

Linux CompactFlash Re-imaging Procedure



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Overview

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





Procedure

- This procedure restores the 512 MB CompactFlash to as-shipped condition
- Can be used to install future updated CompactFlash disk images





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



Equipment Overview

- SanDisk[®] 512 MB CompactFlash[™]
 - Comes preloaded with hardware and software demonstration systems for ML410







Equipment Overview

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







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Files needed

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- Unzip these files to a temp directory (1)
 - 0570040r03.zip
 - cf_image_tools.zip
 - Optional xcsc.zip

E <u>x</u> tract to:	Eolders/drives:	Extract
C:\tmp Files Selected files All files Files: C Files: Qverwrite existing files	→	
Skip older files		New Folder

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Image Checksum

- Optional Run xcsc.exe on the image
 - These values (1) are for the 0570040r03.img

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20.5%	Calculating	li		Processed 512	8 bytes for 0:05, with average rai	te 90,114, /



Determining the Drive Number

• Right click My Computer and select Manage (1)



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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)





Determining the Drive Number

• The Drive number for the CompactFlash can vary from PC to PC

- The Drive number in this case is "0"

📙 Computer Management									
Tree	Volume	Layout	Туре	File System	Status	Capacity			
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 → Logical Drives → A Removable Storage → S Services and Applications 	Contraction Contractic Con	(C:) 18.62 GB NTFS Healthy (System)							
	37.25 GB Online Primary Partition	37.25 GB NTFS Healthy (Active)							



Mount the CompactFlash

- Start a windows command shell
- CD to the temp directory (1)
- Mount the CompactFlash card (2)

mount -b -s -f //./PHYSICALDRIVEx /dev/hd0x

- Replace the x's with the CompactFlash's drive number

	🖾 Command Prompt	
	Microsoft Windows XP [Version 5.1.2600] (C) Copyright 1985-2001 Microsoft Corp.	
1 —	→C:\>cd tmp	
	C:\tmp]mount -b -s -f //./PHYSICALDRIVE2 /dev/hd02 - 2	
	C:\tmp>	
	AND AND ROTIC COMMANDER	•



Image the CompactFlash

- Write the disk image to the CompactFlash card (1) dd bs=256 if=0570040r03.img of=/dev/hd0x
 - Replace the x with the CompactFlash's drive number
- This process can take up to 30 minutes

2

- When finished it will list the records in and out (2)





Unmount the CompactFlash

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



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 "<u>Remove the CompactFlash</u>" slide before ejecting the disk
- The Disk Properties will show 95 MB space on the disk (2)

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Name 🔺	Size	
XILINX		
🗐 ml410_readme.txt	12 KB	
🖬 vxworks	1,864 KB	
👼 xilinx.sys	1 KB	
4 objects	1.83 MB 🛛 😏 My Computer	1.

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Capacity: 100,390,912 bytes 95.7 MB								
2	2 Drive G							
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Drive Partitions

- After imaging, two partitions will appear on the CompactFlash (1)
 - The second (393 MB) is the Linux partition
 - Windows doesn't know about the Linux file system (2)



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





Remove the CompactFlash

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







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CompactFlash IDs

Disk 0 Properties

Disk:

Type:

Disk 0

Online

Removable

General

Status:

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

					Lapacity:	489 MB
					Unallocated Space:	0 MB
📙 Computer Management					р. : т	
Action View	1 🕄 🔤 🛛	1			Device Type:	IDE (Port:u, Target ID: u, LUN:u)
True I		-	1-		Hardware Vendor:	SanDisk SDCFB-512
Tree	Volume	Layout	Туре	File System	Adapter Name:	PCMCIA IDE /ATAPI Controller
🖳 Computer Management (Local)		Partition	Basic		· ·	
🗍 🕵 System Tools	🖃 (C:)	Partition	Basic	NTFS	Volumes contained or	a this disk:
Event Viewer	💷 (D:)	Partition	Basic	NTFS		rails disk.
🗄 📆 System Information	(E:)	Partition	Basic	FAT	Volume	Capacity
🗄 🐺 Performance Logs and Alerts			1			393 MB
🗄 👰 Shared Folders					(E:)	95 MB
🖳 🧾 Device Manager	BDisk 0					
🗄 🚮 Local Users and Groups	Removable	Change Drive Le	tter and Path		,	
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Logical Drives	Filmary Part	Help				
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Available Documentation

- Platform Studio Documentation
 - Embedded Development Kit (EDK) Resources
 <u>http://www.xilinx.com/ise/embedded_design_prod/platform_studio.htm</u>
- ML410
 - ML410 User's Guide

http://www.xilinx.com/bvdocs/userguides/ug085.pdf

ML410 Overview

http://www.xilinx.com/ml410

- ML410 Schematics

http://www.xilinx.com/products/boards/ml410/docs/ml410_revE.pdf

