



Microsoft Windows* XP* Embedded Image Creation Procedures

For the Intel® 3100 Chipset Development Platform

Revision 1.0
February 2006



Information in this document is provided in connection with Intel products. No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted by this document. Except as provided in Intel's Terms and Conditions of Sale for such products, Intel assumes no liability whatsoever, and Intel disclaims any express or implied warranty, relating to sale and/or use of Intel products including liability or warranties relating to fitness for a particular purpose, merchantability, or infringement of any patent, copyright or other intellectual property right. Intel products are not intended for use in medical, life saving, or life sustaining applications.

Intel may make changes to specifications and product descriptions at any time, without notice.

Designers must not rely on the absence or characteristics of any features or instructions marked "reserved" or "undefined." Intel reserves these for future definition and shall have no responsibility whatsoever for conflicts or incompatibilities arising from future changes to them.

Contact your local Intel sales office or your distributor to obtain the latest specifications and before placing your product order.

Copies of documents which have an ordering number and are referenced in this document, or other Intel literature, may be obtained from:

Intel Corporation

www.intel.com

or call 1-800-548-4725

*Third-party brands and names are the property of their respective owners.

Copyright © Intel Corporation 1997-2006.



Table of Contents

1.	Introduction	4
1.1.	Reference Documents.....	4
2.	Formatting and Partitioning the Target Hard Drive.....	4
3.	Unpacking the iMSM Driver.....	4
4.	Creating SLD for the AHCI driver	4
5.	Gather Intel® 3100 Chipset Hardware Information	5
6.	Create a Component for the Intel® 3100 Chipset Platform.....	5
7.	Create a New Configuration	6
8.	Update the Configuration Settings	7
9.	Building Microsoft Windows* XP* Embedded Image	8
10.	Starting Microsoft Windows* XP* Embedded.....	8



1. Introduction

This document describes the process to create a working Microsoft Windows* XP* Embedded image on the Intel® 3100 Chipset development platform. Third party vendors should use this only as a reference to create images that are suitable for their particular hardware and application.

1.1. Reference Documents

- <http://msdn.microsoft.com/library/default.asp?url=/library/en-us/xpehelp/html/xetbsTutorialBuildingDeployingRun-TimeImage.asp>

2. Formatting and Partitioning the Target Hard Drive

1. Connect a blank hard drive to the development system where Microsoft Windows* XP* Embedded development environment is installed.
2. Right click on **My Computer** and select **Manage**.
3. Select **Disk Management**.
4. Create a FAT 32 partition on the blank hard drive.
5. Mark the partition as Active.

3. Unpacking the iMSM Driver

In order for Microsoft Windows XP* Embedded* to boot up in ACHI mode, the iMSM driver must be built into the Microsoft Windows XP* Embedded* image. To do that, you must first unpack the files.

1. From the start menu, choose **Run** and type in "cmd". Click **OK**. A command prompt window appears.
2. Go to the location where "iata_enu.exe" is stored.
3. Enter "iata_enu.exe -a -a -p C:\<path>", where <path> is where you want the files to be extracted.
4. The installation wizard appears. Follow the installation steps and the files are extracted into the designated path. Note that this won't actually install the drivers on your system; it only copies the driver files into the designated path.
5. Go to <path>, and locate "iaAHCI.cat", "iaAHCI.inf", and "iaStor.sys".
6. Use the file explorer to copy these three files into one of the three repositories, which by default are located in "C:\Windows Embedded Data\Repositories".

Note: Ideally, you should create your own repository.

4. Creating SLD for the AHCI driver

1. Run Component Designer.
2. From **File** menu, choose **Import**.
3. In the dialog box, change the file type to "Setup information files (*.inf)" and select iaACHI.inf. The **INF Processing Options** dialog box appears.



4. Choose the **OK** button to start the Import File process.
5. Choose the **Start** button to import the iaACHI.inf file into Component Designer.
6. Choose the **Close** button to close the Import File dialog box. The “iaAHCI.sld” file appears in the SLD browser pane.
7. From the **File** menu, choose **Save** to save the .sld file.
8. From the **Tools** menu, choose **Component Database Manager**. The Component Database Manager opens.
9. Choose the **Database** tab, and then choose **Import**. The **Import SLD** dialog box appears.
10. Browse to the iaAHCI.sld file, choose it, and choose **Open**.
11. Choose **Import**. The .sld file is added to the database and the devices component is added to the database.
12. Close the **Import SLD** dialog box and the Component Database Manager.
13. Close the Component Designer.

5. Gather Intel® 3100 Chipset Hardware Information

1. Copy “tap.exe” from C:\Program Files\Windows Embedded\utilities onto A Intel® 3100 Chipset platform (which should be running Microsoft Windows* XP* SP2).
2. Run “tap.exe” on the target and save the resulting pmq file as “i3100_dev.pmq”.

6. Create a Component for the Intel® 3100 Chipset Platform

1. Run Component Designer.
2. From the **File** menu, choose **Import**. The **Choose File for Import** dialog box appears.
3. In the file list, choose “i3100_dev.pmq” file and then choose **Open**. The **Import File** dialog box appears.
4. Choose the **Start** button to import the “i3100_dev.pmq” file into Component Designer. It can take several minutes for the entries in the “i3100_dev.pmq” file to be matched with the device drivers available in the database.
5. Choose the **Close** button when the import finishes. The “i3100_dev.sld” file appears in the SLD browser pane.
6. From the **File** menu, choose **Save** to save the .sld file.
7. From the **Tools** menu, choose **Component Database Manager**. The Component Database Manager opens.
8. Choose the **Database** tab, and then choose **Import**. The **Import SLD** dialog box appears.
9. Browse to the “i3100_dev.sld” file, choose it, and choose **Open**.



10. Choose **Import**. The .sld file is added to the database and the devices component is added to the database.
11. Close the **Import SLD** dialog box and the Component Database Manager.
12. Close Component Designer.

7. Create a New Configuration

After creating a devices component, you can start building your run-time image. In Target Designer, you add components to your configuration. A configuration is a collection of components that constitutes a Microsoft Windows* XP* Embedded Operating System image.

1. Run Target Designer.
2. From the **File** menu, choose **New**. The New Configuration dialog box appears.
3. For configuration name, use “i3100_dev” and choose OK.
4. The “i3100_dev.slx” configuration appears in the configuration editor.
5. From the Component Browser, drag the **devices** component to the configuration editor pane.
6. In the **Search** box, type **Explorer Shell** and choose the **Search** icon.
7. The **Explorer Shell** component, located in the **Software\System\User Interface\Shells** node, is highlighted in the component browser. Drag the Explorer Shell component to the configuration editor pane. The Explorer shell is added to the configuration.
8. Using the same technique, add the following recommended components:

Note: Search starts from your last selected node in the component browser, and searches down from there. Select the top-level node in the component before choosing the Search icon.

Component	Path
NTFS	/Software/System/System Services/Base
NT Loader	/Software/System/System Services/Base
FAT	/Software/System/System Services/Base
ACPI Uniprocessor PC	/Software/System/System Services/Base
English Language Support	/Software/System/International/Infrastructure/Infrastructure
USB User Interface	/Software/System/User Interface/Shells/Windows Shell
USB Interface Core	/Software/System/User Interface/Shells/Windows Shell
Device Manager	/Software/System/User Interface/Shells/Windows Shell
Registry Editor	/Software/System/User Interface/Shells/Windows Shell
Disk Management	/Software/System/Storage/Storage & File



Command Line Utility	Systems/Applications
Disk Management MMC Snap In	/Software/System/Storage/Storage & File Systems/Applications
Fat Format	/Software/System/Storage/Storage & File Systems/Applications
Fat Format/Tools	/Software/System/Storage/Storage & File Systems/Applications
FAT to NTFS Conversion	/Software/System/Storage/Storage & File Systems/Applications
FAT/NTFS Common Format/Tools/Files	/Software/System/Storage/Storage & File Systems/Applications
Legacy DOS Utilities	/Software/System/Storage/Storage & File Systems/Applications
Misc. File System Utilities	/Software/System/Storage/Storage & File Systems/Applications
NTFS Format	/Software/System/Storage/Storage & File Systems/Applications
NTFS Format Tools	/Software/System/Storage/Storage & File Systems/Applications
NTFS Management Utility	/Software/System/Storage/Storage & File Systems/Applications
Intel® ESB2 SATA AHCI Controller	/Hardware/Devices/IDE ATA/ATAPI controllers

8. Update the Configuration Settings

After creating your run-time image, there are several configuration settings that you must update, depending on the requirements of your run-time image and the target device.

1. Expand the **User Interface Core** component in the configuration browser and choose **Settings**. The User Interface settings appear in the details pane.
2. Select the following check boxes:
 - Show My Computer on Start Menu
 - Show Desktop icons
 - Show Help and Support on Start Menu
 - Show Control Panel on Start Menu
 - Show Network Connections on Start Menu
 - Show Search on Start Menu
 - Show Run on Start Menu
 - Show Log Off on Start Menu (default)



- Show Shut Down on Start Menu (default)
 - Show Internet Explorer on Start Menu
 - Show All Programs list on Start Menu
 - Lock Task bar (default)
 - Use Windows Classic folders (default)
 - Enable Drag and Drop on Start Menu (default)
3. At the top of the i3100_dev node in the configuration browser, choose **Settings**. The configuration settings appear in the details pane.
 4. Under Target Device Settings, choose **Show**.
 5. Type the correct values for the second hard disk where the Windows XP Embedded OS will be deployed. For example, a second hard disk, with the letter C: and boot arc path of rdisk(1)partition(1) would require the following values:
 - Boot drive: C:
 - Windows folder: C:\WINDOWS
 - Program Files folder: C:\Program Files
 - Documents and Settings folder C:\Documents and Settings
 - Boot ARC path: multi(0)disk(0)rdisk(0)partition(1) (default)
 - Boot partition size (MB): 1024
 - Partition cluster size (bytes): 4096 (default)

9. Building Microsoft Windows* XP* Embedded Image

1. Go to **Configuration** and select **Build Target Image....** The “Build i3100_dev.slx” dialog box shows up.
2. Select **Build**.
3. If prompted to run a dependency check, select **Yes**. There should not be any errors or warnings. If there are, then follow the Target Builder’s recommendation to resolve them. When dependency check is done, close the dependency check dialog box.
4. The “Build i3100_dev.slx” dialog box will now ask you to confirm deleting all the contents in the image folder. Select **Yes**. The image building process will begin.
5. Once the process is done, copy all the files in “C:\Windows Embedded Images” into the blank drive created earlier.

10. Starting Microsoft Windows* XP* Embedded

1. Connect the drive created above to an Intel® 3100 development system, power the system and start the operating system.