



Windows XP Embedded BSP for MSMST

User Guide

1 Revision History

Revision	Date	Author	Description
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3 Introduction

This document describes MSMST Board Support Package (BSP) for Microsoft Windows XP Embedded. This document provides:

1. XPE image building environment requirements;
2. BSP installation procedures.

4 XPE image building environment requirements

Host requirements:

1. Windows XP Embedded SP2 Feature Pack 2007 must be installed

5 XPE image deployment

5.1 Import the SLD-Files

The installation should be started with importing the .sld files into the component database by using the Microsoft Component Database Manager:

1. Open component database manager;
2. Under tab “database“, choose import and select the .sld files from the **SldFiles** directory of the BSP;
3. Close database manager.

5.2 Build the project

Follow the steps below to build a XPE project with support for MSMST:

1. Open the Target Designer Environment;
2. Open the .slx file from **ProjectFiles** directory of the BSP.
3. Execute dependencies check (F5) and resolve dependencies.
4. From menu „Configuration“ select “Build Target Image“ or press F7;
5. Verify that build type is set to Release, then choose “build“.

After the build process, the result can be found in the “Windows Embedded Images“ folder.

Created files and folders:

- Documents and Settings
- Program Files
- Windows
- BOOT.INI
- NTDETECT.COM
- NTLDR
- WERUNTIME.INI

5.3 Prepare the hard drive

Procedure:

1. Prepare the bootable device with Windows PE (see section 6 to learn how to create bootable USB flash drive with Windows PE)
2. Copy the created files and folders from the Windows project folder (see. 5.2) to the UFD (if you are going to use bootable UFD to prepare targets hard drive copy the files to the same UFD). Connect the UFD to the target.
3. Boot the target using Windows PE.
4. Run the **DiskPart** tool. For example, at the command prompt, type the following:

```
diskpart
```

5. Use the **DiskPart** tool to determine the disk number and device size to be used for the next step by typing the following at the **DiskPart** command prompt:

```
list disk
```

6. Use the **DiskPart** tool to partition and format the hard disk and make it bootable. For example, type the following at the **DiskPart** command prompt, replacing *<device_size>* with the capacity of the hard drive (in MB).

```
select disk <disk_number>
clean
create partition primary size=<device_size>
select partition 1
active
format fs=ntfs quick
assign
exit
```

7. Transfer the build to the prepared hard disk from the attached UFD. For example,

```
xcopy e:\msmst\*. * /s /e /f c:\
```

where e is the letter of your UFD containing the built project files in the msmst directory and c is the letter of the created partition on the hard drive.

8. Type exit in the command prompt and boot the target from its hard drive.

5.4 Image first boot

The FBA (first boot agent) should start and complete.

Use username "Administrator" with empty password to log in.

6 Creating a bootable USB flash drive with custom Windows PE image

Note: Workstation is a Windows7 operating system; Windows 7 AIK ([Windows Automated Installation Kit for Windows 7](#)) should be installed.

A bootable USB flash drive created in this section can be used for preparing target's hard drive and transferring the build to the target.

Note: Target designer project should support NTFS file system to be able to boot from the drive prepared using this bootable UFD.

Note: You can skip 6.1 and 6.2 and use ISO directory of the winpe_x86.zip archive delivered with BSP in 6.3.

6.1 Set up a Windows PE Build Environment

At a command prompt on your host computer, run the Copype.cmd script. The script is located at C:\Program Files*<version>*\Tools\PETools. The script requires two arguments: hardware architecture and target destination.

```
copype.cmd <arch> <destination>
```

Where *<arch>* can be **x86** or **amd64** and *<destination>* is a path to local directory. For example,

```
copype.cmd x86 c:\winpe_x86
```

The script creates the following directory structure and copies all the necessary files for that architecture.

```
\winpe_x86
\winpe_x86\ISO
\winpe_x86\mount
```

6.2 Add usb and sata drivers

Note: Silicon Image SiI 3132 SATALink Controller and NEC uPD720200 USB3 Controller drivers are needed to boot Windows PE on MSMST board. These drivers can be found in the **SldFiles\rep\sata** and **SldFiles\rep\usb** directories of the BSP.

Start a command prompt as an administrator. Click **Start**, click **All Programs**, and then click **Microsoft Windows AIK**. Right-click **Deployment Tools Command Prompt**, and then click **Run as administrator**.

Mount the base image by using the DISM tool to a local directory share. For example,

```
Dism /Mount-Wim /WimFile:C:\winpe_x86\winpe.wim /index:1
/MountDir:C:\winpe_x86\mount
```

Add drivers as appropriate by using the **Dism** command with the **/Add-Driver** option. For example:

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```
Dism /image:C:\winpe_x86\mount /Add-Driver /driver:C:\test\drivers\nusb3hub.inf
Dism /image:C:\winpe_x86\mount /Add-Driver /driver:C:\test\drivers\nusb3xhc.inf
Dism /image:C:\winpe_x86\mount /Add-Driver /driver:C:\test\drivers\SI3132.inf
```

Commit the changes using the **Dism** command with the **/Unmount-Wim /Commit** option. For example,

```
Dism /Unmount-Wim /MountDir:C:\winpe_x86\mount /Commit
```

Copy your custom image into \ISO\sources folder and rename to boot.wim. For example,

```
copy c:\winpe_x86\winpe.wim c:\winpe_x86\ISO\sources\boot.wim
```

6.3 Prepare a bootable UFD (USB Flash Drive)

During a running Windows 7 operation system, insert your UFD device. At a command prompt, use Diskpart to format the device as NTFS spanning the entire device, setting the partition to active. For example,

```
Diskpart
select disk 1
clean
create partition primary size=<size of device>
select partition 1
active
format fs=ntfs
assign
exit
```

where the value of `disk 1` is equal to UFD.

On your host computer, copy all the content in the \ISO directory to your UFD device. You can manually create the directory structure or use the **xcopy** command to automatically build and copy the appropriate files from your technician computer to your UFD device. For example,

```
xcopy c:\winpe_x86\iso\*.* /s /e /f f:\
```

where `c` is the letter of your host computer hard disk and `f` is the letter of your UFD device.

7 Image Installation from Norton Ghost Image

1. Create bootable USB flash disk: run HPUSBFW.EXE, select USB flash driver, set "Quick format" and "Create a DOS startup disk". Select directory DOS in Open File dialog. Press start;
2. Copy files MOUSE.COM and GHOST.EXE from Ghost directory to the USB flash root;
3. Set current time in BIOS;
4. Boot from USB flash;
5. Run mouse.com and ghost.exe;
6. Select Disk->from partition and choose *.gho file. Then select target disk. Press OK;
7. Reboot system after deploying completion.