DSEK-10

(Digital Signage Evaluation Kit)

User Guide

WinMate Communication INC.

Revision History

Version	Date	Note
1.0	2010.04.15 ✓	First Version

Package List

Before using this Digital Signage Evaluation Kit, please make sure that all the items listed below are present in your package

1. **Box (Packaging)**

2. **DSEK-10 Media Player**

3. **Microsoft Windows Embedded Standard 7 120-day Evaluation Toolkit DVD** (not to be available until end of May)

4. 1x DVD for WES 7 OS recovery
5. **1x CD for DSEK-10 hardware device drivers , user guide** and **platform technology brief**

6. **1x Lockable Power Supply 100-240 Vac / 12Vdc, 80W**
7. OEM solution briefs

Make sure that all of the items listed above are present. Do not attempt to apply power to the system if there is damage to any of its components.

FCC Statement

This device complies with part 15 FCC rules. Operation is subject to the following two conditions：

- This device may not cause harmful interference.
- This device must accept any interference received including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a class "a" digital device, pursuant to part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at him own expense.

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Trademark Acknowledgement

Disclaimer

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Warranty

We warrant that each of its products will be free from material and workmanship defects for a period of one year from the invoice date. If the customer discovers a defect, We will, at its option, repair or replace the defective product at no charge to the customer, provided it is returned during the warranty period of one year, with transportation charges prepaid. The returned product must be properly packaged in it's original packaging to obtain warranty service.

If the serial number and the product shipping data differ by over 30 days, the in-warranty service will be made according to the shipping date. In the serial numbers the third and fourth two digits give the year of manufacture, and the fifth digit means the month (e. g., with A for October, B for November and C for December).

For example, the serial number 1W07Axxxxxxxx means October of year 2007.

Customer Service

We provide service guide for any problem as follow steps： First, contact with your distributor, sales representative, or our customer service center for technical support if you need additional assistance. You may have the following information ready before you call：

- Product serial number
- Peripheral attachments
- Software (OS, version, application software, etc.)
- Description of complete problem
- The exact wording of any error messages

In addition, free technical support is available from our engineers every business day. We are always ready to give advice on application requirements or specific information on the installation and operation of any of our products. Please do not hesitate to call or e-mail us.

Safety Precautions

- Warning!

Always completely disconnect the power cord from your chassis whenever you work with the hardware. Do not make connections while the power is on. Sensitive electronic components can be damaged by sudden power surges. Only experienced electronics personnel should open the Player chassis.

- Caution!

Always ground yourself to remove any static charge before touching the CPU card. Modern electronic devices are very sensitive to static electric charges. As a safety precaution, use a grounding wrist strap at all times. Place all electronic components in a static-dissipative surface or static-shielded bag when they are not in the chassis.

Safety and Warranty

1. Please read these safety instructions carefully.
2. Please keep this user's manual for later reference.
3. Please disconnect this equipment from any AC outlet before cleaning. Do not use liquid or spray detergents for cleaning. Use a damp cloth.
4. For pluggable equipment, the power outlet must be installed near the equipment and must be easily accessible.
5. Keep this equipment away from humidity.
6. Put this equipment on a reliable surface during installation. Dropping it or letting it fall could cause damage.
7. The openings on the enclosure are for air convection. Protect the equipment from overheating. DO NOT COVER THE OPENINGS.
8. Make sure the voltage of the power source is correct before connecting the equipment to the power outlet.
9. Position the power cord so that people cannot step on it. Do not place anything over the power cord.
10. All cautions and warnings on the equipment should be noted.
11. If the equipment is not used for a long time, disconnect it from the power source to avoid damage by transient over-voltage.
12. Never pour any liquid into an opening. This could cause fire or electrical shock.
13. Never open the equipment. For safety reasons, only qualified service personnel should open the equipment.
14. If any of the following situations arises, get the equipment checked by service personnel:
    - A. The power cord or plug is damaged.
    - B. Liquid has penetrated into the equipment.
    - C. The equipment has been exposed to moisture.
    - D. The equipment does not work well, or you cannot get it to work according to the user's manual.
    - E. The equipment has been dropped and damaged.
    - F. The equipment has obvious signs of breakage.

15. Do not leave this equipment in an uncontrolled environment where the storage temperature is below -20° C (-4°F) or above 60° C (140° F). It may damage the equipment.

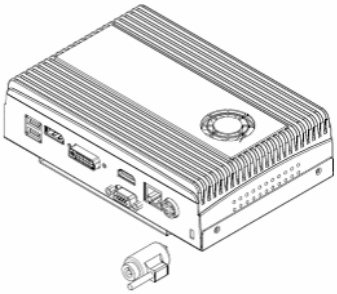
Table of Contents

1. GENERAL INFORMATION

1.1 Introduction

The MEDIA PLAYER is designed to satisfy most in the digital signage and industrial market, such as Shopping Mall, Education and Transportation. It's a PC-based system with DDR3 SDRAM, VGA, DVI-D, HDMI and Display Port controller, and on-board Gbit Ethernet. DSEK-10 integrates one Mini-Card (PCIe) slot and one PCIEx4 slot for expandability (Communication/Discrete Graphics). It is a compact design to meet the demanding performance requirements of today's Digital Signage applications.

DSEK-10 Media Player



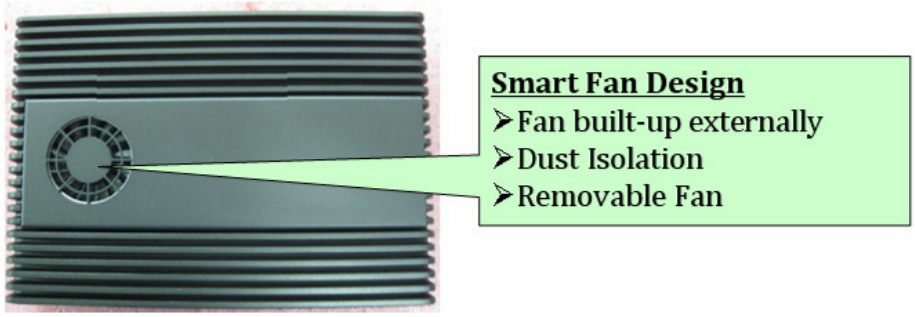
Windows Embedded Standard 7

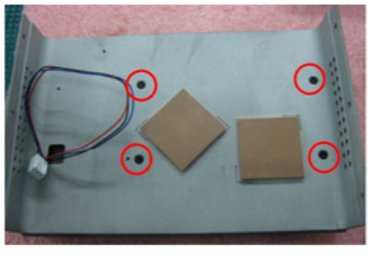
intel

1.2 Feature

1.2.1 Feature I Ultra Compact

1.2.2 Feature II External Fan



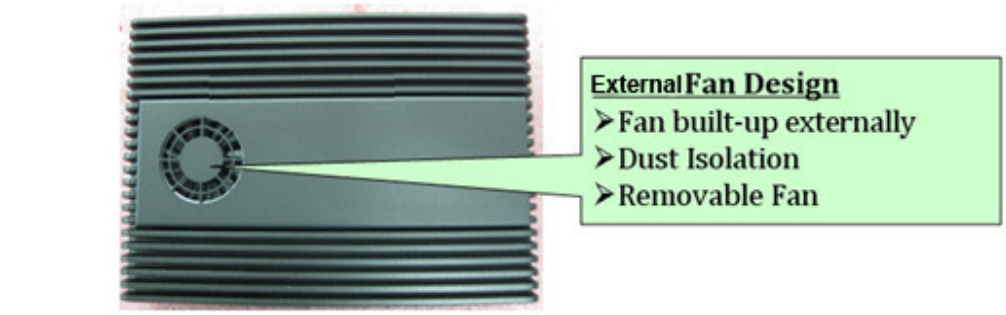


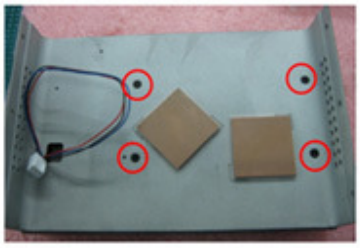
Remove internal screws
On upper housing

Unload the Fan Cover
from upper housing

Removable Fan

1.2.3 Feature III Service Window





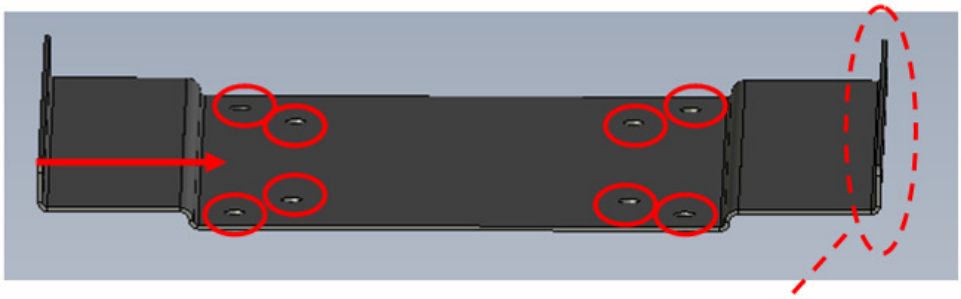
Remove internal screws
On upper housing

Unload the Fan Cover
from upper housing

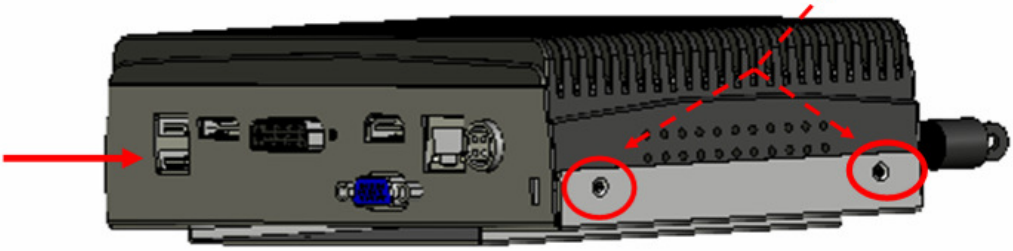
Removable Fan

1.2.4 Feature IV VESA Mount Bracket (Optional)

100x100 mm and
75x75mm VESA
Mount Support



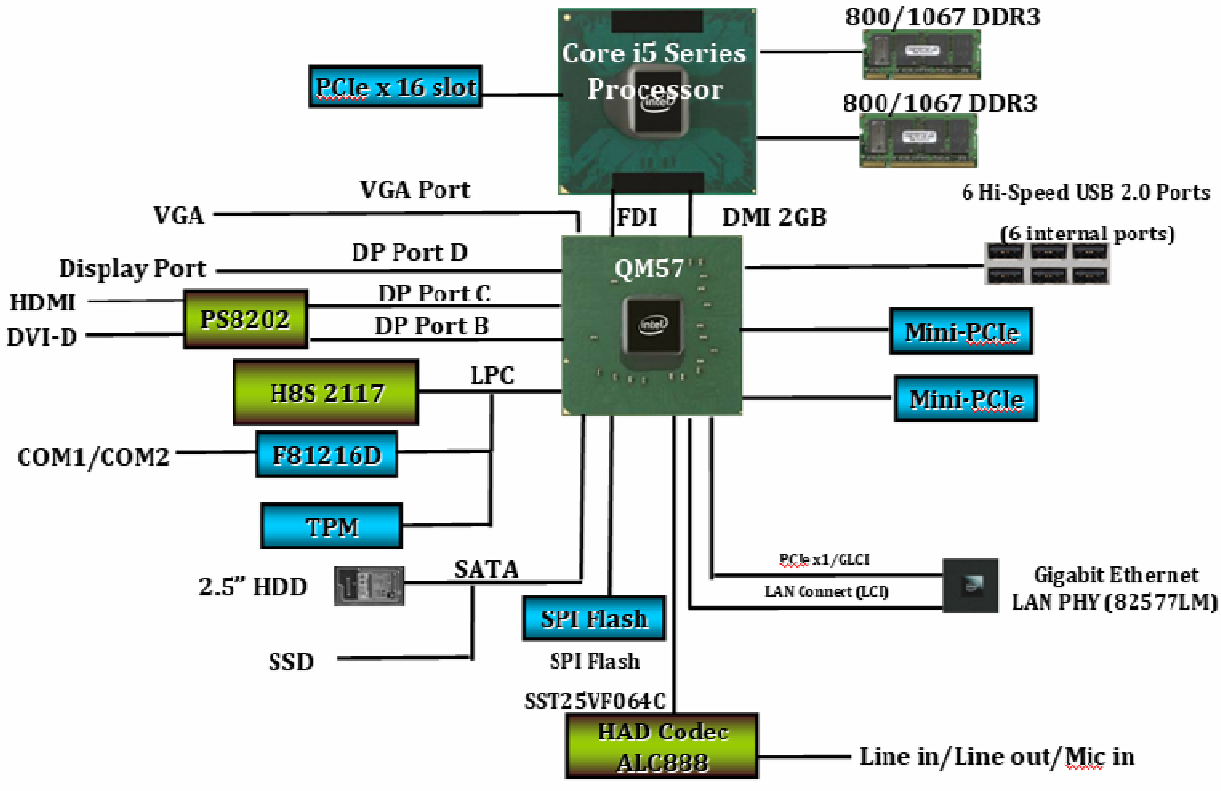
Screw Twin
Harbor



1.3 DSEK-10 MEDIA PLAYER Specifications

System Specification	
Processor	Intel® Core™ i5 Processor (520M)
System Chipset	Mobile Intel® QM57 Express Chipset
System Memory	2 x 2GB SO-DIMM DDR3 1066MT/s
System Storage	SATA 2.5 Hard Disk
BIOS	AMI 4Mbit SPI Flash
Graphic Chipset	Integrated Graphics
Ethernet	Intel® 82577LM Gigabit Ethernet
Audio	Realtek ALC 888 codec
USB	4 x USB ports, USB 2.0 Compliant
Wireless	WiFi / Bluetooth
Operating System	Microsoft Windows Embedded Standard 7
I/O Connectors	
Rear Panel External I/Os	1 x RJ-45 (10/100/1000 Mbps)
	1 x VGA
	1 x HDMI
	1 x DVI-D
	1 x Display Port
	2 x USB
Front Panel External I/Os	2 x USB
	1 x Power / SSD LED
	1 x Reset / Power on Button
	1 x Line-in / Line-out / Mic-in
Mechanical Specification	
Construction	Aluminum housing
Mounting	VESA Mounting
Dimension	184 x 50 x 125 mm (W x H x D)
Environmental Specification	
Operation Temperature	0~40°C
Operating Humidity	30%~90% (non-condensing, RH)

1.4 DSEK-10 Function Block



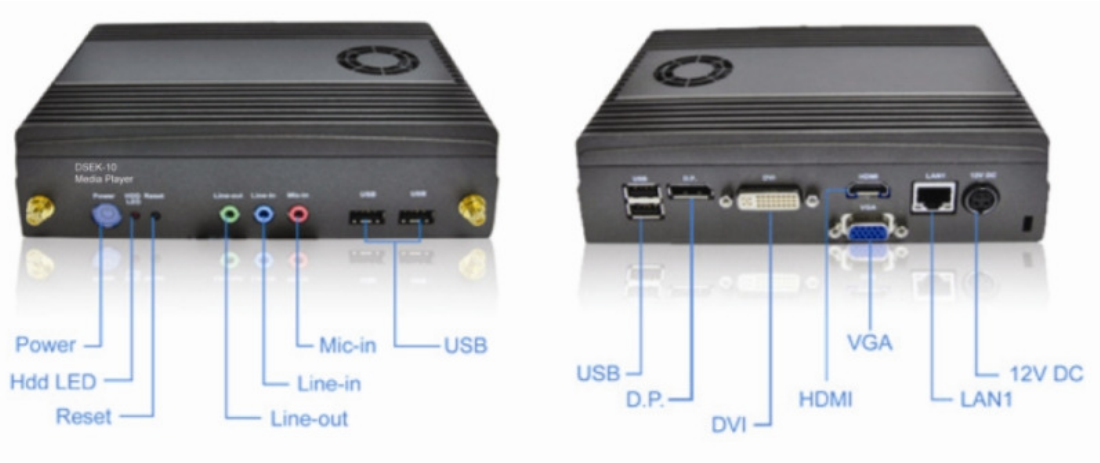
1.5 DSEK-10 Application

2. Getting Started

2.1 Input / Output Devices

The following figure shows the I/O arrangement of DSEK-10 Media Player. The backside of the chassis contains most of the connectors. DSEK-10 Media Player has three types.

DSEK-10 MEDIA PLAYER



2.2 Starting the MEDIA PLAYER

The following sections summarize the necessary hardware and power-on instructions for the DSEK-10 Media Player.

2.2.1 Required Peripherals

External USB interface DVD player (not included)

USB interface Keyboard and Mouse (not included)

External display (not included)

2.2.2 Power Up/Power Down

Steps to be completed by the user

1 Connect a USB keyboard in one of the USB connectors.

2 Connect a USB mouse in one of the USB connectors.

3 Connect a external monitor to one of the Multi-Display IO as below:

VGA port, DVI-D port, HDMI port, Display port.

4 Choose the right AC plug for your electrical outlets. Connect it to the 12V AC/DC adapter. Plug in the AC-DC adapter.

Steps to power-up the DSEK-10 Media Player

1 Press the power-button located at the front panel of chassis.

2 As the system boots, press Del to enter the EFI firmware setup

3 Check time, date, and configuration settings and change if necessary.

4 Press F10 to save and exit the EFI firmware setup.

Steps to Power-down the DSEK-10 Media Player

There are three options for powering-down the DSEK-10 Media Player:

1 Use OS-controlled shutdown through the menu (or equivalent).

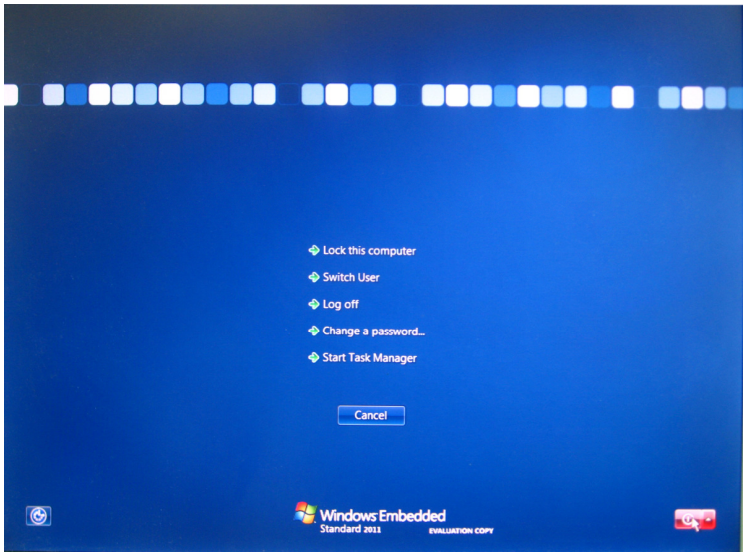
2 Press the power-button at the front panel of chassis to begin power-down.

3 If the system is hung, it is possible to asynchronously shut the system down by pressing the power-button continuously for 4 seconds.

Caution: We do not recommend powering down the board by removing power to the DC power supply or disconnecting the DC input from the board.

2.3 Shutting Down the MEDIA PLAYER

There is only one way we recommend that users can shut down the DSEK-10. Without “Start” in Microsoft Windows Embedded Standard 7 operating system, users can only simultaneously press the <Ctrl>, <Alt> and <Delete> keys, and then the screen will show like below:



Then, users can click the red button on the lower ride side. The media player will shut down soon.

Caution: We do not recommend that users directly press power button for the purpose of shutting down. The behavior might damage the machine.

3 Window Embedded Standard 7 First Boot

When first powering on your DSEK device, a video will begin playing automatically.

This video shows a demonstration of the Intel® Intelligent Digital Signage Proof of Concept, powered by Microsoft Windows Embedded Standard 7. The Proof of Concept was introduced at the National Retail Federation conference in January 2010, and was designed to stimulate new ways for businesses to increase profitability, engage customers, and collect business intelligence through digital signage.

The Proof of Concept video demonstrates much of what can be accomplished with the combined power of the Intel® Core™ i7 processor and the Microsoft Windows Embedded Standard 7 operating system. After viewing the video, you can download the Windows Embedded Standard Toolkit from http://www.microsoft.com/windowsembedded/en-us/products/westandard/futureversion.mspx and begin building your own Digital Sign using section 5 of this document, “Building a custom operating system using Windows Embedded Standard 7”.

4 BIOS SETUP

4.1 BIOS Introduction

The BIOS (Basic Input/Output System) installed in your computer system's ROM supports Intel processors. The BIOS provides critical low-level support for a standard device such as disk drives, serial ports and parallel ports. It also password protection as well as special support for detailed fine-tuning of the chipset controlling the entire system.

4.2 BIOS Setup

The BIOS provides a Setup utility program for specifying the system configurations and settings. The BIOS ROM of the system stores the Setup utility. When you turn on the computer, the BIOS is immediately activated. Pressing the <Del> key immediately allows you to enter the Setup utility. If you are a little bit late pressing the <Del> key, POST (Power On Self Test) will continue with its test routines, thus preventing you from invoking the Setup. If you still wish to enter Setup, restart the system by pressing the"Reset" button or simultaneously pressing the <Ctrl>, <Alt> and <Delete> keys. You can also restart by turning the system Off and back On again. The following message will appear on the screen:

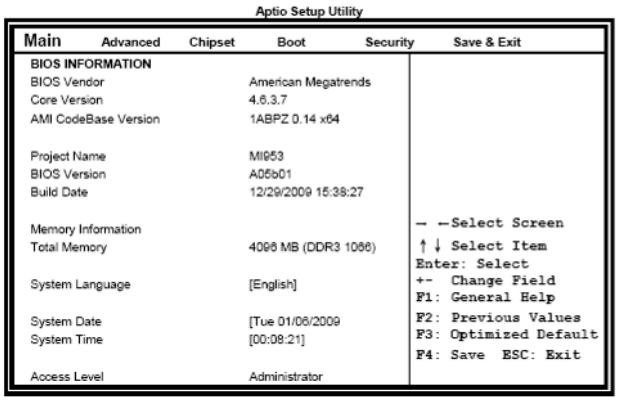
Press <DEL> to Enter Setup

In general, you press the arrow keys to highlight items, <Enter> to select, the <PgUp> and <PgDn> keys to change entries, <F1> for help and <Esc> to quit.

When you enter the Setup utility, the Main Menu screen will appear on the screen. The Main Menu allows you to select from various setup functions and exit choices.

4.3 Main BIOS Setup

This setup allows you to record some basic hardware configurations in your computer system and set the system clock.



Note: *If the system cannot boot after making and saving system changes with Setup, the AMI BIOS supports an override to the CMOS settings that resets your system to its default.*

Warning: *It is strongly recommended that you avoid making any changes to the chipset defaults. These defaults have been carefully chosen by both AMI and your system manufacturer to provide the absolute maximum performance and reliability. Changing the defaults could cause the system to become unstable and crash in some cases.*

System Language

Choose the system default language.

System Date

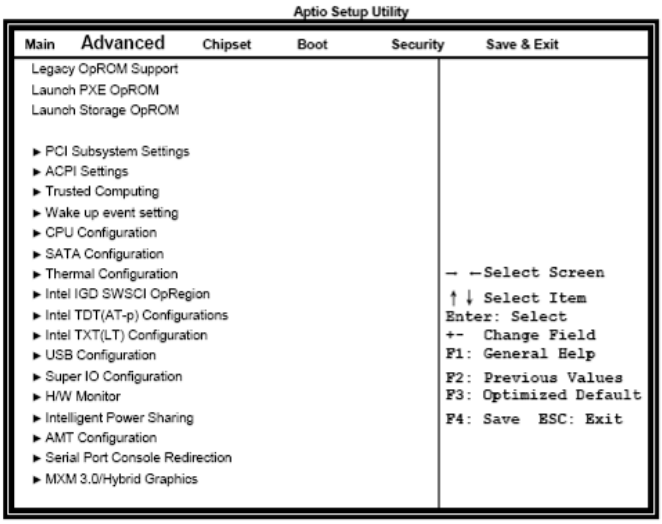
Set the Date. Use Tab to switch between Data elements.

System Time

Set the Time. Use Tab to switch between Data elements.

4.4 Advanced Settings

This section allows you to configure and improve your system and allows you to set up some system features according to your preference.



Launch PXE OpROM

Enable or Disable Boot Option for Legacy Network Devices.

Launch Storage OpROM

Enable or Disable Boot Option for Legacy Mass Storage Devices with Option ROM.

▸ Wake up event setting

Enable/Disable Wake up event.

► Intel TDT(AT-p) Configurations

Disabling TDT Allow user to login to platform. This is strictly for testing only.

This does not disable TDT Services in ME.

▸ Intelligent Power Sharing

Intelligent Power Sharing configuration menu.

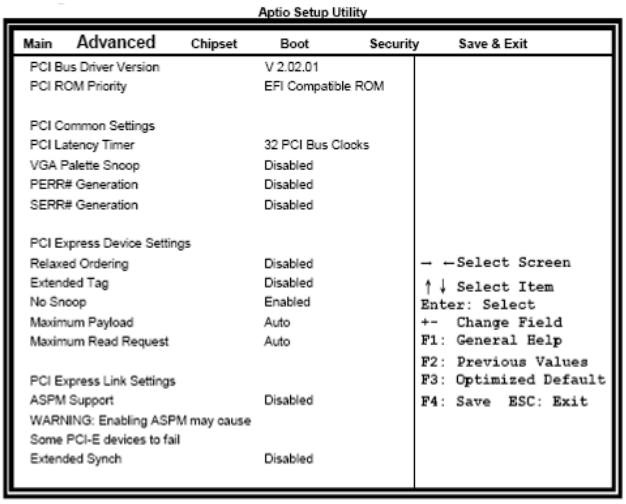
NOTE: DTS must be enabled for Power Sharing to function.

► MXM 3.0/Hybrid Graphics

Enable/Disable the MXM 3.0 support..

PCI Subsystem Settings

This section allows you to configure the PCI, PCI-X and PCI Express settings.



PCI ROM Priority

In case of multiple Option ROMs (Legacy and EFI Compatible), specifies what

PCI Option ROM to launch.

PCI Latency Timer

Value to be programmed into PCI Latency Timer Register.

VGA Palette Snoop

Enables or Disables VGA Palette Registers Snooping.

PERR# Generation

Enables or Disables PCI Device to Generate PERR#.

SERR# Generation

Enables or Disables PCI Device to Generate SERR#.

Relaxed Ordering

Enables or Disables PCI Express Device Relaxed Ordering.

Extended Tag

If ENABLED allows Device to use 8-bit Tag field as a requester.

No Snoop

Enables or Disables PCI Express Device No Snoop option.

Maximum Payload

Set Maximum Payload of PCI Express Device or allow System BIOS to select the value.

Maximum Read Request

Launches (Enabled/Disabled) the boot option for legacy network devices.

PCI Express Link Settings

Set Maximum Read Request Size of PCI Express Device or allow System BIOS to select the value.

ASPM Support

Set the ASPM Level:

Force L0 – Force all links to L0 State

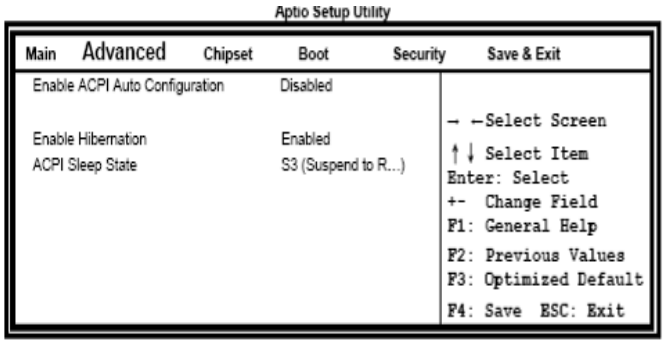
AUTO – BIOS auto configure

DISABLE – Disables ASPM

Extended Synch

If ENABLED allows generation of Extended Synchronization patterns.

ACPI Settings



Enabled ACPI Auto Configuration

Enables or Disables BIOS ACPI Auto Configuration.

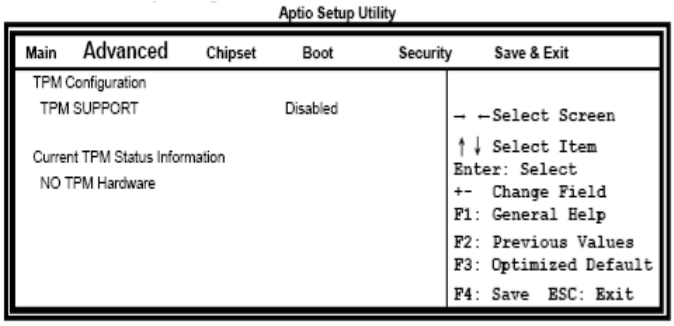
Enable Hibernation

Enables or Disables System ability to Hibernate (OS/S4 Sleep State). This option may be not effective with some OS.

ACPI Sleep State

Select the highest ACPI sleep state the system will enter, when the SUSPEND button is pressed.

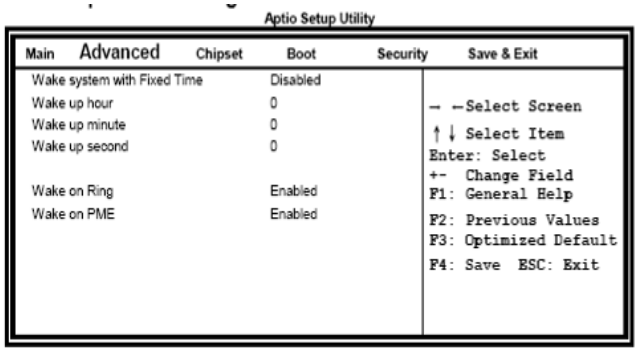
Trusted Computing



TPM Support

Enables or Disables TPM support. O.S. will not show TPM. Reset of platform is required.

Wake up event settings



Wake system with Fixed Time

Enables or Disables System wake on alarm event. When enabled, System will wake on the hr::min:: sec specified.

Wake on Ring

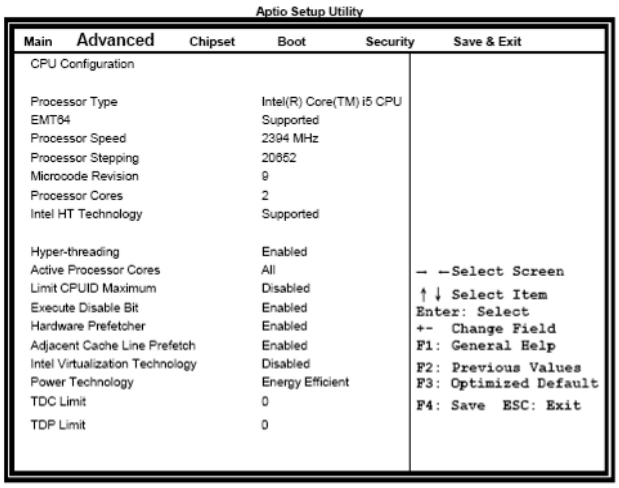
The options are Disabled and Enabled.

Wake on PME

The options are Disabled and Enabled.

CPU Configuration

This section shows the CPU configuration parameters.



Hyper-threading

Enabled for Windows XP and Linux (OS optimized for Hyper-Threading

Technology) and Disabled for other OS (OS not optimized for Hyper-Threading Technology). When Disabled, only one thread per enabled core is enabled.

Active Processor Cores

Number of cores to enable in each processor package.

Limit CPUID Maximum

Disabled for Windows XP.

Execute Disable Bit

XD can prevent certain classes of malicious buffer overflow attacks when combined with a supporting OS (Windows Server 2003 SP1, Windows XP SP2,

SuSE Linux 9.2, Re33dHat Enterprise 3 Update 3.)

Hardware Prefetcher

To turn on/off the MLC streamer prefetcher.

Adjacent Cache Line Prefetch

To turn on/off prefetching of adjacent cache lines.

Intel Virtualization Technology

When enabled, a VMM can utilize the additional hardware capabilities provided by Vanderpool Technology.

Power Technology

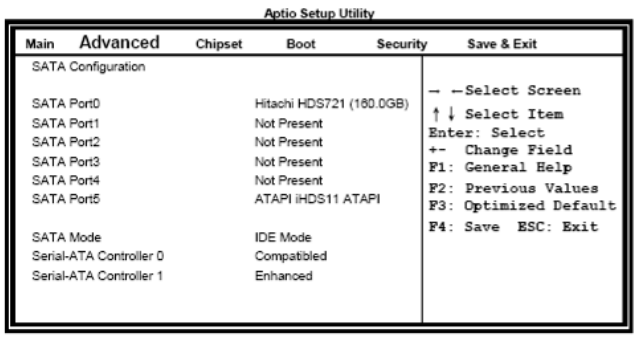
Enable the power management features.

TDC Limit / TDP Limit

Turbo-XE Mode Processor TDC Limit in 1/8 A granularity. 0 means using the factory-configured value.

SATA Configuration

SATA Devices Configuration.



SATA Mode

(1) IDE Mode.

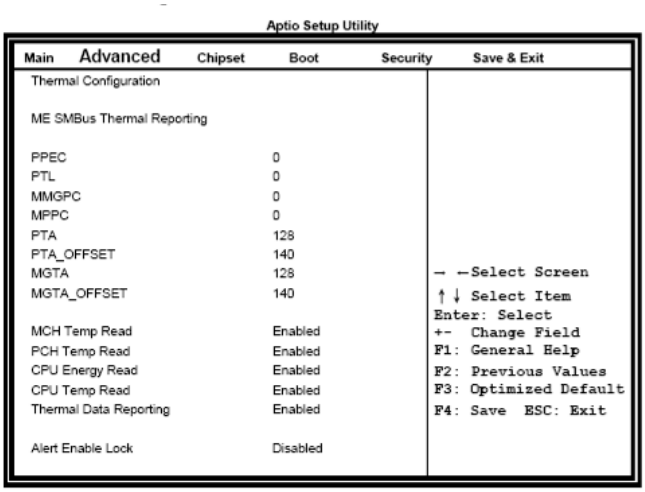
(2) AHCI Mode.

(3) RAID Mode.

Serial-ATA Controller

Enable / Disable Serial ATA Controller.

Thermal Configuration



ME SMBus Thermal Reporting

Enable/Disable ME SMBus Thermal Reporting Configuration.

PPEC

Processor Power Error Correction.

PTL

Processor Temperature Limit.

MMGPC

Max Memory Power Clamp.

MPPC

Max Processor Power Clamp.

MPCP

Max Processor Core Power Clamp.

PTA

PCH Temperature Adjust.

PTA_OFFSET

PCH offset for calculating PCH temperature.

MGTA

MCH/GfX Temperature Adjust.

MGTA_OFFSET

MCH/GfX offset for calculating MCH/GfX Temperature.

MCH Temp Read

MCH Temperature Read Enable.

PCH Temp Read

PCH Temperature Read Enable.

CPU Energy Read

CPU Energy Read Enable.

CPU Temp Read

CPU Temperature Read Enable.

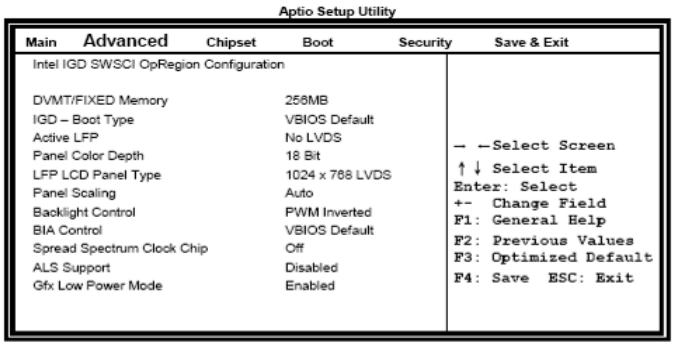
Thermal Data Reporting

Thermal Data Reporting Enable.

Alert Enable Lock

Lock all Alert Enable settings.

Intel IGD SWSCI OpRegion



DVMT/FIXED Memory

Select DVMT/FIXED Mode Memory size used by Internal Graphics Device.

Options are 128MB, 256MB and Maximum.

IGD – Boot Type

Select the Video Device which will be activated during POST. This has no effect if external graphics present. Options are VBIOS Default, CRT, LFP, CRT+LFP, EFP and CRT+EFP.

Active LFP

Select the Active LFP Configuration.

No LVDS: VBIOS does not enable LVDS.

Int-LVDS: VBIOS enables LVDS driver by Integrated encoder.

SDVO LVDS : VBIOS enables LVDS driver by SDVO encoder.

eDP: LVDS Driven by Int-DisplayPort encoder.

Panel Scaling

Select the LCD panel scaling option used by the Internal Graphics Device.

Options are Auto, Force Scaling, Off and Maintain Aspect Ratio.

Backlight Control

Back Light Control Setting. Options are PWM Inverted, PWM Nrmal, GMBus

Inverted and GMBus Normal.

BIA Control

Options are VBIOS Default, Disabled and Level 1/2/3/4/5.

Spread Spectrum Clock Chip

The default setting is Off. Other options are:

Hardware: Spread is controlled by chip.

Software: Spread is controlled by BIOS.

ALS Support

Enabled or Disabled. Valid only for ACPI.

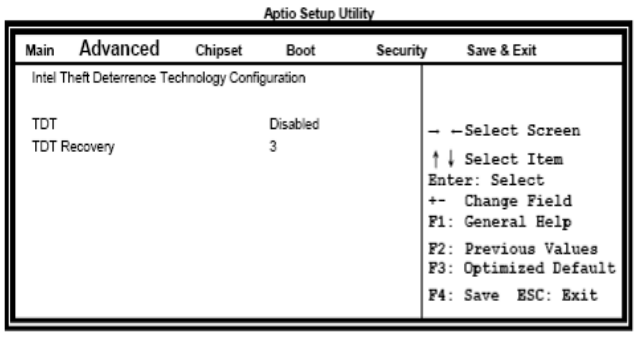
Legacy = ALS Support through the IGD INT10 function.

ACPI = ALS suport through an ACPI ALS driver.

Gfx Low Power Mode

Enabled or Disabled. This option is applicable for SFF only.

Intel TDT(AT-p) Configurations



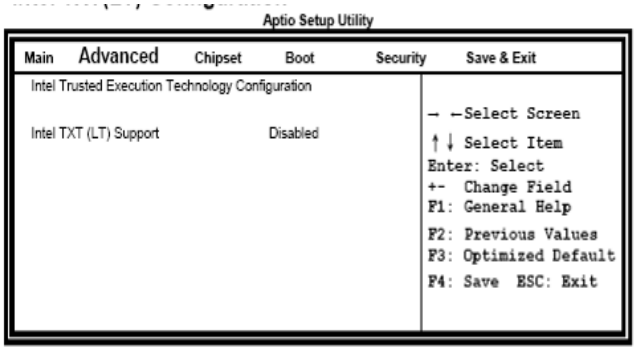
TDT

Enable/Disable TDT in BIOS for testing only.

TDT Recovery

Set the number of times Recovery attempted will be allowed.

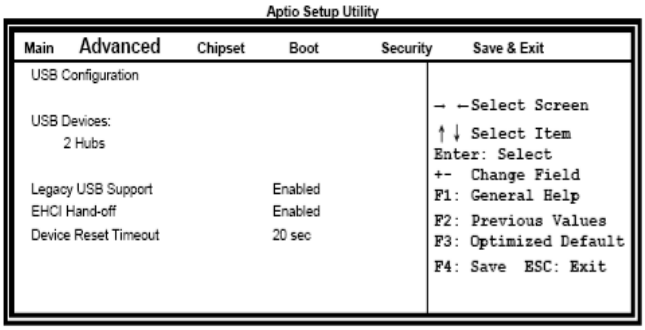
Intel TXT(LT) Configuration



Intel TXT (LT) Support

Enable/Disable Intel Trusted Execution Technology Support.

USB Configuration



Legacy USB Support

Enables Legacy USB support.

AUTO option disables legacy support if no USB devices are connected.

DISABLE option will keep USB devices available only for EFI applications.

EHCI Hand-off

Enabled/Disabled. This is a workaround for Oses without EHCI hand-off

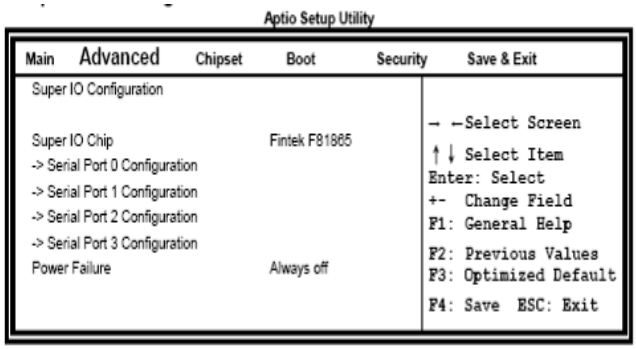
support. The EHCI ownership change should be claimed by EHCI driver.

Device Reset Timeout

USB mass storage device Start Unit command timeout.

Options are: 10 sec / 20 sec / 30 sec / 40 sec.

Super IO Configuration



Serial Port Configuration

Set Parameters of Serial Ports. User can Enable/Disable the serial port and

Select an optimal settings for the Super IO Device.

Power Failure

Options are:

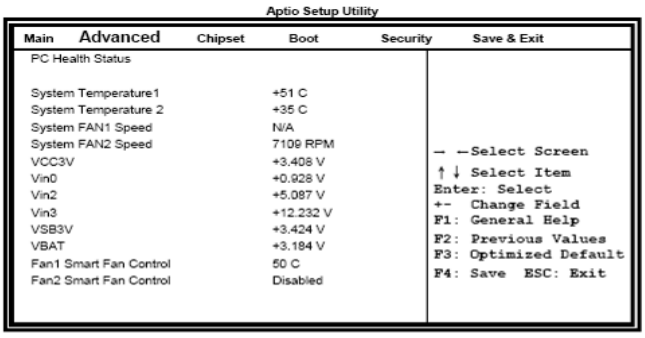
Keep last state

Bypass mode

Always on

Always off (default)

H/W Monitor



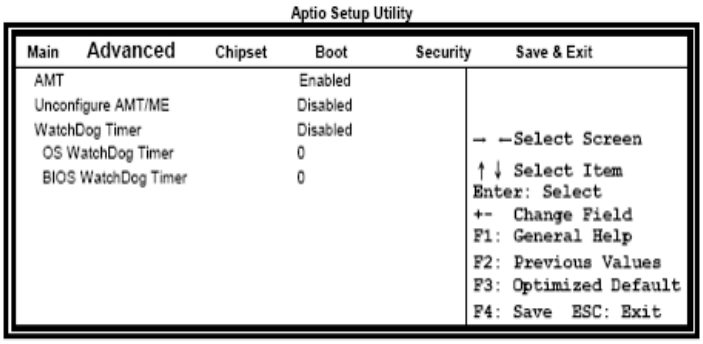
Temperatures/Voltages

These fields are the parameters of the hardware monitoring function feature of the motherboard. The values are read-only values as monitored by the system and show the PC health status.

Fan1/Fan2 Smart Fan Control

This field enables or disables the smart fan feature. At a certain temperature, the fan starts turning. Once the temperature drops to a certain level, it stops turning again.

AMT Configuration



AMT

Options are Enabled and Disabled.

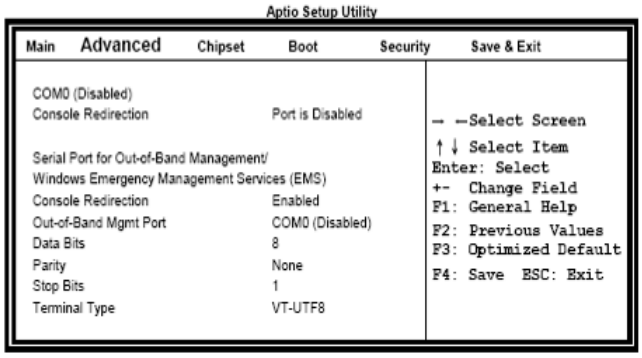
Unconfigure AMT/ME

Perform AMT/ME unconfigure without password operation.

WatchDog Timer

Enable/Disable WatchDog Timer.

Serial Port Console Redirection



Console Redirection

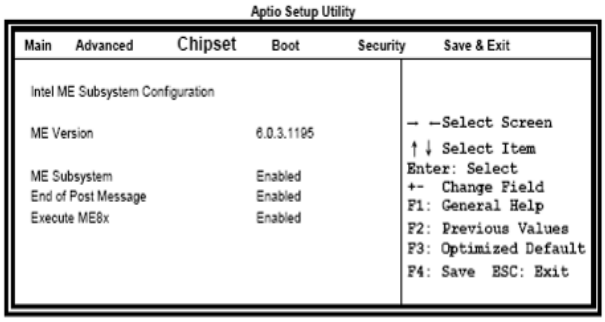
Console Redirection Enable/Disable.

Terminal Type

VT-UTF8 is the preferred terminal type for out-of-band management. The next best choice is VT100+ and then VT100.

Intel ME Subsystem

This section allows you to configure the PCI settings.



ME Version

Launches (Enabled/Disabled) the boot option for legacy network devices.

ME Subsystem

Launches (Enabled/Disabled) the boot option for legacy network devices.

End of Post Message

Launches (Enabled/Disabled) the boot option for legacy network devices.

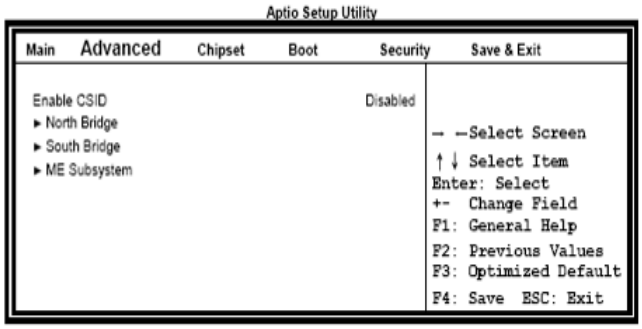
Execute ME8x

Launches (Enabled/Disabled) the boot option for legacy network devices.

4.5 Chipset Settings

This section allows you to configure and improve your system and

allows you to set up some system features according to your preference.



Enable CSID

By default, this item is disabled. Enable Compatible Revision ID.

North Bridge

This item shows the North Bridge Parameters.

South Bridge

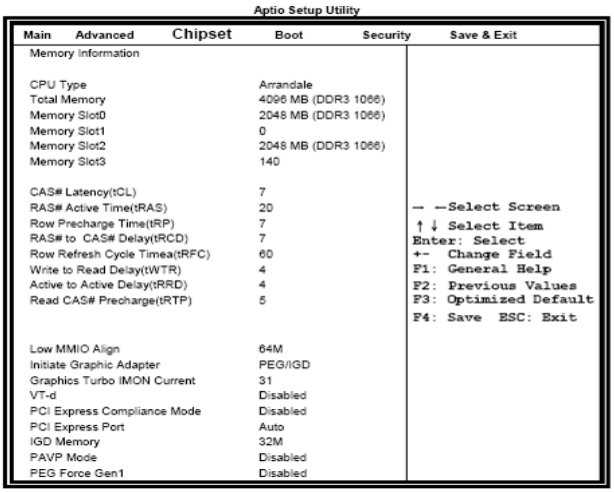
This item shows the South Bridge Parameters.

ME Subsystem

This item shows the ME Subsystem Parameters.

North Bridge

This section allows you to configure the North Bridge Chipset.



Low MMIO Align

Low MMIO resources align at 64MB/1024MB.

Initiate Graphic Adapter

Select which graphics controller to use as the primary boot device.

Options are IGD, PCI/IGD, PCI/PEG, PEG/IGD, PEG/PCI and SG.

Graphics Turbo IMON Current

Graphics turbo IMON current values supported (14-31).

VT-d

VT-d Enable/Disable.

PCI Express Compliance Mode

PCI Express Compliance Mode Enable/Disable.

PCI Express Port

Options are Disabled, Enabled and Auto.

IGD Memory

IGD Share Memory Size. Options are Disable, 32M, 64M and 128M.

PAVP Mode

Select PAVP Mode used by Internal Graphics Device. Options are Disabled and

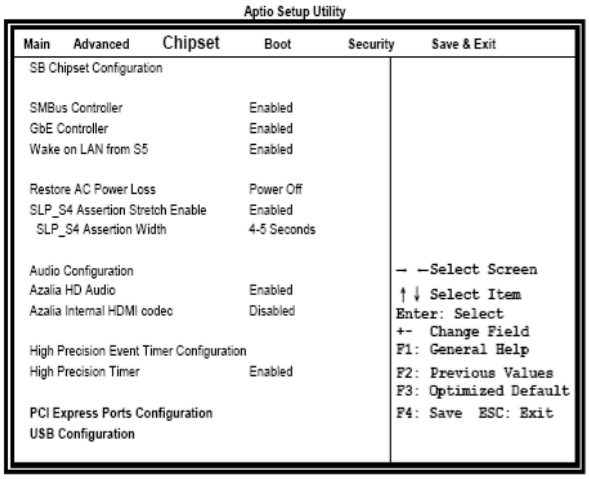
Enabled.

PEG Force Gen1

PCI Express Port Force Gen1. Options are Disabled and

SB Chipset Configuration

This section allows you to configure the South Bridge Chipset.



SMBus Controller

SMBus Controller help.

GbE Controller

This is constantly enabled.

Wake on LAN from S5

Wake on LAN from S5 help.

Restore AC Power Loss

Options are Power Off, Power On and Last State.

SLP_S4 Assertion Stretch Enable

Select a minimum assertion width of the SLP_S4# signal.

Audio Configuration

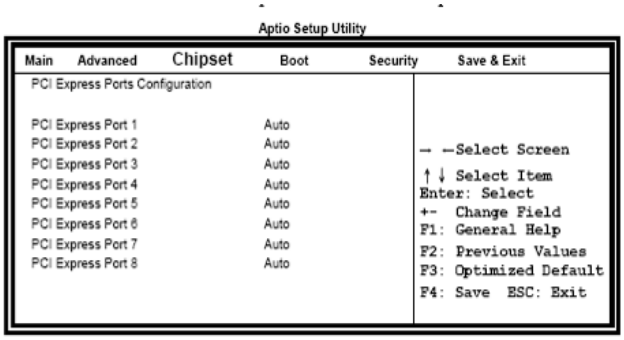
The Audio Configuration settings Enable/Disable the Azalia HD Audio and the Azalia internal HDMI codec.

High Precision Event Timer Configuration

Enable/or Disable the High Precision Event Timer.

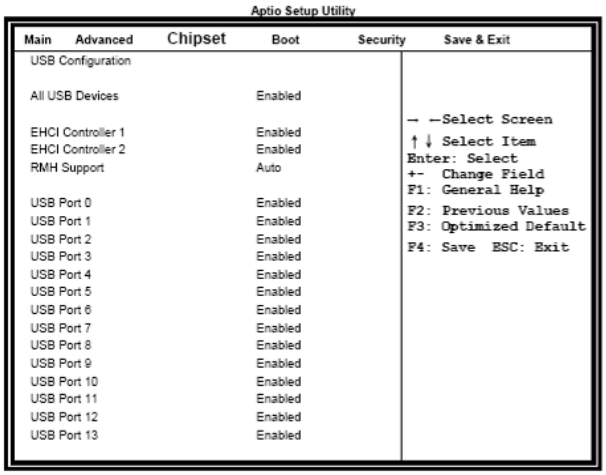
PCI Express Ports Configuration

Enable or Disable the PCI Express Ports in the Chipset.



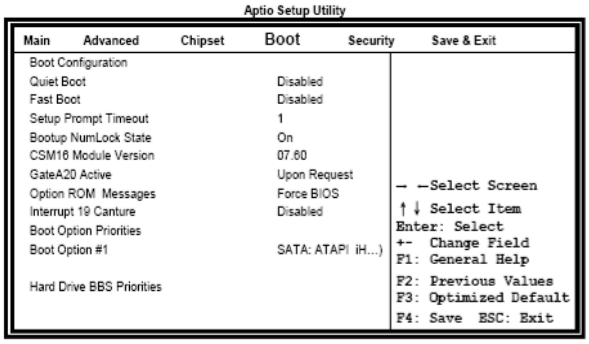
USB Configuration

Enable/Disable All USB Devices, USB 2.0 (EHCI) Support and RMH Support. The setting of AUTO on RMH Support Enable RMH support on Ibex Peak B0 Stepping.



4.6 Boot Settings

This section allows you to configure the boot settings according to your preference.



Quiet Boot

Enables/Disables Quiet Boot option.

Fast Boot

Enables/Disables boot with initialization of a minimal set of devices required to launch active boot option. Has no effect for BBS boot options.

Setup Prompt Timeout

Number of seconds to wait for setup activation key.

65535(0xFFFF) means indefinite waiting.

Bootup NumLock State

Select the keyboard NumLock state.

GateA20 Active

UPON REQUEST – GA20 can be disabled using BIOS services.

ALWAYS – do not allow disabling GA20; this option is useful when any RT code is executed above 1MB.

Option ROM Messages

Set display mode for Option ROM. Options are Force BIOS and Keep Current.

Interrupt 19 Canture

Enable: Allows Option ROMs to trap Int 19.

Boot Option Priorities

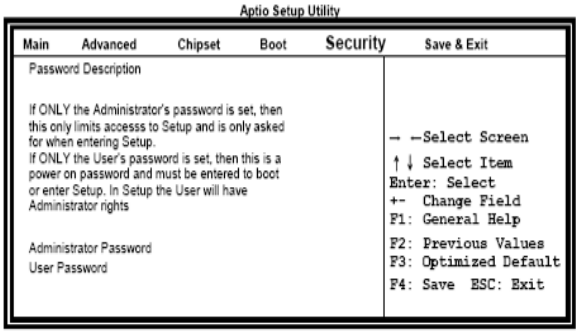
Sets the system boot order.

Hard Drive BBS Priorities

Set the order of the legacy devices in this group.

4.7 Security Settings

This section allows you to configure and improve your system and allows you to set up some system features according to your preference.



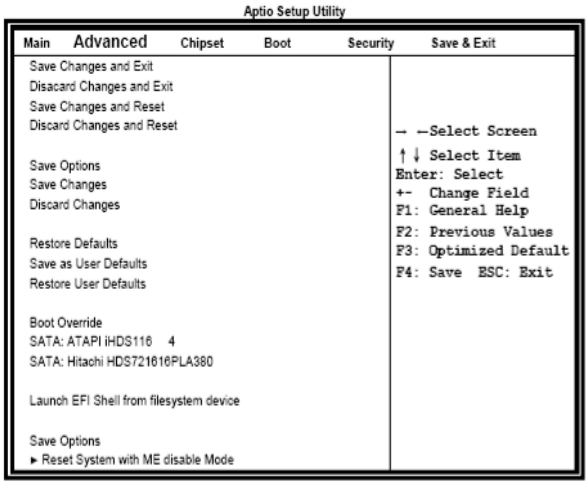
Administrator Password

Set Setup Administrator Password.

User Password

Set User Password.

4.8 Save & Exit Settings



Save Changes and Exit

Exit system setup after saving the changes.

Disacard Changes and Exit

Exit system setup without saving any changes.

Save Changes and Reset

Reset the system after saving the changes.

Discard Changes and Reset

Reset system setup without saving any changes.

Save Changes

Save Changes done so far to any of the setup options.

Discard Changes

Discard Changes done so far to any of the setup options.

Restore Defaults

Restore/Load Defaults values for all the setup options.

Save as User Defaults

Save the changes done so far as User Defaults.

Restore User Defaults

Restore the User Defaults to all the setup options.

Boot Override

Pressing ENTER causes the system to enter the OS.

Launch EFI Shell from filesystem device

Attempts to Launch EFI Shell application (Shellx64.efi) from one of the available filesystem devices.

Reset System with ME disable Mode

ME will run into the temporary disable mode.

5 Building a custom operating system using Windows Embedded Standard 7

5.1 Introduction

Welcome to Windows Embedded Standard 7. This chapter is a guide to help you use and evaluate Windows Embedded Standard 7. In addition to preparation steps, such as toolkit installation, this manual includes labs for key scenarios such as building an image, deploying an image and servicing an image.

The labs are most easily followed in the order presented. You can also chose labs individually based on your interests and previous experience with Windows Embedded, but please note that several lab scenarios assume you have the output of an earlier lab scenario.

5.2 Related Windows 7 Documentation

Windows Embedded Standard 7 is based on Windows 7; therefore much of the Windows 7 documentation can be used as reference material.

- Windows 7 Automated Installation Kit (Windows AIK) online documentation http://www.microsoft.com/downloads/details.aspx?FamilyID=f1bae135-4190-4d7c-b193-19123141edaa&displaylang=en
- Windows 7 Technical Library on Microsoft TechNet http://technet.microsoft.com/en-us/library/dd349342.aspx
- Windows Developer Center for Windows 7 http://msdn.microsoft.com/en-us/windows/dd433113.aspx

5.3 Minimum Device Hardware Requirements

Your DSEK device well exceeds the minimum hardware requirements for Standard 7 and is designed to provide the best possible Digital Signage experience. If using other hardware for Standard 7, your device must have the following minimum hardware:

- 1 GHz x86 or amd64 processor

- 1 GB of flash or hard drive space (4 GB recommended)
- 512 MB of RAM (1 GB recommended for amd64 devices)
- 900 MHz CPU or equivalent
- At least one of the following bootable media types:
  - Bootable DVD-ROM drive
  - Bootable USB 2.0 port and a USB Flash Drive (UFD) with 4 GB free space, or access to a local network
- BIOS supporting Windows Preinstallation Environment (Windows PE) 3.0
- Minimum hardware requirements, particularly RAM requirements, may be greater depending on the size and type of feature packages selected.

5.4 Install Windows Embedded Standard 7 Toolkit

You can install Windows Embedded Standard 7 Toolkit on your development computer from a DVD or from setup files downloaded from Microsoft Connect.

1. Run **Setup.exe**

- If you have the Windows Embedded Standard 7 Toolkit DVD, installation should begin when you insert the DVD into the DVD drive. If it doesn't start automatically, the Setup.exe file can be found at:

  <DVD Drive>:\Setup.exe.

2. On the **Setup Type** page, do one of the following:

- To install the tools and distribution share to the default location, select Complete. The default locations are:
  - 32-bit operating system: *[System Drive]:\Program Files\Windows Embedded Standard 7*
  - 64-bit operating system: *[System Drive]:\Program Files(x86)\Windows Embedded Standard 7*
- To install the tools and distribution share to a different location, select **Custom**.

3. Follow the instructions in the installation wizard to complete the installation process.

5.4.1 Open Windows Embedded Standard 7 Toolkit Help

The Windows Embedded Standard 7 Toolkit Help contains more detailed information on many of the topics and steps contained in this manual.

To access the Windows Embedded Standard 7 Toolkit Help:

1. Start **Image Configuration Editor** on your development computer
   - From the Start menu, click Programs, click Windows Embedded Standard 7, and then click Image Configuration Editor.
2. On the toolbar, click the **Help** icon to launch Help.

5.5 Create a Utility Drive

The DSEK device is able to boot from either an external USB DVD drive, or via a bootable USB flash drive. You can use the x86 Windows Embedded Standard 7 DVD and an external USB DVD drive to install the OS image directly to your device.

Otherwise you can create a bootable USB drive by using the DiskPart tool and then loading the USB Drive with Image Builder Wizard (IBW) or Windows Preinstallation Environment (WinPE). Diskpart supports the partitioning and formatting of a USB Flash Device (UFD) as a bootable device. A USB drive with a minimum of 4 GB is recommended for a utility drive loaded with Image Builder Wizard.

5.5.1 Make Your Utility Disk Bootable

1. Attach your USB drive to your development computer.
2. From a Windows Vista, Windows 7 or Windows Preinstallation (Windows PE) 3.0 environment, run the **DiskPart** tool by typing the following at a command prompt:

```
Diskpart
```

Note:
The version of the DiskPart tool provided by Windows Vista, Windows 7 and Windows PE 2.0, 2.1 and 3.0 supports the partitioning and formatting of a UFD as a bootable device. Previous versions of the DiskPart tool, including the version provided by Windows XP, do not fully support partitioning and formatting a UFD to be bootable and should not be used.

3. 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 prompt:

```
list disk
```

4. Use the DiskPart tool to partition and format the drive and make it bootable. At the DiskPart prompt, type the following, replacing <disk_number> with the disk number of the USB drive:

```
select disk <disk_number>
clean
create part pri
select part 1
active
format fs=ntfs quick
assign
exit
```

Your USB drive is now bootable.

5.5.2 Add Image Builder Wizard to Your Utility Disk

The Image Builder Wizard disks provide the ability to quickly generate a new IBW disk in the event IBW has been serviced or new packages have been added to the distribution share.

To generate an Image Builder Wizard Disk:

1. Start Image Configuration Editor on your development computer
   - From the **Start** menu, select **Programs**, select **Windows Embedded Standard 7**, then select **Image Configuration Editor**.
2. On the **Tools** menu, select **Media Creation**, then select **Create IBW Image with full Distribution Share**
3. Enter the desired distribution share to be copied.
4. Select your USB drive as the target folder.
5. Select the desired disk architecture.
6. Click **OK**.

5.6 Create a Windows Preinstallation Environment Utility Drive (Optional)

In some instances, you may want to create a utility disk that includes the Windows Preinstallation Environment (Windows PE). Windows PE is a lightweight version of Windows used mainly for deployment. You may prefer to use Windows PE instead of Image Builder Wizard if your USB drive is smaller than 2 GB, if you have space limitations on your device or if your device requires custom drivers that you will install on a custom version of Windows PE.

5.6.1 Create a Windows PE Utility Disk with Image Configuration Editor

The Windows PE Utility Disk feature of the Media Creation tool in Image Configuration Editor provides the ability to quickly generate a Windows PE disk for gathering information about your target device or for deploying an image using Image Builder Wizard. The generated disk includes TAP.exe, ImageX and Package Scanner.

To generate a Windows PE utility disk:

1. Create a bootable utility disk (section 1.6.1 above).
2. Start Image Configuration Editor on your development computer
   - From the **Start** menu, select **Programs**, select **Windows Embedded Standard 7**, then select **Image Configuration Editor**.
3. On the **Tools** menu, select **Media Creation**, then select **Create Windows PE Image**.
4. Enter a target folder on your development computer to which the binaries will be copied.
5. Select the desired disk architecture.
6. Click **OK**.
7. Copy the contents of the ISO sub-folder from the target folder on your development computer to the root directory of your bootable utility disk.

5.6.2 Create a Custom Windows PE Image

See the topic “Create a Custom Windows PE Image” in the Windows Embedded Standard 7 Toolkit Help for more information about creating a custom Windows PE Image and gathering other files to add to the bootable USB drive you created in section 1.6.1.

6 Build Windows Embedded Standard 7 Images

6.1 Build a Windows Embedded Standard 7 Image with Image Builder Wizard

Image Builder Wizard (IBW) is a tool you can use to create, configure and install Windows Embedded Standard 7 on your device. The wizard runs directly on your device and guides you through a set of configuration choices. After you make your selections, the wizard creates and installs Windows Embedded Standard 7 onto the device. You can further customize the installation or you can capture it to an image file and deploy it to other devices.

In this lab, you will use IBW on your device to create different Windows Embedded Standard 7 images. You can follow the steps provided in this lab to create the following variations:

- An image that can be used for a digital sign device.
- A "minboot" image that contains only the base packages (referred to as Embedded Core).

6.1.1 Build a Digital Signage Image with Embedded Enabling Features

To build a digital signage image using IBW:

1. Start **Image Builder Wizard** on your device by either:
   - Start the wizard from your Windows Embedded Standard 7 DVD, your ISO image, or the USB drive prepared in section 1.6
   - Boot your device into Windows PE and run **setup.exe** from another location (USB drive, network share, etc.).

Note:
Image Builder Wizard will setup and install Windows Embedded Standard 7. It's important to make sure you are running the wizard on your device itself and not on your development computer.

2. On the first page, select **Build an Image**

This option starts IBW and allows you to choose packages, drivers and languages to include in your image. You can optionally start from a template.

3. Accept the **End User License Agreement** (EULA).

4. The **Choose the way you want to build your image** page allows you to start from a template or from a blank configuration. In this exercise, select the **Digital Signage** template and click **Next**.

5. Select a language, time and currency format and keyboard or input method to install on the final image. These selections are for the primary language of your image. You can add additional languages later. Click **Next** to continue.

6. The **Summary of Drivers and Features** page shows a summary of the drivers to be installed, detected devices and feature packages in your template. Check the **Modify Drivers** and **Modify Features** checkboxes and click **Next**.

7. On the **Find and Select Drivers** page, choose one of the following options and click **Next** to continue:

   - The **Automatically detect devices** option detects the drivers on your device and attempts to find drivers for them.
   - The **Choose a PMQ** option makes it possible for you to import a device list from a previously generated PMQ file. As with Windows Embedded XP, TAP.exe is used to generate this PMQ file.
   - The **Do not select additional drivers** option includes only the drivers in Embedded Core. Your image will still be bootable but drivers for non-boot-critical devices may not be installed.

8. The **Confirm drivers to be installed** page shows drivers that will be installed as well as the devices that were detected on your computer for which we do not have drivers. Click **Browse** if you want to add custom drivers. Click **Next** to continue.

9. On the **Please select Feature Packagesto include in your image** page you can add additional features to your configuration. Because you started from the **Digital Signage** template, several packages have been preselected for you. Choose any additional packages you wish to include.

10. Determine which type of write filters you want to use for your digital sign and select the appropriate feature packages.

    To use **File Based Write Filter (FBWF)** and **Registry Filter**, select:

    - Embedded Enabling Features\File Based Write Filter (FBWF)
    - Embedded Enabling Features\Registry Filter

    OR

    To use **Enhanced Write Filter (EWF)**, **Hibernate Once Resume Many (HORM)** and **Registry Filter**, select:

    - Embedded Enabling Features\Enhanced Write Filter with HORM
    - Embedded Enabling Features\Registry Filter
    - Boot Environments\Enhanced Write Filter Boot Environment

Note:
Although EWF can be used without HORM, using HORM requires EWF.

Adding EWF in IBW (without an answer file) will configure all existing volumes to be protected in RAM-REG mode; however EWF will be disabled for all of them.

11. Click the **Resolve Dependencies** button. If a pop-up window asks you to choose between multiple packages, make the following selections:

    a. If you are installing HORM, select Embedded Windows 7 Boot Environment, otherwise select the Windows 7 Boot Environment.

       - Select **Windows Embedded Standard Startup Screens**.
       - Select **Windows Explorer**.
       - Select **Standard Windows USB Stack**.

    b. Resolve all other dependencies, then click **Done**. Click **Next** to continue.

12. The **Summary of Drivers and Features** page gives you a final overview of packages and drivers to be installed. If you are satisfied with your selections, click **Next**.

13. Select the disk or partition where you would like to install the image, then click **Next** to begin installation and set up of the customized Windows Embedded Standard 7 image on your device.

14. To enable Embedded Enabling Features after installation is complete, open a command prompt on your device and run the following commands:

    - For FBWF and Registry Filter:

```
fbwfmgr /enable
fbwfmrg /addvolume c:
```

    - For EWF, HORM and Registry Filter:

```
ewfmgr c: -enable
ewfmgr c: -activatehorm
```

15. Once HORM has been activated, it should be tested:

    a. Reboot so that EWF is enabled.

    b. Start Internet Explorer

    c. Enable hibernation by typing the following at a command prompt:

```
powercfg -h on
```

    d. Reboot and device should resume from hibernation.

e. Make changes and reboot your device again

f. Verify your device state returns to that of step d above and that the changes made in step e were not retained.

6.1.2 Build an Image with Embedded Core Only

A Windows Embedded Standard 7 image that contains just the Embedded Core package is described as a “minboot” image.

To build an Embedded Core (eCore) image using Image Builder Wizard, follow the steps in section 2.1.1 Build a Digital Signage Image with Embedded Enabling Features with the following changes:

1. At step 4, choose the **Minimum Configuration** template
2. Complete steps 10 and 15 only if you want to enable write filters.

6.2 Build a Windows Embedded Standard 7 Image Using Image Configuration Editor

6.2.1 Build a Digital Signage Image with Custom Settings

1. Start **Image Configuration Editor** on your development computer.
   - From the **Start** menu, select**Programs**, select**Windows Embedded Standard 7**, then select**Image Configuration Editor**.
2. On the **File** menu, select **Distribution Share**, then navigate to the desired distribution share. The default distribution share locations are:
   - On a development computer running a 32-bit operating system:
     - x86 distribution share: *C:\Program Files\Windows Embedded Standard 7\DS*
     - amd64 distribution share: *C:\Program Files\Windows Embedded Standard 7\DS64*
   - On a development computer running a 64-bit operating system:
     - x86 distribution share: *C:\Program Files(x86)\Windows Embedded Standard 7\DS*
     - amd64 distribution share: *C:\Program Files(x86)\Windows Embedded Standard 7\DS64*

3. On the **File** menu, click **New Answer File**. By default, the Embedded Edition package is added to this new answer file. This is the Embedded Core package.

4. Add Driver Packages

   a. On the **File** menu, click **Import** then select **Import PMQ** to add device drivers using a PMQ file. In the **Messages** pane, in the **Import PMQ** tab, you can review the results of mapping the devices in a PMQ file to driver packages.

      - Successfully mapped devices will be listed. To view the package in the answer file that the device was mapped to, double-click the device name.
      - The warning icons denote devices that were not mapped to driver packages. If you need support for these devices, see section 2.2.3

Note:
For more information on how to generate a PMQ file, refer to the Windows Embedded Standard 7 Help topic "How to Generate a .PMQFile Using Target Analyzer".

   b. In the **Distribution Share** pane, under **Packages/Driver**, you can add additional driver packages. Double-click any driver package (leaf node in the tree) to add it to your answer file.

5. Add **Feature Packages**

a. In the **Distribution Share** pane, expand the **Packages/FeaturePack** node.

b. Expand the **Browsers/Internet Explorer 8** node, right-click on **Internet Explorer 8 Browser** and select **Add to Answer File**.

c. Expand the **Graphics and Multimedia** node, right-click on **Windows Media Player 12** and select **Add to Answer File**.

d. Expand the **Remote Connections** node, right-click on **Remote Desktop Connection** and select **Add to Answer File**.

6. Determine which type of write filters you want to use for your digital sign. In the **Distribution Share** pane, under **Packages/FeaturesPack**, right-click on the appropriate feature packages and select **Add to Answer File**.

To use **File Based Write Filter** (FBWF) and **Registry Filter,** select:

- Embedded Enabling Features\File Based Write Filter (FBWF)

- Embedded Enabling Features\Registry Filter

OR

To use **Enhanced Write Filter** (EWF), **Hibernate Once Resume Many** (HORM) and **Registry Filter,** select:

- Embedded Enabling Features\Enhanced Write Filter with HORM
- Embedded Enabling Features\Registry Filter
- Boot Environments\Enhanced Write Filter Boot Environment

Note:
Although EWF can be used without HORM, using HORM requires EWF.

Adding EWF in IBW (without an answer file) will configure all existing volumes to be protected in RAM-REG mode; however EWF will be disabled for all of them.

7. To add language packs, in the Distribution Share pane, expand the **Packages/LanguagePack/en-US** node. Right-click the **English (US) Language Pack** package and select **Add to Answer File**. Add additional language packs the same way.
8. To change Internet Explorer 8 settings:
   a. In the **Answer File** pane, click on the **Internet Explorer 8 Browser** package.
   b. In the **Settings** pane, change **Filter View** to "4 Specialize".
   c. In the **Settings** pane, click on the **Value** column to update the value for each of the following settings:
   d. Set **Home_Page** to www.microsoft.com/embedded
   e. Set **IEWelcomeMsg** to false
   f. Save your answer file.

   You have now changed the way Internet Explorer behaves by using Image Configuration Editor's settings UI. You can change additional settings in your answer file the same way.
9. To resolve dependencies, from the **Validate** menu, select **Add Required Packages**.
   a. If there are any errors listed in the Validation tab of the Messages pane that state "Dependencies of the source package are not satisfied," double-click the error

message and use the **Resolve Dependencies** dialogue box to satisfy all required package dependencies.

- If you are asked to choose between two USB stacks, choose "Bootable Windows USB Stack" only if you are using the USB Boot Embedded Enabling Feature and enabling a USB bootable image (see section 5.3). Otherwise choose "Standard Windows USB Stack."
- If you are asked to choose between two boot environment packages, choose "Enhanced Write Filter Boot Environment" if you are installing HORM with EWF. Otherwise choose "Windows Boot Environment".

b. Warnings that state "Optional Dependencies exist for the source package" are acceptable and may be ignored.

c. Continue until all required dependencies are resolved.

Note:
For more information on the three validation options, refer to Windows Embedded Standard 7 Help's topic "Validating an Answer File in Image Configuration Editor".

10. Use the answer file you just created to install the digital signage image on your device:

a. Boot your device into Image Builder Wizard using the DVD or utility disk you created in section 1.6.

b. On the Build an Image / Deploy an Answer File or WIM page, select Deploy an Answer File or WIM.

c. In the browse to file dialog box, browse to your answer file and click **Open**.

Note:
You can use this answer file to create a configuration set. A configuration set is a folder that contains the packages, applications, images and drivers used in an answer file. Image Builder Wizard uses the configuration set and the answer file to build or modify an installation. For more information, see the Help documentation that was installed with Windows Embedded Standard 7.

11. To enable Embedded Enabling Features after installation is complete, open a command prompt on your device and run the following commands:

- For FBWF and Registry Filter:

```
fbwfmgr /enable
fbwfmrg /addvolume c:
```

- For EWF, HORM and Registry Filter:

```
ewfmgr c: –enable
ewfmgr c: –activatehorm
```

12. Once HORM has been activated, it should be tested:

    a. Reboot so that EWF is enabled.

    b. Start Internet Explorer

    c. Enable hibernation by typing the following at a command prompt:

```
powercfg –h on
```

    d. Reboot and device should resume from hibernation.

    e. Make changes and reboot your device again

    f. Verify that your device state returns to that of step d above and that changes made in step e were not retained.

6.2.2 Add Update Packages to a Distribution Share (Optional)

You can use the ImportPackage feature of Image Configuration Editor to import update packages into an existing Distribution Share. Both cabinet (CAB) files and Microsoft Update Standalone Package (MSU) files can be imported.

You can use the sample packages that were included with the pre-release build of Windows Embedded Standard 7 Toolkit, found under the \Updates folder of the Image Builder Wizard DVD appropriate to your architecture. For more information about which updates are available, see section 4.2.2.

6.3.2.1 *To use the Import Package feature in Image Configuration Editor:*

1. Open Image Configuration Editor on your development computer.
    - On the **Start** menu, select **Programs**, select **Windows Embedded Standard 7**, then select **Image Configuration Editor**.
2. On the **File** menu, click on **Import**, then click on **Import Package(s)**.
3. In the **Select Packages to Import** dialog box, navigate to the file you want to import and click **Open**.

6.3.2.2 *To Import Packages from a command prompt:*

4. Open a command prompt window and navigate to: C:\Program Files\Windows Embedded Standard 7\Tools\Image Configuration Editor
5. At the command prompt, type the following command to add the update package to the 32-bit distribution share:

```
run importpackage <updatepackage> C:\Program
Files\Windows Embedded Standard 7\DS
```

Note:
If your development computer is running a 64-bit operating system, the paths listed above will instead be under the C:\Program Files (x86)\ directory.

6.2.3 Add Third-Party Software (Optional)

The recommended way to add custom files to an Windows Embedded Standard 7 runtime is by using Image Configuration Editor and the OEM Folder.

Files placed in the OEM Folder will be automatically copied to the embedded device during installation. The folder and file hierarchy will be preserved on the embedded device as you define it in the OEM Folder. Details of the format of an OEM Folder can be found in the Windows Embedded Standard 7 Help under “Understanding Distribution Shares and Configuration Sets.”

Image Configuration Editor supports the management of multiple OEM Folders in a distribution share. The folder hierarchy underneath "..\DS\OEM Folders" determines how folders will be displayed in the Image Configuration Editor UI.

6.3.3.1 *Create an OEM Folder:*

1. Right-click the distribution share path in the **Distribution** pane, then select **Explore Distribution Share**.
2. Navigate to the **OEM Folders** directory and add a new sub-folder called MyApplication.
3. Under MyApplication, add a new sub-folder called OEM.
4. Under the OEM folder you just created, add additional subfolders and files as necessary. For example, to deliver the file "foo.exe" to the root of the install partition, the full path should be: "..\DS\$OEM$ Folders\MyApplication\$OEM$\$1\foo.exe"

> **Note:**
> You can also refer to the Microsoft Technet article, Designing a Distribution Share, for additional information on the structure and parameters available for use with the OEM Folder.

6.3.3.2 *Add an OEM Folder to an Answer File:*

1. Expand the **OEM Folders** node in the **Distribution Share** pane.
2. Right-click the **MyApplication** folder and select **Insert OEM Folders Path**.

6.2.4 Run a Custom Script (Optional)

To run a custom script during the installation process, you use the Synchronous command in Image Configuration Editor. You can use the Synchronous command to start the installation of an application, start a program on first boot, or to perform more advanced operations.

For example, the following steps will guide you through the process of finding a package that contains a specific file - in this example it's regedit.exe - and then using a .reg file to modify your registry.

6.3.4.1 *Use Image Configuration Editor to search for the package that contains the file regedit.exe:*

1. Open Image Configuration Editor on your development computer

- From the **Start** menu, select **Programs**, select **Windows Embedded Standard 7**, then select **Image Configuration Editor**.

2. On the **Edit** menu, click **Find**.
3. In the **Look In** group, select **Distribution Share**. Clear any other options.
4. In the **Options** group, select **Search file names in packages**. Clear the other options.
5. In the **Find what** box, type “regedit.exe” and click **Find**.
6. When the search is complete, look for regedit.exe in the **Value** column. It should be listed with a Path of **System Management Utilities/Files**.
7. Double-click that row and the package that contains regedit.exe is now displayed and selected in the **Distribution Share** pane.
8. Right-click on this package and select **Add to Answer File**.

6.3.4.2 *Modify your registry using the Synchronous command:*

1. On the **Insert** menu, click **Synchronous Command**, then select **Pass 7 oobeSystem**.
2. In the **Enter a Command Line** text box, enter the following:

```
cmd /c REGEDIT /s %windir%\mykeys.reg
```

3. Click **OK**

> **Note:**
> Follow the instructions in section 2.2.3 to create an OEM Folder and add the OEM Folder to an answer file to add the .reg file to your answer file.

6.2.5 Add Third-Party Drivers (Optional)

You can add device drivers during several phases of installation. To add third-party drivers using Image Builder Wizard with an answer file, you must include a device-driver path in an answer file.

To select and add a device-driver path to an answer file:

1. Open **Image Configuration Editor** with a Distribution Share and an answer file.
2. From the **Insert** menu, select **Driver Path**, then choose the configuration pass in which you want to install the driver (Windows PE for boot-critical drivers).

> **Note:**
> For more information on configuration passes, refer to the Windows Embedded Standard 7 Help topics “How Configuration Passes Work” and “Image Builder Configuration Passes”.

3. Navigate to the folder containing the inf-type drivers you wish to include and click **Open**.
4. The **Answer File** pane now shows that the selected driver path is added to the answer file.

> **Note:**
> You can also right-click the Out-of-Box Drivers folder or any subfolder in the Distribution Share pane and select Add to Answer File to add the path to the Answer File pane.

6.2.6 Make Your Install Fully Unattended (Optional)

A fully unattended install is an installation that requires no user input after Image Builder Wizard is started with an answer file. To achieve a fully unattended installation, Image Configuration Editor must be used to create an answer file that provides all the information necessary for both the Image Builder Wizard and out-of-box experience (OOBE) processes. The following two sections guide you through the process of providing this information in Image Configuration Editor.

Note:
It is helpful to create an answer file with only the necessary settings and save that answer file with the name Fully_Unattend.xml. Then every time you create a new Windows Embedded Standard 7 configuration, start by loading the Fully_Unattended.xml and saving it as a different answer file (for example: Working.xml). By creating this Fully_Unattend.xml answer file, you can always start with it and then add the packages and customizations you want for a specific Standard 7 runtime.

6.3.6.1 *Suppress Image Builder Wizard Dialogs*

You must include certain settings in your answer file to prevent the Image Builder Wizard user interface (UI) from being displayed. The default behavior of Image Builder Wizard is to display the UI if any of the required settings are incorrect or not available.

In some cases there are multiple ways to configure your unattended installation; which way you choose depends on your build and installation preferences. The following tables describe only the minimum required settings to perform an unattended installation on a device with a single partition. All the settings are found in sub-nodes of the Product/Operating System/Foundation Core/Windows Embedded Edition node packages.

To update the settings:

1. Click on the package that contains the setting in the **Answer File** pane.
2. Change **Filter View By** to the configuration pass shown for each setting in the following table.
3. Click on the **Value** column and enter the example value for each setting.

Note:
The settings described in this document refer to a setup that has only one system partition. Unattended setup and deployment can be achieved on systems with multiple volumes and partitions, but the installation partition/volume will need to be specified using the Setup/ImageInstall/OSImage/InstalllTo SMI setting.

The settings listed in these tables do not include their architecture abbreviation suffix in order to simplify the presentation. The suffix will appear as either "_x86" or "_amd64", depending on the Distribution Share selected for your device's architecture.

Image Builder Wizard Language and Locale Settings

SETTING	VALUE	DESCRIPTION	CONFIGURATION PASS
Microsoft-	`InputLocale = "en-`	Specifies the	1 windows PE

Windows-International-Core-WinPE	US” UILanguage = “en-US”	default language to use on the installed OS. Specifies the default language to use during Standard 7 setup. During installation, Standard 7 setup displays installation progress in the selected language.	

Image Builder Wizard Dialog Boxes

SETTING	VALUE	DESCRIPTION	CONFIGURATION PASS
Microsoft-Windows-Setup	`ShowTemplateSelection = false`	Specifies whether to show the IBW feature template selection page.	1 windowsPE

Microsoft-Windows-Setup | Target Analysis Mapping	`RunTargetAnalysisMapping = True`
	
	`ShowImportDriverUI = False`
	
	`WillShowUI = False`
		Specifies whether to run TAP.exe and map the .pmq file to driver packages.
		
		Specifies whether to show the IBW Import Driver UI page.
		
		Specifies whether to show the IBW Target Analysis Mapping pages.
			1 windowsPE

Microsoft-Windows-Setup | UserData	`AcceptEULA = True`	Specifies whether to accept the Microsoft License Software Terms during IBW	1 windowsPE

Image Installation

You must specify where you intend to install Windows. You can either specify the exact Disk ID and Partition ID or you can install Windows to the first available partition.

SETTING	VALUE	DESCRIPTION	CONFIGURATION PASS
Microsoft-Windows-Setup	`CreateSeparateSystemPartition = false`	Specifies whether a separate system partition should be created	1 windowsPE
Microsoft-	`InstallToAvailablePartition = true`	Installs	1 windowsPE

Windows-Setup | ImageInstall		Standard 7 to the first available partition. **NOTE: Cannot be used in conjunction with Microsoft-Windows-Setup | ImageInstall | OSImage | InstallTo shown below.**	

Microsoft-Windows-Setup |ImageInstall |OSImage |InstallTo	`DiskID = 0`
	
	`PartitionID = 1`
		Specifies the disk and partition to install Standard 7 on. **NOTE: Cannot be used in conjunction with Microsoft-Windows-Setup | ImageInstall shown above.**	1 windowsPE

6.3.6.2 *Suppress OOBE*

The Windows out-of-box experience (OOBE) or "Windows Welcome" is part of the setup UI that appears at the final stage of the setup process, or on first boot after a captured image is deployed. This UI element is run online (booting from the target device) and is a stand-alone application that runs when an image is set up with Image Builder Wizard or deployed from a sysprepped .WIM file. In the OOBE UI, an end-user can configure certain personalization settings, such as naming the computer, creating a user account, setting date and time, time zone, and so on. Many of these settings may not be applicable in embedded scenarios, and, therefore, you may wish to suppress the OOBE UI during setup.

In this lab, we suppress the OOBE UI that appears at the end of setup. Suppression of the OOBE UI is accomplished by providing the necessary information to the setup/OOBE process by using a properly populated answer file.

Some key points that you should consider when suppressing the OOBE UI are user account creation, EULA acceptance, and the product key. Although all the settings used in this section are required to suppress the OOBE UI, these settings — in particular — are

required for your system to be usable. If you omit any of these settings from your answer file, not only will the OOBE UI appear, but your system might possibly be unusable.

Note:
The settings listed in these tables do not include their architecture abbreviation suffix in order to simplify the presentation. The suffix will appear as either "_x86" or "_amd64", depending on the Distribution Share selected for your device's architecture.

OOBE Dialog Box Settings

SETTING	VALUE	DESCRIPTION	CONFIGURATION PASS
Microsoft-Windows-Setup | UserData	`AcceptEula = true`	Specifies the acceptance of the EULA.	1 windows PE
Microsoft-Windows-Shell-Setup	`ComputerName = "*"`	Specifies the name of the computer to apply to the Standard 7 installation. Using an asterisk will assign a random name.	4 Specialize
	`ProductKey = <product key>`	Specifies the product key to use for activation. Note that all zeros may be used – "00000-00000-00000-00000-00000".	
Microsoft-Windows-International-Core	`InputLocale = "en-US"`	Specifies the default input locale of the Standard 7 installation.	7 oobeSystem
	`SystemLocale = "en-US"`	Specifies the default system locale of the Standard 7 installation.	
	`UILanguage = "en-US"`	Specifies the default UI language of the Standard 7 installation.	
	`UserLocale = "en-US"`	Specifies the default user locale of the Standard 7 installation	

		Example: “en-US”	
Microsoft-Windows-Shell-Setup | OOBE	`HideEULAPage = true`	Suppresses the display of the Microsoft Software License Terms page..	7 oobeSystem
	`ProtectYourPC = 3`	Specifies the protection level of the Standard 7 installation.	
	`HideWirelessSetupinOOBE = true`	Hides the Wireless Network selection page.	
	`NetworkLocation = “Work”`	Specifies the location of the device.	
	`TimeZone = “Pacific Standard Time”`	Specifies the time zone of the device.	
Microsoft-Windows-Shell-Setup | UserAccounts	`Right-click to insert a new user account.`	Specifies the user accounts to create on the Standard 7 installation. There must be at least one user account created in the answer file or it will not be possible to log into the system	7 oobeSystem
Microsoft-Windows-Shell-Setup | UserAccounts | LocalAccount	`Name = <Name>`	Specifies a valid account name not already present in your image.	7 oobeSystem
	`DisplayName = <Display Name>`	Specifies a display name for the user account.	

Microsoft-Windows-Shell-Setup | UserAccounts | LocalAccount | Password	`value = <password>`	Specifies a password for the user account.	7 oobeSystem
Microsoft-Windows-Shell-Setup | UserAccounts | AdministratorPassword	`value = <password>`	Specifies a password for the administrator account.	7 oobeSystem
Microsoft-Windows-Core-Settings	`HideEvaluationWarning = 1`	Suppresses the display of the evaluation warning	7 oobeSystem

AutoLogon Settings

Although not actually part of the OOBE suppression, the following settings enable AutoLogon which may be desired for some automation scenarios.

SETTING	VALUE	DESCRIPTION	CONFIGURATION PASS

Microsoft-Windows-Shell-Setup | AutoLogon	`Enabled = true`
	
	`Username = <autologon account name>`
		Enables Autologon.
		
		Specifies the account that will be automatically logged on.
			7 oobeSystem

Microsoft-Windows-Shell-Setup | AutoLogon | Password	`LogonCount = 9999`
	
	`PlainText = false`
	
	`Value = <encrypted password string>`
		Specifies the number of times someone can autologon to the device.
		
		Specifies whether the Autologon password is hidden in the unattended answer file.
		
		Specifies the encrypted password for the autologon
			7 oobeSystem

		account.	

6.2.7 Create Image Builder Wizard Disk from Answer File (optional)

The Media Creation tool in Image Configuration Editor includes an **IBW Disk from Answer File** option that allows you to quickly deploy an image with a specified configuration. This option creates an IBW disk and a configuration set so that, when booting from this disk, IBW will automatically consume the provided answer file and install that configuration on the target device.

To generate an Image Builder Wizard Disk from an Answer File:

1. Create a bootable utility disk (see section 1.6.1 above).
2. In the **Tools** menu, select **Media Creation**, then select **Create IBW Disk from Answerfile**.
3. Enter the desired answer file to be copied, select the utility disk as the target folder and click **OK**.
4. Attach the disk to your device and reboot to run setup and install your image, making sure your device boots to this disk.

7 Deploy an Image

In Section 2 you developed a Windows Embedded Standard 7 image using Image Builder Wizard and/or Image Configuration Editor and then installed it on your reference device. In this section you will learn how to prepare, capture and deploy that image to additional devices.

7.1 Prepare and Capture an Image for Deployment

7.1.1 Sysprep the Image

You can use the Sysprep tool with other deployment tools to install the Windows Embedded Standard 7 operating system onto new hardware. Sysprep prepares a computer for disk imaging or delivery to a customer by configuring the device to create a new computer security identifier (SDI) when the computer is restarted. In addition, Sysprep cleans up user-specific and device-specific settings and data that must not be copied to a destination device. This process is called “generalization.”

To prepare a device for disk imaging:

1. Start with the device on which you already installed a Windows Embedded Standard 7 image. (For more information about building an image, see Section 2.)
2. Open a command prompt and run the following command. This will remove all device and user-specific information from the image, and shut down the device.

```
sysprep /generalize /shutdown
```

3. [Optional]You can also use an answer file with Sysprep by adding the /unattend command.

```
sysprep /generalize /shutdown /unattend:<file_path>
```

Note:

Sysprep can be found on your device in the folder \Windows\System32\Sysprep. You may need to navigate to the root directory or to the Sysprep sub-folder to run Sysprep.

For additional sysprep command line options, refer to the Windows Embedded Standard 7 Toolkit Help.

7.1.2 Capture the Image Into a Windows Image (.wim) File

Now that you have a generalized Standard 7 image installed on your device, you can use ImageX to capture it into a .wim file so you can deploy it to other devices.

To create a .wim file:

1. On your device, do one of the following:

   - Boot into Image Builder Wizard from your utility disk or the Windows Embedded Standard 7 DVD and open a command prompt by either:

     - On the **Build an Image/Deploy an Answer File or WIM** page, press Shift + F10.
     - On the **Build an Image/Deploy an Answer File or WIM** page, select **Launch WinPE Command Prompt**.

   - Boot into Windows PE from your utility disk.

2. If necessary, connect to your network share or the media share that you want to copy your captured image to. For example, the following command will connect you to a network share located at \\mycomputer\images with the user "mydomain\user" and a password of "password."

```
net use * \\mycomputer\images /USER:mydomain\user password
```

3. Capture the image using ImageX. You can do this by entering the following command, where C: is the drive you want to capture andZ:\Mydevice.wim is the location where you want to save your Windows Image file.

```
imagex /capture C: Z:\mydevice.wim "Drive C" /verify
```

4. You can also compress the captured image to reduce the size of the image. For example:

```
imagex /capture /compress maximum C: Z:\mydevice.wim "Drive
C" /verify
```

Note:
For more information about running ImageX, refer to the Windows Embedded Standard 7 Toolkit Help.

7.2 Deploy an Image Using ImageX

In this lab, you will deploy your Windows Embedded Standard 7 image onto a device by using ImageX and Windows PE. To do so, you must first format the hard drive of the destination device with two partitions, apply the image to the second partition, then run BCDBoot to reconfigure the BCD store.

7.2.1 Prepare your Destination Device

To begin this deployment, you will need to boot your destination device and prepare the hard drive by using Windows PE and DiskPart. If you do not have a separate destination device, you can reuse your reference device as the destination device.

To prepare the hard drive:

1. On your device, do one of the following:

   - Boot into Image Builder Wizard from your utility disk or the Windows Embedded Standard 7 DVD and open a command prompt by either:
     - On the **Build an Image/Deploy an Answer File or WIM** page, press Shift + F10.
     - On the **Build an Image/Deploy an Answer File or WIM** page, select **Launch WinPE Command Prompt**.
   - Boot into Windows PE from your utility disk.

Note:
You may need to override the boot order to boot from the utility disk or CD/DVD-ROM drive. During initial boot, select the appropriate function key to override the boot order.

2. Run the DiskPart tool by typing the following at the command prompt:

```
diskpart
```

3. Use the DiskPart tool to determine the disk number and device size to be used for the next step:

```
list disk
```

4. Use the DiskPart tool to partition and format the drive and make it bootable. At the DiskPart prompt, type the following, replacing <disk_number> with the disk number of the drive you wish to use. Although multiple partitions may be used, the following example creates a single partition in order to keep the lab exercise as simple as possible.

```
select disk <disk number>
clean
create part pri
select part 1
active
format fs=ntfs quick
assign letter = C
exit
```

Note:
You can also script this process by saving these commands to a text file. To run the script from a command prompt, type:
`diskpart /s <scriptname.txt>`

7.2.2 Apply an Image to Your Device's Hard Drive

Next you apply your Standard 7 image to your device's hard drive. After it is applied, you need to run the BCDBoot tool to configure the boot partition.

To apply your image and run BCDBoot:

1. Connect the USB drive that contains your saved Windows Embedded Standard 7 image to your device. Apply the image to the hard drive by using ImageX by typing the command below at a command prompt. In the example below <drive1> refers to the drive where ImageX can be found and <drive2> refers to the drive where your Standard 7 image WIM can be found:

```
<drive1>:\imagex.exe /apply <drive2>:\images\myimage.wim 1
C:
```

2. From the command prompt, run BCDBoot to update the BCD store. For example:

```
bcdboot.exe C:\windows /s C:
```

7.2.3 Shut Down the Destination Device

Now that your Windows Embedded Standard 7 image is deployed, you can shut down the device by using the **wpeutil shutdown** option in Windows PE. From the Windows PE command prompt, type:

```
wpeutil shutdown
```

7.3 Deploy an Image Using Image Builder Wizard

After capturing a custom image to a .wim file by using ImageX, you can deploy this image by using Image Builder Wizard. Using this method, you can create customized setup disks that deploy the preconfigured image easily and quickly to your devices.

7.3.1 Start Image Builder Wizard with your Image

Choose one of the following four methods to start Image Builder Wizard with your image.

7.3.1.1 *Use the Deploy an Answer File or WIM button:*

1. Boot your device into Image Builder Wizard using the Windows Embedded Standard 7 DVD or the utility disk you created in section 1.6.
2. On the **Build an Image/Deploy an Answer File or WIM** page, select **Deploy an Answer File or WIM**.
3. Browse to your WIM file and click **Open**.

7.3.1.2 *Use the /installfrom Switch:*

1. Do one of the following:
    - Boot into Image Builder Wizard from your utility disk and open a command prompt by either
        - On the **Build an Image/Deploy an Answer File or WIM** page, press Shift + F10.
        - On the **Build an Image/Deploy an Answer File or WIM page**, select **Launch WinPE Command Prompt**.
    - Boot into Windows PE from your utility disk.
2. Navigate to the directory that contains setup.exe
    - If you are booting from your Image Builder Wizard disk, look in <drive>:\sources

- If you are booting from a Windows PE disk, make sure you can access your Image Builder Wizard files from either a network location or a USB drive. Navigate to that location and find setup.exe in the sources folder.

3. Type the following at the command prompt:

```
setup.exe /installfrom:<drive>:\mydevice.wim
```

7.3.1.3 *Use the InstallFrom Unattend Setting:*

1. Use Image Configuration Editor to configure the InstallFrom setting under Windows Embedded Edition/Setup/ImageInstall/OSImage
    a. The **Path** setting is the location of your custom image WIM file.
    b. You may enter Domain, Username and Password settings under **Credentials** if the path to your WIM is a network location.
    c. Save your changes to an answer file.
2. Using the answer file you just created, do one of the following:
    - Boot into Image Builder Wizard from your utility disk. On the **Build an Image/Deploy an Answer File or WIM** page, press Shift + F10 to open a command prompt.
    - Boot into Windows PE from your utility disk.

3. Navigate to the directory that contains setup.exe

   - If you are booting from your Image Builder Wizard disk, look in <drive>:\sources
   - If you are booting from a Windows PE disk, make sure you can access your Image Builder Wizard files from either a network location or a USB drive. Navigate to that location and find setup.exe in the sources folder.

4. Type the following at a command prompt:

```
setup.exe /unattend:<path_to_your_answer_file>
```

7.3.1.4 *Replace the install.wim on Image Builder Wizard Media*

1. Do one of the following:

   - Follow the steps in section 1.6 to create an Image Builder Wizard USB drive.
   - Copy all files from the Image Builder Wizard DVD to a folder on your development computer.

Note:
In steps 2 through 6 below, E:\ refers to the root of your Image Builder Wizard files.

2. Make a backup copy of the install.wim file in E:\Sources
3. Copy mydevice.wim to E:\sources
4. Rename E:\sources\mydevice.wim to E:\sources\install.wim
5. If E:\ is your USB drive, you can use this drive to boot into Image Builder Wizard and automatically use your custom image as the default image to install.
6. If E:\ is your folder of files copied from your Image Builder Wizard DVD, you will need to create an ISO from these files to turn it back into a DVD. Example:

```
oscdimg -n -m -b"C:\Program Files\Windows Embedded
Standard 7\Tools\PETools\x86\boot\etfsboot.com" E:\
C:\MyNewIBWDisk.iso
```

   You may need to change this command to point to etfsboot.com correctly based on your installation directory and device architecture.

7.3.2 Customize a Captured Image

In addition to simply deploying custom images with Image Builder Wizard, you can also apply answer files and add additional languages to your custom image.

7.3.2.1 *Add a language:*

1. Choose one of the methods in section 3.3.1 to start Image Builder Wizard with your image.
2. When prompted to choose a language, select the language you would like to add. If the language was not already added to your image, it will be added. The selected language will also be set to the default system language.

7.3.2.2 *Apply an Answer File*

1. Do one of the following:
    - Boot into Image Builder Wizard from your utility disk and open a command prompt by either:
        - On the **Build an Image/Deploy an Answer File or WIM** page, press Shift + F10.
        - On the **Build an Image/Deploy an Answer File or WIM** page, select **Launch WinPE Command Prompt.**
    - Boot into Windows PE from your utility disk.
2. Navigate to the directory that contains setup.exe.
    - If you are booting from your Image Builder Wizard disk, look in <disk>:\sources.
    - If you are booting from a Windows PE disk, make sure that you can access your Image Builder Wizard files from either a network location or USB drive. Navigate to that location and find setup.exe in the \sources folder.
3. Type the following at the command prompt where z:\mydevice.wim and y:\myanswerfile.xml refer to the names and locations of your files:

```
setup.exe /installfrom:Z:\mydevice.wim /unattend:Y:\myanswerfile.xml
```

8. Service an Image

8.1 Service an Image with Image Configuration Editor and DISM

This lab consists of two procedures in which you apply updates to a Windows Embedded Standard 7 image by using Image Configuration Editor and Deployment Image Servicing and Management (DISM). DISM is a command line tool that installs, uninstalls, configures and updates features and packages. In the first section, you will create a configuration set using Image Configuration Editor. Then you will install the updates by choosing either online or offline commands.

In order to complete this lab, you must have a bootable device with a custom image already installed. Using the image you installed in sections 2.1.1 or 2.2.1.

8.1.1 Create a Configuration Set using Image Configuration Editor

1. Open Image Configuration Editor, select your Distribution Share, and open an existing answer file or create a new answer file.

> **Notes:**
> If you are creating a new image, ensure that the Embedded Core package (Product\Operating System\Foundation Core\ Embedded Edition) is in you answer file. This package is added by default when you create a new answer file.
>
> If you are adding a package to an existing image, remove the Embedded Core package from your answer file.

2. Select one or more packages to add to your existing image (for example, Windows Media Player found under **Graphics and Multimedia**).
3. [optional] Add the driver packages needed by your device in one of two ways:
   - Manually add driver packages from the **Distribution Share Packages\Driver** category.
   - Use a .pmq file by clicking File and then Import PMQ.
4. Resolve dependencies by:

a. Selecting **Validate** and then selecting **Add Required Packages**.

b. If there are any errors on the **Validation** tab of the **Messages** pane that read "Dependencies of the source package are not satisfied", double-click the error message and use the **Resolve Dependencies** dialog box to satisfy all required package dependencies.

- If you are asked to choose between two USB stacks, choose "Bootable Windows USB Stack" only if you are using the USB Boot EEF and enabling a USB bootable image (see section 5.3). Otherwise, choose "Standard Windows USB Stack".
- If you are asked to choose between two boot environment packages, choose "Embedded Windows 7 Boot Environment" only if you are installing HORM with EWF. Otherwise, choose "Windows 7 Boot Environment".

c. There may also be additional warnings to resolve.

d. Repeat steps a through c until no dependency errors exist.

5. Create a configuration set by selecting **Tools** and then selecting **Create Configuration Set**.
6. Select the target folder for you configuration set. This is the temporary location that will be used to create your configuration set (for example, C:\myCS).
7. [optional] You can also use an OEM folder (see section 2.2.3).
8. Click **OK**.
9. When you see the "Config set created successfully" message, click **OK**.
10. Your configuration set is now available at the target folder you specified.
11. You can also save the answer file for future use:

    a. Select **File** then select **Save Answer File**

    b. Enter a location and click **Save**.

8.1.2 Install using your Configuration Set

After you have created your configuration set, you can choose whether to install it online or offline.

8.1.2.1 *Online Installation*

Note:
For the CTP1 build, online installation is not available. Please continue on to Option 2:

Offline Installation to complete this exercise.

In this step, you apply your Configuration Set Unattend created in Section 4.1.1 to your online image.

To apply your configuration set:

1. Boot your device.
2. From a command prompt on your device, apply the AutoUnattend.xml file created by Image Configuration Editor. Replace <file_path> with the drive letter, folder, and file name of the configuration set that you created in section 4.1.1 above.

```
DISM /online /Apply-unattend:<file_path>
```

3. Verify that the packages were added to the image by using the DISM /Get-Packages command. /Get-Packages does not return a list of .msu packages; instead, it shows the corresponding .cab package.

```
DISM /online /Get-packages
```

8.1.2.2 *Offline Installation*

If you choose the offline installation method, you can also choose whether to create a new image based on an existing image using Image Builder Wizard, or you can use DISM to apply your changes directly to an existing image.

If you are creating a new image with a configuration set, you can use Image Builder Wizard to consume the answer file in the configuration set. Use the steps outlined in this section to point Image Builder Wizard to an answer file. Be sure that you point Image Builder Wizard to your configuration set answer file (AutoUnattend.xml) and that the configuration set payload (the AutoUnattend_Files folder) is at the same location as the configuration set answer file.

8.1.2.2.1 To create a new image using Image Builder Wizard:

After you have created your configuration set in Image Configuration Editor, save the folder in a location accessible by Image Builder Wizard along with your existing image and Setup.exe (IBW). This could be a network share, a USB drive, or a floppy drive, depending on the hardware you are installing on.

1. Boot into IBW on your device using the DVD or the utility disk you created in section 1.6.

2. On the **Build an Image/Deploy an Answer File or WIM** page, select **Deploy an Answer File or WIM**.

3. In the browse to file dialog box, browse to your answer file and click **Open**.

Note:
If you stored your answer file on a network drive you will need to access it from Windows PE by first mapping a network drive by using the "wpeinit" and "net use" commands. Wpeinit initializes basic WinPE functions like networking. Please run wpeinit first, then wait approximately 1 minute before continuing.

Example:
```
wpeinit
net use z: \\MyNetworkShareLocation
```

8.1.2.2.2 To use DISM to apply an update to an existing image:

Use DISM to mount the .wim file that you created in step 3.1.:

1. Similar to ImageX, you use DISM to mount and unmount images for the purposes of offline servicing. From the command prompt, type:

```
MD C:\TAP\Mount
DISM /Mount-Wim /Wimfile:E:\images\myimage.wim
/index:1 /Mountdir:C:\TAP\Mount
```

2. From a command prompt on your technician computer, apply the Autounattend created by Image Configuration Editor. Replace <file_path> with the drive letter, folder, and file name of the configuration set you created in step 5 of the section 4.1.1.

```
DISM /image:C:\TAP\Mount /Apply-unattend:<file_path>
```

3. Verify that the packages were added to the image by using the DISM /Get-Packages command. /Get-Packages does not return a list of .msu packages; instead, it shows the corresponding .cab package.

```
DISM /image:C:\TAP\Mount /Get-packages
```

4. Unmount and commit the changes to the image. From the command prompt, type:

```
DISM /unmount-wim /Mountdir:C:\TAP\Mount /commit
```

8.1.3 Test your image

In this step, you redeploy your updated image and verify your updates.

To test your image:

1. Deploy your updated image from your USB drive. (Also see section 3, Deploy an Image)
2. When the image is applied, remove all media (CD-ROM, USB hard drive, or floppy disk) and restart the computer.
3. Verify your updates. Depending on which updates you selected, you can verify from the OS that they were installed and are operating correctly.

8.2 Service an Image with DISM

In this lab, you update an existing image by using Deployment Image Servicing and Management (DISM). DISM supports updating both an offline image (.wim) and a subset of functions for updating an online image. DISM.exe is copied to your development computer as part of the Windows Embedded Studio installation and can be found in C:\Program Files\Windows Embedded Studio\Tools\.

8.2.1 Mount your image

In this step, you will use DISM to mount the image you captured in step 3.1 Prepare and Capture an Image. Similar to ImageX, you can use DISM to mount and unmount images for offline servicing.

To mount an image using DISM, open a command prompt and type:

```
MD C:\TAP\Mount
DISM /Mount-Wim /WimFile:E:\images\myimage.wim /index:1
/Mountdir:C:\TAP\Mount
```

8.2.2 Add sample packages

In this step, select two sample packages to add to your existing image offline. The following sample packages are included with the Windows Embedded DVD in the \Updates folder.

Update Packages for 32-bit Configurations

KB	Feature set (Parent Package)	Component
600000	WinEmb-Accessibility	Microsoft-Windows-accessibilitycpl
600001	WinEmb-IE-Core	Microsoft-Windows-IE-Behaviors
600002	WinEmb-MediaPlayer	Microsoft-Windows-MediaPlayer-

		autoplay
600003	WinEmb-INF-EmbeddedCore-Drivers-Package	1394.inf
600004	Microsoft-Windows-Embedded-Features-Package	Microsoft-Windows-WBioSrvc
600005	WinEmb-usbboot	embedded-usbstor.inf
600006	WinEmb-usb	usbstor.inf
600007	WinEmb-Shell-Basic	Microsoft-Windows-notepad

Update packages for 64-bit configurations

KB	Feature set (Parent Package)	Component
400000	WinEmb-Accessibility	Microsoft-Windows-accessibilitycpl
400001	WinEmb-IE-Core	Microsoft-Windows-IE-Behaviors
400002	WinEmb-MediaPlayer	Microsoft-Windows-MediaPlayer-autoplay
400003	WinEmb-INF-EmbeddedCore-Drivers-Package	1394.inf
400004	Microsoft-Windows-Embedded-Features-Package	Microsoft-Windows-WBioSrvc
400005	WinEmb-usbboot	embedded-usbstor.inf
400006	WinEmb-usb	usbstor.inf
400007	WinEmb-Shell-Basic	Microsoft-Windows-notepad

8.2.3 Adding a Package Using DISM

1. From a command prompt on your device, add two sample packages to your mounted image by using the DISM /Add-Package command. For example:

```
DISM /image:C:\TAP\Mount /Add-Package
/PackagePath:D:\Updates\KB600000\V1.001\WinEmb6.1-KB600000-
x86.cab
```

2. Verify that the packages were added to the image by using the DISM /Get-Packages command. /Get-Packages does not return a list of .msu packages; instead, it shows the corresponding .cab package. For example:

```
DISM /image:C:\TAP\Mount /Get-packages
```

8.2.4 Unmount and Commit Changes

In this step, you will unmount and commit the changes to the image. From the command prompt, type:

```
DISM /unmount-wim /Mountdir:C:\TAP\Mount /commit
```

8.2.5 Redeploy and Verify

In this step, you will redeploy your updated image and verify that the updates were installed.

1. Deploy your updated image from your USB drive (see section 3 Deploy an Image).

2. When the image is applied, remove all media (CD-ROM, USB hard drive, or floppy disk) and restart the computer.

3. Use DISM to verify that the updates were installed.

```
DISM /online /get-packages
```

8.2.6 Add a Language Pack (optional)

If your manufacturing process dictates adding language support during deployment, you can add the appropriate language packs by using the DISM /Add-package options. In this step, you will add a language pack to your base Windows Embedded Standard 7 image.

1. Make a copy of your base image so it is preserved. For example:

```
Copy E:\images\myimage.wim E:\images\myimage_lab.wim
```

2. From a command prompt on your device, mount the image to a directory:

```
DISM /Mount-Wim /WimFile:E:\images\myimage_lab.wim /Index:1
/mountdir:C:\TAP\Mount
```

3. Add a language package to your image offline by using DISM /Add-Package command. This example adds a language pack from the \Windows Embedded Studio\DS\Packages\LanguagePack.

```
DISM /image:C:\TAP\Mount /Add-Package
/PackagePath:C:\Program Files\Windows Embedded Standard
7\DS\Packages\LanguagePack\x86~Microsoft-Windows-Embedded-
LanguagePack-Package~ZH-CN~~~6.1.7053.0~1.0\LP.CAB
```

4. Verify that the language pack was added to the image by using the DISM /Get-Intl command. For example:

```
DISM /image:C:\TAP\Mount /Get-Intl
```

5. Unmount and commit the changes:

```
DISM /unmount-Wim /MountDir:C:\TAP\Mount /Commit
```

8.3 Install Updates with WUSA

Note:
For the CTP1 build, WUSA cannot be used to install updates. Please skip this exercise.

To install updates using the Windows Update Standalone Installer (WUSA), you have to add the WinEmb-Servicing-WUSA Feature Set to your image.

Copy the updates (in .msu format) that you want to install to your device. Sample updates can be found on the DVD in the \Updates folder. After the update file is copied to your device, you can either simply double-click the .msu file or use the WUSA command-line options to install the update:

```
wusa.exe d:\WinEmb6.0-KB934307-x86.msu /quiet
```

8.4 Service an Image with Package Scanner

Package Scanner is a command-line application that helps to service Windows Embedded Standard 7 devices. You can find the version of Package Scanner (Pkgscn.exe) for use on an x86 runtime in the C:\Program Files\Windows Embedded Standard Quebec\Tools\Image Configuration Editor\ directory (or in the directory where you installed Image Configuration Editor). You can find the version of Package Scanner (Pkgscn.exe) for use on an amd64 runtime in the C:\Program Files (x86)\Windows Embedded Standard 7\Tools\x64 Apps\Apps\ directory. You must run the version of Packages Scanner appropriate to the architecture of the image.

Run*pkgscn.exe /?*at a command prompt for a full list of command line options.

Package Scanner can be run offline or online against WES2011 images. By using the /Image: option, you can point Package Scanner to the root of an offline WES2011 installation (for example, if you attached the WES2011 device's hard disk to your development computer, or mounted the .wim file). Running Package Scanner without the /Image: option scans WES2011 images online. If you would like to run Package Scanner online, run CopyPkgScn.cmd from your Image Configuration Editor folder. If you are running as administrator, double-clicking CopyPkgScn will create a pkgscn folder, which you may copy to your target device. Running CopyPkgScn from a command prompt allows you to specify a target directory. The following examples assume Package Scanner is run online on the WES2011 image. Use /Image:D:\ (where D:\ is the location of your offline WES2011 image) to run Package Scanner offline.

Note:
If your development computer is running a 64-bit operating system, the paths listed above will instead be under the C:\Program Files (x86)\ directory.

8.4.1 Package Enumeration

Package Scanner can list the packages installed in an image by using the /Get-Packages command. This command is useful for determining what packages are in your image, and what updates have been applied. By using the /ConfigSetDir: option in addition to /Get-Packages you can save the list of installed packages into an answer file in a configuration set.

Example:

```
PkgScn.exe /Get-Packages /ConfigSetDir:E:\configset
```

8.4.2 Find Applicable Updates

Using the /Find-Updates command, Package Scanner can query your image and a folder containing update packages. Package Scanner will determine which updates are applicable to your image.

Use the /PackagePath: option to specify the folder of updates to scan (a directory for you to test with is included in the Updates folder on your Image Builder Wizard x86 and amd64 DVDs).

Use the */ConfigSetDir* option to create a configuration set from the applicable updates.

Example:

```
PkgScn.exe /Find-Updates /PackagagePath:F:\Updates
/ConfigSetDir:E:\configset
```

You can then use DISM to apply this configuration set to your device by using the following command from your Windows Embedded Standard 7 runtime image:

```
Dism.exe /online /apply-
unattended:E:\ConfigSet\autounattend.xml
```

8.4.3 Scavenging

Note:

For CTP2, scavenging is not available as the functionality is being revised. Please skip this step.

Scavenging refers to the removal of packages on your image that are no longer being used. You can use the scavenging feature of PackageScanner to prevent unwanted files from reducing the free disk space on your device over time.

For example, scavenging might be useful if you were to install an update KB12345 which updates notepad.exe to version 2.1. Later, you install update KB12346, which updates notepad.exe to version 2.2. Notepad.exe version 2.1 still exists on your device so that if you want to roll back to version 2.1, nothing will break. However, if you stay with version 2.2, version 2.1 still takes up disk space.

To try out scavenging, install two versions of an update. A directory of sample version 1 and 2 updates for you to test with is included in the Updates folder on your Image Builder Wizard x86 and amd64 DVDs. You'll need to use DISM to first install version 1 of the update, then install version 2 of the update.

You can use the following DISM command to install updates.

```
dism.exe /online /add-package /packagepath:D:\Updates\
\KB600000\V1.001\WinEmb6.1-KB600000-x86.cab
```

Install the first version of the update and then install the second version. Once both updates are installed, if you run the following command, you will find that both packages are installed, although the version 1 package is listed as superseded:

```
Dism.exe /online /get-packages
```

Now run:

```
Pkgscn.exe /Find-Scavenge /ConfigSetDir:e:\configset
```

Package Scanner will detect that version 1 of the update is not being used and is therefore eligible for scavenging. The configuration set created with the */ConfigSetDir* option contains an answer file that tells DISM to remove the unused packages.

You can apply the answer file using DISM by running the following command from your runtime image:

```
Dism.exe /online /apply-unattend:e:\ConfigSet\Autounattend.xml
```

9. Additional Windows Embedded Standard 7 Labs

9.1 Suppress OOBE

The Windows out-of-box experience (OOBE) or "Windows Welcome" is part of the setup UI that appears at the final stage of the setup process, or on first boot after a captured image is deployed. This UI element is run online (booting from the target device) and is a stand-alone application that runs when an image is set up with Image Builder Wizard or deployed from a sysprepped .WIM file. In the OOBE UI, an end user can configure certain personalization settings, such as naming the computer, creating a user account, setting date and time, time zone, and so on. Many of these settings may not be applicable in embedded scenarios, and, therefore, you may wish to suppress the OOBE UI during setup.

In this lab, we suppress the OOBE UI that appears at the end of setup. Suppression of the OOBE UI is accomplished by providing the necessary information to the setup/OOBE process by using a properly populated answer file.

Some key points that you should consider when suppressing the OOBE UI are user account creation, EULA acceptance, and the product key. Although all the settings used in this section are required to suppress the OOBE UI, these settings — in particular — are required for your system to be usable. If you omit any of these settings from your answer file, not only will the OOBE UI appear, but your system might possibly be unusable.

9.1.1 Create an Answer File

Create an answer file that contains all the settings required to suppress OOBE UI:

1. Launch the Image Configuration Editor and create a new answer file or open an existing one.
2. Add the **Embedded Core** package to your answer file if you do not already have it.
3. Optional: Add any other feature-sets and packages to your answer file that you need.
4. Click on the package that contains the setting in the **Answer File** pane.
5. Change **Filter View By** to the configuration pass shown for each setting in the following table.
6. Click on the **Value** column and enter the example value for each setting.

7. When all the settings have been updated, save the file in a location accessible by Image Builder Wizard. This could be a network share, a USB drive, or a floppy disk, depending on the hardware you are installing on.

9.1.2 Using your answer file with Image Builder Wizard

You can now use the answer file you created in the last step to suppress OOBE. When setup runs the oobeSystem pass, the OOBE UI should be suppressed because as all the information required by the OOBE UI is provided by the answer file. Note that there are several ways of deploying an image beyond the one listed below. See Section 3 for more information.

To use your answer file with Image Builder Wizard:

1. Boot into IBW on your device using the DVD or the utility disk you created in section 1.6.
2. On the **Build an Image/Deploy an Answer File or WIM** page, select **Deploy an Answer File or WIM**.
3. In the browse to file dialog box, browse to your answer file and click **Open**.

Note:
If you stored your answer file on a network drive you will need to access it from Windows PE by first mapping a network drive by using the "wpeinit" and "net use" commands. Wpeinit initializes basic WinPE functions like networking. Please run wpeinit first, then wait approximately 1 minute before continuing.

Example:
```
wpeinit
net use z: \\MyNetworkShareLocation
```

9.2 Using a Custom Shell and Custom Branding

This section describes how to create a custom shell experience using all of the custom shell components. Each of these components can be used separately or in any combination. With custom shell you can:

- Hide boot screens
- Use Shell Launcher to reference a custom shell
- Remove Windows branding from startup screens
- Replace the background image for the startup screens

- Add message blockers

9.2.1 Hide boot screens

The kernel screens shown during startup and resume from hibernation can be suppressed by adding the package Hide Boot Screens to your runtime using Image Configuration Editor or Image Builder Wizard.

9.2.2 Use Shell Launcher

9.2.2.1 *To use Image Configuration Editor to reference a custom shell (preferred method):*

1. Determine which package(s), if any, your shell needs, and select those packages.
2. Select **Command Prompt with Custom Shell** as your shell.
3. Place your shell in the appropriate OEM folder. (Refer to section 2.2.3 for additional OEM folder information or Microsoft TechNet article Designing a Distribution Share.)
4. Add the Shell Launcher component to the offline phase
5. Set the **CustomShell** setting to run your shell application.
6. If necessary, update *setupcomplete.cmd*. (See Microsoft TechNet article Add a Custom Script to Windows Setup.)

9.2.2.2 *To use Image Builder Wizard to reference a custom shell:*

1. Determine which package(s), if any, your shell needs, and select those packages.
2. Select **Command Shell** as your shell.
3. Update *setupcomplete.cmd* to modify the **HKLM\Software\Microsoft\Windows Embedded\EEF\Shell Launcher** value to include the name of your shell, using WMI. There is no Image Builder Wizard mechanism to modify unattend.xml. (See Microsoft TechNet article Add a Custom Script to Windows Setup.)
4. Place your shell in the appropriate OEM folder. (Refer to section 2.2.3 for additional OEM folder information or Microsoft TechNet article Designing a Distribution Share.)

9.2.3 Remove Windows branding

There are two packages available for branding the startup screens:

- Windows Embedded Standard Startup Screens – shows the Windows Embedded Standard logo.

- Unbranded Startup Screens – shows no logo.

To remove the Windows branding, select the **Unbranded Startup Screens** package.

9.2.4 Replace the startup screen background image

This step allows you to replace the background image for the startup screens. This, combined with the step above, allows you to rebrand the startup to your custom requirements.

1. Add the Custom Logon Desktop Background Images package.
2. Use the path setting to point to a directory containing one or more of the files listed below.
3. File names must be:
   - backgroundDefault.jpg
   - background768×1280.jpg
   - background900×1440.jpg
   - background960×1280.jpg
   - background1024×1280.jpg
   - background1280×1024.jpg
   - background1024×768.jpg
   - background1280×960.jpg
   - background1600×1200.jpg
   - background1440×900.jpg
   - background1920×1200.jpg
   - background1280×768.jpg
   - background1360×768.jpg

Note:
You do not need to supply all the files. BackgroundDefault.jpg will be used if the corresponding resolution file is not available. The file MUST be less than 256kb. Providing the image file that matches your video resolution will improve the system performance.

4. Use Image Configuration Editor to create a configuration set or an IBW disk from the answer file.

5. Deploy using the configuration set or answer file.

9.2.5 Add Message Blockers

Windows Embedded Standard 7 has two different message blocking options. They can be used separately or in unison.

9.2.5.1 *Message Box Default Reply*

This component will automatically respond to all message boxes using their default response. It is identical to the WES component (see MSDN Windows Embedded Standard library article Message Box Default Reply for more information). Message Box Default Reply is only supported for x86 systems.

9.2.5.2 *Dialog Filter*

This component allows you to define windows based on a set of parameters (Process name, Window Title, Dialog Type, list of buttons). For each window you can choose which button is used to dismiss the window. This component requires you to know which windows you want to block.

To create the configuration file, we have provided a Dialog Filter Editor that is installed on your development computer with the Windows Embedded Standard 7 Toolkit. The editor can be used to create a configuration file on any Windows 7 or Windows Embedded Standard 7 machines. To use it on your runtime, you will need to copy the application to the runtime. The files are located in the *Windows Embedded Standard 7\EmbeddedSDK\bin* directory. Be sure you copy the *en-US* directory along with the executable.

The Dialog Filter Service is able to process windows as they are created and, in some cases, before they are completely initialized. While this helps eliminate flicker on the device display, in some cases the Dialog Filter Service may see different window information (title, class, process or button list) than what is visible on the screen and the Dialog Filter Editor. Most commonly, “Untitled –“ may not be inserted into the window title before the Dialog Filter attempts to close the window. This appears mainly with applications that use documents and place the name in the title (such as Notepad).

If, for any reason, a window does not close as expected, open the log file as described below. This will provide the XML required to filter a window and which can be compared with the XML created by the Dialog Filter Editor.

9.2.5.3 *Log File Method*

The Windows event log can be used to get the XML data necessary for the configuration file. The configuration file is located at *ProgramData\Microsoft\DialogFilter\ConfigurationList.xml.*

To use the log, you must do the following:

1. Run the event viewer (*eventvwr.exe*)
2. Go to **Applications and Services Log/Microsoft/Windows/Dialog Filter/Operational**
3. Enable the log (either in the right window pane or by using the right mouse button on the **Operational** directory).

From this point on the Dialog Filter will log all windows it finds to the operational log. The information will include an XML snippet that can be copied to the configuration file.

An example is:

```
<?xml version="1.0" encoding="UTF-8"?>
<CL:dialogs xmlns:CL="urn:Dialogs">
<dialog>
<ProcessImageName>notepad.exe</ProcessImageName>
<Title>Untitled - Notepad</Title>
<Class>Notepad</Class>
<Buttons>
<Button>Line up</Button>
<Button>Line down</Button>
<Button>Column left</Button>
<Button>Column right</Button>
<Button>Minimize</Button>
<Button>Maximize</Button>
<Button>Close</Button>
</Buttons>
<Actions>
<Action>Close</Action>
</Actions>
</dialog>
</CL:dialogs>
```

9.2.5.4 *To Add Message Blockers:*

1. Add Message Box Default Reply (see MSDN Windows Embedded Standard library article Message Box Default Reply).
2. Add Dialog Filter

3. Use the path setting in Image Configuration Editor to point to a configuration file. The file must be named *ConfigurationList.xml*.

    - If you use Image Builder Wizard, install with Image Configuration Editor without a configuration set, or do not provide a configuration file, you can manually place the file in the directory *ProgramData**Microsoft**DialogFilter*\ on the device runtime. The file must be named *ConfigurationList.xml*.

Note:

The XML file must be saved in Unicode format. This can be done using Notepad if you choose the **save as** option and choose **utf-8**.

9.3 Build a USB bootable Windows Embedded 2011 image

USB Boot is an Embedded Enabling Feature (EEF) that you can use to boot a Windows Embedded 2011 image from a USB Flash drive (UFD), such as a USB thumb drive or USB key, instead of the device hard drive. Choose one of the two options below for building a USB bootable image with Image Builder Wizard. Although slightly more complicated, the second option will run faster.

9.3.1 Install from Image Builder Wizard directly to UFD :

1. Make sure the USB drive you want to install to is plugged into the device that is currently running Image Builder Wizard. Also, make sure there are no files on the USB drive that you need because they may be lost during setup.
2. Run **Image Builder Wizard** from your chosen source (network share, DVD, or utility disk).
3. Continue through the wizard.
4. On the **Please select Feature Packages to include in your image** page:
   a. Under **Embedded Enabling Features** select **Bootable Windows USB Stack**.
   b. Add any additional packages you wish to include.
   c. Click the **Resolve** button and resolve all dependency issues.
      - If asked to choose between Standard Windows USB Stack and Bootable Windows USB Stack make sure you leave only Bootable Windows USB Stack checked.
      - Continue resolving dependencies until complete.
5. Make certain the UFD is plugged into the device, then select **Next** to continue.
6. On the target drive selection screen, select the UFD target, partition and format it, then continue the installation process.
7. Allow setup to complete.
8. If this UFD will be deployed to another machine, follow the SysPrep instructions in section 3.1.1.

Note:
If you are using a UFD with WinPE to run IBW and your install target is a second UFD, after the file copy and when the reboot happens, remove the WinPE UFD from the system to prevent it from rebooting back into setup.

9.3.2 Install from Image Builder Wizard to Hard Drive, ImageX to UFD:

1. Run Image Builder Wizard from your chosen source (network share, DVD, or utility disk).
2. Continue through the wizard.
3. On the **Please select Feature Packages to include in your image** page:
   a. Under **Embedded Enabling Features** select **Bootable Windows USB Stack**.
   b. Add any additional packages you wish to include.

c. Click the **Resolve** button and resolve all dependency issues.

- If asked to choose between Standard Windows USB Stack and Bootable Windows USB Stack make sure you leave only Bootable Windows USB Stack checked.
- Continue resolving dependencies until complete.

4. On the drive selection screen, select the first partition on the target drive, using the GUI tools to partition and format the drive as appropriate.
5. If this image will be deployed to another machine, follow the SysPrep instructions in step 3.1.1.
6. Capture the sysprepped image to a .wim file with the following command:

```
imagex /capture <src><dst> "<name>"
```

7. Insert the destination UFD.
8. Run Diskpart by doing the following:

a. From a Windows Vista, Windows 7 or Windows Preinstallation (Windows PE) 3.0 environment, run the **DiskPart** tool by typing the following at a command prompt:

```
diskpart
```

> Note:
> The version of the DiskPart tool provided by Windows Vista, Windows 7 and Windows PE 2.0, 2.1 and 3.0 supports the partitioning and formatting of a UFD as a bootable device. Previous versions of the DiskPart tool, including the version provided by Windows XP, do not fully support partitioning and formatting a UFD to be bootable and should not be used.

b. 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 prompt:

```
list disk
```

c. Use the DiskPart tool to partition and format the drive and make it bootable. At the DiskPart prompt, type the following, replacing <disk_number> with the disk number of the USB drive:

```
select disk <disk_number>
clean
create part pri
select part 1
active
format quick fs=ntfs label=embedded
```

```
assign
exit
```

9. Apply the image to the UFD by using ImageX with the following command:

```
imagex /apply <src> 1 <dst>
```

10. After the image is applied, insert the UFD into the target hardware.

11. Boot the computer, making certain the BIOS settings are set to boot to a USB device first.

12. Allow setup to complete.

9.4 Create Custom Templates for IBW

9.4.1 Creating Templates

In addition to the templates created by Microsoft, IBW supports user-created templates. Templates are essentially just answer files that contain no settings. You can create your own templates using Image Configuration Editor.

1. Start Image Configuration Editor.
2. On the **File** menu, select **New Answer File**.
3. Add desired feature packages to your answer file.
   - It is recommended that you not add any driver or language packages to your template. These can be added in IBW.
4. On the**Validate** menu, select**Add Required Packages**.
   - While you may also choose **Add Required and Optional Packages**, this makes removing packages from a template in IBW more difficult, as there are many more dependencies between optional packages.
5. In the **Messages** pane, you may see warnings and errors.
   a. Click on each error and resolve feature package conflicts by selecting or deselecting packages.
   b. Review warnings and resolve appropriately.
6. Remove unnecessary language packages (optional). Resolving dependencies may have added a language package to your template. As mentioned above, this is not necessary for IBW templates, as languages will be added by IBW automatically. If you leave the language package in the template, this language will be in every configuration built with IBW, no matter what the user selected.
   a. Delete any language packages that were added.
   b. On the**Validate**menu, select **Validate Only**.
   c. Ensure that the language package is the only missing dependency.
7. Save your template.

9.4.2 Using Custom Templates in IBW

Once you have created a custom template, you need to make it available to IBW. Choose one of two options:

1. Use the **Browse to template** button in IBW's **Choose the way you want to build your image** page.

OR

2. Put your template in IBW's Distribution Share

    d. IBW searches for templates in DS\Templates\IBW

    e. If you have created a bootable IBW USB disk, you can easily put your custom templates in this folder to have IBW detect and make them available.

10. Services/ Updates

10.1 DSEK-10 Official website

The relevant information about DSEK-10 including the latest news and downloads will be presented in the website below:

http://www.winmate.com.tw/DigitalSignage/DSEK-10.htm

Please go there to obtain further details of DSEK-10.

10.2 Company information

Winmate Communication Inc.

9F, No.111-6, Shin- De Rd,. San- Chung City Taipei 241, Taiwan, R.O.C.

Tel: 886-2-8511-0288

Fax: 886-2-8511-0211

Contact us: sales@winmate.com.tw

Distributor and more products:

Please refer to our website: www.winmate.com.tw

10.3 User Support Information

10.3.1 Professional support

1. Telephone
2. Email to our Sales Representative
3. Online

Please go to the official website http://www.winmate.com.tw/DigitalSignage/DSEK-10.htm , click "support" category and fill your contact information in the columns. Then, we will contact with you.

4. Video Conference

5. Senior Project Manager Consulting

6. Pre-booked 1 day training in Supplier (excluding transportation/lodge/ meal fee)

10.3.2 Standard support

2. Email to our Sales Representative