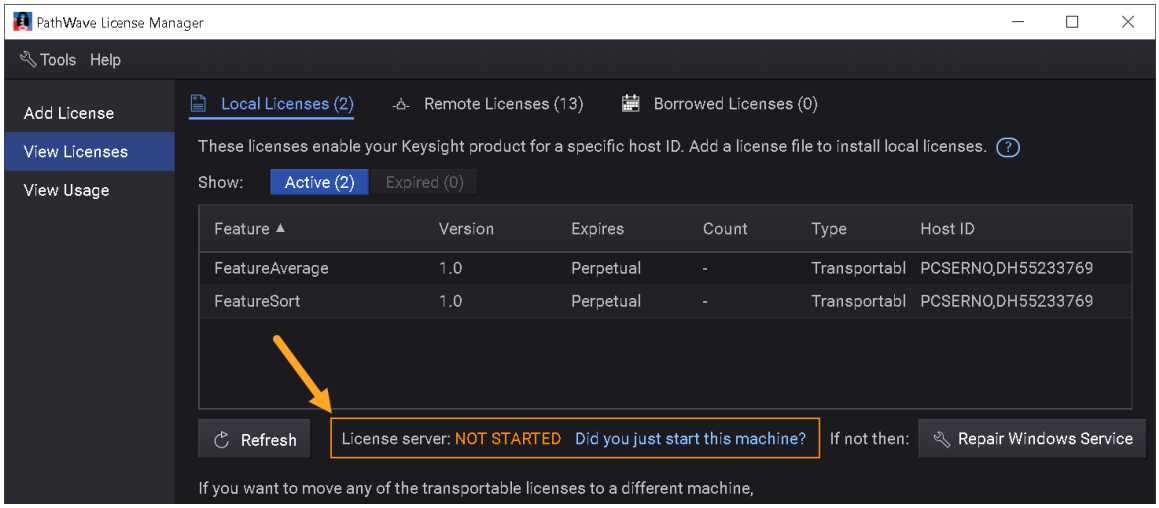
a. Start Keysight Software Manager Utility .

b. Click the **Add a License File** button.
Follow the steps to install your license, consulting the **Help** for details if necessary.

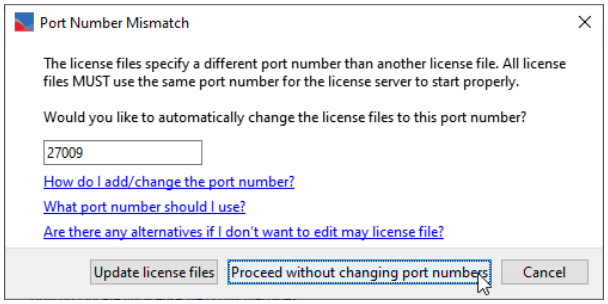
c. Select **View Licenses** to see your new license.

Step 4: Resolve problems

- If licenses are not usable or are not visible in Keysight Software Manager Utility immediately after rebooting your machine, **wait two minutes** to allow supporting processes to start up, then refresh KSM-U Refresh.
- If the licenses are still not visible, look for a License Server: message. In MS Windows, if you see this message, click the **Repair Windows Service** button to resolve the problem.



- If some of your licenses are still not visible, they may be located in **user-specific locations** (such as *C:\Users\bob\Desktop*) where license processes cannot access them. This could happen if you installed licenses in those locations using a different license manager (not KSM-U). Using the license manager provided with the appropriate product, remove and reinstall such licenses to a generally accessible location, such as *C:\Users\public* .
- If you install a license using the EEsof Keysight Floating License Manager, after having installed KSM-U, you may see a **Port Mismatch** dialog box:



  This can be safely ignored by clicking **Proceed without changing port numbers**.
- If you're experiencing other problems, see the **Help** for your license management tool and refer also to the Keysight Licensing Administrator's Guide (https://www.keysight.com/find/licensingdoc).

Install floating licenses

NOTE If the entitlement certificate you received from Keysight has the words "Easy Activation" in the title, see the instructions in this document Activating licenses using KSM-U.

The procedure on this page assumes that you will be adding your new licenses to an existing floating license server (a dedicated machine), using the FlexNet tools. If you are activating floating licenses using Easy Activation with Keysight Software Manager Utility (KSM-U) then see the instructions in this document Easy Activation using KSM-U.

- If you need to set up a new floating license server, see the instructions in this document Set up a New License Server. For additional information, refer to the Keysight Licensing Administrator's Guide, available at https://www.keysight.com/find/licensingdoc, in the section entitled "Setting up a New License Server."
- If you need to update an existing license server, see the instructions in "Setting Up an Existing License Server" in the Keysight Licensing Administrator's Guide.

- If you need to migrate your floating licenses from a legacy KLM6-based floating license server to the latest Keysight License server version, see the instructions in this document Migrating from a KLM 6 floating license server.

Step 1: Obtain a license file

a. Find your **entitlement certificate** for the purchased product.
Your entitlement certificate is typically emailed to you, but in some cases a paper copy is shipped with the purchased product.

b. Determine the license server's host ID in one of the following ways.

- On the server machine, execute `lmutil lmhostid` to get the FlexNet host ID directly.

  NOTE If you see a `No such file or directory` error when you try to run `lmutil`, then you need to install the Linux Standard Base library. On Ubuntu use `sudo apt update && sudo apt install lsb-core -y`, or on RedHat (RHEL) use `yum` to install `redhat-lsb`.

- Windows: On the server machine, execute `getmac /v /fo list`. Your host ID is listed as the Physical Address of the Network Adapter.
- Linux: On the server machine, execute `/sbin/ifconfig -a`
  Examine the `ifconfig` results to find your Ethernet interface (often called `eth0`) and use its hardware address (`HWaddr`). For example, in the `ifconfig` output shown below, the host ID is `00:0c:29:c0:06:65.`

```
eth0 Link encap:Ethernet  HWaddr 00:0c:29:c0:06:65
      inet addr:156.140.113.178  Bcast:156.140.113.255  Mask:255.255.254.0
      inet6 addr: fe80::20c:29ff:fec0:665/64 Scope:Link
      UP BROADCAST RUNNING MULTICAST  MTU:1500  Metric:1
      RX packets:36522 errors:0 dropped:0 overruns:0 frame:0
      TX packets:10160 errors:0 dropped:0 overruns:0 carrier:0
      collisions:0 txqueuelen:1000
      RX bytes:38094114 (38.0 MB)
      TX bytes:695114 (695.1 KB)
```

c. Visit Keysight Software Manager (KSM) www.keysight.com/find/softwaremanager and follow the steps to request a license.
If you don't have a KSM account, you will be guided to create one.

Step 2: Save the license file

To save the license file for use by Keysight Licensing:

a. Make a copy of the license file on your hard disk, in:
   - Windows: *C:\ProgramData\Keysight\Licensing\Licenses\Server*
   - Linux: */var/opt/keysight/licensing/licenses/server*

b. Open or view the license files in the directory to ensure they all specify the same port value (between 27000 and 27009, inclusive) in their SERVER statements. If not, edit them to have the same port value. You will experience licensing failures if the licenses have conflicting port numbers.

c. On Linux, you must set the file permissions so that it can be read by *lmgrd*. For example:
   ```
   chmod a+r <filename.lic>
   ```
   This example gives all users read access to the license.

Step 3: Restart the license server manager

Windows: To start the FlexNet license server manager (*lmgrd*) and vendor daemon (*agileesofd*), restart the Windows service (typically named EEsof EDA License Server).

Linux: Start the license server manager (*lmgrd*) and vendor daemon (*agileesofd*) on the machine to which the license is tied as follows:

a. Change directory to the location of your server files (for example, */opt/keysight/licensing/agileesofd*).

b. Run the following command to start *lmgrd:*

```
./lmgrd -c <license file path> -l <license log file path>
```

where:

<license file path> specifies one or more full path names to license file(s) and/or folder(s) containing license files.

<license log file path> is the full path name to the debug log file.

Step 4: Configure the client machine(s)

a. Install the licensed Keysight software on the machine(s) where you will use it (the clients).

b. In Keysight Software Manager Utility, follow the on-screen instructions to Specify a Remote License Server, so that the product can get its license from the server machine.

c. Select View Licenses to see your new license. ✓

Set Up a New License Server

NOTE This procedure describes setting up a floating license server that has no previous licenses or licensing software installed. If you have an existing floating license server and wish to upgrade or add to it, see "Setting Up an Existing License Server" in the Keysight Licensing Administrator's Guide.

The following steps describe license server setup using the Keysight License Server download. This procedure does not cover license server setup using Keysight Software Manager Utility (formerly called PLM) -- for those instructions see Easy Activation in this document.

Ensure that your chosen license server conforms to your purchased license types. Your floating licenses may be single-site, single-region, or worldwide licenses; you can find this information in the license files. For additional help on choosing a license server, see the FlexNet Publisher License Administration Guide.

A summary of the steps to set up a new license server, expanded below:

- Prerequisite: Select a license server machine
- Step 1: Install Keysight License Server on the license server machine
- Step 2: Obtain a license file
- Step 3: Save the license file on the license server machine
- Step 4: Manually start the license server manager to verify your setup
- Step 5: Automate the startup of the license server manager
- Step 6: Reboot to test the new license server

Prerequisite: Select a license server machine

- See http://www.keysight.com/find/licenseserver for supported operating systems.
- For important considerations when setting up redundant servers, see the section entitled "Multiple Server Configurations" in the Keysight Licensing Administrator's Guide.
- For more information, see Selecting a License Server Machine in https://www.keysight.com/find/fnpadmin

Step 1: Install Keysight License Server on the license server machine

a. On your license server machine, open your web browser and navigate to Keysight License Server | Keysight.
b. Download the appropriate package for your platform.

NOTE The Keysight License Server must be version 2023.03 or greater to be compatible with clients that use the former PathWave License Manager version 7.0 to 7.5.
The Keysight License Server must be version 2025.02 or greater to be compatible with clients that use Keysight Software Manager Utility version 7.6.0.

c. Extract the files to the following folder (you may need to create the folder using `mkdir -p <path-name>`):
   - Windows: `C:\Program Files\Common Files\Keysight\Licensing Daemon\bin`
   - Linux: `/opt/keysight/licensing-daemon/bin`

Step 2: Obtain a license file

a. If you have ordered a licensed Keysight product, you'll receive (typically by downloading or by email) an entitlement certificate. Note the order number and certificate number.
b. Determine the license server's host ID in one of these ways:
   - On the server machine, execute **`lmutil lmhostid`** to get the FlexNet host ID directly.
   - On the server machine:
     - Windows: execute **`getmac /v /fo list`** . Your host ID is listed as the Physical Address of the Network Adapter.
     - Linux: execute **`/sbin/ifconfig -a`** . Examine the ifconfig results to find your Ethernet interface (often called eth0) and use its hardware address (HWaddr), removing the colons to create the alphanumeric host ID

c. Go to http://www.keysight.com/find/softwaremanager to obtain your license file. Follow the instructions on screen to enter your order number, certificate number, and host ID.

NOTE If you haven't used Keysight Software Manager (KSM) before, you may need to create an account on KSM.

d. Follow the KSM website's instructions to request a license file. The license file will be emailed to you or made available for download.

Step 3: Save the license file on the license server machine

The port number is typically specified in the license file (readable as plain text) and is usually 27009. See "Port Number Conflicts" in the Keysight Licensing Administrator's Guide for what to do if your license files have different port numbers, or if some do not have port numbers.

a. Make a copy of the license file on your hard disk in:
   - Windows: `C:\ProgramData\Keysight\Licensing\Licenses\Server`
   - Linux: `/var/opt/keysight/licensing/licenses/server`

Step 4: Manually start the license server manager to verify your setup

This is to verify that there is no networking, host name resolution, or other issue that could prevent the license server manager from starting.

a. From the install folder for *lmgrd*, execute the following command (entered on a single line without line breaks):

   Windows: `lmgrd -c C:\ProgramData\Keysight\Licensing\Licenses\Server -l C:\ProgramData\Keysight\Licensing\Log\LicenseServer.log`
   Linux: `./lmgrd -c /var/opt/keysight/licensing/licenses/server -l /var/opt/keysight/licensing/log/license-server.log`

b. Verify that the server is UP and has licenses: `./lmutil lmstat -a`

Step 5: Automate the startup of the license server manager

NOTE You must install a license (Step 3 above) before you can set up automated startup of the license server manager and the vendor daemon.

On Windows

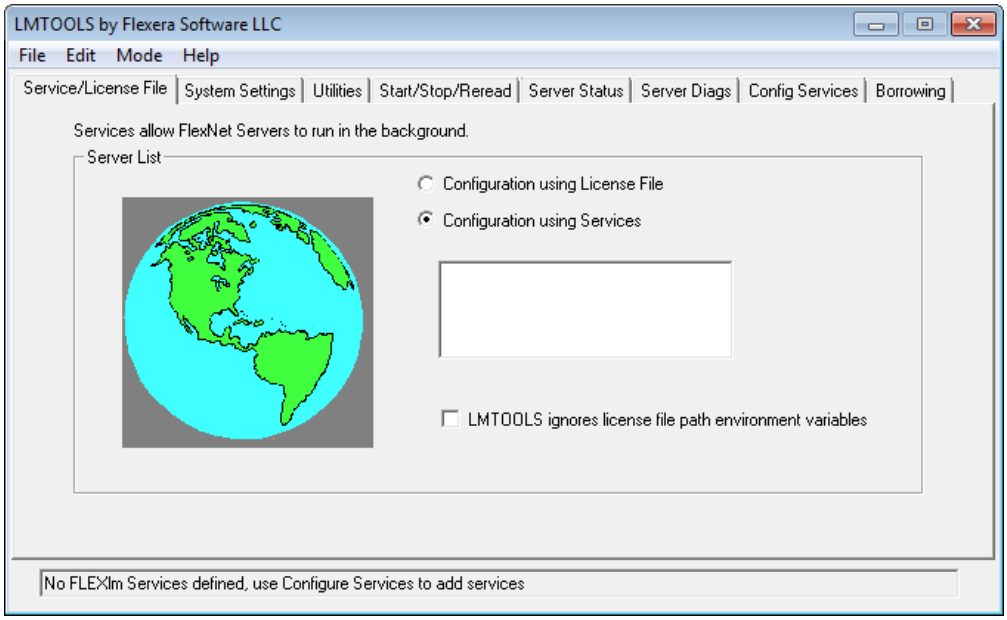
To start the FlexNet license server manager (*lmgrd*) and vendor daemon (*agileesofd*) and automate their restart upon PC reboot, configure a Windows service as follows:

NOTE You must have administrator privileges to configure a Windows service. The service will run under the local system account as the special *Local Server* user, which does not have special system privileges. This means you should consider the following:

- The log file must be in a location that is writable by all users. If you specify a log file location that is not writable, the service will immediately exit, and will not indicate any errors (it returns an exit code of 0 even though it encountered an error). Since the log file was not writable, you will have no error message anywhere to indicate what went wrong, or even that there was a problem.
- The license files must be in a location that is readable by all users. If you specify a location that isn't readable, the log file will contain an error indicating that the license file couldn't be found.

a. Run *lmtools.exe* from `C:\Program Files\Common Files\Keysight\Licensing Daemon\Agileesofd`. The **LMTOOLS** window is displayed.

b. In the **Service/License File** tab, select the **Configuration using Services** option.



c. Click the **Config Services** tab and enter the following details. See the NOTE above for additional information about paths.

   i. **Service Name**: For compatibility with Keysight EDA products, use the name **EEsof EDA License Server**.

   ii. **Path to the lmgrd.exe file**: Click **Browse** and specify the path to the *lmgrd.exe* file on the license server (for example, `C:\Program Files\Common Files\Keysight\Licensing Daemon\Agileesofd\lmgrd.exe`).

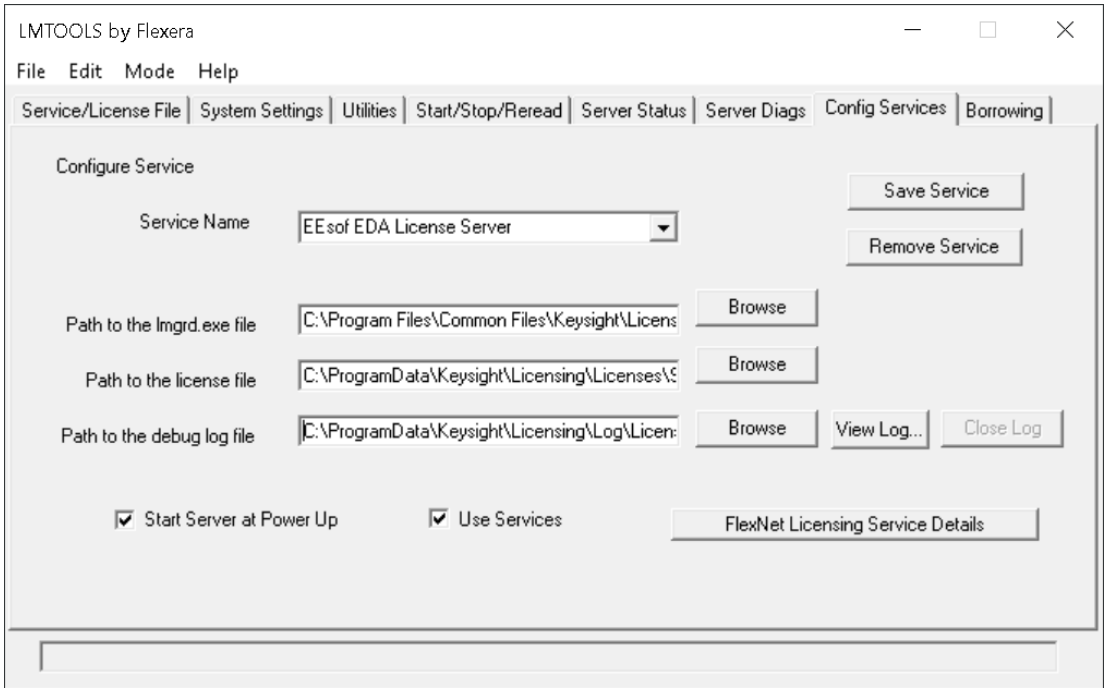
   iii. **Path to the license file**: Click **Browse** and specify the path to the license directory on the license server (for example, `C:\ProgramData\Keysight\Licensing\Licenses\Server`). Generally, it is best to make this a path to a directory. If you know you need to specify individual license file(s) instead of a directory, you can do so (for example, `C:\ProgramData\Keysight\Licensing\Licenses\Server\license.lic`).

   iv. **Path to the debug log file**: Click **Browse** and specify the path to the debug log file on the license server (for example, `C:\ProgramData\Keysight\Licensing\Log\LicenseServer.log`).

d. Select the **Use Services** option.

e. Select the **Start Server at Power Up** option.

f. Click **Save Service**. The following figure shows the configured services in the **LMTOOLS** window.



g. Click the **Start/Stop/Reread** tab and observe that your service shows up in the **License servers installed as Windows services on this computer** list.

h. To start the service, on the **Start/Stop/Reread** tab, select your service and click **Start Server**.

NOTE To verify that the license server manager and the vendor daemon are running, click the **Config Services** tab again and click **View Log**. A log window appears that indicates whether *lmgrd* and *agileesofd* are up and running.

If you need to stop the license server, execute the following (substituting your license location if it is different):

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

On Linux

To run *lmgrd* manually once:

a. Change directory to `/opt/keysight/licensing-daemon/bin`

b. Run the following command to start *lmgrd:*

```
./lmgrd -c  /var/opt/keysight/licensing/licenses/server  -l /var/-
opt/keysight/licensing/log/license-server.log
```

NOTE If you see one of these errors when you start *lmgrd*:

```
lmgrd: /lib64/ld-lsb-x86-64.so.3: bad ELF interpreter: No such file or directory

lmgrd: No such file or directory
```

then you need to install the Linux Standard Base library . Use `yum` to install `redhat-lsb` .

If you need to stop the license server manually, execute the following (substituting your license location if it is different):

```
lmutil lmdown -c /var/opt/keysight/licensing/licenses
```

To automate the license server manager's startup upon system reboot

a. Confirm the license server is stopped before executing the following steps.

b. Navigate to: `cd /etc/systemd/system`

c. Configure a service: `sudo touch keysight-lmgrd.service # to create the service`

d. Open keysight-lmgrd.service in an editor: `sudo gedit keysight-lmgrd.service`

e. Add code similar to the following sample (check the paths to lmgrd, your licenses file(s), and the server log file, on your machine and modify paths in the script if they differ from your configuration):

```
[Unit]
Description=Keysight License Server
Wants=network-online.target
After=network-online.target
[Service]
User=lmgrd
Group=lmgrd
ExecStart=/opt/keysight/licensing-daemon/bin/lmgrd -c
/var/opt/keysight/licensing/licenses/server -l /var/opt/keysight/licensing/log/license-
server.log -reuseaddr -z
[Install]
WantedBy=multi-user.target
```

f. Execute the following commands:

```
sudo systemctl start keysight-lmgrd # to start this boot
sudo systemctl enable keysight-lmgrd.service # to start at subsequent boots
```

g. Check the service status with:

```
systemctl status keysight-lmgrd.service
```

Step 6: Reboot to test the new license server

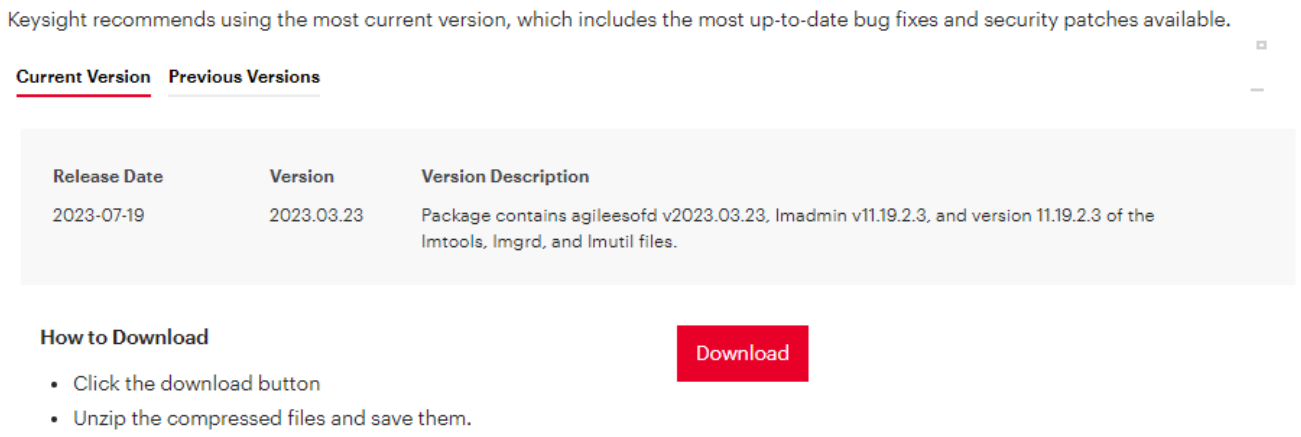
a. Configure your client machines to get their licenses from the new license server.
b. Then, restart the server machine to test the automated startup of the license server manager. Note that it can take a few minutes for the license server manager to start up after the machine is rebooted.
c. Once a few minutes have passed, check to make sure you can use the floating licenses on your client machines.

Migrating from a KLM 6 floating license server

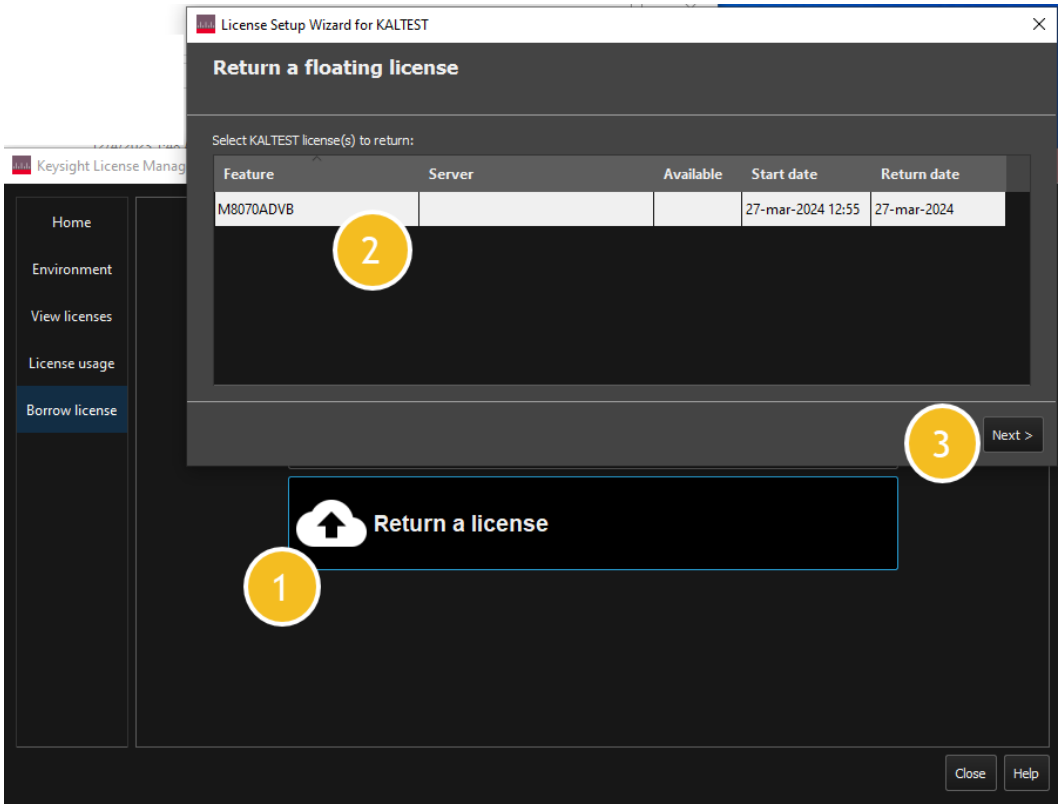
Follow these steps if you have previously used a floating license server set up using KLM 6, and are moving those floating licenses on that server to the latest Keysight License Server:

1. **Download the latest version of Keysight License Server** from Keysight License Server | Keysight

   - Download the server package for Windows 64-bit.

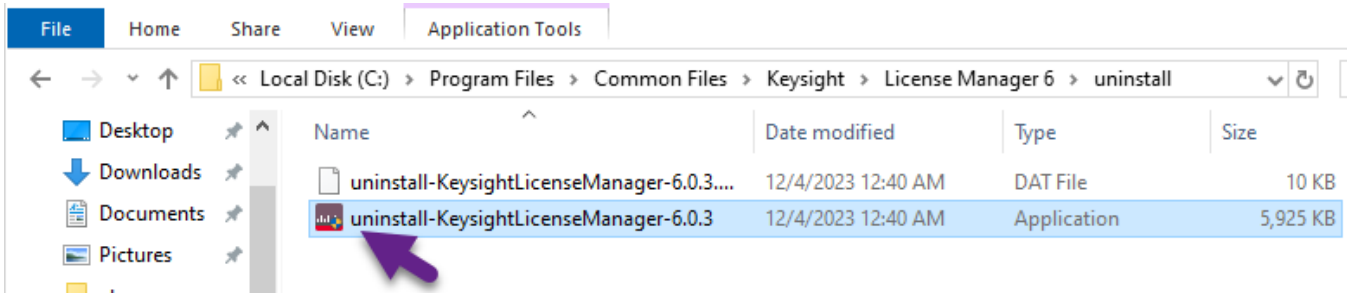


2. **Return all borrowed licenses** to the KLM 6 license server.



When you have returned all borrowed licenses, close KLM 6.

Run the KLM 6 uninstaller:

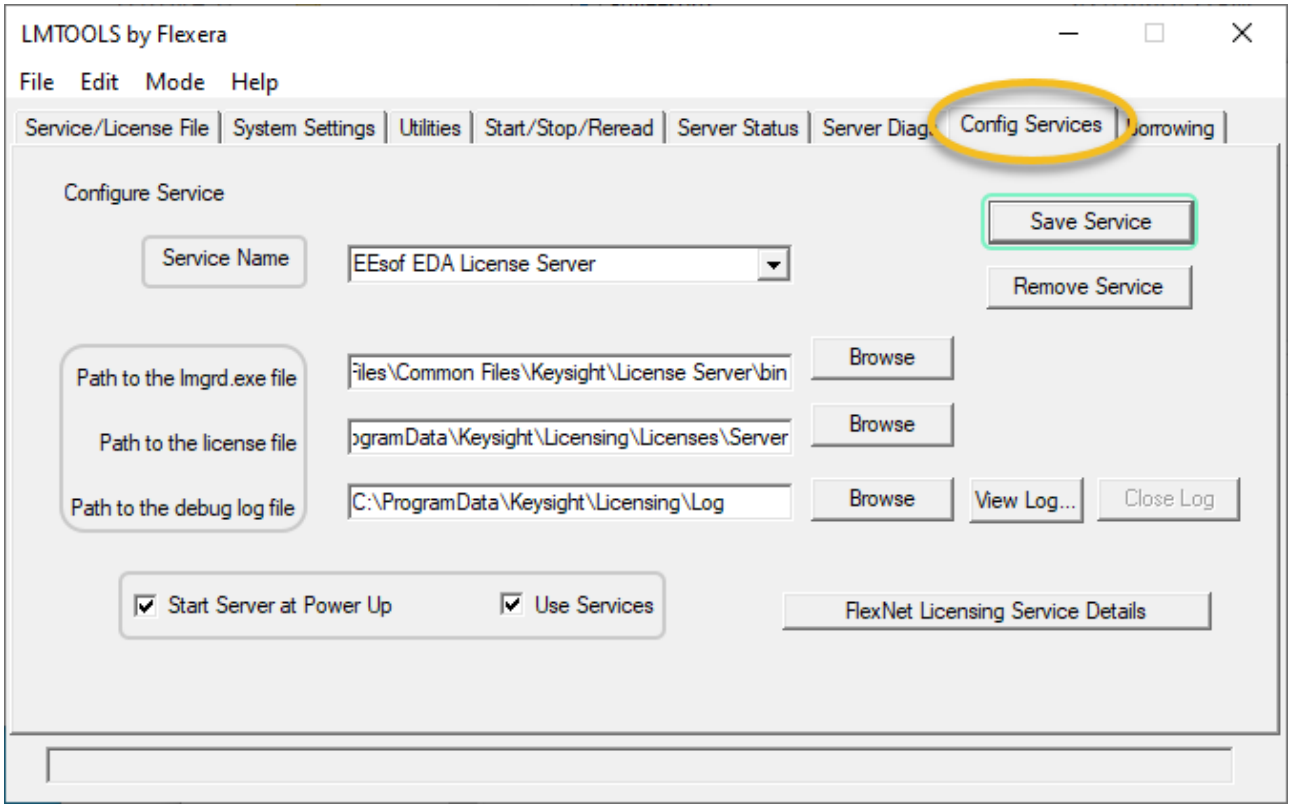
3. 

After the uninstall is complete, the Setup utility will offer to restart the machine. Click **Yes**.

4. **Install the latest version of Keysight License Server** on the server machine.

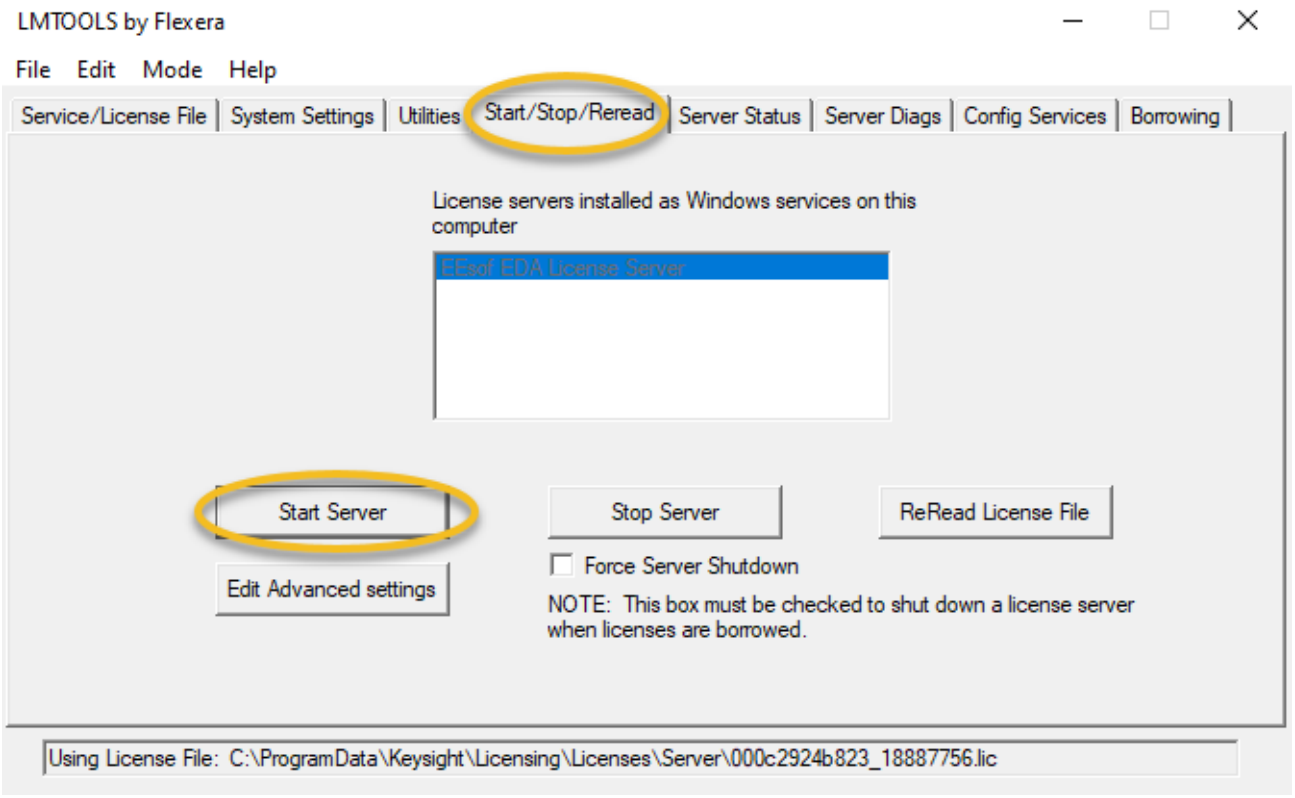
   - Unpack the server package files to the executable location: *C:\Program Files\Common Files\Keysight\Licensing\License Server\bin*

Set up the license service using LMTOOLS (found in the \License Server\bin folder; run LMTOOLS as Administrator).
From the **Config Services** tab:

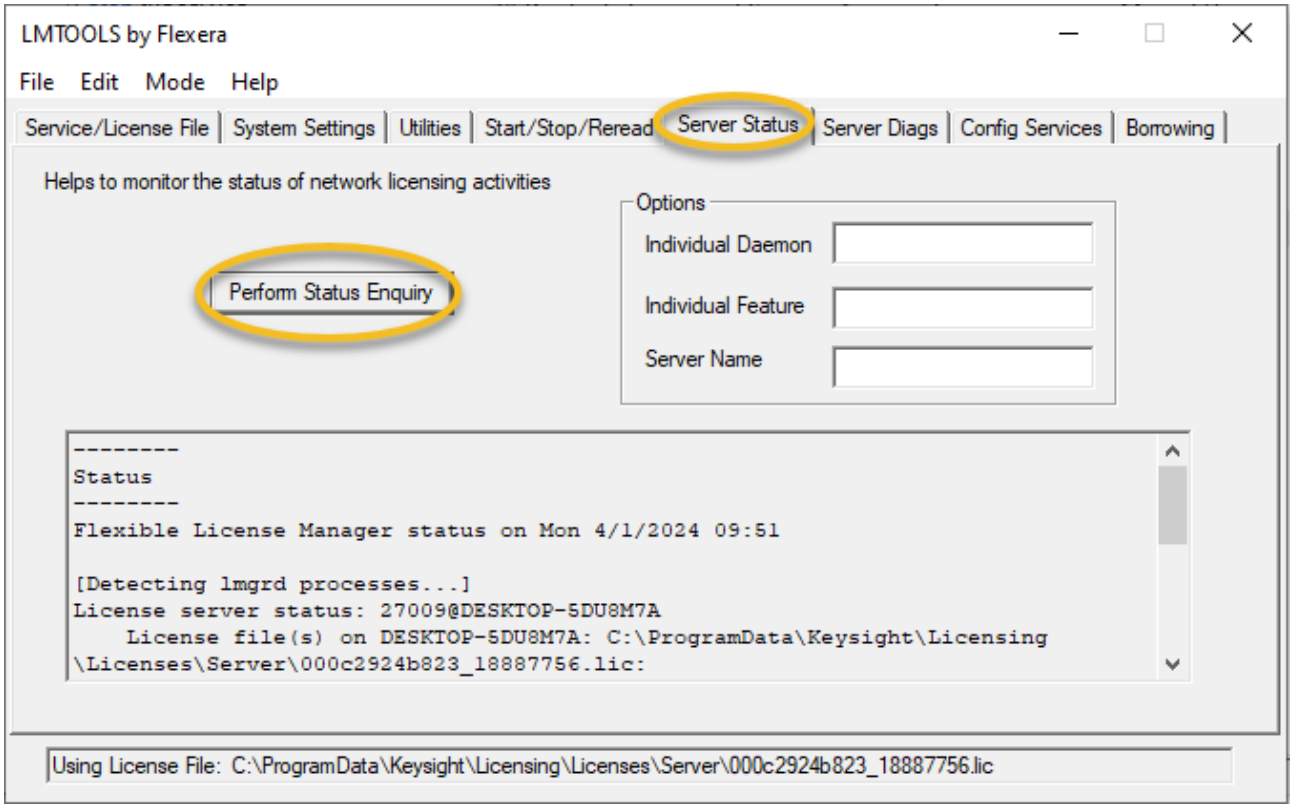
5. 

6. **Enter "EEsof EDA License Server"** in the **Service Name** text field.
7. **Set the paths to the lmgrd.exe file, the license file(s), and the debug log file.**
   a. To use the defaults, cut and paste the following paths into their respective entry fields.
      i. Note that it may be necessary to create some of these folders before you can save the service.
      ---
      ii. For the lmgrd.exe file: C:\Program Files\Common Files\Keysight\License Server\bin
      iii. For licenses: C:\ProgramData\Keysight\Licensing\Licenses\Server
      iv. For the debug log file: C:\ProgramData\Keysight\Licensing\Log
      ---
      v. Select the **User Services** and **Start Server at Power Up** boxes.
      vi. Click **Save Service.**

8. Select the **Start/Stop/Reread** tab, then click **Start Server** to start the service.



9. To check the server status, click **Perform Status Enquiry** in the **Server Status** tab.



10. If the server doesn't start, and the status message text doesn't supply enough information to point to the issue, refer to the *Keysight Licensing Administrator's Guide's* section on troubleshooting: How to Troubleshoot Problems - Keysight Licensing Administrator's Guide - Confluence

Easy Activation

The procedure on this page covers activation of new licenses using Easy Activation with Keysight Software Manager Utility (KSM-U). Keep in mind:

- Easy Activation is available when the entitlement certificate you receive from Keysight shows the words **Easy Activation** in its title.
- Easy Activation requires an internet-connected machine (PC or instrument).
- Easy Activation supports node-locked, transportable, USB portable (dongle), and floating licenses.
- If you do not see the words **Easy Activation** in the title of your entitlement certificate, refer to the instructions in Install node-locked...licenses on your client machine.

Step 1: Check your Entitlement Certificate

On the machine you want to license,

a. If the software to be licensed is not yet installed, install it. This also installs the Keysight Software Manager Utility (previously referred to as PathWave License Manager).
b. Start the Keysight Software Manager Utility (KSM-U).
c. Click the Enter Activation Code button in KSM-U. Note if your PC/instrument is not connected to the internet, then you cannot use Easy Activation and need to request a license from the Keysight Software Manager (KSM) website using a connected PC. For more information, refer to Install node-locked...licenses on your client machine.

Step 2: Copy & Paste the Activation Code (or Entitlement Code)

In the KSM-U activation wizard,

a. From your entitlement certificate for the purchased product, copy and paste your activation code (or entitlement code) into the wizard input field. An activation code activates a single product/feature. The entitlement code activates multiple or all products and features in an order.
b. Click Next.

Step 3: Select your Product(s)

In the KSM-U activation wizard,

a. The product or products that are available to activate are listed.
b. Select the product or products you want to activate and assign the license count/quantity as needed.
c. If a floating license is shown but is greyed out, you can select the Floating licenses are disabled switch to enable KSM-U as the floating license server for that license. If you do, be sure to follow Step 5 below.
d. Click Next.

Step 4: Confirm Activation

a. The product or products that are ready to activate are listed, along with the host ID(s) that are to be assigned to each.
b. If you want to change the ethernet MAC address host ID to be assigned, click the pencil icon to the right of the host ID to see and choose from any alternates.

c. When you have confirmed the information looks correct, click **Next**. A success message shows the status (or any errors will be noted).

Step 5: Optional – Set up Remote Clients to use Floating Licenses

If you have activated one or more floating licenses in Step 3, to be used on one or more remote clients, then follow these steps:

a. Run KSM-U on the remote client (the one you want to license).
b. Click **Edit Servers**.
c. Select the product family of the Keysight software you are licensing.
d. Enter the license server, using the `port@host` format, where the port is typically `27009`, and the host is the hostname or IP address of the machine on which you used KSM-U to activate the floating license. Example: `27009@ksmu1server`
e. Click **Verify Connection and Save** to test the connection and save the configuration.

License Managers

NOTE

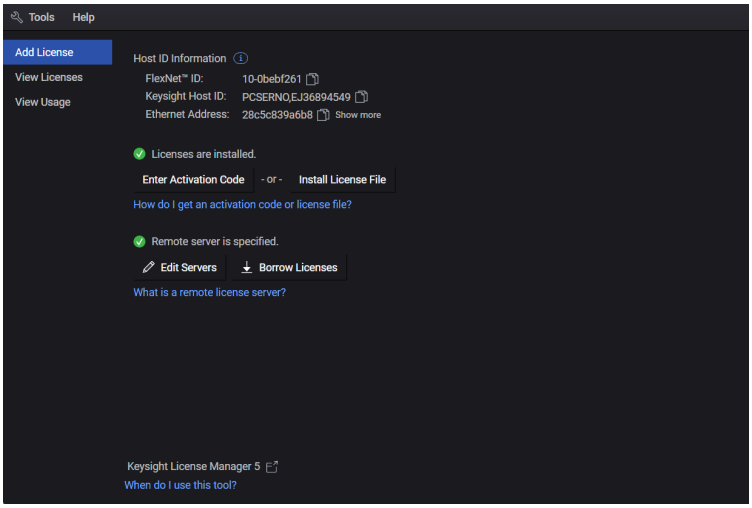
- If you have licenses located in **user-specific locations** (such as *C:\Users\fred\Desktop*), these licenses may not be accessible to the license service created by Keysight Software Manager Utility). Using the license manager provided with the appropriate product, **remove and reinstall such licenses** in a generally accessible location, such as *C:\Users\public* .
- When you install a new license manager, **do not remove old license manager(s) from your system**.

Over the years, Keysight has produced a number of license management tools. Two of three mentioned here are still in general circulation and may be necessary to manage your licenses.

Please refer to your Keysight product documentation to determine which of the following license management application(s) are appropriate for your product(s). In many cases, the appropriate license management application is included in the installation of your Keysight product or is preinstalled on your Keysight instrument.

When you install a new product or product version, and that product installs a new license manager, it is not necessary nor advisable to remove old license manager(s) from your system. You may need them to manage your older licenses and removing them may cause conflicts. However, if you do remove a license manager, its licenses are not removed with it. Simply reinstall the license manager, using the download links listed below.

Keysight Software Manager Utility (formerly PathWave License Manager)



Keysight Software Manager Utility (KSM-U):

- Allows you to manage many types of Keysight licenses for a variety of software products and instruments.
- Also displays licenses installed with all of the other license managers shown on this page.
- Launches Keysight License Manager 5 when necessary to manage certain older licenses.
- Has replaced Keysight License Manager 6.
- Is used for newer Keysight products of many types, such as PathWave FPGA, PathWave Test Sync Executive (beginning with version 2020 Update 1), and IoT Wireless Test Software.

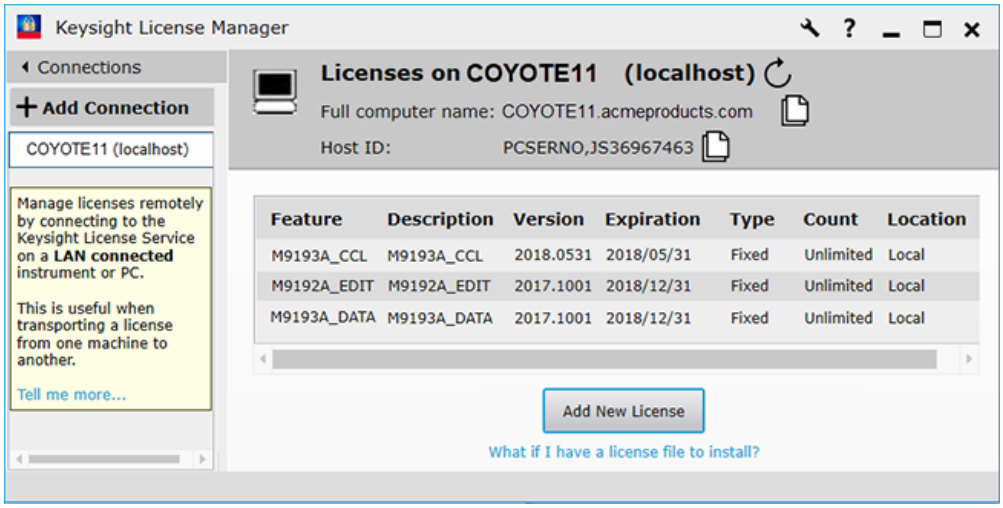
Download KSM-U from https://www.keysight.com/find/ksmu.

Keysight License Manager 6

KLM6 Obsolescence

NOTE Keysight License Manager 6 has been functionally replaced by Keysight Software Manager Utility. Be aware that KLM6 installed an older version of the Keysight License Server files (*lmgrd* and *agileesofd*); it is not advisable to install Keysight License Manager 6 *after* you have installed a newer license manager such as Keysight Software Manager Utility.

Keysight License Manager 5

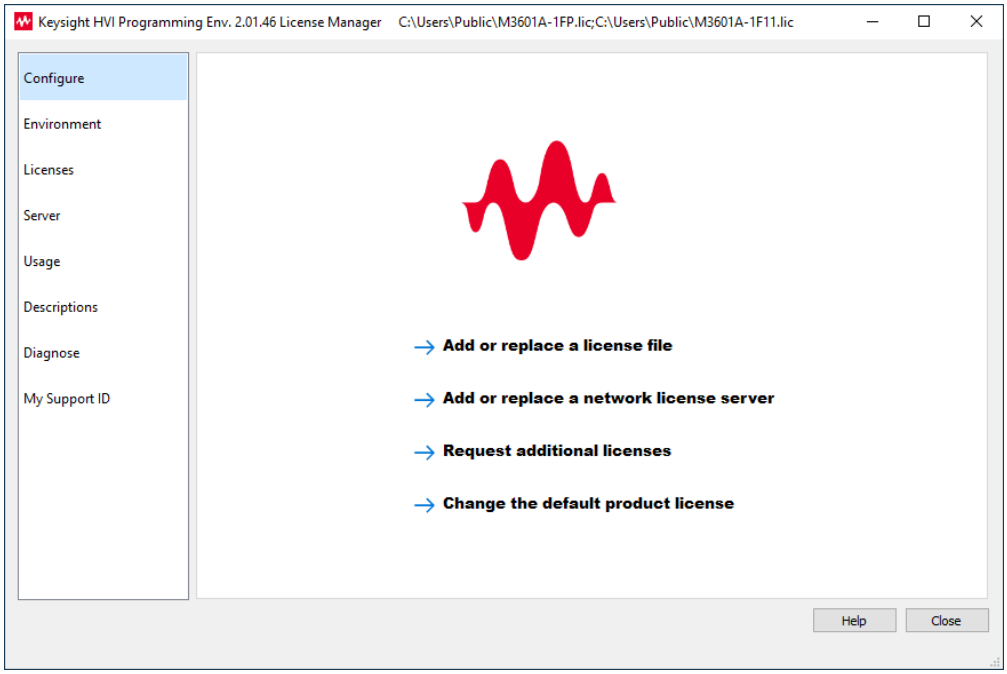


This license management application:

- Allows you to manage primarily node-locked and transportable licenses for a variety of software products and instruments.
- Is necessary to install and transport those licenses.
- Does not display licenses installed with other license managers.
- Is used for many test and measurement products, such as original BenchVue software, and for some instruments and firmware products.

Download Keysight License Manager 5 from Keysight License Manager 5.

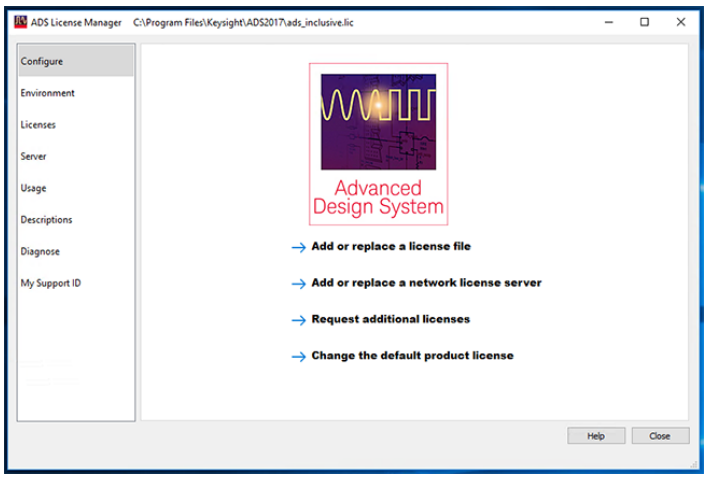
Keysight Floating License Manager for Design Software Products



This license management application:

- Allows you to manage licenses primarily for EDA Design Software products (not required for installation of other types of floating licenses).
- Displays some licenses installed with other license managers.
- Used for most Keysight EDA products and some other products, such as the M3601A Hard Virtual Instrument (HVI) Design Environment.
- May be installed as a product-customized license manager, for example Keysight HVI Programming Env. 2.01.46 License Manager in the image above, and ADS License Manager in the

image below (shown for comparison).



Download the Keysight Floating License Manager for EDA from https://www.keysight.com/find/eesof-flexnet-downloads.

This information is subject to change without notice.
© Keysight Technologies 2024-2025
Edition 2.0, June, 2025
Printed in USA

KEYSIGHT TECHNOLOGIES

www.keysight.com