

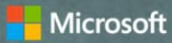
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Windows 8 Troubleshooting Concepts

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Welcome my name is Milad Aslaner and I'm a Premier Field Engineer within the Global Business Support group of Microsoft. This is the start of the training course which handles

What is Windows RE?

Windows RE is an extensible recovery platform

Based on Windows PE

If computer fails to start, Windows goes into Windows RE

Startup Repair tool to automates diagnosis and repair

Windows RE help reducing support costs by up to 80 % through automatic repair.

Windows Recovery Environment (Windows RE) is an extensible recovery platform based on Windows Preinstallation Environment (Windows PE).

When the computer fails to start, Windows automatically fails over into this environment, and the Startup Repair tool in Windows RE automates the diagnosis and repair of an unbootable Windows Vista® installation. Furthermore, Windows RE is a starting point for various tools for manual system recovery.

The primary audience of this technology includes original equipment manufacturers (OEMs), original device manufacturers (ODMs), and corporate IT professionals.

Benefits of Windows RE

Windows RE provides the following benefits:

Can help reduce support costs by up to 80 percent through automatic repair of common root causes of unbootable operating system installations.

Can add customized recovery tools to Windows RE.




Can be used as the platform for image recovery.

Supports mass-storage drivers and language packs through Windows PE tools.

Can run automatically or manually.

Provides diagnostic and repair logs.

Common Scenarios

 <h2>For End-user</h2> <p>Home user updates his video card driver and restarts his PC. Computer restarts and results in a blue screen. Startup Repair wizard identify this cause and can automatically repair the faulty driver.</p>	 <h2>Our IT Pro's</h2> <p>IT Pro can go into Windows RE and log on with a local administrator account and select full-volume restore. Once restore has been completed, IT Pro can click the Reset button and computer restarts successfully into Windows.</p>	
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End-user Scenario

A home user installs a video card driver from Fabrikam and restarts his computer. While Windows Vista restarts, the computer stops unexpectedly and an error message appears on a blue screen because of the driver. The computer automatically restarts. The user then sees a message that the computer failed to start and that Windows will attempt to repair it. Once in Windows RE, the Startup Repair wizard actively diagnoses the computer and determines that System Restore must repair the problematic video card driver. The user chooses to repair the video card driver, and the computer restarts after the repair. Now the computer successfully restarts, and the user sees the logon screen for Windows.

System Administrator Scenario

A system administrator for an enterprise is attempting to fix a client computer that cannot start. The administrator presses **F8** during startup and selects the **Recovery Environment** entry, which boots the computer into Windows RE. He logs on by using a local administrator account, and selects the full-volume restore application from the list of available tools. Once the restore has completed, the administrator clicks the **Reset** button in Windows RE, and the computer restarts.

Workflow

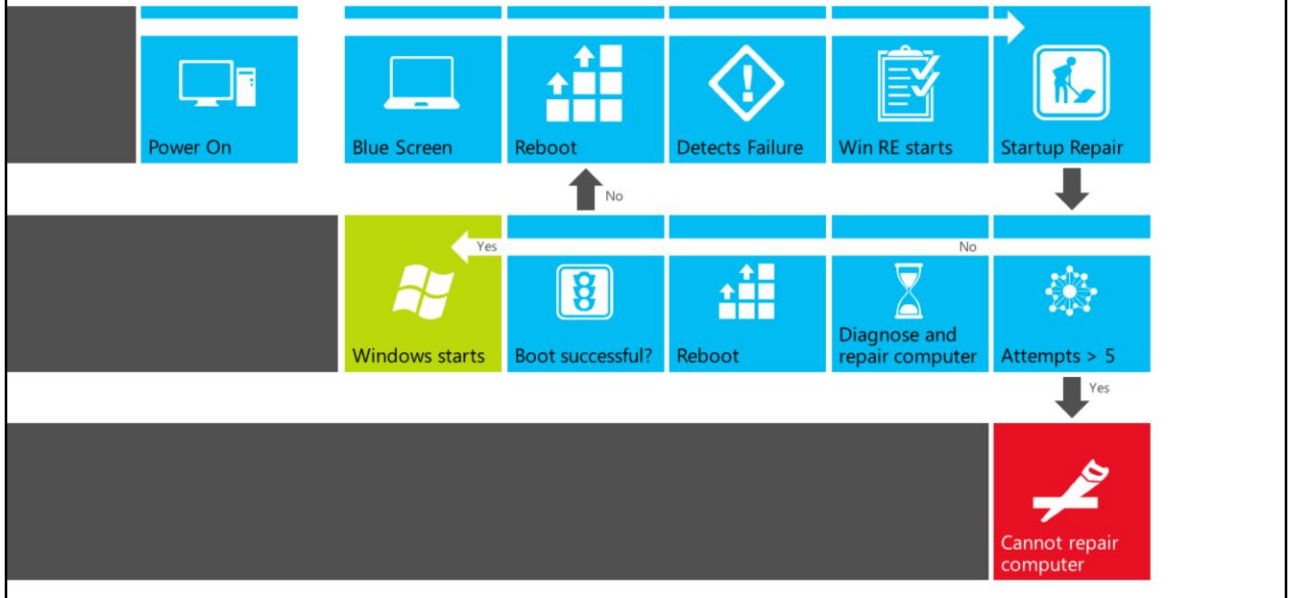





Image-based Recovery

 <p>User-created Recovery Image</p>	<p>End users can utilize backup tool to create a own backup image</p> <p>Can be stored on external hard disk or on a hard disk partition</p>	
 <p>Factory-created Recovery Image</p>	<p>Recovery image can be placed on the Windows RE partition</p> <p>OEM can utilize imaging APIs for Windows to restore OS volume</p>	

In the event that the Windows installation cannot be repaired with Startup Repair or other manual repair steps, Windows RE can be used to launch an image-based recovery tool.

User-created Recovery Image

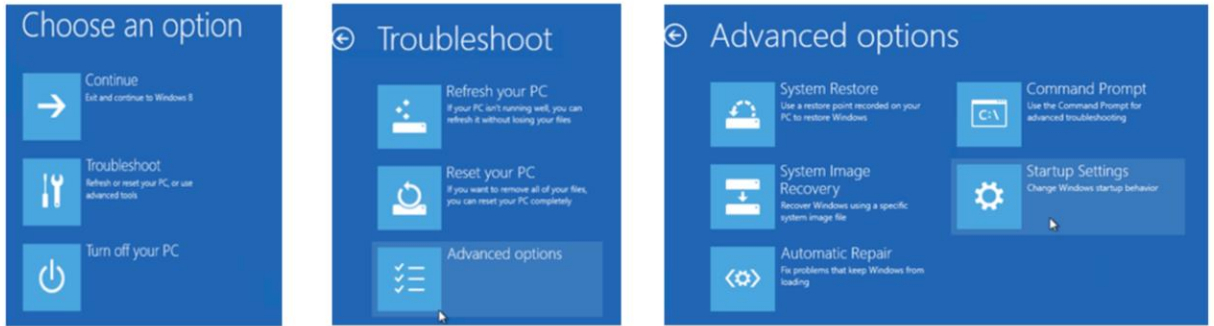
Windows Vista provides end users with the ability to create a backup image of their entire operating system. End users can do this by using the Backup tool. The system image can be stored on an external hard disk, on a hard disk partition other than those imaged, or on a DVD. To restore the computer by using this system image, users must launch the restore interface from the list of Windows RE manual tools.

Factory-created Recovery Image

To facilitate restoring a computer to its factory state, a recovery image can be placed on the Windows RE partition. This eliminates the need for a separate recovery media in most cases.

If the Windows image format is used in the manufacturing process, the same operating system image can be used for recovery as well. A computer manufacturer can develop an application by using the Imaging APIs for Windows and the Windows image to restore the operating system volume. This application can be launched from the Windows RE user interface (UI) by using customizations provided by the ODM.

Windows RE Tools



System Restore: Goes back to a previous restore point. (Note: Most enterprise environments disable creating system restore points.)

System Image Recovery: Recovers Windows using a specific system image file.

Automatic Repair: Fixes problems with the boot files, BCD database and other startup issues.

Windows RE Repair Actions (1)

Problem	Repair Action	Automated	Manual
Registry corruption	System Restore Repair using backup registry	✓ ✓	✓ ✓
Missing or damaged system and driver files	Repair using system cache Repair using driver store	✓ ✓	✓ ✓
Corrupt disk metadata	Disk metadata repair	✓	✓
Corrupt file system metadata	Chkdsk	✓	✓
Blue screen caused by driver	System Restore Remove incompatible drivers	✓ ✓	✓ ✗

Windows RE Repair Actions (2)

Problem	Repair Action	Automated	Manual
Incompatible Hotfix/SP	System Restore	✓	✓
Bad Memory	Windows Memory Diagnostics	✓	✓
Bad Hard Drive	Windows Disk Diagnostics CompletePC restore	✓ ✗	✗ ✓
Missing or Damaged BCD	Rebuild BCD	✓	✓
Irreparable System	Complete PC restore	✗	✓

Push-button Reset with Windows 8

Push-button reset is a new feature with Windows 8

Enables users to repair PC with preserving their data

Possibility to customize feature with custom scripts

Lowers custom recovery solutions in your enterprise



<http://technet.microsoft.com/en-us/library/jj126997.aspx>

On Windows 8 editions, Windows RE includes push-button reset features that enable your users to repair their PCs quickly while preserving their data and important customizations. This can help you satisfy support obligations with faster average resolution times and fewer resources. You can customize the push-button reset features by inserting custom scripts that can install applications or preserve additional data. This can help you eliminate or lower the development costs of custom recovery solutions.

The following recovery functions are available in push-button reset:

Refresh your PC fixes software problems by reinstalling the factory image, while preserving user accounts, data, and Windows® Store apps.

Reset your PC prepares the PC for recycling or transfers of ownership by removing all user data and reinstalling the factory image.

Push-button reset features can be run from a hard drive partition with Windows RE, or from external media such as a USB flash drive or DVD that includes Windows RE.

You can also prepare the PC to enable your users to create their own external recovery media, and provide the option to optionally reclaim the hard drive space for their own use. For more information, see [How to Configure Bare-Metal Restore/Recovery Media](#).

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