
Tivoli Provisioning Manager for OS Deployment 7.1.1

Deployment basics



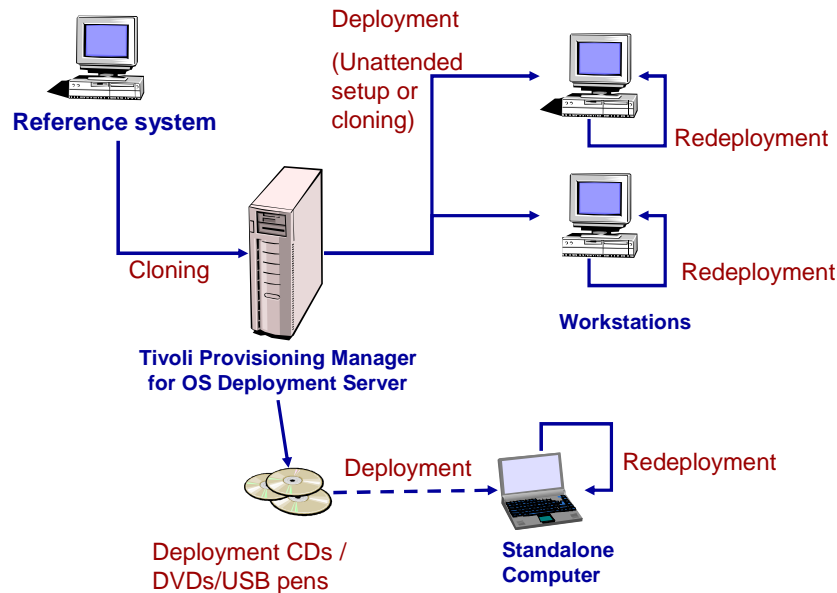
In this module, you will learn about the deployment features provided by Tivoli® Provisioning Manager for OS Deployment. This module is about performing common operating system tasks and executing these operations through the product WEBUI.

Deployment features

- Tivoli Provisioning Manager for OS Deployment offers these deployment features:
 - Unattended image setup
 - Clone image capture and setup
 - Clone from a reference image file
 - Redeployment
 - Deployment from CD/DVD and USB key
 - Machine snapshot
 - Hardware configuration
 - Software modules installation

An image on a computer can be installed in one of two ways: unattended image setup or clone image setup. In an unattended image setup, you obtain the image from a CD/DVD and deploy it to a target machine. In Tivoli Provisioning Manager for OS Deployment, this setup image is known as an **unattended image profile**. In a clone image setup, you capture the operating system image from a reference machine and deploy it to a different target system. This setup image is known as a **clone image profile**. Tivoli Provisioning Manager for OS Deployment offers various additional features, such as: clone from a reference image file; redeployment; deployment from CD/DVD and USB key; machine snapshot; hardware configuration; software modules installation.

Deployment scenarios quick view



This slide contains a quick view of the basic deployment scenarios available with Tivoli Provisioning Manager for OS Deployment. You can install a target system either by a clone or unattended profile in connected mode. In other words, you install with the target PXE booted into the Tivoli Provisioning Manager for OS Deployment boot server. Or, you install in offline mode by using a deployment CD/DVD or USB pen. In offline mode, an ISO image is created, starting from the system profile, and deployed on the target through the specific media. The target is not usually connected to the network. With both unattended and clone profiles you can use the redeployment function. Redeployment provides the replay of a standard deployment operation locally on the target. Its purpose is to have the system reset to a certain state at every boot or at some fixed interval. The operating system image or images are stored in a protected redeployment partition on the target disk to be restored when needed. The redeployment can be used also to install multiboot hosts. In such a case, at each host PXE boot, Tivoli Provisioning Manager for OS Deployment offers the choice of several OS configurations available on the target.

Unattended image

- Created from a source CD/DVD including the OS setup image, for example, Windows® CD/DVD
- Supported for Windows, AIX®, Linux®, Solaris, and VMWare ESX Server V3
- From the **OS Deployment > System profiles** panel, choose one of the following options:
 - Select **Add a new profile** in the Contextual actions menu
 - Click the **New profile** button
- In the wizard, select the **Unattended setup (scripted install)** option and specify the directory where the OS image files are located

An unattended setup is a system profile image that is created from a source CD or DVD. Unattended setup is supported for Windows, AIX, Linux, Solaris, and VMWare ESX Server V3. You can create an unattended image profile using the Tivoli Provisioning Manager for OS Deployment WEBUI. From the **OS Deployment > System profiles** panel, select **Add a new profile** in the Contextual actions menu or click the **New profile** button. In the wizard, select the **Unattended setup (scripted install)** option and specify the directory where the OS image files are located. Some additional customization is needed for AIX and Solaris unattended profile creation. Refer to the Tivoli Provisioning Manager for OS Deployment Guide for more information.

Clone image

- Is a depersonalized boot device image captured from an installed machine
- Is supported only for Windows and Linux on Intel®
- For Windows, run Sysprep manually on the reference machine before starting the capture.
- From **OS Deployment > System profiles** panel, select **Add a new profile** in the Contextual actions menu or click the **New profile** button
- Select the **Cloning from a reference machine** option

A clone image is a depersonalized boot device image that is captured from an already installed machine. This feature is supported only for Windows and Linux on Intel platforms. This image can be installed on computers other than the captured one. You can create a clone image using the profile wizard after preparing the reference machine. For Windows, you run Sysprep manually on the reference machine to prepare the system before starting the capture from the product WEBUI. The set of options needed when running sysprep depends on the Windows operating system type. Refer to the Tivoli Provisioning Manager for OS Deployment Guide for more information. To create a clone profile using the Tivoli Provisioning Manager for OS Deployment WEBUI, you access the **OS Deployment > System profiles** panel and select **Add a new profile** in the Contextual actions menu or click the **New profile** button. In the system profile wizard, select the option **Cloning from a reference machine** and then provide the IP address of the already prepared reference machine.

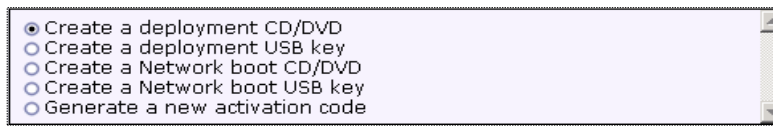
Clone from a reference image file

- Is a clone profile from an operating system file
- Only WMI files and Solaris Flash Archive files are supported
- From **OS Deployment > System profiles** panel, select **Add a new profile** in the Contextual actions menu or click the **New profile** button
- Select the **Cloning from a reference image file** option in the Profile Wizard

With Tivoli Provisioning Manager for OS Deployment, you can create clone profiles from operating system files. They can be either WMI files or Solaris Flash Archive files. To create a clone profile from a reference image file using the Tivoli Provisioning Manager for OS Deployment WEBUI, you access the **OS Deployment > System profiles** panel. Select **Add a new profile** in the Contextual actions menu or click the **New profile** button. Then, select the option **Cloning from a reference image file** in the Profile Wizard. For a clone profile from a Solaris Flash Archive, you have to set up a Solaris installation server with a configured network share hosting the specific Solaris Flash Archive file (.flar file).

Deployment from CD/DVD/USB key (1 of 2)

- A deployment CD/DVD or USB pen that is used for installing onto machines in offline mode
- A PXE CD/DVD or USB key for using Tivoli Provisioning Manager for OS Deployment on PXE-less environments
- You can create these media packages using the Tivoli Provisioning Manager for OS Deployment WEBUI
 - Click **OS Deployment > System profiles** and click the **Generate Media** button
 - Select an option



With Tivoli Provisioning Manager for OS Deployment, you have the possibility to deploy an operating system from a CD/DVD image or from a USB pen image. Generally, this feature is used when the target machines are either not connected to the network or cannot reach the Tivoli Provisioning Manager for OS Deployment server to perform the PXE boot. Instead, a network boot CD/DVD or USB pen is useful in PXE-less environments. An example is a case when the target system NIC is not PXE-enabled. This method simulates the PXE process and enables the system to work with the Tivoli Provisioning Manager for OS Deployment boot server to perform deployment operations. You can create these media packages using the Tivoli Provisioning Manager for OS Deployment WEBUI. Click **OS Deployment > System profiles** and then click the “Generate Media” button. The available options in the Wizard are: Create a deployment CD/DVD; Create a deployment USB key; Create a Network boot CD/DVD; Create a Network boot USB key; and Generate a new activation code. The generated CD/DVD or USB key can be protected by an activation code that is generated by providing a password. This activation code can be time-based and prevents unauthorized personnel from using the image.

Deployment from CD/DVD/USB key (2 of 2)

- In a **deployment CD/DVD** or **USB pen**, you can include a deployment scheme, software modules, and system profiles
 - For a deployment CD/DVD, the process builds an ISO file on the boot server
 - For a USB key, the process writes directly to the USB key mounted on the machine where the Web Interface Extension is installed
- A **PXE-emulation (Network boot) CD/DVD** or **USB key** emulates PXE
 - During its creation, you specify if the target will use a dynamic or static IP address and what the address of the boot server is that needs to be contacted in PXE mode

When creating a deployment CD/DVD or USB key, you can include a deployment scheme, software modules, and system profiles. For a deployment CD/DVD, the process builds an ISO file on the boot server or on any other machine running the Web Interface Extension so that you can later transfer that file onto a CD/DVD. For a USB key, the process writes directly to the USB key that is mounted on the machine where the Web Interface Extension is installed. A PXE-emulation (Network boot) CD/DVD or USB key emulates PXE on machines that do not have a network card provided by the PXE boot ROM chip. When you create the CD/DVD, you specify whether the target will use a dynamic or static IP address. You also specify the IP address of the Tivoli Provisioning Manager for OS Deployment boot server that needs to be contacted in PXE mode.

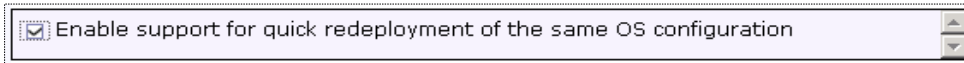
Redeployment

- Is like a simple deployment but the OS image or images are stored in a protected redeployment partition on the target disk
- Allows the replay of a standard deployment operation locally on the target
- Ensures that the system is reset to a certain state at every boot or at some fixed interval
- Is set up when you select the **Enable support for quick redeployment of the same OS configuration** option

You can use the redeployment features to store the operating system image or images into a protected partition on the target disk. You can restore them at each PXE boot or at some fixed interval. This deployment option is used when you want a quick way to reset your system to a certain state. For example, you might want to reset workstations used by students for laboratory exercises. If you deployed the profile in redeployment mode, then you can reset the systems to an operating system fresh installation state every morning when you start the machines. To use the redeployment feature, you have to create a deployment scheme. This scheme must have at least the option “Enable support for quick redeployment of the same OS configuration” selected. When you deploy a system profile to the target, you specify that the operation is a redeployment preload and select the created redeployment scheme.

Steps for redeployment

- Create a redeployment scheme, access the OS Deployment > Task Templates and change to the Deployment Schemes folder. Click the New deployment scheme button and follow the wizard. When requested, select “Enable support for quick redeployment of the same OS configuration”.



- When deploying a system profile from the OS Deployment > Target Monitor panel, click the target system and select the Deploy now option. Follow the wizard and choose the created redeployment scheme

The following steps are needed to deploy an operating system profile in redeployment mode. First, create a deployment scheme with the option for redeployment. In other words, select the “Enable support for quick redeployment of the same OS configuration” option. Second, right-click the target and select the “Deploy now” option. Specify the redeployment method in the wizard, and select the redeployment scheme you previously created. The deployment wizard lists the possibility to customize the target system GUI. This is the GUI that appears to the user at each PXE boot after the deployment in redeployment mode has finished successfully. For example, the GUI might include a password protection for the quick redeployment operation.

Machine snapshot

- You can use a software module as a software or drivers package for deployment and post installation configuration
- You can use Tivoli Provisioning Manager for OS Deployment to install various software modules
 - Inject drivers during a Windows installation
 - Install applications on various platforms
 - Patch the operating system
 - Modify the Windows registries
- Use the Tivoli Provisioning Manager for OS Deployment WEBUI
 - Select **OS Deployment > Software modules** and click the **New software** button or select the **Add a new software** option in the Contextual actions menu

A machine snapshot is a quick operating system snapshot that can be restored on the same machine. This snapshot is supported only for Windows and uses the same wizard option as the Windows clone. The difference between the two operations is that you do not run sysprep on the installed Windows system before taking the system snapshot profile. This snapshot cannot be used as a backup feature because some applications might not work after a restore operation. This situation applies mainly to large servers hosting complex software.

Hardware configuration

- Is a task to perform these pre-deployment actions on a target system:
 - RAID configuration
 - BIOS update
 - BIOS settings
 - Custom configuration
- Requires a hardware environment, which is created in the WEBUI from the **Advanced features > Hardware configurations** panel for each hardware vendor to be configured

A hardware configuration is a task for performing actions on the target BIOS or disks before the system is deployed. It requires a hardware environment to be executed because the hardware environment is the place where the hardware configuration task runs. To work with the various supported hardware vendors, you create the needed hardware environment and then create the specific hardware configuration task to execute on the target system. This feature provides the possibility to perform the RAID configuration, BIOS update, BIOS settings or custom configuration. The Tivoli Provisioning Manager for OS Deployment Guide provides step-by-step procedures to create a hardware environment for each supported hardware vendor so that you can create and customize your hardware configuration tasks. You can perform a hardware configuration task on a target like you perform a deployment. You right-click the target and select "Deploy now". The task can be sent to the systems as a stand-alone operation or together with a system profile deployment.

Software module

- You can use a software module as a software or drivers package for deployment and post installation configuration
- You can use Tivoli Provisioning Manager for OS Deployment to install various software modules
 - Inject drivers during a Windows installation
 - Install applications on various platforms
 - Patch the operating system
 - Modify the Windows registries
- Use the Tivoli Provisioning Manager for OS Deployment WEBUI
 - Select **OS Deployment > Software modules** and click the **New software** button
 - Select the **Add a new software** option in the Contextual actions menu

A software module is a software or drivers package that can be used for deployment and post installation configuration. Depending on the target operating system you specify in the wizard, you can create and install various software modules. Software deployment scenarios can include injecting drivers during a Windows installation, installing applications on various platforms, patching the operating system, and modifying the Windows registries. You can also create Windows universal operating system images, using the drivers packages. You can create a software module by using the Tivoli Provisioning Manager for OS Deployment WEBUI. Select **OS Deployment > Software modules** and click the **New software** button. Or, select **Add a new software** in the Contextual actions menu. The Wizard will guide you step-by-step in the specific software module creation.

Summary

In this module, you learned about:

- The deployment features offered by Tivoli Provisioning Manager for OS Deployment
- Methods for using the product WEBUI

In this module, you learned about the deployment features offered by Tivoli Provisioning Manager for OS Deployment and methods for using the product WEBUI.

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