



ArcGIS® 10 Licensing Concepts and Strategies

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ArcGIS 10 Licensing Concepts and Strategies

An Esri White Paper

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ArcGIS 10 Licensing Concepts and Strategies

Introduction

With ArcGIS® 10, new license management technology has been implemented in ArcGIS Desktop. This document will help you understand the changes and assist you in license planning so you can use the options that best fit your organizational needs. The concepts discussed herein are well documented in the ArcGIS 10 Resource Center. Links are provided throughout this document for your reference.

The ArcGIS Desktop 10 licensing considerations are as follows:

- Single use (SU) licensed software and extensions are authorized for use on a particular machine.
- Concurrent use (CU) licenses are authorized to a particular server to serve to a number of machines in a network via the license manager.
- There are no hardware keys or sharing of license files.
- Concurrent use licenses may be "[borrowed](#)" so users can disconnect from the network and utilize the license for a specified term.
- Some customers, such as large enterprise license agreement (ELA) customers, will have the ability to authorize SU licenses as well as serve CU licenses on a local [enterprise activation server](#).
- License management may be aided by the use of [provisioning files](#).
- ArcInfo® will be available as a single use license; however, you can also now borrow a concurrent use ArcInfo license.
- ArcGIS Engine Runtime will be available as a concurrent use license.
- The ArcGIS Server 10 licensing technology will not be updated at this release.
- The [Customer Care portal](#) includes methods to manage and download your Esri software license entitlements.
- You can serve version 10 concurrent use licenses from the ArcGIS 10 license manager to both 10 and 9.x clients, but 9.x clients are unable to borrow a license.

Concepts

What Is Licensing?

In its simplest form, licensing can be defined as the ability or right to use a specific product for a specified period of time. There are various types of licenses and license agreements to meet the needs of different organizations.

Single Use Licenses

A single use license generally restricts use of a software product to one user/machine. A single use license must be dedicated for each computer that has use rights for the software, data, or documentation. A single use license is sometimes referred to as a "node-locked license," but *single use* is the preferred Esri terminology.

Concurrent Use Licenses

A concurrent use license allows users to gain access to the software from any computer on the network on which the software is installed. A license server manager administers a pool of licenses to be shared. The number of concurrent licenses determines the number of users who can run the applications concurrently. If all licenses are being used, an additional user cannot run the application until one of the other users finishes using his/her license. When one user finishes using the license, another user can begin using it. A concurrent use license is not locked to a single computer and, as such, can float on a network. This is why you may still hear it referred to as a "floating license."

Authorization

After installation of your ESRI® software, you will authorize your ArcGIS 10 software as follows:

Run Software Authorization Wizard:

1. Enter your user (registration) information and authorization numbers. These numbers are provided via e-mail from Esri Customer Service or your authorized Esri distributor.
2. You may complete the authorization process by sending the information using the following methods:
 - Internet activation (default) from Software Authorization Wizard (SAW): This is a fast and easy send and receive process.
 - E-mail: If your machine is not directly connected to the Internet, you may send the file via e-mail to receive a reply e-mail from a machine with Internet connectivity. The response e-mail will contain an authorization file to complete the process on the machine to be authorized.
 - Web page upload: Upload the SAW-generated file to receive the authorization via e-mail to complete the process on the machine to be authorized. No Web site login is required for this option.

Authorization is available 24 hours a day, 7 days a week.

Deauthorize

This is the removal of a software license that is tied to a particular machine. The process is used prior to transferring a license to a new machine. This may be utilized when a new machine is purchased to replace a currently authorized computer or if the license is to transfer to a new user's machine under the same customer number or ELA. Once

deauthorized via Software Authorization Wizard, the software may be uninstalled, then authorized on the new machine. Deauthorization is permitted up to four times per year per license.

Repair The license technology uses multiple machine identifiers when authorizing on a specific machine. If you change the machine configuration by upgrading one or two components of the machine, the license should still be valid. However, if too many identifiers are changed, a "repair" request will be triggered. Repairs, though uncommon, are available up to two times per year.

Borrow This capability is available to concurrent use licenses in ArcGIS Desktop 10. It enables a user to temporarily obtain a concurrent use license in such a way that the license can be used for a limited period of time while the user is disconnected from the local network. To avoid confusion, do not interchange the terms *borrow* and *checkout*. Checkout refers to the act of utilizing a license while still connected to the license server.

- The permissible time period is set by the administrator for all licenses borrowed from a particular license manager.
- There is no limit to the number of times a license can be borrowed.
- A user on the network will only see the licenses (core and extensions) that are available to be borrowed.
- The borrowed license will "return" to the network at the end of the time-out date.
- If the borrowed time is set to time out in 15 days or less, the user will get a reminder upon starting ArcGIS.
- If the user's machine is stolen or crashes with the borrowed license, the license will remain borrowed until the preset time-out date. Thus, shorter borrowing periods are recommended.

Provisioning This method of managing your license entitlements is especially useful if your organization has a large number of licenses. A provisioning file can be created to activate a set of authorizations in concurrent use and enterprise licensing scenarios. The provisioning file combines a set of authorization numbers in a single file that is sent to the user and can be uploaded directly into Software Authorization Wizard. This can be created via the Customer Service Web site or in a text editor such as Notepad. See the [documentation](#) for more information.

Enterprise Activation In some scenarios, such as enterprise license agreements, a license server may be enabled as an enterprise activation server. This can be used to authorize and manage single use/enterprise activation (EA) licenses on an organization's own network, without having to connect to Esri's activation server each time a license is modified (e.g., authorized, deauthorized, or repaired).

The enterprise activation server is authorized one time by connecting to Esri through the standard authorization process. There is an audit log available that will detail how many single use enterprise licenses have been authorized by users. This log can be sent from the administrator to Esri for audit purposes.

Audit Log The [audit log](#) captures license borrow, return, and enterprise single use authorization activity. You can view the log file using the ArcGIS license server administrator.

Options File The [options file](#) allows the license administrator to control user access to licenses on the license manager. Users are identified by their user name, host name, display, or IP address.

Strategies The remainder of this document describes common ArcGIS Desktop deployment scenarios and provides recommended guidelines for how to best deploy your software using the new license management technology.

In each of the scenarios below, you will need the following:

- The new ArcGIS 10 authorization number(s) sent to you via e-mail from Esri or your distributor. Be sure you have the new authorization number(s) before starting this process.
- The new ArcGIS 10 software, either downloaded or physically delivered on media.

***Scenario 1:
Single Use License
Deployment (Basic)***

This scenario represents your typical small company or organization with one to five users with a mix of ArcGIS Desktop applications and extensions. As commonly seen in this environment, each user has his/her own licensed copy of the desktop version of choice with the desired extensions.

Implementation

1. Uninstall version 9.x.
2. Install version 10.
3. Authorize the software through Software Authorization Wizard by entering the authorization numbers for the core software and extensions.

***Scenario 2:
Concurrent Use
License Deployment
(Basic)***

Many organizations save money by utilizing the concurrent use licensing model. In this scenario, users have generally the same needs with respect to ArcGIS features and share the concurrent use licenses managed by the ArcGIS 10 license manager on the network. New in ArcGIS 10 is the opportunity to borrow licenses while disconnected from the network. There are no hardware keys or keycode request forms.

Implementation

1. Uninstall the ArcGIS 9.x license manager from the server.
2. [Install](#) the ArcGIS 10 license manager.

3. Authorize the licenses to that server via Software Authorization Wizard. There is no need to complete a keycode request form; simply follow the steps in the wizard.
4. Consider enabling [borrowing](#) if users would benefit from use when away from the network.
 - a. Establish time permissions for borrowing. Shorter borrowing periods are recommended as in the event of a stolen machine or machine crash, the license will not be returned until the borrowing period has timed out.
 - b. If varying borrowing periods are required, consider a second license manager so that the different periods may be enabled. You can only set one time period (in number of days) for all licenses borrowed from a particular server.

***Scenario 3:
Education—
Teaching and
Research Lab Kit
Deployment***

The Teaching and Research Lab Kit provides a quantity of 31 single use or concurrent use licenses with the option to purchase additional quantities of 10. Quite often, in ArcGIS 9.3.1 and prior versions, the organization would select the single use license option whereby it would receive one license file that could be used for all 31 machines in hard drive imaging. The practice of sharing one 9.x license file across all machines in the classroom/lab used the honor system to enforce the license agreement and was inherently insecure.

In ArcGIS Desktop 10, each single use licensed machine is authorized individually, but the best practice recommendation is to move to the concurrent use model. This enables reimaging in standard lab operating procedures to continue without additional administration and limitations due to the authorization process. Since most labs are networked, it is simple to set up the ArcGIS 10 license manager on a server. (If the lab computers are not networked, a Teaching and Research Lab Kit of single use licenses is available, but each machine in the lab must be individually authorized.)

Implementation—Concurrent Use

1. Server
 - a. Install ArcGIS Desktop 10 license manager on a server in the network.
 - b. Authorize the license manager.
2. Clients
 - a. Install ArcGIS Desktop 10 on one client machine.
 - b. Run the ArcGIS administrator and connect to the license manager on the server.
 - c. Create an image of the client machine with ArcGIS Desktop installed.
 - d. Image the other machines in the lab. (Reimaging will not invoke licensing issues.)

Implementation—Single Use

1. Install ArcGIS Desktop 10.
2. Create an image of the client machine with ArcGIS Desktop installed.
3. Image the other machines in the lab.
4. Authorize the software on each machine.
5. Deauthorize on each machine prior to reimaging (maximum is four times/year).

***Scenario 4:
Education—School
Building Deployment***

Just as in the educational lab setting, it is recommended that large educational institutions, such as a school building deployment, use concurrent use licenses. The concurrent use environment enables the licenses to be reused easily (given a connection to the license manager server) after reimaging the hard drive, and therefore less administration is needed. The organization could use single use licenses, but it would require authorization on each machine after installation and deauthorization of the license prior to wiping the hard drive. There is also a limit to the number of times a machine may be deauthorized in a given year (four times/year).

Implementation

1. Server
 - a. Uninstall the license manager for 9.x if installed.
 - b. Install license manager for ArcGIS 10.
 - c. Authorize the license manager.
 - i. If multiple license managers are desired (for different departments), [transfer](#) the desired number of license managers to the secondary servers.
 - ii. Create an [options file](#) to reserve a license for the instructor, if desired.
 - iii. If more than one computer lab exists in the building, you can also add groups to the options file, restricting ArcView® licenses to one lab group and ArcEditor™ for the advanced lab group.
2. Clients
 - a. Install ArcGIS Desktop 10 on one client machine.
 - b. Run the ArcGIS administrator and connect to the license manager on the server.
 - c. Create an image of the client machine with ArcGIS Desktop installed.
 - d. Image the other machines in the lab. (Reimaging will not invoke licensing issues.)

Scenario 5: Small Government ELA or Small Utility ELA Deployment

With the new borrowing feature of ArcGIS Desktop 10, organizations with Small Government and Small Utility ELAs should consider using concurrent use licenses as the primary license and only use single use licenses as special requirements dictate. The ELA may still have a mix of SU and CU licenses, and these licenses would still expire in accordance with the term of the agreement.

- Demand for single use licenses may decrease if the organization makes use of the new concurrent use [borrowing](#) feature.
- If single use licenses are required, the administrator might find [provisioning](#) via the Customer Care portal useful.

Scenario 6: Large Government Organization

Large government ELAs often have a complex mix of single use and concurrent use licenses of different levels of ArcGIS with a varying mix of extensions across different departments. At the release of ArcGIS 10, administrators should utilize concurrent use licenses with borrowing enabled to limit the need for administering single use licenses.

Some large ELAs may find it useful to request an enterprise activation server, especially in environments where a firewall may hinder license activations. The enterprise activation server can locally authorize enterprise single use licenses and is useful in managing large enterprise license entitlements.

Multiple enterprise license managers can be used to enable the tracking of single use license authorizations per server/department for auditing purposes. The following options are available for consideration:

- Track the activation of single use licenses from the enterprise activation server for subsequent reporting per the ELA agreement using the [audit log](#).
- Manage and track the borrowing of concurrent use licenses.
- Set variable concurrent use time expirations per server.
- Establish various options (using the options file) per server.
- Enable [failover](#) license servers.

Implementation

1. Uninstall the ArcGIS 9.x license manager.
2. Install the ArcGIS 10 license manager.
3. Authorize all entitlements to that server. It is possible to authorize only the desired quantity of licenses, but if other license managers are planned, the following is recommended:
 - a. After authorizing all licenses to the primary server, transfer the desired quantities to the other servers in the network.

- b. If the servers are on independent networks within the organization, plan ahead to authorize the desired quantities to each server within a limited time period.¹
4. [Set up borrowing](#) parameters.
5. If desired, use an [options file](#) to set particular access rights to the license server.
6. Audit with the help of the [audit log](#).²

Scenario 7: Legacy and the Cloud

In this scenario, the organization, such as a utility, has many desktop users, more than half of whom are ready to benefit from the upgrade to ArcGIS 10. Others in the organization have the issue of legacy applications or custom add-ons written in Visual Basic 6 that are not supported in the latest release of ArcGIS. In the meantime, the utility has been moving all its data to the cloud to better serve the data to the public and partners and reduce the amount of fragmentation in the infrastructure. However, moving the data has decreased efficiencies for the many ArcGIS Desktop users as "raw" data retrieval is slow over the network.

The utility could upgrade its license managers to version 10 and still enable both version 9.x and 10 clients to use the version 10 concurrent use licenses. As it moves more data (and applications) to the cloud, this utility may wish to explore the use of terminal servers, such as Citrix, to enable the desktop environment to reside in the cloud with the data. This will expedite data retrieval to the desktop clients and enable multiple clients to each user as some users only need the legacy applications for a percentage of their work but would like to use version 10 for the remainder of their GIS work. Even though the license manager is in the cloud, if users have ArcGIS Desktop 10 loaded locally, they would still be able to borrow a license to use when disconnected from the network. Note that for optimum printing performance, the utility should set up a print server in the cloud that sends the print job to a local printer on the network.

Scenario 8: Classified Environment Deployment

The default authorization process of transmitting the authorization information over the Internet is simple and straightforward. However, for those organizations whose users' machines or networks do not have direct access to the Internet, the users or administrators can use an alternative method to authorize their licenses.

Implementation

1. Uninstall version 9.x.
2. Install version 10.
3. Run Software Authorization Wizard and enter the authorization numbers for the core software and extensions (or point the SAW to a [provisioning file](#)).

¹In the event you were to authorize a subset of your entitlement and leave the rest on Esri's activation server, and your authorization number were to be leaked, there is a chance someone could set up a server and authorize the remainder of your entitlement. Though the risk may be low, Esri does not take responsibility for ensuring the server requesting authorization belongs to the entitled organization.

²Some users may find the [debug log](#) helpful in internal audits. There are optional methods to track usage of concurrent use licenses such as Flexera's [FlexNet Manager for Engineering Applications](#), OpenLM, and various scripts that may be found on Esri's Web site.

4. Take the file generated by the SAW to another machine to transmit the file via e-mail or [upload to Esri's Customer Care site](#) to establish trusted storage and receive the authorizations.
5. On the machine that generated the file transmitted to Esri, run the SAW and use the received file to authorize the license to that machine.³

***Scenario 9: OEM
(ArcGIS Engine)
Deployment***

ArcGIS Engine 10 can utilize a single use or a concurrent use license. The best practice is determined by the user scenario and how it is to be delivered—as a solution bundle or an embedded solution. This scenario discusses the options rather than one single best practice.

From reading the prior scenarios, you will have noticed the trend in the best practice recommendations is for concurrent use licenses. At version 10, concurrent use licensing is even a possibility for ArcGIS Engine. The benefit of being able to utilize the license on different machines and with different users is obvious. It must be noted, however, that the license manager must be installed on a server on the end user's network and cannot be "hidden" by the OEM partner.

On the other hand, the single use license can be installed silently. As long as the end user has Internet access, the single use license can be authorized silently by calling a [provisioning file](#) from the setup, which will make the connection and authorize the license.

³Esri is aware of customers with security procedures requiring additional measures and will meet those requirements on a case-by-case basis.



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