Rescue Media Builder

RMBuilder.exe

The Rescue Media Builder executable **'RMBuilder.exe'** is located in the Macrium Reflect installation folder, usually 'C:\Program Files\Macrium\Reflect'. **RM Builder.exe** can be launched independently or by taking the Rescue Media build menu option in **Macrium Reflect**.

RMBuilder.exe depends on the following files:

Description	Architecture	File name
DVD/CD Support	32 Bit	PrimoBurner.dll
	64 Bit	PrimoBurnerx64.dll
Free Edition	32 Bit	WaikFiles00x86.exe
	64 Bit	WaikFiles00x64.exe
Home/Workstation Edition	32 Bit	WaikFiles15x86.exe
	64 Bit	WaikFiles15x64.exe
Server Edition	32 Bit	WaikFiles20x86.exe
	64 Bit	WaikFiles20x64.exe
Server Plus Edition	32 Bit	WaikFiles25x86.exe
	64 Bit	WaikFiles25x64.exe

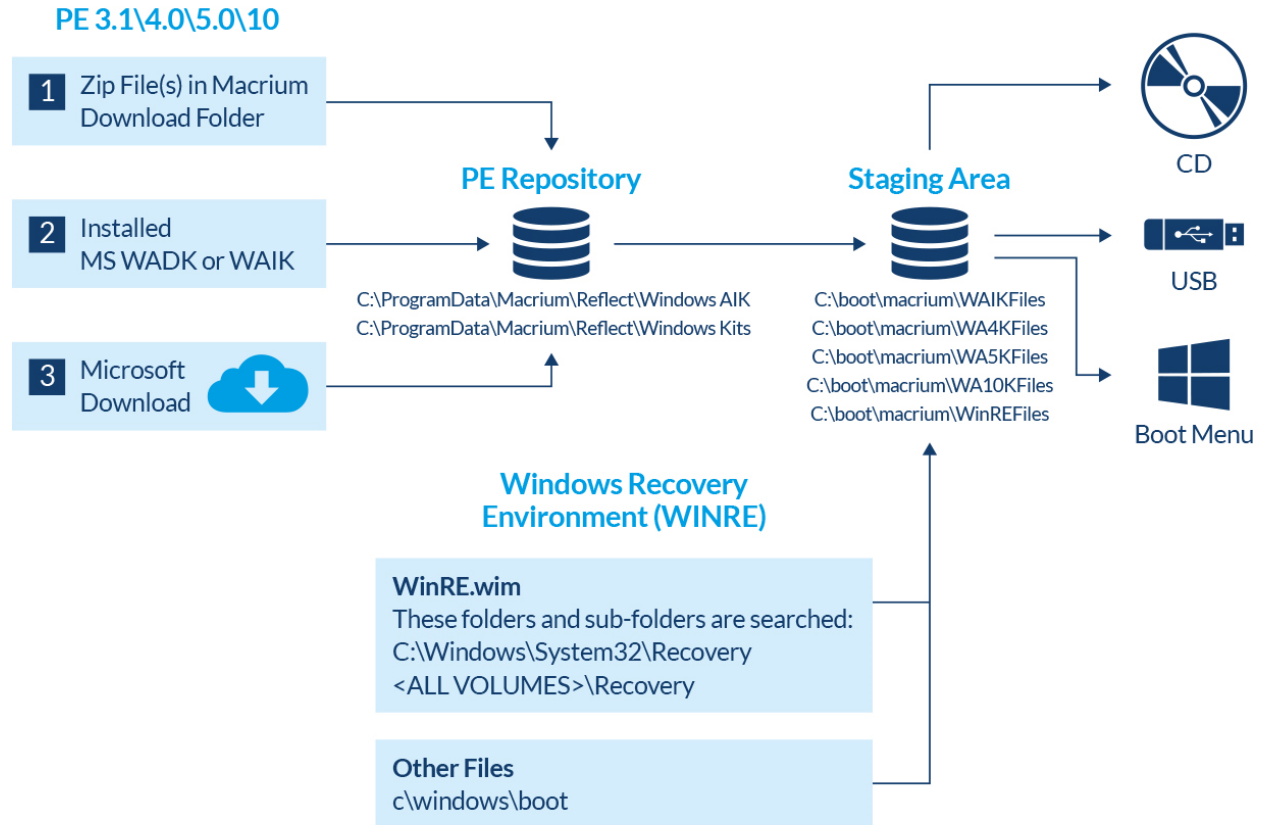**Note:** RMBuilder.exe requires Macrium Reflect to be installed.

Windows Image File (WIM) and toolset files location

For **Windows PE 3.1/4.0/5.0/10** the files required to build the Macrium Rescue media are copied from the **Input location** to the **Repository**. The **Repository** is then used to populate the **Staging Area** when rescue media is built from scratch or stale.

For the **Windows Recovery Environment (WinRE)** the required files are located on the current system and copied to the **Staging Area** when rescue media is built from scratch or stale.

The **Staging Area** provides the files for the **Boot Menu** and for creating **ISO/DVD/CD and USB** boot media.

Macrium Rescue Environment

PE 3.1\4.0\5.0\10

| 1 | Zip File(s) in Macrium Download Folder |

PE Repository

| 2 | Installed MS WADK or WAIK |

C:\ProgramData\Macrium\Reflect\Windows AIK
C:\ProgramData\Macrium\Reflect\Windows Kits

| 3 | Microsoft Download |

Staging Area

C:\boot\macrium\WAIKFiles
C:\boot\macrium\WA4KFiles
C:\boot\macrium\WA5KFiles
C:\boot\macrium\WA10KFiles
C:\boot\macrium\WinREFiles

CD

USB

Boot Menu

Windows Recovery Environment (WINRE)

WinRE.wim
These folders and sub-folders are searched:
C:\Windows\System32\Recovery
<ALL VOLUMES>\Recovery

Other Files
c\windows\boot

Windows PE 3.1/4.0/5.0/10

Required files to populate the **PE Repository** are searched for in the following sequence...

1. **PE Zip files**: - PE zip files(s) containing the Windows Image (WIM) file and toolset files are saved to the Macrium download folder by the Reflect download manager ReflectDL.exe.

   The default location is '**C:\users\<USER>\Downloads\Macrium'**

Windows PE	File Name
PE 3.1	pe3x64.zip pe3x86.zip
PE 4.0	pe4x64.zip pe4x86.zip
PE 5.0	pe5x64.zip pe5x86.zip
PE 10	pe10_1709x64.zip pe10_1709x86.zip

   .
2. **WAIK/WADK -** Windows is searched for installations of the **Windows® Automated Installation Kit (AIK)** for PE 3.1 or the **Windows® Assessment and Deployment Kit (Windows ADK)**. These products contain the Windows Image File (WIM) and tools to create the rescue media.

   https://docs.microsoft.com/en-us/windows-hardware/get-started/adk-install
   https://www.microsoft.com/en-us/download/details.aspx?id=5753

> **Note:** The **WADK** and **WAIK** download is several GB. It isn't necessary to manually install these products unless you are having problems with the automated download.

3. **Automated Download -** Finally, any missing files are automatically downloaded directly from Microsoft and copied to the **PE Repository.**

> **Note:** If there is no Internet connection at this stage then the build process will fail.

PE Repository

Files located in **1.** above are copied to the PE repository in the following folders.

PE Version	Location
3.1	C:\ProgramData\Macrium\Reflect\Windows AIK
4.0	C:\ProgramData\Macrium\Reflect\Windows Kits\8.0
5.0	C:\ProgramData\Macrium\Reflect\Windows Kits\8.1
10	C:\ProgramData\Macrium\Reflect\Windows Kits\10

Windows Recovery Environment (WinRE)

Files for the **Windows Recovery** rescue environment are pre-existing and located on the local file system.

The folowinng **folders, and sub-folders** are searched for file **WinRE.wim**

C:\Windows\System32\Recovery
<ALL VOLUMES>\Recovery

If multiple copies of **WinRE.wim** are found then each WIM is examined and the WIM that contains the most recent Windows OS is copied to the **Staging Area.**

Additional toolset files are copied from folder **'C:\Windows\Boot'**

Staging Area

The Staging Area is re-populated each time the rescue media is re-built. Immediately after the Windows Image (WIM) file is copied to the Staging Area, it is mounted and the current version of Macrium Reflect is copied to the WIM file system along with required components and additional files extracted from **WaikFilesxNNnnn.exe.**

PE Version	Location
3.1	C:\boot\macrium\WAIKFiles
4.0	C:\boot\macrium\WA4KFiles
5.0	C:\boot\macrium\WA5KFiles
10	C:\boot\macrium\WA10KFiles
WinRE	C:\boot\macrium\WinREFiles

Output

When the **'Build'** button is clicked files are copied from the **Staging Area** to the rescue media target. For the **Boot menu**, the **Windows Boot Configuration Data (BCD)** is updated to add a **'Macrium Reflect System Recovery'** menu option which loads the Windows Image File (WIM) directly from the Staging Area.

For more information on the Windows BCD please see here: https://en.wikipedia.org/wiki/Windows_Vista_startup_process