

# Contents

<b>Chapter 1</b>	<b>Autodesk Installation Overview and FAQ</b> . . . . .	<b>1</b>
	What's New in the 2014 Installation Guide . . . . .	1
	Installation Overview . . . . .	1
	Prepare for Installation . . . . .	2
	Select Install Type . . . . .	3
	Change Product Language . . . . .	4
	Specify License . . . . .	5
	Configure and Install . . . . .	6
	Activate Products . . . . .	6
	Create Deployment . . . . .	7
	Frequently Asked Questions . . . . .	8
	What if I have lost my serial number or product key? . . . . .	8
	Why do I need to activate a product after installation? . . . . .	8
	Can I install Autodesk products from a website? . . . . .	8
	How does a trial license work in a product suite or bundle? . . . . .	9
	How do I change my license type? . . . . .	9
	Where can I find product license information after installation? . . . . .	9
	After installation, how can I change product configuration, repair, or uninstall the product? . . . . .	9
<b>Chapter 2</b>	<b>Autodesk Network Administrator's Guide</b> . . . . .	<b>11</b>

Network Administration and Deployment . . . . .	11
What's New in the 2014 Network Administrator's Guide . . . . .	11
About Deployments . . . . .	12
Language Pack Deployment . . . . .	13
Check Deployment Readiness . . . . .	13
Ensure .NET 3.5 Support for Windows 8 . . . . .	14
Determine the Installation Type . . . . .	15
Determine the License Server Model . . . . .	16
Configure Individual Products . . . . .	16
Include Additional Software . . . . .	17
Include Service Packs . . . . .	18
Create a Network Share . . . . .	19
Create a Deployment . . . . .	20
Create a Combined 32- and 64-bit Deployment . . . . .	22
Modify a Deployment . . . . .	23
Direct Users to the Administrative Image . . . . .	24
Uninstall Deployed Products . . . . .	24
Alternative Distribution Methods . . . . .	25
Overview of Distribution Methods . . . . .	25
Batch Files for Deployments . . . . .	25
Group Policies for Deployments . . . . .	28
Microsoft SCCM for Deployments . . . . .	34
Imaging Software for Deployments . . . . .	39
Installation Questions . . . . .	42
Licensing Questions . . . . .	43
Deployment and Networking Questions . . . . .	44
Uninstall and Maintenance Questions . . . . .	46
Glossary . . . . .	48
<b>Chapter 3 Autodesk Licensing Guide . . . . .</b>	<b>49</b>
Introduction . . . . .	49
What's New in the 2014 Licensing Guide . . . . .	49
License Types . . . . .	49
Activation . . . . .	51
Registration . . . . .	51
Simplified Licensing . . . . .	52
Stand-Alone Licensing . . . . .	52
Introduction to Stand-Alone Licenses . . . . .	52
Multi-Seat Stand-Alone License . . . . .	52
Manage Your Stand-Alone License . . . . .	53
Transfer Your Stand-Alone License . . . . .	55
Troubleshoot a Stand-Alone License Error . . . . .	59
Network Licensing . . . . .	61
Planning Your Network Licensing . . . . .	61
Understanding Your Network License . . . . .	67
Running the Network License Manager . . . . .	77

	Using Other Features of Network Licensing . . . . .	86
	Frequently Asked Questions about Network Licensing . . . . .	102
<b>Chapter 4</b>	<b>Autodesk Navisworks 2014 Installation Supplement . . . . .</b>	<b>105</b>
	System Requirements . . . . .	105
	About Language Packs . . . . .	107
	Uninstalling Language Packs . . . . .	108
	File Exporters . . . . .	108
	Autodesk Navisworks Uninstall Information . . . . .	108
	<b>Index . . . . .</b>	<b>111</b>



# Autodesk Installation Overview and FAQ

# 1

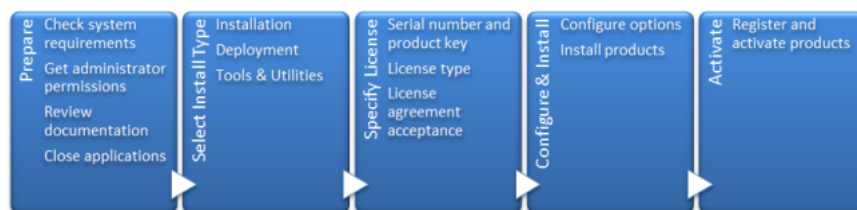
## What's New in the 2014 Installation Guide

The *Installation Overview and FAQ* is now part of a consolidated *Installation Help* online document that includes the *Network Administrator's Guide*, *Licensing Guide*, and product-specific supplements. This new structure is expected to be easier to use and to maintain.

The product installers now also install an Autodesk Uninstall Tool that makes it much easier to uninstall a suite or several products in a single operation. You can read more about the Uninstall Tool in this [FAQ topic](#) (page 9).

## Installation Overview

The following diagram shows the major parts of the installation process:

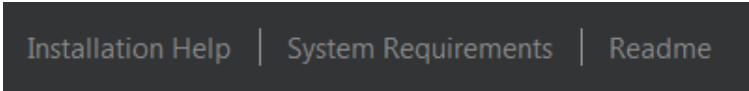


Further details are provided in the following sections.

## Prepare for Installation

Before starting to install, check the following details:

- Confirm that your computer meets the minimum system requirements. If in doubt, click System Requirements at the bottom of the installer screen.
- Find the certified and recommended computer hardware for the products or suites you are planning to install. For more information, go to [www.autodesk.com/hardware](http://www.autodesk.com/hardware).
- Review product documentation to clarify details such as the type of installation to do (stand-alone or network) and which products to install. Documentation is accessible from links on the lower left corner of the installer:



Installation Help | System Requirements | Readme

- Ensure that your user name has Administrator permissions to install applications on the computer or network.
- Obtain serial numbers and product keys for all products you want to install. These are on the product package or provided at the time you download the software.
- When you are ready to run the installer, close all running applications.

### Windows 8 and the .NET 3.5 Requirement

Some Autodesk products require Microsoft DirectX, which, in turn, requires the Microsoft .NET Framework. But Windows 8 has enforced restrictions on installing .NET 3.5 and earlier versions from local media. Therefore, Autodesk products require Internet access so that Windows updates can install or enable the .NET Framework.

If the Autodesk installer is unable to install .NET 3.5 or an earlier version on Windows 8, the following message appears:

**An Internet connection is required to install a Windows component. Please connect and re-launch the installer.**

The .NET installation is prevented by any of the following conditions:

- An Internet connection is not available during installation.
- The computer is configured to use Windows Server Update Services (WSUS) instead of Windows Update.

- The Windows 8 update for Microsoft Security Advisory ( [2749655](#) ) is not installed.

If any of these conditions cannot be resolved, then the System Administrator or user must manually enable .NET 3.5 on each Windows 8 computer before running the Autodesk installer. For more information and procedures, see the following [MSDN article](#).

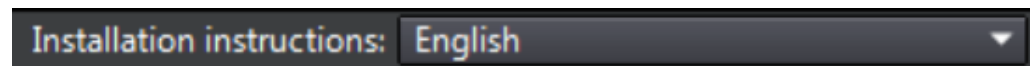
## Select Install Type

Here is some basic information to help you choose the right path.

- **Install** is recommended for individual users or small groups. The key point is that you will repeat the installation process on each computer. This is the only valid installation type for a stand-alone license, but it can also be used with a multi-seat stand-alone or network license.
- **Create Deployment** is recommended for network administrators, using either a multi-seat stand-alone or network license. In the deployment process, the installation is configured once, stored on the network, and then distributed efficiently to users' computers.  
For more information on deployments, see [Create Deployment](#) (page 7) or the *Network Administrator's Guide*.
- **Install Tools & Utilities** is used to install tools and utilities related to your suite or product. If you have a network license for your Autodesk product, you will need to use this option to install the Network License Manager before any users can run the product. Consult the documentation for your suite or product to identify the available tools and utilities of interest.

## Select Installer Language

On the first screen of the installer, you can select the language for the installer screens, using this control on the upper right:



For some Autodesk products, later in the install process you can select the language for installed products. For more information, see [Change Product Language](#) (page 4).

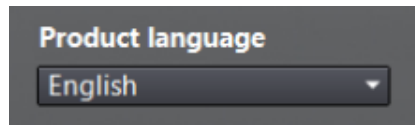
## Change Product Language

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**IMPORTANT** This topic does not apply to Autodesk products that provide each language version on separate media. For these products, you must specify the product language when purchasing, and cannot change it.

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For some Autodesk products, such as AutoCAD, you can select the product language at the time of installation, using this drop-down menu on the installer:



### Language Selection Menu

If the language you want is not on this menu, your available options vary by Autodesk product. Some products, such as Inventor, use language packs to support additional languages.

### These conditions apply to language selection:

- Each suite installation uses a single language. If you need to install one or more products in a different language, that requires a separate installation.
- All deployments must be in a single language. One administrative image can support deployments for different languages, but each deployment is for one language.
- If you are installing multiple products and select a language that is not supported by some products, these products use a default language.
- After you leave the Product Information page of the installer, the menu for selecting a language or adding a language pack is disabled. If you later decide to change the language or add a language pack, you cannot go back to the Product Information page and use the menu. Instead, you must cancel the installation, start the installer again, and then make the correct language selection on the Product Information page.

### About Language Packs

A language pack is a software module that can be added to an Autodesk product to change the language used throughout the user interface and the documentation. A single instance of the product software can support multiple languages by adding language packs. Each language pack is matched to a



specific Autodesk product, and includes an installer. You must install the Autodesk product before installing a language pack. Each installed language pack creates a separate icon on the Windows Start menu, such as "Inventor - French (Francais)" that you can use to start the product in that language. Depending on your product, language packs may be available on the installation media or from a website.

A language pack installer provides an option to create a language pack deployment for a particular product. The language pack deployment can be installed on multiple computers, after the related product is installed, to add another language version.

## Specify License

The following notes provide a general overview. For more detailed information, see the *Licensing Guide* for your product.

### License Types

You can install most Autodesk products for a trial period of 30 days to evaluate the product. If you purchase a license, it is configured as either stand-alone or network, and for a specific number of users. These license types are briefly described as follows:

- A **stand-alone license** is intended for use by one person. The licensed products can be installed on two computers, as long as both instances are not running concurrently.
- A **multi-seat stand-alone license** is intended to support a specified maximum number of users, but it can be installed on a larger number of computers for convenient access.
- A **network license** supports a specified number of users who are connected to a network. The Network License Manager is installed on one or more servers on the network to manage the distribution of licenses to users.

### Network License Server Models

If you are using a network license, choose the server configuration for the Network License Manager that was specified at the time of license purchase:

- **Single License Server**  
One server manages all licenses on the network.
- **Distributed License Server**

Licenses are distributed across a pool of multiple servers in the network. You enter the name of each server in the pool.

#### ■ **Redundant License Server**

Three servers are available to authenticate each license. You enter the names of the three servers.

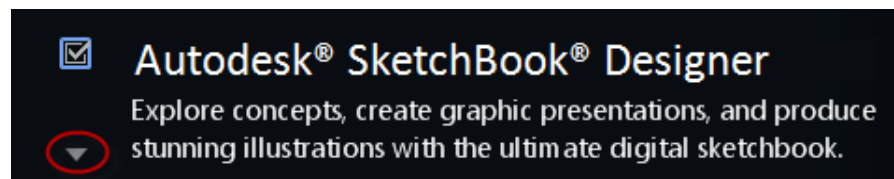
## Configure and Install

### Installation Path

This path specifies where the product folder will be installed. If you change the location, use only valid ASCII characters in the install path.

### Configuration

Most products have a number of configuration settings. On the Install > Configure Installation page, for any product you have selected to install, you see a triangular control for access to a configuration panel:



Click anywhere in the product box to open the configuration panel. For many products, you can select an installation type, either **Typical** to accept the default configuration settings, or **Custom** to review the settings and decide whether to modify them. More information on the configuration settings for your product may exist in a product supplement to *Installation Help*. After you have configured the settings as required, click the triangle to close the configuration panel.

## Activate Products

When you run an Autodesk product for the first time, the activation process verifies that your license is valid, and associates the license with your computer. If it is connected to the Internet, your computer can communicate directly with Autodesk to complete the activation process.

If your computer is disconnected from the Internet, you will see a website address where you can activate a product later when you are connected. Record the website address, product name, serial number, product key, and request code. You will need to enter this data on a web page to activate the product. For more information on activation, go to [Autodesk Licensing](#) and select the FAQ link.

## Create Deployment

If you want to install Autodesk products on multiple computers using an efficient process, create a deployment.

### Administrative Image

The deployment process creates an administrative image, which is a set of installation files that are used to install a consistent configuration of programs on each computer. Other settings:

- **Administrative image path.** Specify a shared network location where you have Full Control permissions. Users will go to this path to install the programs.
- **Target platform.** Select either 32-bit or 64-bit to match the operating system of the computers that will use the deployment.
- **Include only products required by this deployment configuration.** If selected, the deployment cannot be modified in the future to include additional products. If unselected, the administrative image will include all possible products, and the deployment can be modified in the future in any way.

### Installation Settings

- **Silent mode** runs the installation in background, without user input.  
**IMPORTANT** In silent mode, the user's computer can restart automatically and without warning when the installation is complete.
- A **log file** records installation data for each computer.
- A **network log file** keeps a central record of installation data for all computers that run the deployment. It has the same name as your deployment, and must reside in a shared folder where users have Change permissions, so that their computers can write to the log file.

## Frequently Asked Questions

For advice and assistance with topics not covered here, go to [Autodesk Support](#), click your product name, and search in the Knowledgebase for your product.

### **What if I have lost my serial number or product key?**

Check your product packaging or purchase records, if available, or contact [Autodesk Customer Service](#) for assistance.

### **Why do I need to activate a product after installation?**

Activation verifies for Autodesk and for you as a license holder that your Autodesk product is installed on an eligible computer. The activation process improves license security and management. For example, it ensures that a multi-seat license is not in use by more than the authorized number of users.

### **Can I install Autodesk products from a website?**

Several Autodesk websites are being set up to support product downloads, including Subscription, Education, eStore, My Account, and the Trial site. On each site where downloads have been implemented, you have a choice of several download methods to suit different requirements. If you want to install products directly on your computer, use the Install Now option. If you want to download the files to install products later, or to create a deployment, Download Manager is recommended, or you can use Browser Download. More details are provided on the download websites.

## How does a trial license work in a product suite or bundle?

A single trial period, usually 30 days, applies to all Autodesk products in the suite or bundle. When the first product is started, the trial period begins for all products. If the user does not activate one of the products before the trial period ends, access to all of the products is denied. After the trial period ends, the user can restore access to the products by entering an activation code.

## How do I change my license type?

If you are running a product installer and simply entered the wrong license type (network or stand-alone) by mistake, use the Back button to return to the Product Information dialog, and change the license type.

If you want to change the license type for an installed product, contact your Autodesk reseller or license supplier to review any business requirements and to obtain the new license and serial number. Then uninstall your product and run a new install to change the license type and enter the new serial number.

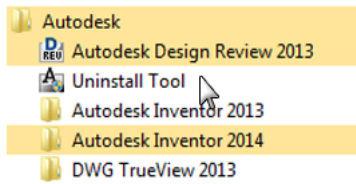
For Media & Entertainment products 3ds Max, Maya, MotionBuilder, Mudbox, and Softimage, a procedure is available for switching a stand-alone license to a network license. Instructions are provided in the supplements for these products in *Autodesk Installation Help*.

## Where can I find product license information after installation?

Select Help menu ► About, or About *[Product Name]*. If your product uses InfoCenter, that is where you can find the Help menu.

## After installation, how can I change product configuration, repair, or uninstall the product?

To uninstall several products or an entire suite, it is recommended that you use the Autodesk Uninstall Tool, which you can launch from the list of products on your computer.



Access to the list varies by version of Windows:

- **Windows 7 or XP:** Click Start menu ► All Programs.
- **Windows 8:** Right-click Start screen ► All Apps.

In the tool window, select the products to be uninstalled. If uninstalling one of your selected products would prevent another product from operating correctly, you will see a warning message about also uninstalling the related products. The Uninstall Tool does not uninstall service packs or locally installed Help files.

Some uninstall operations are best done for individual products rather than from the Uninstall Tool. An example is uninstalling a product without removing the related language packs. Product-specific operations are explained in the following procedure.

- 1 Go to the Windows control panel:
  - **Windows XP:** Click Start menu ► Settings ► Control Panel ► Add or Remove Programs.
  - **Windows 7:** click Start menu ► Control Panel ► Programs/Uninstall a Program.
  - **Windows 8:** right-click Start screen ► All Apps ► Control Panel.
- 2 In Windows control panel, click the product name, and then click Uninstall/Change (Windows 7 or 8) or Change/Remove (Windows XP). The Installer opens in maintenance mode, and directs you through the process.

# Autodesk Network Administrator's Guide

# 2

## Network Administration and Deployment

### What's New in the 2014 Network Administrator's Guide

The *Network Administrator's Guide* is now part of a consolidated *Installation Help* online document that includes the *Installation Overview and FAQ*, *Licensing Guide*, and product-specific supplements. This new structure is expected to be easier to use and to maintain.

Other improvements are as follows:

- **Deployment path length validation.** Deployments created on Windows can exceed the maximum path length for the operating system, especially if they are nested deeply within a directory structure. To reduce the chances of exceeding this limit, Autodesk shortened many of the deployment directory names, and implemented a path length check that alerts the user if a path is too long, and by how many characters.
- **Combined 32- and 64-bit deployments.** For networks that include both 32- and 64-bit computers, network administrators can create a combined deployment that will determine the computer type and automatically install the matching product versions. For more information, see [Create a Combined 32- and 64-bit Deployment](#) (page 22).
- **Including additional software in deployments.** When you select the Autodesk products to include in a deployment, you can also include third-party products, add-ins from the App Store, language packs, and other

.MSI or .EXE packages. For more information, see [Include Additional Software](#) (page 17).

- **Scripted uninstall file.** Each deployment now includes a batch file that you can use to automatically uninstall all or part of a deployment. For more information, see [Uninstall Deployed Products](#) (page 24).

## About Deployments

A deployment provides an efficient way to install one or more Autodesk products with a standard configuration on multiple computers. The files required for the installation process are stored on the network, in an administrative image, in a folder to which all users have shared access. To install the products, users navigate to the deployment folder and double-click an installer shortcut (.LNK file).

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**NOTE** The installer referenced in this guide applies only to Windows operating systems. However, some of the concepts and procedures may apply to Autodesk products on Linux or Mac OS X networks.

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Some essential facts about deployments:

- Deployments can be created for network licenses or multi-seat stand-alone licenses.
- Multiple deployments with different configurations can exist in the same folder, sharing the same administrative image.
- Each deployment installs products in a single language. If you need to install products in different languages, each language requires a separate deployment. For products that support language packs, you can include additional language packs with a deployment.
- An existing deployment can form the basis for creating another deployment with a different configuration.
- Deployments can be configured to generate a log file for each installation. Network administrators can use these log files for troubleshooting.
- Each deployment creates a subfolder, *<deployment name>\SMS\_SCCM scripts*, which contains two documents to help you with the distribution of deployments using Microsoft Systems Management Server (SMS) and System Center Configuration Manager (SCCM): *SMS\_SCCM\_ReadMe.txt* and *<deployment name>\_SCCM.txt*. The *SMS\_SCCM scripts* folder also contains two files to help you create a batch file to automate the uninstallation of



some or all of the products in a deployment. The two files are *<deployment name>\_Uninstall.txt* and *Product\_Uninstall\_ReadMe.txt*.

## Language Pack Deployment

Some Autodesk products, such as Inventor and Revit, can use separate language packs to add one or more additional language versions to an installed product. Each language pack provides user-interface strings, message text, and documentation in a specific language, without duplicating the product software. To distribute a specific language version to multiple instances of an Autodesk product, you can use the installer included with each language pack to create a language pack deployment. If you need to deploy language packs for multiple languages or multiple products, you can create a batch file to install a series of language packs on each computer.

## Check Deployment Readiness

This checklist identifies preliminary tasks to complete, information to gather, and decisions to make before creating a network deployment.

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**TIP** To review deployment settings, including details of product configuration, you can create a test deployment. After the learning process, you can delete the test deployment.

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### Deployment Checklist

- Review the system requirements by clicking the System Requirements link in the installer. Confirm that your network, servers, and client computers meet these system requirements.
  
- Understand the general process for installing the type of license you have purchased. For a network license deployment, know the license server name(s), and the type of license server model that was specified at the time of license purchase.
  
- Install and activate any network administrator tools and utilities. For example, if you are using a network license, install the Network License Manager from the installer.

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## Deployment Checklist

- For any Windows 8 computers, ensure that the Microsoft .NET 3.5 Framework can be installed, or manually enable it before deployment.
- Locate your product serial number and product key. These are found on the outside of the product packaging, or in an email message if you downloaded your product or upgrade from Autodesk.
- Identify a network location for deployments, and create a shared folder to contain deployments.
- If your product has language options, decide which language to use for each deployment.

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**NOTE** Languages can be included when you initially create a deployment, or when you create a new deployment configuration, but not when you modify a deployment.

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- Determine whether to create log files on individual computers, in the deployment folder, or both.
- Determine whether to run installations in silent mode.  

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**NOTE** When products are installed in silent mode, the user's system can automatically reboot without warning when the installation is complete.

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- Identify other configuration options to set, such as defined search paths, locations of support files, and whether to automatically install service packs.

## Ensure .NET 3.5 Support for Windows 8

Some Autodesk products require Microsoft DirectX, which, in turn, requires the Microsoft .NET Framework. But Windows 8 has enforced restrictions on installing .NET 3.5 and earlier versions from local media. Therefore, Autodesk products require Internet access so that Windows updates can install or enable the .NET Framework.

If the Autodesk installer is unable to install .NET 3.5 or an earlier version on Windows 8, the following message appears:

**An Internet connection is required to install a Windows component. Please connect and re-launch the installer.**

The .NET installation is prevented by any of the following conditions:

- An Internet connection is not available during installation.
- The computer is configured to use Windows Server Update Services (WSUS) instead of Windows Update.
- The Windows 8 update for Microsoft Security Advisory ( [2749655](#) ) is not installed.

If any of these conditions cannot be resolved, then the System Administrator or user must manually enable .NET 3.5 on each Windows 8 computer before running the Autodesk installer. For more information and procedures, see the following [MSDN article](#).

## Determine the Installation Type

When setting up your deployment, you specify the installation type by target platform and license type.

### Target Platform

Specify either a 32-bit or 64-bit platform, depending on the operating system of the computers that will use the deployment. For some Autodesk products, you can install a 32-bit version on a 64-bit operating system. For more information, consult product-specific documentation.

### License Type

Specify one of the following license types in the installer, based on the type of license you purchased:

**Network License** With this license type, you install the product to computers on a network, along with the files and registry entries that allow the product to communicate with the Network License Manager (NLM) on one or more servers. You also define the NLM configuration. When an Autodesk product starts up on a client computer, it requests a license from NLM, then returns it when the product is stopped. Computers running the product based on a network installation do not require individual activation.

A major advantage of a network license is that you can install the product on more systems than the number of licenses you have purchased (for example, purchase 25 licenses, but install on 40 computers). At any one time, the product runs on the maximum number of computers for which you have licenses, so you get true floating licenses.

**Stand-Alone License** This license type is for multi-seat stand-alone installations where a single serial number and product key are used to install products on multiple computers. With this license type you do not use NLM to manage product licensing. Instead, installation, registration, and activation occur on each computer. After the first computer activates the multi-seat stand-alone serial number and product key, activation occurs automatically for all other computers using this deployment, as long as they are connected to the Internet.

## Determine the License Server Model

If you choose the Network License option, you need to know which license server model will be used to distribute the product licenses. The model was specified as one of the following when the license was purchased:

- **Single license server model.** The Network License Manager (NLM) is installed on a single server, so license management and activity is restricted to this server. A single license file records the total number of licenses available on the server.
- **Distributed license server model.** Licenses are distributed across more than one server. A unique license file is required for each server. To create a distributed license server, you must run NLM on each server that is part of the distributed server pool.
- **Redundant license server model.** Three servers are available to authenticate each license. With this configuration, licenses continue to be monitored and issued as long as at least two servers are functional. The license file on all three servers is the same, and you must run NLM on each server.

For more information, see [Understanding License Server Models](#) (page 61) in the *Licensing Guide*.

## Configure Individual Products

When you create a deployment, you can accept the default settings for any product you choose to install, or you can configure these settings to create a

custom deployment. Configuration details for different products are covered in product supplements to *Installation Help*. It is recommended that you review these supplements, and determine the right settings for each product in your deployment.

To configure product settings, on the Create Deployment page of the installer, ensure that the product is selected for installation, and then click the product in the scrolling list. The configuration panel opens.

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**IMPORTANT** The configuration settings you choose apply to every instance of the product installed from the deployment. After the deployment is created, these settings can be changed only by modifying the deployment.

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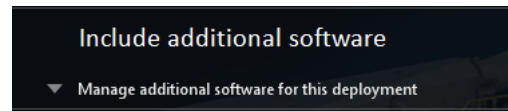
Most products allow you to choose an installation type, either Typical to select the most common options, or Custom to review options in more detail.

Some other common product settings are as follows:

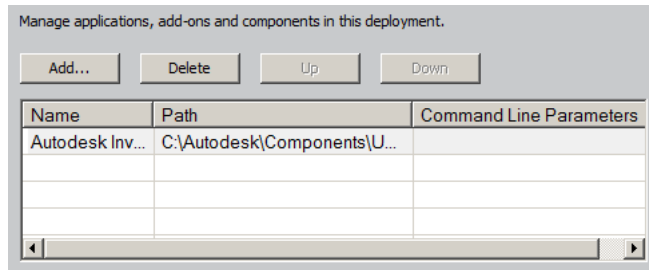
- User preferences for product behavior
- Installation of support files, such as material libraries
- Access to online resources

## Include Additional Software

When you create a deployment, at the end of the product list in the installer you see an option to include additional software in your image.



This is used for installing language packs, components from [apps.exchange.autodesk.com](https://apps.exchange.autodesk.com), or other third-party software. The additional software must be packaged in a self-extracting executable (.EXE) or .MSI format. This option should not be used to install Vault or other Autodesk products. When you choose this option, you use a table to manage the additional software.



Before creating a deployment, store any additional software in a single location that is easy to find. To add software to a deployment, click Add, browse to the file location, and then click the file. The file name and path are added to the management table. Buttons for deleting files and moving them up or down in the list become active when the table contains at least two files. Horizontal and vertical scroll bars are added when the table extends beyond the window.

## Include Service Packs

Most products provide the option to include service packs in a deployment. You can download a service pack from *autodesk.com*, or use a service pack stored on a local hard drive or network location. In either case, the service pack will be applied after installation of the main product.

If you select the Install Service Pack from *autodesk.com* button, the service pack will be automatically downloaded and you will not need to extract the MSP file.

You can add multiple service packs to a deployment only if the service packs are locally stored, not if you are downloading them from *autodesk.com*.

---

**NOTE** If the deployment process for the main product is canceled or fails, the service pack installation will automatically be canceled.

---

Two options are available for including service packs in deployments:

- **Append the Service Pack onto the Deployment.** When you append a service pack, the service pack is applied to the current deployment only. Multiple service packs can be appended to a deployment. The service pack file is included in the deployment and the service pack is applied after the product is deployed.
- **Merge the Service Pack into the Administrative Image MSI File.** With this option, the service pack is merged into the administrative image.

Once merged, a service pack cannot be removed from the administrative image.

### To extract a Microsoft Installer Patch (MSP) file from a service pack

- 1 Download the service pack from the Support site for your product.
- 2 Review the service pack *Readme* file for information about patch usage.
- 3 Open a Windows command prompt and enter the patch file name followed by the `/e` switch and a target file name. Here is the general command format:

```
<local_drive:>\<patch_name>.exe /e  
<local_drive:>\<patch_name>.msp
```

Here is an example:

```
C:\ProductSP1.exe /e ./ProductSP1.msp
```

where *ProductSP1.exe* is the name of the downloaded patch and *ProductSP1.msp* is the name of the extracted file. Using `./` in front of the extraction file name places the extracted file in the same folder as the original executable. The `"e"` command line switch extracts the MSP file from the executable.

### To include a service pack with the deployment

To include a service pack with a deployment, the MSP file must be extracted from the downloaded service pack executable.

- 1 On the Include Service Packs page, click the Browse button.
- 2 In the Open dialog box, locate the service pack you want to include with the deployment.
- 3 Select the MSP file and click Open.
- 4 Specify whether you want to append the service pack to the deployment or merge the service pack into the administrative image.
- 5 Click Next.

## Create a Network Share

After you have fully prepared for creating a deployment, you are ready to set up and distribute Autodesk products from a shared network location. A network share is an installation folder to which all users' computers have access. You create deployments in the network share, and point users to this location to

install the program. Any subfolders inside a network shared folder are automatically shared.

---

**IMPORTANT** If your deployment folder is nested inside a series of subfolders, you risk exceeding the path length limit set by the Windows operating system. Avoid this possibility by placing your deployments in a location at or near the top directory of the drive, such as `\\serverXX\Deployments`.

---

If you select the option to create a network log file, then during installation, the user's computer writes an entry to the log file in the network share. Therefore, this option requires that users have read-write access to the network share.

You can create a deployment folder on a network share as part of the process of creating the deployment. If you plan to create several deployments of the same product or suite, configured for different user groups, then these deployments can share the same administrative image, and the shortcuts can reside in the same folder. However, if you plan to create deployments of different products or suites, it is recommended that you create separate product folders on the network share before starting to create deployments.

For more information on how to create a network share, see the documentation for your operating system.

## Create a Deployment

Use this procedure to create a new deployment from the installer. In the process, you can create a **default deployment** by accepting the default configuration of each installed product, or you can create a **custom deployment** by customizing the configuration settings of one or more products in the deployment.

### To create a deployment

- 1 Close all running applications on your computer.
- 2 Start the installer.
- 3 On the first page, if language choices are available, select a language for the deployment instructions, and then click Create Deployment.



4 On the Configure <name> page, **Administrative Image** section, specify the following data:

- a Enter a descriptive name for the deployment that identifies the user group, platform, or other attribute to differentiate this deployment from others.
- b Enter the path or browse to the shared network folder where you want to create and store your administrative image.

**IMPORTANT** If your deployment folder is nested inside a series of subfolders, you risk exceeding the path length limit set by the Windows operating system. Avoid this possibility by placing your deployments in a location at or near the top directory of the drive, such as `\\serverXX\Deployments`.

Users install the program from this location.

- c Select either 32-bit or 64-bit for the target operating system.
- d Choose whether to include only the products required by this configuration.
  - If selected, the deployment cannot be modified in future to include additional products.
  - If unselected, the administrative image will include all possible products, so the current deployment can be modified in any way.

5 In the **Installation Settings** section, select one or more of these options:

- **Silent mode** runs the installation in background, without prompting the user for any input.

**NOTE** Silent mode can automatically restart the user's computer without warning after installation.

- **Log file on each workstation** can enable users to review and troubleshoot their own installations.
- **Network log file** in a central location supports the network administrator in reviewing data for all installations.

**NOTE** The network log file must be in a shared folder where users of the deployment have read-write access. Otherwise, log data for user installations cannot be written to the log file.

6 Review and accept the Autodesk software license agreement.

- 7 On the Product Information page, select your license type, and enter your serial number and product key. If this data is valid, green check marks appear.
- 8 If you are sure that the product information is correct, click Next.
- 9 On the Create Deployment Configuration page, select the products to include in the deployment.
- 10 If you need to configure settings for a product, click the product name to open the configuration panel where you can review and change settings.

**IMPORTANT** The configuration settings you choose apply to every instance of the product installed from the deployment. After the deployment is created, these settings can be changed only by modifying the deployment.

Configuration settings vary widely by product. For more information, see the Installation Help supplement for the product.

- 11 Click Create to create the deployment.  
After the deployment is created, the Deployment Configuration Complete page opens, showing the path to the new deployment and a link for registering products online.
- 12 After you have finished using this screen, click Finish.

## Create a Combined 32- and 64-bit Deployment

If you are deploying products on a network that includes both 32- and 64-bit computers, consider creating a combined deployment that detects the computer type and delivers the matching deployment. You must first create separate 32- and 64-bit deployments before you create the combined deployment.

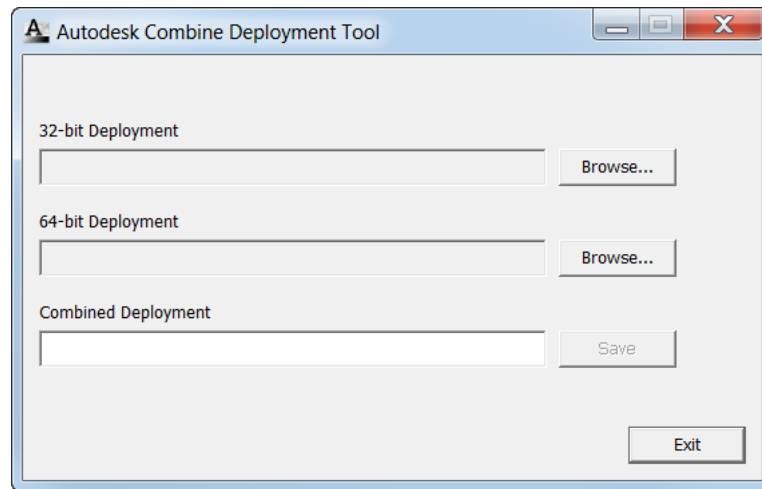
---

**IMPORTANT** Before starting this procedure, ensure that all products in the deployment support 32-bit operating systems.

---

### To create a combined deployment

- 1 Create separate 32- and 64-bit deployments from the product installers and store them in the same deployment folder. Include either '32' or '64' in the deployment name to clearly designate the type.
- 2 In the deployment Tools folder, double-click the **CombineDeploy.exe** tool.



- 3 In the tool panel, browse to the 32- and 64-bit deployments, and then enter a descriptive name for the combined deployment.  
The combined deployment is saved in the same folder as the 32- and 64-bit deployments.

## Modify a Deployment

Inside each deployment folder is a Tools folder that contains a shortcut (.LNK file) named Create & Modify a Deployment. You can use this shortcut to

- Create a new deployment configuration
- Create a new deployment configuration that uses an existing deployment as a template
- Modify the configuration of an existing deployment

The installer pages guide you through the process, similar to when creating an original deployment. If your original administrative image was set to include only products required by the deployment configuration, then your options for creating or modifying the deployment are limited. In particular, you cannot add products to the deployment that are not in the original administrative image. Conversely, if your original administrative image was not set to include only the required products, then it includes all product files. As a result, you can add products when you modify this deployment or when you create new deployment configurations.

### To modify a deployment

- 1 Open the shared network folder that contains the deployment.
- 2 In the Tools folder, double-click the Create & Modify a Deployment shortcut.  
The installer opens at the Modify Deployment page.
- 3 Click through the deployment configuration pages, and select the required options.
- 4 Click Create Deployment.

## Direct Users to the Administrative Image

After you have created the deployment, users can install the program using the shortcut (.LNK file) located in the deployment folder with the administrative image. The shortcut name matches the deployment name that you specified when creating the deployment. Notify users of the shortcut name and location. Instruct them to double-click the shortcut to start the installation. If the deployment uses silent mode, advise users to keep other applications closed during the installation, because their computers might restart automatically after products are installed.

## Uninstall Deployed Products

Each deployment includes a batch file that you can use to automate the uninstallation of some or all of the products in the deployment. Along with the file there is a text document that explains how to customize the batch file for your use. The files are located in the *<deployment name>\SMS\_SCCM scripts* folder, and the file names are as follows:

- *<deployment name>\_Uninstall.txt*
- *Product\_Uninstall\_ReadMe.txt*

In summary, the process involves converting the .TXT file to a .BAT file with ANSI encoding, and then uncommenting a number of lines in the file, removing the :: characters at the beginning of the ::call :funcUninstall command line for each product that you want to uninstall.

# Alternative Distribution Methods

## Overview of Distribution Methods

In addition to standard deployments, you can use the following alternative methods of distributing Autodesk programs on Windows platforms:

- Batch files
- Group Policy Objects (GPOs)
- Microsoft System Center Configuration Manager (SCCM)
- Imaging software

Each method is described in a separate set of topics in this guide:

- [Batch Files for Deployments](#) (page 25)
- [Group Policies for Deployments](#) (page 28)
- [Microsoft SCCM for Deployments](#) (page 34)
- [Imaging Software for Deployments](#) (page 39)

## Batch Files for Deployments

A batch file executes a set of commands. Installation batch files are useful for installation of stand-alone or network licensed programs on computers that are connected to a network. These files are also useful for installing service packs, extensions, and object enablers on a network.

The batch file consists of one or more commands, as well as command switches that specify options, and flags that modify the options. An installation script also contains path names.

An installation script points to the location of the product's *setup.exe* file. You must point to the *setup.exe* file on your installation media or network location.

In order for your Autodesk product to run properly, you must have Administrator permissions on the computer where the program is being installed.

## Sample Installation Batch Files

The sample batch files in this section install AutoCAD in typical configurations for stand-alone or network licensed versions. To make it easy to copy this sample batch file and substitute your own information, the same names are used throughout for variables.

### Notes

<mediaDriveLetter> is the drive letter where the media is mounted or the *setup.exe* file is stored

Install options used here include /t (setup is executed by script) and /qb (display a basic user interface). Others such as /w (log nonfatal warnings) are defined for Microsoft Msiexec command line, and documented on the MS TechNet website.

<SerialPrefix> is the first 3 digits of the serial number

<SerialPostfix> is the last 8 digits of the serial number

<ProdKey> is the Product Key

<lang> is the IETF language tag, for example en-US for English-United States

<eula\_lang> is the ISO 3166-1 alpha-2 standard for the country for example US = United States

### Stand-Alone License

```
<mediaDriveLetter>\setup.exe /t /qb /language <lang> /c
ACAD: INSTALLDIR="%programFiles%\Autodesk\AutoCAD 2014"
ACADSERIALPREFIX=<SerialPrefix>ACADSERIALNUMBER=<SerialPostfix>
```

```
ADLM_PRODKEY=<ProdKey> ADLM_EULA_COUNTRY=<eula_lang>
InstallLevel=5
```

Example:

```
C:\setup.exe /t /qb /language en-us /c
ACAD: INSTALLDIR="%programFiles%\Autodesk\AutoCAD 2014"
ACADSERIALPREFIX=123 ACADSERIALNUMBER=12345678
ADLM_PRODKEY=001E1 ADLM_EULA_COUNTRY=US InstallLevel=5
```

### Single Network License

```
<mediaDriveLetter>\setup.exe /t /qb /language <lang> /c
ACAD: INSTALLDIR="%programFiles%\Autodesk\AutoCAD 2014"
```

```

ACADSERIALPREFIX=<SerialPrefix>ACADSERIALNUMBER=<SerialPostfix>

ADLM_PRODKEY=<ProdKey> ADLM_EULA_COUNTRY=<eula_lang>
InstallLevel=5
ACADSTANDALONENETWORKTYPE="3" ACADLICENSESERVERTYPE="Single
  Server License"
ACADLICENSETYPE="Network License"
ACADSERVERPATH="<FlexLicenseServer> 000000000000"

```

### Notes

For network licenses, ACADSTANDALONENETWORKTYPE identifies the type of license being installed. It has three possible values: 0 for both network and stand-alone, 1 for stand-alone, and 3 for network.

<FlexLicenseServer> is the network license server.

### Distributed Network License

```

<mediaDriveLetter>\setup.exe /t /qb /language <lang> /c
ACAD: INSTALLDIR="%programFiles%\Autodesk\AutoCAD 2014"
ACADSERIALPREFIX=<SerialPrefix>ACADSERIALNUMBER=<SerialPostfix>

ADLM_PRODKEY=<ProdKey> ADLM_EULA_COUNTRY=<eula_lang>
InstallLevel=5
ACADSTANDALONENETWORKTYPE="3"
ACAD_LICENSESERVER_DISTRIBUTED="1"
ACADLICENSESERVERTYPE="Distributed Server License"
ACADLICENSETYPE="Network License"
ACADSERVERPATH="@<server1>;@<server2>;@<server3>;"

```

### Notes

<server1> thru <serverN> are valid network license servers.

### Redundant Network License

```

<mediaDriveLetter>\setup.exe /t /qb /language <lang> /c
ACAD: INSTALLDIR="%programFiles%\Autodesk\AutoCAD 2014"
ACADSERIALPREFIX=<SerialPrefix>ACADSERIALNUMBER=<SerialPostfix>

ADLM_PRODKEY=<ProdKey> ADLM_EULA_COUNTRY=<eula_lang>
InstallLevel=5
ACADSTANDALONENETWORKTYPE="3"
ACADLICENSESERVERTYPE="Redundant Server License"
ACADLICENSETYPE="Network License"

```

```
ACADSERVERPATH="<server1> 000000000000 27005;<server2>  
000000000000 27005;<server3> 000000000000 27005;"
```

### Notes

<server1> thru <server3> are valid network license servers with redundant licenses.

## Run Batch Files

After creating a batch file, you move it to a server or use a mapped drive letter or a UNC (universal naming convention) path. If you place it on a server for users to run, create a shared folder on the server, and then add users to the share with the rights they need. Users who just run the batch file can have read-only access to the shared folder.

Next, in another server location, create a directory for each product you want to install. Copy the installation files to this directory from the product media. You may also want to create directories for service packs, extensions, and your own customization tools.

Use one of the following methods to run an installation batch file:

- Run the batch file manually at each individual computer. To run the installation, paste the batch file into the Run dialog box or run it from the Windows command prompt.
- Send an email to each user who should run the batch file, with the UNC path and any required instructions.
- Email the batch file to each user with instructions for use.
- Set up the batch file so that it runs on login.

## Group Policies for Deployments

With group policies, you can advertise and install a program by assigning a deployment to specific computers. Generally, you would assign the deployment to a computer that is shared by several users. A deployment assigned to a computer can be used by any user of that computer.

---

**NOTE** Autodesk products are designed to be installed on a computer so that any user who logs on to the computer can run the software. If you assign a deployment to a specific user rather than a computer, you may encounter problems when a second specified user tries to install or uninstall a copy of the program.

---



The following section outlines the advantages and disadvantages of using group policies.

#### Advantages

- Works well with deployment functionality.
- Allows you to add custom files to a deployment.
- Allows deployment to computers rather than to users.

#### Disadvantages

- Prohibits the passing of command-line parameters to an MSI executable. You must use scripts instead.
- Prohibits customization of application settings, other than what is set while creating a deployment.

Autodesk products typically have software prerequisites that must be installed on a computer to support the Autodesk product. In particular, Microsoft .NET Framework 4.0, Fusion, and the Fusion plug-in must be installed prior to using group policies. Before deploying products, consult the *System Requirements* for each product, and ensure that these are installed on the computer where the program will be installed.

Distributing a program through group policies involves three main steps:

- 1 **Create an application distribution share point.** The application distribution share point is created when you create a deployment.
- 2 **Assign the deployment to a computer.** See [Use Group Policies to Assign a Deployment to Computers](#) (page 29).
- 3 **Verify the installation.** Confirm that the program has been correctly installed. See [Verify a Group Policy Deployment](#) (page 32).

## Use Group Policies to Assign a Deployment to Computers

Perform the following procedures from a Windows 7 or 8 computer or a Windows 2003, 2008 or 2012 server that has Group Policy Management Console installed, and has access to the Active Directory server.

---

**NOTE** For more information, go to [Microsoft TechNet](#) and search for "Group Policy Management Console".

---

### To assign a deployment to a computer

- 1 Start the Group Policy Management Console (*gpmc.msc*).
- 2 Right-click the organizational unit where you want to create the group policy object (GPO). Then select Create and Link a GPO Here and name the Group Policy.
- 3 Edit the policy.
- 4 In the Group Policy Object Editor dialog box, under Software Settings, right-click Software Installation, and click New ► Package.
- 5 In the Open dialog box, navigate to the administrative image created by the deployment process. Navigate to *Img\<processor type>\<product name folder>*. The processor type is either x86 or x64, depending on the processor type for which you created your deployment.

---

#### Examples

---

For x86 deployments:

```
\\server123\Deployment\Img\x86\<product name>
```

---

For x64 deployments:

```
\\server123\Deployment\Img\x64\<product name>
```

---

- 6 Select the Windows Installer Packages file called *<product name>-<deployment name>.msi*. Click Open.  
If the product was AutoCAD and the deployment was called "Design 2014 64 bit," then the deployment's MSI file would be *acad-Design 2014 64 bit.msi*.
- 7 In the Deploy Software dialog box, select Advanced and click OK.
- 8 In the Properties dialog box, Modifications tab, click Add.
- 9 In the Open dialog box, select the Transform Package file called *<product name>-<deployment name>.mst*. Click Open.
- 10 In the Properties dialog box, Modifications tab, click Add.
- 11 In the Open dialog box, navigate to *<deployment location>\Tools* and select the Transform Package file called *gpo.mst*.
- 12 Click OK to complete the package.

## Adding a Language Pack

If your product uses language packs, you may need to add a language pack to your package.

### To add a language pack

- 1 In the Group Policy Object Editor dialog box, under Software Settings, right-click Software Installation for the same object, and then click New ► Package.
- 2 In the Open dialog box, navigate to the location of the administrative image that you specified when creating the deployment. Navigate to *Img\<processor type>\<locale>\<product name>\<product name>lp.msi*. Click Open.

The *<locale>* used in the examples is *en-us* for US English.

---

#### Examples

---

For x86 deployments: `\\server123\Deployment\Img\x86\en-us\<product name>`

---

For x64 deployments: `\\server123\Deployment\Img\x64\en-us\<product name>`

- 3 In the Deploy Software dialog box select Advanced and click OK.
- 4 In the *<product name>* Properties dialog box, Modifications tab, click Add.
- 5 In the Open dialog box, select the Transform Package file called *<product name>-<deployment name>.mst* located at *Img\<processor type>\acad*. Click Open.
- 6 In the *<product name>* Properties dialog box, Modifications tab, click Add.
- 7 In the Open dialog box, navigate to *<deployment location>\Tools* and select the Transform Package file called *gpo.mst*.
- 8 Click OK to complete the package.

### To add the product-specific package

- 1 In the Group Policy Object Editor dialog box, under Software Settings, right-click Software Installation for the same object, and then click New ► Package.

- 2 In the Open dialog box, navigate to the location of the administrative image that you specified when creating the deployment. Navigate to *Img\<processor type>\<locale>\<product name>ps.msi*. Click Open.  
The <locale> used in the examples is en-us for US English.

---

### Examples

---

For x86 deployments: `\\server123\Deployment\Img\x86\en-us\<product name>`

---

For x64 deployments: `\\server123\Deployment\Img\x64\en-us\<product name>`

- 3 In the Deploy Software dialog box select Advanced and click OK.
- 4 In the <product name> Properties dialog box, Modifications tab, click Add.
- 5 In the Open dialog box, select the Transform Package file called *acad-<deployment name>.mst* located at *Img\<processor type>\<product name>*. Click Open.
- 6 In the <product name> Properties dialog box, Modifications tab, click Add.
- 7 In the Open dialog box, navigate to <deployment location>\Tools and select the Transform Package file called *gpo.mst*.
- 8 Click OK to complete the package.

The GPO is now assigned to all computers that are members of the organizational unit for which the GPO was created. The next time a computer in the organizational unit is restarted, the program will be installed and will be available for all users of the computer. See [Verify a Group Policy Deployment](#) (page 32) to confirm that the group policy has been created correctly.

## Verify a Group Policy Deployment

To verify that this deployment has been correctly assigned to a computer, restart a computer that is in the organizational unit for which the group policy was created. The program installation begins before the login prompt is displayed. The operating system displays group policy messages, including a message indicating the installation of any managed software.

After logging in, double-click the program icon on the desktop to complete the installation and start the program.

---

**NOTE** If problems arise, an entry is logged in the system's Event Viewer, under Applications.

---

## GPO Requirements for Deploying Revit Interoperability

These instructions apply to group policy object (GPO) deployments of Revit Interoperability components with 3ds Max, 3ds Max Design, Inventor, or Showcase. The product-specific MSI files are as follows:

- *RXM2014.msi* for 3ds Max or 3ds Max Design
- *RXI2014.msi* for Inventor
- *RXS2014.msi* for Showcase

In addition to the main GPO transform file (*gpo.mst*), deployments that include a Revit Interoperability component must include one of the following product-specific transform files:

- *RXM2014.mst* for 3ds Max or 3ds Max Design
- *RXI2014.mst* for Inventor
- *RXS2014.mst* for Showcase

These MST files are located in the `\Img\<processor type>\RX2014` directory.

If the deployment does not install products on the default path (`C:\Program Files\Autodesk`) then you must use a tool such as Orca (available with Windows SDK) to transform the `INSTALLDIR` property in the Property table.

### To change the `INSTALLDIR` property:

- 1 Run Orca, and open the Revit Interoperability MSI file for your product (example: *RXI2014.msi* for Inventor).
- 2 Select the Transform menu ► New Transform. Orca will track any changes that you make to the cells in the install tables.
- 3 With the Property table selected in the left pane, click Tables ► Add Row.
- 4 Add the `INSTALLDIR` row to the Property table, and enter the install path, with a backslash (\) at the end (example: `C:\Inventor\`).
- 5 Select Transform ► Generate Transform and save the MST file.

- 6 Include this MST file along with *gpo.mst* and the transform file for the Revit Interoperability MSI.

## Microsoft SCCM for Deployments

Microsoft System Center Configuration Manager (SCCM) allows you to manage software distribution to selected target systems through a remote process. For more information about this topic, go to [Microsoft TechNet](#) and search for "System Center Configuration Manager".

Each deployment includes a folder *<deployment name>\SMS\_SCCM scripts*, which contains four documents to help you with SCCM deployments and uninstalling products:

- *SMS\_SCCM\_ReadMe.docx*
- *<deployment name>\_SCCM.txt*
- *Product\_Uninstall\_Readme.txt*
- *<deployment name>\_Uninstall.txt*

For more information, see [Use SCCM to Uninstall Deployed Products](#) (page 37).

---

**NOTE** Microsoft .NET Framework 4.0 must be installed on each target computer before using SCCM to distribute Autodesk products. Some products require .NET 4.5, which can be installed by the SCCM deployment.

---

### To deploy Autodesk products with SCCM

- 1 Identify or create a collection of target computers to receive the software package.
- 2 Create a source directory using the Create Deployment procedure in the installer. See [Set Up a Source Directory for SCCM](#) (page 35).
- 3 Create an SCCM package to deploy to your target systems, and notify users that the software package is available. See [Create the SCCM Software Installation Package](#) (page 35).

## Set Up a Source Directory for SCCM

When you use SCCM to deploy Autodesk products, you set up the source directory using the Create Deployment process in the installer.

The Create Deployment process creates an administrative image that is used by SCCM to distribute the Autodesk products to the target systems. The location of the administrative image is the package source directory.

To learn more about deployments and setting up the source directory for Autodesk software, see [About Deployments](#) (page 12).

---

**NOTE** Before trying to configure SCCM to deploy the product, it is recommended that you test your deployment to ensure that it can install the product successfully.

---

### To test your deployment

- 1 Log on to a Windows computer as a user who has administrative privileges.
- 2 Navigate to the source directory where your administrative image was created.
- 3 Double-click the deployment shortcut created by the deployment process. The program is either installed, or error information is written to the log file at %temp%.

## Create the SCCM Software Installation Package

After creating the source directory using the deployment process, create the SCCM software installation package. An SCCM package contains the files and instructions that SCCM uses to distribute the software and advertise the package to users. The deployment process creates the files and instructions, but SCCM must be configured to use these files.

### To create a software installation package using SCCM

- 1 Click Start menu ► All Programs ► Microsoft System Center ► Configuration Manager 2007 ► ConfigMgr Console.
- 2 In the Configuration Manager Console window, expand Software Distribution.
- 3 Right-click Packages ► Distribute ► Software.

- 4 In the Distribute Software wizard, click Next.
- 5 In the Package dialog box, select Create a New Package and Program without a Definition File. Click Next.
- 6 In the Package Identification dialog box, enter the information for Name, Version, Publisher, Language and any comments. Click Next.
- 7 In the Source Files dialog box, make selections for where SCCM retrieves the files and how it manages them. Select "Always Obtain Files from a Source Directory". Click Next.
- 8 In the Source Directory dialog box, specify the location of the source directory. Click Next.
- 9 In the Distribution Points dialog box, select the distribution point(s), which is the location from which the software package will be deployed to the target computers. Click Next.
- 10 In the Program Identification dialog box, enter the name of your program. This name displays in Add or Remove Programs in the Control Panel. In the Command Line field, enter **.\Img\setup.exe /W /Q /I .\Img\<deployment name>.ini /language en-us**. For example, if your deployment is named "Adsk-2014", you would enter **.\Img\setup.exe /W /Q /I .\Img\Adsk-2014.ini /language en-us**. Click Next.

**NOTE** This example assumes the language pack you wish to install is US English. About the flags, /W indicates SMS and SCCM, /Q indicates a silent install, and /I indicates a deployment installation.

- 11 In the Program Properties dialog box, Program Can Run drop-down list, select how you want your program to install. Your choices are
  - Only When a User is Logged On
  - Whether or Not a User is Logged On
  - Only When No User is Logged On
- 12 In the After Running drop-down list, select an action to take after the program has been installed. Your choices are
  - No Action Required
  - Program Restarts Computer
  - ConfigMgr Restarts Computer
  - ConfigMgr Logs User Off

**NOTE** Some products require a system restart after installation.



Click Next.

- 13 In the Advertise Program dialog box, select Yes to advertise the program to users. Click Next.
  - 14 In the Select a Program to Advertise dialog box, select the package you want to advertise. Click Next.
  - 15 In the Select Program ► Advertisement Target dialog box, select the collection of people to whom you want to advertise, or create a new collection.
  - 16 In the Select Program ► Advertisement Name dialog box, enter or change the name of your advertisement. Add any comments to further describe the advertisement. Click Next.
  - 17 In the Select Program ► Advertisement Subcollection dialog box, select one of the following options:
    - Advertise this Program to an Existing Collection
    - Create a New Collection and Advertise this Program to It
  - 18 Click Next.
  - 19 In the Select Program ► Advertisement Schedule dialog box, if desired, set options to advertise your program at a specific date and time, or set an expiration date. Click Next.
  - 20 In the Select Program ► Assign Program dialog box, select one of the following options:
    - If the installation process is mandatory, select Yes, Assign the Program.
    - If the installation process is optional, select No, Do Not Assign the Program.
- Click Next.
- 21 In the Summary dialog box, verify your advertisement information. Use the back buttons to make any changes. To finish, click Next.

## Use SCCM to Uninstall Deployed Products

Before using this procedure, go to the *<deployment name>\SMS\_SCCM scripts* folder and create an uninstallation batch file with ANSI encoding, following the instructions in the *Product\_Uninstall\_Readme.txt* file. You will use the resulting batch file *<deployment name>\_Uninstall.bat* in this procedure.

### To create a software uninstallation package using SCCM

- 1 Click Start menu ► All Programs ► Microsoft System Center ► Configuration Manager 2007 ► ConfigMgr Console.
- 2 In the Configuration Manager Console window, expand Software Distribution.
- 3 Right-click Packages ► Distribute ► Software.
- 4 In the Distribute Software wizard, click Next.
- 5 In the Package dialog box, select Create a New Package and Program without a Definition File. Click Next.
- 6 In the Package Identification dialog box, enter the information for Name, Version, Publisher, Language and any comments. Click Next.
- 7 In the Source Files dialog box, make selections for where SCCM retrieves the batch file (<deployment name>\_Uninstall.bat) and how it manages it. Select "Always Obtain Files from a Source Directory". Click Next.
- 8 In the Source Directory dialog box, specify the location of the source directory. Click Next.
- 9 In the Distribution Points dialog box, select the distribution point(s). This is the location from which the software package will be deployed to the target computers. Click Next.
- 10 In the Program Identification dialog box, enter the name of your program. This is the name that displays in Add or Remove Programs in the Control Panel. In the Command Line field, enter .\<deployment name>\_Uninstall.bat. Click Next.
- 11 In the Program Properties dialog box, Program Can Run drop-down list, select how you want your program to run. Your choices are
  - Only When a User is Logged On
  - Whether or Not a User is Logged On
  - Only When No User is Logged On
- 12 In the After Running drop-down list, select an action to take after the program has run. Your choices are
  - No Action Required
  - Program Restarts Computer
  - ConfigMgr Restarts Computer
  - ConfigMgr Logs User Off

**NOTE** Some products require a system restart after running.

Click Next.

- 13 In the Advertise Program dialog box, select Yes to advertise the program to users. Click Next.
  - 14 In the Select a Program to Advertise dialog box, select the package you want to advertise. Click Next.
  - 15 In the Select Program ► Advertisement Target dialog box, select the collection of people to whom you want to advertise, or create a new collection.
  - 16 In the Select Program ► Advertisement Name dialog box, enter or change the name of your advertisement. Add any comments to further describe the advertisement. Click Next.
  - 17 In the Select Program ► Advertisement Subcollection dialog box, select one of the following options:
    - Advertise this Program to an Existing Collection
    - Create a New Collection and Advertise this Program to It
  - 18 Click Next.
  - 19 In the Select Program ► Advertisement Schedule dialog box, if desired, set options to advertise your program at a specific date and time, or set an expiration date. Click Next.
  - 20 In the Select Program ► Assign Program dialog box, select one of the following options:
    - If the installation process is mandatory, select Yes, Assign the Program.
    - If the installation process is optional, select No, Do Not Assign the Program.
- Click Next.
- 21 In the Summary dialog box, verify your advertisement information. Use the back buttons to make any changes. To finish, click Next.

## Imaging Software for Deployments

You can use imaging software, such as Norton™ Ghost™, to create a master image to distribute Autodesk products. Once created, the master image can be replicated to other computers throughout your facility.

---

**IMPORTANT** Autodesk does not recommend or support the distribution of products using imaging software. However, if you plan to use this method of distribution, please review the following instructions carefully.

---

The use of imaging software can result in conflicts with product licensing, incomplete installations, and problems with activation.

---

**NOTE** If you experience licensing instability in a SATA RAID environment, using imaging software to distribute Autodesk products can cause product activation problems, such as an “Activation code limit exceeded” situation.

---

## Distribute Multi-Seat Stand-Alone Products

You can use a master image to distribute a multi-seat stand-alone product to multiple computers.

---

**NOTE** When using Norton Ghost, you must use the *-ib* switch to include the boot sector in your master image. Consult your imaging software for more details on including the boot sector as part of the master image.

---

Master images should not be created if you have previously run Autodesk products on the master computer. Cleaning the system may be necessary. For more information, see [Clean a Master System and Restore the Operating System](#) (page 42).

### To distribute a multi-seat stand-alone product to multiple computers using a master image

- 1 Create a network deployment for a multi-seat stand-alone product. For more information, see [Create a Deployment](#) (page 20).
- 2 Install the Autodesk product from the deployment onto the master computer.
- 3 On the master computer, create a master image, including the boot sector. Test the product on a computer other than the master computer before distributing the product. Launch the product on the other computer, and then register and activate it. Users have a trial period to register and activate the product on their computers.
- 4 Apply the master image to the target computers.

## Distribute Network Licensed Products

You can use a master image to distribute network licensed products.

### To distribute a network licensed product to multiple computers using a master image

- 1 Create a network deployment for a network licensed product. For more information, see [Create a Deployment](#) (page 20).
- 2 Install the product from the deployment onto the master computer.  
**NOTE** A license server must be running, and each computer must be connected to the network in order for the product to obtain a license.
- 3 After the product has been installed, use imaging software to create a master image of the system's hard drive.
- 4 Apply the master image to the target computers.

## Restore the Master Image

The following procedure assumes that you have saved a copy of each computer's *AdLM* folder (and *Product Licenses* folder, if present) to another computer or an external drive before you reformat the computer.

### To restore a product using a master image

- 1 Exit any running application. Do not run the application again until after you have completed this procedure.
- 2 In Windows Explorer, copy the *AdLM* folder from the appropriate path shown below to a location other than the disc that will be restored.  
*%programdata%\FLEXnet*
- 3 Reformat the computer and restore the master image.  
**NOTE** Do not perform a low-level format of the hard drive.
- 4 Copy the *AdLM* folder that you created in step 2 to its original location on the reformatted computer.

---

**NOTE** When you restore the disc image, any files that were altered are put back in their original state and ready to use again. The license files are preserved, and no reactivation of products is necessary.

---

## Clean a Master System and Restore the Operating System

If you have already run your Autodesk product on the master computer, the master computer should be properly cleaned before creating a master image.

### To clean a master computer and restore the operating system

- 1 Clean the hard drive, including the boot sector.

For example, if you use GDISK utility from Norton, use the following command:

```
gdisk 1 /diskwipe
```

Where *1* is the hard disk that is being wiped.

**NOTE** If you use a utility other than Norton Ghost, make sure that it cleans the boot sector; otherwise, you will not be able to activate Autodesk products.

- 2 Create a new partition and use the restore disc or product media to install the operating system.

## Installation Questions

This section provides answers to some frequently asked questions about installation and deployment. For additional advice and assistance, go to [Autodesk Support](#), click your product name, and search in the Knowledgebase for your product.

## Licensing Questions

### What is the difference between a stand-alone license and a network license?

A stand-alone license supports one or more Autodesk products for an individual user. Similarly, a multi-seat stand-alone license supports a specific number of users. While the software can be installed on additional computers in your facility, the license specifies a maximum number of concurrent users.

A network license supports a specific maximum number of concurrent users on computers connected to a network. A software utility known as the Network License Manager (NLM) issues licenses to computers, up to the number of licenses purchased. At this point, no more computers can run the Autodesk product until a license is returned to the NLM.

### What is the benefit of using a network licensed version of the software?

Network licensing provides ease of license management for large drafting/design facilities, classrooms, and other environments that need to support many users. The Network License Manager provides centralized control of licenses, including their registration, activation, and distribution to users. One main advantage of a network license is that you can install products on more computers than the number of licenses you have purchased. For example, you can purchase 25 licenses but install them on 40 computers for ease of access. At any one time, products can run on the maximum number of computers for which you have licenses. This means you get a true floating license. A network licensing system can also be configured to allow users to borrow a license for a limited time to use on a computer disconnected from the network.

### What is SAMreport-Lite?

SAMreport-Lite is a report generator that helps you monitor the usage of network licenses for products that use FLEXnet™. SAMreport-Lite is not distributed with Autodesk products, but it is available from Autodesk.

SAMreport-Lite can help you better manage your software licenses. For more information, click [SAMreport-Lite](#).

## Deployment and Networking Questions

### Where should deployments be located?

Create a network share folder in the top directory of the drive where you want to store deployments, such as `\\serverXX\Deployments`. This location minimizes the possibility of your deployment path exceeding the path length limit set by the Windows operating system. You can then add subfolders named to reflect the products deployed. If you plan to create several deployments of the same product or suite, configured for different user groups, then these deployments can share the same administrative images, and the shortcuts can reside in the same folder. Any subfolders inside a shared folder are automatically shared.

For more information on network shares, see [Create a Network Share](#) (page 19).

### When should I select all products for the administrative image, and can I add products later?

If you include all products in your deployment, the administrative image will be larger, but you will be able to modify the deployment or create new ones without restrictions. If you select the checkbox "Include only products required by this deployment configuration", the resulting deployment includes a subset of the available products. Any modifications to this deployment, or additional deployments based on the first one, will be limited to the same set of products or fewer.

It is recommended that you include all available products if you plan to create multiple deployments from this administrative image with different product mixes, and prefer not to use the installation media again. However, if you are certain that you will never want to deploy some of the products, or if you do not expect to create additional deployments, you should select a subset of products.



You can create another deployment later, and include additional products, but to do this you need to create a new administrative image from the installation media.

## **What are profiles of user preferences?**

A profile is a collection of user settings for AutoCAD or another Autodesk product. Profiles are not used by all products. When you specify a profile on the Specify User Preferences page during the deployment process, it ensures a standard configuration for all computers that use that deployment to install the product.

Profiles can contain configuration settings for almost anything that is not a drawing-based system variable. For example, a profile can contain support paths, grip settings, and print settings. Profiles are created on the Profiles tab of the product's Options dialog box.

## **What happens if I choose to append or merge service packs?**

When you append a service pack, it is applied to the current deployment only. The service pack file is included in the deployment, and the service pack is applied after the product is deployed.

When you merge a service pack, the service pack is merged into the administrative image. Once merged, a service pack cannot be removed from the administrative image.

You can choose to append or merge service packs from the product configuration panel when creating a deployment.

## **Where can I check if service packs are available for my software?**

To find out if a patch or Service Pack is available, visit the Support page for your product at <http://autodesk.com/servicesandsupport>.

## How do I extract an MSP file?

This topic applies only to Windows platforms. A Microsoft Patch (MSP) file is usually contained in a Service Pack executable that you download from the Support website for your product. To extract the MSP file from the executable, run the patch program from the Windows command prompt using the */e* switch. The syntax is as follows:

```
<local_drive:>\<patch_name>.exe /e <local_drive:>\<patch_name>.msp
```

Pay particular attention to the location where the files are extracted. For details about using the patch file, review the *Readme* file for the patch.

## How should I configure a network license server for a firewall?

If you have a firewall between the license server(s) and the client computers, you need to open some TCP/IP ports on the server for license-related communication. Open port 2080 for *adskflex*, and open ports 27000 through 27009 for *lmgrd*.

## Uninstall and Maintenance Questions

### How can I see what is included in a default installation?

Follow the installation process to the Configure Installation page. The products selected here are installed in a default installation. If you click a selected product to open the configuration panel, you can see the default settings for subcomponents and features.

### Is it possible to change the installation folder when adding or removing features?

After your product is installed, you cannot change the installation path. Changing the path while adding features results in program corruption, so it is not an option.

## **How do I install tools and utilities after installing my product?**

Run the installer again from the downloaded package or the original media, and click Install Tools & Utilities on the first screen. The installer guides you through the process of selection, configuration, and installation of tools and utilities.

## **When should I reinstall the product instead of repairing it?**

Reinstall your product if you accidentally delete or alter files that are required by the program. Missing or altered files adversely affect the performance of your product and cause error messages when you try to execute a command or find a file.

If an attempt to repair an installation fails, reinstalling is the next best option.

## **Do I need the original media to reinstall my product?**

Yes, unless you installed the product from an Autodesk website, using the Install Now or Download Now options. When reinstalling a product, you are prompted to load the original media. If the product was installed from a network deployment, you need access to the original deployment, unaltered by later changes such as the addition of a service pack.

## **When I uninstall my software, what files are left on my system?**

If you uninstall the product, some files remain on your computer such as files you created or edited (for example, drawings or custom menus).

Your license file also stays on your computer when you uninstall your product. If you reinstall on the same computer, the license information remains valid; you do not have to reactivate the product.

## Glossary

**activate** Part of the Autodesk software registration process, it allows you to run a product in compliance with the product's end-user license agreement.

**administrative image** A collection of shared file resources created by the deployment process and used to install the program to network computers.

**deployment** The process of installing Autodesk products to one or more computers on a network.

**hot fix** Autodesk terminology for a minor application patch that contains a few code fixes.

**installation image** A deployment that consists of one or more MSI files and their associated data files, any associated transforms, additional user-specified custom files, profile, and registry settings.

**language family** A set of languages (core product, plus language packs) that are distributed together, typically based on a geographic grouping. Languages are not distributed in this way for all Autodesk products.

**language pack** A set of installed files, used by some Autodesk products, that enable the user to work in the application in the language specified by the language pack.

**License Transfer Utility** A tool used to transfer a stand-alone license for an Autodesk product from one computer to another, using Autodesk servers. Both the source and target computers require Internet access.

**multi-seat stand-alone installation** A type of installation in which multiple stand-alone seats of the product are installed using a single serial number.

**network license installation** A type of installation in which the product is installed on multiple computers, but the distribution of licenses is handled by the Network License Manager.

**patch** A software update to an application.

**service pack** Autodesk terminology for a major application patch that typically includes many code fixes.

**silent mode** An installation that proceeds without any explicit user input. No dialog boxes are presented that require interaction from the user.

## Introduction

### What's New in the 2014 Licensing Guide

The *Licensing Guide* is now part of a consolidated *Installation Help* online document that includes the *Installation Overview and FAQ*, *Network Administrator's Guide*, and product-specific supplements. This new structure is expected to be easier to use and to maintain.

Other improvements are as follows:

- Updated Network License Manager tools with FLEXnet 11.11.
- New topics explain [License Sharing and Cascading](#) (page 67) for network licenses and [Simplified Licensing](#) (page 52) with term licenses.
- Network license file examples have been updated.
- New topics have been added to support term license users: [Manage a Term License](#) (page 55) and [Restoring Access to a Term License](#) (page 61).

### License Types

Autodesk provides two main types of licenses:

- A **stand-alone license** supports one or more Autodesk products for an individual user. This license type also has a multi-seat version that supports a specific number of users. The software can be installed on additional computers in your facility, but the number of concurrent users is limited.

- A **network license** supports a specific maximum number of users on computers connected to a network. A software utility known as the Network License Manager (NLM) issues a license to each user who starts an Autodesk product, up to the number of licenses purchased. When a user closes all Autodesk products, typically the license is returned to the NLM, and is available to other users. However, NLM can be configured to allow a user to borrow a license and disconnect from the network until a specified return date. A borrowed license is only returned to NLM on the return date, or sooner if the user chooses to return it early.

Autodesk supports dynamic product usage and license behaviors. You can purchase a specific type of behavior with a specific license and change that license at a later date without having to uninstall and reinstall the Autodesk product.

### **License usage types**

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**NOTE** All license types are available as stand-alone and network except for the Student Portfolio license, which is available as stand-alone only.

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**Commercial** A license for a product that was purchased commercially.

**Not for Resale** A license for a product that is not sold commercially.

**Educational (EDU)/Institution** A license designed specifically for educational institutions.

**Student Portfolio** A license for students who are using an Autodesk product as part of their curriculum.

### **License behaviors**

**Trial** A license that allows individuals to run a product or suite in trial mode for a specified time period, usually 30 days. The trial period starts the first time you launch the product, or one of the products in the suite. You can activate and register the license at any time, before or after the trial period expires.

**Permanent** Allows permanent use of an Autodesk product.

**Term Extendable** Allows access to an Autodesk product for a limited time. The term can be extended at any time.

**Term Non-Extendable** Allows access to an Autodesk product for a limited time. The term cannot be extended.

### **License models**

**Standard** Applies to an activated stand-alone license.

**Capacity** Applies to a usage-based license. In this model, the user pays a fee that varies according to the amount of time that the product is actually used.

**Term** Applies to a term-based license. In this model, the user pays a fee for a specified term, which can be renewed. Term-based licenses require named users.

## Activation

Activation is the process of verifying the serial number and product key of an Autodesk product, and licensing it to run on a specific computer. This process occurs the first time the product is started.

Activation cannot occur if the serial number and product key combination is invalid, or if the computer is disconnected from the Internet. In such cases, contact Autodesk to resolve the situation. While disconnected from the Internet, you can run the product in Trial mode for an extended period, usually 30 days, and follow instructions for offline activation. This process usually involves four steps:

- 1 Record the product name, serial number, product key, and request code.
- 2 Connect online to a specified Autodesk website and enter the product data.
- 3 Receive an activation code from Autodesk.
- 4 Enter the activation code on a product screen.

If you upgrade your product from an earlier version, you may need to provide your old serial number. For more information on activation, go to [Autodesk Licensing](#) and select the FAQ link.

---

**NOTE** If you are installing and using an Autodesk product on both operating systems of a dual-boot operating system, obtain a separate activation code for each operating system.

---

## Registration

Depending on your product, registration is optional or required. If required, you are prompted to create an Autodesk User ID associated with an individual or company account. If registration is optional, you can choose to postpone it, and you will be reminded periodically to register. The Autodesk website where you register products is <https://registeronce.autodesk.com>.

## Simplified Licensing

The licensing process has been simplified for some customers with stand-alone term licenses, including students at educational institutions. The licenses are pre-registered so that the customers are not required to enter serial numbers and product keys or follow the activation process. These customers are encouraged to download products from an Autodesk website using the Install Now option, which automatically installs the product on the user's computer.

Students at educational institutions are entitled to download free copies of Autodesk products from the Autodesk Education Community website, [students.autodesk.com](https://students.autodesk.com). The products are fully functional with stand-alone three-year term licenses.

## Stand-Alone Licensing

### Introduction to Stand-Alone Licenses

A stand-alone license authorizes a single user to use the specified Autodesk product. The product can be installed on more than one computer, but multiple instances of the same product cannot be running concurrently on different computers.

Stand-alone licensing allows you to use your Autodesk product in trial mode for a specified period, usually 30 days, from the first time you start the product. For a product suite, the trial period countdown begins when the first product is started, and it applies to all Autodesk products in the suite. You can activate your license at any time before or after the trial period expires.

The licensing process creates a license file and a minor change to the computer's file system. These changes remain on your computer when you uninstall your product. If you reinstall your Autodesk product on the same computer, the license remains valid. You do not have to reactivate the product.

### Multi-Seat Stand-Alone License

A multi-seat stand-alone license allows you to use a single serial number and product key to run one or more Autodesk products on a specified number of computers. As with a single stand-alone license, products activate automatically



when started for the first time if an Internet connection is available, and if the serial number and product key combination is registered correctly with Autodesk.

A multi-seat stand-alone license can be deployed efficiently to multiple computers on a network from an image created by the Create Deployment option in the installer.

For more information about multi-seat stand-alone installation and deployments, see the *Network Administrator's Guide* for your product, or go to [www.autodesk.com/licensing](http://www.autodesk.com/licensing).

## Manage Your Stand-Alone License

### View Product License Information

You can view detailed information about your Autodesk product license, such as the serial number, license usage type and behavior.

#### To view product license information

- 1 Start your Autodesk product.
- 2 Click Help ► About, or About *[Product Name]*.
- 3 In the About window, click Product Information or Product License Information.

### Save License Information as a Text File

You can view detailed information about your Autodesk product and your product license (such as the serial number, license usage type and behavior), and then save this information as a text file for future reference.

#### To save license information as a text file

- 1 Start your Autodesk product.
- 2 Click Help ► About or About *[Product Name]*.
- 3 In the About window, click Product Information or Product License Information.

- 4 In the Product License Information dialog box, click Save As.
- 5 In the Save As dialog box, name the file, choose a location where you want to save the file, and then click Save.
- 6 In the Product License Information dialog box, click Close.

## Update Your Serial Number

You typically update your serial number for a stand-alone license when you purchase a new license in order to change the license type or behavior. For example, you would do this if you want to convert an educational license to a commercial license, or if you want to extend the term of a term extendable license. When you update a license, you do not need to uninstall and reinstall the product. The new license includes a new serial number that you enter in the Product License Information dialog box.

Your serial number is located on the outside of the product packaging or in the *Autodesk Upgrade and Licensing Information* email you received when you downloaded your product.

When you register and activate your product, your serial number is submitted to Autodesk over the Internet, if a connection is available.

If you have a suite of products that use a single serial number, only the first product you register and activate displays the updated serial number. For other products to display the serial number, you must update them from the Help menu.

### To update your serial number

- 1 Start your Autodesk product.
- 2 Click Help ► About, or About *[Product Name]*.
- 3 In the About window, click Product Information or Product License Information.
- 4 In the Product License Information dialog box, click Update.
- 5 In the Update the Serial Number dialog box, enter your product serial number.

**NOTE** If you have lost your serial number, go to [www.autodesk.com/contactus](http://www.autodesk.com/contactus) for assistance.

- 6 Click Activate. The updated serial number is displayed.

**NOTE** In some cases, you must restart the product to display the updated serial number.

- 7 In the Product License Information dialog box, click Close.

## Manage a Term License

Each Autodesk term license contract identifies a term expiry date and a number of allowed users. Users log in to the Autodesk My Accounts portal to download products associated with a specific contract. If you are the administrator for a term license, you access the portal to provide a list of named users and send invitations to the users to download and install products. To prevent license errors, this list must be updated with any changes to the group of eligible users.

If the term license expires, you can purchase a new contract for the same product. When one of the named users for the new contract launches the product, they will follow a procedure to change the serial number for the product, which re-activates the license and associates it with the new contract. This process of changing the serial number is required separately for each product covered by the contract.

## Transfer Your Stand-Alone License

### About the License Transfer Utility

The License Transfer Utility is used only with stand-alone licenses. It transfers a product license online from one computer to another, and ensures that the product works only on the computer that contains the license. A suite license can also be transferred, in which case all installed suite products are disabled on the exporting computer, and enabled on the importing computer.

For some Windows-based products, you can install the License Transfer Utility from the Tools & Utilities tab of the installer. For others, you select the License Transfer Utility on the product configuration panel of the installer.

---

**IMPORTANT** To transfer a license, the Autodesk product or suite must be installed on both computers. In addition, you need an Internet connection, and an Autodesk user ID and password, available from the Autodesk Register Once website (<https://registeronce.autodesk.com>).

---

The License Transfer Utility is a custom stand-alone installation option. During installation, a shortcut is created. A shortcut is installed once per product, per computer.

You can transfer a license to another computer temporarily or permanently. For example, a temporary transfer enables you to use the Autodesk product on a mobile computer while your main computer is being repaired or replaced.

License transfers rely on the product serial number or product key. Before an Autodesk license can be exported, it must be activated with the serial number and product key. During license import, a previously activated and exported license is imported to a product or suite installed with the same serial number. The activation is transferred to the importing computer, completing the license transfer.

The maximum number of concurrent license exports is equal to the number of seats you own. For example, if your license covers five seats you can have up to five license exports in progress at any time.

When you upgrade your Autodesk product, you can no longer perform online license transfers of the previous license.

Although the License Transfer Utility allows you to transfer a product license between computers, your license agreement may not allow the installation of an Autodesk product on more than one computer. Consult your license agreement to find out whether your product license permits the use of the License Transfer Utility.

## Export a License

A license is exported when the License Transfer Utility moves a product license from a computer to the online Autodesk server.

The license can be exported as public or private:

- **Public** means that anyone using the same serial number and their own user ID and password can import that license.
- **Private** means that you are reserving that license for yourself and the license can only be imported with the same serial number, user ID, and password that were used when it was exported.

If it has not been imported, a private license becomes public after 14 days.

## To export a license

- 1 On the computer where you want to export the license, start the License Transfer Utility.
  - **Windows 7 or XP:** Click Start menu ► Autodesk ► *[Product Name]* ► License Transfer Utility.
  - **Windows 8:** Right-click Start screen ► All Apps ► License Transfer Utility – *[Product Name]*
  - **Mac OS X:** Open Applications/Autodesk/*[Product Name]*/Licensing/License Transfer Utility.
  - **Linux:** Open a shell and run the following command, where `<productKey>` is the product key for a specific product, not a suite:

```
/opt/Autodesk/Adlm/R7/bin/LTU <productKey> 2014.0.0.F  
-d "SA"
```

**NOTE** If your product is installed on Mac OS X or Linux as part of an Autodesk Suite, you may find a shell script such as `LTU.sh` in the same folder as the application. This script will start LTU and provide the correct product key. To use the script, run it in Terminal, select the language of the user interface, and then follow the remaining steps of this procedure.

The Export the License dialog box displays the Autodesk product name and serial number.

- 2 Click Sign In.
- 3 On the Log In page, enter your Autodesk user ID and password and click Log In.
- 4 On the License Export page, confirm the export information.
- 5 If you want to make the license available as a public import, click Make the license available as a public import.
- 6 Click Export.
- 7 On the License Export Confirmation page, click Finish.

## Import a License

A license is imported when the License Transfer Utility moves a previously exported product license from the online Autodesk server to a computer. The import action completes the license transfer process, and transfers the product

activation to the importing computer. The presence of an active license allows your Autodesk product to run on that computer.

### To import a license

- 1 On the computer where you want to import the license, start the License Transfer Utility.
  - **Windows 7 or XP:** Click Start menu ► Autodesk ► *[Product Name]* ► License Transfer Utility.
  - **Windows 8:** Right-click Start screen ► All Apps ► License Transfer Utility – *[Product Name]*
  - **Mac OS X:** Open Applications/Autodesk/*[Product Name]*/Licensing/License Transfer Utility.
  - **Linux:** Open a shell and run the following command, where `<productKey>` is the product key for a specific product, not a suite:

```
/opt/Autodesk/Adlm/R7/bin/LTU <productKey> 2014.0.0.F  
-d "SA"
```

**NOTE** If your product is installed on Mac OS X or Linux as part of an Autodesk Suite, you may find a shell script such as `LTU.sh` in the same folder as the application. This script will start LTU and provide the correct product key. To use the script, run it in Terminal, select the language of the user interface, and then follow the remaining steps of this procedure.

The Import the License dialog box displays the Autodesk product name and serial number.

**NOTE** If you are importing a license to replace a trial license, you will see the Update the Serial Number and Product Key dialog box. In this case, enter the required data, and then click Update.

- 2 In the Import the License dialog box, click Sign In.
- 3 On the Log In page, enter your Autodesk user ID and password and click Log In.
- 4 On the License Import Confirmation page, click Finish.

The license is now imported to the computer and you can run your Autodesk product on this computer. If you want to transfer the license to another computer, repeat the export and import procedures.

## Troubleshoot a Stand-Alone License Error

### Preserving a License When Hardware Changes

If you replace or reconfigure hardware on the computer where your Autodesk product license resides, the stand-alone license might fail, with the result that you will not be able to use your product.

To prevent damage to your product license, use the License Transfer Utility to export your license file before changing the hardware. After the hardware change, you can import the license file back onto the computer. For information about using the License Transfer Utility, see [About the License Transfer Utility](#) (page 55).

---

**NOTE** If you get a license error when you change your hardware, you may have to reactivate your license. See [Activation](#) (page 51).

---

### Reinstalling an Operating System

If you reinstall the operating system on the computer where your Autodesk license resides, the license can fail. As a result, you would be unable to use your product, and you would have to reactivate your license. The following procedure prevents a license failure when reinstalling the operating system. See [Activation](#) (page 51).

---

**NOTE** The following procedure is for the Windows operating system. If you are running Autodesk products on Mac OS X or Linux platforms, see your product supplement to *Installation Help* for more information.

---

#### To prevent a license error when reinstalling an operating system

---

**NOTE** If using Norton™ Ghost™ or another image utility, do not include the Master Boot Record.

---

- 1 Locate one of the following folders and make a backup copy:
  - (Windows XP) C:\Documents And Settings\All Users\Application Data\FLEXnet
  - (Windows 7, 8, Server 2008 R2, or 2012 R2) C:\ProgramData\FLEXnet

- 2 Reinstall the operating system and reinstall the Autodesk product.
- 3 Paste the license folder to the same location from which you originally copied the folder in step 1.

You can now run your Autodesk product.

## Changing the System Date and Time

Your product license allows for time changes to the system clock within two days of the current time. If you set your system clock back or forward more than two days, the next time you start your product, you will see a reminder to correct the system clock. If you do not correct the system clock, you receive a license error.

To prevent a license error, ensure that the system date and time on your computer are accurate when you install and activate your Autodesk product.

## Distributing a Software Image to Multiple Computers

You can use the installer's Create Deployment option to create a product installation image on your server, and make it available on your computer network. During creation of this image, you are prompted for registration information, which is stored with the image and deployed to all product installations. For more information, see the *Network Administration Guide*.

Additionally, you can manually distribute the software using the installation media that comes with your Autodesk product. However, if your computers do not have an Internet connection, make sure that the registration data for each computer matches exactly. Inconsistent registration data can cause activation failures.

---

**NOTE** The distribution of applications using “ghosting” is not recommended. It can result in incomplete installations and activation problems.

---

## Preserving a License on a Re-imaged Computer

On a network license server, licenses are maintained on the server. No additional steps are needed to preserve network licenses.



For a stand-alone license, you need to export the license before re-imaging the computer. You can use the License Transfer Utility to export the license to the Autodesk server. After the re-imaging, import the license to the correct computer.

## **Restoring Access to a Term License**

The most common reasons for being denied access to a term-licensed Autodesk product are as follows:

- The user ID you entered does not represent an authorized user. To change or check permissions, see your license administrator. Other options in this situation are to enter the user ID for an authorized user, or to enter a different serial number that associates the user ID with a valid contract.
- The term contract has expired. To extend your contract, see your license administrator. Another option in this situation is to enter a different serial number that associates your user ID with a valid contract.

# **Network Licensing**

## **Planning Your Network Licensing**

### **Understanding License Server Models**

This section explains the three possible server models that support the Network License Manager. A server network can include Windows, Mac OS X, and Linux servers in any combination. Advantages and disadvantages of each model are presented to help you decide which one best suits your needs. When you purchase a network license, you specify which server model you will use.

### **Single License Server Model**

In the single license server model, the Network License Manager is installed on a single server, so license management and activity is restricted to this server. A single license file represents the total number of licenses available on the server.

### **Advantages of the Single License Server Model**

- Because all license management takes place on a single server, you have just one point of administration and one point of failure.
- Of the three license server models, this configuration requires the least amount of maintenance.

### **Disadvantage of the Single License Server Model**

- If the single license server fails, the Autodesk product cannot run until the server is back online.

## **Distributed License Server Model**

In the distributed license server model, licenses are distributed across more than one server. A unique license file is required for each server. To create a distributed license server, you must run the Network License Manager on each server that is part of the distributed server pool.

### **Advantages of the Distributed License Server Model**

- Servers can be distributed across a wide area network (WAN); they do not need to exist on the same subnet.
- If one server in the distributed server pool fails, the licenses on the remaining servers are still available.
- If you need to replace a server in the distributed server pool, you do not need to rebuild the entire pool.
- Server replacement is easier than in a redundant server pool, where you must reactivate the entire pool.

### **Disadvantages of the Distributed License Server Model**

- If a server in the distributed server pool fails, the licenses on that server are unavailable.
- This model can require more time for setup and maintenance than other models.

## **Redundant License Server Model**

In the redundant license server model, three servers are configured to authenticate license files. Licenses can be monitored and issued as long as at

least two license servers are still functional. The Network License Manager is installed on each server, and the license file on each server is the same.

In the redundant license server model, all servers must reside on the same subnet and have consistent network communications. (Slow, erratic, or dial-up connections are not supported.)

**Advantage of the Redundant License Server Model**

- If one of the three servers fails, all licenses that are managed in the server pool are still available.

**Disadvantages of the Redundant License Server Model**

- If more than one server fails, no licenses are available.
- All three servers must reside on the same subnet and have reliable network communications. The redundant server pool does not provide network fault tolerance.
- If one of the three servers is replaced, the complete redundant server pool must be rebuilt.
- If your Autodesk product supports license borrowing, and licenses are borrowed from a redundant license server pool, you must restart the license server after you stop the Network License Manager.

## Windows System Requirements for the Network License Manager

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**NOTE** The Network License Manager supports Ethernet network configurations only.

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**Hardware and software requirements for the network license server**

---

Hardware/Software	Requirement
Operating System	Windows® 8 32- or 64-bit <ul style="list-style-type: none"><li>■ Windows 8</li><li>■ Windows 8 Pro</li><li>■ Windows 8 Enterprise</li></ul>
	Windows 7 32- or 64-bit

---

**Hardware and software requirements for the network license server**

---

Hardware/Software	Requirement
	<ul style="list-style-type: none"> <li>■ Windows 7 Home Premium</li> <li>■ Windows 7 Professional</li> <li>■ Windows 7 Ultimate</li> <li>■ Windows 7 Enterprise</li> <li>■ Windows 7 Starter (32-bit)</li> </ul>
	<p>Windows XP 32- or 64-bit. SP2 or later for 64-bit systems; SP3 or later for 32-bit.</p> <ul style="list-style-type: none"> <li>■ Windows XP Home (32-bit)</li> <li>■ Windows XP Professional</li> </ul>
	<p>Windows Server 32- or 64-bit SP1 or later</p> <ul style="list-style-type: none"> <li>■ Windows 2012 Server</li> <li>■ Windows 2008 Server R2</li> <li>■ Windows 2008 Server (SP2 or later)</li> <li>■ Windows 2003 Server R2</li> <li>■ Windows 2003 Server</li> </ul>
Computer/processor	Intel® Pentium® III or higher 450 MHz (minimum)
Network interface card	<p>Compatible with existing Ethernet network infrastructure</p> <hr/> <p><b>NOTE</b> The Network License Manager supports multiple network interface cards, but at least one must be an Ethernet card.</p> <hr/>
Communication protocol	<p>TCP/IP</p> <hr/> <p><b>NOTE</b> The Network License Manager uses TCP packet types.</p> <hr/>
Internet browser	Internet Explorer 7, 8, 9, or 10

---

**Hardware and software requirements for the network license server**

---

Hardware/Software	Requirement
FLEXnet	11.11.0.0

---

**Virtual Machine Support**

---

Hardware	Virtualizer	Virtual OS
Intel PC 64	Windows 2012, 2008 or 2003 R2 servers running on VMware® ESX 4.0 or 5.0 (License Manager Only)	Windows 8, Windows 7, Windows Server, or Windows XP; 32- or 64-bit on all platforms.

## Linux System Requirements for the Network License Manager

---

**NOTE** The Network License Manager supports Ethernet network configurations only.

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---

**Linux hardware and software requirements for the network license server**

---

Hardware/Software	Requirement
Operating system	Linux® 32- or 64-bit Red Hat® Enterprise Linux 5.0 WS (U4)
Computer/processor	Intel Pentium 3 or higher 450 MHz (minimum)
Network interface card	Compatible with existing Ethernet network infrastructure <b>NOTE</b> The Network License Manager supports multiple network interface cards, but at least one must be an Ethernet card.
Communication protocol	TCP/IP

---

**Linux hardware and software requirements for the network license server**

---

Hardware/Software	Requirement
	<b>NOTE</b> The Network License Manager uses TCP packet types
Internet browser	Qt 4.7.2
FLEXnet	11.11.0.0

## Mac OS X System Requirements for the Network License Manager

---

**NOTE** The Network License Manager supports Ethernet network configurations only.

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**Mac OS X hardware and software requirements for the network license server**

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Hardware/Software	Requirement
Operating system	Mac OS® X version 10.5.3 and higher
Computer/processor	Intel Mac
Network interface card	Compatible with existing Ethernet network infrastructure <b>NOTE</b> The Network License Manager supports multiple network interface cards, but at least one must be an Ethernet card.
Communication protocol	TCP/IP <b>NOTE</b> The Network License Manager uses TCP packet types
Internet browser	Safari 4.0.x or 5.0.x
FLEXnet	11.11.0.0

# Understanding Your Network License

## How Your License Works

When you start an Autodesk product, it requests a license from the license server through the TCP/IP network. If a license is available, the Network License Manager assigns a license to the computer, and the number of available licenses on the license server is reduced by one.

When you exit a product, the license returns to the Network License Manager. If you run multiple sessions of an Autodesk product on an individual computer, only one license is used. When the last session is closed, the license is released.

The following three items manage the distribution and availability of licenses:

- **License manager daemon** (*lmgrd* or *lmgrd.exe*) handles the original contact with the application, and then passes the connection to the vendor daemon. By using this approach, a single *lmgrd* daemon can be used by multiple software vendors to provide license authentication. The *lmgrd* daemon starts and restarts the vendor daemons as needed.
- **Autodesk vendor daemon** (*adskflex* or *adskflex.exe*) tracks the Autodesk licenses that are checked out and the computers that are using them. Each software vendor has a unique vendor daemon to manage vendor-specific licensing.

**NOTE** If the *adskflex* vendor daemon terminates for any reason, all users lose their licenses until *lmgrd* restarts the vendor daemon or until the problem causing the termination is resolved.

- **License file** is a text file that has vendor-specific license information.

## License Sharing and Cascading

The Network License Manager (NLM) enables several Autodesk products on the same computer to share a single license when appropriate. For example, if you launch AutoCAD, the NLM can assign a single AutoCAD license to your computer. Later, if you launch Revit, and there are available licenses for the Building Design Suite (BDS), the NLM can take back the AutoCAD license and upgrade your license to a BDS license that can support AutoCAD, Revit, and other BDS products running concurrently. If you then shut down Revit and other BDS products, so that you are running only AutoCAD, the NLM cannot

downgrade your suite license to a single AutoCAD license if the suite license is required by another user. In this situation, AutoCAD is holding onto a suite license that it may not need. The only way to return that license to NLM is to shut down AutoCAD.

License cascading is a process by which network licenses are automatically switched or substituted by the NLM according to a hierarchy of value. It occurs in order to distribute licenses most efficiently among a group of users, subject to the limitation that licenses can be upgraded but not downgraded. The basic principles are that lower-cost licenses are used when possible, and higher-cost licenses are used only when required, such as when a user is running two or more suite products, or when all the lower-cost licenses are in use.

The NLM surveys license usage every two minutes; if possible, it redistributes licenses among users, and takes back licenses that have been unused for longer than the allowed idle time, or timeout period. For more information on license timeout, see [Set Up License Timeout](#) (page 100).

License cascading is most effective in a large user group when the NLM has a pool of different license types available for distribution. For example, if the pool includes product-specific licenses for several products, some licenses for a standard suite, and some licenses for an ultimate suite, the NLM has many options for efficient license management. It can assign single-product licenses as individual products start up, replace these with a suite license if a user runs multiple products, and upgrade a standard suite license to an ultimate one if a user invokes an advanced operation that requires a product from the ultimate suite.

For more information, see the Services & Support topic [Understanding Cascade Licensing for Autodesk Products](#).

## Interpreting Your License File

The network license file you receive from Autodesk contains licensing information required for a network installation. You obtain license file data when you register your Autodesk product.

The license file contains information about network server nodes and vendor daemons. It also contains an encrypted digital signature that is created when Autodesk generates the file.

The license file configures network license servers to manage licenses. When creating a deployment, the network license server name(s) are specified so that each product instance knows which server(s) to contact to obtain a license.



The network license server(s) must be accessible to every user who runs one or more products that require a network license.

The following table defines each license file parameter. For more information, see the *License Administration Guide*, installed with the Network License Manager.

<b>Definitions of license file parameters</b>			
<b>Line</b>	<b>Parameter</b>	<b>Definition</b>	<b>Example</b>
SERVER	Host Name	Name of the server where the Network License Manager resides	LABSERVER
	Host ID	Ethernet address of the server where the Network License Manager resides	03D054C0149B
USE_SERVER	[None]		
VENDOR	Vendor Daemon	Name of the server-side Autodesk vendor daemon	<i>adskflex.exe</i>
	Port Number	Network port number reserved and assigned for use only by Autodesk products running the Autodesk vendor daemon	port=2080
PACKAGE	Name	Name of feature code group	<i>SERIES_1</i>
	Version	Internal version number reference	1.000
	COMPONENTS	List of feature codes supported in the package	COMPONENTS= "526000REVIT_9_OF\ 51200ACD_2013_OF\ 513001INVBUN_11_OF"
	OPTIONS		OPTIONS=SUITE
	SUPERSEDE	Replacement for any existing Increment line of the same feature code	SUPERSEDE

---

**Definitions of license file parameters**

Line	Parameter	Definition	Example
		from any license files on the same license server that have a date earlier than the defined Issue Date	
	SIGN	Encrypted signature used to authenticate the attributes of the license file	SIGN=0 SIGN2=0
INCREMENT	Feature Code	Product supported by the license file	51200ACD_2013_OF
	Expiration Date	Amount of time the licenses are available	permanent
	Number of Licenses	Number of licenses supported by the license file	25
	VENDOR_STRING	License usage type and license behavior of the product that is supported by the license file	COMMERCIAL
	BORROW	Definition of the license borrowing period for the licenses defined under the same increment line. In this example, the maximum period that licenses can be borrowed is 4320 hours (180 days), unless otherwise noted. License borrowing is disabled when this parameter is absent in the license file.	BORROW=4320
	DUP_GROUP	Definition of multiple license requests when the same user and same host share the same license	DUP_GROUP=UH
	ISSUED	Date that the license file was generated by Autodesk	15-jul-2012

---

**Definitions of license file parameters**

Line	Parameter	Definition	Example
	Serial Number	Serial number of the Autodesk product	123-12345678
	SIGN	Encrypted signature used to authenticate the attributes of the license file	SIGN=6E88EFA8D44C

## License File Examples

The Autodesk network license file contents reflect the license server configuration and the licensed products, as shown in the examples provided.

### Example of a License File Not Specific to a Product

Here is an example of the contents of a license file and the parameters associated with each line:

```
SERVER
ServerName HostID
USE_SERVER
VENDOR adskflex port=portnumber
INCREMENT feature_code Adskflex Version ExpDate
NumberofLicenses \
VENDOR_STRING=UsageType:Behavior BORROW=4320 SUPERSEDE \
DUP_GROUP=DupGrp ISSUED=IssueDate SN=SerialNumber SIGN= \
```

### Example of a License File for a Single or Distributed Server

Here is an example of a completed license file for a single or distributed license server model:

```

SERVER SINGH122SGJJ 183da2724cf4
USE_SERVER
VENDOR adskflex port=2080
INCREMENT 85730ACD_2012_OF adskflex 1.000 permanent 100 \
  VENDOR_STRING=nfr:permanent SUPERSEDE DUP_GROUP=UH \
  ISSUED=25-Jun-2012 BORROW=4320 SN=399-99999966 SIGN="1D58 0263 \
  29E9 78DD 2790 B0A9 2238 74BA 7E6D AED7 E11A D4FE 4581 420B \
  792A 12A2 59E5 7856 4AE2 B8E5 44AA 4AC7 9668 4C41 F978 52BD \
  C46D 256A 357F C7B3" SIGN2="11A6 8D57 8341 137E 339E A6C8 ECB7 \
  CEE8 71CB 5987 1828 AF89 3225 7DC9 E03D 119B D75F 6A16 1863 \
  FEAF 7F54 5755 00A7 6C23 38D4 5BEE 75F6 AD2F C495 4C54"

```

## Example of a License File for a Redundant Server

Here is an example of a completed license file for a redundant license server model:

```

SERVER SINGH122SGJJ 183da2724cf4 27005
SERVER asrdfxlicense2 2c27d733deee 27005
SERVER asrdfxlicense3 e83935466f9b 27005
USE_SERVER
VENDOR adskflex port=2080
INCREMENT 85730ACD_2012_OF adskflex 1.000 permanent 1 \
  VENDOR_STRING=nfr:permanent SUPERSEDE DUP_GROUP=UH \
  ISSUED=29-Oct-2012 BORROW=4320 SN=399-99999966 SIGN="06A8 BAB8 \
  EE47 32D3 71D0 9C92 9EB8 15E1 F726 F312 6865 D2D8 4E09 D03C \
  E6FD 114F C1B6 443F 897C 6945 4DAE 826E 32C7 A9B9 A989 D7CF \
  659D 3E8F 32DE 76BE" SIGN2="0814 5EF2 F731 F693 59C2 46B9 75A5 \
  D3AD E1AF 7F2F 80F8 AD10 B71E 3293 D27E 167E 8D0A CF29 93BB \
  9A6D EA28 4CC8 E9BC 653F 0F5B F040 CEBA 431A 4E0E A496"

```

---

**NOTE** The redundant server model requires the addition of a port number (the default is 27005) for each server.

---

## Example of a License File for Combined Autodesk Product Versions

You can combine a license file for different releases of the same Autodesk product or for different Autodesk products, and run all products from one license server.

Here is an example of the contents of a combined license file for AutoCAD 2012 and AutoCAD 2013:

```

SERVER SINSGH122SGJJ 183da2724cf4
USE_SERVER
VENDOR adskflex port=2080
INCREMENT 85730ACD_2012_OF adskflex 1.000 permanent 100 \
  VENDOR_STRING=nfr:permanent SUPERSEDE DUP_GROUP=UH \
  ISSUED=25-Jun-2012 BORROW=4320 SN=399-99999966 SIGN="1D58 0263 \
  29E9 78DD 2790 B0A9 2238 74BA 7E6D AED7 E11A D4FE 4581 420B \
  792A 12A2 59E5 7856 4AE2 B8E5 44AA 4AC7 9668 4C41 F978 52BD \
  C46D 256A 357F C7B3" SIGN2="11A6 8D57 8341 137E 339E A6C8 ECB7 \
  CEE8 71CB 59B7 1828 AF89 3225 7DC9 E03D 119B D75F 6A16 1863 \
  FEAF 7F54 5755 00A7 6C23 38D4 5BEE 75F6 AD2F C495 4C54"
INCREMENT 85871ACD_2013_OF adskflex 1.000 permanent 1 \
  VENDOR_STRING=nfr:permanent SUPERSEDE DUP_GROUP=UH \
  ISSUED=29-Nov-2012 BORROW=4320 SN=399-99999966 SIGN="042D 792A \
  1ED0 EF3C EC47 8652 A99E 1203 4158 4610 75DA 2853 CD55 FBD8 \
  20E1 0277 C167 5A31 B81A 050C 51B6 7BCF B007 8CF8 E295 FCE1 \
  E2BC 0398 7184 4FC9" SIGN2="02F7 1B93 4AED 52BD 95E1 B82E BA37 \
  0FBB 8E9A 8628 1730 D0B5 0D62 B7E6 8050 070B C12C D328 7425 \
  8B10 E86D 8A42 2EA7 CD7A CA1E E533 B4FA 1D5C 8484 7456"

```

## Package License File Types and Examples

Autodesk offers a package license file option, which allows the use of a suite of products that are packaged and sold together. The package license file contains a set number of licenses for four different versions of your software. Running an instance of any one of the versions uses one license in the package. Packaged license files support prior versioning for subscription users. Package license files operate under the following guidelines:

- Package license files come with the current version of the software and three previous versions of the same product.
- License files can be combined with license files for different products. For more information about combining license files, see [Example of a Package License File for Combined Autodesk Product Versions](#) (page 75).
- Package license files cannot be combined with non-package license files for product versions contained in the package. For example, you cannot combine an Autodesk 2014 package license file with a regular license file for an Autodesk product 2014, 2013, 2012, or 2011.
- Both the PACKAGE and INCREMENT sections of the license file are required for licensing to work properly. When you combine license files, be sure to include both of these sections.
- License borrowing, option files, and licensing cascading work the same for package licenses as they do for regular license files.
- A new license file supersedes an older one.

## Example of a Package License File for a Single or Distributed Server

Here is an example of a completed package license file for a single or distributed license server model:

```
SERVER SINGSH122SGJJ 183da2724cf4
USE_SERVER
VENDOR adskflex port=2080
PACKAGE 64300ACD_F adskflex 1.000 COMPONENTS="85871ACD_2013_OF \
85730ACD_2012_OF 85536ACD_2011_OF 71200ACD_2010_OF" \
OPTIONS=SUITE SUPERSEDE ISSUED=10-Oct-2012 SIGN="1A36 84F2 \
DEBD 4A0E 8A03 76E8 0977 4F8A 3B83 4FCB C7B5 9EC9 B9D7 EA3A \
FB49 0B7B 40E7 FD4D 57F3 6667 29EA BB1C 866A 4B76 5B35 31F0 \
B838 832A D49B 822D" SIGN2="1BF8 DD3A 1D6A 7843 D502 ADDA C9D1 \
BC89 9AB9 700D 72F6 B64A 3646 C0B8 0F9C 06CE 91E7 83C8 F236 \
2AC1 4EAA 08A2 B8C0 1ED9 3B77 09E6 B947 8D32 9AE7 93BE"
INCREMENT 64300ACD_F adskflex 1.000 permanent 100 \
VENDOR_STRING=nfr:permanent SUPERSEDE DUP_GROUP=UH \
SUITE_DUP_GROUP=UHV ISSUED=10-Oct-2012 BORROW=4320 \
SN=399-99999966 SIGN="095F OCC1 48BF 7321 3F44 22F7 7A32 708C \
7A61 3D14 DE29 2863 E121 8E16 398F 14F1 ECB2 7155 F271 F77D \
82D3 449D FCC5 E56B AB67 1643 C66A 93C4 7998 693B" SIGN2="0F4B \
DD07 5B6D 7402 60E8 7DA6 E651 8F71 BBC3 7E3F CA01 4DA4 7369 \
0561 18C1 1721 2736 E383 8D1F 43AF 8150 59E8 6AE5 8D63 785D \
BD33 302A EB8C B881 EFBF"
```

## Example of a Package License File for a Redundant Server

Here is an example of a completed package license file for a redundant license server model:

```

SERVER SINGH122SGJJ 183da2724cf4 27005
SERVER asrdfslicense2 2c27d733deee 27005
SERVER asrdfslicense3 e83935466f9b 27005
USE_SERVER
VENDOR adskflex port=2080
PACKAGE 64300ACD_F adskflex 1.000 COMPONENTS="86063ACD_2014_OF \
85871ACD_2013_OF 85730ACD_2012_OF 85536ACD_2011_OF" \
OPTIONS=SUITE SUPERSEDE ISSUED=29-Nov-2012 SIGN="1EDE 3467 \
FE15 71AE 9ED9 11E4 D963 C97C A82F 15AC 740D D149 208D EA8D \
C8AB 166B 97F3 626C FD82 FEAA F2C2 062F 5B50 CEC3 1072 FC43 \
2649 FC74 751D 39E4" SIGN2="0D33 5BF3 3037 D67E A182 3AEE F915 \
B56C 25BD 8E7F 07F4 079C E27B A85C 487E 0AEC 9D91 7468 FBB8 \
2B9D BC81 B674 5E41 08DD 62B5 98F4 F0BF 6896 B93D D64D"
INCREMENT 64300ACD_F adskflex 1.000 permanent 1 \
VENDOR_STRING=nfr:permanent SUPERSEDE DUP_GROUP=UH \
SUITE_DUP_GROUP=UHV ISSUED=29-Nov-2012 BORROW=4320 \
SN=399-99999966 SIGN="1491 93E4 5C65 9F5B 33B0 8202 49F4 3489 \
C2D5 B1FD 8AD2 B417 E523 00FC 7642 1A8D F42E FAA6 A25E 2CBC \
14B8 4206 DD0C 1ECC 575E 474A 4057 4933 C2BD C8B0" SIGN2="1B68 \
9217 C0B9 00BF 63ED 88E2 A1D2 263C 9CAD E9D1 9E08 1D1F 8C2F \
0C26 03D6 0F61 ACCA 705B 3B63 E0E2 DFB8 EFF1 E9AD 7ACD 2F76 \
22CA 1197 5BFF 9EDD FA88"

```

## Example of a Package License File for Combined Autodesk Product Versions

Here is an example of a completed package license file for combined Autodesk product versions:

```

SERVER SINSGH122SGJJ 183da2724cf4
USE_SERVER
VENDOR adskflex port=2080
PACKAGE 64300ACD_F adskflex 1.000 COMPONENTS="85871ACD_2013_OF \
85730ACD_2012_OF 85536ACD_2011_OF 71200ACD_2010_OF" \
OPTIONS=SUITE SUPERSEDE ISSUED=10-Oct-2012 SIGN="1A36 84F2 \
DEBD 4A0E 8A03 76E8 0977 4F8A 3B83 4FCB C7B5 9EC9 B9D7 EA3A \
FB49 0B7B 40E7 FD4D 57F3 6667 29EA BB1C 866A 4B76 5B35 31F0 \
B838 832A D49B 822D" SIGN2="1BF8 DD3A 1D6A 7843 D502 ADDA C9D1 \
BC89 9AB9 700D 72F6 B64A 3646 C0B8 0F9C 06CE 91E7 83C8 F236 \
2AC1 4EAA 08A2 B8C0 1ED9 3B77 09E6 B947 8D32 9AE7 93BE"
INCREMENT 64300ACD_F adskflex 1.000 permanent 100 \
VENDOR_STRING=nfr:permanent SUPERSEDE DUP_GROUP=UH \
SUITE_DUP_GROUP=UHV ISSUED=10-Oct-2012 BORROW=4320 \
SN=399-99999966 SIGN="095F 0CC1 48BF 7321 3F44 22F7 7A32 708C \
7A61 3D14 DE29 2863 E121 8E16 398F 14F1 ECB2 7155 F271 F77D \
82D3 449D FCC5 E56B AB67 1643 C66A 93C4 7998 693B" SIGN2="0F4B \
DD07 5B6D 7402 60E8 7DA6 E651 8F71 BBC3 7E3F CA01 4DA4 7369 \
0561 18C1 1721 2736 E383 8D1F 43AF 8150 59E8 6AE5 8D63 785D \
BD33 302A EB8C B8B1 EFBF"
PACKAGE 66800REVIT_F adskflex 1.000 COMPONENTS="85862REVIT_2013_OF \
85747REVIT_2012_OF 85587REVIT_2011_OF 74100REVIT_2010_OF" \
OPTIONS=SUITE SUPERSEDE ISSUED=29-Nov-2012 SIGN="1E2B 1C36 \
EC18 1B8F 1278 7DAA 2028 794B D267 2AD2 06D0 B53D F2EF A548 \
5875 0E33 80B0 79C9 0727 5969 1FDA 9470 82AE 3436 9E88 F7B7 \
73F2 21A4 6ECC 0A7B" SIGN2="1484 1D14 FDD0 CCC5 ABC7 8175 9BFA \
56B6 EB0A B1FA F032 1A51 7A37 420A C411 16AE BE57 0198 990C \
673C AFF4 E0EE 03D9 E4DD 4CCB B5DF CCB7 D839 083E 22D6"
INCREMENT 66800REVIT_F adskflex 1.000 permanent 1 \
VENDOR_STRING=nfr:permanent SUPERSEDE DUP_GROUP=UH \
SUITE_DUP_GROUP=UHV ISSUED=29-Nov-2012 BORROW=4320 \
SN=399-99999966 SIGN="14BF 7CC1 69C5 152A 7F1C 8D2A BEBD A1B9 \
A1BA A535 358B 1ADF 4AB8 9D83 2304 1373 0CD7 917F 082B C214 \
B5D9 B475 2B9A 394B 2315 E9AA 6115 FF79 E1B6 CB29" SIGN2="047B \
CCC2 1BFD 09B7 C349 F26A 86B5 4C1F 433E BA3B A03C 4552 8E5F \
6D29 4843 0A5D 5220 D503 F77C 316F 0049 37B8 E996 EDB9 C99A \
560F B014 D558 969B 7818"

```

## Losing Your Connection to the License Server

When an Autodesk product is running, it communicates with the license server at regular intervals using a method known as the “heartbeat” signal. If the heartbeat signal is lost, the server tries to reconnect. If the server cannot reconnect, the user receives a license error.

If the product stops working because it has lost a connection to the server, you must shut down the product, and then restart it. Most Autodesk products give you the opportunity to save open documents before shutting down. If the problem causing the original loss of the heartbeat signal is resolved and licenses are available on the server, you can restart your Autodesk product. If you are running several Autodesk products when a license server connection is lost, the error messages for different products typically appear after different time delays, based on product settings.



## Running the Network License Manager

The Network License Manager is used to configure and manage the license servers. When you create a deployment, the installer prompts you for information about the license manager, such as license server model and server name.

## Install the Network License Manager

---

**IMPORTANT** Do not install the Network License Manager on a remote drive. When you install the Network License Manager files, you must provide a path to a local drive. You must specify the drive letter; the universal naming convention (UNC) is not permitted.

---

You can install the Network License Manager before or after you install the products that will use it. Network License Manager must configure the license servers before any products can obtain licenses and start running.

If an earlier version of the Network License Manager is already installed on the computer, you should upgrade by installing the new Autodesk Network License Manager into the folder where the old version was located.

### Windows procedure

- Install the Network License Manager from the Install Tools & Utilities panel of the Autodesk installer.

### Mac OS X procedure

- 1 Navigate to the NetworkLicenseManager folder on your product install media, or in the package you downloaded.
- 2 Do one of the following:
  - (DVD or USB) Double-click the Network License Manager package icon.
  - (Download) Double-click the Network License Manager .dmg, then double-click the Network License Manager package icon.

The Install Autodesk NLM wizard appears.

- 3 Click **Continue** to begin the installation, then follow the instructions in the installer to install the Network License Manager tools.

- 4 Click Close when you see the Install Succeeded message.

By default, the Network License Manager tools are installed in the following directory: `/usr/local/flexnetserver`. In addition, scripts to help set up your license server are installed in the following directory: `/Library/StartupItems/adsknlm`.

### Linux procedure

- 1 Open a shell as a super user (using `su -`).
- 2 Navigate to the NetworkLicenseManager directory on your product install media, or extract the Network License Manager package from the compressed file that you downloaded.
- 3 To install the Network License Manager, enter the following command:

```
rpm -ivh adlmflexnetserver-#.rpm
```

where # is the package number.

## Obtain the Server Host Name and Host ID

Autodesk uses the server host name, host ID, and product serial number to generate a license file.

To obtain the information, use one of the following procedures.

### To obtain the host name and ID at the Windows command prompt

- 1 At the Windows command prompt, enter **ipconfig /all**
- 2 Record the Host Name and Physical Address line. Eliminate dashes from the physical address. This is your twelve-character host ID.

**NOTE** If your server has more than one network adapter, select the one that corresponds to a physical network adapter. View the Description field above each physical address. If there is more than one physical network adapter, it does not matter which one you use. Devices such as VPN adapters, PPP adapters, and modems are not valid.

- 3 Close the Windows command prompt.

## To obtain the host name and ID using the LMTOOLS utility

---

**IMPORTANT** Do not run LMTOOLS on a remote computer.

---

You should be logged in with Administrator rights when working with the LMTOOLS utility.

- 1 Click Start ► All Programs ► Autodesk ► Network License Manager ► LMTOOLS Utility.
- 2 In the LMTOOLS utility, click the Systems Settings tab.
- 3 Locate the Computer/Hostname box. Copy the host name and paste the information into a text editor.
- 4 Locate the Ethernet Address box. The 12-character Ethernet address is the host ID.

**NOTE** If your server has more than one Ethernet adapter, select one that corresponds to a physical network adapter. If you are using a Mac OS X computer with more than one network card, you must use the address of the primary network card.

- 5 Close LMTOOLS.

## To obtain the host name and ID using the Mac OS X or Linux terminal window

- 1 Launch a Terminal window.
- 2 Go to the directory where lmutil is installed.
- 3 Retrieve the host name by entering the following in Terminal:

```
<prompt>./lmutil lmhostid -hostname
```

The host name is displayed.

- 4 Retrieve the host ID by entering the following in Terminal:

```
<prompt>./lmutil lmhostid
```

The twelve-character host ID is displayed.

- 5 Close the Terminal Window.

## Configure a License Server

Configure a license server to manage your Autodesk product licenses.

---

**IMPORTANT** If you have a firewall between the license server(s) and the client computers, you must open some TCP/IP ports on the server for license-related communication. Open port 2080 for *adskflex*, and open ports 27000 through 27009 for *lmgrd*.

---

Configure the license server using one of the following procedures.

You should be logged in with Administrator rights when working with the LMTOOLS utility.

---

**NOTE** If your license server is running, you must stop it before performing any system maintenance. For more information, see [Stop and Restart the License Server](#) (page 91).

---

### To configure a license server with LMTOOLS

- 1 Do one of the following:
  - **Windows 7 or XP:** Click Start ► All Programs ► Autodesk ► Network License Manager ► LMTOOLS Utility.
  - **Windows 8:** Right-click Start screen ► All Apps ► LMTOOLS Utility.
- 2 In the LMTOOLS utility, on the Service/License File tab, make sure the Configure Using Services option is active.
- 3 Click the Config Services tab.
- 4 In the Service Name list, select the service name you want to use to manage licenses.

By default, the service name is *Flexlm Service 1*. If FLEXnet® is managing other software on your computer in addition to Autodesk, you can change the service name to avoid confusion. For example, you can rename *Flexlm Service 1* to *Autodesk Server1*.

**NOTE** If you have more than one software vendor using FLEXnet for license management, the Service Name list contains more than one option. Make sure that only one Autodesk service is listed.

- 5 In the Path to Lmgrd.exe File field, enter the path to the Network License Manager daemon (*lmgrd.exe*), or click Browse to locate the file.

By default, this daemon is installed in the *C:\Program Files\Autodesk\Autodesk Network License Manager* folder.
- 6 In the Path to the License File box, locate or enter the path.

This is the path to the license file obtained through autodesk.com or the location where you placed the license file if you obtained it offline.

- 7 In the Path to the Debug Log File box, enter a path to create a debug log, or click Browse to locate an existing log file.

It is recommended that you save to the *C:\Program Files\Autodesk\Autodesk Network License Manager* folder. The log file must have a *.log* file extension. For new log files, you must enter the *.log* extension manually.

- 8 To run *lmgrd.exe* as a service, select Use Services.
- 9 To start *lmgrd.exe* automatically when the system starts, select Start Server at Power Up.
- 10 Click Save Service to save the new configuration under the service name you selected in step 4. Click Yes when prompted if you would like to save the settings to the service.
- 11 Click the Start/Stop/Reread tab and do one of the following:
  - If a service has not yet been defined for Autodesk, click Start Server to start the license server.
  - If a service for Autodesk is already defined and running, click ReRead License File to refresh the Network License Manager with any changes made to the license file or options file.

The license server starts running and is ready to respond to client requests.

- 12 Close LMTOOLS.

Some Autodesk products provide a script to automate part of this procedure. See the "Product Supplements" section of *Installation Help* for more information.

Before configuring your license server for Mac OS<sup>®</sup> X, ensure that the following steps have been completed:

- You have installed the Autodesk Network License Manager which contains the following files: *lmgrd*, *adskflex*, and *lmutil*.
- You have received the network license file from Autodesk that contains the product licenses; for example, *productlicense.lic*.

---

**NOTE** Before performing any system maintenance on your license server, see [Stop and Restart the License Server](#) (page 91).

---

### To configure automatic start-up of a Mac OS X license server

- 1 Create a directory titled *flexnetserver* under the home directory; for example, */usr/local/flexnetserver*.
- 2 Move the following files: *lmgrd*, *adskflex*, *lmutil*, and your product license file (*.lic*) into the *flexnetserver* directory created in Step 1.
- 3 If it does not already exist, create the directory *StartupItems* under */Library* using the *sudo* command. For example, *sudo mkdir StartupItems*.
- 4 Create a startup item directory; for example, */Users/<user id>/adsknlm*.
- 5 Create an executable script file; for example, *adsknlm*, by entering the following in Terminal:

**NOTE** The executable file name must be the same as the directory name.

```
#!/bin/sh
./etc/rc.common
StartService() {
  ConsoleMessage "Starting Autodesk Network License
  Manager"
  /usr/local/flexnetserver/lmgrd -c\
  /usr/local/flexnetserver/productlicense.lic -l\
  /usr/local/flexnetserver/debug.log
}

StopService() {
  ConsoleMessage "Stopping Autodesk Network License
  Manager"
  /usr/local/flexnetserver/lmutil lmdown -q -all -force
}

RestartService() {
  ConsoleMessage "Restarting Autodesk Network License
  Manager"
  /usr/local/flexnetserver/lmutil lmreread -c
  /usr/local/flexnetserver/productlicense.lic
}

RunService "$1"
```

- 6 Grant the executable permission to the script by entering the following in Terminal:

```
chmod +x adsknlm
```

- 7 Create a property list file named *StartupParameters.plist* and add it to the directory by entering the following in Terminal:

```
{
  Description="Autodesk Network License Manager";
  Provides=("adsknlm") OrderPreference = "None";
  Messages={start=
    "Starting Autodesk Network Manager Service";
  stop=
    "Stopping Autodesk Network Manager Service";
};}
```

- 8 Move the startup item directory to */Library/StartupItems/* and modify your directory permission by entering the following in Terminal:

**NOTE** For security reasons your startup item directory should be owned by root, the group should be set to wheel, and the permission for the directory should be 755.

```
sudo mv /Users/<user id>/adsknlm/
/Library/StartupItems/
sudo chown root /Library/StartupItems/adsknlm/
sudo chgrp wheel /Library/StartupItems/adsknlm/
sudo chmod 755 /Library/StartupItems/adsknlm/
sudo chown root /Library/StartupItems/adsknlm/*
sudo chgrp wheel /Library/StartupItems/adsknlm/*
```

- 9 Your resulting directory should look like this:

```
drwxr-xr-x
4 root wheel 136 Jul 31 01 01:50drwxr-xr-x
3 root wheel 102 Jul 30 01 21:59-rw-r--r--
1 root wheel 204 Jul 30 20:16
StartupParameters.plist-rwxr-xr-x
1 root wheel 417 Jul 31 00:45 adsknlm
```

- 10 Reboot your Mac and verify in the *debug.log* file (*/Users/<user id>/NLG/*) that the *lmgrd* and *adskflex* start up successfully.

---

**NOTE** Before performing any system maintenance on your license server, see [Stop and Restart the License Server](#) (page 91).

---

Before configuring your license server for Linux, ensure that the following steps have been completed:

- You have installed the Autodesk Network License Manager, which contains the following files: *lmgrd*, *adskflex*, and *lmutil*.

- You have received the network license file from Autodesk that contains the product licenses; for example, *productlicense.lic*.

### To configure automatic start-up of a Linux license server

- 1 Extract the FLEXnet IPv4 server files into the following directory:  
*/opt/flexnetserver*.
- 2 Copy the *.lic* file into the *flexnetserver* directory created in Step 1.
- 3 Open a terminal window in root mode.
- 4 Go to the directory */etc/*.
- 5 Locate the *rc.local* file.
- 6 Edit the *rc.local* file and start *lmgrd* by entering the following commands in the terminal window:

**NOTE** Replace *acad.lic* with your license file name.

```
/bin/su <user id> -c 'echo starting lmgrd>\
/opt/flexnetserver/boot.log'

/usr/bin/nohup/bin/su <user id> -c 'umask 022;\
/opt/flexnetserver/lmgrd -c\
/opt/flexnetserver/acad.lic >> \
/opt/flexnetserver/boot.log \'
/bin/su <user id> -c 'echo sleep 5 >> \
/opt/flexnetserver/boot.log \'

/bin/sleep 5

/bin/su <user id> -c 'echo lmdiag >>\
/opt/flexnetserver/boot.log \'
/bin/su <user id> -c '/opt/flexlm11.11/lmutil lmdiag
-n -c\
/opt/flexnetserver/acad.lic >> \
/opt/flexnetserver/boot.log \'
/bin/su <user id> -c 'echo exiting >>\
/opt/flexnetserver/boot.log \'
```

- 7 Save the edited *rc.local* file.
- 8 Reboot your machine and verify that the *lmgrd* and *adskflex* have started by doing one of the following:
  - During the reboot, look for the message that the license server has started.



- Check the *boot.log* file created in */opt/flexnetserver/* to see if *lmgrd* and *adskflex* have started.

## Uninstall the Network License Manager

Before uninstalling the Network License Manager, you must stop the license server. For more information, see [Stop and Restart the License Server](#) (page 91).

Either before or after the uninstall, you must manually delete files that you created for use with the Network License Manager, such as log files, license files, and the options file. These files are not automatically deleted when you uninstall the Network License Manager.

### Windows procedure

- 1 Do one of the following:
  - **Windows 7 or XP:** Click Start ► All Programs ► Autodesk ► Network License Manager ► LMTOOLS Utility.
  - **Windows 8:** Right-click Start screen ► All Apps ► LMTOOLS Utility.
- 2 In the LMTOOLS utility, click the Start/Stop/Reread tab, and then click Stop Server.
- 3 Close LMTOOLS.
- 4 In the Windows Control Panel, locate Autodesk Network License Manager in the list of programs, and uninstall it by clicking Remove or Uninstall.
- 5 If prompted, restart your computer.

### Mac OS X procedure

- 1 Delete the following directories:
  - */usr/local/flexnetserver/*
  - */Library/StartupItems/adsknlm*

This removes the main license server tools as well as the configuration scripts that help you set up your license server.
- 2 Reboot your machine.

### Linux procedure

- 1 Open a shell as a super user.
- 2 Execute the following command to verify the package number of the Network License Manager that you installed:

```
rpm -qa |grep adlm
```

- 3 Execute the following command to uninstall the Network License Manager package:

```
rpm -e adlmflexnetserver-#.rpm
```

where # is the package number.

- 4 If you edited your rc.local file to configure your license server (for example to start lmgrd), remove those commands from the rc.local file.

## Using Other Features of Network Licensing

### License Borrowing

If you are using a network-licensed version of your Autodesk product and your network administrator supports the license borrowing feature, you can borrow a product license from your network license server to use the Autodesk product for a specified time when your computer is not connected to the network. Your license is automatically returned to the license server at the end of the day on the return date you set when you borrow the license. You can also return a license early. The maximum borrowing period is six months.

---

**NOTE** License borrowing does not apply to stand-alone licenses.

---

**NOTE** A limited number of licenses are available for borrowing. If you try to borrow a license and are notified that no licenses are available, see your network administrator for help.

---

### Borrow a License

With a borrowed license, you can run an Autodesk product for a specified time period while disconnected from the network. If you do not remember when a borrowed license expires, you can check the date in two ways: click

Help ► About and consult the Product License Information dialog box, or in some products, place your cursor over the Borrowing icon in the status tray (lower right corner of the screen).

When the borrowing period expires, the borrowed license is automatically returned to the license server. When your computer is reconnected to the network, you can run your Autodesk product from the network or borrow a license again.

### **Interaction with Other License-Borrowing Tools**

Using the license-borrowing feature in your Autodesk product is the recommended way to borrow a license. Some third-party borrowing tools are available, but these tools are not supported or compatible with the license-borrowing feature in your Autodesk product. Other supported license-borrowing tools are the Autodesk License-Borrowing utility (shipped with Autodesk products) and the borrowing feature in LMTOOLS utility, a component of the Autodesk Network License Manager on Windows servers.

If another license-borrowing tool is active when you attempt to use the license-borrowing feature, proceed as follows to borrow a license for your Autodesk product:

- If you run the Autodesk License-Borrowing utility that shipped with your Autodesk product and then turn on the borrowing flag for the Adskflex option or the All option, a license can be borrowed when you start your Autodesk product. However, you cannot return a license until you exit and then restart your Autodesk product.
- On a Windows server, if borrowing is set in the LMTOOLS utility for all products, either use the other tool to borrow licenses for your Autodesk product, or stop the borrowing process in LMTOOLS utility, and then use the license-borrowing feature in your Autodesk product.
- If borrowing is set in LMTOOLS utility for non-Autodesk products only, stop the borrowing process in the LMTOOLS utility. You can then use the license-borrowing feature to borrow licenses for your Autodesk product. If you do not stop the borrowing process in LMTOOLS utility, the license-borrowing feature will not function.

### **To borrow a license using the Tools menu**

This option is not available in all Autodesk products.

- 1 Click Tools menu ► License Borrowing ► Borrow License.

- 2 In the Borrow a License window, on the calendar, click the date when you want to return the license.

This date must be within the valid date range set by your network administrator. The valid date range is displayed in this window.

- 3 Click Borrow License.
- 4 In the License Borrowed message, click Close. The license is borrowed, and you can now use your Autodesk product with your computer disconnected from the network.

**NOTE** In some products, you can verify that your license is borrowed by placing your cursor over the Borrowing icon in the status tray, which is in the lower-right corner of your Autodesk product.

### To borrow a license using the Help menu

- 1 Click Help ► About ► Product Information or Product License Information.
- 2 In the Product License Information window, click Borrow License.
- 3 In the Borrow a License window, on the calendar, click the date when you want to return the license.  
This date must be within the valid date range set by your network administrator. The valid date range is displayed in this window.
- 4 Click Borrow License.
- 5 In the License Borrowed message, click Close. The license is borrowed, and you can now use the Autodesk product with your computer disconnected from the network.

## BORROWLICENSE Command

Use this command to borrow a product license from the network license server. With a borrowed license, you can run an Autodesk product disconnected from the network. Access to the command varies by product, and includes one or more of the following options.

**Tools menu:** License Borrowing ► Borrow License

**Help menu:** About ► Product Information or Product License Information ► Borrow License

**Command line:** borrowlicense

The Borrow a License window is displayed, presenting the following options:

**Calendar** Sets the date when you plan to return a borrowed license. The return date must be within the range specified by your network administrator.

**Borrow a License** Borrows the license from the network license server based on the specified return date.

**Cancel** Cancels the borrowing action; no license is borrowed.

## Return a License

Your borrowed network license is automatically returned to the network license server on the day that the license expires. You can return a license earlier than the expiry date, but to do this, your computer must be connected to the network license server.

Once a borrowed license is returned, you can borrow a license again as long as your computer is connected to the network license server and a license is available on the server.

### To return a borrowed license early

Access to the command varies by product, and includes one or more of the following options:

- Click Tools menu ► License Borrowing ► Return License Early.
- Click Help menu ► About ► Product Information or Product License Information. In the Product License Information dialog box, click Return License, and then click Yes.
- In the status tray, right-click the License Borrowing icon. Click Return License Early.

---

**NOTE** If your product supports access to license borrowing commands in the status tray, you can use this method to return a borrowed license early, but the display settings for the status tray must be turned on. To turn on the display settings, right-click an empty area on the status bar. Click Tray Settings.

---

Your license is returned to the network license server.

### To check the license expiration date

Access to this command varies by product, and includes one or both of the following options:

- In the status tray, right-click the License Borrowing icon.
- Click Help menu ► About ► Product Information or Product License Information. In the Product License Information dialog box, see the License Expiration Date.

## RETURNLICENSE Command

Use this command to return a borrowed Autodesk product license earlier than the return date specified when you borrowed the license. Access to the command varies by product, and includes one or more of the following options.

**Tools menu:** License Borrowing ► Return License

**Help menu:** About ► Product Information or Product License Information ► Return License

**Status tray:** Right-click the License Borrowing icon. Click Return License Early.

**Command line:** returnlicense

## FLEXnet Configuration Tools

The Network License Manager uses FLEXnet® license management technology from Flexera Software™. FLEXnet provides administrative tools that help to simplify management of network licenses. You can use FLEXnet tools to monitor network license status, reset licenses lost during a system failure, troubleshoot license servers, and update existing license files.

For specific information about using FLEXnet configuration tools, you can find the *License Administration Guide* in the following directory:

- **Windows:** C:\Program Files\Autodesk Network License Manager\Docs\FlexUser\LicenseAdministration.pdf
- **Mac OS X:** /usr/local/flexnetserver/LicenseAdministration.pdf
- **Linux:** /opt/flexnetserver/LicenseAdministration.pdf

## Windows Utilities for License Server Management

FLEXnet provides two utilities for managing the license server. The default location for these tools is in this folder: *C:\Program Files\Autodesk\Autodesk Network License Manager*.

**LMTOOLS Utility (lmttools.exe)** Provides a Microsoft® Windows graphical user interface for managing the license server.

**lmutil.exe** Provides a set of command-line options for managing the license server.

You can use LMTOOLS or *lmutil.exe* to perform the following server management tasks:

- Start, stop, and restart the server.
- Configure, update, and reread the license file.
- Diagnose system or license problems.
- View server status, including active license status.

## Stop and Restart the License Server

Before you can perform any system maintenance on your license server (including uninstalling the Autodesk License Manager) you must stop the license server. When you have completed maintenance, you can restart the license server.

You should be logged in with Administrator rights when working with the LMTOOLS utility.

### To stop a Windows license server

- 1 Do one of the following:
  - **Windows 7 or XP:** Click Start ► All Programs ► Autodesk ► Network License Manager ► LMTOOLS Utility.
  - **Windows 8:** Right-click Start screen ► All Apps ► LMTOOLS Utility.
- 2 In the LMTOOLS utility, click the Service/License File tab.
- 3 Select the Configure Using Services option.
- 4 Select the service name for the license server you want to stop manually.

- 5 Click the Start/Stop/Reread tab.
- 6 Click Stop Server.
- 7 Close LMTOOLS.

#### **To restart a Windows license server**

- 1 Do one of the following:
  - **Windows 7 or XP:** Click Start ► All Programs ► Autodesk ► Network License Manager ► LMTOOLS Utility.
  - **Windows 8:** Right-click Start screen ► All Apps ► LMTOOLS Utility.
- 2 In the LMTOOLS utility, click the Service/License File tab.
- 3 Select the Configure Using Services option.
- 4 Select the service name for the license server you want to start manually.
- 5 Click the Start/Stop/Reread tab.
- 6 Click Start Server to restart the license server.

Different procedures are required for regular and automatic license servers. Both versions are provided here.

#### **To stop a Mac OS X license server**

Enter the following in Terminal:

```
./lmutil lmdown -q -force
```

#### **To restart a Mac OS X license server**

Enter the following in Terminal:

```
./lmgrd -c acad.lic -l debug.log
```

#### **To stop an automatic Mac OS X license server**

Enter the following in Terminal:

```
sudo  
/sbin/SystemStarter stop adsknlm
```

#### **To restart an automatic Mac OS X license server**

Enter the following in Terminal:



```
sudo
/sbin/SystemStarter restart adsknlm
```

### To stop a Linux license server

Enter the following in Terminal:

```
./lmutil lmdown -q -force
```

### To restart a Linux license server

Enter the following in Terminal:

```
./lmgrd -c acad.lic -l debug.log
```

---

**NOTE** Replace *acad.lic* with your license file name and *debug.log* with your log file name.

---

## Update FLEXnet from a Previous Version

Autodesk 2014 products require FLEXnet version 11.11.0.0 or later. If you are currently using an earlier version of FLEXnet, you need to update.

---

**NOTE** If the server where you plan to install the Autodesk Network License Manager has FLEXnet installed for another product, make sure that the version of *lmgrd.exe* (Windows) or *lmgrd* (Mac or Linux) is the most current version.

---

To determine the installed version of FLEXnet, you need to verify the version of the following files:

- *lmgrd.exe*
- *lmtools.exe*
- *lmutil.exe*
- *adskflex.exe*

You should be logged in with Administrator rights when working with the LMTOOLS utility.

### To verify the file version of Windows tools

- 1 Do one of the following:
  - **Windows 7 or XP:** Click Start ► All Programs ► Autodesk ► Network License Manager ► LMTOOLS Utility.
  - **Windows 8:** Right-click Start screen ► All Apps ► LMTOOLS Utility.
- 2 In LMTOOLS utility, click the Utilities tab.
- 3 Enter the location of the file, or click the Browse button to locate the file and click Open. The default file location is as follows:  
*C:\Program Files\Autodesk\Autodesk Network License Manager\lmutil.exe*
- 4 Click Find Version.  
The version number of the file you selected is displayed. If necessary, use the following procedure to update your version of FLEXnet.

### To update FLEXnet in Windows

- 1 Back up your license files.
- 2 Do one of the following:
  - **Windows 7 or XP:** Click Start ► All Programs ► Autodesk ► Network License Manager ► LMTOOLS Utility.
  - **Windows 8:** Right-click Start screen ► All Apps ► LMTOOLS Utility.
- 3 In the LMTOOLS utility, click the Start/Stop/Reread tab.
- 4 Click Stop Server.
- 5 Close LMTOOLS.
- 6 Note the location where the Network License Manager is installed and then uninstall the Network License Manager. For details about uninstalling the Network License Manager, see [Uninstall the Network License Manager](#) (page 85).
- 7 Install the Network License Manager. For details about installing the Network License Manager to the same location as the previous version, see [Install the Network License Manager](#) (page 77).
- 8 Do one of the following:
  - Double-click the LMTOOLS icon on the desktop.
  - **Windows 7 or XP:** Click Start ► All Programs ► Autodesk ► Network License Manager ► LMTOOLS Utility.

- **Windows 8:** Right-click Start screen ► All Apps ► LMTOOLS Utility.

- 9 In the LMTOOLS utility, click the Start/Stop/Reread tab.
- 10 Click Start Server.
- 11 Close LMTOOLS.

To determine the installed version of FLEXnet, you need to verify the version of the following files:

- *lmgrd*
- *lmutil*
- *adskflex*

---

**NOTE** Version 11.11.0.0 of the FLEXnet license manager that ships with Autodesk products is backwards compatible, and will administer licenses for products from versions 2002 through 2014. Please note that Autodesk products older than version 2005 are no longer supported.

---

#### To verify the version of Mac OS X or Linux tools

You should be logged in with the same user ID you used when installing the FLEXnet files, for example, */Users/<userid>/adsknlm* (Mac OS X) or */home/<userid>/adsknlm* (Linux).

Enter the following commands in the terminal window/prompt:

```
<prompt>./lmutil -v
<prompt>./lmgrd -v
<prompt>./adskflex -v
```

The output of each command will look similar to this example:

```
Copyright
© 1989-2010 Macrovision Europe Ltd. And/or Macrovision
Corporation.
All Rights reserved.
lmutil v11.5.0.0 build 56285 i86_mac10
```

#### To update FLEXnet in Mac OS X

Administrator permission is required for this procedure. FLEXnet is installed in */usr/local/flexnetserver* when running the flexnetserver merge module.

- 1 Back up your license files.

- 2 Stop the Autodesk Network License Manager service by entering the following in Terminal:

```
sudo ./lmutil lmdown -q -force
```

- 3 Note the location where the Network License Manager is installed and then uninstall the Network License Manager by entering the standard Mac OS X commands, for example, *rm*.
- 4 Install the Network License Manager.
- 5 Start the Autodesk Network License Manager service by entering the following string in Terminal.

**NOTE** In the string, replace *product.lic* and *debug.log* with your license file name and log file name.

```
sudo ./lmgrd -c product.lic -l debug.log
```

### To update FLEXnet in Linux

Administrator permission is required for this procedure. FLEXnet is installed in */opt/flexnetserver* when running the flexnetserver merge module.

- 1 Back up your license files.
- 2 Stop the Autodesk Network License Manager service by entering the following in Terminal:

```
./lmutil lmdown -q -force
```

- 3 Note the location where the Network License Manager is installed and then uninstall the Network License Manager by entering the standard Linux commands, for example, *rm*.
- 4 Install the Network License Manager. Copy the new version of the FLEXnet network license manager files (*lmgrd*, *adskflex*, and *lmutil*) to the location recommended when you configured your license server, for example, */home/<user id>/adsknlm*.
- 5 Start the Autodesk Network License Manager service by entering the following string in Terminal.

**NOTE** In the string, replace *product.lic* and *debug.log* with your license file name and log file name.

```
./lmgrd -c product.lic -l debug.log
```

## Set Up and Use an Options File

With an options file, you set configuration options that determine how a license server manages licenses. An options file sets parameters that the license file reads and the *lmgrd* program executes.

The options file on each server specifies the license-handling behavior for that server. By managing the contents of the options files, you can specify the same behavior on all license servers, or implement particular differences among the servers.

---

**NOTE** For options file changes to take effect on a license server, you must save the options file, and then reread the license file.

---

Use the options file to set parameters for the following server-related features:

- Report log file
- License borrowing
- License timeout

You can also set up advanced parameters for reserving licenses, restricting license usage, or defining groups of users. These options are particularly useful if you find that a pool of licenses is not being correctly shared or cascaded among users. For more information, go to the Autodesk Services & Support web page [How to control network license access using an options file](#).

To learn more about setting advanced options file parameters, see the FLEXnet document, *License Administration Guide*. This document is installed on the license server, in the Network License Manager directory.

## Create an Options File

---

**NOTE** For options file changes to take effect on a license server, you must save the options file, and then reread the license file.

---

### To create an options file on a Windows platform

You should be logged in with Administrator permissions when working with the LMTOOLS utility.

- 1 Open a text editor, enter the parameters you want, and then save the document as a file named *adskflex.opt* to the same location where you saved the license file.

**NOTE** Be sure to save the file with the extension *.opt*. The default extension *.txt* is not recognized by the Network License Manager.

- 2 Do one of the following:
  - **Windows 7 or XP:** Click Start ► All Programs ► Autodesk ► Network License Manager ► LMTOOLS Utility.
  - **Windows 8:** Right-click Start screen ► All Apps ► LMTOOLS Utility.
- 3 In the LMTOOLS utility, on the Start/Stop/Reread tab, click Reread License File.
- 4 Close LMTOOLS.

### To create an options file on a Mac OS X or Linux platform

- 1 Open a text editor, enter the parameters you want, and then save the document as a file named *adskflex.opt* to the same location where you saved the license file.

**NOTE** Make sure you save the file with the extension *.opt*. The default extension *.txt* is not recognized by the Network License Manager.

- 2 Launch a Terminal window, navigate to the Autodesk Network License Manager folder, and enter the following string:

```
./lmutil lmreread -c @hostname-all
```

- 3 Close the Terminal window.

## Create a Report Log

In the options file, you can create a report log file, which is a compressed, encrypted file that provides usage reports on license activity.

## To create a report log

- 1 In a text editor, open the options file, *adskflex.opt*.
- 2 In the options file, enter the following syntax on its own line (REPORTLOG must be uppercase):

### **REPORTLOG [+]*report\_log\_path***

- **Windows example:** REPORTLOG +"c:\My Documents\report.rl" means that a report log named *report.rl* is located in the folder *c:\My Documents*.
- **Mac OS X or Linux example:** REPORTLOG +"/Users/<user id>/NLM/report.rl" means that a report log named *report.rl* is located in the folder */Users/<user id>/NLM*.

**NOTE** Path names that contain spaces must be enclosed in quotation marks.

In the REPORTLOG syntax, “[+]” means that entries to the log file you create are appended rather than replaced each time the Network License Manager is restarted. It is recommended that you use this option to retain a history of log entries.

## Configure License Borrowing with the Options File

If your Autodesk product supports the license borrowing feature, you can use the options file to configure license borrowing options. For example, define the maximum number of licenses that can be borrowed from your network at any one time. In addition, define who can borrow an Autodesk product license. Licenses are assigned to people, not computers.

For more information on license borrowing, see [License Borrowing](#) (page 86).

---

**NOTE** If your Autodesk product licenses are borrowed from a redundant license server pool, you must restart the license server after you stop the Network License Manager.

---

At the end of a borrow period, the borrowed license is automatically disabled on the borrower's computer and becomes available again on the license server. A license can also be returned before the borrow period has ended.

## To set license borrowing parameters

- 1 In the options file, enter the following syntax on its own line (BORROW\_LOWWATER must be uppercase):

### **BORROW\_LOWWATER feature\_code n**

In the BORROW syntax, “feature\_code” is the name of the product in the license file, and “n” is the minimum number of licenses that must remain on the server. When this number is reached, no more licenses can be borrowed.

For example, the syntax BORROW\_LOWWATER Autodesk\_f1 3 means that for the product Autodesk\_f1, when only three licenses remain on the license server, no licenses can be borrowed.

- 2 Enter the following syntax on the next line (MAX\_BORROW\_HOURS must be uppercase):

### **MAX\_BORROW\_HOURS feature\_code n**

In this syntax, “n” is the number of hours that a license can be borrowed.

For example, the syntax MAX\_BORROW\_HOURS Autodesk\_f1 360 means that for product Autodesk\_f1, licenses can be borrowed for 360 hours, or 15 days.

**NOTE** Licenses are borrowed in multiples of 24 hours only. Any number that is not a multiple of 24 is rounded down to the nearest multiple. For example, the number 125 is rounded down to 120 hours, or 5 days.

For more information about setting up the license borrowing feature, see the FLEXnet documentation. On a Windows server, the default install location for the documentation is *C:\Program Files\Autodesk\Autodesk Network License Manager* folder. On a Mac OS X or Linux server, the documentation is installed in the Network License Manager directory.

---

**NOTE** To borrow a license in an Autodesk product, click Help ► About ► Product Information ► Borrow License. Alternatively, enter **borrowlicense** on the product command line. Help for this feature is available in the Borrow a License for *[Product Name]* window and in *C:\Program Files\[Product Name]\Help\adsk\_brw.chm*.

---

## Set Up License Timeout

License timeout is set in the options file to determine how long a product session can be idle before the license is reclaimed by the license server. When you set this flag in the options file, a user's license is reclaimed by the license



server if the product is idle on a computer for more than the timeout period you define.

---

**IMPORTANT** License timeout is not supported by all Autodesk products.

---

If a user's license is lost because of the idle timeout, the product attempts to claim a new license once the user uses the product again. If no license is available, the user can save work before the product shuts down.

You can use the TIMEOUT parameter to set individual license timeouts for each Autodesk product on your computer, or use the TIMEOUTALL parameter to set one license timeout for all Autodesk products on your computer.

### To set license timeout parameters

- For individual Autodesk products: In the options file, enter the following syntax on its own line (TIMEOUT must be uppercase):

#### **TIMEOUT feature\_code n**

In the TIMEOUT syntax, “feature\_code” is the name of the product (referred to in the INCREMENT line in the license file), and “n” is the number of seconds before an inactive license is reclaimed by the license server.

For example, the syntax `TIMEOUT Autodesk_f1 7200` means that for the product Autodesk\_f1, the license timeout period is 7200 seconds, or two hours.

- For all Autodesk products: In the options file, enter the following syntax on its own line (TIMEOUTALL must be uppercase):

#### **TIMEOUTALL n**

In the TIMEOUTALL syntax, “n” is the number of seconds before an inactive license is reclaimed by the license server.

For example, the syntax `TIMEOUTALL 7200` means that for all Autodesk products, the license timeout period is 7200 seconds, or two hours.

For more information about using the license timeout feature, see the FLEXnet document, *License Administration Guide*. On a Windows server, the default install location for the document is `C:\Program Files\Autodesk\Autodesk Network License Manager` folder. On a Mac OS X or Linux server, the document is installed in the Network License Manager directory.

## Frequently Asked Questions about Network Licensing

This section outlines some common questions and their solutions with regards to software licenses and licensing your product(s). For additional advice and assistance, go to [Autodesk Support](#), click your product name, and search in the Knowledgebase for your product.

### What is the difference between a stand-alone license and a network license?

A stand-alone license supports one or more Autodesk products for an individual user. Similarly, a multi-seat stand-alone license supports a specific number of users. While the software can be installed on additional computers in your facility, the licensed number of users cannot be exceeded.

A network license supports a specific maximum number of users who are connected to a network. A software utility known as the Network License Manager (NLM) issues licenses to users, up to the number of licenses purchased. At this point, no more computers can run the Autodesk product until a license is returned to the NLM.

### What is the benefit of using a network licensed version of the software?

Network licensing provides ease of license management for large drafting/design facilities, classrooms, and other environments that need to support many users. The Network License Manager provides centralized control of licenses, including their registration, activation, and distribution to users. One main advantage of a network license is that you can install products on more computers than the number of licenses you have purchased. For example, you can purchase 25 licenses but install them on 40 computers for ease of access. At any one time, products can run on the maximum number of computers for which you have licenses. This means you get a true floating license. A network licensing system can also be configured to allow users to borrow a license for a limited time to use on a computer disconnected from the network.

## How does the licensing process use the Internet?

Internet communication is required to complete the process of license activation. If you are not connected to the Internet when you install an Autodesk product, you can operate in trial mode for a specified period, typically 30 days. When you choose to activate the software and enter your registration data, your computer communicates with Autodesk over the Internet. An activation code is provided for you to enter in the fields of a product dialog box. The Internet is also used to communicate with Autodesk for other purposes such as authorizing access to websites, downloading service packs, and sending product support messages.

## Can I use the Network License Manager with IPv6?

The standard version of Network License Manager distributed with Autodesk products is designed for networks that use Internet Protocol version 4 (IPv4). Other versions for use on IPv6 networks are available for download from Autodesk websites:

- [www.autodesk.com/licensetools](http://www.autodesk.com/licensetools)
- [www.autodesk.com/nlm-ipv6-windows](http://www.autodesk.com/nlm-ipv6-windows)
- [www.autodesk.com/nlm-ipv6-mac](http://www.autodesk.com/nlm-ipv6-mac)
- [www.autodesk.com/nlm-ipv6-linux](http://www.autodesk.com/nlm-ipv6-linux)



# Autodesk Navisworks 2014 Installation Supplement

# 4

This section contains information that is specific to the installation, configuration, and licensing of the following Autodesk Navisworks software:

- Autodesk Navisworks Manage
- Autodesk Navisworks Simulate
- Autodesk Navisworks Freedom
- Autodesk Navisworks File Exporters

## System Requirements

See the following sections for hardware and software requirements.

### Single Installation Requirements

- Microsoft® Windows® 8 (64-bit) or Microsoft Windows 7 (32 or 64-bit) (Service Pack 1) Home Basic, Home Premium, Professional, Enterprise, or Ultimate (recommended)
- Intel® Pentium® 4 or AMD Athlon™ 3.0 GHz (or higher) with SSE2 technology
- 512 MB RAM (minimum); 2 GB or greater RAM (recommended)
- 30 GB free disk space for installation
- Direct3D 9® and OpenGL® capable graphics card with Shader Model 2 (minimum)
- 1,280 x 800 VGA display with true color (1,920 x 1,080 monitor and 32-bit video display adapter recommended)

- Microsoft Mouse-compliant pointing device
- Microsoft® Internet Explorer® 7.0 or later

### Deployment Requirements

Hardware and software requirements for the location of the administrative image

- 10 GB hard disk

Hardware and software requirements for client machine

- Microsoft® Windows® 8 (64-bit) or Microsoft Windows 7 (32 or 64-bit) (Service Pack 1) Home Basic, Home Premium, Professional, Enterprise, or Ultimate (recommended)
- Intel® Pentium® 4 or AMD Athlon™ 3.0 GHz (or higher) with SSE2 technology
- 512 MB RAM (minimum); 2 GB or greater RAM (recommended)
- 30 GB free disk space for installation
- Direct3D 9® and OpenGL® capable graphics card with Shader Model 2 (minimum)
- 1,280 x 800 VGA display with true color (1,920 x 1,080 monitor and 32-bit video display adapter recommended)
- Microsoft Mouse-compliant pointing device
- Microsoft® Internet Explorer® 7.0 or later

Hardware and software requirements for the network license server (Windows)

- Microsoft® Windows® 8 or Microsoft Windows 7 (Service Pack 1)
- Intel® Pentium® 3 or higher, 450 Mhz (minimum)
- Network interface card compatible with existing Ethernet network infrastructure

**NOTE** The Network License Manager supports Ethernet network configurations only.

- TCP/IP communication protocol

**NOTE** The Network License Manager uses TCP packet types.

- FLEXnet 11.10.0.0

# About Language Packs

Each Autodesk product is installed with a default language. A language pack is a mechanism used by some Autodesk products to provide another language for the user interface and the documentation. Each language pack contains only the text strings and documents required to support a user working in the specified language; it does not duplicate the core product software.

To run Autodesk Navisworks in another of the installed languages, you need to add one of the language selector arguments to the desktop shortcut. To be able to do this, you need to have installed at least one language pack during the Autodesk Navisworks installation process.

Language packs are about 200 MB in size, so they can be installed and uninstalled quickly. A single installed product can support several languages, enabling users to switch from one to another when required.

---

**NOTE** Microsoft Windows 7 is the most stable platform for use with language packs. You may experience display problems with Windows XP. For best results, the Windows language setting should match the Autodesk language setting.

---

## To run Autodesk Navisworks in another language

- 1 Right-click the Autodesk Navisworks desktop shortcut, and click **Properties** on the shortcut menu to open the Autodesk Navisworks**Properties** dialog box.
- 2 On the **Shortcut** tab, enter a space in the **Target** field after `..roamer.exe`, and then enter one of the following arguments:
  - **-lang en-US** for English localization
  - **-lang de-DE** for German localization
  - **-lang es-ES** for Spanish localization
  - **-lang fr-FR** for French localization
  - **-lang it-IT** for Italian localization
  - **-lang ja-JP** for Japanese localization
  - **-lang ko-KR** for Korean localization
  - **-lang pt-BR** for Brazilian Portuguese localization
  - **-lang ru-RU** for Russian localization
  - **-lang zh-CN** for Chinese (PRC) localization

The syntax for the shortcut is "drive:pathname\roamer.exe" - lang [language pack]. So for example, the following entry starts the program from a folder named Autodesk Navisworks in Italian language: "C:\Autodesk Navisworks\roamer.exe" -lang it-IT

**NOTE** To run the product in a different language you must have already installed the corresponding language pack.

- 3 Click **OK** to save the changes.

## Uninstalling Language Packs

You can uninstall language packs without uninstalling the main product. The default language that was installed with the product cannot be separately uninstalled.

You can uninstall language packs in the same way that you uninstall products. Go to the Windows Control Panel where products are listed, and click the language pack that you want to uninstall.

## File Exporters

Autodesk Navisworks provides file exporters to create native Autodesk Navisworks files directly in CAD applications.

You can choose to install/deploy file exporters with or without installing Autodesk Navisworks.

---

**NOTE** File exporters are not available if you are installing/deploying Autodesk Navisworks Freedom.

---

## Autodesk Navisworks Uninstall Information

If you uninstall Autodesk Navisworks, some files remain on your computer such as files you created or edited (for example, drawings or custom menus).

Your license file also stays on your computer when you uninstall your product. If you reinstall on the same computer, the license information remains valid; you do not have to reactivate the product. For more information on installation and licensing please refer to the Autodesk Navisworks [support site](#).



---

**IMPORTANT** Do not use registry cleaning programs or attempt to modify the registry entries yourself to uninstall Autodesk Navisworks. Failure to follow the official uninstall procedure will result in the inability to re-install the software.

---



# Index

.NET 3.5 Framework 14

## A

activating programs 51, 57

activation 6, 8, 9

AdLM (Network License Manager) 77

administrative image 7, 44

shortcut 24

adskflex (Autodesk vendor daemon) 67

Adskflex option 86

advertising deployments 28

assigning deployments 28, 29

Autodesk

License Borrowing utility 86

License Transfer Utility 55

Network License Manager 77

products

activating 51

using off network 86

## B

batch file 13, 24

batch files

deploying program with 25

running 28

samples 26

borrowing licenses 86

configuring 99

returning licenses 89

BORROWLICENSE command 88

## C

cleaning hard drives 42

client computers

assigning deployments 29

restoring master systems 42

verifying deployments 32

combined product versions

license file example 72

package license file example 75

Commercial licenses 49

configuration 16

defaults 46

configuration settings 6

configuring

license borrowing 99

license servers 79

Linux 83

Mac OS X 81

options file 97

Windows 80

copying

licenses 55, 59

custom settings 6

customized deployments 16, 20

## D

daemons

license manager daemons 67

vendor daemons 67

date and time, system 60

default installation 46

deployment 60

deployments

3ds Max and Max Design 33

add-ons 17

assigning 28, 29

batch files 25

checklist 13

combined 22

create 20

customized 16

directory locations 44

distributing 28, 39

group policies 28

imaging software 39

Inventor 33

- issues 42
- methods 25
- modifying 23, 44
- new features 11
- overview 12
- Showcase 33
- verifying installation 32
- DirectX 9.0C 34
- display product license information 53
- distributed license server 5, 62
  - license file example 71
- distributed license server model 16
- distributing software images 60
- documentation links 2
- Download Manager 8, 51
- dual-platform deployment 22

## E

- Educational (EDU)/Institution
  - licenses 49
- Ethernet address 78
- expiration dates for licenses 86
- exporting licenses 55
  - transfer files 56

## F

- firewall 79
- firewall and license server 46
- FLEXnet tools 90
  - documentation 99
  - options file 97, 99
  - updating 93

## G

- glossary 48
- group policies 28
  - verifying deployments 32
- group policy object (GPO) 29

## H

- hard disks, cleaning 42

- hardware certification 2
- hardware changes, and license errors 59
- hardware requirements, Network License
  - Manager
    - Linux 65
    - Mac OS X 66
    - Windows 63
- heartbeat signals 76
- host names and IDs 78
  - LMTOOLS procedure 79
  - Mac or Linux procedure 79
  - Windows procedure 78

## I

- imaging software deployments 39
- importing licenses 55
  - transfer files 57
- InfoCenter 9
- Install Now 8, 51
- installation
  - advertising deployments 28
  - batch files 25
  - customizing 16
  - default settings 46
  - group policies 28
  - imaging software 39
  - network deployment 13
  - repairing damaged installations 41
  - restore operating system 42
  - service packs 18
  - software deployments 13
  - tools and utilities 47
  - types of 15
  - verifying deployments 32
- installation log 7
- installation path, changing 46
- installation process diagram 1
- installation updates 1
- installing Network License Manager 77
- IPv6 103

## K

- Knowledgebase 8, 42

## L

- language pack 13
- language pack, adding 29
- languages 3, 4
- license
  - cascading 67
  - sharing 67
  - substitution 67
- License Administration Guide 90, 100
- license borrowing 86
  - configuring 99
  - expiration dates 86
  - returning licenses 89
  - third-party licensing tools 86
- license data 53
- license file example
  - combined product versions 72
  - combined product versions, package license 75
  - distributed license server 71
  - generic 71
  - redundant server 72
  - redundant server, package license 74
  - single license server 71
  - single or distributed server, package license 74
- license files
  - examples 71
  - package license examples 73
  - package license overview 73
  - understanding 68
- license information, display 53
- license manager daemon 67
- license server
  - Windows 91
- license server models 5, 16, 61
  - distributed 62
  - redundant 62
  - single 61
- license servers
  - borrowing licenses 86
  - configuring 79
    - Linux 83
    - Mac OS X 81
    - options file 97
    - Windows 80
  - host names and IDs 78
  - limited number of licenses 86
  - losing connection 76
  - Network License Manager 77
  - returning licenses 89
  - stopping and restarting 91
  - third-party licensing tools 86
  - Windows management utilities 91
- license term 55
- License Transfer Utility 55
- license types 5, 43
  - change 9
- license usage report 98
- licenses
  - assigning 67
  - behaviors (term limits) 97
  - borrowing 49, 86, 97
  - exporting 56
  - FLEXnet tools 90
  - functional overview 67
  - importing 57
  - issues 102
  - license files 68
  - license servers 79
  - multi-seat stand-alone 49, 52
  - network 49
  - Network License Manager 77
  - on re-imaged computers 60
  - registration 51
  - returning 90
  - single-user 52
  - stand-alone 49, 52
  - timeout 97, 100
  - transferring 55, 57, 59
  - types 49
- licensing updates 49
- limits on number of licenses 86
- Linux
  - configuring license servers 83
  - Network License Manager system requirements 65
  - obtaining server host names and IDs 79
- lmgrd (license manager daemon) 67

- LMTOOLS utility 80, 86, 91
  - obtaining server host names and IDs 79
- lmttools.exe utility 91
- lmutil.exe utility 91
- log files 7, 97, 98

## M

- Mac OS X
  - configuring license servers 81
  - Network License Manager system requirements 66
  - obtaining server host names and IDs 79
- master images 39, 41
- master systems 42
- Microsoft Installer Patch files 18, 46
- Microsoft System Center Configuration Manager 34, 35
- Microsoft Windows
  - configuring license servers 80
  - Network License Manager system requirements 63
- MSP files 18, 46
- multi-seat stand-alone installations 40
- multi-seat stand-alone licenses 49, 52

## N

- named users 49, 55
- network administration new features 11
- network installations
  - batch files 25
  - deployment 13
  - group policies 28
  - imaging software deployments 41
  - types of 15
- network license 3, 43
  - usage reports 43
- network license installations
  - imaging software deployments 41
  - license behaviors 97
  - license borrowing 99
  - selecting 15
  - with firewall 46

- Network License Manager
  - about 77
  - assigning licenses 67
  - installing 77
  - uninstalling on Windows 85
  - upgrading 77
- network license servers
  - borrowing licenses 86
  - limited number of licenses 86
  - returning licenses 89
  - third-party licensing tools 86
- network licenses 49
  - controlling access 97
  - timeout 100
  - usage report 98
- network shares
  - creating 19
  - locations 44
- new features 1
- new licensing features 49
- Norton Ghost 39
- Not for Resale licenses 49

## O

- operating system selection 7
- operating systems, restoring 42
- operating systems, reinstalling 59
- options file
  - creating 97
  - license borrowing setup 99
  - license timeout setup 100
  - report log setup 98
- options file (FLEXnet tools) 97

## P

- package license files 73
- Permanent licenses 49
- physical address 78
- private licenses 56
- product settings 6
- profiles, user 45
- public licenses 56

## R

- re-imaged computers 60
- reactivating licences 59
- redundant license server 5, 62
  - license file example 72
  - package license file example 74
- redundant license server model 16
- reinstall product 47
- reinstalling operating systems 59
- remove deployment 24
- repair product 9
- report log files, creating 98
- restart Windows license server 91
- restore
  - damaged installation 41
  - operating system 42
- return dates for licenses 86
- returning borrowed licenses 86, 89
- RETURNLICENSE command 90
- Revit Interoperability 33
- running batch files 28

## S

- SAMreport-Lite 43
- SATA RAID environments 39
- SCCM (System Center Configuration Manager) 34
- SCCM packages 35
- SCCM uninstall 37
- serial number 2, 8
- serial numbers, updating 54
- servers
  - host names and IDs 78
  - license servers 77, 79
    - Linux configuration 83
    - Mac OS X configuration 81
    - Windows configuration 80
  - stopping and restarting 91
- service packs 18, 45
- shortcut to administrative images 24
- silent mode 7
- single license server 5, 61
  - license file example 71
  - package license file example 74

- single license server model 16
- single-user licenses 49, 52
- software requirements, Network License Manager
  - Linux 65
  - Mac OS X 66
  - Windows 63
- source directory for SCCM 35
- stand-alone installations
  - batch files 25
  - imaging software and 40
  - selecting 15
- stand-alone license 3, 43
- stand-alone licenses 49, 52
- student licensing 52
- Student Portfolio licenses 49
- suite 9
- switch license type 9
- system date and time 60
- system requirements 2
- system requirements, Network License Manager
  - Linux 65
  - Mac OS X 66
  - Windows 63

## T

- TCP/IP names 78
- Term Extendable licenses 49
- term licence errors 61
- Term Non-Extendable licenses 49
- third-party licensing tools 86
- time and date, system 60
- timeout of network licenses 100
- tools and utilities 3
- tools and utilities, installing 47
- transfer files
  - exporting 56
  - importing 57
- transfer of license 55
- transferring licenses 55
- Trial licenses 49
- typical settings 6

## **U**

- undeployment 24
- uninstall product 9, 47
- uninstalling Network License Manager on Windows 85
- updating FLEXnet tools 93
- upgrading Network License Manager 77
- usage-based license 49
- user profile settings 45

## **V**

- vendor daemons 67

- verifying group policy deployments 32

## **W**

- web-based installation 8
- Windows
  - configuring license servers 80
  - Network License Manager system requirements 63
  - obtaining server host names and IDs 78
- Windows 8 2, 14