

CREATE WINPE USING WAIK FOR WINDOWS 7

Run Deployment Tools CMD

As you already know, we have to have WAIK installed on our system. WAIK contains Deployment Tools CMD which we will use to create our WinPE ISO. To run Deployment Tools CMD go to **Start > All Programs > Microsoft Windows AIK > Deployment Tools Command Prompt**.

Create WinPE ISO

Deployment Tools Command Prompt will automatically take us to the PETools folder. Here we will run '**copype**' command, and specify 32bit system (with x86), and specify a folder where our WinPE will be saved (in our case **C:\wpe**). The command looks like this: '**copype x86 c:\wpe**'.

```
C:\Program Files\Windows AIK\Tools\PETools>copype x86 c:\wpe
-----
Creating Windows PE customization working directory
c:\wpe
-----
1 file(s) copied.
1 file(s) copied.
C:\Program Files\Windows AIK\Tools\PETools\x86\boot\bcd
C:\Program Files\Windows AIK\Tools\PETools\x86\boot\boot.sdi
C:\Program Files\Windows AIK\Tools\PETools\x86\boot\bootfix.bin
C:\Program Files\Windows AIK\Tools\PETools\x86\boot\etfsboot.com
C:\Program Files\Windows AIK\Tools\PETools\x86\boot\fonts\chs_boot.ttf
C:\Program Files\Windows AIK\Tools\PETools\x86\boot\fonts\cht_boot.ttf
C:\Program Files\Windows AIK\Tools\PETools\x86\boot\fonts\jpn_boot.ttf
C:\Program Files\Windows AIK\Tools\PETools\x86\boot\fonts\kor_boot.ttf
C:\Program Files\Windows AIK\Tools\PETools\x86\boot\fonts\ugl4_boot.ttf
9 File(s) copied
C:\Program Files\Windows AIK\Tools\PETools\x86\EFI\microsoft\boot\bcd
C:\Program Files\Windows AIK\Tools\PETools\x86\EFI\microsoft\boot\fonts\chs_boot
.ttf
C:\Program Files\Windows AIK\Tools\PETools\x86\EFI\microsoft\boot\fonts\cht_boot
.ttf
C:\Program Files\Windows AIK\Tools\PETools\x86\EFI\microsoft\boot\fonts\jpn_boot
.ttf
C:\Program Files\Windows AIK\Tools\PETools\x86\EFI\microsoft\boot\fonts\kor_boot
.ttf
C:\Program Files\Windows AIK\Tools\PETools\x86\EFI\microsoft\boot\fonts\ugl4_boo
t.ttf
6 File(s) copied
1 file(s) copied.
Success
Updating path to include peimg, cdimage, inagex
C:\Program Files\Windows AIK\Tools\PETools\
C:\Program Files\Windows AIK\Tools\PETools\..\x86
c:\wpe>_
```

Image 186.1 - copype Finished Successfully

Once the files are copied we are automatically transferred to the **c:\wpe** folder.

Let's see the content of that folder using the 'dir' command.

```
c:\wpe>dir
Volume in drive C has no label.
Volume Serial Number is BC51-CE5D

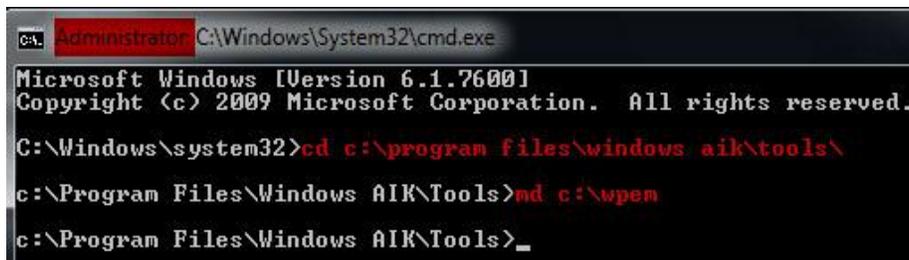
Directory of c:\wpe
05/03/2011 09:18 PM <DIR> .
05/03/2011 09:18 PM <DIR> ..
06/10/2009 02:14 PM 4,096 etfsboot.com
05/03/2011 09:18 PM <DIR> ISO
05/03/2011 09:18 PM <DIR> mount
07/13/2009 07:51 PM 114,088,185 winpe.wim
2 File(s) 114,092,281 bytes
4 Dir(s) 31,647,576,064 bytes free
c:\wpe>_
```

Image 186.2 - wpe Folder Content

In our **C:\wpe** folder we see that we have ISO folder, which is the folder that we will burn to an image. Also we have default **winpe.wim** file, and we have **etfsboot.com** file (which is boot manager).

The next step is to open **wimpe.wim** image file and copy files that we want into that image. The main thing that we want to copy to winpe.wim is the **ImageX** tool.

To do that we will open second command prompt with elevated privileges (right-click CMD, then select 'Run as administrator'). In that second CMD we will go to the 'c:\program files\windows aik\tools\' folder. Use the 'dir' command to check the content of that folder. What we need to do next is use the ImageX command to mount the c:\wpe folder. Before we do that we have to create a folder to mount it to. In our case we will create c:\wpem folder.

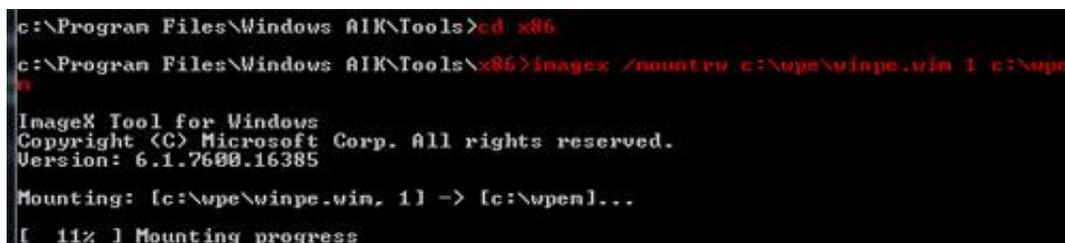


```
C:\Windows\System32\cmd.exe
Microsoft Windows [Version 6.1.7600]
Copyright (c) 2009 Microsoft Corporation. All rights reserved.

C:\Windows\system32>cd c:\program files\windows aik\tools\
c:\Program Files\Windows AIK\Tools>md c:\wpem
c:\Program Files\Windows AIK\Tools>_
```

Image 186.3 - wpem Folder Created

ImageX for 32bit systems is located in the 'x86' folder, so we will open it. Next, we will use **ImageX** command with **/mountrw** switch. /mountrw will make our mount readable and writable. We will also choose our **winpe.wim** file, boot the first installation in it (option 1), and choose our output folder (c:\wpem). The final command looks like this: '**imagex /mountrw c:\wpe\winpe.wim 1 c:\wpem**'.



```
c:\Program Files\Windows AIK\Tools>cd x86
c:\Program Files\Windows AIK\Tools\x86>imagex /mountrw c:\wpe\winpe.wim 1 c:\wpe
ImageX Tool for Windows
Copyright (C) Microsoft Corp. All rights reserved.
Version: 6.1.7600.16385
Mounting: [c:\wpe\winpe.wim, 1] -> [c:\wpe]...
[ 11% ] Mounting progress
```

Image 186.4 - Mounting Process

The content from the **c:\wpe** folder was mounted to the **c:\wpem** folder. When the mount is complete we can browse to the **c:\wpem** folder and see the content of the image.



Image 186.5 - wpem Folder

Now we have to copy ImageX from the '**C:\Program Files\Windows AIK\Tools\x86**' folder to our '**c:\wpem**' folder.



Image 186.6 - ImageX Copied

Now we can unmount the image and commit changes. Remember that we can also copy other data, tools, drivers or anything else that we want to have available once we boot up with that WinPE image. To unmount the image let's go to the command prompt and run the following command: '**imagex /unmount /commit c:\wpem**'.

```
c:\Program Files\Windows AIK\Tools\x86>imagex /unmount /commit c:\wpem
ImageX Tool for Windows
Copyright (C) Microsoft Corp. All rights reserved.
Version: 6.1.7600.16385
Committing: [c:\wpem]...
```

Image 186.7 - Committing Changes and Unmounting

What really happened is that the content of the c:\wpem folder (mount) was saved to the windows image. Image was then unmounted and saved to the winpe.wim file.

Next, we are going to copy **c:\wpe\winpe.wim** file to the **c:\wpe\ISO\sources** folder and change the name to **boot.wim**. We can do this using Windows Explorer. The '**sources**' folder of every Windows 7 installation contains two important files: **install.wim** and **boot.wim**. The boot.wim is for booting the DVD and starting the installation. Install.wim stores the actual installation files. At this point we can create ISO image from our prepared folder. The WAIK has a tool called **oscdimg** (Operating System CD Image) creator which we can use to create ISO images from data on our hard drive. Let's go back to Deployment Tools Command Prompt and run the **oscdimg** command. We will specify **-n** for long file names, specify the **source folder**, specify **destination file**, and also specify the **boot files** which will be included in the boot sector (**-b**), so that our image will be bootable. The whole command is: '**oscdimg -n c:\wpe\iso c:\wpe\winpe.iso -b"c:\wpe\etfsboot.com"**'.

```
c:\wpe>oscdimg -n c:\wpe\iso c:\wpe\winpe.iso -b"c:\wpe\etfsboot.com"
OSCDIMG 2.55 CD-ROM and DUD-ROM Premastering Utility
Copyright (C) Microsoft, 1993-2007. All rights reserved.
Licensed only for producing Microsoft authorized content.

Scanning source tree
Scanning source tree complete <17 files in 8 directories>

Computing directory information complete
Image file is 143167488 bytes
Writing 17 files in 8 directories to c:\wpe\winpe.iso
100% complete
Final image file is 143167488 bytes
Done.
c:\wpe>
```

Image 186.8 - oscdimg Complete

Once the ISO image is complete we can burn it to a CD or DVD, which we can then use to boot our computer from.

Remember

Using WAIK tools, we have to prepare WinPE ISO before we can capture reference computer. Our WinPE ISO has to contain ImageX tool, which we will use to capture Windows image.

Commands that are mentioned in this article

- **copy x86 c:\wpe** - creates a destination folder, which contains the WINPE.WIM file, a MOUNT folder you can use to mount the WIM using ImageX or DISM, an ISO folder that contains all the files needed to create a WinPE ISO image, and the BIN file needed to make the ISO bootable
- **md c:\wpem** - make new directory named 'wpem' in c:\ folder.

- **imagex /mount /w c:\wpe\winpe.wim 1 c:\wpem** - used to mount the winpe.wim image (first installation) to the c:\wpem folder with read and write permissions.
- **imagex /unmount /commit c:\wpem** - unmount image and commit all changes
- **oscdimg -n c:\wpe\iso c:\wpe\winpe.iso -b"c:\wpe\etfsboot.com** - create ISO image from files in the 'iso' folder and include boot files. Destination file is 'winpe.iso'

Paths that are mentioned in this article

- **Start > All Programs > Microsoft Windows AIK > Deployment Tools Command Prompt** - path to the CMD which will automatically include paths for dism, oscdimg and imagex
- **c:\wpe** - folder in which we copied WinPE
- **c:\program files\windows aik\tools** - path to the WAIK tools
- **c:\wpem** - folder which we used to mount winpe.wim image.
- **c:\wpe\ISO** - folder which we used to create the final WinPE ISO file.

Source: <http://www.utilizewindows.com/7/deployment/186-create-winpe-using-waik-for-windows-7>