

# **LightTools Installation Guide**

**for Fixed and Floating Licensing (OSG Floating License Manager)**

**March 2017**

**SYNOPSYS®**

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# Chapter 1 Getting Started

This chapter lists LightTools system requirements and tells you how to contact LightTools Support.

You can run LightTools using either a *fixed* license or a *floating* license. A fixed license allows you to run LightTools only on the computer on which it is installed (see *Installing LightTools with a Fixed License* on page 3). A floating license, which is installed on a network server, allows you to run LightTools on any computer on the same network (see *Installing LightTools with a Floating License* on page 11). The number of users that can use LightTools concurrently is limited by the licensing software.

## System Requirements

To install LightTools to run with either a fixed or floating license, you must have:

- A personal computer with an Intel or AMD processor supporting SSE2 (such as Intel Core, Intel Atom, AMD Athlon 64, etc.)

To get maximum performance from multi-threaded simulations, we recommend 4 to 16 CPU cores. LightTools simulation performance scales well with the number of cores, so a computer with 12 or 16 cores can secure an almost linear increase in performance.

If Intel Hyper-Threading Technology is available on your computer, enabling it will further increase multi-threaded simulation performance.

- Operating system: Windows 7 with Service Pack 1 (SP1) for 64-bit
- Random Access Memory (RAM): 6 GB minimum, 16 GB (or more for extremely large models or large simulations) recommended
- Free disk space on the *system drive* (i.e., the drive on which the operating system is installed) for prerequisite software: 10 GB

Large models and complex analyses may require significantly more disk space. If LightTools is installed on a drive other than the system drive, that drive should also have at least 10 GB free disk space.

- Free disk space as listed for LightTools components:

Component	Disk Space
Base LightTools product	1654 MB, plus virtual memory equal to 3 times the RAM
Online documentation	121 MB
Tutorial Files	86 MB
Data Exchange Modules, <i>excluding</i> CATIA V5	323 MB
CATIA V5 Modules	878 MB
SOLIDWORKS Link Module	42 MB

- License keys provided by Synopsys OSG via SolvNet SmartKeys
- License dongle
- For the LightTools SOLIDWORKS Link Module, you need a licensed version of SOLIDWORKS 2013 or later (with the latest service pack recommended) installed on the same computer as LightTools.
- Display:
  - A high-resolution monitor (1280 x 1024 or better) with 16-bit (65536) colors or more
  - An OpenGL compliant graphics card with stable ICD driver support recommended. We recommend that you always use the latest version of the driver for your graphics card.
- A DVD drive, if installing from a DVD
- If you will be running LightTools with a floating license, you must also have:
  - TCP/IP network protocol
  - Floating license manager software provided by Synopsys OSG. This guide provides instructions for installing the OSG Floating License Manager (a Sentinel RMS license manager that has been customized for Synopsys OSG software), provided on SolvNet. See *Using Synopsys SolvNet to Obtain LightTools Software and Licenses* on page 35 for details about obtaining this software.

## Contacting LightTools Support

If you need help or have questions about LightTools that are not answered in the documentation or the online help, feel free to contact the LightTools Support team by telephone, fax, or email. LightTools Support is available from 8 a.m. to 6 p.m., Pacific Time.

Support Hotline (800) 243-8672 (U.S. and Canada only)

Telephone (626) 795-9101

Fax (626) 795-0184

Email: [lighttools\\_support@synopsys.com](mailto:lighttools_support@synopsys.com)

## Chapter 2 Installing LightTools with a Fixed License

You can run LightTools using either a *fixed* license or a *floating* license. This chapter describes how to install the product to run using a fixed license, which allows you to run LightTools only on the computer on which it is installed.

These instructions assume that you have already downloaded LightTools from the Synopsys SolvNet website or that you ordered and received a LightTools DVD. If you have not done so, see *Using Synopsys SolvNet to Obtain LightTools Software and Licenses* on page 35.

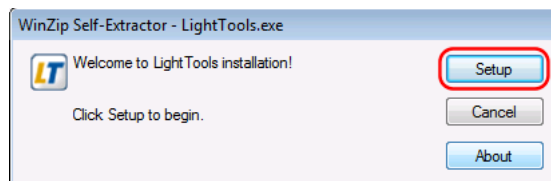
### Installing LightTools

1. Log on to your computer as Administrator.
2. If you downloaded LightTools, navigate to the folder where the setup file is located. If you have a DVD, insert it into the DVD drive and navigate to that drive.
3. Double-click the setup file (e.g., LightToolsversion.exe)

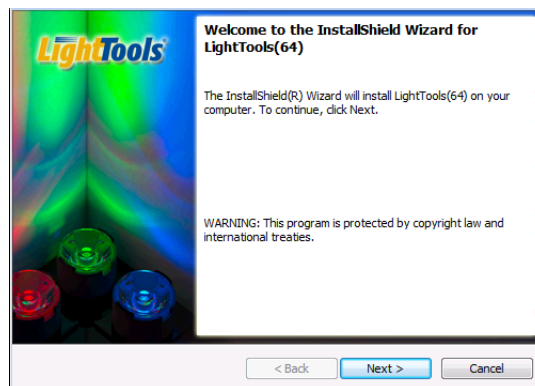
where *version* is the version number for the release (e.g., LightTools64850FCS.exe).

The WinZip Self-Extractor for LightToolsversion.exe is displayed.

4. Click the Setup button to begin.

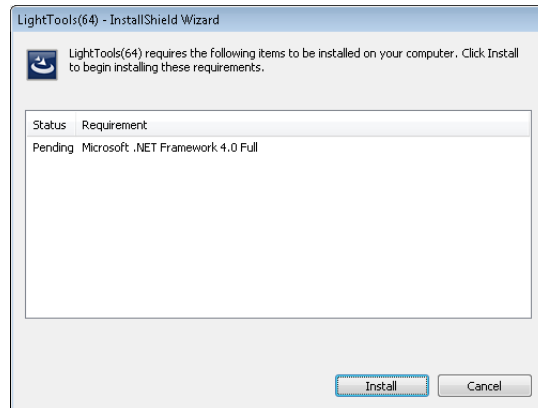


The installation files are extracted, and then the InstallShield Wizard is displayed.

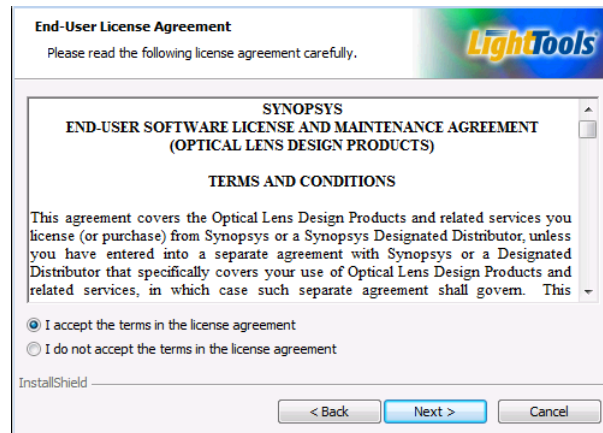


5. Click Next to continue.
6. If you are prompted to install .NET Framework, as shown in the following example, click the Install button.

## CHAPTER 2 Installing LightTools with a Fixed License

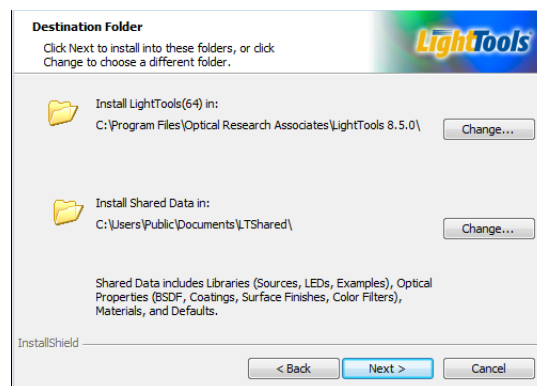


The End User License Agreement screen is displayed.



7. Click the I accept option and click Next to continue.

The Destination Folder screen is displayed.

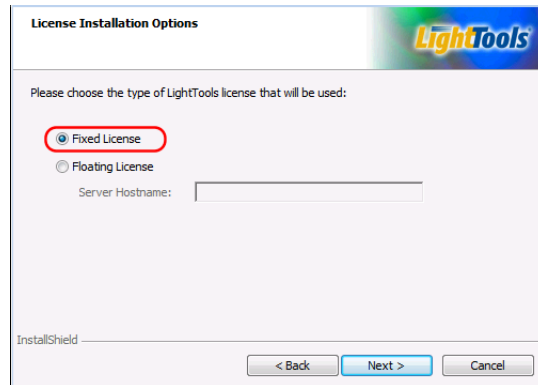


8. To accept the default location for the program and Shared Data files, click Next.

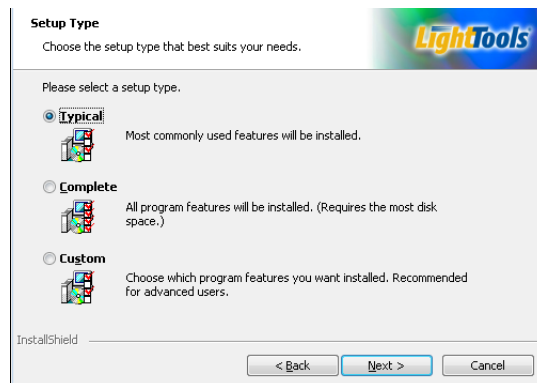
The License Installation Options screen is displayed.

9. Make sure the Fixed License option is selected (it's the default setting) and click Next to continue.

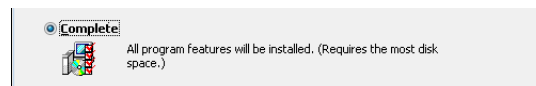




The Setup Type screen is displayed.

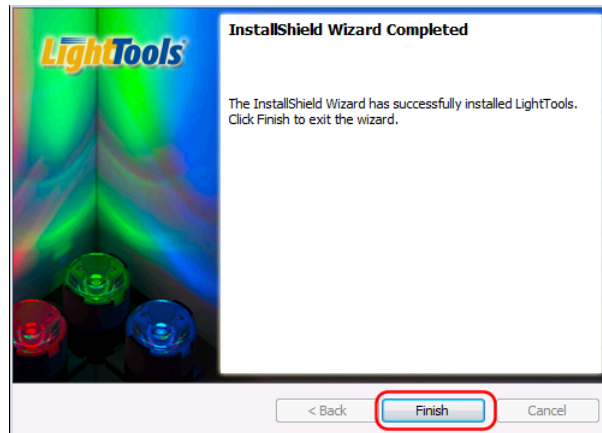


**Note:** The data exchange module for CATIA V4 is automatically installed with LightTools if you select the Typical setup option, but the larger data exchange module for CATIA V5 is not. To install the CATIA V5 data exchange module with all other LightTools features, select the Complete option on the Setup Type screen.



If you select the Custom option, *you must click the CATIA V5 option to include it*; the default setting for the CATIA V5 option in the Custom installation is *not* selected.

10. After you select the type of installation you would like to run, click Next to continue.
11. On the Ready to Install the Program screen, click the Install button to begin installing LightTools.
12. When the installation is complete, click Finish to close the wizard.

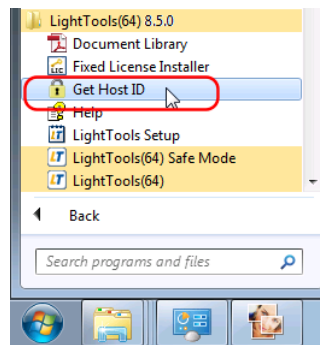


If you already have a license key for this product, skip to *Installing a License Key for a Fixed License* on page 7. If you do not yet have a license key, continue with *Obtaining the Host ID for a License Dongle* on page 6.

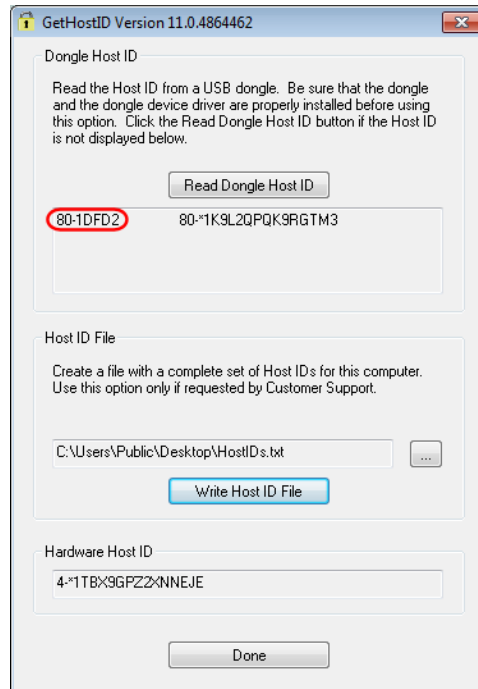
## Obtaining the Host ID for a License Dongle

A license key is designed to work for only one USB dongle, so the license key is associated with a unique value encoded on the dongle called a *Host ID*. Because of this, you need to know the Host ID for the license dongle before you can retrieve a license key. The Host ID is printed on a label on the USB dongle; if you're unable to read the ID on the label, you can also obtain the Host ID by running a program that reads it from the dongle. In the LightTools installation, the GetHostID utility is provided for this purpose. Follow these steps to run the GetHostID utility.

1. Insert the USB dongle in an active USB port.
2. Select the Windows Start menu, expand the LightTools group and select GetHostID, shown in the following figure.



The GetHostID utility is displayed, as shown in the following figure. Under the Read Dongle Host ID button, a short Host ID and a long Host ID are displayed side by side. To obtain a license key at this time, you need only the *short* Host ID (the first eight characters). In this example, the short Host ID is **80-1DFD2**. (Note that in some display configurations, the two Host IDs are separated by a single space.)



3. Copy the short Host ID to use when you retrieve your license key on the Synopsys SolvNet website. See *Retrieving License Keys* on page 43 for instructions.
4. Click Done to close the GetHostID utility.

After you retrieve your license key, go to *Installing a License Key for a Fixed License* on page 7.

## Installing a License Key for a Fixed License

To install the license key for LightTools, you must have:

- LightTools installed
- A license dongle
- A valid license key (in previous releases, license keys were called license *codes*.) This procedure assumes that you have already obtained license keys from the SolvNet SmartKeys web page. If you have not done so, see *Retrieving License Keys* on page 43 for instructions.



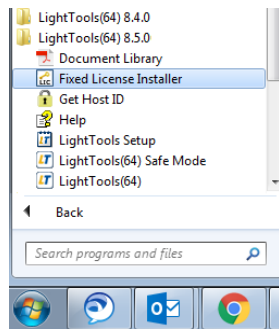

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**Note:** If you try to start LightTools before you install your license key, the License Manger Error dialog box is displayed. Click the Install License button on that dialog box to display the Fixed License Installer and follow steps 3 through 6.

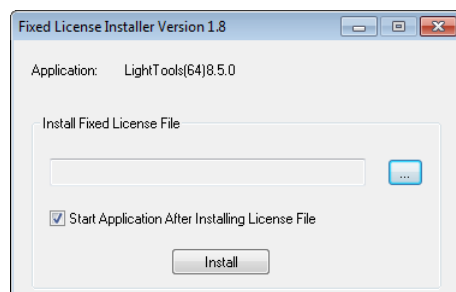
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Follow these steps to install your license key.

1. Insert the license dongle in an active USB port.
2. To install your license key, click **Start > Programs > LightTools > Fixed License Installer**.

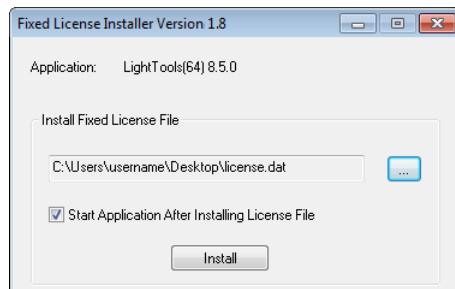


The Fixed License Installer is displayed.



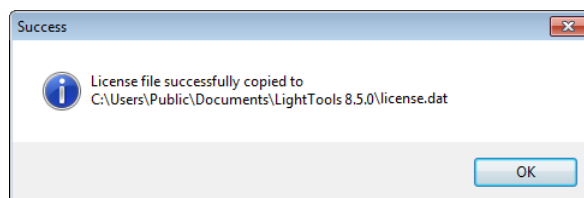
3. Click the browse button .
4. In the Open dialog box, navigate to the license file, select it, and click Open.

The Open dialog box is closed, and the path to the license key file is shown in the Fixed License Installer.



5. Click the Install button.

The license key is installed, and the Success dialog box is displayed.



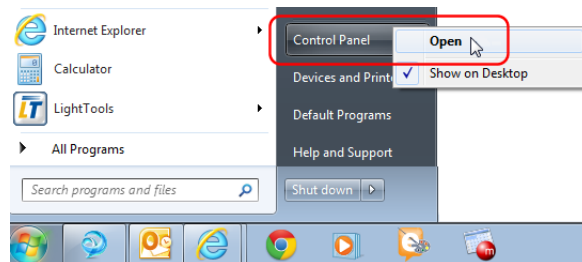
6. Click OK.

LightTools starts automatically.

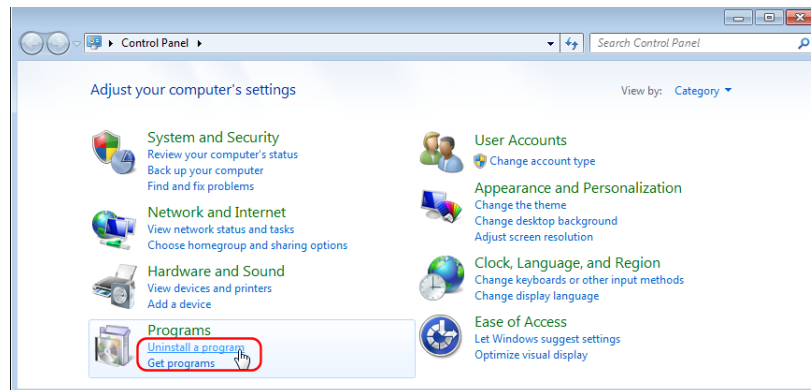
## Modifying License Options

If you need to change the type of license (e.g., fixed or floating) for your LightTools installation, follow these steps.

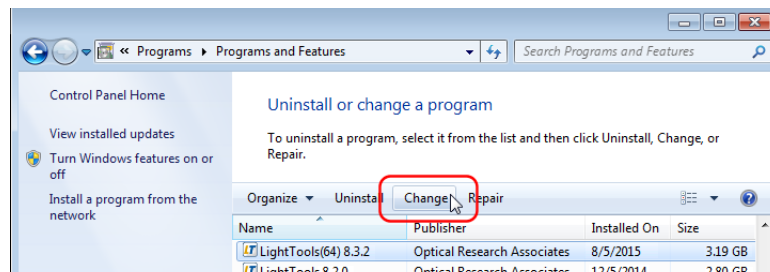
1. Open the InstallShield Wizard:
  - If you have a LightTools DVD, insert it into the DVD drive and choose **Modify > Change Licensing Options**.
  - If you do not have a DVD, follow these steps:
    - a. From the Windows Start button, select Start.
    - b. Right-click Control Panel and select Open on the pop-up menu.



- c. Under Programs, click Uninstall a Program.



- d. In the Name column, locate and select the LightTools program you want to modify.
  - e. Click the Change button.

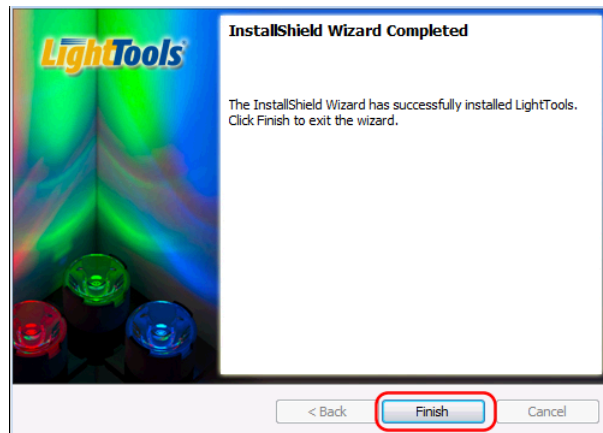


2. When the InstallShield Wizard is displayed, click Next.

On the Program Maintenance screen, the Modify option is selected.

3. Click Next.
4. On the Installation Options page, click the option for Change Licensing Options and click Next.
5. On the License Installation Options page, select the type of license that will be used. If you select Floating License, enter the Server Hostname as well.
6. Click Next.
7. On the Ready to Modify the Program page, click Install.

When the licensing option has been updated, the wizard displays the InstallShield Wizard Completed screen.



8. Click Finish to close the wizard.

# Chapter 3 Installing LightTools with a Floating License

You can run LightTools using either a *fixed* license or a *floating* license. This chapter describes how to install the product to run using a floating license on a network server, which allows you to run LightTools on any computer on the same network, and describes how to install LightTools on one or more client machines. The number of users that can use LightTools concurrently is limited to a predetermined number by the licensing software.

The floating license capability is supported by the OSG Floating License Manager, which is a Sentinel RMS license manager that has been customized for Synopsys OSG software. If you install other Synopsys OSG software products, they will share the same license management software, and their license keys will be written to the same license key file. The applications cannot share licenses; they share only the license server software.



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**Note:** Installing a floating license requires system-administration-level training and should be performed by someone who is familiar with your network structure. To perform this installation, you must be logged on as administrator.

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The steps for installing LightTools to run with a floating license are:

1. *Selecting a License Server* on page 11
2. *Installing the OSG Floating License Manager on the License Server* on page 12
3. *Installing a License Key for a Floating License* on page 22
4. *Installing LightTools on Client Machines* on page 23
5. *Administering Floating Licenses* on page 28

## Selecting a License Server

Before installing any software, you must identify the computer that will act as the license server. This must be a computer connected to a network that can grant access to one or more client machines.



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**Note:** By default, the License Server communicates via port 5093. If you will be running LightTools across different subnets, you will have to configure your routers or firewalls to allow two-way communication across this port.

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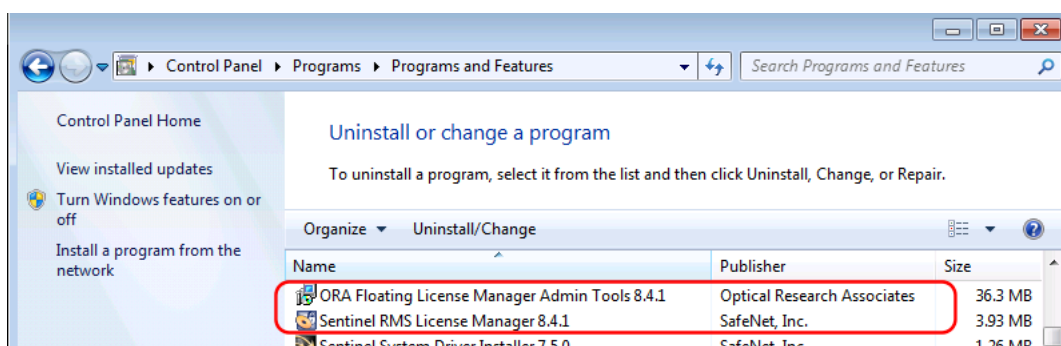
## Installing the OSG Floating License Manager on the License Server

Follow these steps to install the OSG Floating License Manager, which is provided on the SolvNet website. See *Downloading LightTools Software from SolvNet* on page 37 (step 10) for instructions.



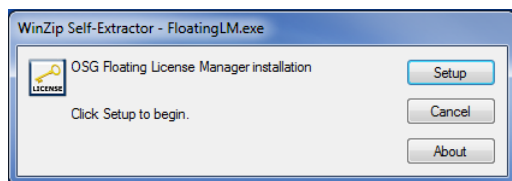
**Note:** If you have any other version of the Sentinel RMS software (e.g., 8.4.1, 8.6), you must first uninstall that version, as described below.

**Before You Begin:** To uninstall an earlier version of the Sentinel RMS software, click the Windows Start menu, and click **Control Panel > Programs > Programs and Features**. If you have the ORA Floating License Manager installed, be sure that you uninstall *both* the ORA Floating License Manager Admin Tools and the Sentinel RMS License Manager, shown in the following figure



1. Log on to the license server with administrator privileges.
2. Navigate to folder where you downloaded the OSG Floating License Manager, FloatingLM.exe.
3. Double-click the file FloatingLM.exe.

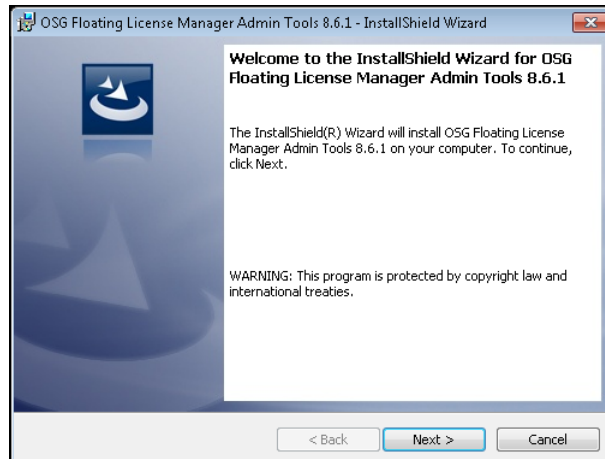
The WinZip Self-Extractor for the OSG Floating License Manager installation is displayed.



4. Click Setup.

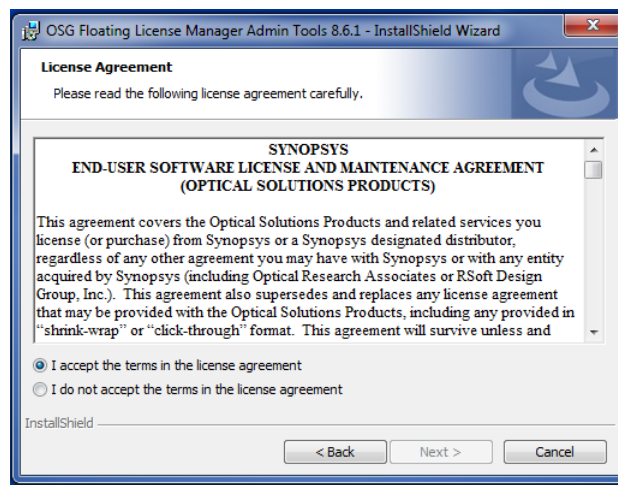
The Welcome screen for the OSG Floating Manager Admin Tools wizard is displayed.





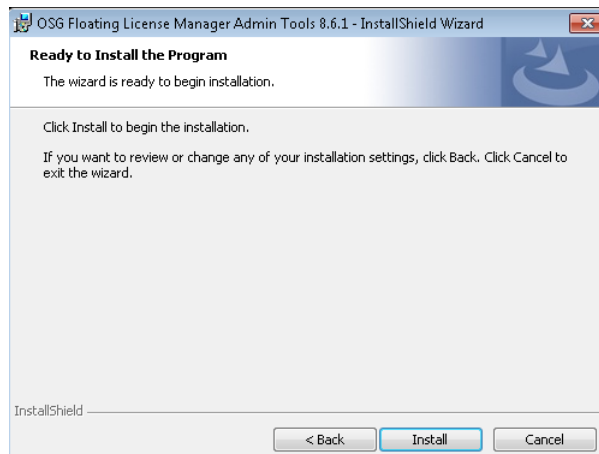
5. Click Next.

The License Agreement screen for the OSG Floating License Manager Admin Tools is displayed.



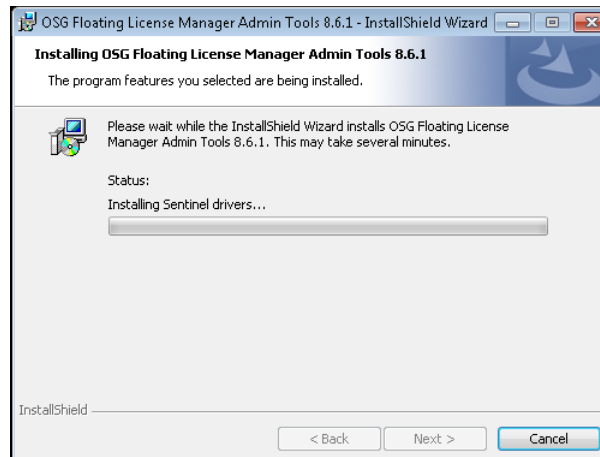
6. Click the I Accept option and click Next to continue.

The Ready to Install screen is displayed.



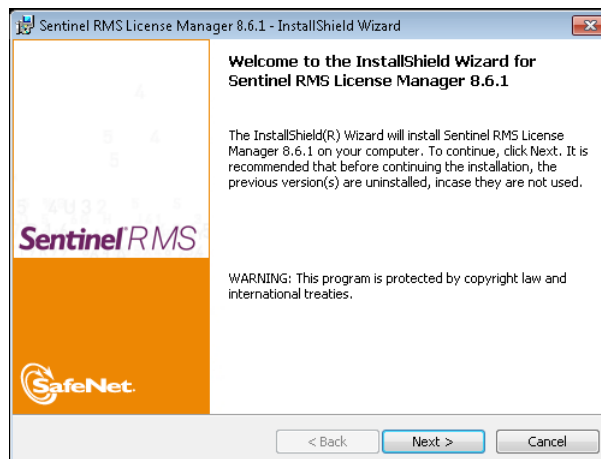
7. Click Install.

The progress screen is displayed while the software is installed.



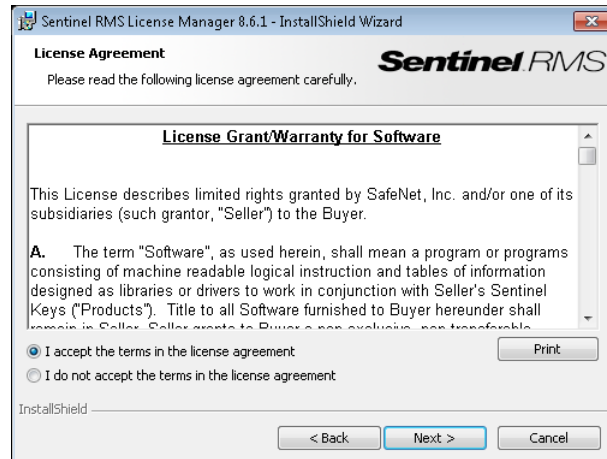
8. Accept the default settings for all options.

The Welcome screen for the Sentinel RMS License Manager is displayed.



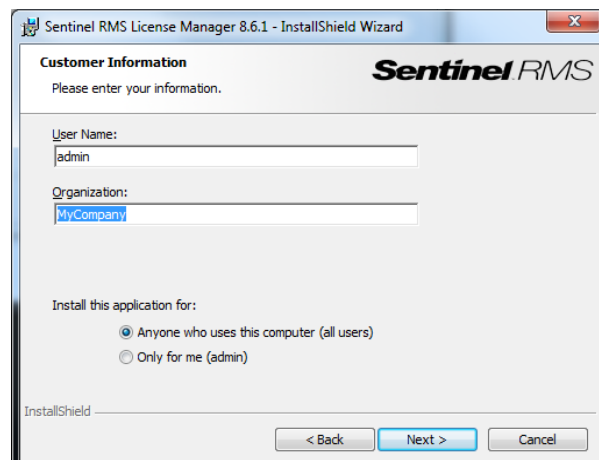
9. Click Next.

The License Agreement screen for the Sentinel RMS License Manager wizard is displayed.



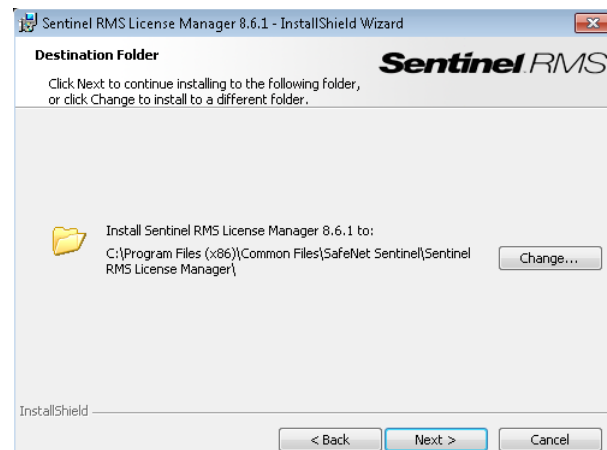
10. Click the I Accept option and then click Next to continue.

The Customer Information dialog box is displayed.



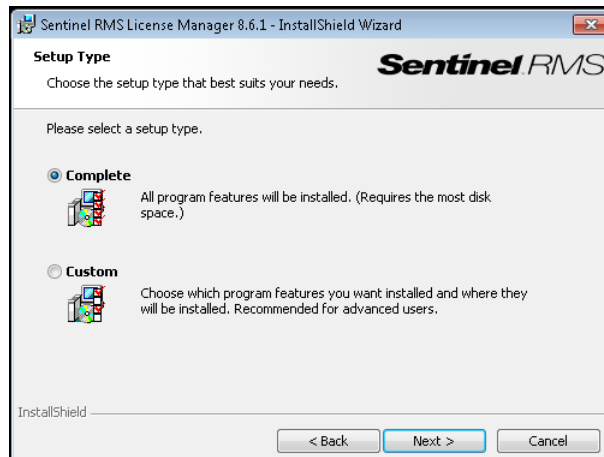
11. Click Next to accept the defaults and continue.

The Destination Folder screen is displayed.



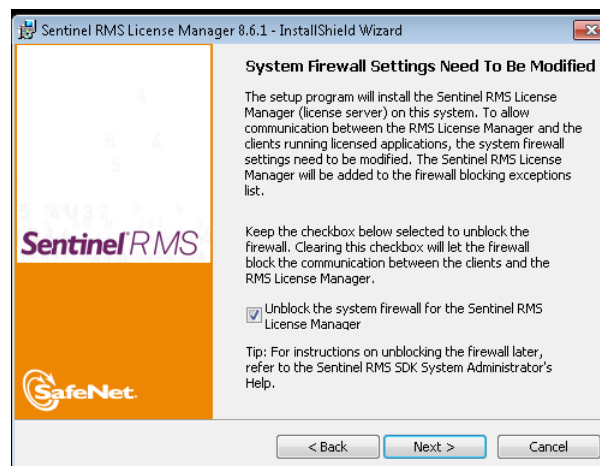
12. Click Next to accept the default and continue.

The Setup Type screen is displayed.



13. Click Next to accept Complete (recommended) and continue.

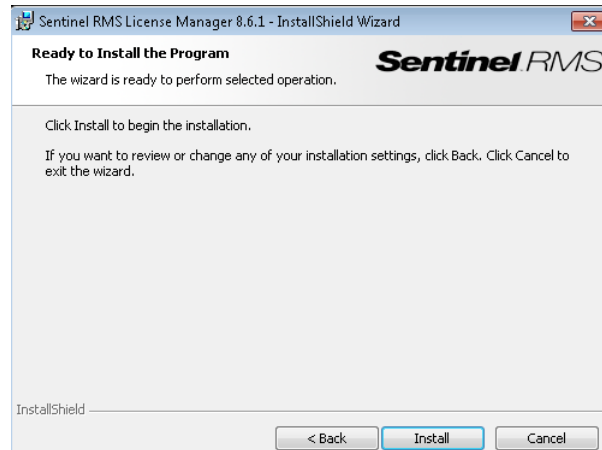
The System Firewall Settings screen is displayed.



14. Click Next (recommended).

If you choose to change the setting on this screen, see *Network Firewall Settings* on page 19 before proceeding.

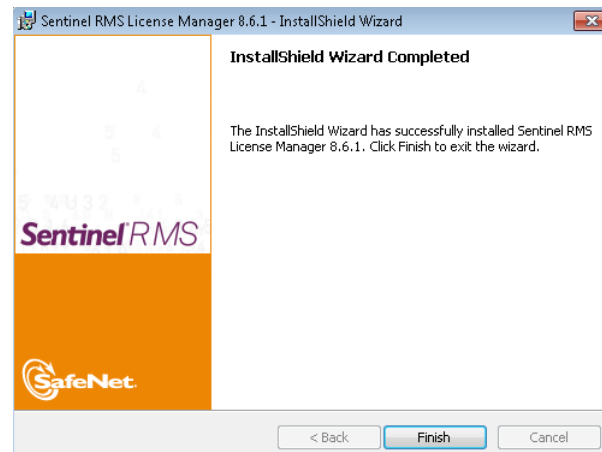
The Ready to Install screen is displayed.



15. Click Install.

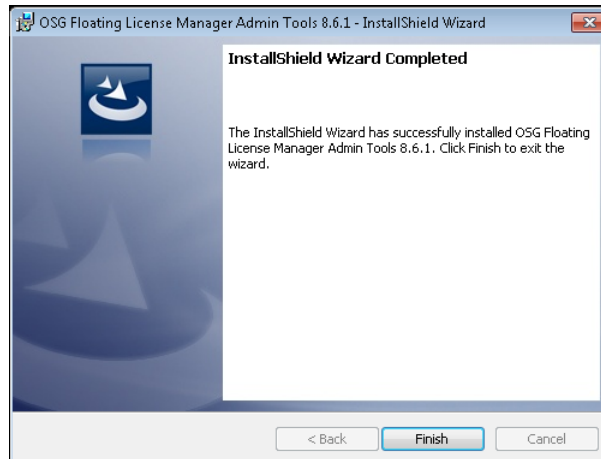
The progress screen is displayed while the software is installed.

When the installation is finished, the Completed screen for the Sentinel License Manager is displayed.



16. Click Finish.

The Completed screen for the OSG Floating License Manager Admin Tools is displayed.



17. Click Finish.

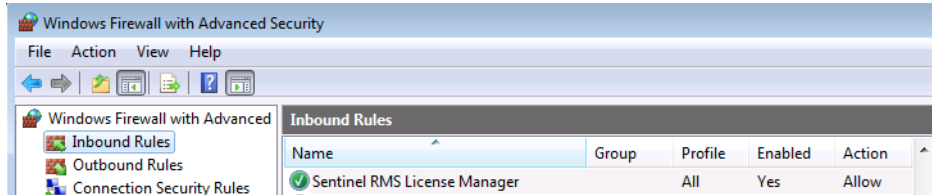
The installation is complete.

18. Reboot your computer if prompted to do so.

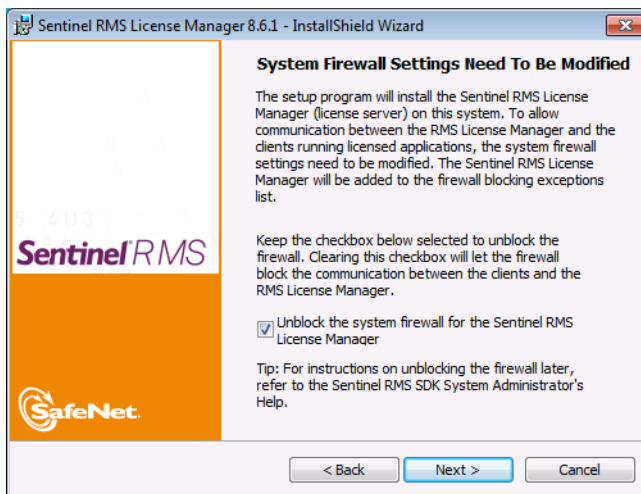
If you already have a license key for this product, skip to *Installing a License Key for a Floating License* on page 22. If you do not yet have a license key, continue with *Obtaining the Host ID for a License Dongle* on page 20.

## Network Firewall Settings

By default, installing the Sentinel RMS License Manager adds one or more inbound rules for the executable (lservnt.exe).



This action is enabled by the check box in the InstallShield Wizard dialog shown in the following figure. If you choose to bypass this action by deselecting this check box, LightTools may not be able to obtain the license needed to run.

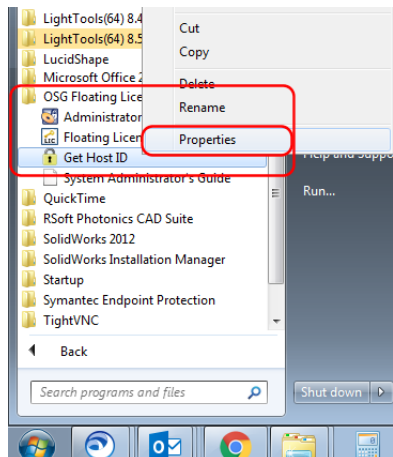


As the dialog explains, the firewall blocking exceptions can be added at a later time. Additionally, if you want strict firewall settings, you can allow communications only for port 5093 in the Ports setting of the Inbound Rules.

## Obtaining the Host ID for a License Dongle

A license key is designed to work for only one USB dongle, so the license key is associated with a unique value encoded on the dongle called a *Host ID*. Because of this, you need to know the Host ID for the license dongle before you can request a license key. The Host ID is printed on a label on the USB dongle; if you're unable to read the ID on the label, you can also obtain the Host ID by running a program that reads it from the dongle. In the OSG Floating License Manager installation, the GetHostID utility is provided for this purpose. Follow these steps to run GetHostID.

1. Insert the USB dongle in an active USB port on the license server.
2. To display the correct Host ID in the GetHostID utility, you need to modify the shortcut to the utility as follows:
  - a. Click the Windows Start menu, select OSG Floating License Manager group, **right-click** GetHostID and select Properties, shown in the following figure.

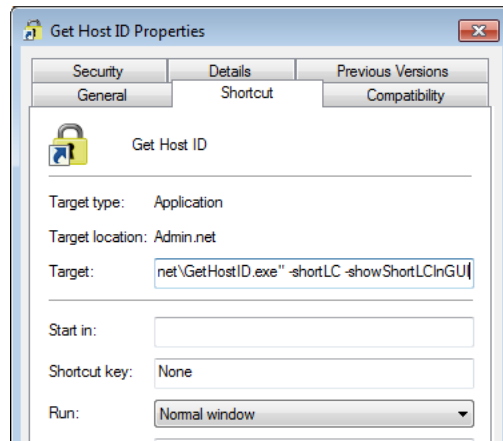


- b. In the GetHostID Properties dialog box, click the Shortcut tab. For the Target command, add the following text at the end of the line:

**-shortLC -showShortLCInGUI**

so that the complete command looks like this:

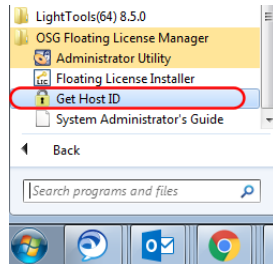
**"C:\Program Files\Optical Research Associates\LightTools 8.5.0\LightTools\GetHostID.exe" -shortLC -showShortLCInGUI**



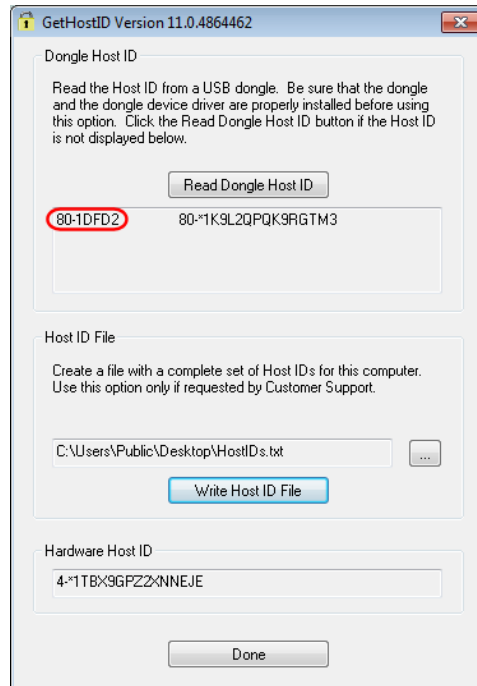


Be sure that there is a space between **.exe"** and **-shortLC**.

- c. Click OK to accept the change and close the GetHostID Properties dialog box.
3. Select the Windows Start menu, expand the OSG Floating License Manager group, and select GetHostID, shown in the following figure.



The GetHostID utility is displayed, as shown in the following figure. Under the Read Dongle Host ID button, a short Host ID and a long Host ID are displayed side by side. To obtain a license key at this time, you need only the *short* Host ID (the first eight characters). In this example, the short Host ID is **80-1DFD2**. (Note that in some display configurations, the two Host IDs are separated by a single space.)



4. Copy the short Host ID to retrieve your license key on the Synopsys SolvNet website. See *Retrieving License Keys* on page 43 for instructions.
5. Click Done to close the GetHostID utility.

After you retrieve your license key, go to *Installing a License Key for a Floating License* on page 22.

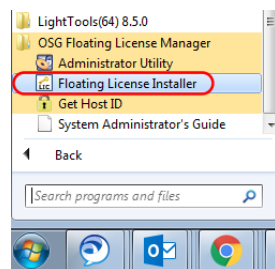
## Installing a License Key for a Floating License

After you install the license server software and retrieve a license key, you need to install the license key on the license server before client machines can successfully run LightTools. The Floating License Installer is provided for this purpose.

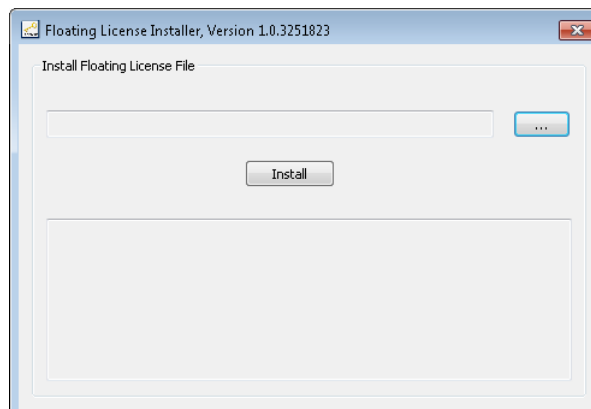
This procedure assumes that you have already obtained a valid license key from the SolvNet SmartKeys web page. If you have not done so, see *Retrieving License Keys* on page 43 for instructions.


Follow these steps to install your license key file.

1. Make sure that the license dongle is inserted in an active USB port on the license server.
2. Click the Windows **Start** button on the taskbar, and select **All Programs > OSG Floating License Manager > Floating License Installer**.

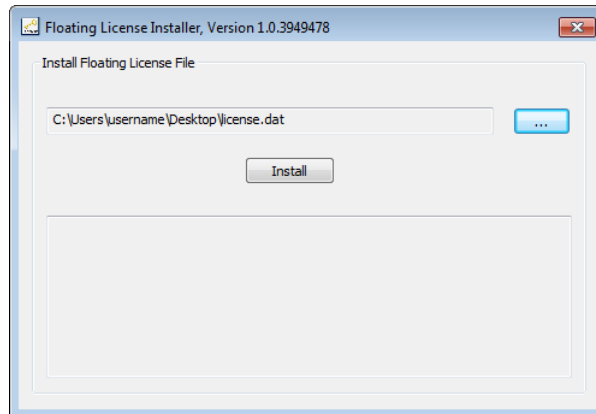


The Floating License Installer is displayed, as shown in the following figure.



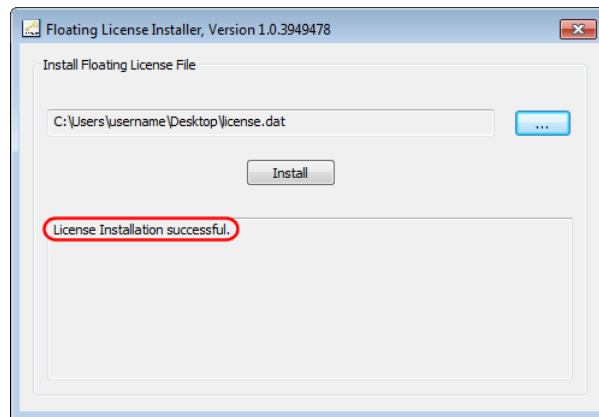
3. Click the Browse button .
4. In the Open dialog box, navigate to the license key file, select it, and click Open.

The Open dialog box is closed, and the path to the license key file is shown in the Floating License Installer.



5. Click the Install button.

The license key file is installed, and the Success dialog box is displayed.



6. To close the Floating License Installer, click the red X in the top right corner.

Continue with *Installing LightTools on Client Machines* on page 23.

## Installing LightTools on Client Machines

LightTools must be installed on each client machine where it will be used. During the installation, you select Floating License as the license type and then specify the name of the server, which is the computer on which the license manager is installed.

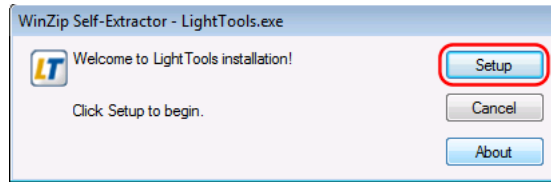
These instructions assume that you have already downloaded LightTools from the Synopsys SolvNet website or that you ordered and received a LightTools DVD. If you have not done so, see *Using Synopsys SolvNet to Obtain LightTools Software and Licenses* on page 35.

1. Log on to your computer as Administrator.
2. If you downloaded LightTools, navigate to the folder where the setup file is located. If you have a DVD, insert it into the DVD drive and navigate to that drive.
3. Double-click the setup file (e.g., LightToolsversion.exe)

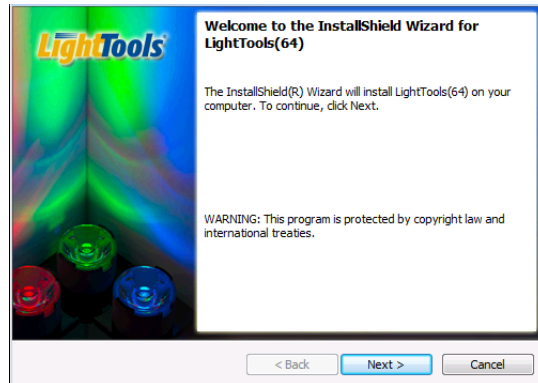
where *version* is the version number for the release (e.g., LightTools64850FCS.exe).

The WinZip Self-Extractor for LightToolsversion.exe is displayed.

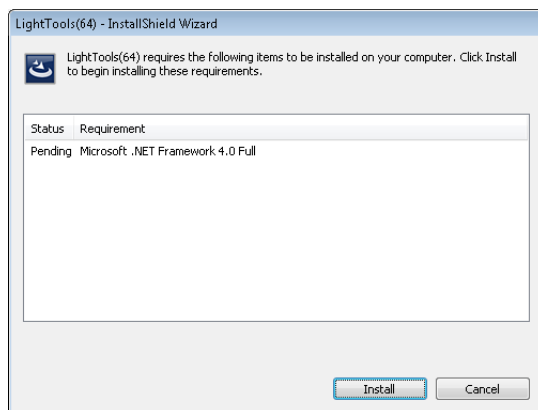
4. Click the Setup button to begin.



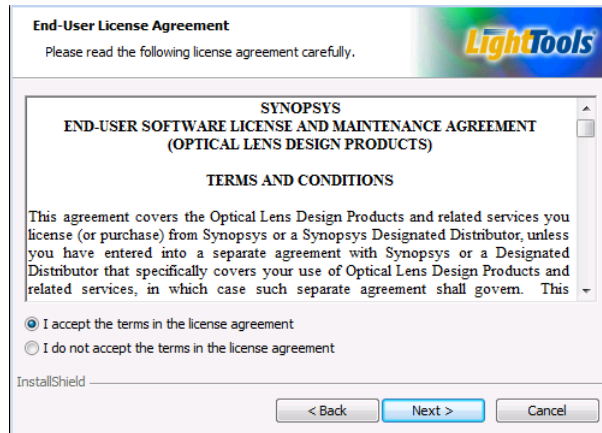
The installation files are extracted, and then the InstallShield Wizard is displayed.



5. Click Next to continue.
6. If you are prompted to install .NET Framework, as shown in the following example, click the Install button.

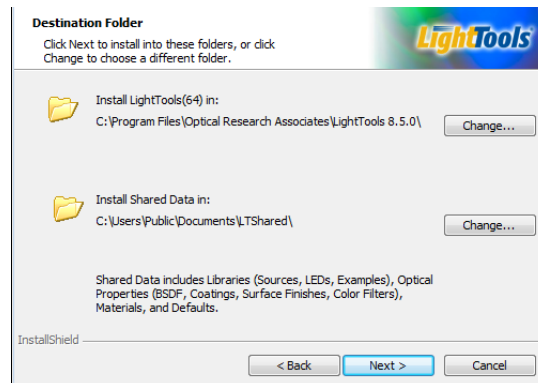


The End User License Agreement screen is displayed.



7. Click the I accept option and click Next to continue.

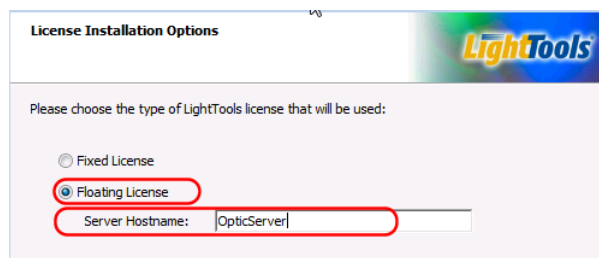
The Destination Folder screen is displayed.



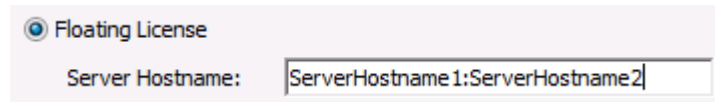
8. To accept the default location for the program and Shared Data files, click Next.

The License Installation Options screen is displayed.

9. Select the Floating License option.
10. Next to the Server Hostname, enter the name of the computer on which the license manager was installed and click Next to continue. In the following figure, the name *OpticServer* is used as an example; be sure to enter the name of your license server in this field.

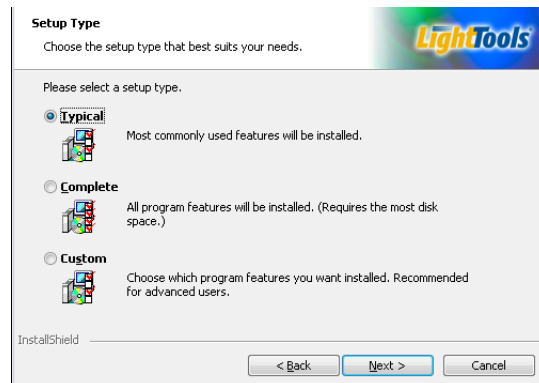


If you want to enter more than one server name, you can do so, as long as you separate the names with a colon, as shown in the following example. The names *ServerHostname1* and *ServerHostname2* are examples; be sure to enter the names of your license servers in this field.

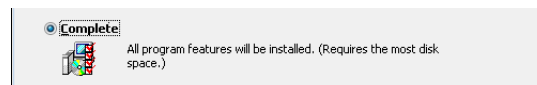


11. Click Next.

The Setup Type screen is displayed.



**Note:** The data exchange module for CATIA V4 is automatically installed with LightTools if you select the Typical setup option, but the larger data exchange module for CATIA V5 is not. To install the CATIA V5 data exchange module with all other LightTools features, select the Complete option on the Setup Type screen.

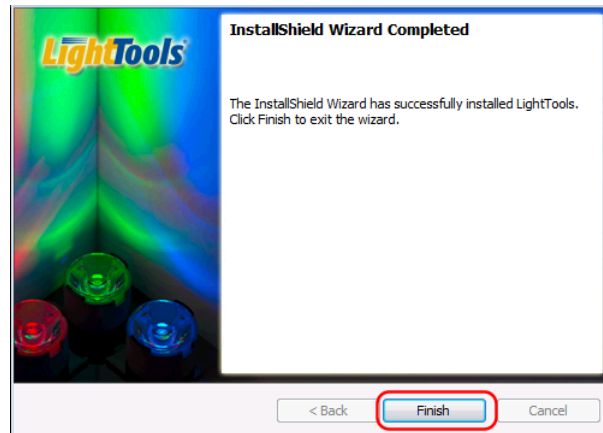


If you select the Custom option, *you must click the CATIA V5 option to include it*; the default setting for the CATIA V5 option in the Custom installation is *not* selected.

12. After you select the type of installation you would like to run, click Next to continue.

13. On the Ready to Install the Program screen, click the Install button to begin installing LightTools.

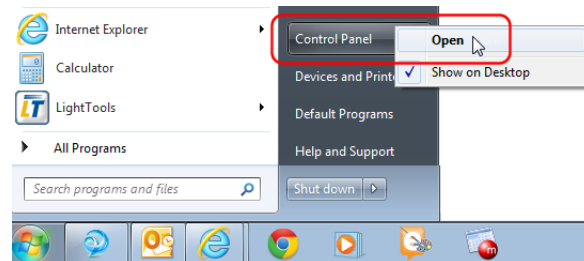
14. When the installation is complete, click Finish to close the wizard.



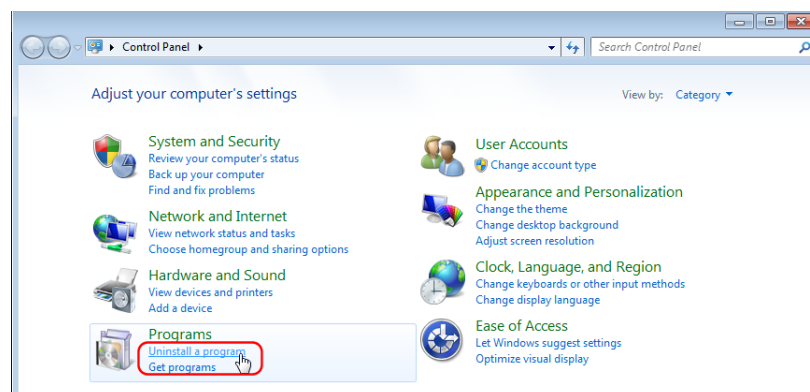
## Modifying License Options

If you need to change the type of license (e.g., fixed or floating) for your LightTools installation, follow these steps.

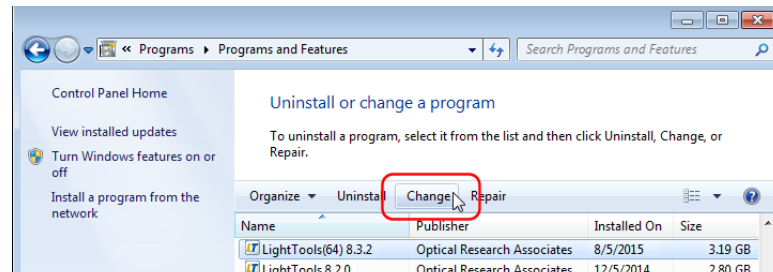
1. Open the InstallShield Wizard:
  - If you have a LightTools DVD, insert it into the DVD drive and choose **Modify > Change Licensing Options**.
  - If you do not have a DVD, follow these steps:
    - a. From the Windows Start button, select Start.
    - b. Right-click Control Panel and select Open on the pop-up menu.



- c. Under Programs, click Uninstall a Program.

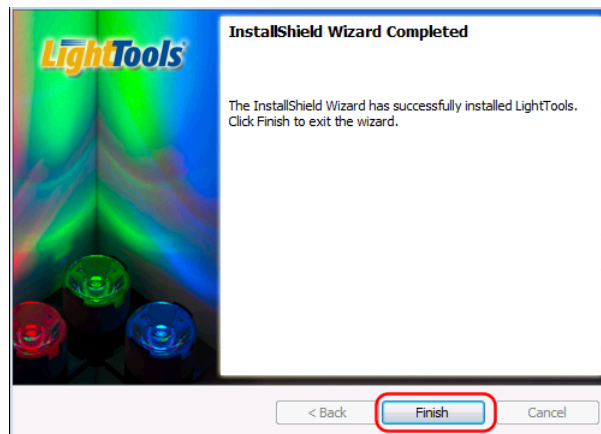


- d. In the Name column, locate and select the LightTools program you want to modify.
- e. Click the Change button.



2. When the InstallShield Wizard is displayed, click Next.  
On the Program Maintenance screen, the Modify option is selected.
3. Click Next.
4. On the Installation Options page, click the option for Change Licensing Options and click Next.
5. On the License Installation Options page, select the type of license that will be used. If you select Floating License, enter the Server Hostname as well.
6. Click Next.
7. On the Ready to Modify the Program page, click Install.

When the licensing option has been updated, the wizard displays the InstallShield Wizard Completed screen.



8. Click Finish to close the wizard.

## Administering Floating Licenses

In general, there is nothing that you need to do to administer the floating licenses. As long as the floating license server machine is operational, connected to the network, and is running the Sentinel service, licenses are available to clients.



## Monitoring License Use

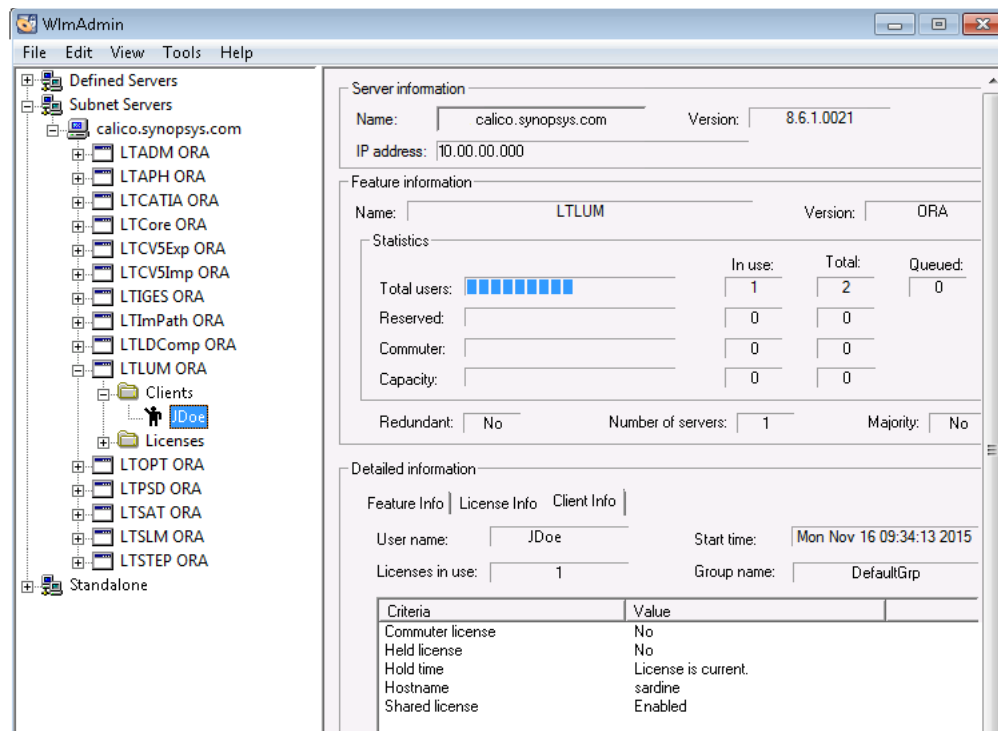
It is possible for all available licenses to be in use, which would prevent additional clients from running LightTools. In such cases, a system administrator can use the WlmAdmin utility to determine to whom the module licenses have been allocated.



**Note:** To use the WlmAdmin utility, you must be the person who started the license server, or you must have administrator privileges.

1. To start the utility, click the Windows **Start** menu and select **Programs > OSG Floating License Manager > Administrator Utility**.
2. Expand the list of modules below the license server hostname.

The details presented in the dialog box indicate which client machine and username have checked out the licenses. The example below shows that from the license server machine *calico*, a LightTools Illumination Module (LTLUM) license is checked out to a user named *JDoe*, who is using the client machine *sardine*.



You can also use the WlmAdmin utility to obtain other licensing activity information, such as license servers detected, details on active licenses, etc. For more information about how to use the WlmAdmin utility, see the *Sentinel System Administrator's Guide*. After the Sentinel software is installed, this manual is available by selecting the Windows **Start** menu and selecting **Programs > OSG Floating License Manager > System Administrator's Guide**.



**Note:** Not all functions described in the *Sentinel System Administrator's Guide* are supported by LightTools.

## Improving Access to LightTools Licenses with the Sentinel License Manager

By default, LightTools licenses are available to anyone on your server on a first-come, first-served basis. Therefore, you can use LightTools immediately without using the Sentinel License Manager. However, if you want to control access to these licenses based on work priorities, you can use the Sentinel License Manager to reserve copies for or deny access to specific users.

Before using the Sentinel License Manager, consider how you want to organize your groups, keeping in mind the following points:

- Anyone on your server can use a license that has not been explicitly reserved.
- After you create a group, you can specify the status of individual members as *Included* (access allowed) or *Excluded* (access denied).
- You can exclude all members of a group from using licenses (called license *tokens*) by specifying 0 licenses for that group.

For example:

- Organize by department:

If you have departments in your organization, enter each department as a separate group, assign the appropriate number of license tokens to each group, and designate each group member as Included or Excluded. You can change this designation for members as needed, according to work priorities.

- Organize by priority:

Create a group for preferred users and another group for everyone else. In the preferred user group, designate all members as Included and assign to them as many licenses as you can allow. For the second group, you enter everyone else in the company, assign the remaining license tokens, and designate which people are Included and which are Excluded. You can change the Included and Excluded designations as the work load changes.

When you are ready to implement this arrangement, you can use the Sentinel License Manager to create a *reservation* file, as described in the following steps.

1. On the license manager server, start the license manager administration utility from the Windows Start button:

**Start > All Programs > OSG Floating License Manager > Administrator Utility**

The WlmAdmin window is displayed.

2. From the menu at the top of the WlmAdmin window, select **Edit > Reservation File**.

The Wlsgrmgr window is displayed.

3. To set up a new members group, select **File > New**.

4. Follow these steps to select a feature.

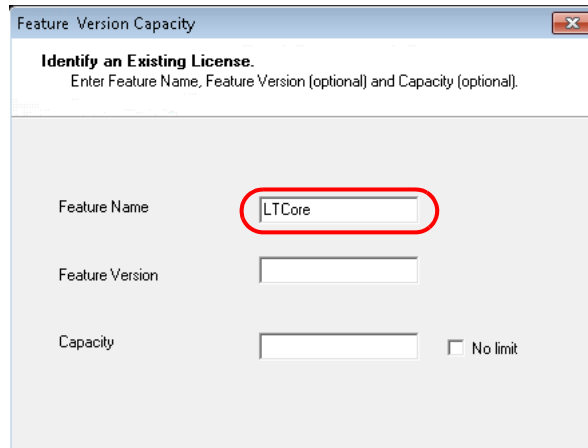
- a. Select **Feature > Add**.

The Add License Reservation Wizard is displayed.

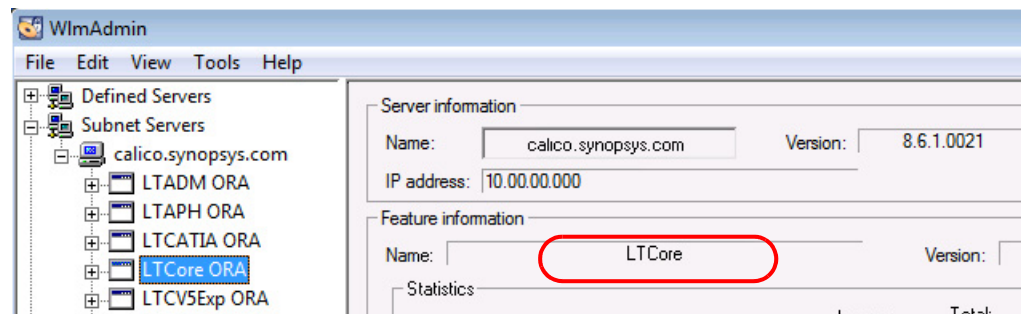
- b. Click **Next** to continue.

The Feature Version Capacity window is displayed.

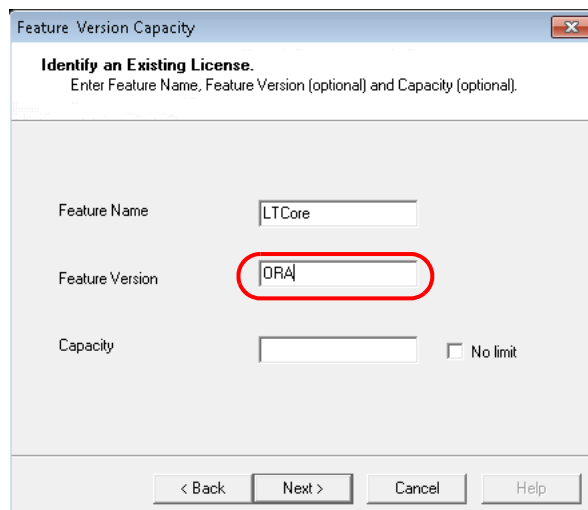
- c. Enter the appropriate Feature Name.



You must enter feature names as they appear in the WlmAdmin dialog box, shown in the following example.



- d. For the Feature Version, enter ORA (upper case).



- e. Click Next.

The Group window is displayed.

5. To establish a user group, follow these steps.

- a. Enter a name that identifies the user group for which you want to allow or deny access.

- b. In the Tokens field, enter the number of licenses to reserve for that group.
- c. Click Next.

The Members window is displayed.

6. To add members to the group, follow these steps.



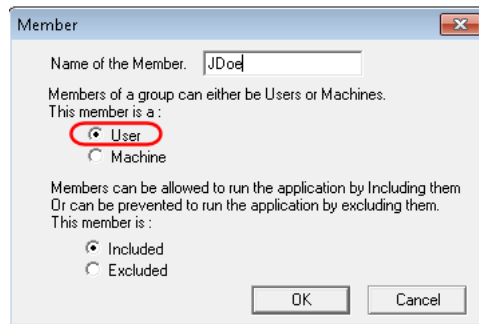

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**Note:** Add members who will be allowed access, as well as members who will be denied access.

---

- a. Click the Add button.

- b. In the Name of the Member field, enter the member's user name. Members can be defined only by user name and not by the client computer name or IP address.



- c. Select User.
  - d. Click Included for members who are allowed access or Excluded for members who are denied access.
  - e. Click OK on the Member window and repeat the process to add each user in the group.
  - f. Click Finish on the Members window to apply the changes and close the window.
7. Repeat the process of selecting a feature, establishing a group, and adding members for each group (steps 4, 5, and 6, above).
  8. Select **File > Save As** and find the directory where the license manager is installed.  
 By default, the license manager is installed in **C:\Program Files\Common Files\SafeNet Sentinel\Sentinel RMS License Manager\WinNT**. A file called **lsreserv** is created and saved at this location. The License Manager references this file to determine which users have access to each feature.
  9. Restart the Sentinel RMS License Manager, as described in the following steps.
    - a. From the Windows Start button, select **Start**.
    - b. Right-click **Control Panel** and select Open on the pop-up menu.
    - c. Click System and Security.
    - d. Select Administrative Tools and then Services.
    - e. Locate and right-click the Sentinel RMS License Manager service in the Services dialog box, and select the Restart option on the pop-up menu.



# Appendix A Using Synopsys SolvNet to Obtain LightTools Software and Licenses

Software and license keys for LightTools are available for download from the Synopsys SolvNet website. This appendix describes how to use the website to download this software products and the license keys required to use it.



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**Note:** For customers working with distributors, please contact your local LightTools software distributor to obtain your software and license. See the [Synopsys Optical Solutions Group Global Contacts](#) page for contact information.

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Special terms used in these instructions are explained in the *Glossary* on page 63.

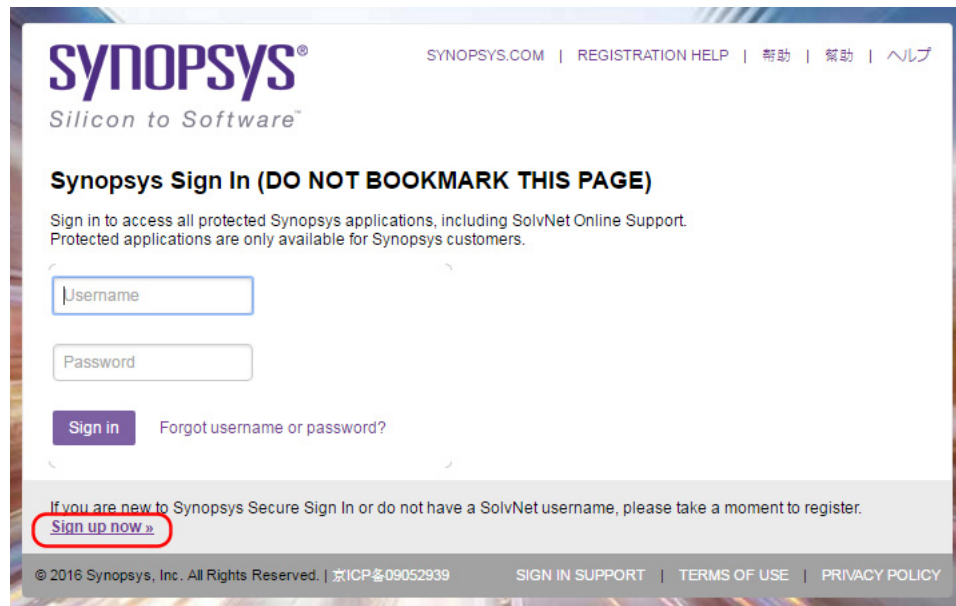
The process is described in the following procedures.

1. *Signing Up for a SolvNet Account* on page 36
2. *Downloading LightTools Software from SolvNet* on page 37  
or  
*Ordering Media (CDs/DVDs)* on page 39
3. *Installing LightTools* on page 41
4. *Retrieving License Keys* on page 43

## Signing Up for a SolvNet Account

Before you can download LightTools software and license keys, you must sign up for a Synopsys SolvNet account. If you already have a SolvNet account, you can skip to *Downloading LightTools Software from SolvNet* on page 37.

1. Go to <https://solvnet.synopsys.com> and click the **Sign Up Now** link.



2. Follow the instructions for New User Registration.

During the registration process, you will need to enter your company's Site ID. If you do not know your company's Site ID, please contact [solvnetfeedback@synopsys.com](mailto:solvnetfeedback@synopsys.com) to request it. Be sure to include your company name and address in the email request.

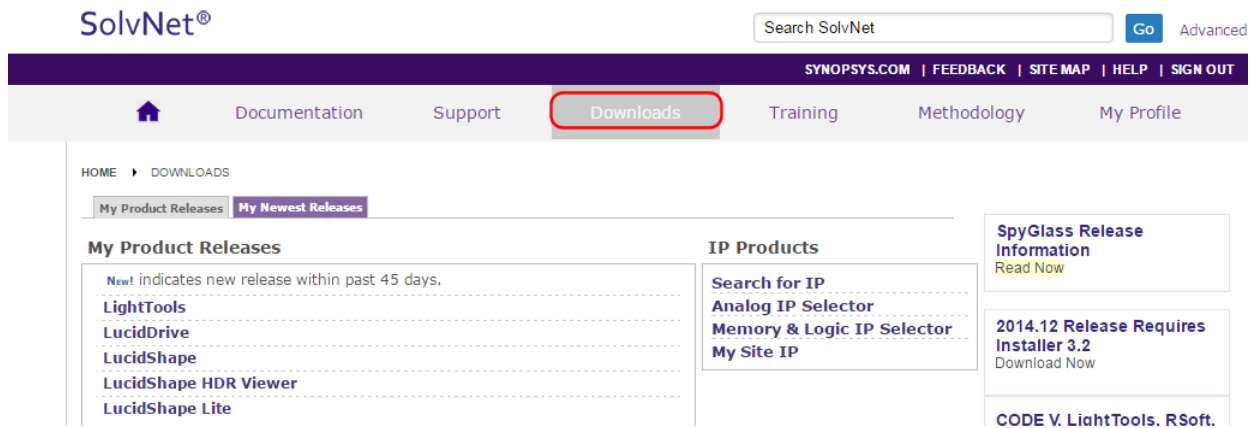
SolvNet will send you a confirmation email. Follow the link in the email to complete the registration process.



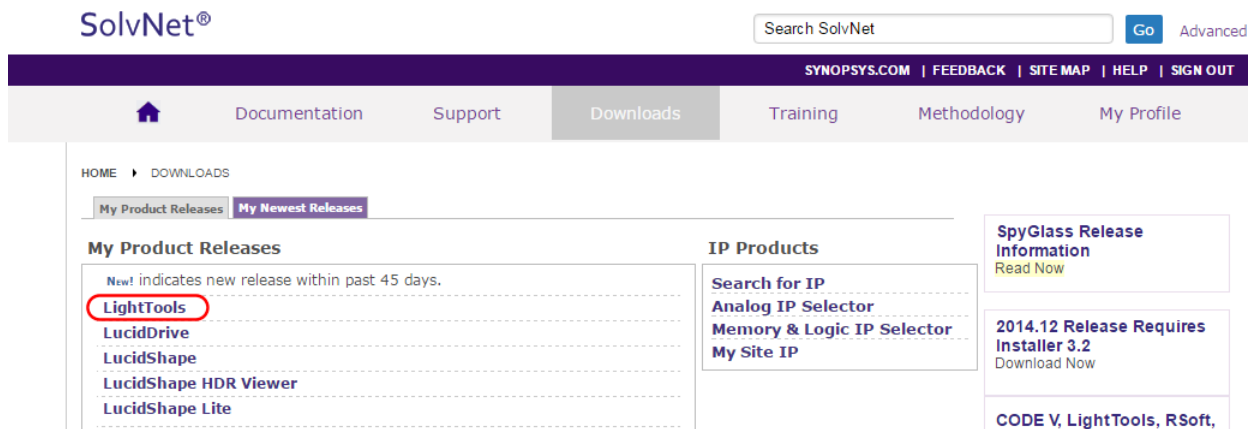
## Downloading LightTools Software from SolvNet

Follow these steps to download the LightTools product. If you are unable to download software, you can order a CD or DVD instead. See *Ordering Media (CDs/DVDs)* on page 39 for instructions.

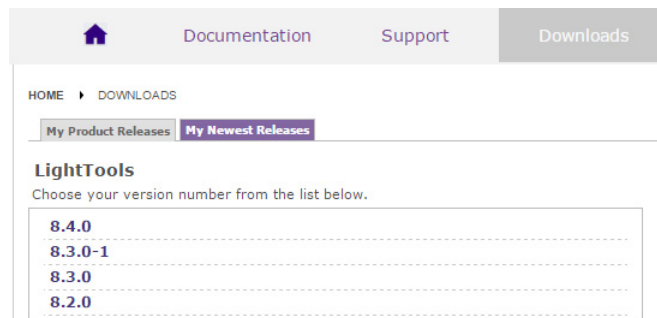
1. Go to <https://solvnet.synopsys.com> and enter your User Name and Password to sign in.
2. Click Downloads.
3. All Synopsys products currently licensed at your company will be listed.



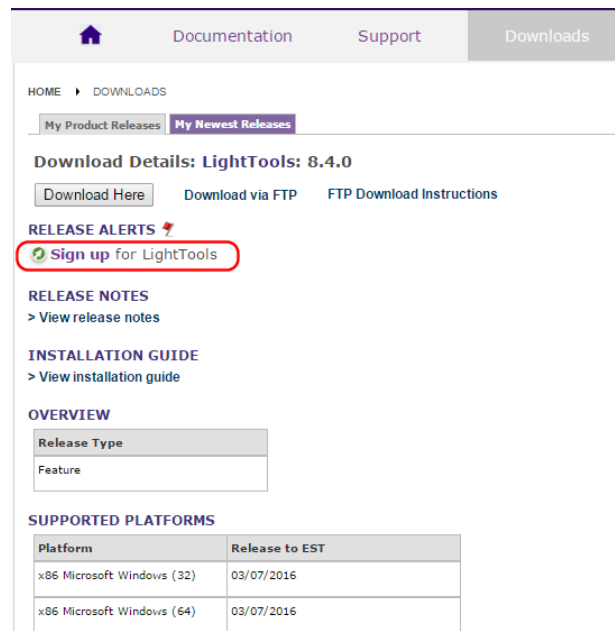
4. Select the product you want to download.



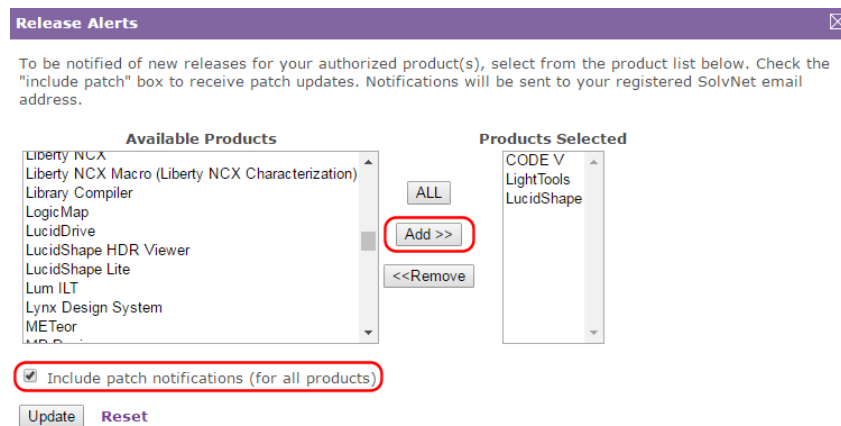
5. Select the version you would like to download.



The **Downloads** page is displayed.



6. Click the **Release Alerts** link to display a **Release Alerts** options that allow you to subscribe to Release Notification emails from SolvNet. These emails let you know when a new version of LightTools is available for download.



- a. Click the product name for which you would like to receive notifications or click **ALL** to receive notifications for all products in the list.
- b. Click the **Add** button.
- c. Click the **Include patch notifications** check box. This allows you to receive notifications of LightTools service releases.
- d. Click the **Update** button.

You are returned to the **Downloads** page.

7. On the **Downloads** page, click **Download Here**.
8. On the Electronic Software Transfer (EST) page, click YES, I AGREE TO THE ABOVE TERMS to continue.
9. Click the **Download** button, shown in the following figure, to begin downloading the software.

10. Floating license customers: if you are a system administrator setting up a floating license server, you can also click the **Download** button for the FloatingLM.exe to download the OSG Floating License Manager at this time. See *Installing LightTools with a Floating License* on page 11 for installation instructions.



**Note:** The FloatingLM.exe installs the new OSG Floating License Manager, which is provided as an optional upgrade and is compatible with LightTools and CODE V, as well as the LucidShape family of products. You can also continue to use the Sentinel RMS License Manager v. 8.6.1, which was available in previous releases and is compatible with LightTools and CODE V.

### Synopsys Electronic Software Transfer(EST)

Product Listing:

Version:

HTTP may be used for downloads from the rev, rev\_o, rev\_a, ip, exp, la and auth directories.

[Explanation of EST directories](#)

For downloads from the /pub directory use FTP connection <ftp.synopsys.com>

Action	File	Size
<input type="button" value="Download"/>	LightTools64850FCS.exe	File size : 1661 MB
<input type="button" value="Download"/>	FloatingLM.exe	File size : 40.8 MB
<input type="button" value="Download"/>	README_LightTools_8.5.txt	File size : 2 KB
<input type="button" value="Download"/>	checksum_info.txt	File size : 228 Bytes

### Ordering Media (CDs/DVDs)

If you are unable to download software and would like to order media (CD or DVD) instead, you can do this directly on the Synopsys SolvNet website. Follow these steps to order media.

1. Go to <https://solvnet.synopsys.com> and enter your User Name and Password to sign in.
2. Click Downloads.
3. Click the **MediaCenter** link in the lower right corner.

SYNOPSYS.COM | FEEDBACK | SITE MAP | HELP | SIGN OUT

Home Documentation Support Downloads Training Methodology My Profile

HOME > DOWNLOADS

My Product Releases My Newest Releases

**My Product Releases**

New! indicates new release within past 45 days.

- LightTools
- LucidDrive
- LucidShape
- LucidShape HDR Viewer
- LucidShape Lite

New! indicates new release within past 45 days.

**IP Products**

Search for IP

- Analog IP Selector
- Memory & Logic IP Selector
- My Site IP

**SpyGlass Release Information**  
[Read Now](#)

**2014.12 Release Requires Installer 3.2**  
[Download Now](#)

**CODE V, LightTools, RSoft, and LucidShape Users**  
Customer Support

**Missing Product?**  
[Contact Us](#)

[DOWNLOADS FAQ](#)

**MEDIACENTER**

- On the **Media Center** page, select the product (e.g., CODE V, LightTools, etc.) and click the **Add** button.

The screenshot shows the Synopsys Media Center interface. At the top, there is a navigation bar with links: SYNOPSYS.COM, FEEDBACK, SITE MAP, HELP, and SIGN OUT. Below this is a secondary navigation bar with links: HOME, DOCUMENTATION, SUPPORT, DOWNLOADS, TRAINING, METHODOLOGY, and MY PROFILE. The main content area is titled "HOME > DOWNLOADS > MEDIA CENTER". It contains instructions for ordering media, a user selection dropdown (User: rcoblent, Site: EMPLOYEE), and two lists of products. The "Available Products" list includes Liberty NCX, Liberty NCX Macro (Liberty NCX Characterization), Library Compiler, LightTools (highlighted with a red box), LogicMap, LucidDrive, LucidShape, LucidShape HDR Viewer, LucidShape Lite, and Lum.UIT. The "Products Selected" list shows CODE V. An "Add >>" button is highlighted with a red box, and a "Remove" button is also visible.

- Complete the Shipping Address information and click **Continue**.
- Review the shipping request, shown in the following figure, and click **Place Order**, shown in the following figure.

The screenshot shows the Synopsys Media Center interface with the shipping request form. The navigation bar is the same as in the previous screenshot. The main content area is titled "HOME > DOWNLOADS > MEDIA CENTER". It contains a message: "Please check the following information. If everything is correct, click 'Place Order' button to place the order. Otherwise, click 'Back' button to make correction." Below this is a form with the following fields:

Name	Cary Rose
User Name	crose
Site ID	100
Products	46217-EST LucidShape 2016.03
<b>Additional Information</b>	
Email	CARYROSE@SYNOPSYS.COM
Attention to Name	Cary Rose
Job Title	
Company Name 1	Synopsys Inc.
Company Name 2	
Department 1	
Department 2	
Department 3	
Department 4	
Address 1	199 South Los Robles Ave
Address 2	CA
Address 3	
Address 4	
Address 5	
City	Pasadena
Zip/Postal Code	91101
State/Province	CA - California
District	
Country	US - United States
Phone Number	626-696-9101
Is Primary Contact	No
Request permanent change to site addresses	No

At the bottom of the form, there are two buttons: "<< Back" and "Place Order". The "Place Order" button is highlighted with a red box.

## Installing LightTools

Instructions for installing LightTools software and license keys are provided in the following chapters:

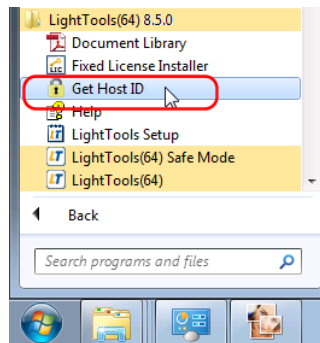
- *Getting Started* on page 1 - lists LightTools system requirements and tells you how to contact LightTools Support.
- *Installing LightTools with a Fixed License* on page 3 - With a fixed license, you install the product, the license dongle, and the license key on the computer where you want to run LightTools.
- *Installing LightTools with a Floating License* on page 11 - With a floating license, you install the license dongle and license key on a network server and the product on one or more client machines where you want run LightTools; you also install the OSG Floating License Manager on the network server to manage the licenses.

After you install the LightTools product, continue with *Retrieving License Keys* on page 43.

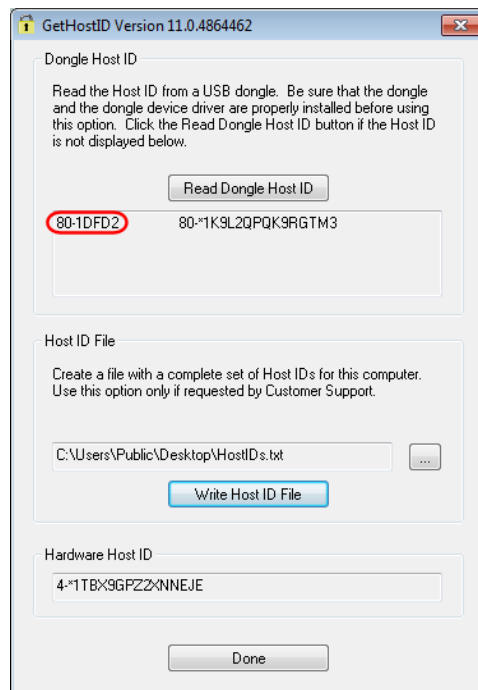
## Obtaining the Host ID for a License Dongle

A license key is designed to work for only one USB dongle, so the license key is associated with a unique value encoded on the dongle called a *Host ID*. Because of this, you need to know the Host ID for the license dongle before you can retrieve a license key. The Host ID is printed on a label on the USB dongle; if you're unable to read the ID on the label, you can also obtain the Host ID by running a program that reads it from the dongle. In the LightTools installation, the GetHostID utility is provided for this purpose. Follow these steps to run GetHostID.

1. Insert the USB dongle in the USB port.
2. Select the Windows Start menu, expand the LightTools group, and select GetHostID, shown in the following figure.



The GetHostID utility is displayed, as shown in the following figure. Under the Read Dongle Host ID button, a short Host ID and a long Host ID are displayed side by side. To obtain a license key at this time, you need only the *short* Host ID (the first eight characters). In this example, the short Host ID is **80-1DFD2**. (Note that in some display configurations, the two Host IDs are separated by a single space.)



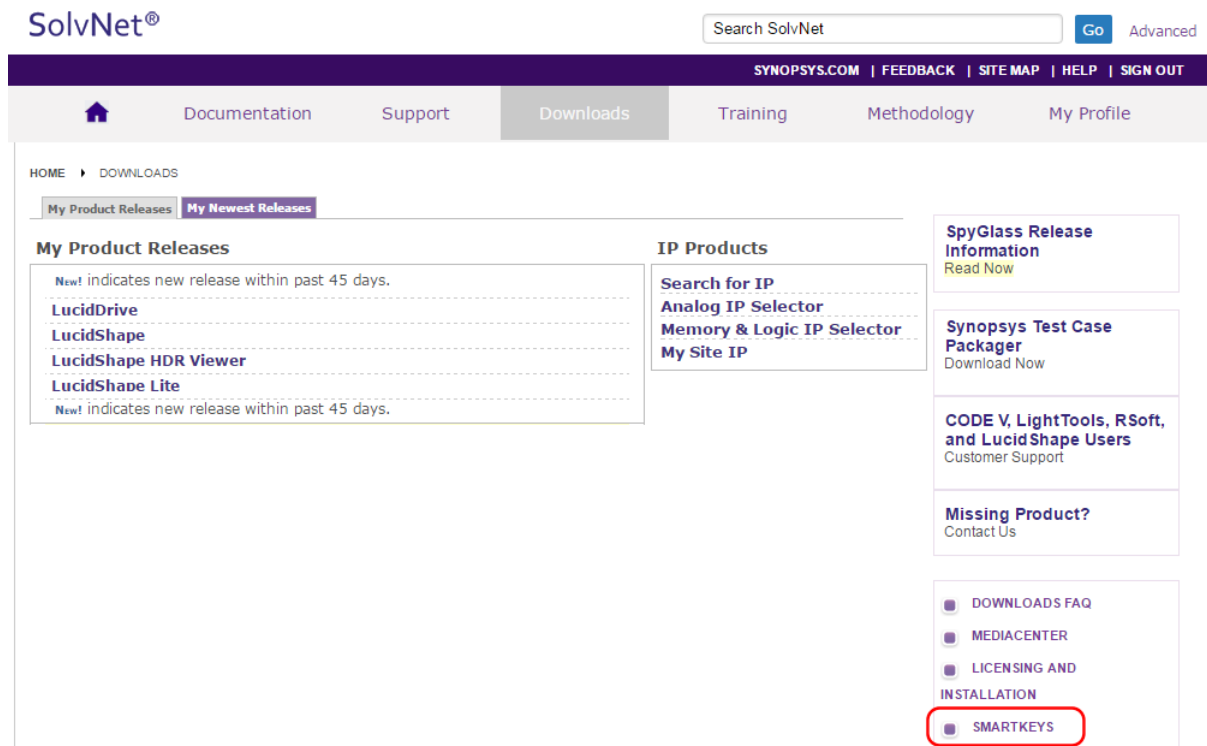
3. Copy the short Host ID and go on to *Retrieving License Keys* on page 43.

## Retrieving License Keys

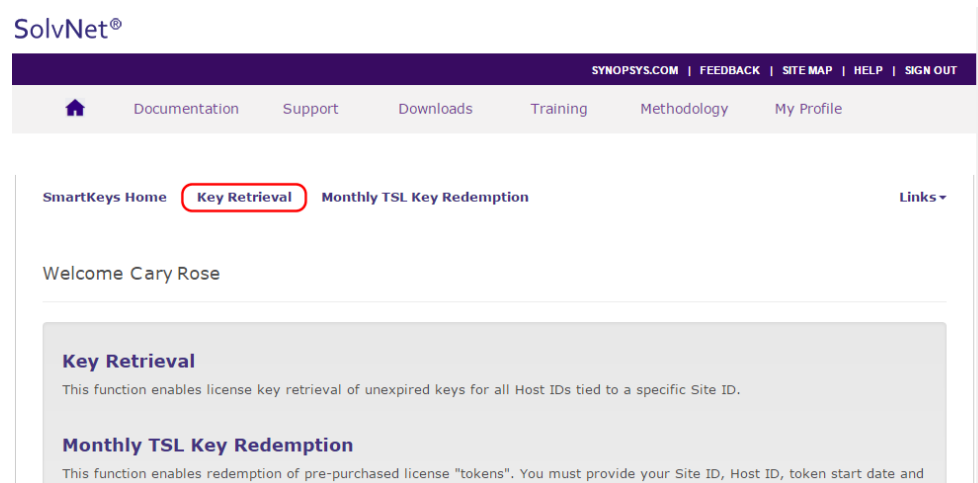
A license key is a file containing licensing information for your specific USB dongle. You can obtain license keys using the SmartKeys web page on the Synopsys SolvNet website. Follow these steps to obtain your license keys.

1. Navigate to the SmartKeys page on SolvNet.

You can go to SmartKeys directly using this link: <https://solvnet.synopsys.com/SmartKeys>, or you can navigate there from the SolvNet Downloads page by clicking the **SmartKeys** link in the lower right corner.



2. On the SolvNet SmartKeys home page, click the **Key Retrieval** link.



The SmartKeys Key Retrieval page is displayed.

You can retrieve a license key for a single USB dongle, or you can retrieve license keys for all Host IDs at your company.

3. To obtain a license key for a single USB dongle, enter the Host ID of your LightTools USB dongle in the Host ID (Optional) field. If you do not know the Host ID value for your USB dongle, see *Obtaining the Host ID for a License Dongle* on page 41.

To obtain license keys for all products and all Host IDs at your company, leave the Host ID (Optional) field blank.

4. Click **Retrieve Key**, shown in the following figure.

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Documentation Support Downloads Training Methodology My Profile

SmartKeys Home Key Retrieval Monthly TSL Key Redemption Links ▾

### Key Retrieval

**Site ID** – Retrieve keys for site IDs for which you are registered. Multiple site IDs may be selected using the Ctrl or Shift key. You may register for additional site IDs by updating your **SolvNet** profile.

**Host ID (Optional)** – Retrieve a key for a specific host ID. For redundant server configurations, enter only one of the hostids. **CODE V & LightTools Users:** [Click here](#) for information on obtaining the host ID.

**Key Retrieval**

Site ID 00000 - MyCompany \*

Site ID (Override)

Host ID (Optional) 80-1DFD2

Attachment Option Text Format \*

Reset Retrieve Key Help

Your LightTools license key will be delivered as a text file attached to an email from the SmartKeys system. If you did not enter a Host ID in step 3, you will receive a separate email with a single license key attached for each Host ID at your company. The email will include the Host ID for which the license key is valid.

5. Save the license key to a convenient location on your computer. You need to access this file to activate LightTools.
6. See one of the following procedures for instructions on installing the license key to activate your LightTools product.
  - *Installing a License Key for a Fixed License* on page 7
  - *Installing a License Key for a Floating License* on page 22



# Appendix B Troubleshooting the LightTools Floating License Installation

If a security problem occurs when you use a LightTools floating license, a License Manager Error dialog box displays an error message. Below are a few common security errors with their causes and resolutions. If you are unable to correct the problem, please contact LightTools Support at this link:

[lighttools\\_support@synopsys.com](mailto:lighttools_support@synopsys.com)

## Problem Adding License Keys to the License Server

**Problem:** *Sentinel: Error [19]: Failed to add license code ...*

**Cause:** This general error message indicates that the license keys were not applied successfully in the license manager. This can occur if the file where the codes were being read is corrupted. However, this error can also occur if license keys that have already been successfully entered are entered a second time.

**Solution:** Verify that the license file contains license keys for the current version of LightTools being installed, and not for an earlier version (the version number is listed in the comments of the license file received from Synopsys). Also verify that the license file has not become corrupted. This might occur if the license file has been edited (i.e., lines containing license keys are changed or become line wrapped incorrectly).

## Problems Starting LightTools

**Problem:** *Error #18b - No valid license code for version x.x.x found.*

**Cause:** There has not been a valid license key entered for this version of LightTools.

**Solution:** See *Installing a License Key for a Fixed License* on page 7 for instructions on installing license keys.

**Problem:** *Error #0xC800100D - License code for version x.x.x has expired.*

**Cause:** The license key for LightTools has expired, or the PC date is before the start date of the license.

**Solution:** Verify that the date on the computer is correct. Install the license key for this version of LightTools on the license manager machine according to the instructions in *Installing a License Key for a Floating License* on page 22. If a new license key is needed, contact LightTools Support.

**Problem:** *Error #8001008 - License manager is not responding. Verify license manager host is available and license manager process is running.*

**Cause:** The Sentinel Floating License Manager program has been disabled.

**Solution:** Restart the license manager program. To do this, open the Control Panel (select **Start > Settings > Control Panel**), select Administrative Tools and then Services. Locate and right-click on Sentinel in the dialog box, and select the Start option on the pop-up menu.

**Cause:** The license manager machine is unavailable.

**Solution:** Verify that the license manager machine is available on the network.

**Cause:** The ORA\_LSHOST environment variable is not set or is incorrectly set.

**Solution:** Change the Hostname with the Program > Change option, as follows: Windows **Start** button > **Control Panel > Programs > Uninstall a Program**. Select LightTools and click **Change** on the menu bar. Select **Next > Modify > Change Licensing Options > Next > Floating License**. Enter a name for the **Server Hostname**. Click **Next > Install > Finish**.

**Problem:** *An unexpected licensing error has occurred.*

**Cause:** An error has occurred with the license manager. The License Manager Error dialog box will contain more specific information about the problem, which is provided by the Sentinel Floating License Manager program. If you are still having difficulties identifying the problem, contact LightTools Support for guidance.

# Glossary

<b>Host ID</b>	A hexadecimal value encoded on the USB dongle. The Synopsys SmartKeys site and delivery email reference the Host ID value when license keys are requested and delivered.
<b>License Key</b>	A file containing the encoded license information needed to run LightTools for a specific USB dongle.
<b>Site ID</b>	A unique number used to identify a specific company. Every company that uses LightTools and other Synopsys software has a unique site ID.
<b>SmartKeys</b>	The SolvNet page where you submit license key requests.
<b>SolvNet</b>	The Synopsys customer portal ( <a href="https://solvnet.synopsys.com">https://solvnet.synopsys.com</a> ). This is where you go to download LightTools software as well as license keys.





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