Creating WinPE 2.0 PXE Bootable Image

This document describes how to make it possible to boot WinPE 2.0 via PXE

In order to create WinPE 2.0 PXE Bootable Image the following things are required:

- Supplied from Paragon
 - Customization scripts
 - Windows PE directory structure containing the binary files to be added (by default it is named winpe_custom)
 - o Paragon Deployment Manager installed
- Not supplied from Paragon
 - Tools for wim images and WinPE 2.0 maintaining (imagex, peimg, dll libraries and wimfltr.sys driver) and supplementary files for bootable images creation. All these components are included into Windows Automated Installation Kit (WAIK) or OEM Preinstallation Kit (OPK) packages, so you need to install one of these packages in order to successfully customize WinPE 2.0 images. For more information regarding these software kits please refer to Microsoft documentation.
 - Wim image which will be used as a raw. You can use default image winpe.wim which is included both into OPK and WAIK and located in C:\Program Files\Windows AIK\Tools\PETools\<platform> (for WAIK) or C:\Program Files\Vista OPK\Tools\PETools\<platform> (for OPK), where <platform> is "x86" or "amd64".

In order to get bootable PXE image use *build.cmd*. This script calls *dm_custom.cmd* and *makepxe.cmd* scripts which already have default settings defining paths for OPKtools, raw wim image and PXE boot directory. Default paths are:

- for OPK: C:\Program Files\Vista OPK\
- for WAIK: C:\Program Files\Windows AIK\
- for Deployment Manager: C:\Program Files\Paragon Software\Deployment Manager\
- for PXE boot directory: C:\Program Files\Paragon Software\Deployment Manager\PXEServer\

If your OPKTools (or WAIK) and Paragon Deployment Manager are installed into default paths, *build.cmd* will not require any modifications. Otherwise, you need to make some corrections: modify path to OPKTools location and PXE boot folder. Scripts which are to be modified: *dm_custom_init.cmd* (for path to OPK) and *build.cmd* (for path to PXE directory).

Path to OPKTools is set by *rootPath* variable of *dm_custom_init.cmd*. In order to modify it do the following:

- Open dm_custom_init.cmd this file in a text editor;
- □ Modify path after *rootpath*=
- □ Save the file and close the text editor

Path to PXE directory is set as a parameter for *makepxe.cmd* script which is called by *build.cmd*. In order to set proper path do the following:

- Open build.cmd in a text editor
- Put proper path to a PXE boot directory instead of "C:\Program Files\Paragon Software\Deployment Manager\PXEServer"
- □ Save the file and close the text editor

To make the PXE bootable WinPE 2.0 image manually, you need to perform the following steps:

- First, get the customized wim file. For this purpose you can use example script *build_image.cmd*. If your OPKTools (or WAIK) and Paragon Deployment Manager are installed into default paths, this script will not require any modifications. Otherwise, prior to use this script you need to modify the *build image.cmd*:
 - Open this cmd file with a text editor;
 - Find a long string starting from "call dm_custom.cmd" and modify parameters: wim-image name (maybe with path), path to directory with programs you want to put into wim-image, name (maybe with path) of result wim-image after the "wim" parameter;
 - □ Save this cmd file and run it with the same parameters as for iso making.

As a result you will get the customized wim image. Detailed description how to get customized wim image please read at the document "Customizing WindowsPE 2.0 using Paragon Customization Scripts".

2) When you have your customized wim image, run the build_pxe.cmd file. with paramaters: 1your customized wim file, 2- path, where your PXE server is located. Example for *tftpd32.exe*:

> makepxe.cmd mywinpe.wim "C:\Program Files\Paragon Software\Deployment Manager SBE\PXEServer"

The script will also copy "default" file into the "pxelinux.cfg" folder (previous "default" file will be saved as "default.old").

Note: if destination path where your PXE server is located contains spaces, it must be set into inverted commas.

3) Now you should have in your PXE server directory, the following files:

pxeboot.0
bootmgr.exe
Boot (folder)
Fonts (folder with some font files, example below)
chs_boot.ttf
cht_boot.ttf
jpn_boot.ttf
kor_boot.ttf
bcd
BCD.LOG
boot.sdi
winpe.wim

- 4) The following instructions are given for *tftpd32.exe*:
 - Open the "**pxelinux.cfg**" folder;
 - Set the PXE boot file in the PXE server options to "/pxeboot.0". To do this, use the Paragon PXE Server, as shown on Picture 1.

Paragon PXE se	rver		×
Current Directory Boot File	E:\Program Files\NetJa	pan\Multicast Solutic	Browse
PXE image	,		Browse
IP pool starting ad	dres: 10.0.0.20		
Size of pool	50		
Default router	0.0.0.0	Start	Save
Mask	255.0.0.0	Stop	Exit

Picture 1. Setting Boot File to "/pxeboot.0"

5) Now, you're ready to boot WinPE 2.0 on your client PC's.

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6) If you would like to boot Linux with PXE again, just return the old "default" file and change the Boot File setting in Paragon PXE Server back to "/pxelinux.0".