Rescue Environment

> **Caution**
> Absolutely the first thing you need to do after purchasing and installing Macrium Reflect is create Rescue Media

If you lose your Windows operating system, you can start your PC using Macrium Reflect rescue media on CD, DVD, or USB stick. This makes creating rescue media the first thing you need to do with Macrium Reflect. It contains a bootable, lightweight version of Windows and a full version of Macrium Reflect.

This lightweight version of Windows is called Windows Pre-installation Environment (also known as Windows PE or WinPE) and is provided by Microsoft. When you create rescue media, Macrium Reflect downloads Windows PE automatically for you and writes it to your media. It downloads just those components you need to rescue your system.

You have the option of restoring to a new system or virtual machine using Macrium ReDeploy to reconfigure your Windows installation for the new hardware.

Windows PE and the rescue environment

Windows PE is a reduced version of Microsoft Windows that is designed to boot from CD, DVD or USB on a wide range of hardware. When you run the rescue media wizard, Macrium Reflect automatically downloads the Windows PE components from Microsoft and builds the rescue environment locally. The Macrium Windows PE rescue media has the following features:

- Fixes for boot problems
- Macrium ReDeploy to prepare Windows to load on new hardware
- RAID support
- USB 3.0 support
- CD boot
- USB boot
- Boot menu
- Full version of Macrium Reflect
- Reduced download size compared with full Windows Automated Installation Kit (WAIK) - 150 MB to 450 MB (depending on PE version and 32- or 64-bit support)

Windows PE hardware support

The Macrium Rescue Environment needs to include support for your hardware such as USB ports, network interfaces, and in particular for your storage device if for example you use RAID disks. The default Windows PE environment supports a good selection of hardware and you can add support for further devices. When Macrium Reflect creates a rescue CD or USB, it analyses your system hardware and tries to locate drivers for unsupported devices by looking on your system. If it can't find appropriate drivers, Macrium Reflect prompts you to provide drivers. You can provide drivers by finding driver packages on the local hard drive, looking for driver CDs supplied with the system, or downloading drivers from the web. After you provide these additional drivers, Macrium Reflect adds them to the Windows PE environment.

> **Note:** You cannot add support for booting media because booting takes place before drivers are loaded. For example, if your CD drive is connected via an unsupported SCSI interface card or your boot menu lies on an unsupported RAID array, then the Windows PE cannot boot. Booting using a USB stick is a good workaround in this case as all USB 2 interfaces are supported by default.

CD, DVD and USB rescue media

You can boot your computer into Windows PE from a CD, DVD, USB stick or USB attached external hard disk. For convenience or for automated restores to your system disk, you can add Windows PE to a boot menu that's displayed when your system first starts. Although, do not rely upon this local copy as a rescue mechanism because it could be lost if you suffered hard disk failure or corruption leaving you without a method for rescuing your system.

Macrium Reflect creates custom Windows PE systems for each installation type by downloading the required components from Microsoft.

Further reading:

- Creating rescue media
- Adding a boot menu option for Reflect recovery
- Preparing a USB stick for Windows PE
- Creating a bootable Windows PE USB stick
- Accessing network shares in Windows PE
- Technicians portable application support
- Adding device drivers to Windows PE
- About Adding Drivers to WinPE Rescue Media

- Fixing Windows boot problems
- Updating rescue media to include additional hardware drivers
- Adding iSCSI support to Windows PE
- Adding BitLocker support to Windows PE
- Restoring an image from within the Rescue Media