

## AutoCAD 2005 Network Licensing

### 1. Overview

In AutoCAD® 2002, Autodesk introduced a new network license manager, FLEXlm® from Macrovision Corporation. With the release of AutoCAD® 2005 software, Autodesk continues to enhance the capabilities of this license management software by enhancing the license borrowing capability with the latest FLEXlm version. In addition, AutoCAD 2005 includes a new Network License Authorization Utility.

This document provides an in-depth look at the FLEXlm features in AutoCAD 2005 software and reviews the basic FLEXlm technology and how it works. At the end of this paper is a section for users who are making the transition from the older Élan network licensing software used with AutoCAD 2000i and earlier releases.

### 2. Can I have a back-up license server?

Autodesk does not allow backup servers. However, Autodesk supports a distributed or redundant server model that allows failover in case your active computer stops working, but this is not a backup.

- **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 pool, you must run the Network License Manager on each server that is a member of the distributed server pool. The number of licenses available for a given product is the sum of licenses for that product across all distributed server pool members. If one server goes down, customers can use the licenses on the remaining servers.
- **Redundant license server model:** Three servers authenticate a single license file. One server acts as the master, while the other two provide backup if the master server fails. With this configuration, licenses continue to be monitored and issued as long as at least two servers still work. You must install the Network License Manager on each server.

### 3. If my server goes down, can I get another license file for my new server?

Yes, Autodesk provides a temporary license to run until your primary server comes back up. If your primary server is permanently disabled, Autodesk reissues a new, permanent license for the new server.

### 4. Can I first deploy my Autodesk licenses on a test server, and then move them to another “production” server?

Yes. To do this, contact the Autodesk registration and activation team so they can issue you a license file that works for 30 days.

### 5. I have a network license system at work that allows me to run Autodesk products while on the network. Am I allowed to run a copy of the products on my home computer, and how do I do this?

The Autodesk Software License Agreement permits an additional installation only on a computer that is owned or controlled by the licensee. This provision is intended to allow employees to work while away from their usual work location. It is not intended to allow employees to install a product on their personal computer over which the licensee has no control.

You have two options:

- Use the License Borrowing utility to check out a license from the network license server on a computer owned by the licensee. Your license is automatically returned to the license server at

the end of the day on the return date you set when you borrowed the license. You can also return a license early.

- If you have a VPN (Virtual Private Network) connection into your company, dial up and run the application remotely on a computer owned by the licensee. You do not have to check out a license from the server.

### 6. Can I use a network license within my country?

Yes, you are allowed to use the network license within a country. In addition, if you purchased your Autodesk product within the European Economic Area (E.E.A.), you are allowed to run the network license within the E.E.A.

### 7. I am a customer with a network license, but I want to move two licenses and deploy them as stand-alone. How is this done?

- If you are a current subscription customer, contact the Autodesk Business Center at [customercare.abc@autodesk.com](mailto:customercare.abc@autodesk.com) and ask to create a new group for that product family with a stand-alone deployment for two seats. The network license is decremented by the number of stand-alone licenses requested. There is no charge, and you can merge back into one group in the future when you are ready. In EMEA, you sign a software removal form for network license reduction. If it's for a certain period, Autodesk provides a temporary code.
- If it is a perpetual license that is not on subscription, you can get a new license created for two stand-alone seats. Place an order with the Autodesk Business Center at [customercare.abc@autodesk.com](mailto:customercare.abc@autodesk.com). The network license is decremented by the number of stand-alone licenses requested. In EMEA, you sign a software removal agreement for this. New products with new deployment type settings and new serial numbers are issued. You can change back again, if necessary (there is a charge to do so). Ask the Autodesk Business Center at [customercare.abc@autodesk.com](mailto:customercare.abc@autodesk.com) for the specific cost in your region.
- Another option is to exchange two network licenses for two new stand-alone licenses for one seat each (there is a charge to do this). Ask your Autodesk Business Center at [customercare.abc@autodesk.com](mailto:customercare.abc@autodesk.com) for the cost in your region. As part of this transaction, Autodesk also ships you any necessary media or boxes

### 8. If I am on subscription, how do I run part of my network on the prior version and another part on the current version?

First, you must have owned the prior release. Next, you must request a new network license through Autodesk Business Center [customercare.abc@autodesk.com](mailto:customercare.abc@autodesk.com) for the number of licenses you wish to run on each version. The license total will not exceed the number of purchased licenses. If you are not on subscription, Autodesk allows you to do this for 120 days after you have installed the new Autodesk product.

## 9. License Borrowing

### 9.1 What is license borrowing?

License borrowing was first introduced in AutoCAD 2004 and allows licenses that normally reside on the license server to be bound to a user's workstation for a fixed period. License borrowing has been enhanced in AutoCAD 2005. License borrowing is now part of the AutoCAD software. During the borrowing period, maintaining a license does not require any communications with the license server. At the end of the license borrowing period, the license is automatically disabled on the user's workstation, and the license server increases its pool of available licenses by one. The user also may return the license to the server pool early if it's no longer needed. A common use of license borrowing is taking a laptop, with an AutoCAD license bound to it, on a trip where access to the license server is not possible.

License borrowing has been integrated in AutoCAD 2005, users can borrow a license from within AutoCAD. By integrating license borrowing into AutoCAD 2005 there is no longer a need for a separate

utility or to use LMTOOLS utility from Macrovision. LMTOOLS is how Macrovision controls the use of license borrowing.

### **9.2 How do I control my users' borrowing of licenses?**

Since borrowing removes a license from your server's license pool, you may want to restrict how many licenses can be borrowed and who is allowed to borrow them. There are three key options file controls that you can use to control license borrowing. BORROW\_LOWWATER sets the maximum number of licenses that can be borrowed (by product) on a license server. INCLUDE\_BORROW and EXCLUDE\_BORROW enable you to specifically include or exclude individual users, groups of users, specific workstations, and so forth.

### **9.3 What is the maximum period my users can borrow licenses?**

The Autodesk license file sets the maximum period at 30 days. You can then set a shorter period (if necessary) through the ADLM\_BORROWMAX environmental variable (described in the Autodesk Network Licensing Guide). Based on this maximum, your user selects the actual borrowing period desired. This borrowing period is set in days so that the license is always deactivated on the individual's workstation at midnight on the last day of the borrowing period.

### **9.4 Can users return their licenses early?**

Yes, using the license borrowing utility, a user can return a license early (if connected to the license server).

### **9.5 How do users borrow a license?**

In AutoCAD 2005, licenses are borrowed directly from within the application. There no longer is a need to use the License Borrowing Utility used in AutoCAD 2004.

### **9.6 How does a user know that a license has been successfully borrowed?**

When the user launches the AutoCAD product (or any other borrowed product), they are notified through Communication Centers balloon notification that they are running under a borrowed license. The notification informs the user that the license has been borrowed and indicates the number of days left until the license expires. They can also return the license to the NLM through Communication Center.

### **9.7 Can users borrow licenses if they are traveling and their previous licenses have expired?**

They must be able to connect to your network and to acquire licenses from the appropriate license server. If you have configured your network to allow access (for example, through a VPN and dial-up connection, or a local office that is connected by a WAN back to your office), then your users should be able to borrow subsequent licenses in exactly the same way they did at your home office.

### **9.8 Does AutoCAD 2005 support the timeout feature in the options file?**

AutoCAD 2005 continues to support the timeout feature that was introduced in AutoCAD 2004. The timeout feature is supported through the options file. Timeout defines the maximum time a license may sit idle before the license server reclaims it. AutoCAD 2002 did not support this feature, because there was no process for determining when an AutoCAD session was idle. Systems administrators can use timeout to enforce the return of licenses to the license pool when they are not being used. The behavior of a license reclaimed by the timeout setting is the same as that exhibited by a license that loses communication with the license server.

## **10. FLEX/m Basics**

### **10.1 How does FLEX/m work?**

FLEX/m is a client-server application toolkit. The software/client requests a license from the license server and is either granted or denied the license.

The main FLEX/m components are

- Imgrd
- License file

- Vendor daemon(s)
- License administration tools (lmutil, lmdiag, lmstat, and so forth)

The user installs lmgrd and the vendor daemon on the computer specified in the license file. Once the license file(s) and the daemons are in place, the only requirement is to start lmgrd. The daemon is typically started when the machine boots (on Microsoft® Windows® as a system service) but can also be started manually.

When the AutoCAD 2005 network version is started, a request for a license token is sent to the FLEXlm license server. If a license is available, it is granted, and the AutoCAD 2005 application starts on the workstation. Once a license has been granted, a “heartbeat” is established between the AutoCAD session and the license server. The frequency of this heartbeat is once per minute. When the AutoCAD session ends, the license token is returned to the server and the heartbeat is terminated. The FLEXlm license server is passive in that it does not advertise itself, thus it does not generate unnecessary network traffic.

### 10.2 What are the components of the FLEXlm license server?

The following terms are used to describe FLEXlm concepts and software components:

**Feature**—Any functionality requiring licensing. The meaning of a feature depends entirely on how it is used by each application. For example, a feature could represent any of the following:

- An application software system consisting of hundreds of programs
- A single program (regardless of version)
- A specific version of a program
- A part of a program
- A piece of data

**Client**—An application program requesting or receiving a license.

**Daemon**—A process that must continuously run in the background and is often designed to respond to requests from other processes across a network. On Microsoft® Windows NT®, daemons are called “services.” When services respond to requests, they are known as the “server” half of a client/server architecture.

**Vendor Daemon**—The daemon or service that dispenses licenses for the requested features. This daemon is built by a software provider with FLEXlm libraries supplied by Macrovision Corporation. The Autodesk vendor daemon name is *adskflex*.

**lmgrd**—The daemon process, or license server, that directs client processes to the correct vendor daemon. The same lmgrd can be shared by all applications from all vendors, because this daemon neither authenticates nor dispenses licenses. lmgrd processes few user requests on its own but forwards these requests to the vendor daemons.

**License File**—A file distributed with software that enables and restricts the usage of specified features and behaviors.

The three principal components of the FLEXlm network licensing system are the master daemon, the vendor daemon, and the license file. These components can be configured and managed with a GUI interface tool, *lmtools.exe*, or a command-line interface, *lmutil.exe*. At the option of the administrator, FLEXlm is capable of writing a debug log file and report log file. The administrator can create a vendor-specific options file to control license access and specify report log placement.

A single instance of the master daemon is run on the license manager system, regardless of how many products or even software vendors are being served. When an application such as AutoCAD software sends a request for a license, it first contacts this master daemon, which directs the request to the proper vendor daemon.

Once the master daemon passes a license request to the vendor daemon, all license interactions occur between the application (AutoCAD) and the vendor daemon (adskflex). Adskflex authenticates requests against the license file that contains information about the number of licenses authorized for each product feature and is tied to the license server by the network interface card’s Ethernet MAC address.

If the administrator elects to create a vendor-specific options file, license access can be reserved or denied based on workstation host name, user login name, or IP address. The options file also enables an administrator to reserve licenses for a user. Administrators specify report log creation in the options file to be used by the SAMreport-Lite tool.

## 11. Host ID

### 11.1 How is the host ID used?

The host ID is used to communicate between the license manager and the AutoCAD 2005 software. The license manager uses the host ID to distinguish itself from other computers running license managers, and the AutoCAD application uses the host ID to identify which computer to request a license from.

### 11.2 How do I get the system host ID?

When you create deployments, the Network Installation wizard prompts you for the server host name and server host ID. The server host name is the name of the computer running FLEXlm, and the server host ID is the MAC address of the network card from the host server. The Network Installation wizard can look up the server host ID of the computer specified under server host name. If the Network Installation wizard is unable to look up the server host ID it can be obtained by running *lmtools.exe* from the computer where FLEXlm is installed. *LMTOOLS* can be installed from the AutoCAD 2005 CD browser. Installing the Network License Manager is step 2 on the Network Deployment tab. The server host ID is the Ethernet address found on the System Settings tab in the *LMTOOLS* window. The server host ID is the identification key used to bind the license file to a particular license server machine. The Network Installation wizard also creates a license file (*licpath.lic*) from the information supplied, telling AutoCAD 2005 software where to find the license manager.

## 12. FLEXlm Versions

### 12.1 How can I tell which version I'm using?

Use the *lmutil lmver* command, or you can run *lmtools.exe*. When using *lmtools*, go to the Utilities tab, navigate to the FLEXlm file, and click the Find Version button.

### 12.2 I have products from several companies at various FLEXlm version levels. Do I have to worry about how these versions work together?

If you're not combining license files from different vendors, the simplest thing to do is to run them separately, making sure you use the tools (especially *lmgrd* and the vendor daemon) that are shipped by each vendor.

Newer versions of *lmgrd* always support older versions of vendor daemons and applications. If you have combined license files from two vendors, you must use the latest version of *lmgrd*.

If you've received two versions of a product from the same vendor, you must use the latest vendor daemon. An older vendor daemon with a newer client may cause communication errors.

### 12.3 I've received a new copy of a product from a vendor, and it uses a new version of FLEXlm. Is my old license file still valid?

Yes. Older FLEXlm license files are always valid with newer versions of FLEXlm.

## 13. License File Locations

### 13.1 My AutoCAD program cannot seem to find the license file. What can I do?

For Autodesk products using FLEXlm, the license files reside on the license server and are used by the master daemon and vendor daemon to distribute licenses.

Created with the deployment and installed with each application to the client workstation is a file named *licpath.lic*, which contains the path information to the license server.

**Note:** Distributed server configurations do not use *licpath.lic*. Instead an environment variable `ADSKFLEX_LICENSE_FILE` is set which specifies the server search order.

Based on the error code displayed, you can reference the specific error in the *FLEX/m* documentation to resolve why AutoCAD cannot retrieve a license.

**13.2 I have received FLEX/m license files from two different companies. Do I need to combine them?**

You don't need to combine license files. You can have any number of separate license files, with different *lmgrd* server processes supporting each file. Moreover, because *lmgrd* is a lightweight process, running separate license files is often the simplest way to proceed for sites without systems administrators.

**13.3 When is it recommended to combine license files?**

Many systems administrators, especially for larger sites, prefer to combine license files to ease administration of *FLEX/m* licenses. It's purely a matter of preference. Autodesk recommends running separate license files between different companies software. Autodesk recommends combining Autodesk license files.

**14. License File Contents**

**14.1 What are the components of a license file?**

The license file contains licensing information provided by Autodesk. You obtain license file data when you authorize the NLM.

The license file contains information about network server nodes and vendor daemons, and an encrypted digital signature created when Autodesk generates the license file. The following is an example of the contents of a license file:

```
SERVER ServerName HostID
USE_SERVER
VENDOR VendorDaemon port=portnumber
INCREMENT IncrementName VendorDaemon Version Expiration NumberofLicenses \
  VENDOR_STRING=UsageType:LicenseBehavior BORROW=### SUPERSEDE
  DUP_GROUP=DupGroup ISSUED=IssueDate SN=SerialNumber
SIGN=nnnnnnnnnnnn
```

The following table defines each license file parameter.

Parameter	Definition
ServerName and HostID	Binds the license to a particular server and network adapter.
VendorDaemon	The name of the server-side Autodesk license daemon ( <i>adskflex</i> ).
Portnumber	Reserved and assigned for use only for Autodesk products running the Autodesk/ <i>FLEX/m</i> vendor daemon. By default port 2080.
IncrementName	Name of the product or feature.
Version	Internal version number.
ExpirationDate	The date when the license expires.
NumberofLicenses	Specifies the number of licenses to be managed by a particular server or redundant server pool.
VENDOR_STRING	Defines the license configuration settings, <i>UsageType</i> and <i>LicenseBehavior</i> .
BORROW	Keyword allows license borrowing.
SUPERSEDE	Replaces existing lines in a license file that have a date earlier than the defined <i>IssueDate</i> . The Autodesk policy for modifying an existing license

	is to reissue the entire license file. Because there can be multiple INCREMENT lines, the SUPERSEDE/ISSUED parameters are used to replace any previous product or feature of the same name.
DupGroup	Defines how the server handles the sharing of multiple license requests. The default for this behavior is Host, which allows for multiple sessions on the same computer to share the same license.
IssueDate	The date the license file was generated by Autodesk.
SerialNumber	The serial number of the Autodesk product.
SIGN=	The encrypted signature used to authenticate the attributes of the license file.

Following is an example of a completed license file for a single or distributed server model issuing 3 licenses:

```
SERVER NLMSVR1 000476e5cb3d
USE_SERVER
VENDOR adskflex port=2080
INCREMENT 46300ACD_2005_0F adskflex 1.000 permanent 3 \
  VENDOR_STRING=commercial:permanent BORROW=720 SUPERSEDE \
  DUP_GROUP=UH ISSUED=10-MAR-2004 SN=341-01234567 SIGN="1FBC
  0A61 9D93 AA5E A581 BFB3 AAE5 17D6 08EC 2814 E51C 5072 638D"
```

Following is an example of a completed license file for a redundant server model issuing 10 licenses:

```
SERVER NLMSVR1 0002008B5DB2 27005
SERVER NLMSVR2 00020086FC64 27005
SERVER NLMSVR3 00020086FC50 27005
USE_SERVER
VENDOR adskflex port=2080
INCREMENT 46300ACD_2005_0F adskflex 1.000 permanent 10 \
  VENDOR_STRING=commercial:permanent BORROW=720 SUPERSEDE \
  DUP_GROUP=UH ISSUED=13-Mar-2004 SN=341-01234567 SIGN="0D6B \
  36CE B604 B481 1709 C6E5 EC24 BA3F 549F 81B5 D5DD EB90 3497"
```

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

## 15. Using FLEX/m

### 15.1 How do I obtain and set up the FLEX/m license file?

New to AutoCAD 2005 is the Network License Authorization Utility. Install the utility and run the application to obtain your license file. The utility is available for installation from the Network Deployment tab of the CD Browser. The license file identifies important licensing information, including license type and behavior, and the number of licenses available for use.

**To obtain a license file manually:**

1. Obtain the following information:
  - Product serial number(s)
  - Server name
  - Host ID number
  - An email address where Autodesk can send the license file

2. Contact the Autodesk Registration and Authorization office and provide all required information specified in the previous step.

The Autodesk Registration and Authorization office will email you the license file in text format. Usually as an attachment.

**To set up a license file:**

Copy the attachment to the *Autodesk License Manager\license* folder. You can name the license file anything you want; however, the name must have a *.lic* or *.dat* extension.

**15.2 How do I configure and start the FLEXlm license server?**

You configure the license server with the *lmtools.exe* utility. LMTOOLS is installed as part of the Autodesk Network License Manager. For specific steps see the technical white paper, "Installing the Autodesk Network License Manager for AutoCAD 2005 or AutoCAD 2005-Based Products".

**15.3 If my client application exits abnormally, does the server free the license?**

Yes, unless the client's entire system crashes. The license is freed immediately when the computer is still able to communicate with the license manager. If the entire system crashes, then the license is not freed, and you should use the *lmremove* option of *lmutil.exe* to free the license or fix the problem and restart AutoCAD on the computer that crashed. You can also create an options file, setting a timeout value where a license is released if communication is lost between the client application and the license server.

**15.4 What happens when the server stops?**

AutoCAD software continues running and checks for about 15 minutes to see if the license server has been restored. After that, if the license server is still down, users on each client workstation receive a warning that their license(s) has been lost and are prompted to save their work before exiting.

**16. How FLEXlm Works**

**16.1 What prevents me from changing a license file?**

Each feature line in the license file has a 12- or 20-character hexadecimal license key. If anything significant is changed, the key becomes invalid, and the license won't work.

**16.2 How fast does a check-out occur?**

Check-out speed depends on the operating system and the system or network load. Some tests show that a typical system performs check-outs in about 1/50 second (20 ms).

**16.3 Does FLEXlm licensing impose a heavy load on the network?**

No. A typical check-out request requires five messages and responses between client and server, and each message is less than 150 bytes.

When a server is not receiving requests, it requires virtually no CPU time.

**16.4 Does FLEXlm work with ATM, ISDN, token ring, and so on?**

These are not officially supported, but, in general, they have no impact on FLEXlm. Because FLEXlm requires TCP/IP, as long as TCP/IP works, FLEXlm will work.

**16.5 Does FLEXlm work with subnets, fully qualified names, multiple domains, and so forth?**

Yes.

**16.6 We are using FLEXlm over a wide-area network. What can we do to improve performance?**

Setting up your license configuration as a distributed server model improves performance over a wide-area network.

## 17. Redundant Servers

### 17.1 What are redundant servers?

With a redundant server model, you can use three servers to authenticate a single license file. One server acts as the master, while the other two provide backup if the primary server fails. Using this configuration, the system continues to monitor and issue licenses as long as at least two servers are functional.

If you use the redundant server model, all servers must reside on the same subnet and have consistent network communications. (Slow, erratic, or dial-up connections are not recommended.) This model does not support the User Datagram Protocol (UDP) packet type.

To create a redundant server pool, install the network license manager on all three servers that make up the redundant server pool. To get proper license authorization, you must obtain the host ID and server name for each server in the redundant server pool before contacting Autodesk.

Redundant servers require a quorum of two servers to be up, or no licenses are served.

### 17.2 How do I start redundant servers?

The redundant server model requires Microsoft Windows NT Server 4.0, Windows 2000 Server or Windows 2003 Server. Windows NT/2000 Workstation editions are not supported. To start the redundant servers, use LMTOOLS.exe on each server and start each server within 3 minutes.

**Note:** The redundant server model requires that separate copies of the same license file, the license manager daemon (lmgrd), and the vendor daemon reside on each server; all are necessary to authenticate and release licenses.

## 18. FLEXlm Versus Élan

### 18.1 Why has Autodesk changed its network license manager to FLEXlm?

FLEXlm is a more reliable and robust network licensing tool. In addition, it is already in wider use than the previous license manager.

### 18.2 Will the FLEXlm license server coexist with an existing Élan installation?

Yes, the two license managers can coexist; however, Élan can't be used to manage licenses for AutoCAD 2002, 2004, and 2005 and FLEXlm can't be used to manage licenses for AutoCAD 2000i and earlier.

### 18.3 Does FLEXlm support Novell networks?

You can still deploy and run the AutoCAD application in a Novell® network environment using the FLEXlm license manager. However, the license manager itself must reside on a supported Microsoft Windows operating system, and the TCP/IP protocol must be configured and running on your network. This configuration does not support the IPX/SPX protocol or Novell Loadable Modules (NLM) of FLEXlm.

### 18.4 How do I generate usage reports with FLEXlm?

Autodesk includes SAMreport-Lite with FLEXlm. You can use SAMreport-Lite to generate summary reports on software usage. A copy of the SAMreport-Lite User's Guide is available for download from the Network Deployment tab of the AutoCAD 2005 CD browser. You need to obtain a license for SAMreport-Lite before you can start reviewing log files. The procedure to do this is explained in the guide.

### 18.5 Does Autodesk still provide a Network Setup wizard?

No in AutoCAD 2005, the Network Setup wizard has been replaced by the Network Installation wizard. The Network Installation wizard was first introduced in AutoCAD 2004 and replaces the older Network Setup wizard.

### 18.6 How do FLEXlm and the Autodesk License Manager from Élan compare?

AutoCAD 2002, 2004 and 2005 users see no difference using FLEXlm compared to earlier versions of AutoCAD software that use the Autodesk License Manager provided by Élan. AutoCAD requests a

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license from the license manager, and that request is either granted or denied. When the user is finished using the software, the license is returned to the license manager.

### 18.7 What are the FLEXlm equivalent tools when compared to Élan?

Élan uses five program files to control, distribute, and report on license activity. FLEXlm uses only three program files. Following is a comparison of the Élan tools with their FLEXlm counterparts.

Élan Tools	FLEXlm Tools
<b>AdLM Admin</b>	<b>lmtools</b>
Key Directory	Configure Services:Path to license file
Host Name	System Settings:Computer/Hostname
Key (Authorization Code)	License file obtained from Autodesk
Feature Code: Licenses	Server Status:Perform Status Enquiry

Élan Tools	FLEXlm Tools
<b>AdLM Control</b>	<b>lmtools and lmutil.exe</b>
Servers	Server Status:Server Name
Clients	Server Status:Perform Status Enquiry
Bury Client	lmutil lmremove
Zero Log	Switch Report Log
Find Log	Configure Services:Path to Debug Log
Dump Log	Config Services:View Log and Close Log provide similar functionality.
<b>AdLM Query</b>	<b>lmtools</b>
Servers	Server Status:Server Name:Perform Status Enquiry
Clients	Server Status:Perform Status Enquiry
Environment	System Settings Server Status:Perform Status Enquiry
Feature	Server Status:Individual Feature:Perform Status Enquiry
<b>AdLM Report</b>	<b>SAMreport-Lite</b>
<b>AdLM Control Panel Applet</b>	<b>lmtools</b>
Start/Stop	Start/Stop/Reread
Settings	Configure Services Options file
<b>AdLM equivalent</b>	<b>lmtools</b>

No equivalent	Utilities
No equivalent	Server Diagnostics

Besides the initial program files, both the FLEXlm and Élan license managers use support files. Following is a list of each file and its default installation location and equivalent.

Élan	FLEXlm
.key\<feature number>.lic One .lic file must exist for each application.	.\license\<file_name>.lic or .dat Multiple Autodesk product license files can be combined into a single file for easier management.
.Vog\adlm.log	.Vog\<file_name>.log
<b>Élan Resource file</b>	<b>FLEXlm Options file</b>
Set in control panel applet and created by user	Created by user and specified in license file

**18.8 Does FLEXlm use a server code and authorization code?**

FLEXlm has an equivalent for both the server code and authorization code. In FLEXlm the server code is equal to the Ethernet address reported on the System Settings tab in lmtools. The FLEXlm equivalent of the authorization code is the license file that Autodesk emails you when you authorize AutoCAD software.

**18.9 Will FLEXlm work with AutoCAD 2000 and AutoCAD Release 14?**

No. FLEXlm cannot distribute licenses for AutoCAD 2000/2000i or AutoCAD Release 14. FLEXlm can coexist with the AdLM from Élan. The Élan license manager administers AutoCAD 2000/2000i and AutoCAD Release 14 licenses.

**18.10 Will Élan administer AutoCAD 2002, 2004 and 2005 licenses?**

No. Élan cannot distribute licenses for AutoCAD 2002, 2004 and 2005. Élan can coexist on the same computer running the FLEXlm license manager. The FLEXlm license manager will administer the AutoCAD 2002 licenses.



Autodesk, Inc.  
111 McInnis Parkway  
San Rafael, CA 94903  
USA

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