

ADOBE® CREATIVE SUITE®

**DEPLOYMENT AND PROVISIONING
CONCEPTS**



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Adobe® Creative Suite® Deployment and Provisioning Concepts

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Deployment and Provisioning Concepts

Introduction

This document discusses concepts and defines terms used in describing the process of getting an Adobe® Creative Suite® product installed and ready to run on a system.

The purpose of this document is:

- ▶ To define concepts and terms Adobe uses in its documentation to describe the process of installing Adobe Creative Suite software products and getting them ready to run with full functionality;
- ▶ To serve as the conceptual basis for the tools and documentation Adobe provides to accomplish this process.

This document is written for Adobe customers, especially enterprise customers, who are responsible for installing, updating, and otherwise servicing Adobe Creative Suite products.

This document belongs to a set of documents which covers various aspects of deploying Creative Suite 4 products in an enterprise environment. The other documents in the set are:

- ▶ Enterprise Deployment Guide
- ▶ Enterprise Deployment Toolkit Guide
- ▶ Enterprise Deployment Reference
- ▶ Enterprise Deployment Worksheets

NOTE: In the rest of this document and all related documents, Creative Suite 4 and Creative Suite 5 are abbreviated to CS4 and CS5.

Alphabetical Index of Terms

<u>ACTIVATION</u>	<u>INSTALL PROGRAM</u>	<u>PROVISIONING</u>
<u>CREATIVE SUITE PRODUCT</u>	<u>LICENSE</u>	<u>REGISTRATION</u>
<u>CS4 DEPLOYMENT TOOLKIT</u>	<u>LICENSE HOLDER</u>	<u>RETAIL SERIAL NUMBER</u>
<u>CUSTOMIZED INSTALL</u>	<u>LICENSE KEY</u>	<u>SERIAL NUMBER</u>
<u>DEACTIVATION</u>	<u>MEDIA IMAGE</u>	<u>SERIALIZATION</u>
<u>DEPLOYMENT</u>	<u>MEDIA MASTERING</u>	<u>SHARED & SUPPORTING COMPONENTS</u>
<u>DEPLOYMENT PACKAGE</u>	<u>NATIVE INSTALL PROGRAM</u>	<u>SILENT INSTALL</u>
<u>DESERIALIZATION</u>	<u>PAYLOAD</u>	<u>SUITE PRODUCT</u>
<u>ENTERPRISE INSTALL</u>	<u>POINT PRODUCT</u>	<u>UBER PROGRAM</u>
<u>EULA</u>	<u>PRODUCT ESD</u>	<u>UNINSTALL</u>
<u>INSTALL</u>	<u>PRODUCT INSTALL FOLDER</u>	<u>VOLUME SERIAL NUMBER</u>
<u>INSTALL ARCHIVE</u>	<u>PRODUCT MEDIA</u>	

Basic Concepts

The process of taking a purchased software product from media to ready-to-run on a system has historically been called installing. After a product is installed, you can configure it, update it, and remove it. So much for simplicity. The actual picture, especially in an enterprise situation, is more complex. The activities that make up this complexity fall into two phases — deployment and provisioning. These concepts in relation to application software are very similar to the military use of the same terms.

DEPLOYMENT

In military usage, deployment is the process of bringing troops to the place where they can take effective action. In the software world, the parallel is installing software – putting application files where you need them. However, in the software world, deployment includes other activities as well. For our purposes in discussing the deployment of CS4 products, deployment includes:

- ▷ *Installing — Copying application files from a physical or electronic medium to the system where the application will be run and configuring the operating system so that users can launch the application.*
- ▷ *Updating — Modifying, adding to, removing from, or replacing existing application files on a system to add a new version or new or repaired functionality to an existing version.*
- ▷ *Uninstalling — Removing application files and configuring the operating system so that the application is no longer offered for launch.*
- ▷ *Reinstalling — Combining an uninstall and an install in a single action.*
- ▷ *Install tracking — Reporting on which locations and which computers applications are currently installed.*

These processes need to be done by one or more special applications that are separate from the application being installed.

PROVISIONING

In military usage, provisioning is the process of supplying deployed troops with the resources they need to perform their function. In the software world, provisioning is primarily about supplying the application with a license – the permission to run – so that it can run and keep running.

Software provisioning encompasses a number of activities, many of which are related to an application's license.

- ▷ *Serialization — Providing the serial number to an application. This number was received when the product was purchased.*
- ▷ *Activation — Getting a durable, non–tamperable, locally–storable token from Adobe that indicates that Adobe has validated your use of this application's serial number on this computer.*
- ▷ *Configuring — Making adjustments to application preferences so that the application runs as desired. Because the applications in a CS4 suite product are designed to work together, configuring one application may require configuring other applications in the suite to ensure proper interoperability. In addition, since many applications use operating system facilities, properly configuring an application may require setting operating system preferences and settings as well.*
- ▷ *EULA — Getting the user's agreement to the terms of the legal license which allows the software to be used;*
- ▷ *License tracking — Reporting which licenses are being used in which locations on which computers.*

All or most of these activities must be handled by the applications, so they can verify that the user has a license. However, for convenience, most install programs allow some provisioning steps, such as entering serial numbers. This information is then saved on the computer for use by the application when it is launched.

NOTE: *Some Adobe product install programs also do activation during deployment; however, the Creative Suite® install program does not.*

While it is useful to define deployment and provisioning as separate phases, in fact they are performed in an interrelated way. For example, an install program does mainly install steps, but may also do some provisioning steps. See [“How Deployment and Provisioning are Related”](#) starting on [page 16](#) for a fuller explanation.

CREATIVE SUITE PRODUCT

An Adobe® product consisting of one or more primary applications, along with related utilities, libraries, and possibly other supporting items such as sample content, all of which are installed by a single install program and licensed with a single serial number that is used for all applications in the product. The product has a name that contains the term “CS” or “Creative Suite”.

POINT PRODUCT

A Creative Suite product consisting of a single primary application along with related items as defined above. Examples of point products include InDesign® CS4, Photoshop® CS4, and Flash® Professional CS4.

SUITE PRODUCT

A Creative Suite product consisting of multiple primary applications along with related items as defined above. The primary applications in a suite may have specialized functionality that is available only when they are purchased or licensed as part of a suite. When you install a suite product, you can choose which primary applications to install; you do not have to install all of them. There are six CS4 suite products: Design Standard, Design Premium, Web Standard, Web Premium, Master Collection, and Production Premium.

The next two sections explain deployment and provisioning in more detail and define terms applicable to each phase.

Deployment Concepts

Install Process Terms

The word “install” is commonly used to mean “run an installer”. The reality is not that simple. Most installers do more than just install; they do deployment but they also do some provisioning. To make matters worse, the word installer is used in so many senses as to make it useless as a technical term. Therefore, we define the term “install” and other related terms very carefully here, and avoid using the term “installer” altogether.

INSTALL

The process of copying product files and related files to a computer and performing any necessary operating system configuration so that, when the install is complete, the product can be run in the correct way.

An install can be very simple, involving a few files and a few configuration settings done by one install process, or complex, involving many files comprising numerous components that work together as one application or a set of applications from the user's point of view, and that may require multiple install processes to install and configure completely.

This word can be used as a verb (I am ready to install Photoshop®) or as a noun (I just did an install of Photoshop).

UNINSTALL

The process of removing product files from a computer so that no trace of the product is left and its application(s) can no longer be run on the system.

An uninstall can be very simple, involving the removal of a few files, or complex, involving decisions about whether or not to remove related components which may be shared by other applications or products still on the system. Like an install, an uninstall may require multiple uninstall processes to uninstall completely.

This word can be used as a verb (I am going to uninstall Photoshop) or as a noun (I just did an uninstall of Photoshop).

INSTALL PROGRAM

A program that installs a product on a computer and may perform some provisioning activities as well (licensing, configuration, activation). For CS4 products, this program is called Setup. This is a typical name for an install program on Windows®; it is not the typical name for an install program on the Mac. All install programs, run in a special mode, can also uninstall products that they installed.

The install program is operating system dependent because the way in which environment variables, application preferences, and path names are specified varies across operating systems. Default locations and directory structures also vary. Because of these variations, the install program is platform-specific. The Windows and Mac install programs look and act the same when you run them and share much common code, but some of the code is platform-specific.

NATIVE INSTALL PROGRAM

A generic install program that comes as part of an operating system platform. It can be used to install most applications on that platform. You cannot use native install programs to install CS4 products.

SILENT INSTALL

Running an install program without a UI.

Silent installs are desirable in several situations: to save time as part of a software deployment by an IS department, and in a network environment where the installation software resides on a central server and individual systems install the application from that server using a multiple-seat site license. Enterprise companies often meet one or both of these criteria.

CUSTOMIZED INSTALL

An install done with pre-furnished choices so that a UI, if offered, uses those choices as default values.

ENTERPRISE INSTALL

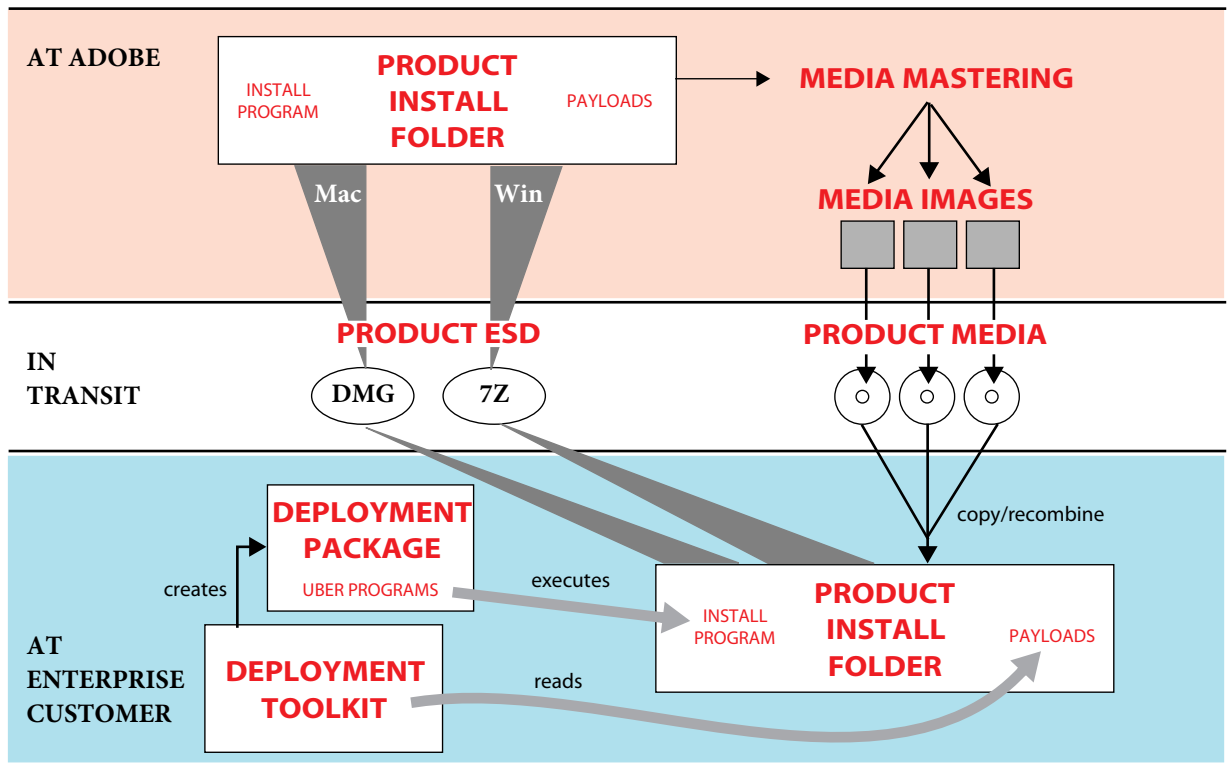
A silent, customized install of a product to many computers simultaneously. CS4 deployment packages created with the CS4 deployment toolkit perform enterprise installs.

The term “installer” has been used in many ways over time so as to render it useless as a technical term. It has been used to mean:

1. The thing you double click or otherwise invoke to start an install. For CS4 products, this is a program called Setup.
2. The folder containing the thing listed in #1, along with the “stuff” it needs to perform an install, contained in a hierarchy of subfolders.
3. A shorthand term for a payload, which is part of the “stuff” in #2.
4. A shorthand term for product media.
5. A shorthand term for media image.

Clearly some different terms are needed here to distinguish between these five different but related things, and none of those terms are the word “installer”. We call #1 an *install program*, as already defined, and #2 a *product install folder*. The other three — payload, product media, and media image — are legitimate terms and are carefully defined here, along with other related terms. The figure on the next page shows these items pictorially; the terms defined in this document are shown in red in the figure.

If you have been used to a particular meaning for these two words, their definitions in this document may feel new or odd to you. Bear with them; in the long run, these meanings will give greater clarity to the documentation set.



PRODUCT INSTALL FOLDER

A folder containing an install program, related files and libraries it needs to run, as well as subfolders containing all the product application files and configuration information (payloads) needed to install a particular CS4 product. This folder structure is the form a product takes when it emerges from a development team at Adobe. It is also the form that results from mounting or extracting a product ESD or copying one or more DVDs (product media) onto a disk. It is the form needed by both the CS4 deployment toolkit and the deployment packages the toolkit creates.

You may be used to calling this the “installer”.

MEDIA MASTERING

Also called “image mastering”. The process of dividing up the contents of a product install folder into chunks so that each chunk fits on a single piece of physical media. The only medium currently supported for CS4 products is the DVD. If the mastering process results in one chunk, the entire product install folder fits on a single DVD; if it results in more than one chunk, the product install folder spans multiple DVDs.

In either case, this process also creates media mastering information that includes branding information and an index which helps the install program locate the contents of the product install folder on the DVDs. This extra information is included in the first chunk. In the one-DVD case, the index is very simple: everything is on the first DVD.

MEDIA IMAGE

A single chunk of files produced by the media mastering process. Each media image is burned onto a single DVD in product manufacturing.

PRODUCT MEDIA

One or more DVDs, each of which holds a media image, that collectively contain a product install folder for a single CS4 product. It is a packaging of the product install folder that is transportable from Adobe to customers and usable directly by the install program to install the product. Product media always come with shrinkwrap products.

PRODUCT ESD

A compressed electronic version of a product install folder. ESD stands for Electronic Software Distribution. A product ESD is the electronic counterpart to product media.

On Windows®, a product ESD is a self-extracting 7-ZIP archive. When extracted, the result is the original product install folder.

On the Mac, an ESD is a mountable DMG virtual disk image; this is the canonical form for a media image on the Mac. When you mount a DMG, the result is the original product install folder.

Product ESDs are available to all volume customers, although some must pay for it. This is the recommended form for use in enterprise deployment situations.

INSTALL ARCHIVE

An install archive is a particular kind of file archive format suitable for use by an install program. It contains all the files and folders the install program extracts and copies onto a system during an install. There are many different kinds of install archives. An install archive can be a single file or a folder containing archived data.

Some install programs use specialized archive file formats understood only by them, but most install programs handle install archives in standard archive formats that are also used outside of the context of an install.

PAYLOAD

A payload is a set of detailed instructions for installing a particular application, component, or discrete piece of functionality. These instructions may include directions on where to copy the content of an install archive to the target system, how to name each item that is copied, what operating system configuration is needed, or directions for necessary provisioning activities.

A payload may also contain additional material used by the install program when following the payload instructions, such as an install archive, graphics for display in the install program's UI, or metadata about related payloads. A payload may even contain another payload.

A payload can take many forms; it can be a single file, a group of files, a folder, or a folder hierarchy. A given install program understands only certain payload forms.

SHARED & SUPPORTING COMPONENTS

Two terms used to refer to components that are not standalone applications but may be included with the primary application(s) in a CS4 point product or suite product. They are not sold separately. A component provides a specific piece of functionality. It can be a small collection of resources or a launchable application. Some components are required by one or more primary applications in order for that application to display full functionality; other components are available as optional choices when installing a product.

Examples of shared components include Adobe® Bridge, Adobe® Device Central, and Adobe® Drive. Examples of supporting components include the Adobe Fonts All bundle, the Adobe Color CommonSet color settings, the Adobe® PDF Library Files, and Adobe Update Manager.

Deployment Terms

CS4 DEPLOYMENT TOOLKIT

A small Adobe application with an AIR-based GUI that creates deployment packages. See [DEPLOYMENT PACKAGE](#).

The toolkit provides some of the same functionality that the Setup program provides — it reads a single product install folder and presents a list of applications and components you can choose to install. However, it also makes easy some other configuration that without the toolkit is either more difficult or not possible to accomplish.

DEPLOYMENT PACKAGE

A deployment package is an encapsulation of an invocation of a CS4 product install program for a single CS4 product. A deployment package provides an automated way of invoking a CS4 install program to perform an enterprise install.

A deployment package records the list of applications and components you choose to install for a given CS4 product, along with your choices for options that control both the behaviors of the install process and the installed applications. Some of these options can be set in configuration files when not using a deployment package, but others are available only with a deployment package. Creating a deployment package with the deployment toolkit is the preferred alternative to the laborious and error-prone process of editing XML configuration files, placing them in the appropriate places, and invoking the install program with special command line arguments to perform an enterprise install.

A deployment package is implemented as a folder that contains four things: two programs (see [UBER PROGRAM](#)) and two XML files, one for each program. The XML files store information about the choices you make when you create the package with the deployment toolkit. The Uber programs use this information to appropriately call the install program in the product install folder.

Other products, like SMS/SCCM, also use the term “package”. When the context makes it clear that it is an Adobe deployment package that is being talked about, we sometimes shorten the term “deployment package” to simply “package”.

UBER PROGRAM

One of two executables in a deployment package. They are called *AdobeUberInstaller* and *AdobeUberUninstaller*. Each Uber program uses the information in its correspondingly named XML file to invoke the install program in the product install folder so that it performs an enterprise install or uninstall.

When deploying a CS4 deployment package using an enterprise deployment system such as ARD or SMS/SCCM, the deployment system invokes the Uber program, which in turn invokes the Adobe install program (Setup).

Provisioning Concepts

LICENSE

A legal agreement between a user and Adobe that allows the user to use Adobe® software.

SERIAL NUMBER

A string of 24 printable digits, generated by Adobe, that represents the purchase of a particular Adobe product and its associated legal usage agreement. In the enterprise world, Adobe uses serial numbers as license keys. See [LICENSE KEY](#).

RETAIL SERIAL NUMBER

In the retail world, a license is owned by a single person and grants permission for that user to install and use a product on only one or two computers. In this context, the 24-character string generated by Adobe is called a **retail serial number**, or more commonly just a **serial number**.

VOLUME SERIAL NUMBER

*In the enterprise world, a license is owned by a single person or company, and the license grants to that person or company the permission to install and use a product on multiple computers. This is called a multi-seat license. The number of computers allowed is specified as part of the license agreement. In this context, the 24-character string generated by Adobe is called a **volume serial number**. When the context makes it clear in this documentation set that volume is meant, this term can also be abbreviated to just **serial number**. See also [LICENSE KEY](#).*

LICENSE KEY

In general, any special sequence of printable letters and digits entered into an application to unlock its functionality. Adobe uses serial numbers as its license keys, which is why the term license key is often used to mean a volume serial number. The term license key is generally used in enterprise environments. At Adobe, licenses keys are volume serial numbers. We use the term "serial number" or "volume serial number" in this documentation set.

LICENSE HOLDER

The person who owns the software; if a company owns the software, the person who acts for the license holder.

SERIALIZATION

*The process of entering and validating a serial number for an application so that the application can fully function when launched by a user. When this process is successfully completed, the application is said to be **serialized**.*

DESERIALIZATION

*The act of telling an application to forget an already entered serial number. This process is sometimes called **returning your serial number**. When you invoke an application that has been deserialized, it will prompt you to enter another serial number.*

ACTIVATION

The process of validating that a serial number was issued by Adobe for the product being activated, and that the serial number is not being used on too many computers. This process results in a durable, non-tamperable, locally-storable activation token from Adobe being placed on the application's computer; this token is also stored at Adobe. Activation occurs after serialization.

DEACTIVATION

The process of removing an activation token from a computer, which renders the application to which the token belongs no longer usable. You should deactivate an application before removing it; you can do this from the Help menu in the application. The most common situation for deactivating an application is when you move it from one computer to another.

Deactivation is usually combined with deserialization; if it is not, the next time the application is launched, it is simply reactivated.

REGISTRATION

The act of providing Adobe with information about the licensed user of an application in return for a thank-you gift or access to product support.

EULA

An acronym for End User License Agreement. The EULA states all the legal conditions that pertain to a given license agreement. In the context of EULAs, the end user is the purchaser.

The text of the EULA is displayed when a newly installed application is first launched. In retail situations, this is appropriate, as the end user is the purchaser. In enterprise deployment situations, however, a company is the

purchaser, and the company accepted the EULA when they purchased the product. In this case, you can configure a deployment package to suppress the display of the EULA in the applications it installs.

Serial Numbers

How Serial Numbers are Created

An Adobe serial number is a 24-character string of digits generated randomly by special software at Adobe. Serial numbers can be displayed with or without hyphens; in the hyphenated form, the hyphens separate the string into 4-digit groups.

An Adobe serial number can take one of two forms:

- ▶ *Clear-text form* — Serial numbers in this form typically, but not necessarily, begin with a '1'.

The clear form is used whenever Adobe provides a serial number to a customer. The serial number on the slip of paper in the shrinkwrap box retail customers receive, and the serial number you get from the Adobe Licensing web site when you buy a volume license for a product are in the clear-text form.

You also use this form when communicating with Adobe or Adobe products. You use the clear-text form when you enter a serial number in the Adobe deployment toolkit, the Adobe install program UI, or an Adobe application UI, or you communicate in person with an Adobe employee.

- ▶ *Encrypted form* — Serial numbers in this form typically, but not necessarily, begin with a '9'. The encrypted form is used only by Adobe software, which can both encrypt and decrypt serial numbers. When an Adobe application is serialized, the application stores the serial number on the system in encrypted form, so that it cannot be discovered by searching the disk.

How Serial Numbers are Entered

Your serial number represents your legal right to use the product. You can present your serial number in one of three ways:

- ▶ *To the deployment toolkit* — When you create a deployment package, you must provide a volume serial number for CS4 product you are packaging. The toolkit checks the validity of the serial number you enter. The Uber program passes this verified serial number to the install program when the package is executed.
- ▶ *To the install program* — If you run the install program for a product directly, it prompts you for a serial number. You can enter either a retail or a volume serial number in the UI. The install program checks that the serial number you enter is valid for the product you are installing.

Providing a serial number during installation is optional; if you do not provide one, the product is installed in trial mode. See [“Trial Licenses”](#) below.

If you are doing a retail install involving only one or a very few computers, and you already have the product media container in hand with the serial number written on it, and you are sure you are going to keep and use the product, you should enter the serial number during installation.

- ▶ *To the application* — If you planned to use the product in trial mode, or for some other reason did not have the serial number available when you installed it, the application prompts you for a serial number each time you launch it. You can provide a serial number at any time during the trial period. See [“Trial Licenses”](#) below for how this is done.

Unlike the deployment toolkit and the install program, which accept only the serial number for the product being packaged or installed, an application can accept the serial number for any product that

you have purchased that includes that application. For example, you can give Photoshop a serial number for Photoshop®, Photoshop® Extended, Design Standard, Design Premium, Web Premium, Master Collection, or Production Premium, as long as their versions match (both CS4).

How Serial Numbers are Activated

For all CS4 products, applications perform an activation the first time they are launched after being serialized. During the activation process:

- ▶ The application sends Adobe its machine identity and the serial number, so an online connection is necessary.
- ▶ Adobe checks that the application's serial number was issued by Adobe and that the serial number is not being used on too many computers.
- ▶ If all is well, Adobe issues a durable, non-tamperable, locally-storable activation token to the application, which the application stores on its system; it is also stored at Adobe.

The process of activation is invisible to the user who launches the application, unless the activation fails, at which point the application prompts the user for further information.

Trial Licenses

When you buy an Adobe CS4 product, you actually get two licenses: one you buy and one that is built into the product, which is called a trial license. The one you buy (or will buy) is represented by the serial number that comes with your product media on a piece of paper, or via some other communication means from Adobe or your reseller. The serial number for the trial license is stored in encrypted form in a licensing configuration file that comes with the application.

If an application is installed with a serial number, as it is when deployed from an Adobe deployment package, the users of the applications so installed never see any evidence of licensing activity. The trial license is not used in this case.

An application can, however, be installed without a serial number. If you run the Setup program directly, it prompts you for a serial number, but does not require you to provide one. If you do not provide one, the application can be used for a period of time without anyone explicitly providing a serial number for it; internally, it uses the serial number for the trial license built into the product. This allows you to use an application for a period of time before deciding whether or not to purchase it. The trial period is usually 30 days.

When an application is running in trial mode, it prompts you each time it is launched for a serial number, but allows you to run even if you don't enter one. However, at the end of the trial period, you must enter a serial number before you can continue to use the application.

How Deployment and Provisioning are Related

While it is easy and clearer to define deployment and provisioning as separate activities, in practice you frequently see them happening together. In fact, most of the tools and processes used when installing a product do some of both. Many operations have aspects of both.

1. The install program does deployment and also some provisioning activity, because when it is finished, you can launch the application. It puts files onto the system (deployment). It accepts and processes a serial number if one is provided (provisioning). It can also configure installed applications to behave in certain ways, such as suppressing the EULA display, product registration, and automatic update checking (provisioning).
2. When you deploy an application, you can also deploy standard preferences for use by the application when it runs. This is really a provisioning step, taken partially by the install program (in placing them appropriately on the system) and partially by the application (when it runs and looks for preference settings). Furthermore, when a newly installed application is launched, if it doesn't find any preference settings, it creates its own default set; in essence, it provisions itself.
3. The CS4 applications do provisioning when they activate themselves.
4. While an application cannot directly do any deployment activities, it can trigger deployment activity by another program.
 - ▷ Applications have automatic update detection capability. They also provide a menu choice which allows the user to explicitly look for available updates. In these cases, if the user chooses to accept a discovered update, the application triggers the updater to perform the update.
 - ▷ Some applications use third party code to implement certain features. This code comes with royalty obligations and is not installed unless a serial number is provided during installation. This means that the feature is missing in the trial version of the product.

Adobe® Premiere® Pro is an example of this. If Adobe Premiere Pro is installed without a serial number, some of its functionality is not installed. For example, the ability to generate videos using MP2 is not available in the trial version. The functionality is incorporated into the product in such a way that it is a separate entity on the file system and can be accessed directly by means other than running Adobe Premiere Pro. Since the Adobe licensing mechanism cannot prevent such unauthorized use, the royalty agreement with the third party forbids Adobe to even place the code on a system unless a royalty is paid. Clearly, Adobe does not want to pay the royalty unless it knows for sure that the customer is going to purchase a license. This is why the code for that feature is not installed unless a valid serial number is presented during installation.

While an application is running in trial mode, it always displays the serial number prompt screen when you launch it, to give you a chance to enter a number and terminate the trial period. So, at any time during the trial period, you can decide to buy it and pay Adobe for a license. When you purchase a license, you receive a serial number. You can then launch Adobe Premiere Pro and enter the serial number. The application then serializes and activates (both provisioning steps). In this process, the application notices that some of its features are not yet installed on your disk. So it offers to invoke the install program for you to install the missing features (deployment).