Contents

What is Windows System Image Manager?

Windows System Image Manager (Windows SIM) creates and manages unattended Windows Setup answer files in a graphical user interface (GUI).

Answer files are XML-based files that are used during Windows Setup to configure and to customize the default Windows installation.

For example, you can use Windows SIM to create an answer file that partitions and formats a disk before installing Windows, changes the default setting for the Internet Explorer home page, and configures Windows to boot to Audit mode after installation. By modifying settings in the answer file, Windows SIM can also install third-party applications, device drivers, language packs, and other updates.

This topic includes:

- Benefits of Windows SIM

- Common Windows SIM Scenarios

- Technologies Related to Windows SIM

✎Note

Windows SIM does not modify the Windows image itself; Windows SIM is used only to create an answer file. This answer file is used during Windows Setup to apply the settings to the Windows installation. Windows SIM does not modify the settings in a Windows image file.

Benefits of Windows SIM

Windows SIM provides the following benefits that enable you to:

- Quickly create an unattended answer file.

- Validate the settings of an existing answer file against a Windows image (.wim) file.

- View all the configurable component settings in a .wim file.

- Update an existing answer file easily.

- Create a configuration set that contains a complete set of portable folders with setup files.

- Add third-party drivers, applications, or other packages to an answer file.

Common Windows SIM Scenarios

The following sections describe common Windows SIM scenarios.

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Create a New Answer File for a Windows Image
Windows SIM enables you to create an answer file to be used during Windows Setup. You can view all the components available in a Windows image, add component settings to your answer file, and choose when to apply a component setting, by adding it to a particular configuration pass.

After component settings are added to an unattended answer file, you can view and customize the available settings for each component. For more information, see Understanding Answer Files.

Edit an Existing Answer File
Windows SIM enables you to add new components, packages, or other updates to an existing answer file. You can also validate an existing answer file against a Windows image to ensure that the settings in that answer file can be applied to a specific Windows image. An answer file is typically associated with a specific Windows image. By using Windows SIM, you can open the Windows image, open an existing answer file, and then make changes to the answer file.

Windows SIM validates the component settings in the answer file against the settings available in the Windows image. For more information, see Add a Component to an Answer File.

Add Additional Device Drivers to an Answer File
You can add device drivers during Windows Setup by using Windows SIM. Three types of drivers are used in setup:

- In-box drivers

  In-box drivers are handled the same as packages.

- Out-of-box drivers

  You can add additional .inf-based, out-of-box device drivers during Windows Setup, by using Windows SIM. Typically, these out-of-box drivers are processed during the auditSystem configuration pass. Your .inf-based, out-of-box drivers must be in a distribution share subfolder called "Out-of-Box Drivers". For more information, see Add Out-of-Box Drivers to a Distribution Share.

- In-box drivers installed with an .msi file.

  In-box drivers requiring an .msi file are added by the same method as applications.

> **✎Note**
>
> Boot-critical device drivers required for installation must be added during the windowsPE configuration pass. These device drivers are added by using the Microsoft-Windows-PnpCustomizationsWinPE component. For more information, see Add Device Drivers During Windows Setup. You can also add device drivers to an offline image by using Package Manager. For more information, see Add Device Drivers to an Offline Windows Image.

Add Applications or Additional Drivers to an Answer File
You can add additional applications or drivers to be installed during Windows Setup with Windows SIM, by using an optional set of folders called a **distribution share**. A distribution share is used to store any and all applications, device drivers, scripts, or other resources that you make available during Windows Setup.

You can add additional applications, scripts, and other binaries, by using a data image. A data image is packaged similar to a Windows image. By using ImageX, you can capture a folder structure that contains the resources that you must add to Windows (or another partition on the computer) during Windows Setup. You can specify where the data image is applied, by using the DataImage setting in the Microsoft-Windows-Setup component. For more information, see Create a Data Image.

You can also use OEM folder structures to place binary files and other applications in specific locations during Windows Setup. Applications are added from distribution shares through subfolders called OEM folders. A RunSynchronous setting must also be added to the answer file to launch the .msi file or the .exe file that installs the application. For more information, see Add Content to OEM Folders.

Windows System Image Manager

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Add Updates to a Windows Image Offline

Windows SIM enables the addition of offline updates to a Windows image, including software updates, device drivers, language packs, and other packages. Packages are provided by Microsoft.

Package Manager is the tool that is used to apply packages to Windows. You can use an answer file with Package Manager to apply packages to a Windows image. Any package installation, removal, or modifications in the answer file are applied to the Windows image. For more information, see Package Manager Technical Reference.

Packages that exist in the offlineServicing pass are applied to the offline Windows image. For more information, see Understanding Windows Image Files and Catalog Files.

Create a Configuration Set

A configuration set is a subset of files that are available in a distribution share that is explicitly called in an answer file. When you choose to create a configuration set, any files in a distribution share that are referenced in the answer file are saved to a specific folder. Paths to these files are updated in the answer file to point to the specific folder.

Configuration sets are merely smaller, more portable versions of a distribution share. A configuration set is ideal for installations that cannot access a distribution share. For more information, see Understanding Distribution Shares and Configuration Sets.

Import Packages to a Distribution Share

Windows SIM imports packages that are not part of a Windows image (.wim) file to an optional set of folders called a distribution share. The packages can then be added to an answer file from the distribution share. To import a package to a distribution share, you must use the Windows SIM tool or the CPI APIs. For more information, see Understanding Distribution Shares and Configuration Sets.

You can also import a package directly into an answer file. The answer file includes a pointer to the path of the package.

Technologies Related to Windows SIM

The following sections describe technologies related to Windows SIM.

Windows Setup

Windows Setup is a program that installs Windows. Windows Setup uses a new technology called image-based setup (IBS) that provides a single, unified process with which all customers—including OEMs, corporations, and retail customers—can install Windows. Image-based setup performs clean installations, as well as upgrade installations of Windows, and is used in both client and server installations.

System Preparation Tool (Sysprep)

Sysprep prepares a Windows image for disk imaging, system testing, or delivery to a customer. Sysprep can be used to remove system-specific data from a Windows image, such as the security identifier (SID). After removing unique system information from an image, you can capture that Windows image and use it to deploy on multiple systems.

In addition, Sysprep can:

- Configure the Windows image to boot to Audit mode. Audit mode enables you to test the integrity of the system and to install additional applications and device drivers.
- Configure Windows to boot to Windows Welcome the next time the computer starts.

OEMs are required to run the **sysprep /oobe** option before delivering a computer to an end user.

Package Manager

Package Manager (Pkgmgr.exe) is a command-line tool that installs, removes, or updates Windows packages. You can add packages, provided as .cab files, to an offline Windows image. Package Manager can also be used to enable or to disable Windows features. Package Manager can take an unattended installation answer file as input and configure settings listed in the offlineServicing configuration pass.

Windows System Image Manager

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ImageX

ImageX (ImageX.exe) is a command-line tool that enables original equipment manufacturers (OEMs) and corporations to capture, to modify, and to apply file-based disk images for rapid deployment. ImageX works with Windows image (.wim) files for copying to a network, or it can work with other technologies that use Windows images, such as Windows Setup, Windows Deployment Services (Windows DS), and the Systems Management Server (SMS) 2003 Operating System Deployment Feature Pack.

Windows Preinstallation Environment

Windows Preinstallation Environment (Windows PE) is a minimal Win32 operating system with limited services, built on the Windows Vista kernel. It is used to prepare a computer for Windows installation, to copy disk images from a network file server, and to initiate Windows Setup.

International Settings Configuration Tool

The International Settings Configuration Tool (Intlcfg.exe) enables you to change the default international settings in a Windows image.