

Bootable Minimum Win 7 PE On A USB Stick

Windows Pe (Windows Preinstallation Environment)

- Minimal Operating System
- Used To Prepare A Computer For Windows Installation

The Major Steps In Putting A Minimal Win 7 Pre-Execution Environment On A USB Stick Are:

1. Prepare The USB Stick
2. Download & Install Win 7 Automated Installation Kit (AIK)
3. Build A PE (Pre-Execution Environment) Directory
4. Prepare The Windows Image (Wim) File
5. Put The PE (Pre-Execution Environment) Files On The USB
6. Boot From Your Minimum Win 7 PE USB Stick

STEP 1: PREPARE THE USB STICK

- A 1 gigabyte USB stick will more than suffice.
- Use DISKPART to prepare the USB stick to be bootable

DISKPART

- Powerful
- Dangerous if misused
- Command-line program

RUN DISKPART

- Ctrl + Esc | type Powershell or Cmd in the "Search Box" | hit Enter|
- Type **DISKPART** | hit Enter

- Enter following DISKPART commands:

List disk	(optional to help you specify the correct "index" number)
select disk 1	(for the case of 1 hard drive, assigned index of 0, and 1 USB stick)
detail disk	(info will help verify that you've selected the desired USB stick)
clean	{Removes all partition or volume formatting from disk with focus}
create partition primary	{create a primary partition }
select partition 1	{select the partition you just created}
active	(mark the partition as Active, ie, a system bootable partition)
format quick fs=fat32	(format the partition as Fat32)
assign	(assign next available drive letter to the volume)
exit	(exit DISKPART and return to the command-shell prompt)

- Type EXIT | hit ENTER Exit from the command-shell.

REMOVE THE USB STICK

STEP 2: DOWNLOAD & INSTALL WIN 7 AUTOMATED INSTALLATION KIT (AIK)

The Win 7 AIK is a set of tools and documentation that support the configuration and deployment of Windows® operating systems

DOWNLOAD THE AIK

The Windows® Automated Installation Kit (AIK) for Windows® 7 RC download URL is:

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<http://www.microsoft.com/downloadS/details.aspx?familyid=60A07E71-0ACB-453A-8035-D30EAD27EF72&displaylang=en>

You will be downloading a 1.40 GB (1,505,271,808 bytes) ISO file.

BURN THE AIK ISO FILE

Win 7 comes with a very primitive command-line ISO burner, named, ISOBURN.EXE which is located in your \windows directory. You can use ISOBURN.EXE, I did, to burn the ISO to a DVD.

Don't have a computer with Win 7 installed handy? Use the free Active@ ISOBURNER. The URL is: <http://software.isoft.net/IsoBurner-Setup.exe>

Burn the ISO to a DVD.

INSTALL THE AIK

- Run the AutoRun.inf file on the DVD.
- Take a short break while the Win 7 Automated Installation Kit (AIK) is installed.
- After installation, you will have:

\Program Files\Windows AIK folder (with sub-folders)
Entry for Windows AIK in your "All Programs" menu.

STEP 3: BUILD A PE (Pre-Execution Environment) DIRECTORY

- Use **COPYPE.CMD** to build the PE directory structure. **COPYPE.CMD** is located in C:\Program Files\Windows AIK\Tools\PETools.
- With Windows Explorer (Win + E) navigate to: C:\Program Files\Windows AIK\Tools\PETools
- Shift + right-click on C:\Program Files\Windows AIK\Tools\PETools
- Select "Open command windows here".
- Enter: **COPYPE.CMD x86 C:\winpe**

Use either x86 or amd64 as appropriate. The folder name winpe is not sacred. Use any name you desire.

- Hit Enter key and the copype.cmd will run.
- Close the command prompt window (after COPYPE.CMD finishes):
- Type EXIT and hit Enter

STEP 4: PREPARE THE WINDOWS IMAGE (WIM) FILE

Deployment Image Servicing and Management (DISM) is:

- A command line tool, DISM.EXE
- utilized to prepare the Windows Image (WIM) file
- utilized to service a Windows Image (WIM) file
- located in \Program Files\Windows AIK\Tools\Servicing

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DO NOT USE THE DISM.EXE LOCATED IN \WINDOWS\SYSTEM32.

- Run DISM as Administrator: **Ctrl + Esc** | type **Cmd** in the "Search Box" | **rt-click** on **CMD.EXE** in the resulting Programs list | select "Run as Administrator"

- Change present working directory:

```
CD c:\program files\Windows AIK\Tools\Servicing
```

- Prepare the WIM
To do anything with a WIM, you must "Mount" a WIM.
DISM insists upon the "index" parameter, even when the WIM file contains only one OS image.

```
DISM /MOUNT-WIM /MOUNTDIR:C:\winpe\mount /WIMFILE:C:\winpe\winpe.wim /INDEX:1
```

- Unmount and save changes to the WIM file. The DISM word for save is COMMIT!

```
DISM /UNMOUNT-WIM /MOUNTDIR:C:\winpe\mount /COMMIT
```

- Our winpe.wim file GREW!

Original size: 113,772,853 winpe.wim

Size after a mount and unmount with commit: 114,526,083 winpe.wim

For reasons beyond my understanding, these sizes have been different for each and every min WinPE I've made.

- COPY THE WINPE.WIM TO THE \ISO\SOURCES SUBFOLDER AS BOOT.WIM

```
Copy c:\winpe\winpe.wim c:\winpe\ISO\sources\boot.wim
```

STEP 5: PUT THE PE (PRE-EXECUTION ENVIRONMENT) FILES ON THE USB

Step 1: Insert the USB stick which you prepared

Step 2: Go to a command shell prompt - **Ctrl + ESC** | **CMD.EXE** | **Enter**

Step 3: Copy entire \ISO directory onto the USB stick

```
xcopy c:\winPE\iso\*.* f:\ /e
```

where f: represents the drive letter used by your USB stick

Step 4: close the command shell: **Exit** | **Enter**

Step 5: REMOVE THE USB STICK

NOTE: This minimum Win 7 PE used 142,610,432 bytes space on the USB stick.

STEP 6: BOOT FROM YOUR WIN 7 PE USB STICK

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- If needed, Boot into your BIOS setup routine and move booting from USB up to the top of the boot list.
- Save and exit from the BIOS setup routine.
- Shutdown your computer.
- Insert your brand-new Win7 PE stick into a USB port.
- Turn on your computer.