Linux CompactFlash Re-imaging Procedure

April 2007

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Overview

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- 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

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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

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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 www.sandisk.com for more information

- SanDisk PC Card adapter

  – Used in a laptop PCMCIA slot to program CompactFlash cards

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Files needed

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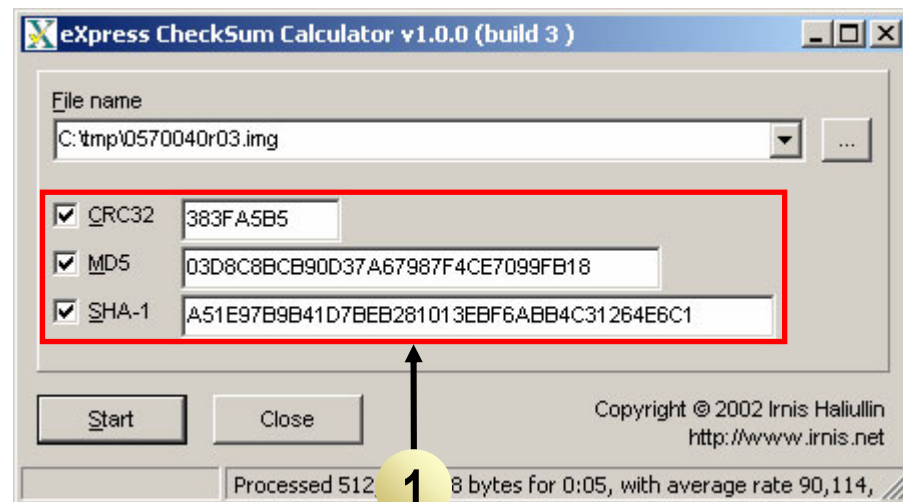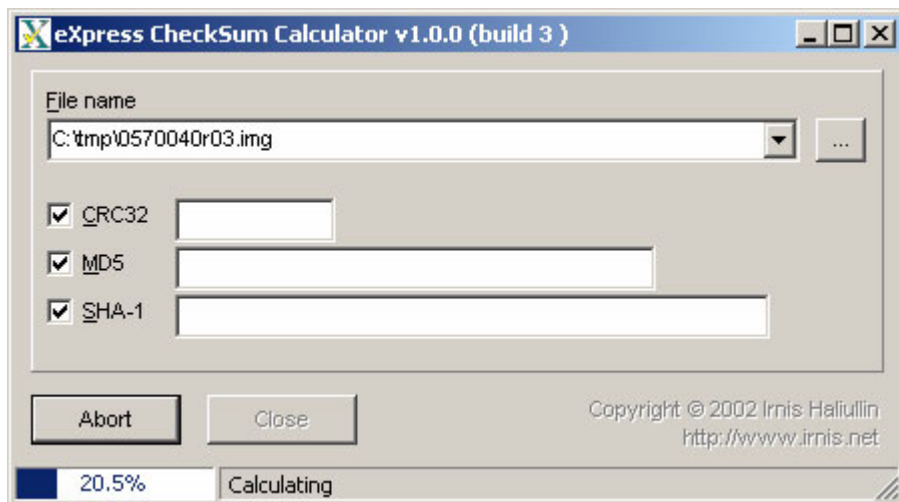 - 0570040r03.zip
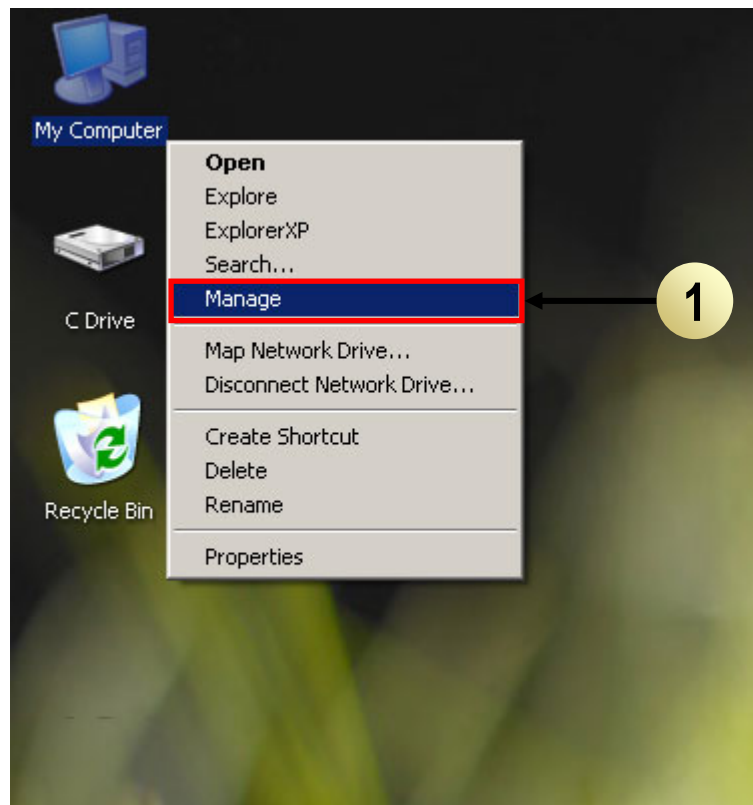 - cf_image_tools.zip
  - Optional - xcsc.zip
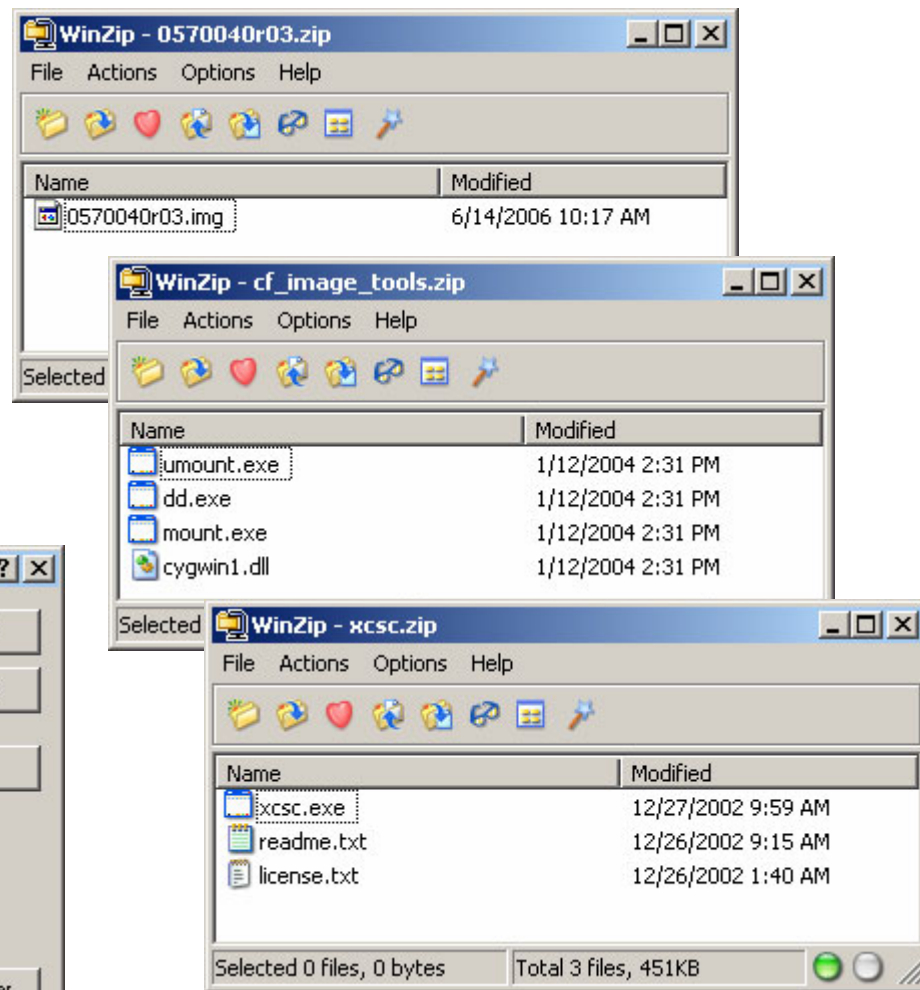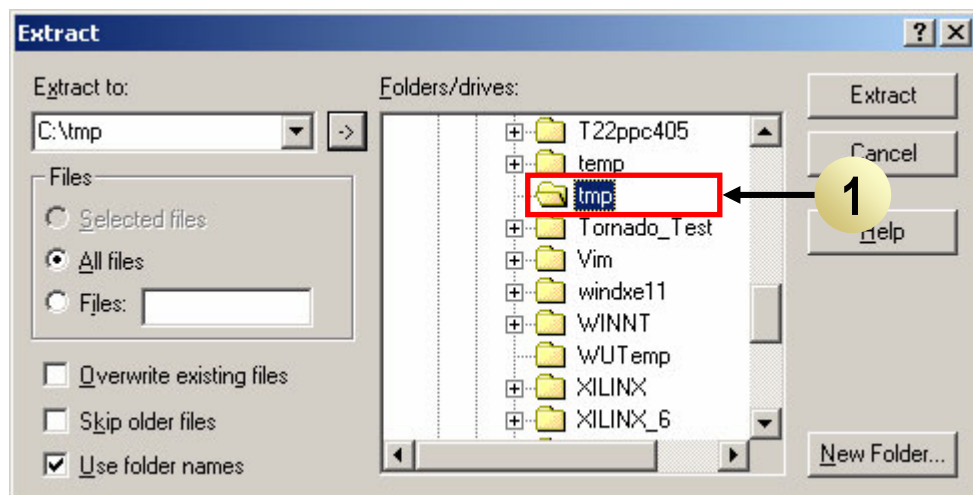
Image Checksum

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

Determining the Drive Number

- Right click My Computer and select **Manage** (1)

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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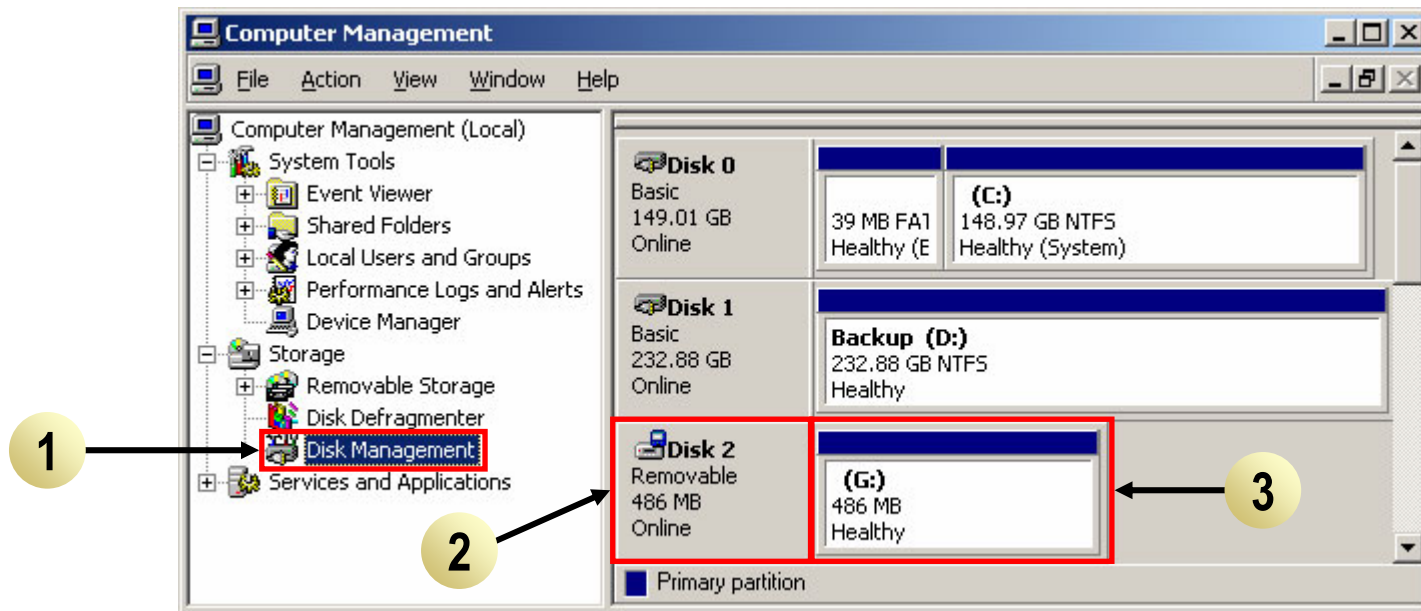
Determining the Drive Number

- The Drive number for the CompactFlash can vary from PC to PC
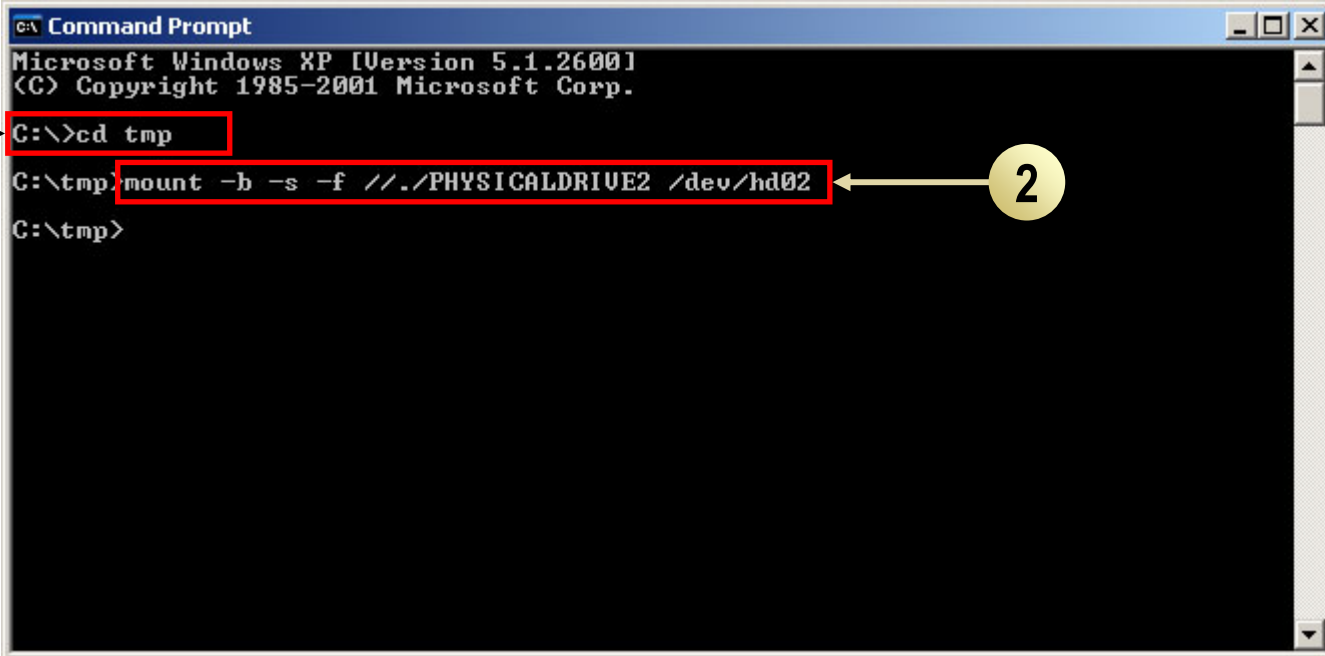 - The Drive number in this case is "0"
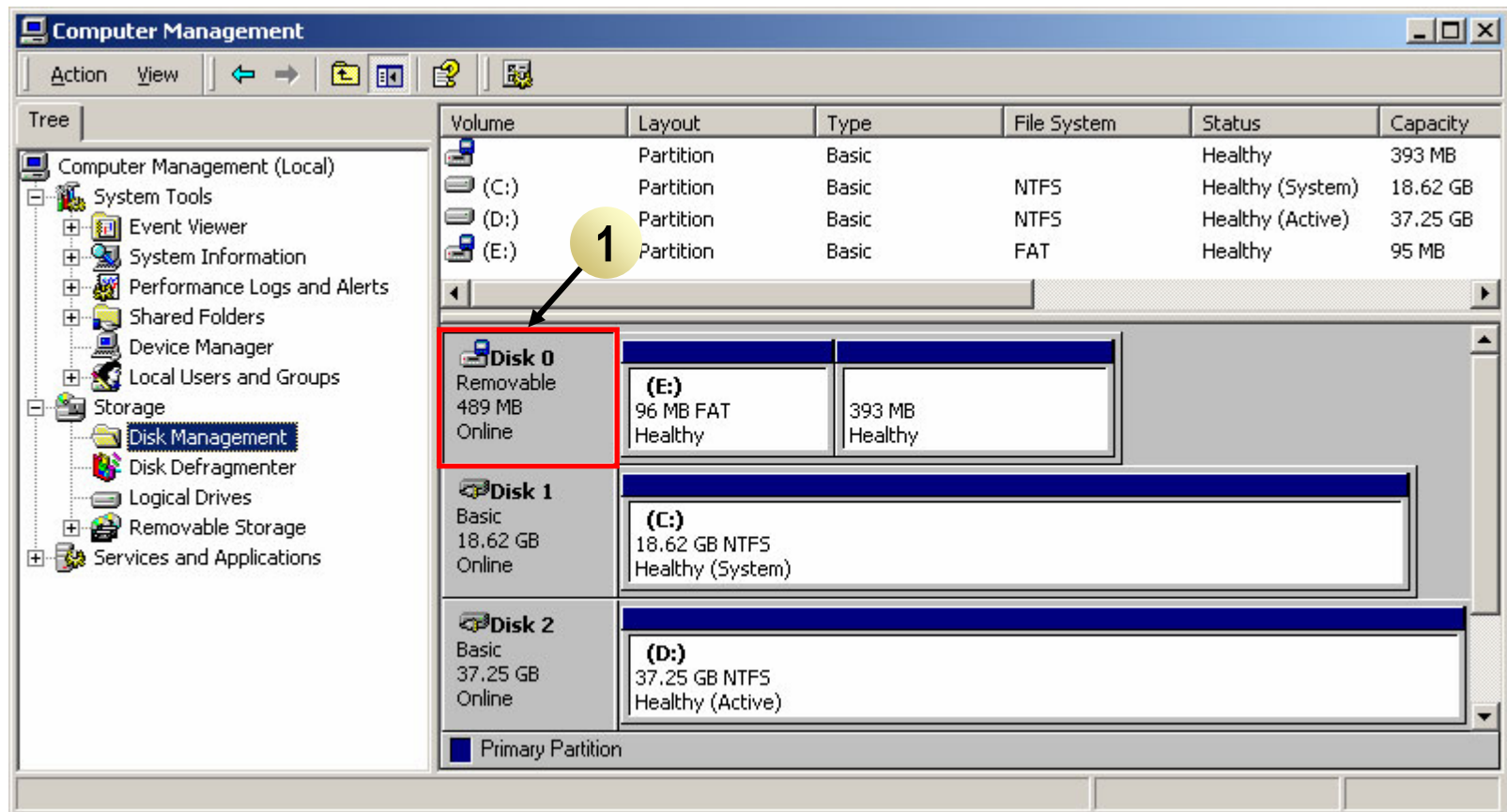
Mount the CompactFlash

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

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

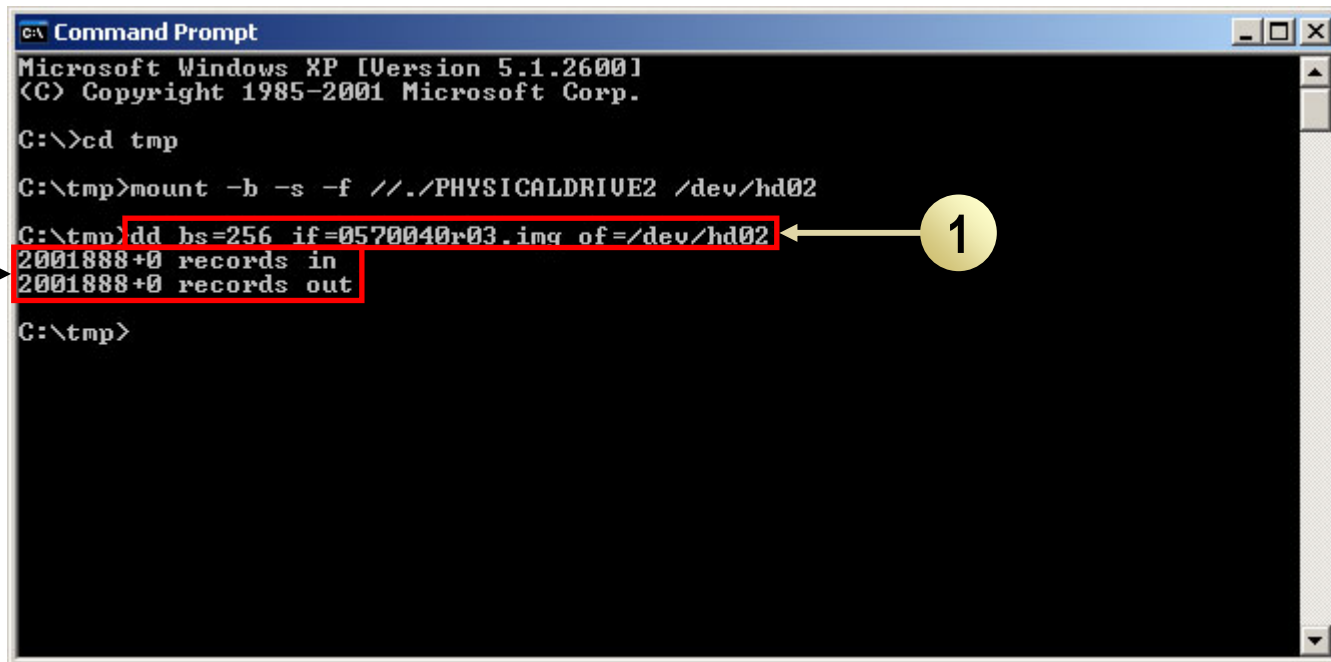 – Replace the x's with the CompactFlash's drive number

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

  – When finished it will list the records in and out (2)
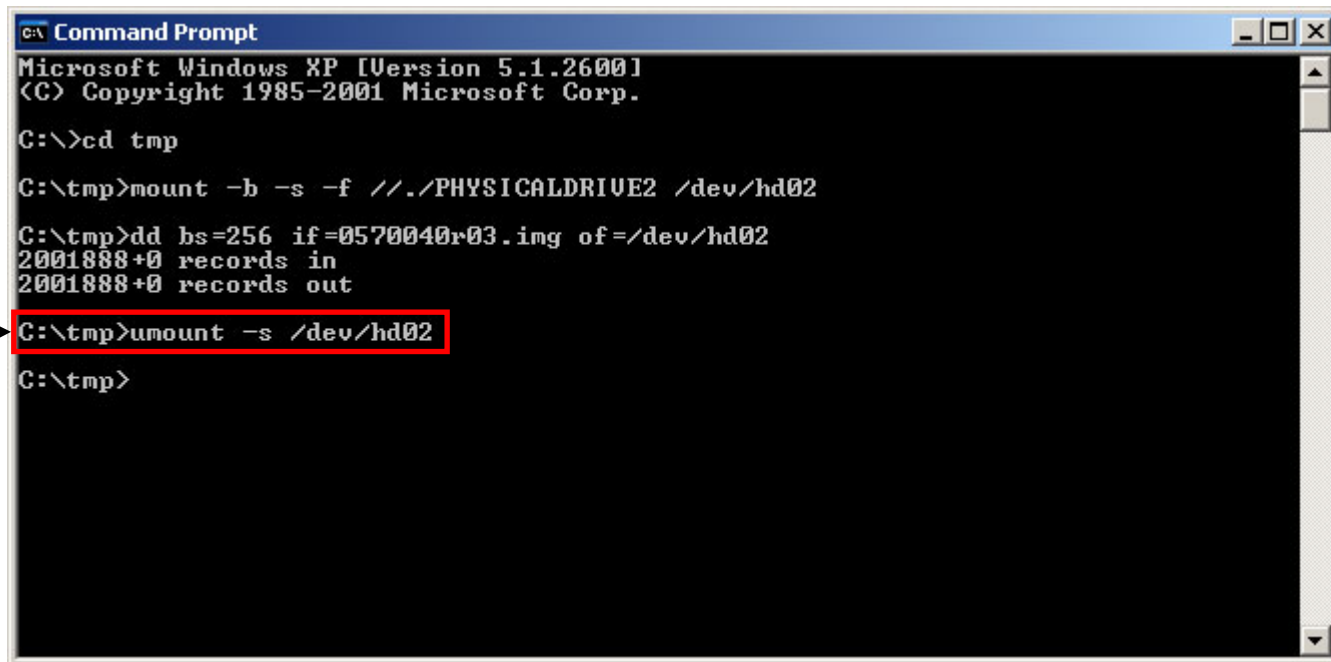
Unmount the CompactFlash

- Unmount the CompactFlash card (1)

umount -s /dev/hd0x

– Replace the x with the CompactFlash's drive number

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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 95 MB space on the disk (2)
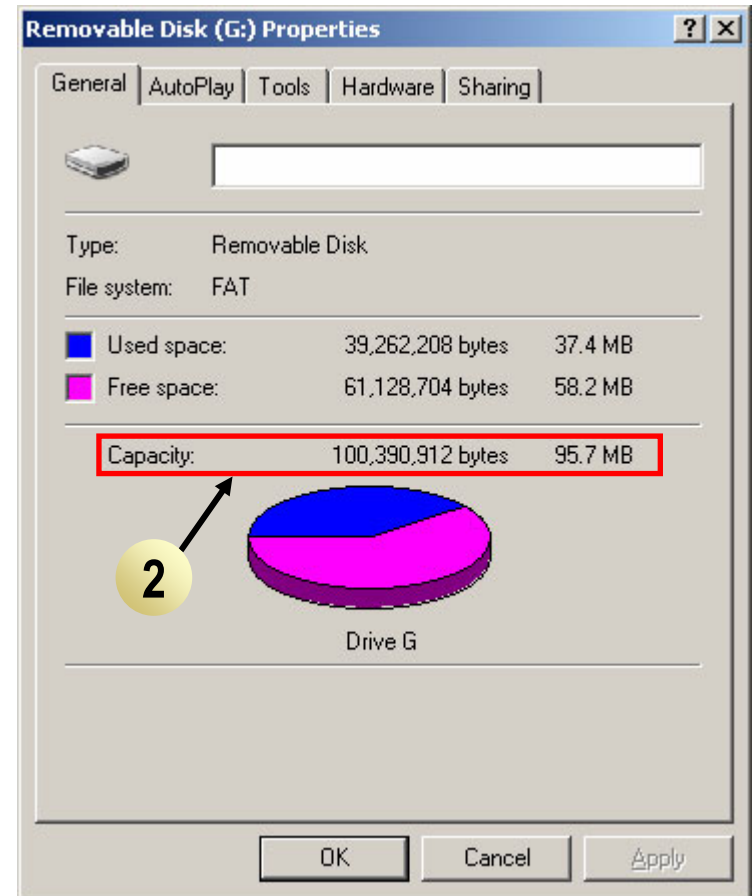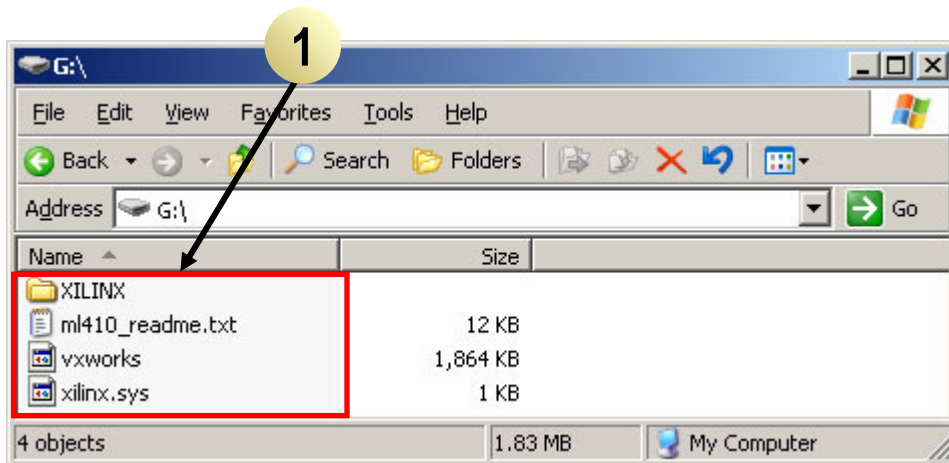
Drive Partitions

- 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)
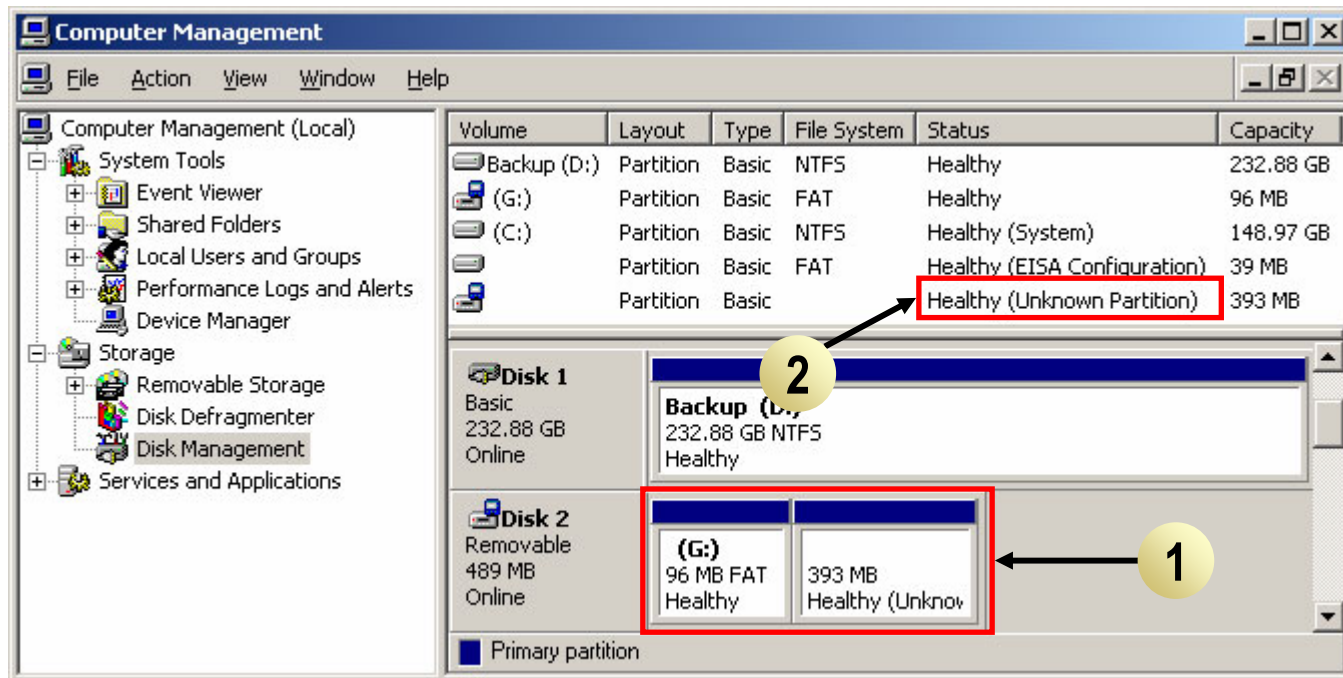
Remove the CompactFlash

- 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
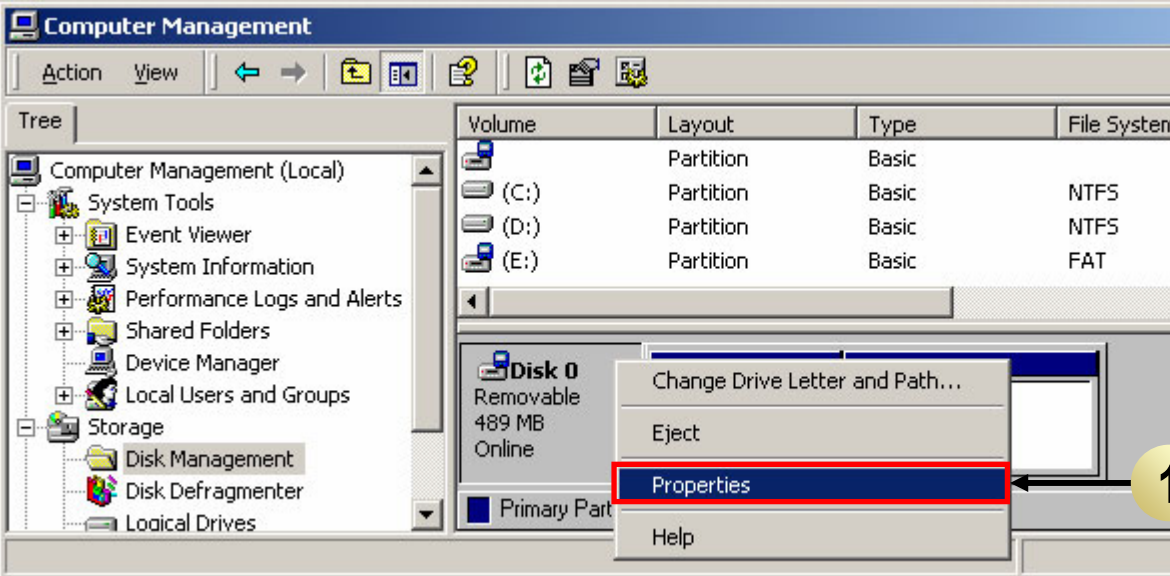
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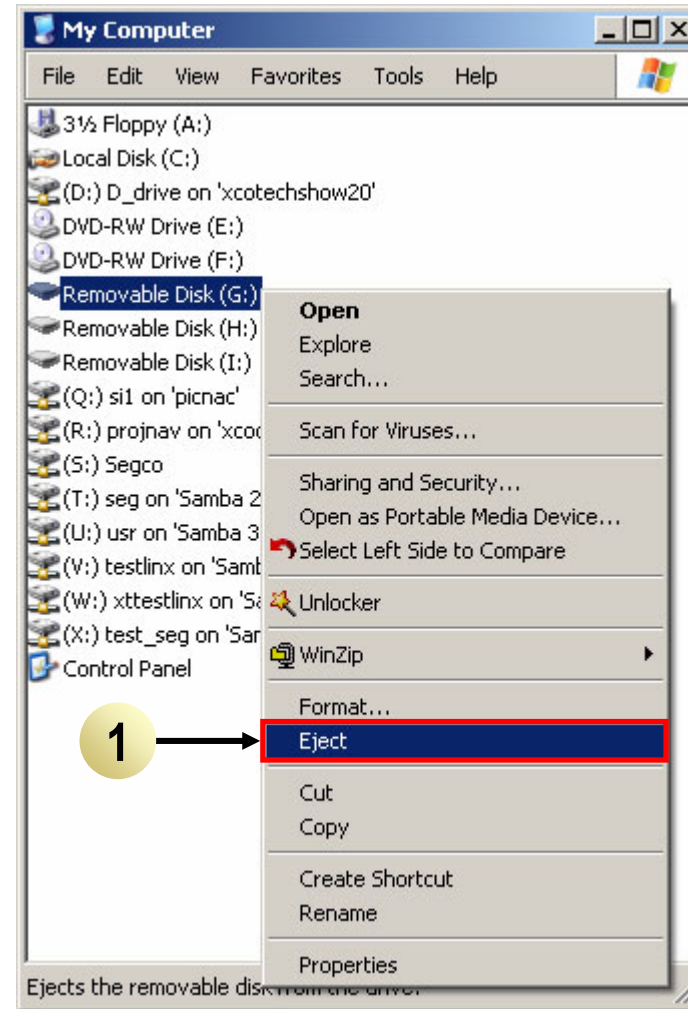
Remove the CompactFlash

- 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)
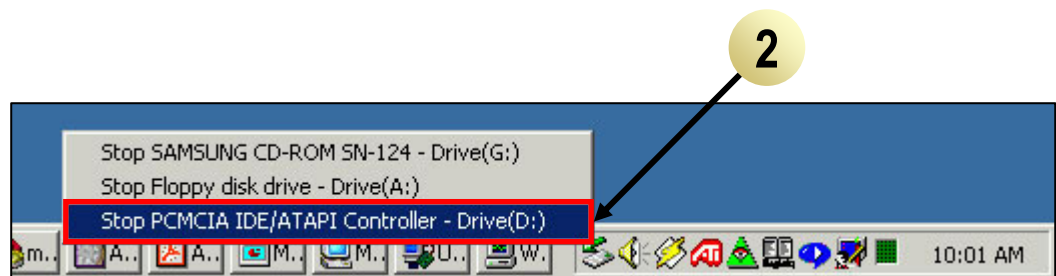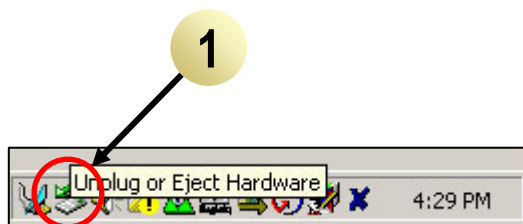
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CompactFlash IDs

- Use a PC Card Adapter

- Right click on the CF disk and select Properties (1)

- This disk is a SDCFB-512 (2)
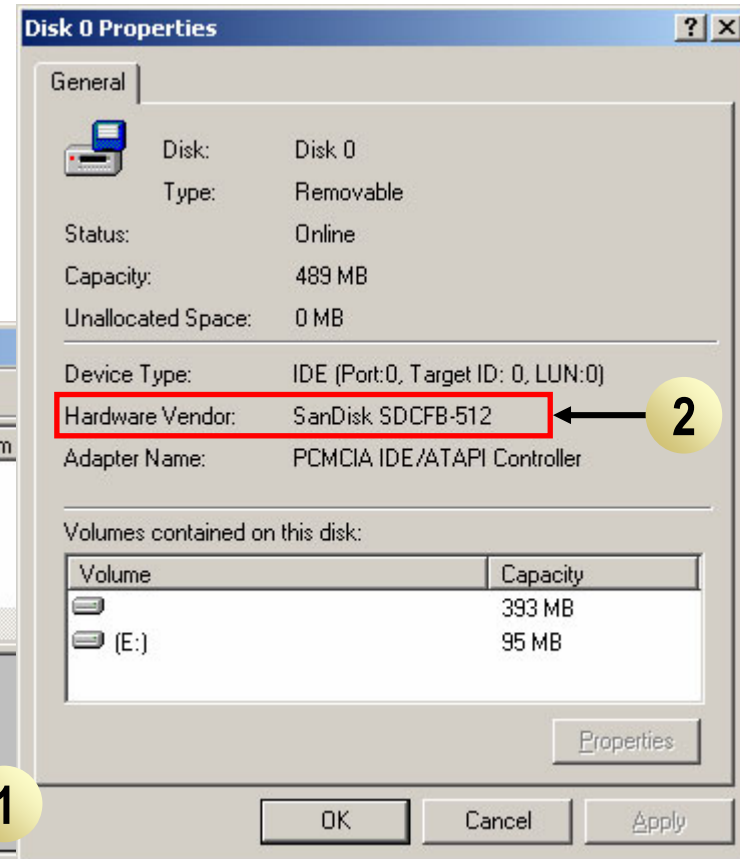
Available Documentation

- Platform Studio Documentation
  - Embedded Development Kit (EDK) Resources

    http://www.xilinx.com/ise/embedded_design_prod/platform_studio.htm

- 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

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