



Windows Vista™

Deployment Guide for Windows Vista Service Pack 1

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Abstract

This document provides IT administrators with instructions for planning and deploying Windows Vista Service Pack 1 (SP1). This guide includes technical information, procedures, and recommendations for installing Windows Vista SP1 in a business or corporate environment. Although this guide includes some basic operating system information, we assume that you already have a working knowledge of Windows Vista and update installations.

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Windows Vista Service Pack 1 Deployment Guide

About this guide

This guide is for IT administrators who are deploying Windows Vista® Service Pack 1 (SP1). This document includes technical information, procedures, and recommendations for installing SP1 in a business or corporate environment. Although this guide includes some basic operating system information, we assume that you already have a working knowledge of Windows Vista and update installations. For more information about deployment, see the following Microsoft resources:

- Windows Vista SP1: Microsoft Deployment Tools Matrix (<http://go.microsoft.com/fwlink/?LinkId=108441>)
- Microsoft Deployment Documentation (<http://go.microsoft.com/fwlink/?LinkId=108442>)
- Windows Vista Deployment Step-by-Step Guide (<http://go.microsoft.com/fwlink/?LinkId=66066>)
- System Center Configuration Manager 2007 (<http://go.microsoft.com/fwlink/?LinkId=100278>)
- Microsoft Windows Server Update Services (<http://go.microsoft.com/fwlink/?LinkId=94244>)

 **Note**

To provide feedback about this guide, e-mail vistafb@microsoft.com.

Terminology used in this guide

The terms defined in the following table are used throughout this document.

Term	Definition
Integrated installation	Also known as "slipstream installation." In this installation method, the service pack is integrated into the operating system. As a result, the operating system and service pack are installed simultaneously. You use the integrated installation to upgrade computers and to perform new installations on computers that do not have an operating system.
Offline	In the context of updating images, the term "offline" refers to updating or applying changes to an operating system image that is not currently running. For example, you might update a Windows Image (.wim) file by using ImageX in the Windows Automated Installation Kit (AIK).

Term	Definition
Online	In the context of updating images, the term "online" refers to updating or applying changes to an operating system that the computer is booted into. For example, installing an update by using Windows® Update is an online operation.
Package	A collection of files representing an update that fixes a problem or introduces new functionality. Packages include the component files as well as the necessary metadata to manage the packages. Many packages are distributed as .msu files, each of which contains a compressed cabinet file (.cab file).
Service pack	The means by which product updates are consolidated and distributed. Service packs are software packages that may contain updates for system reliability, program compatibility, security, and so on. These updates are bundled together for easier downloading and installation. A service pack includes all fixes released to date, as well as additional improvements to existing components.
Stand-alone package	A version of the SP1 package that contains all of the files necessary to install the package on any computer (even without an Internet connection). In contrast, when you install the SP1 package from Windows Update, only the files needed for that specific computer are downloaded and installed. There is usually a considerable size difference between a package that is downloaded using Windows® Update and the corresponding stand-alone package.
Update	<ul style="list-style-type: none"> • Noun: Any update, update rollup, service pack, feature pack, critical update, security update, or hotfix that improves or fixes a software product released by Microsoft. For definitions of each of these types of updates, see article 824684 in the Microsoft Knowledge Base (http://go.microsoft.com/fwlink/?LinkID=43258). • Verb: To make a computer or file more current.
Upgrade	<ul style="list-style-type: none"> • Noun: A software package that replaces a particular version of a product with a newer version of the same product. • Verb: To update existing program files, folders, and registry entries to a more recent version by using Setup.exe from the installation media. Upgrading leaves existing files and settings intact, in contrast to when you perform a new installation in which all files are deleted and then reinstalled.

In this guide

This guide covers the following:

- [Overview of SP1](#)
- [Before you deploy SP1](#)
 - Obtain the installation files
 - Perform predeployment tasks
 - Review changes to SP1 functionality
- [Planning to Deploy SP1](#)
 - Application compatibility
 - Installation options
- [Deploying SP1](#)
 - Small-scale scenarios
 - Large-scale scenarios
- [Uninstalling SP1](#)
- [Troubleshooting](#)

Overview of SP1

Windows Vista SP1 is a set of updates and fixes for Windows Vista that addresses feedback from our customers (in addition to the improvements that are delivered to users through Windows Update). In addition to including previously released updates, SP1 focuses on specific reliability and performance issues, support for new types of hardware, and support for a few emerging technology standards. Note that although SP1 is not intended to be a vehicle for releasing new features, some existing components do gain enhanced functionality through SP1. For more information about SP1, see the following Microsoft TechNet articles:

- Overview of Windows Vista Service Pack 1 (<http://go.microsoft.com/fwlink/?LinkId=100279>)
- Notable Changes in Windows Vista Service Pack 1 (<http://go.microsoft.com/fwlink/?LinkId=107077>)

Before you deploy SP1

Complete the following steps before you deploy SP1:

- Obtain the installation files.
- Perform predeployment tasks.
- Review changes to SP1 functionality.

Obtain the installation files


Obtain the SP1 files by using one of the following methods:

- **Stand-alone package.** You can download SP1 from the Microsoft Download Center at <http://go.microsoft.com/fwlink/?LinkId=107075>.
- **Windows Update.** Windows Update contains SP1, so SP1 will be installed automatically on computers that are set to receive updates. However, before SP1 is installed, the user must accept the Microsoft Software License Terms.
- **Integrated installation.** SP1 is integrated into the Windows Vista installation media, and it is also available as part of the media kit for Volume License customers as well as TechNet and MSDN subscribers.

Perform predeployment tasks

Perform the following tasks before you install SP1. If you are installing SP1 by using Windows Update, be sure to perform these tasks before you accept the Microsoft Software License Terms.

- **Check disk space requirements.** The following are the approximate disk space requirements for the system partition. Note that these requirements will increase if there are language packs on your computer. For more information about each method, see [Installation options](#).

Installation method	Approximate disk space requirements
Stand-alone installation	<ul style="list-style-type: none"> • x86-based: 2,500 MB to 5,450 MB • x64-based: 4,100 MB to 7,850 MB
Windows Update	<ul style="list-style-type: none"> • x86-based: 1,200 MB • x64-based: 1,500 MB
Integrated installation	<ul style="list-style-type: none"> • 15 GB <p> Note For more information about system requirements for Windows Vista, see http://go.microsoft.com/fwlink/?LinkId=108506.</p>

Note

SP1 is supported only for x64-based and x86-based computers.

- **Back up important data.** For Windows Update and stand-alone installations, Setup automatically takes a system restore point before the installation of SP1 begins, which backs up system files. However, you may want to back up any user data before you begin installing SP1.
- **Read the release notes** (<http://go.microsoft.com/fwlink/?LinkId=107076>).
- **Disconnect any serial cables connected to UPS devices.** If you have an uninterruptible power supply (UPS) connected to your destination computer by a serial cable, remove that connection before running Setup. Setup detects devices that are connected to serial ports,

and UPS devices can cause problems with the detection process. You can leave your computer connected to a UPS for power as long as the UPS itself is plugged in. However, you should make sure that you have enough power for the entire installation, which can take a long time.

- **Uninstall any prerelease versions of SP1.** Microsoft does not support upgrading to this version of SP1 from any prerelease version of SP1. To uninstall a prerelease version, follow the steps in the [Uninstalling SP1](#) section of this guide.
- **Plug laptops into an AC power source.**
- **Check for file corruption issues.** To ensure that your computer does not have file corruption issues, we recommend that you run Check Disk (Chkdsk.exe) and System File Checker (SFC.exe) by using the following procedure.

▶ To fix corrupted file issues

1. Open an elevated Command Prompt window (click the **Start** button, type **command** in the **Start Search** box, right-click **Command Prompt**, and then click **Run as administrator**).
2. Run the following command (assuming that C is the system drive): **chkdsk c: /F**
3. After the command in step 2 completes, run the **SFC /Scannow** command.

Review changes to SP1 functionality

The following section outlines some of the changes in SP1. For a complete list, see the Microsoft TechNet article "Selected improvements in Windows Vista SP1" (<http://go.microsoft.com/fwlink/?LinkId=107077>).

The Windows OPK and AIK

The Windows OEM Preinstallation Kit (OPK) and the Windows Automated Installation Kit (AIK) have been updated for SP1. These kits include two new tools that you should use when creating images:

- **Boot critical driver tool (PostReflect.exe).** PostReflect is a command-line tool that is used to reflect all boot-critical device drivers out of the driver store in an offline image (see the [Terminology used in this guide](#) for a definition of "offline"). Driver reflection is the process of installing a driver on a computer that may or may not have a device for that driver. Typically, this involves copying the driver files to the destination location so that the driver can be loaded by the operating system during the boot process. If all of the boot-critical drivers are reflected in the image, it can be deployed to various hardware configurations. After applying SP1 online and creating an image for the computer, you must run this tool on the offline Windows image. This is necessary because SP1 contains boot-critical drivers for the hardware abstraction layer (HAL) and matching changes to the kernel. If the updated versions of boot-critical drivers for the HAL and the kernel are not correctly installed on the

computer that you are deploying SP1 to, the operating system will not boot on that computer or on any computer that has a different CPU or hardware configuration.

- **Windows Vista SP1 File Removal tool (Vsp1cln.exe).** Vsp1cln.exe is an optional tool that you can run after you install SP1. This tool removes older versions of components that have been updated in SP1, which are stored during the installation in case you need to uninstall SP1 later. Saving these older components increases the amount of disk space that is used. Typically, you should run Vsp1cln.exe if you want to reclaim this disk space after applying SP1 and if you will not need to uninstall SP1. Note, however, that you cannot uninstall SP1 after you run this tool. You can use this tool both online and offline, but you must have SP1 installed and you must use the correct version of the tool. If you are running this file on an offline image, you should use the Vsp1cln.exe included in the Windows OPK or AIK. However, if you are running this file online (on a computer that you are booted into), you should use the Vsp1cln.exe file located at %windir%\system32\vsp1cln.exe.

To download the Windows AIK, see <http://go.microsoft.com/fwlink/?LinkID=54863>. To obtain the OPK, contact your Technical Account Manager.

Group Policy management tools

After you install SP1, you will be temporarily unable to manage domain-based Group Policy from that computer because of the following changes:

- The Group Policy Management Console (GPMC) will be uninstalled.
- Gpedit.msc will default to the Local Group Policy Editor.

Because of these changes, use Remote Desktop to connect to another computer to manage Group Policy. Shortly after the release of Windows Server 2008, an updated GPMC with greater functionality will be released as part of the Remote Server Administration Tools (RSAT). The updated GPMC will include the ability to use Starter Group Policy objects (GPOs), which enable you to configure common scenarios more easily. It will also include more powerful search and filter capabilities to make it easier to find and edit settings and add comments about the settings (or the GPO itself), as well as Group Policy Preferences (also known as PolicyMaker) to further enhance the manageability of Group Policy. For more information about Group Policy Preferences, see <http://go.microsoft.com/fwlink/?LinkID=103735>.

For more information about these changes, see the release notes (<http://go.microsoft.com/fwlink/?LinkId=107076>) and the Windows Vista Service Pack 1 Overview (<http://go.microsoft.com/fwlink/?LinkId=100279>).

Planning to Deploy SP1

To determine which SP1 deployment scenario or combination of scenarios is best for your organization, consider the following questions. The Microsoft Deployment documentation (<http://go.microsoft.com/fwlink/?LinkId=108442>) contains best practices and tools to help you answer these questions.

- Are you updating existing computers that are running Windows Vista, performing new installations, or upgrading a previous version of Windows to Windows Vista?
- Where will the service pack files be stored?
- What network capacity will you need to ensure that the service pack deployment does not adversely affect the network or cause significant performance issues for other business applications?

Application compatibility

Application Compatibility Toolkit (ACT) 5.0 helps you identify and manage your overall application portfolio, which reduces the cost and time involved in resolving issues. ACT 5.0 has several features, including a new integrated interface that enables you to manage the entire toolkit from a single location, and an SP1 reporting node. In addition, you can run ACT 5.0 in your current environment (including Windows operating systems from Windows 2000 onward) so that you can test all operating system configurations before you begin deployment. For more information, and to download ACT 5.0, see "Application Compatibility" (<http://go.microsoft.com/fwlink/?LinkID=71359>).

Installation options

There are three ways that you can deploy SP1, as explained in the following table.

Method	Explanation
Installing SP1 by using Windows Update	<p>In a Windows Update installation, Windows Update downloads the applicable portions of the service pack to the destination computer and works within the operating system to install the service pack. This method requires relatively low bandwidth and minimizes network traffic because only the changes needed for a specific computer are applied.</p> <p>This method is used in the following scenarios:</p> <p>Scenario 1: Installing by using Windows Update.</p> <p>Scenario 4: Deploying by using WSUS</p>
Installing SP1 by using the stand-alone installation	<p>In a stand-alone installation, you install the service pack to upgrade computers that already have an operating system. The download size of the stand-alone package is larger than the package applied with Windows Update. This method is recommended for the following situations:</p> <ul style="list-style-type: none"> • Applying SP1 to computers with limited or no Internet connectivity. • Applying the service pack to more than one computer by using deployment tools such as Systems Management Server 2003 (SMS), WSUS Server, System Center Essentials, or System Center Configuration Manager 2007.

Method	Explanation
	<p>This method is used in the following scenarios:</p> <ul style="list-style-type: none"> • Scenario 2: Installing the stand-alone package • Scenario 4: Deploying by using WSUS • Scenario 6: Deploying by using SMS or System Center Configuration Manager
Installing SP1 by using the integrated installation	<p>In an integrated installation (also known as a "slipstream installation"), the service pack is integrated into the operating system, and therefore the operating system and service pack are installed simultaneously. Use the integrated installation to upgrade computers running Windows XP and to perform clean installations on computers that do not have an operating system. You cannot use the integrated installation to upgrade computers running Windows Vista to SP1. For an overview of supported upgrade paths from previous versions of Windows, see http://go.microsoft.com/fwlink/?LinkId=100331.</p> <p>If you choose this option, you cannot uninstall the service pack when the installation is complete. Instead, you would need to reinstall the entire operating system.</p> <p>This method is used in the following scenarios:</p> <ul style="list-style-type: none"> • Scenario 3: Creating or updating a custom image • Scenario 5: Deploying by using Windows Deployment Services

Deploying SP1

The following scenarios describe some of the ways that you can deploy SP1.

Small-scale scenarios

- [Scenario 1: Installing by using Windows Update](#)
- [Scenario 2: Installing the stand-alone package](#)

Large-scale scenarios

- [Scenario 3: Creating or updating a custom image](#)
- [Scenario 4: Deploying by using WSUS](#)
- [Scenario 5: Deploying by using Windows Deployment Services](#)
- [Scenario 6: Deploying by using SMS or System Center Configuration Manager](#)

Small-scale scenarios

The following scenarios are applicable to businesses and individuals who want to deploy SP1 to a relatively small number of computers.

In this section:

- [Scenario 1: Installing by using Windows Update](#)
- [Scenario 2: Installing the stand-alone package](#)

Scenario 1: Installing by using Windows Update

This method of installation is for individual users who are currently running Windows Vista and have configured Windows Update to download and install updates. To install SP1 by using Windows Update, you may need to install as many as three prerequisite updates: KB937287, KB935509, and KB938371. These are permanent packages designed to ensure that the computer will still function properly if SP1 is later uninstalled.

► To install the service pack by using Windows Update

1. Ensure that you are connected to the Internet.
2. Do one of the following:
 - If your computer is set to automatically install updates, when prompted, follow the instructions to install SP1.
 - To initiate the installation, follow steps 3 through 7.



Note

Because of the prerequisite updates, if you do not initiate the installation, it may take more than five days before you are prompted to install SP1 (one day for each prerequisite, and one or more days to begin the download of SP1).

3. Click **Start**, click **Control Panel**, double-click **Windows Update**, and then click **Check for Updates**. The following updates will be offered one at a time if they are not already installed:
 - KB935509 (This update is only for computers running Windows Vista Enterprise or Windows Vista Ultimate and requires a restart.)
 - KB938371 (This update requires a restart.)
 - KB937287 (This update may require a restart.)Repeat this step until you have installed each of these prerequisite updates, each time waiting 10 to 15 minutes for the installation of the update to complete.
4. Click **Start**, click **Control Panel**, double-click **Windows Update**, and then click **Check for Updates**.
5. Select the SP1 update (KB936330). If there are other updates displayed, make sure that SP1 is the only update selected, and then click **Install**.
6. After Setup downloads the update, accept the EULA and then click **Install**.
7. Setup will begin the installation. When prompted, click **Restart now**. During this second installation phase, Setup will prevent you from logging on while the service pack is being installed. The installer will automatically restart the computer several times during this

process.

 **Caution**

Do not restart the computer or turn the power off, even if the computer remains in an unknown state for a long time. If you do, the computer may go into an unbootable state.

8. Setup is complete when you are presented with the Windows logon prompt. At this time, you can log onto the computer.
9. To confirm that SP1 is installed, right-click **Computer** and then click **Properties**. You will find a reference to the service pack in the **Windows Edition** section.

Scenario 2: Installing the stand-alone package by using the installer executable file

The installer executable file contains every file necessary to install the service pack. This file is self-extracting and you can run it either from the command line or by double-clicking the file within Windows Explorer. The executable file will automatically install the following updates if they are not already installed:

- KB937287*
- KB937954
- KB935509*
- KB938371*
- KB936330 (SP1)

 **Note**

KB937287, KB935509, and KB938371 are permanent packages and cannot be uninstalled. These packages are permanent to ensure that the computer will still function properly if SP1 is later uninstalled.

To install SP1 by using the stand-alone package

1. Copy or download the installation file (Windows6.0-KB936330-X86.exe or Windows6.0-KB936330-X64.exe) to a computer. You can download SP1 from the Microsoft Download Center at <http://go.microsoft.com/fwlink/?LinkId=107075>.
2. To run the package, use the command-line options listed below, or double-click the file within Windows Explorer. It may take several minutes to extract the installation files, and even longer if you are installing SP1 by using a shared network resource.
3. Follow the instructions in the Setup wizard.
4. After the first phase of installation is complete, the computer will automatically restart. During this second installation phase, Setup will prevent you from logging on while the service pack is being installed. The installer will restart the computer several times during this phase.
5. Setup is complete when you are presented with the Windows logon prompt. At this time,

you can log on to the computer.

6. To confirm that SP1 is installed, right-click **Computer** and then click **Properties**. You will find a reference to the service pack in the **Windows Edition** section.

Command-line options

Use the options described in the following table to define the way SP1 is installed. You can precede the following options with a forward slash (/) or a hyphen (-). Note that the options are not case-sensitive, and **XXX** stands for either **x86** or **x64**.

Syntax:

windows6.0-kb936330-XXX.exe [/quiet] [/nodialog] [/norestart]

**windows6.0-kb936330-XXX.exe [/quiet] [/nodialog] [/forcerestart |
/warnrestart[:<Seconds>]] [/promptrestart]**

For example, to run the installation file in quiet mode without restarting the computer, type

windows6.0-kb936330-x86.exe /quiet /norestart

Options	Description
/forcerestart	If a restart is required, this option forces any open applications or documents to close.
/nodialog	Suppresses the success or failure dialog box at the end of the installation.
/norestart	Does not restart the computer after the installation is complete, even if a restart is required to complete the installation. This option is intended for use with the /quiet option.
/promptrestart	If a restart is required, a dialog box notifies the user that a restart is required to complete Setup. You should use this option with the /quiet option.
/quiet	Runs the installation in quiet mode. This mode shows no user interface during the installation of the updates. This is the same as unattended mode, except that the user interface is hidden. No prompts will appear during the installation process except the success or failure dialog box at the end of the installation. To suppress this dialog box, you must also specify the /nodialog option.
/unattend	Installs the service pack in unattended mode. Only critical error prompts and a progress bar will appear during the installation. For example, Microsoft Software License Terms is not shown, and the computer will be automatically restarted.

Options	Description
/warnrestart[:<seconds>]	If a restart is required, a dialog box notifies the user that the computer will restart in the specified number of seconds. The user can either cancel the restart or restart the computer immediately. The default setting is 30 seconds.
/wsus	Returns a failure code if the previous installation attempt failed. This option is needed only when deploying in a WSUS, SMS, or System Center Configuration Manager environment, or in any non-Microsoft product that uses the Windows Update Agent to report installation success.
/? or /help	Displays command usage.

Large-scale scenarios

The following scenarios are applicable to businesses that want to deploy SP1 to multiple computers or deploy custom images, or both. If you have custom Windows Vista images that you want to update, you can boot the Windows image, apply the service pack, and then recapture the image. This "online" method is the only way to update images with SP1; SP1 cannot be installed to or uninstalled from an offline image of Windows Vista. You will need to obtain the latest version of the Windows OPK or Windows AIK.

Business Desktop Deployment (BDD) 2007 (<http://go.microsoft.com/fwlink/?LinkID=95464>) is the recommended methodology and solution to help you deploy Windows Vista. BDD 2007 can assist you in building custom images and deploying Windows Vista remotely. You can also use BDD 2007 for zero touch deployments using SMS and System Center Configuration Manager.

In this section:

- [Scenario 3: Creating or updating a custom image](#)
- [Scenario 4: Deploying by using WSUS](#)
- [Scenario 5: Deploying by using Windows Deployment Services](#)
- [Scenario 6: Deploying by using SMS or System Center Configuration Manager](#)

Scenario 3: Creating or updating a custom image

Use this installation method if you have an automated process for reproducing images. When creating images, you will need to install the updated Windows OPK and Windows AIK. To update an existing image, boot into the image and then update it with SP1. You can only use an "online" method to update images with SP1. Also, you cannot install or uninstall SP1 from an offline image of Windows Vista. For example, there is no comparable support for the **/integrate** option from previous versions of Windows. After you install SP1, you must run Sysprep, Postreflect.exe, and VSP1cln.exe (optionally) before you recapture the image. Note that when you run Vsp1cln.exe, you will not be able to uninstall SP1. For more specific instructions for this scenario, see "Install

Windows Vista Service Pack 1" (<http://go.microsoft.com/fwlink/?LinkID=90643>). This topic is also included in the Windows AIK documentation (Waik.chm) and the OPK documentation (Opk.chm).

Scenario 4: Deploying by using WSUS

Windows Server Update Services (WSUS) enables you to deploy the latest Microsoft product updates to computers running the Windows operating system. By using WSUS, you can fully manage the distribution of updates that are released through Microsoft Update to computers in your network. For general information about WSUS, see <http://go.microsoft.com/fwlink/?LinkID=94244>.

You can download SP1 by synchronizing your WSUS servers using the following procedure. The package that is installed contains both the prerequisite packages and SP1. This entire package will be downloaded to each destination computer, unlike with Windows Update, where only the components that are needed for a specific computer are installed. In advanced situations, you may want to deploy the version of SP1 that is installed by Windows Update (which downloads only the applicable portions of the service pack to each computer). For more information about this deployment method, see Knowledge Base article 947936 (<http://go.microsoft.com/fwlink/?LinkId=109133>).

Important

If your WSUS server is running Windows Server 2003, you will need to install an update to ensure that SP1 is downloaded successfully. For more information, see Knowledge Base article 938759 (<http://go.microsoft.com/fwlink/?LinkId=108519>).

To deploy SP1 by using WSUS

1. Ensure that your WSUS server is configured to synchronize Windows Vista service packs.
2. Synchronize your WSUS server.
3. Locate the SP1 package, and approve it for the appropriate target groups.

Note

The destination computer will restart multiple times during the installation.

Scenario 5: Deploying SP1 by using Windows Deployment Services

This scenario explains how to use Windows Deployment Services to install an integrated version of Windows Vista with SP1. However, it does not explain how to set up Windows Deployment Services. For more information, see the following step-by-step guides (depending on which version of Windows Deployment Services you have):

- Windows Deployment Services Update Step-by-Step Guide for Windows Server 2003 (<http://go.microsoft.com/fwlink/?LinkId=66145>)
- Windows Deployment Services Role Step-by-Step Guide (<http://go.microsoft.com/fwlink/?LinkId=84628>)

To deploy an image of Windows Vista with SP1, you can do either of the following:

- Add the Install.wim image from the DVD that contains the integrated version of Windows Vista SP1 to your Windows Deployment Services server.
- Create a customized install image from a reference computer and then add it to your Windows Deployment Services server by using the following procedures.

To create a capture image and a reference computer

1. Add the Boot.wim located in the \Sources directory on the Windows Vista with SP1 DVD to your Windows Deployment Services server.
2. Create a capture image from the Boot.wim, and then add it to the Windows Deployment Services server.
3. Create a reference computer that contains Windows Vista, SP1, and any programs and settings that you want to include in the image.
4. At a command prompt, change directories to \Windows\System32\Sysprep.
5. Run the following command: **sysprep /oobe /generalize /reboot**
6. Run Postreflect.exe and VSP1cln.exe offline by using the instructions in the "Install Windows Vista Service Pack 1" (<http://go.microsoft.com/fwlink/?LinkID=90643>).

To create an install image that contains the new image

1. Restart the computer, and then press **F12**.
2. Select the capture image that you created in step 2 in the preceding procedure.
3. In the image capture wizard, choose the appropriate drive, and then provide a name and description for the image. Click **Next** to continue.

Important

You will only see drives that contain operating systems prepared with Sysprep.

4. Click **Browse** and then browse to a local location where you want to store the captured install image.

Important

You must enter a local location to save the new image; otherwise, you will not be able to capture the image. In the event of a network malfunction, this will prevent the image from being corrupted.

5. Type a name for the image using the .wim file name extension, and then click **Save**.

Important

You must use the .wim file name extension or the capture will fail.

6. Follow the rest of the instructions in the image capture wizard.
7. Now that you have the custom install image on your server, you can perform a PXE boot on a client computer and install the image. For more information, use the steps in the "PXE booting a client to install an image" section in one of the following two guides

(depending on the version that you have):

- Windows Deployment Services Update Step-by-Step Guide for Windows Server 2003 (<http://go.microsoft.com/fwlink/?LinkId=66145>)
- Windows Deployment Services Role Step-by-Step Guide (<http://go.microsoft.com/fwlink/?LinkId=84628>)

Scenario 6: Deploying SP1 by using SMS 2003 or System Center Configuration Manager

You can deploy SP1 with System Center Configuration Manager 2007, System Center Essentials, or Microsoft Systems Management Server (SMS) 2003. For a description of the options you can use to install SP1 (see especially the **/wsus** option), see the [Command-line options](#) section earlier in this guide.

Important

When using each of these tools on a computer running Windows Server 2003, you must install the KB938759 update (<http://go.microsoft.com/fwlink/?LinkId=109188>) to ensure that SP1 is downloaded successfully. For SMS and Configuration Manager, you must apply this update to every site server, software update point, and administration console. Note that this update is already included in Windows Vista and Windows Server 2008, and that this update is not available for Windows XP. In addition, you must start the Distribute Software Update Wizard from a computer running Windows Server 2003 (with KB 938759 applied), Windows Vista, or Windows Server 2008.

- **Configuration Manager 2007.** You have two options when deploying SP1. The first option is to distribute the software by creating a software distribution package and advertisement. For more information about this option, see "Software Distribution in Configuration Manager" (<http://go.microsoft.com/fwlink/?LinkId=109191>). Or you can deploy SP1 as a software update by using Software Updates Management with Configuration Manager 2007. The main advantage to this second method is that there are no command-line settings to configure or detection logic to author. In Configuration Manager 2007, SP1 will be listed as an available update after a successful sync from the Software Update Point. For more about this option, see "Software Updates in Configuration Manager" (<http://go.microsoft.com/fwlink/?LinkId=109202>).
- **System Center Essentials.** System Center Essentials is a new management solution in the System Center family of IT systems management products, specifically designed for IT professionals working in midsize businesses. For more information about System Center Essentials, download "Overview: System Center Essentials 2007" (<http://go.microsoft.com/fwlink/?LinkId=89185>).
- **SMS 2003.** You have two options when deploying SP1. You can distribute the software by creating a software distribution package and advertisement. For more information about this option, see "Distribute Software" (<http://go.microsoft.com/fwlink/?LinkId=109218>). Or you can deploy SP1 as a software update by using the Inventory Tool for Microsoft Updates (ITMU). For more information about deploying software updates by using SMS 2003 and ITMU, see

the Microsoft TechNet article "SMS 2003 Inventory Tool for Microsoft Updates" (<http://go.microsoft.com/fwlink/?LinkId=108463>).

Uninstalling SP1

You can remove SP1 by using either **Programs and Features** or the command line. Note, however, that you cannot uninstall SP1 offline using any method. In addition, it is not possible to uninstall the permanent prerequisite updates (KB937287, KB935509, and KB938371). However, you can uninstall KB936330 and KB937954. You also cannot uninstall the service pack and other updates that were installed using an integrated installation.

▶ To uninstall SP1 by using Programs and Features

1. Open **Control Panel**, click **Programs**, and then click **View Installed Updates**.
2. In the **Microsoft Windows** list, right-click **Service Pack for Microsoft Windows (KB936330)**, and then click **Uninstall**.
3. When prompted, restart the computer.

▶ To uninstall SP1 by using the command line

1. Open an elevated Command Prompt window (click **Start**, type **command** in the **StartSearch** box, right-click **CommandPrompt**, and then click **Run as administrator**).
2. Run the following command (assuming that Windows6.0-KB936330.exe is in the C:\temp folder): **C:\temp\Windows6.0-KB936330-X86.exe /x:C:\temp**
3. To create a sandbox, type **md <sandbox>**.
4. To remove SP1, type **start /w pkgmgr.exe /m:c:\temp\Windows6.0-KB936330-X86.cab /up /s:<sandbox>**.
5. After Pkgmgr.exe completes, you will be prompted to restart the computer (unless you specified the **/quiet** command with Pkgmgr).

Troubleshooting

When installing SP1, some computers may run into issues that block the installation or otherwise cause it to fail. These issues may include the following

- A hard disk that is corrupted.
- Memory failures.
- Software and file system synchronization issues. For performance reasons, the file system keeps a copy of the contents of some files in the memory, and it can take a while for these contents to be written back to the hard disk. Therefore, sometimes the contents of the files on the hard disk may be slightly out of synchronization with the memory.

To work around installation problems, perform the following steps in the specified order:

1. Ensure that you have enough disk space, as specified in the "Check disk space requirements" table under [Perform predeployment tasks](#) earlier in this guide. Then restart the computer and try to install SP1 again. This will ensure that all files are synchronized properly.
2. If the installation still fails, open an elevated Command Prompt window, and then run **chkdsk /f**. The Chkdsk tool checks the file system and metadata for errors, and then it fixes the errors, if possible. Then try to install SP1 again.
3. If the installation still fails, open an elevated Command Prompt window, and then run **SFC /scannow**. The System File Checker tool scans all protected files to verify their versions, and then it updates these files, if possible. Then try to install SP1 again.
4. If the installation still fails, open an elevated Command Prompt window, and then run **MdSched.exe**. The Windows Memory Diagnostic tool tests the Random Access Memory (RAM) on your computer for errors. Then try to install SP1 again.
5. If the installation still fails, download and extract the KB947821 update from the Microsoft Download Center at <http://go.microsoft.com/fwlink/?LinkId=109180>. The Windows6.0-KB947821-XXX.msu file will ensure that the computer is ready to be updated. Then try to install SP1 again.