



## Networking Autodesk Products from A2Z

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**CM2386**

### Learning Objectives

At the end of this class, you will be able to:

- Install and configure the Autodesk license manager
- Create deployment images that are optimized to your requirements
- Avoid common mistakes and traps
- Troubleshoot problems using administrative tools and log files

### About the Speakers

*Jerry is a consultant specializing in Enterprise licensing and installation. Jerry has been working with Autodesk products and licensing for over 25 years. He has held positions in Autodesk Product Support, Autodesk Consulting, and Product Management. This is Jerry's 14th Autodesk University as a speaker. Prior to joining Autodesk, Jerry worked for an AutoCAD® dealer, where he was in charge of AutoCAD sales, services and support as well as system integration services. Jerry served as president of an AutoCAD users group and participated on CAD advisory councils for local colleges. Jerry has accepted numerous invitations to lecture on network licensing and software distribution topics.*

*Fred Babin, known as "Tiny" among his colleagues, is the CADD Services technical lead for Parsons Brinckerhoff (PB) Americas. Fred's responsibilities includes new technology & software implementation, training, delivery of software upgrades, custom development of automation services, and management of PB's engineering document management solutions. Fred has over 25 years of experience working for PB and SC Department of Transportation in providing support services for CADD & Engineering solutions.*

## Overview

This document is intended to supplement the Networking Autodesk Products from A2Z presentation to be posted separately and the lecture content to be presented by Jerry Milana and Fred Babin at Autodesk University in Las Vegas, Nevada, November 2013.

Network based software licensing offers benefits to Small Business and Enterprise level companies alike. The following are key benefits of network licensing:

- **Asset Management**  
With workstation (node) locked licensing your software assets are distributed across your organization making them challenging to track. With network licensing, software assets can be resolved back to your license manager(s).
- **Contract Compliance**  
Usage data can be recorded that will document compliance.
- **Visibility into Utilization**  
Reports can be run to analyze historical usage, even across multiple servers.
- **Economy of use**  
Not everyone in your organization is likely to be an 8 hour a day production user of the software installed on their computer. Network licensing allows multiple users to share a license so long as only one person is using it at the same time.

Autodesk Network Licensing is based upon technology supplied by Flexera Software called FLEXnet Licensing. FLEXnet Licensing includes components software developers integrate into their applications and components that are installed on a server to act as a license manager. As implemented by Autodesk this licensing system allows Autodesk customers install the network licensed version of its products on as many workstations as desired regardless of how many network seats they have purchased. When an application is started it contacts the license manager and requests a license. The license manager will only grant licenses up to the number the customer has purchased. The license manager software is included on the distribution media and downloads of network licensable Autodesk software products. Please review your Autodesk license agreement in force to understand limitations where you can install and use Autodesk software products or contact your authorized Autodesk reseller.

In order to facilitate consistent deployment and unattended installations a utility called the Deployment Wizard is included on the program media that allows administrators to create Deployment images. These deployment images include all installation options prepopulated and can be created to allow interactive or silent, unattended installs. These deployments may be used to install an Autodesk product by simply running a shortcut or administrators can automate software delivery using Group Policies, Microsoft SCCM or other software delivery automation infrastructure in place.

The Autodesk network licensing system also provides access to an historical usage report generation tool called SAMReport-Lite via download. This tool is available at no additional cost to Autodesk customers holding network licenses. SAMReport-Lite reports on Autodesk license usage only, it will not report on other FLEXnet licensed software. Flexera offers a more advanced reporting and management product called FLEXnet Manager. FLEXnet Manager is available for purchase from Flexera and may be licensed to report on Autodesk license usage as well as software from other FLEXnet publishers. For more information in FLEXNET Manager visit <http://www.flexerasoftware.com>.

Implementing Network Licensed Autodesk products involves the following 7 phases:

1. Install the Autodesk Network License Manager on one or more servers
2. Obtain a license file from Autodesk
3. Configure and start the license manager
4. Create deployment Image or images you wish to install on workstations
5. Test the deployment images and license access on a sample of typical workstations
6. Production rollout
7. Ongoing monitoring and maintenance

Just like every Networking A2Z Class over the years, Jerry and Fred will walk you end to end of a network licensed Autodesk product implementation. Each year we strive to detail specific aspects based on what's new and the questions we receive over the year. For 2013 we will emphasize two key areas:

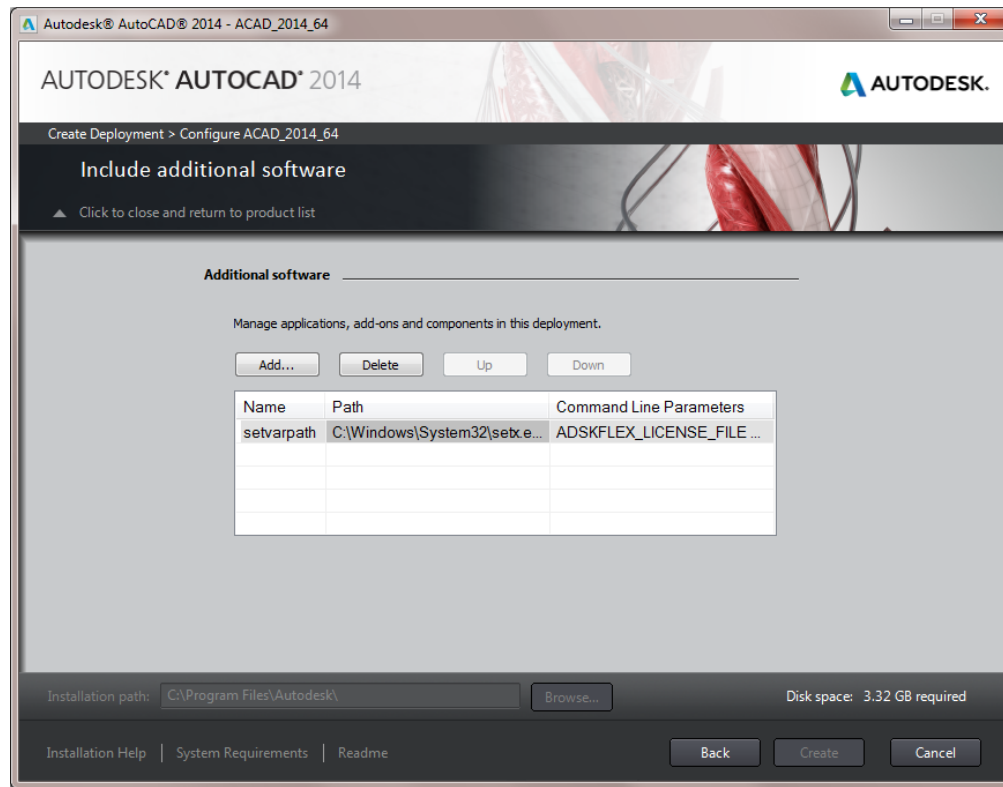
- The new 'Include Additional Software' Deployment feature
- Creating and Managing the Options File

Of course there are more critical path operations required to perform the above phases. These will be illustrated in the presentation slide deck and addressed in the lecture.

### **Include Additional Software**

This new feature allows you to include software and utilities with your deployment that are not included on the Autodesk media. This software will be installed on workstations at the end of the deployment install process.

If you use Group Policies or manual methods of installing deployment images to workstations this new capability may save you lots of time. You can install your utilities and third party software without making secondary trips to the computer. This new capability may be of little interest to you if your company automates software delivery using SCCM, Altiris or similar systems that allow you to chain multiple installations in specific order as most such systems offer greater flexibility.



A great use of this capability is specifying port usage for the license manager. The deployment wizard does not allow you to specify the port used to contact the license manager master daemon. Port callouts can reduce startup time and are required if the license manager is setup to use ports outside of the default 27000-27009 range. In the example included above, setx.exe from the Windows\System32 folder was used with parameters to set the ADSKFLEX\_LICENSE\_FILE environment variable to include port callouts. Setx.exe does not work on all versions of Windows so if you have an mixed operating system environment using setx.exe is not recommended. Consider creating an MSI package that will reset the ADSKFLEX\_LICENSE\_FILE environment variable.

You can only point to and execute .exe and .msi files. This limits you from using .bat or other script based utilities that you may have developed in house. It also limits you from directly calling internal Operating System commands. Consider investing in an MSI packaging solution that will allow you to package your script routines into MSI's.

## Creating and Managing the Options File

The Options File is a text file that an administrator creates and maintains that drives license manager behavior and access control. The license manager installation and setup process does not generate an options file; it must be manually created post install and setup.

No matter how few licenses you have or how simple your license management needs are you should be using an options file to at least release inactive application sessions. Sessions can

become inactive if a user is not using the software open on their desktop. The software will not go inactive if a background process is in progress. Another cause of inactive sessions are ungracefully disconnected sessions such as network interruption, crashes, etc. If a session becomes inactive in this way it will tie up that seat indefinitely unless a timeout value is set. If a session license is returned to the license manager due to inactivity at the workstation the software continues to run on the workstation until activity is detected. At this point a single attempt is made to get the license back. If a license is available on the license manager it is granted to that workstation and the software continues to run without messaging the user. If all seats of a license are in use the user will be messaged that the license has been lost. If there is unsaved work the user will be given an opportunity to save their work before exiting. While you can set a specific timeout value for each product it is most common to set a global timeout which will apply to all Autodesk software managed by a particular license manager.

You may also want to consider managing license borrowing parameters in your options file. Unmanaged, most Autodesk licenses may be borrowed by any user for up to six months. Since there is no way to administratively recall a borrowed license it is important to manage this feature proactively! You can control how long licenses may be borrowed and/or who can borrow or turn off borrowing altogether. To turn off borrowing for a product create a group containing only a nonexistent user then restrict borrowing to only that group using `INCLUDE_BORROW`. If you later have a need to allow select users to borrow, just add them to that group. Borrowing controls must be done on a per product basis; there are no global borrowing settings. If you have suite and/or subscription licenses you can apply settings to the suite/subscription license or to the individual package components. If you apply borrow term limits to a high level suite/subscription license the borrow user interface on workstations will not reflect the new limits but the user will not be able to borrow past the limits set in the options file. If the limits are applied to each individual package component then the workstation will reflect the options file limits.

If you will be using SAMReport-Lite to produce historical usage reports then you will need to turn on report logging. Report logs differ from the debug log file in that it contains more detailed usage data and stores it in binary format. The only way to enable this logging is in the options file.

You can also control general access to licenses by user, machine, groups of machines or users and IP address range. User and machine groups are created in the options file. There is no direct link between the operating system databases (Active Directory) and options file groups. In order to use an operating system group you would have to export the data to a text string and import it into the options file. The most commonly used access controls used are `INCLUDE`, `EXCLUDE` and `RESERVE`. If you create an `INCLUDE` setting for a license only the users or machines included will be able to use that license. With `EXCLUDE` you specify users or machines that will not have access to a particular license. You can `RESERVE` a portion of a license seat count for a group of users giving that group exclusive access to that portion of seats. If you are managing user or machine groups in an options file it is strongly

recommended that you set GROUPEASEINSENSITIVE to ON (default is off). This is because Windows logon and machine names are not case sensitive but exact typed logon and machine case is sent to the license manager for evaluation.

There are many other possible options file settings. Options file syntax is documented in detail in the "LicenseAdministration.pdf" file located in the folder where you installed the license manager. Options file syntax is case sensitive and at times complex. Remember to view to license manager debug log file after implementing options file changes to assure desired behavior!

To create an options file use Notepad to create the desired option lines then save it as ADSKFLEX.OPT in the same folder where you placed the license file.

A common misconception is that you need to stop-start the license manager to implement edits to the options file. Doing a license reread will also implement any changes made to the options file. Reread is more desirable over stopping and starting the license manager as it does not interrupt license availability to users

The following is an example of an options file contents. Note that comment lines start with the # symbol and these lines are not evaluated by the license manager.

**ADSKFLEX.OPT**

# set inactive timeout to 5400 seconds (90 minutes) for all Autodesk software

TIMEOUTALL 5400

# ignore case when evaluating login names and machine names

GROUPCASEINSENSITIVE ON

# create a report log report.rl in the folder C:\adsk license manager\logs

# the plus sign tells the license manager not to delete the contents when doing a stop/start

# remember to use quotes if your path or filename has spaces

REPORTLOG +"C:\adsk license manager\logs\report.rl"

# create a user group called AUTOCAD\_BORROW

# members of the group have login names of jonesm potterh and smithp

# the group name cannot have a space

GROUP AUTOCAD\_BORROW jonesm potterh smithp

# only members of AUTOCAD\_BORROW can borrow an AutoCAD 2013 license

INCLUDE\_BORROW 85871ACD\_2013\_OF GROUP AUTOCAD\_BORROW

# AutoCAD 2013 may be borrowed for a maximum of 10 days

MAX\_BORROW\_HOURS 85871ACD\_2013\_OF 240

# deny access to all machines with an IP address between 123.123.123.0 thru 123.123.123.255

EXCLUDEALL INTERNET 123.123.123.\*