

How to use the Sysprep tool to automate successful deployment of Windows XP

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INTRODUCTION

This step-by-step article describes how to use the System Preparation Tool (Sysprep) to automate the successful deployment of Microsoft Windows XP. Sysprep is a tool that is designed for system administrators, Original Equipment Manufacturers (OEMs), and others who must automatically deploy the Windows XP operating system on multiple computers. After you perform the initial setup steps on a single computer, you can run the Sysprep tool to prepare the sample computer for cloning.

MORE INFORMATION

Requirements for running the Sysprep tool

Before you can use the Sysprep tool, your computer hardware and related devices must meet the following requirements:

- The reference and destination computers must have compatible HALs. For example, Advanced Programmable Interrupt Controller (APIC)-based MPS (multiprocessor systems) must use the same APIC HAL. A standard HAL Programmable Interrupt Controller (PIC)-based system is not compatible with either the APIC HAL or the MPS HAL.
- The reference and destination computers must have the same Advanced Configuration and Power Interface (ACPI) support.
- The Plug-and-Play devices on the reference and destination computers, such as modems, sound cards, network adapters, and video cards, do not have to be from the same manufacturer. However, the drivers for these devices must be available.
- Third-party disk-imaging software or disk-duplicating hardware devices are required. These products create binary images of a computer's hard disk and either duplicate the image to another hard disk or store the image in a file on a separate disk.
- The size of the hard disk on the destination computer must be at least the same size as the hard disk on the reference computer. If the destination computer has a larger hard disk, the difference is not included in the primary partition. However, you can use the ExtendOemPartition key in the Sysprep.inf file to extend the primary partition if it was formatted by using the NTFS file system.

Prepare a reference computer for Sysprep deployment

To prepare a reference computer for Sysprep deployment in Windows XP, follow these steps:

1. On a reference computer, install the operating system and any programs that you want installed on your destination computers.
2. Click **Start**, click **Run**, type **cmd**, and then click **OK**.
3. At the command prompt, change to the root folder of drive C, and then type **md Sysprep**.
4. Insert the Windows XP operating system CD into the appropriate CD-ROM or DVD-ROM drive, and then open the Deploy.cab file in the \Support\Tools folder.

Note To make sure that you are using the correct version of the Deploy.cab file for your service pack, use the Deploy.cab file that is distributed with that service pack. Visit the following Microsoft Web site to download the correct version for your service pack:

<http://www.microsoft.com/windowsxp/downloads/default.mspx>
(<http://www.microsoft.com/windowsxp/downloads/default.mspx>)

5. Copy the Sysprep.exe file and the Setupcl.exe file to the Sysprep folder.

Note If you use the Sysprep.inf file, copy this file to the Sysprep folder also. For the Sysprep tool to function correctly, the Sysprep.exe file, the Setupcl.exe file, and the Sysprep.inf file must all be in the same folder.

6. Remove the Windows XP operating system CD.
7. At the command prompt, type **cd Sysprep** to change to the Sysprep folder.
8. To run the Sysprep tool, type the following command at the command prompt:

Sysprep /optional parameter

Note For a list of parameters, see the "Sysprep parameters" section.

If you run the Sysprep.exe file from the %systemdrive%\Sysprep folder, the Sysprep.exe file removes the whole folder and the contents of the folder after it finishes.

9. Microsoft recommends that after you run the Sysprep.exe file on a reference computer, isolate the reference computer from the local network where the image will be subsequently deployed to avoid any NetBIOS conflicts. This permits the Sysprep tool to complete the Setup program, join the domain that is specified, and use the new computer name that is specified in the Sysprep.inf answer file.

Create the Sysprep.inf answer file

The Sysprep.inf answer file is a text file that scripts the answers for a series of graphical user interface (GUI) dialog boxes. To create a Sysprep.inf answer file that is used by the Sysprep tool, you can use a text editor or you can use the Setup Manager tool that is included on the Windows XP CD and is also included with the Microsoft Windows XP Resource Kit. The answer file must be renamed to Sysprep.inf, and must reside in the Sysprep folder in the root of the drive where Windows XP is installed, or these files can reside on a floppy disk. If the Sysprep folder is named differently, the Setup program ignores it. There is not a parameter for specifying the Mini-Setup Wizard answer file.

Sysprep.inf answer file format and parameters

- The Sysprep.inf answer file format and parameters are the same as the Unattended.txt file for Windows XP, but only the following sections and parameters are supported:

[Unattended]

ExtendOemPartition
OemPnPDriversPath
OemSkipEula
InstallFilesPath
KeepPageFile
ResetSourcePath
UpdateHAL
UpdateUPHAL
UpdateInstalledDrivers
TapiConfigured

[GuiUnattended]

AdminPassword
Autologon
AutoLogonCount
OEMDuplicatorString
OEMSkipRegional
OEMSkipWelcome
TimeZone

[UserData]

Supports the same set of entries as the Unattend.txt file.

[LicenseFilePrintData]

Supports the same set of entries as the Unattend.txt file.

[GuiRunOnce]

Supports the same set of entries as the Unattend.txt file.

[Display]

Supports the same set of entries as the Unattend.txt file.

[RegionalSettings]

Supports the same set of entries as the Unattend.txt file.

[Networking]

Supports the same set of entries as the Unattend.txt file.

[Identification]

Supports the same set of entries as the Unattend.txt file.

[TapiLocation]**[Sysprep]**

Automatically generates the entries in the [SysprepMassStorage] section.

[SysprepMassStorage]

Allows you to use the same image on computers with different mass-storage devices.

Use the Setup Manager tool to create the Sysprep.inf answer file

To install the Setup Manager tool and to create an answer file, follow these steps:

1. Open My Computer, and then open the Support\Tools folder on the Windows XP CD.
2. Double-click the **Deploy.cab** file to open it.
3. On the **Edit** menu, click **Select All**.
4. On the **Edit** menu, click **Copy To Folder**.
5. Click **Make New Folder**.

Type the name that you want for the Setup Manager folder, and then press ENTER. For example, type **setup manager**, and then press ENTER.

6. Click **Copy**.
7. Open the new folder that you created, and then double-click the **Setupmgr.exe** file. The Windows Setup Manager Wizard starts.
8. Follow the instructions in the wizard to create an answer file.

For additional information about how to create an answer file, click the following article number to view the article in the Microsoft Knowledge Base:

[308662](http://support.microsoft.com/kb/308662/) (<http://support.microsoft.com/kb/308662/>) HOW TO: Use Setup Manager to create an answer file in Windows 2000

Sysprep parameters

You can use the following optional parameters with the Sysprep command in Windows XP:

- **-activated** - Do not reset the grace period for Windows product activation. Use this parameter only if you have activated the Windows installation in the factory.

Important The product key that you use to activate the Windows installation must match the product key that is located on the COA sticker that is attached to that particular computer.

- **-audit** - Restarts the computer in Factory mode without having to generate new security IDs (SIDs) or process any items in the [OEMRunOnce] section of the Winbom.ini file. Use this command-line parameter only if the computer is already in Factory mode.
- **-bmsd** - Populates all the available mass storage devices in the [SysprepMassStorage] section.
- **-clean** - Clears the critical devices database that is used by the [SysprepMassStorage] section in the Sysprep.inf file.
- **-factory** - Restarts in a network-enabled state without displaying Windows Welcome or mini-Setup. This parameter is useful for updating drivers, running Plug and Play enumeration, installing programs, testing, configuring the computer with customer data, or making other

configuration changes in your factory environment. For companies that use disk imaging (or cloning) software, Factory mode can reduce the number of images that are required.

When all the tasks in Factory mode are complete, run the Sysprep.exe file by using the **-reseal** parameter to prepare the computer for end-user delivery.

- **-forcshutdown** - Shuts down the computer after the Sysprep.exe file finishes.

Note Use this parameter with computers that have an ACPI BIOS that do not shut down correctly with the default behavior of the Sysprep.exe file.

- **-mini** - Configures Microsoft Windows XP Professional to use Mini-Setup instead of Windows Welcome. This parameter does not affect Microsoft Windows XP Home Edition, where the first-run experience is always Windows Welcome.

Note that if you plan to use the Sysprep.inf file to automate Mini-Setup, you must either run the Sysprep tool by using the **-mini** switch, or click to select the **MiniSetup** check box in the GUI interface. By default, if you do not choose to run Mini-Setup, Windows XP Professional runs the Windows Welcome.

- **-noreboot** - Modifies registry entries (SID, OemDuplicatorString, and other registry entries) without the computer restarting or preparing for duplication. This parameter is mainly used for testing, specifically to see if the registry is modified correctly. Microsoft does not recommend this option because making changes to a computer after the Sysprep.exe file has run may invalidate the preparation that was completed by the Sysprep.exe file. Do not use this parameter in a production environment.
- **-nosidgen** - Runs the Sysprep.exe file without generating new SIDs. You must use this parameter if you are not duplicating the computer where you are running the Sysprep.exe file or if you are preinstalling domain controllers.
- **-pnp** - Runs the full Plug and Play device enumeration and installation of previous devices during Mini-Setup. This command-line parameter has no effect if the first-run experience is Windows Welcome.

Use the **-pnp** command-line parameter only when you must detect and install previous, non-Plug and Play devices. Do not use the **sysprep -pnp** command-line parameter on computers that only use Plug and Play devices. Otherwise, you will increase the time that it takes for the first-run experience without providing any additional benefit to the user.

Note When unsigned drivers are unavoidable, use the *UpdateInstalledDrivers=yes* parameter in conjunction with **OemPnPDriversPath=** and **DriverSigningPolicy=ignore** instead of the **-pnp** command-line parameter to provide a more seamless installation.

- **-quiet** - Runs the Sysprep.exe file without displaying onscreen confirmation messages. This is useful if you are automating the Sysprep.exe file. For example, if you plan to run the Sysprep.exe file immediately after the unattended Setup program finishes, add the **sysprep -quiet** command to the [GuiRunOnce] section of the Unattend.txt file.
- **-reboot** - Forces the computer to automatically restart, and then starts Windows Welcome Mini-Setup, or Factory mode, as specified. This is useful when you want to audit the computer and verify that the first-run experience is operating correctly.
- **-reseal** - Clears the Event Viewer logs and prepares the computer for delivery to the customer. Windows Welcome or Mini-Setup is set to start the next time that the computer restarts. If you run the **sysprep -factory** command, you must seal the installation as the last step in your preinstallation process. To do this, run the **sysprep -reseal** command or click the **Reseal** button in the **Sysprep** dialog box.

REFERENCES

For more information about how to use the Sysprep.inf file for multilingual support, see the online Help.

For a more detailed explanation about answer files and their valid parameter values, see the Ref.chm file in the \Support\Tools\Deploy.cab folder that is located on the Windows XP Professional CD.

APPLIES TO

- Microsoft Windows XP Professional
- Microsoft Windows XP Home Edition

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