ML505/506 CompactFlash
Re-imaging Procedure

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Overview

- Procedure
- Warnings
- Setup
- Checksum
- Determining the Drive Number
- Imaging the CompactFlash

Note: This presentation can be used for ML505 or ML506; see notes at bottom of these pages
Procedure

• This procedure restores the ML505 32 MB CompactFlash to as-shipped condition
• Can be used to install future updated CompactFlash disk images

Note: Presentation applies to the ML505 and ML506
Caution

• This procedure will erase a hard drive
  – Make sure you are erasing the Compact Flash and not your PC’s hard drive
  – Drive numbers mentioned in this procedure sometimes change when your PC reboots - verify the drive number each time this procedure is used
  – These tools do not check to see if you are doing something wrong
  – If you do not make a backup copy of the CompactFlash card you are imaging, you will lose all the data on the CompactFlash

• Xilinx cannot take responsibility for lost data or damaged hard drives

Note: Presentation applies to the ML505 and ML506
Equipment Overview

• SiliconDrive™ 32 MB CompactFlash™
  – Comes preloaded with hardware and software demonstration systems for ML505

Note: The ML506 uses a 128 MB Compact Flash
Equipment Overview

• Any CompactFlash Programmer that attaches to your PC - Some examples:
  • SanDisk ImageMate®
    – Provides a USB interface for programming CompactFlash cards
    – See www.sandisk.com for more information
  • SanDisk PC Card adapter
    – Used in a laptop PCMCIA slot to program CompactFlash cards

Note: Presentation applies to the ML505 and ML506
Files needed

- Unzip these files to a temp directory (1)
  - ml505_cf_img.zip
  - cf_image_tools.zip
  - Optional - xcsc.zip

Note: For the ML506, use ml506_1080072r02.zip
Image Checksum

- Optional - Run `xcsc.exe` on the image
  - These values (1) are for the `ml505_cf_0570051r02.img`
  - The image CRC can be found on the download page for that specific image

Note: For the `ml506_1080072r02.img` md5 sum is `46b307d96ec30318847e5bef464302e8`
Determining the Drive Number

- Right click My Computer and select Manage (1)

Note: Presentation applies to the ML505 and ML506
Determining the Drive Number

- Select **Storage -> Disk Management** (1)
- In this case, the CompactFlash’s Drive Number is “2” (2)
  - May have a different number on your system
  - This number may change after a reboot or hardware change, so always check
  - The partitioning (3) may look different (two instead of one)

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**Note:** Presentation applies to the ML505 and ML506
Determining the Drive Number

• The Drive number for the CompactFlash can vary from PC to PC
  – The Drive number in this case is “0”
Mount the CompactFlash

- Start a Windows command shell
- CD to the temp directory (1)
- Mount the CompactFlash card (2)
  
  `mount -b -s -f //./PHYSICALDRIVE\x /dev/hd0\x`
  
  - Replace the x’s with the CompactFlash’s drive number

Note: Presentation applies to the ML505 and ML506
Image the CompactFlash

• Write the disk image to the CompactFlash card (1)
  \[ \text{dd bs=256 if=ml505 Cf_0570051r02.img of=/dev/hd0x} \]
  – Replace the \( x \) with the CompactFlash’s drive number

• This process can take up to 30 minutes
  – When finished it will list the records in and out (2)

Note: For the ML506, use the file name of the ML506 image
Unmount the CompactFlash

- Unmount the CompactFlash card (1)
  
  unmount -s /dev/hd0x
  
  - Replace the x with the CompactFlash’s drive number

Note: ML506 should show 508416+0 records in and out
Drive Contents

- The CompactFlash should look like this after Imaging (1)
  - Note: You may have to eject and reinsert the CompactFlash to see this
  - Review “Remove the CompactFlash” slide before ejecting the disk

- The Disk Properties will show 30.9 MB space on the disk (2)

Note: Presentation applies to the ML505 and ML506
Drive Partitions

- After imaging, one partition will appear on the CompactFlash (1)

Note: Presentation applies to the ML505 and ML506
Remove the CompactFlash

• To insure data integrity, always Eject the Compact Flash prior to removing it from the adapter
• Right-click on the CompactFlash Drive and select Eject (1)
• Remove the Compact Flash card

Note: Presentation applies to the ML505 and ML506
Remove the CompactFlash

- When using a PC Card Adapter, the card must be properly stopped before it is removed from your PC
  - Click on the Unplug or Eject Hardware icon in your system tray (1)
  - Stop the PCMCIA controller (2)

Note: Presentation applies to the ML505 and ML506
CompactFlash IDs

- Use a PC Card Adapter
- Right click on the CF disk and select Properties (1)
- This disk is a SDCFB-512 (2)

Note: Presentation applies to the ML505 and ML506
Documentation

- ML505/506
  - ML505 Overview
    http://www.xilinx.com/ml505
  - ML506 Overview
    http://www.xilinx.com/ml506
  - ML505/506 Getting Started Tutorial – UG348
  - ML505/506 Schematics
Documentation

• Virtex-5
  – Silicon Devices
    http://www.xilinx.com/products/silicon_solutions
  – Virtex-5 Multi-Platform FPGA
  – Virtex-5 Family Overview: LX, LXT, and SXT Platforms
    http://www.xilinx.com/support/documentation/data_sheets/ds100.pdf
  – Virtex-5 FPGA Configuration User Guide
  – Virtex-5 FPGA DC and Switching Characteristics Data Sheet
Documentation

• RocketIO
  – RocketIO GTP Transceivers
  – RocketIO GTP Transceiver User Guide
Documentation

• Design Resources
  – ISE Development Tools and IP
    http://www.xilinx.com/ise
  – Integrated Software Environment (ISE) Foundation Resources
    http://www.xilinx.com/ise/logic_design_prod/foundation.htm
  – ISE Manuals
    http://www.xilinx.com/support/software_manuals.htm
  – ISE Development System Reference Guide - 9.2i
    http://toolbox.xilinx.com/docsan/xilinx92/books/docs/dev/dev.pdf
Documentation

- Platform Studio
  - Embedded Development Kit (EDK) Resources
    http://www.xilinx.com/edk
  - MicroBlaze Processor Reference Guide – UG081
  - EDK Concepts, Tools, and Techniques – XTP013
Documentation

• Additional Design Resources
  – Customer Support
    http://www.xilinx.com/support
  – Xilinx Design Services:
    http://www.xilinx.com/xds
  – Titanium Dedicated Engineering:
    http://www.xilinx.com/titanium
  – Education Services:
    http://www.xilinx.com/education
  – Xilinx On Board (Board and kit locator):
    http://www.xilinx.com/xob