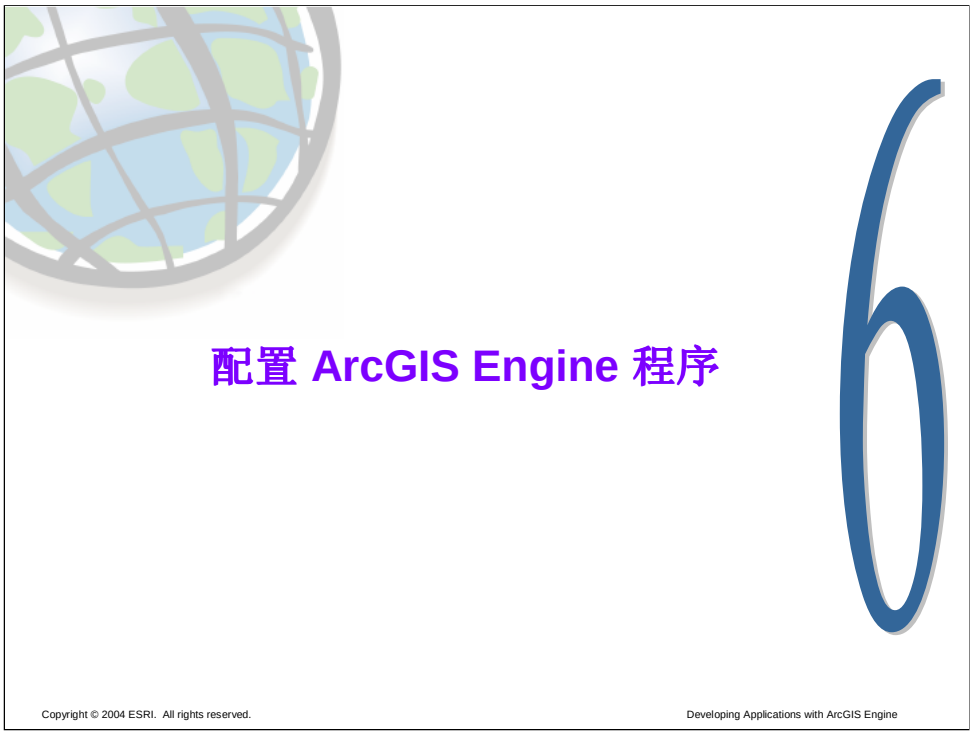

配置 ArcGIS Engine 程序
6
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Developing Applications with ArcGIS Engine

课程 6 回顾

- 开发和配置进程
- ArcGIS Engine Runtime 产品
- MSI安装程序
- 测试配置
- 设定配置

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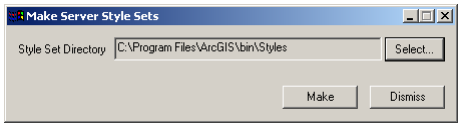
Development and deployment cycle

Prior to developing with the ArcGIS Engine, a developer will install the ArcGIS Engine Developer Kit, which includes the components, controls, ArcGIS Engine Runtime, and developer samples. Each application will contain licensing code to check out the appropriate product and extensions. Consult the *ArcGIS Engine Developer Guide* for license initialization guidelines and best practices. After testing the application, a setup application may be created to incorporate the ArcGIS Engine Runtime setup, the application, additional utility components, and any other required resources such as .style files, MXD documents, and data. Authorization of and use of the Engine Runtime may be handled manually by the user or as an automated part of the setup package.

创建和分发style sets

- 开发者可以在ArcMap创建定制style sets (.style)
- Server Styles 是被安装在 Engine
- ServerStyleGallery对象可以访问 styles
- 制作 Server Styles tool 能够转换自定的 .style 文件





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Styles and server styles

ArcGIS Desktop users can use the Style Manager to access and create new collections of symbols, colors, color ramps, and hatches. These symbols are stored as .style files which are located in the ArcGIS Desktop installation location under \bin\styles by default. Engine applications may take advantage of these styles used in creating MXD files; however, an end user who does not have the Desktop applications currently installed will need to have .ServerStyle files available in order to display MXDs correctly. Each Desktop .style file has a corresponding .ServerStyle file that gets installed by the ArcGIS Engine runtime setup. These .ServerStyle files are located in <ArcGIS installation location>\Styles. If an ArcGIS Desktop user has created custom .style files, they may be converted to .ServerStyles using the Make Server Style tool, which ships with the ArcGIS Engine Developer Kit. The ServerStyleGallery coclass can be used to work with styles stored in .ServerStyle files.



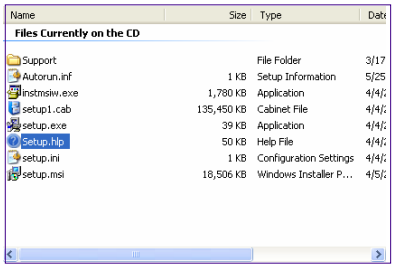
ArcGIS Engine Runtime

The ArcGIS Engine Runtime must be installed before any Engine applications can be deployed. A developer must ensure that no pre-ArcGIS 9.0 products are installed on the client machine before installing the runtime. ArcGIS Desktop users will also require an installation of the Engine Runtime to utilize Engine applications.

It should also be noted that ArcGIS Engine Runtime cannot be installed on ArcGIS 8.x systems.

ArcGIS Engine Runtime 安装

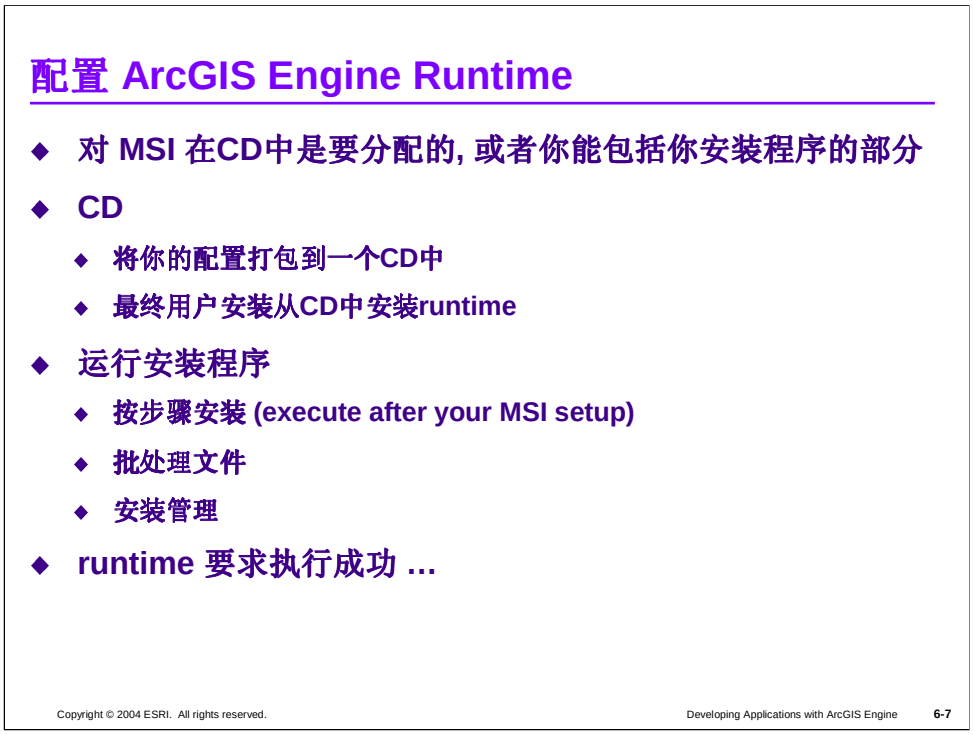
- 一个 安装所有要求要素的MSI 安装包支持 ArcGIS Engine 应用程序
- 这些资料放在 ArcGIS Engine Runtime CD中
- CD包含有那些内容?
  - ArcGIS Engine
    - Libraries and components
  - ArcGIS Engine Java Runtime
    - Java 档案
  - ArcGIS Engine .NET Runtime
    - .NET 集合
- 大约 150 MB
- 270 MB 安装



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Engine Runtime setup

The ArcGIS Engine Runtime setup is an MSI package that requires Windows Installer technology to execute. The MSI may be executed with various options that include choosing all of the components and features or individual features as required. The MSI resides on the ArcGIS Engine Runtime CD.

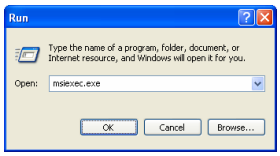


Deployment options

The Engine Runtime may be deployed in several ways; one approach is to provide the setup MSI on a CD-ROM and let the end user install it prior to using any Engine applications. A developer may make copies of the ArcGIS Engine Runtime CD for distribution. However, a preferred method is to write a setup package that will check for the existence of the ArcGIS Engine Runtime and validate system requirements prior to installing an application. Three methods for automated deployment of the runtime are: calling the Engine Runtime MSI setup from your MSI Package, creating a batch file with command line arguments, and using SMS or ActiveDirectory with Group Policies in a managed environment. For more information on the latter option, see the white paper called Deploying Managed ArcGIS 9 Setups at:
http://support.esri.com/index.cfm?fa=knowledgebase.whitepapers.viewPaper&PID=80&MetaID=799

ArcGIS Engine Runtime 安装需求

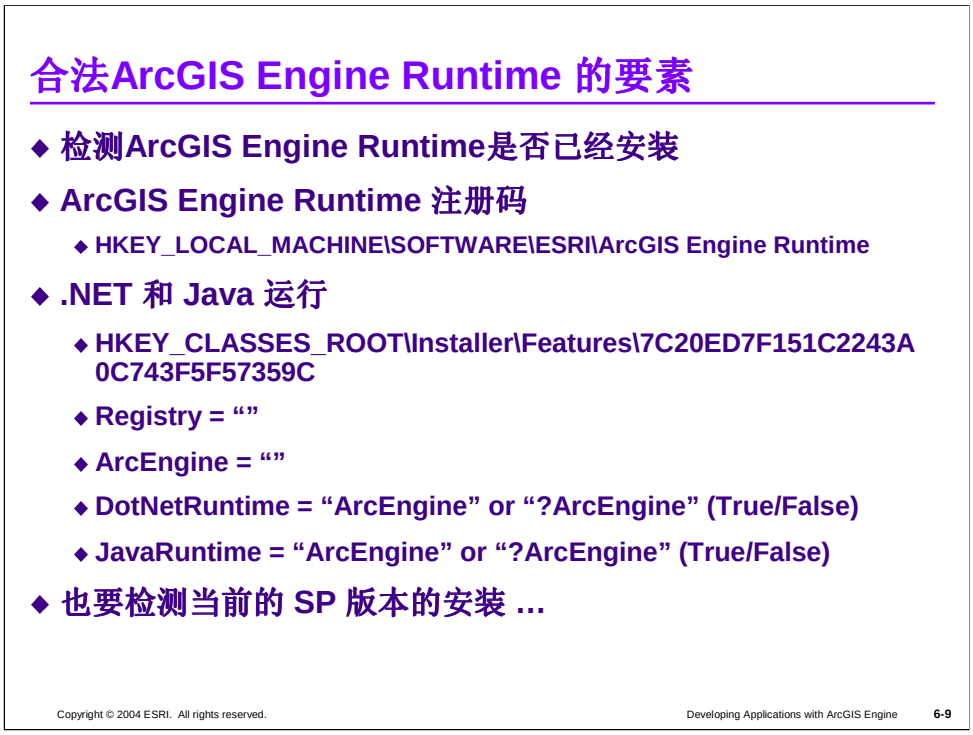
- 操作系统
  - Windows NT SP6a, 2000, XP Professional, 2003 Server
- Windows 安装版本 2.0
  - instmsiw.exe 已经包含在 Engine Runtime CD中
  - Msiexec.exe 必须安装在 System32 目录下
- 检查Windows 安装版本
  - msiexec.exe位于 System32
  - 检测文件 Properties > Version



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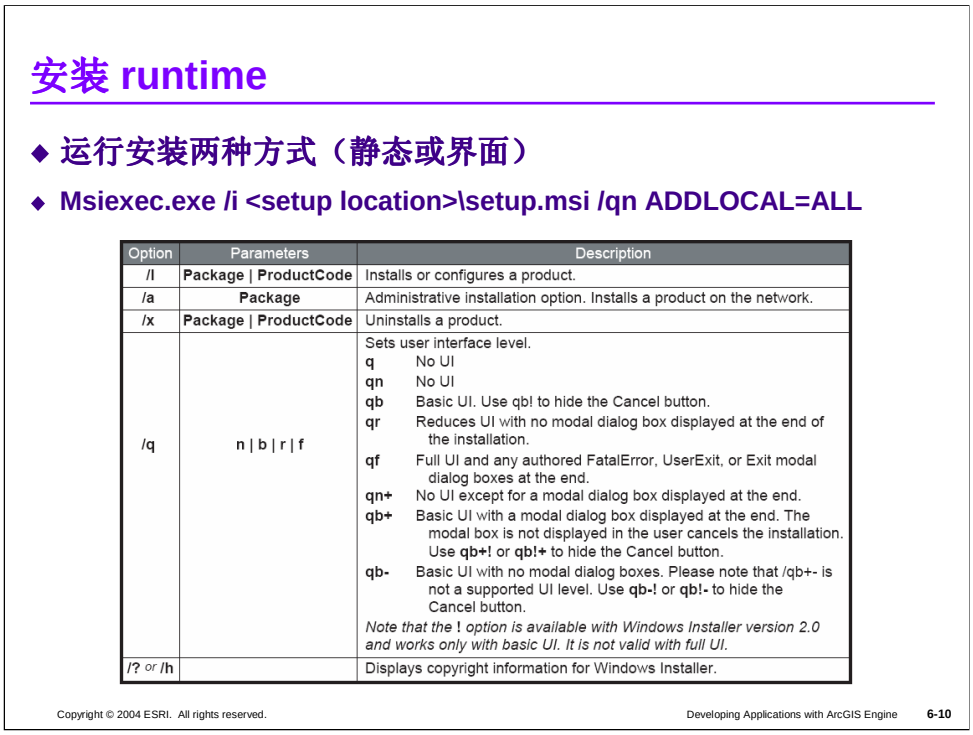
Pre-installation requirements

Before installing the Engine Runtime, some pre-installation requirements must be met. Check the ESRI Support page at http://support.esri.com for operating system requirements. If the Runtime needs to be installed, some further checks are required to ensure that the Windows Installer Service version 2.0 or greater have been installed. Some methods for checking the version of the Windows Installer are located at: http://msdn.microsoft.com/library/default.asp?url=/library/en-us/msi/setup/determining_the_windows_installer_version.asp. In the example above, the msiexec.exe may be invoked from Start > Run. If the Windows Installer is present, the version will be displayed in the resulting dialog.



Check for runtime and features

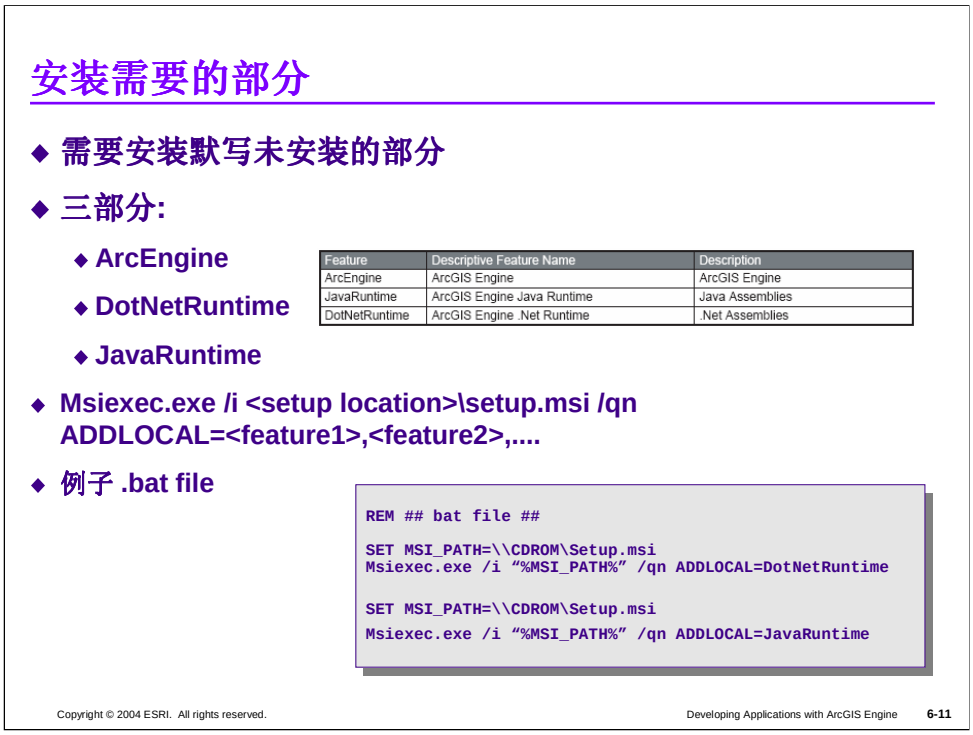
A developer may check HKEY_LOCAL_MACHINE\Software\ESRI\ArcGIS Engine Runtime and verify the RealVersion value to determine whether the Engine Runtime has already been installed. If the Runtime has been installed, some additional features may be required to run an application, such as the .NET Primary Interop assemblies. A Question mark (?) prior to the runtime string value for either .NET or Java indicates that this feature is not currently installed. A setup program should also check whether the latest service packs have been applied. The latest service packs may be downloaded from the ESRI support page at: http://support.esri.com/index.cfm?fa=downloads.patchesServicePacks.gateway. Service packs are provided as .msp files, which may be also included in a setup package.



Runtime installation command line parameters

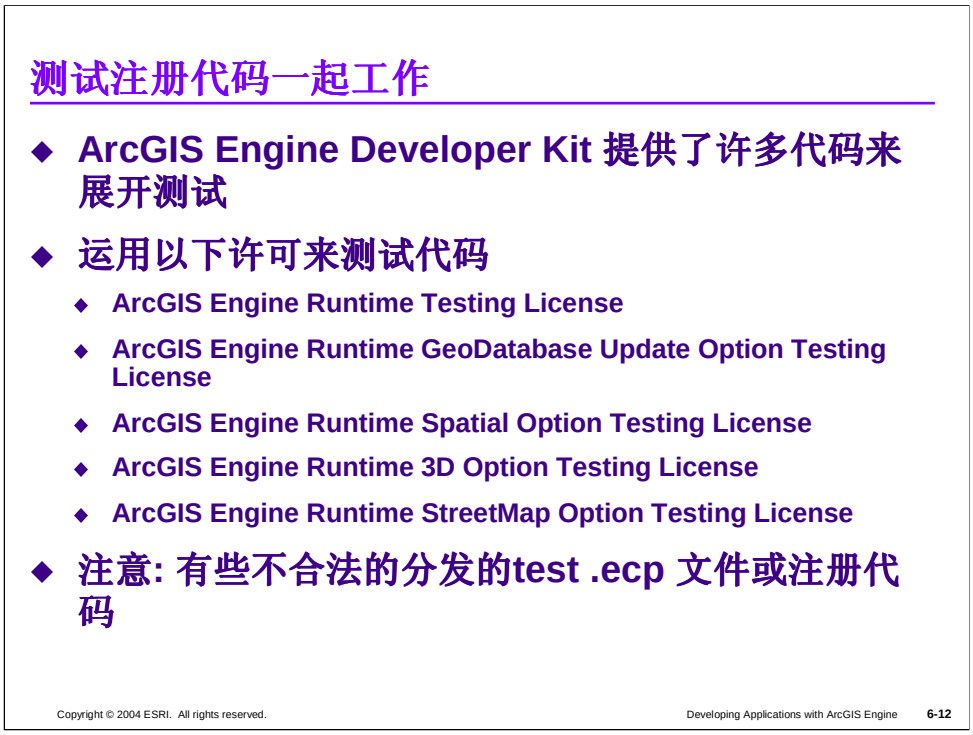
When installing the ArcGIS Engine Runtime, you can employ standard MSI command line parameters to provide options including silent installation, installation with minimal user UI indicators, and preferences for logging. A full list of these options are located at: http://msdn.microsoft.com/library/default.asp?url=/library/en-us/msi/setup/command_line_options.asp

The ADDLOCAL property may be used to specify features that get installed. Omitting the ADDLOCAL property will perform a typical installation. Although it is possible to override the default installation location using the InstallDir property, it is generally recommended to use the default installation location.



Installing specific features

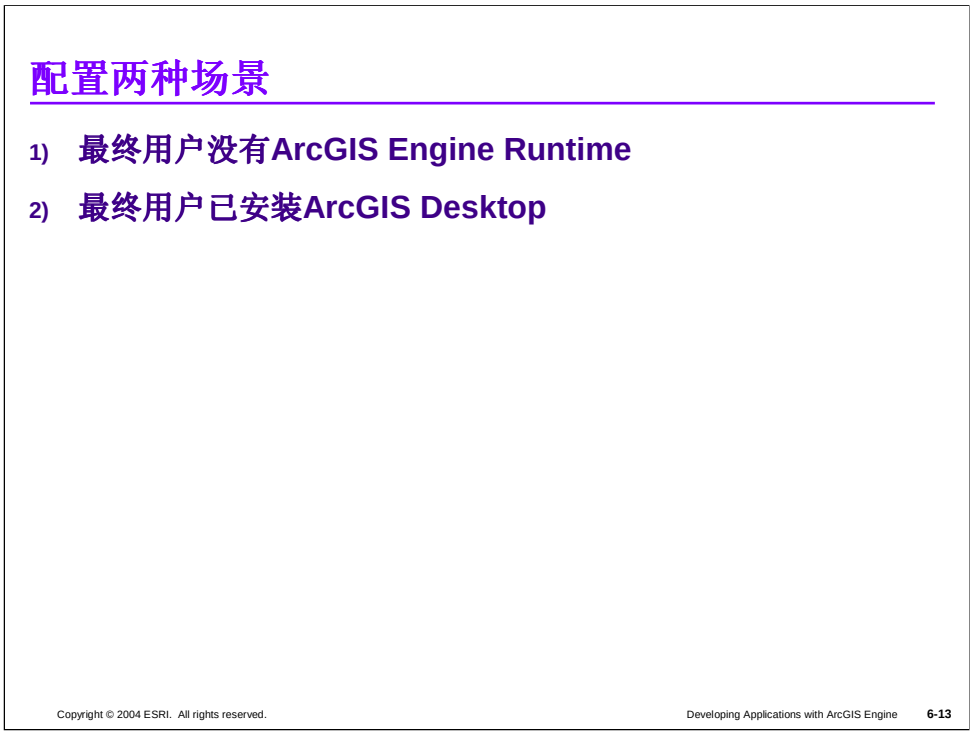
When installing specific features, the ADDLOCAL Windows Installer command may be used with a delimited list of arguments. Be aware that feature names are case sensitive. If the DotNetRuntime or JavaRuntime options are individually specified and the ArcEngine feature is missing, it will automatically be included during installation. If the DotNetRuntime option is specified and the .NET Framework 1.1 is not detected on the client machine, this feature will not be installed.



ArcGIS 9 software authorization

The ArcGIS Engine Developer Kit comes with many registration numbers which you use to either authorize a system for development or for testing deployments. After you finish development, you should use one or more of the test registration codes available to test your application. This system should be used to simulate how an end-user client system will be authorized. Run your installation program and application on this system after the authorization process to ensure it will work as expected.

The following products need to be authorized for use: ArcView Single Use, ArcGIS Engine Developer Kit, ArcGIS Engine Runtime, ArcGIS server, ArcSDE, and ArcIMS. A new ESRI Customer Service website has been launched to help automate obtaining authorization files and licenses. Navigate to http://service.esri.com and click Product Registration. Select a product for authorization and follow instructions to obtain the appropriate file. You may register products during the installation process or at a later time after installation by running the Software Authorization Wizard. The wizard may be accessed from the ArcGIS Program Group.

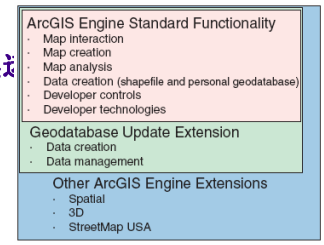


Deployment scenarios

The two scenarios presented represent here the most typical deployment scenarios for ArcGIS Engine developers. Another scenario that is possible is the existence of both the ArcGIS Engine Runtime and ArcGIS Desktop. Care must be taken by the developer to check the state of a client machine before proceeding with installation and authorization of the ArcGIS Engine Runtime.

最终用户没有ArcGIS Engine Runtime

- 配置选项:
  1. 你将安装prompts user练习ESRI用于交换这
  2. 需要安装Runtime
- 最终用户还需要授权软件
  - 联系ESRI注册运行时
  - 使用.ecp文件授权软件
  - 更新C:\Program Files\ESRI\License\sysgen\keycodes
- 注意
  - Economical and easiest methodology for developers
  - End user will have to purchase the correct runtime license and extension



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No ArcGIS Engine Runtime

There are two deployment options for users who do not currently have the ArcGIS Engine Runtime. An installer package can check the registry for the existence of the ArcGIS Engine Runtime and additional required features; subsequently, it can alert the end user that they need to acquire the software from ESRI prior to using the deployed application. As an alternative, you can install the ArcGIS Engine Runtime and indicate to the end user that authorization is required. An end user can authorize the runtime by obtaining an ESRI Copy Protection (ECP) file from ESRI after providing the appropriate registration number.

最终用户已经安装ArcGIS Desktop

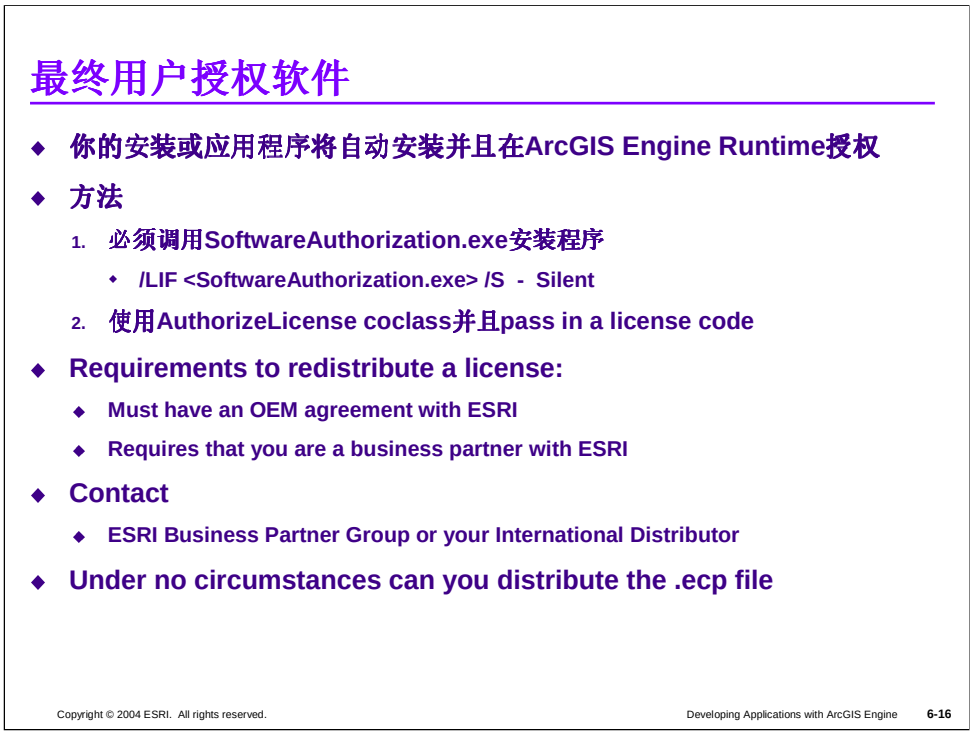
- 同样要求安装ArcGIS Engine Runtime
- 应用程序将检测是否有 ArcGIS Desktop许可
- 不同的可用许可
  - 浮动许可
  - 单机版许可
- 应用程序将会被产品许可限制
  - ArcView: 不能更新ArcSDE数据库
- 注意：
  - Checking out desktop licenses is expensive



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ArcGIS Desktop user

The ArcGIS Engine Runtime should *always* be installed on a client machine using a custom ArcGIS Engine application, even if the ArcGIS Desktop is already present. The application should provide licensing code that ensures the appropriate product and extensions can be checked out by the user during initialization. Once an application has been initialized by checking out a FlexLM license, that license must be used for the lifetime of the application. Always strive to consume the lowest level of licensing required by the application. For example, do not check out an ArcEditor license if the deployed application does not need to perform edits on a versioned geodatabase. This ensures that concurrent licenses needed by other ArcGiS Desktop users will still be available.



AoAuthorizeLicense

The SoftwareAuthorization.exe may be run silently by a developer installation program. This executable is found in the <ArcGIS installation location>\bin directory. The AoAuthorizeLicense object may be used to license ArcGIS Engine Runtime options, and can accept either valid strings containing licensing information, or a reference to an .ecp file that is embedded into the setup package.

In either case, the .ecp file must not be copied to the client machine for any reason.

练习6

- 检测运行时和要素的注册码
- 创建一个.bat文件
- Un-authorize the ArcGIS Engine Developer Kit
  - 移除C:\Program Files\ESRI\License\sysgen\keycodes
- 安装运行时（runtime）
- 软件授权
  - Location of the test .ecp file: _____
- 测试应用程序

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课程 6 回顾

- 开发和配置ArcGIS Engine应用程序的步骤?
- MSI组件之间不同?
- 解释如何使用registration codes测试你的配置?
- 什么时候需要安装ArcGIS Engine Runtime?

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