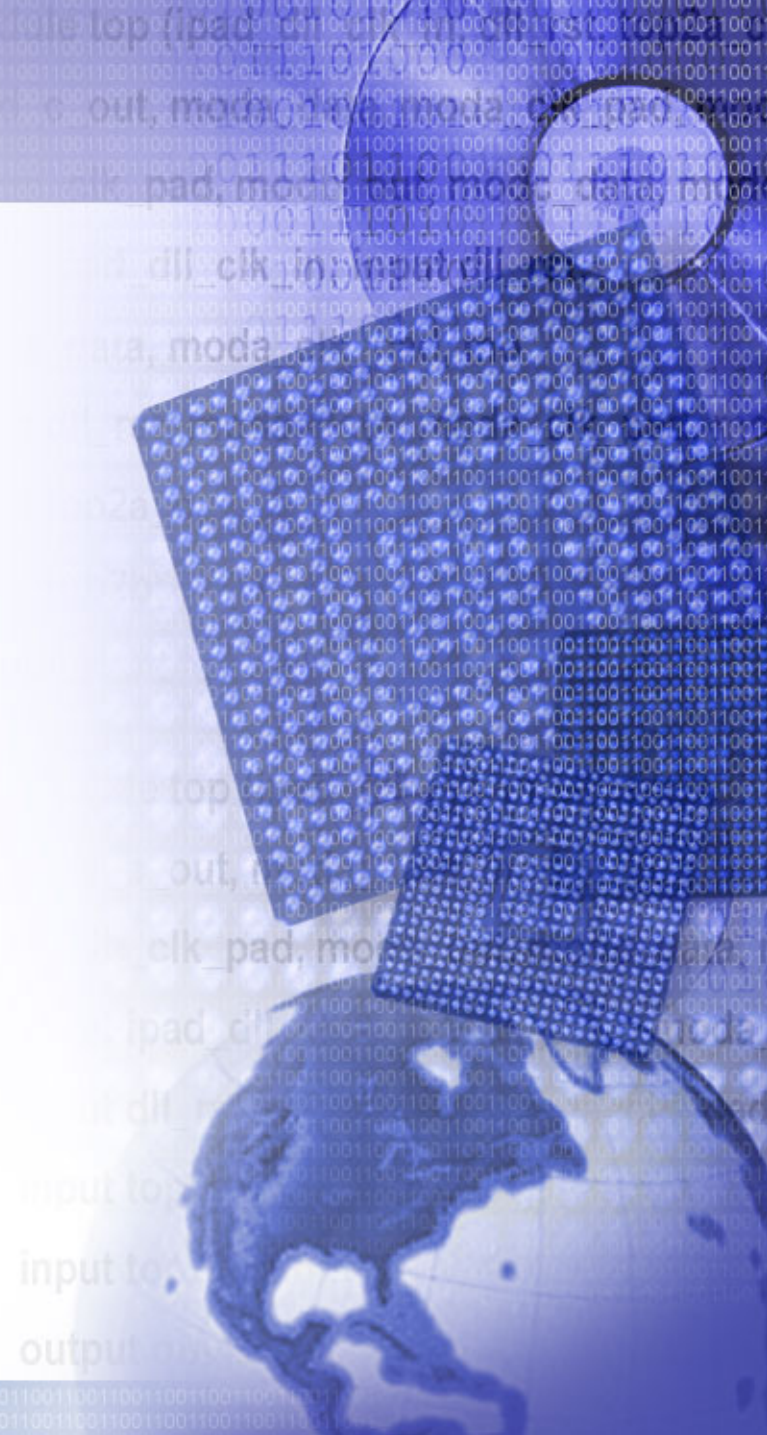




Linux CompactFlash Re-imaging Procedure

July 2006



Overview

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

Procedure

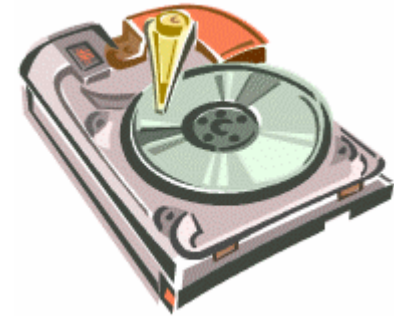
- This procedure restores the 512 MB CompactFlash to as-shipped condition
- Can be used to install future updated CompactFlash disk images



Warnings

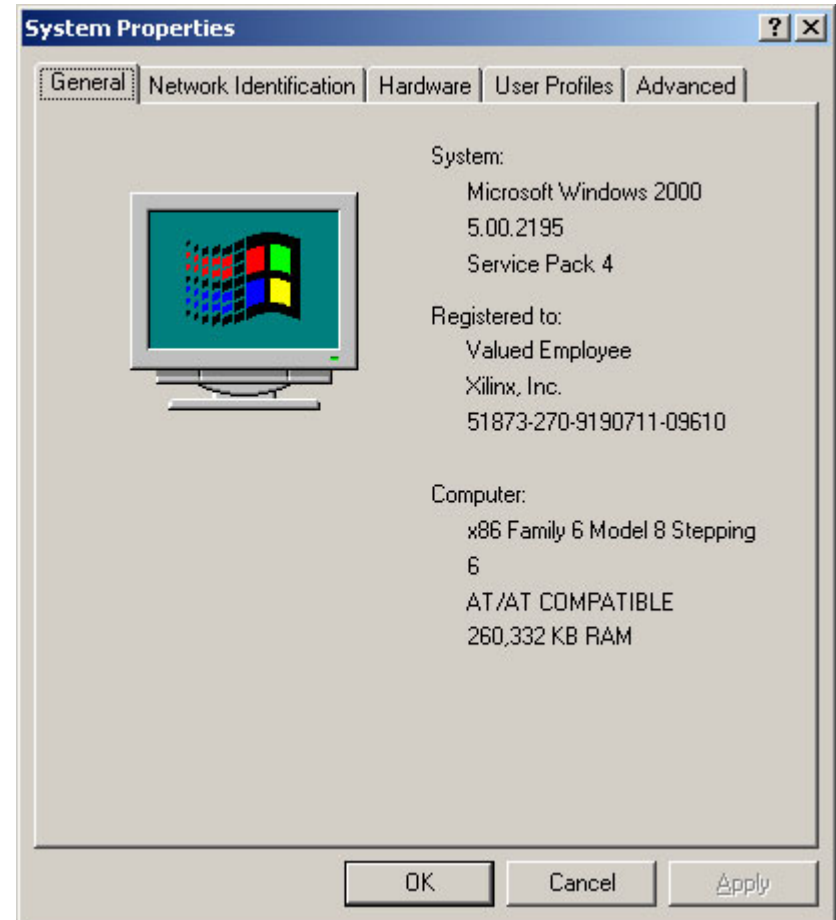


- This procedure will erase a hard drive
 - Make **sure** you are erasing the Compact Flash and not your PC's hard drive
 - Drive numbers mentioned in this procedure sometimes change when your PC reboots - verify the drive number **each time** this procedure is used
 - These tools **do not** check to 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



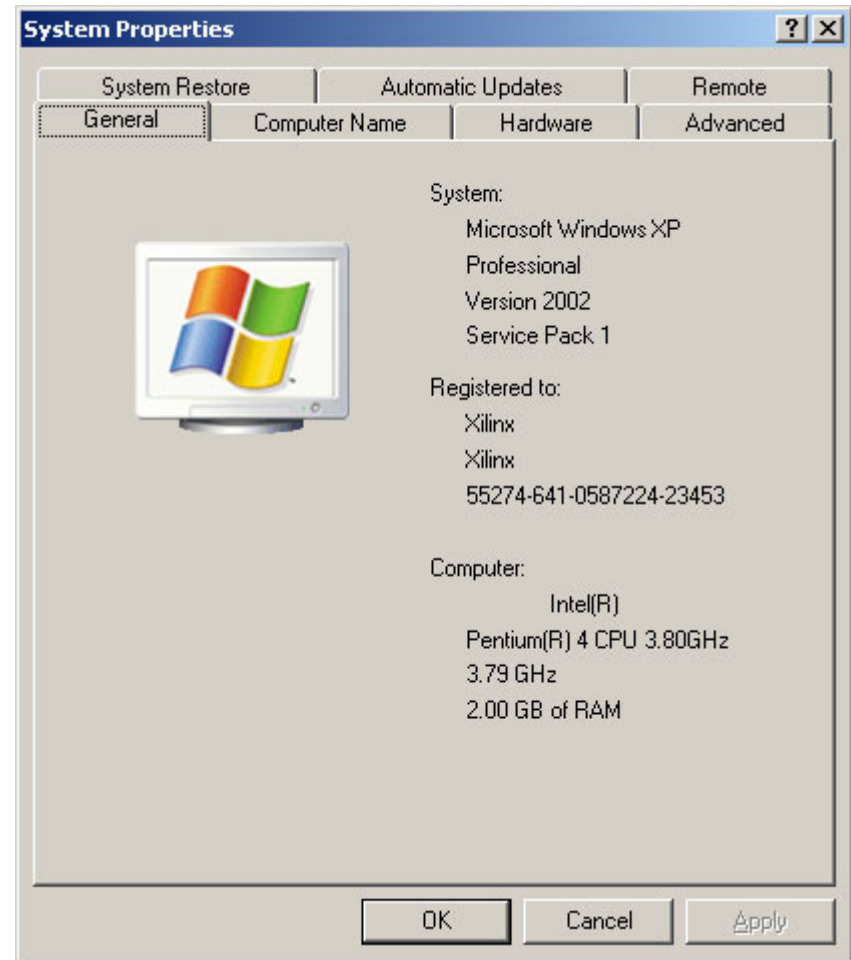
Software Setup

- This setup works in this Windows environment:
 - Windows 2000 (NT 5.0)
 - 5.00.2195 SP4
 - **Right click on “My Computer” and select Properties to view your system properties**



Software Setup

- This setup works in this Windows environment:
 - Windows XP (NT 5.0)
 - **Version 2002 SP1**
 - **Right click on “My Computer” and select Properties to view your system properties**



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



Files needed

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

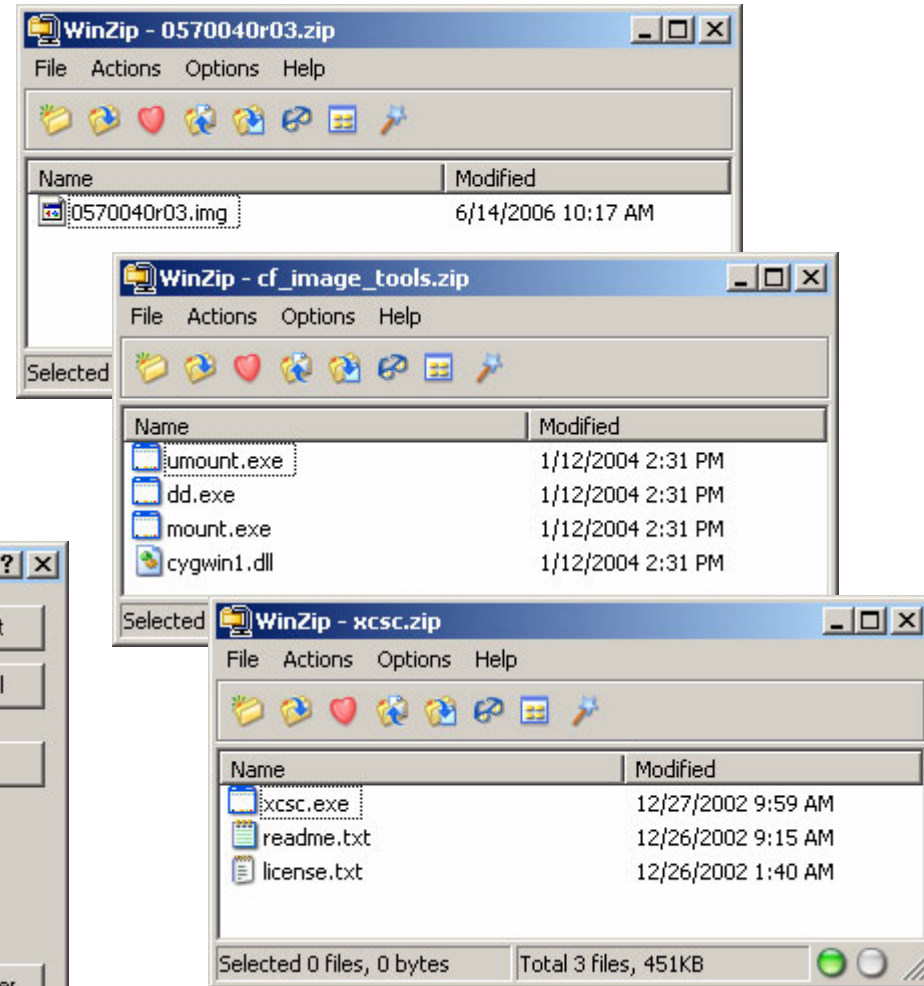
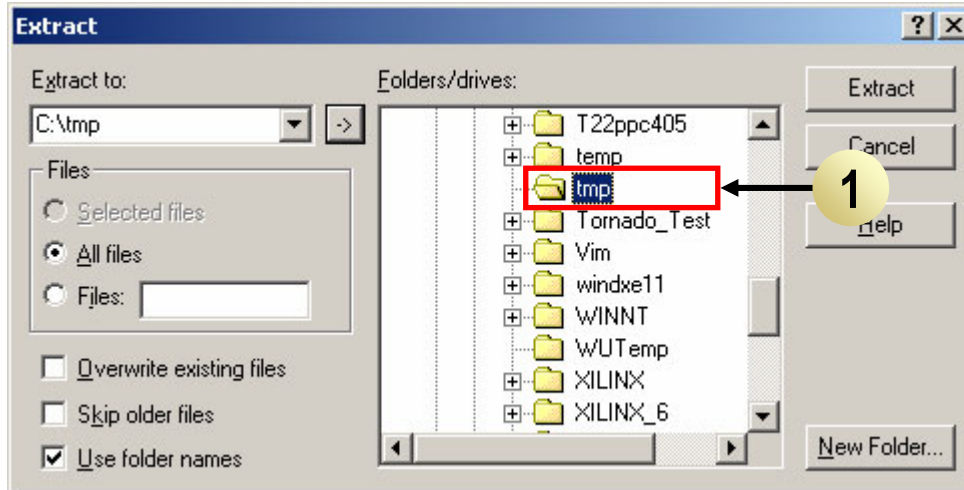
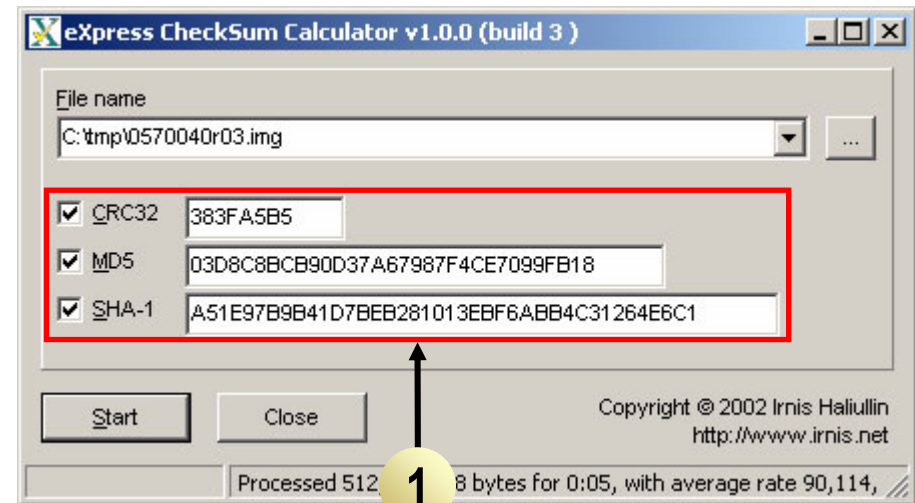
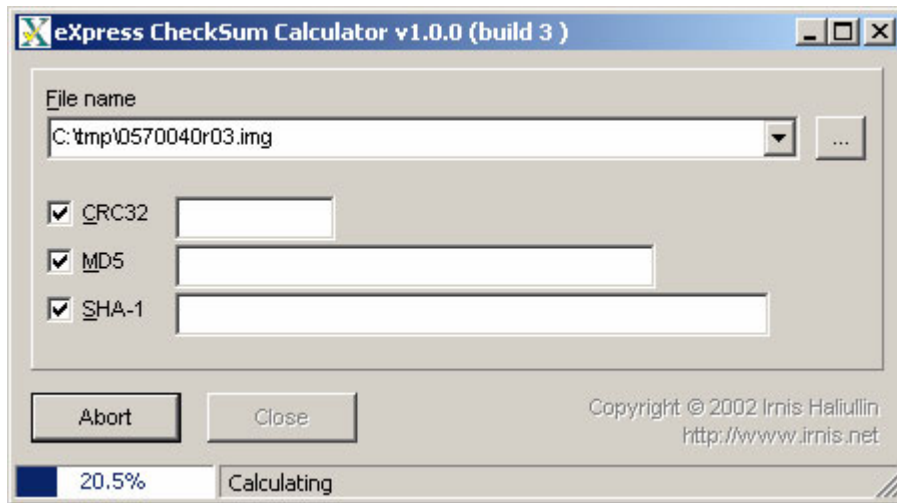


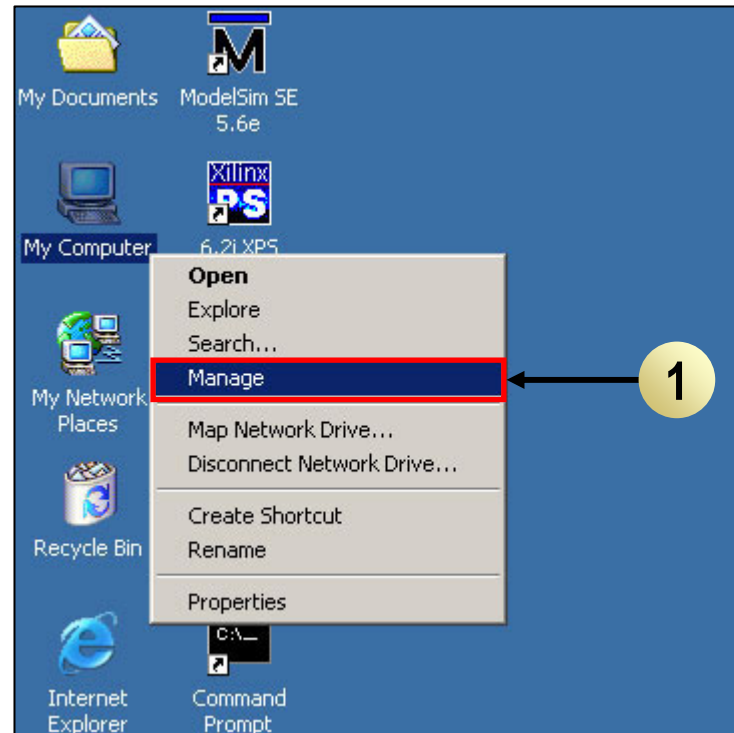
Image Checksum

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



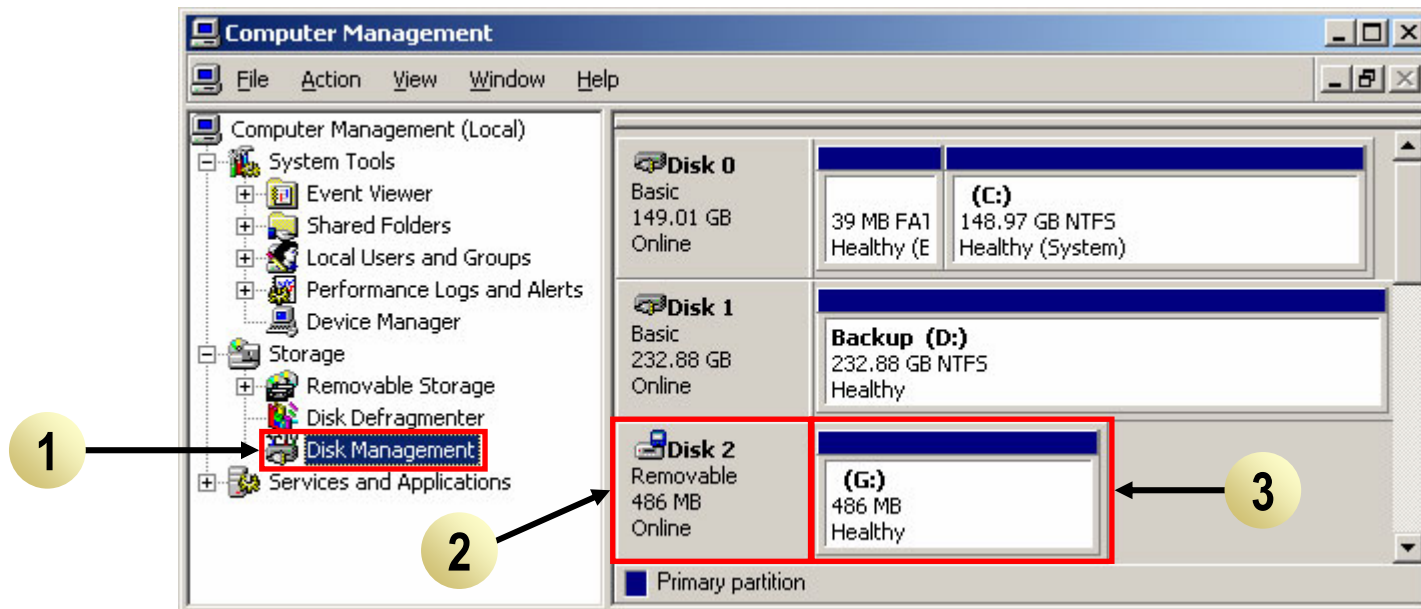
Determining the Drive Number

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



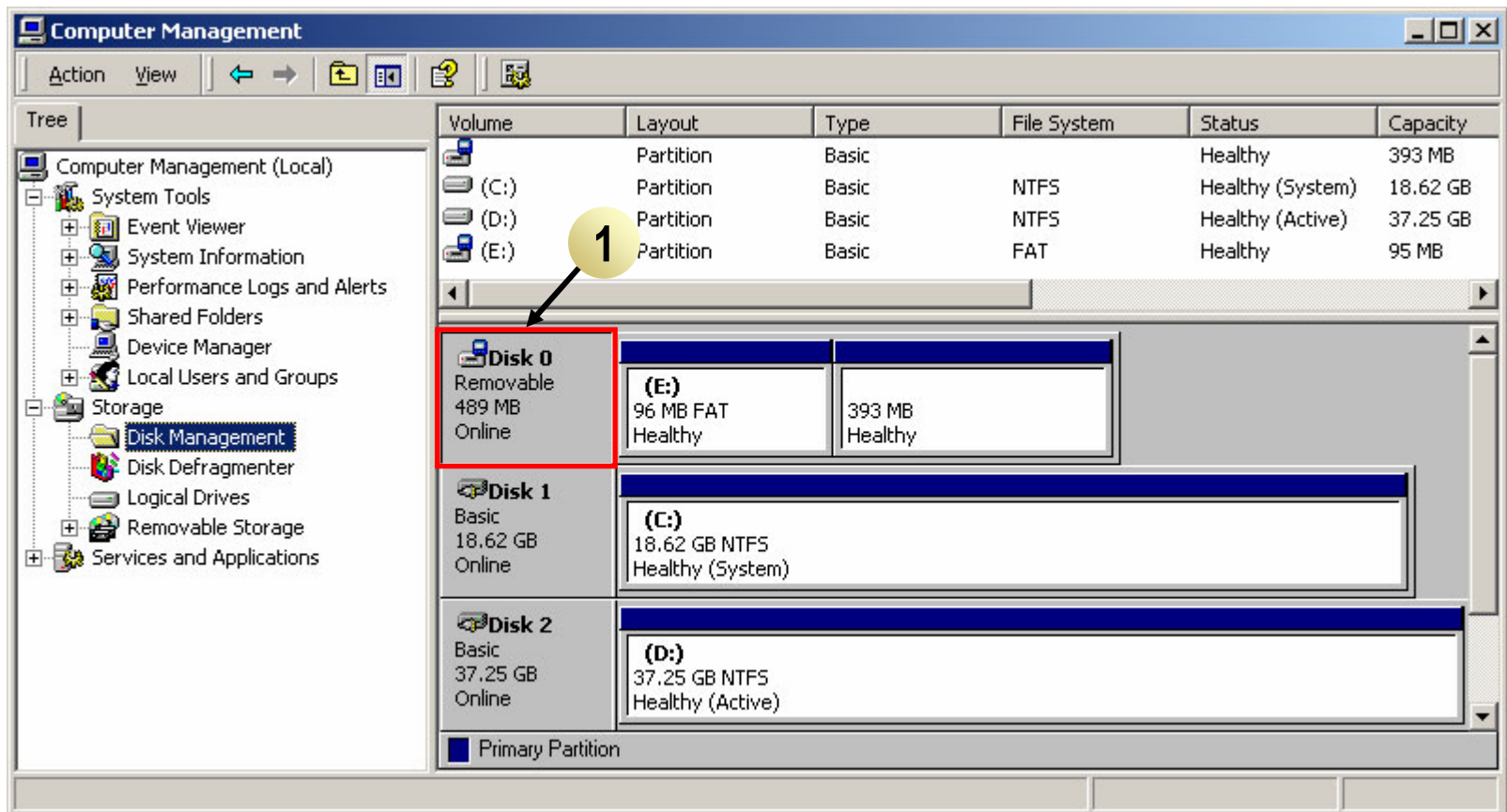
Determining the Drive Number

- 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)



Determining the Drive Number

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

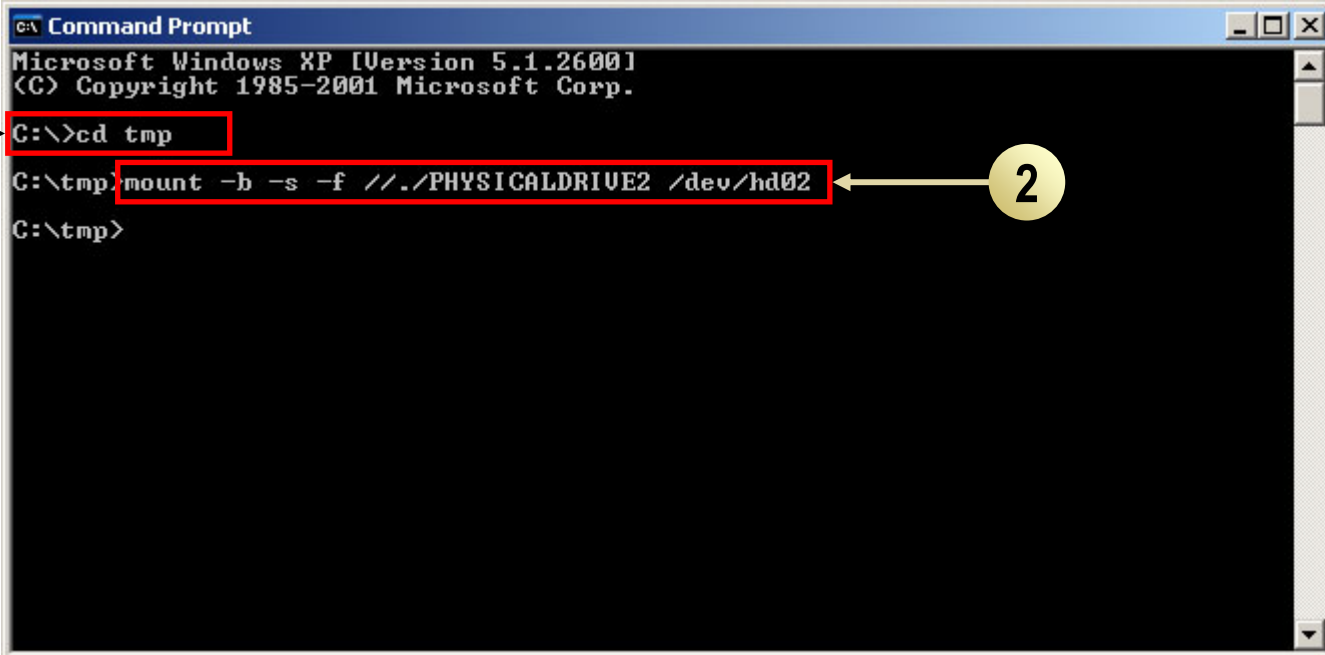


Mount the CompactFlash

- 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



```
Command Prompt
Microsoft Windows XP [Version 5.1.2600]
(C) Copyright 1985-2001 Microsoft Corp.

G:\>cd tmp
G:\tmp>mount -b -s -f ../PHYSICALDRIVE2 /dev/hd02
G:\tmp>
```

Image the CompactFlash

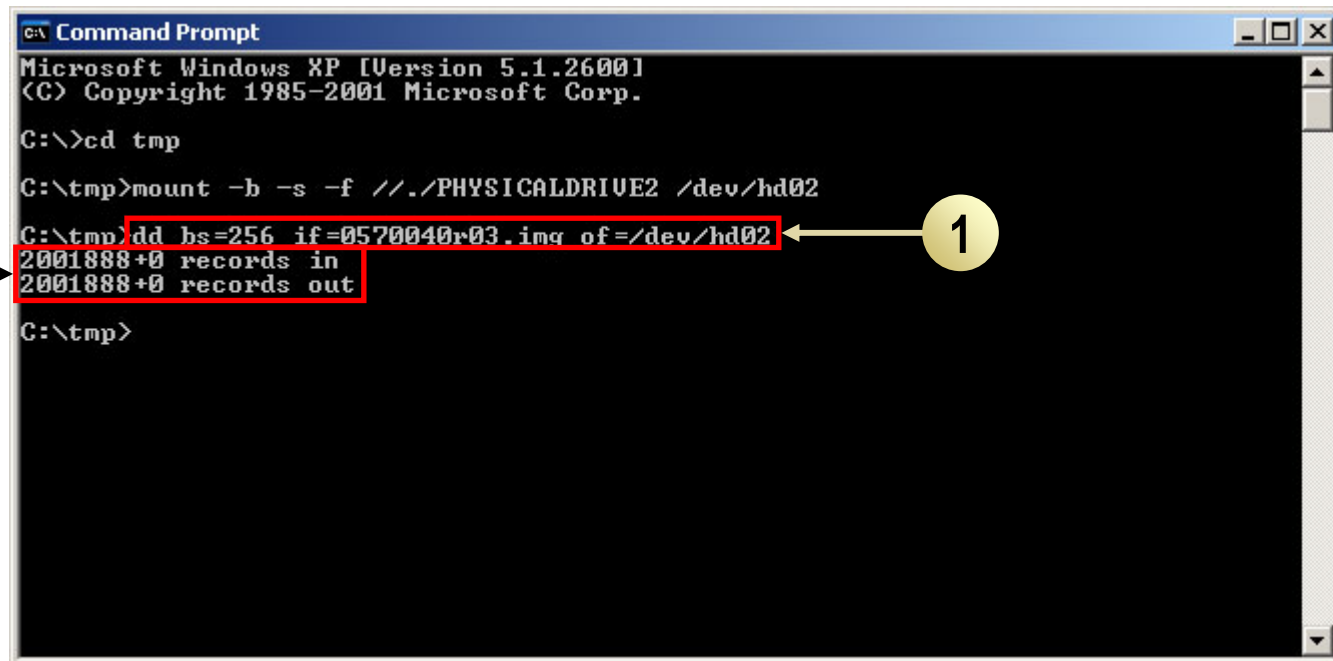
- Write the disk image to the CompactFlash card (1)

```
dd bs=256 if=0570040r02.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)



```
Command Prompt
Microsoft Windows XP [Version 5.1.2600]
(C) Copyright 1985-2001 Microsoft Corp.

C:\>cd tmp

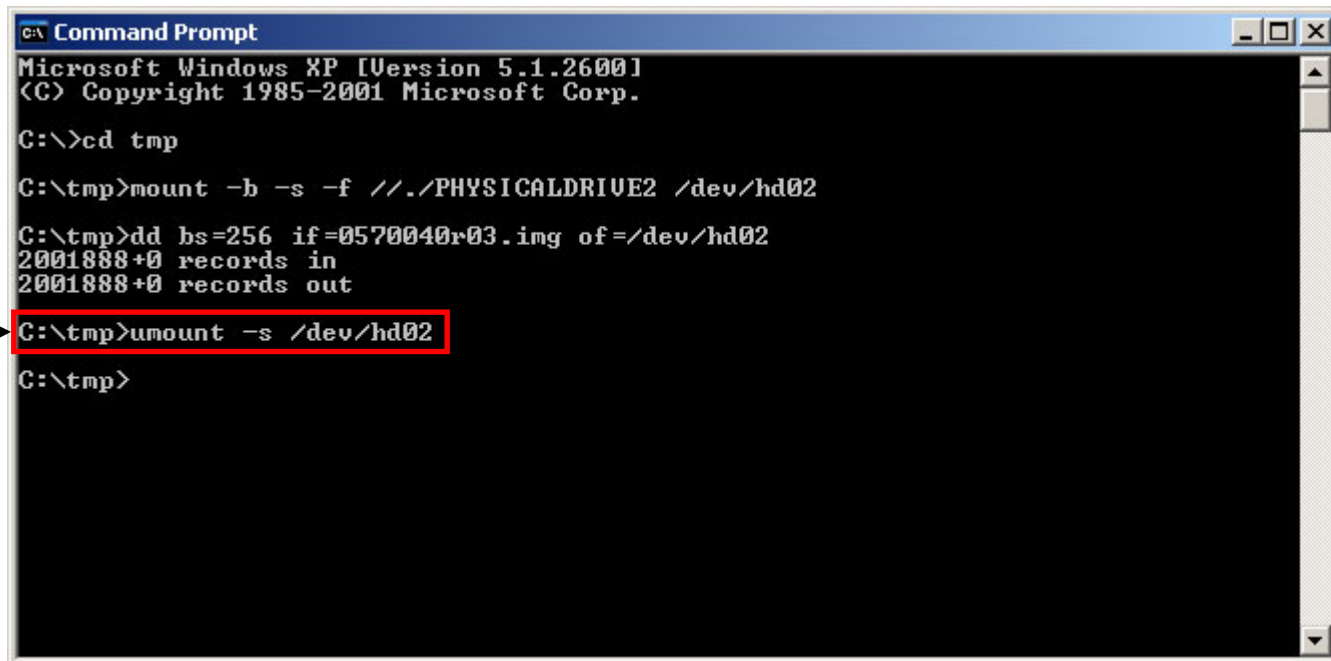
C:\tmp>mount -b -s -f ../PHYSICALDRIVE2 /dev/hd02

C:\tmp>dd bs=256 if=0570040r03.img of=/dev/hd02
2001888+0 records in
2001888+0 records out

C:\tmp>
```

Unmount the CompactFlash

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



```
C:\ Command Prompt
Microsoft Windows XP [Version 5.1.2600]
(C) Copyright 1985-2001 Microsoft Corp.

C:\>cd tmp

C:\tmp>mount -b -s -f ../PHYSICALDRIVE2 /dev/hd02

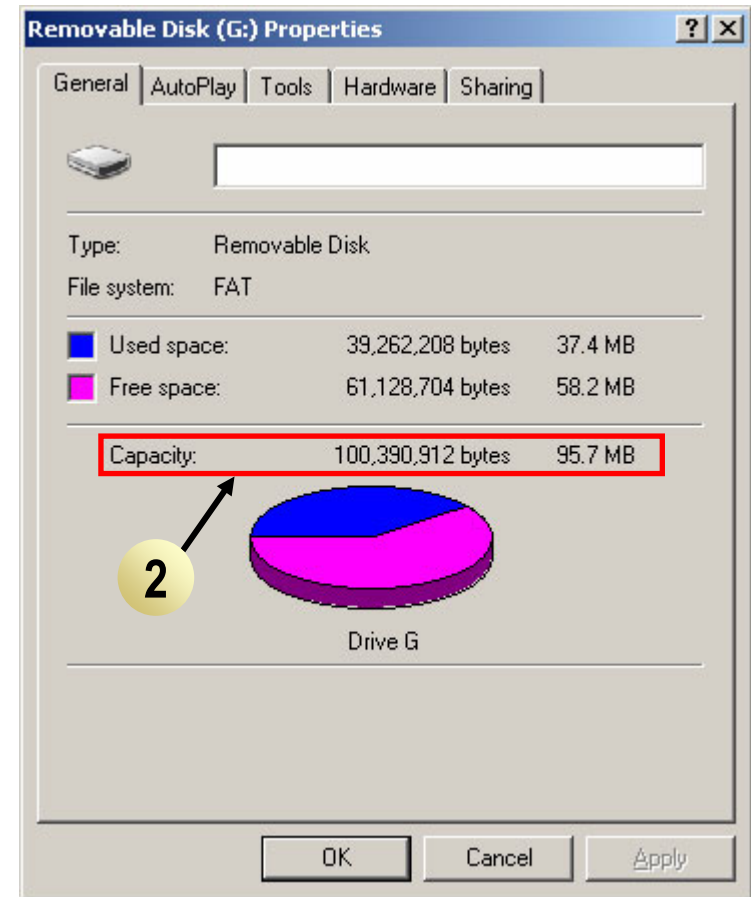
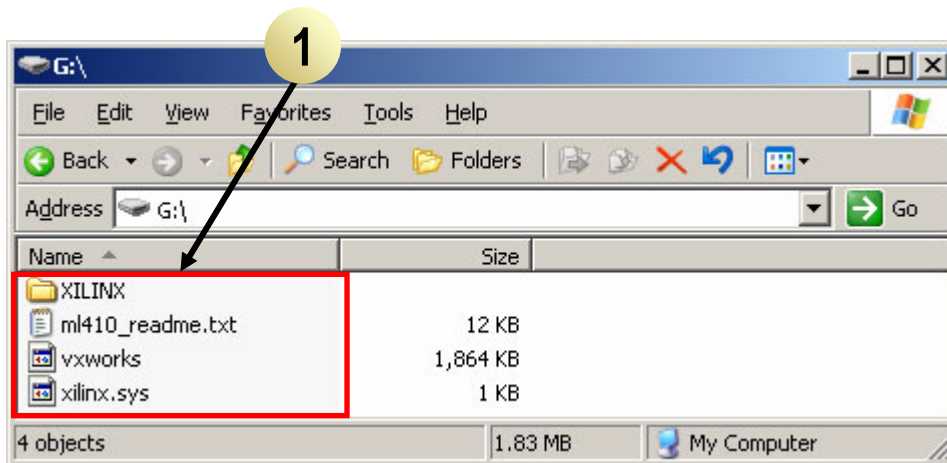
C:\tmp>dd bs=256 if=0570040r03.img of=/dev/hd02
2001888+0 records in
2001888+0 records out

1 → C:\tmp>umount -s /dev/hd02

C:\tmp>
```

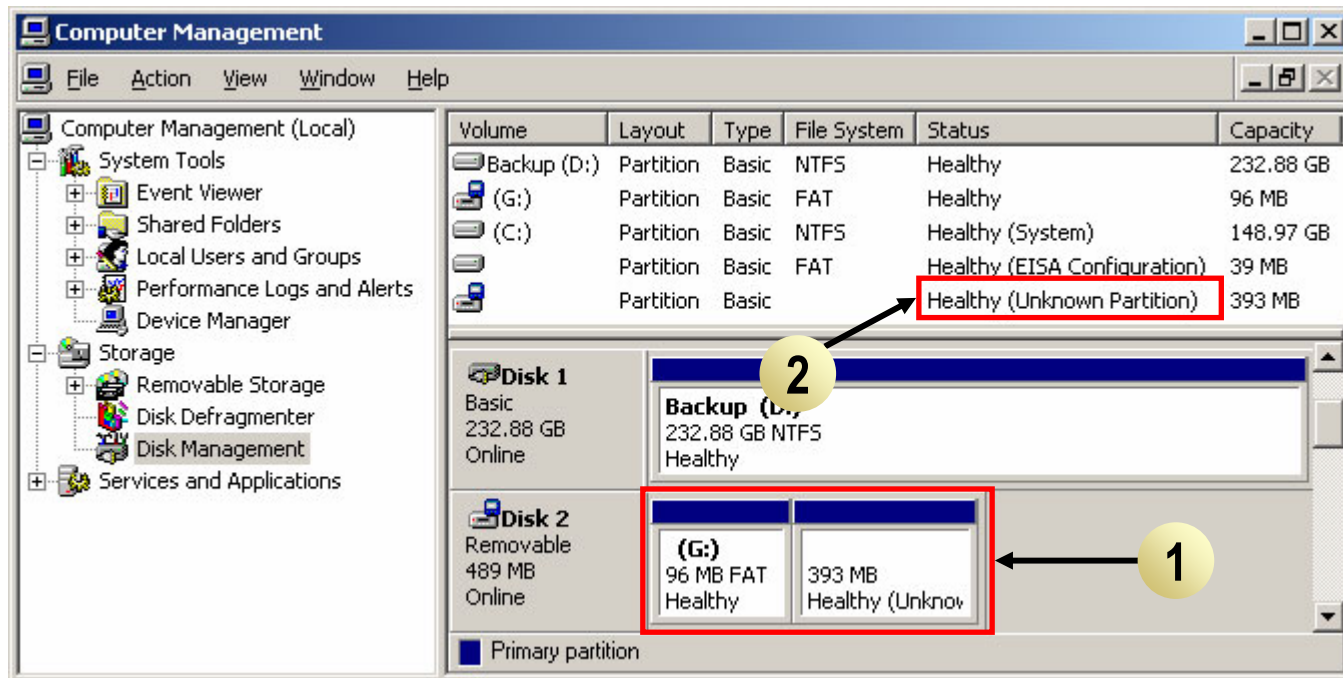
Drive Contents

- 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)



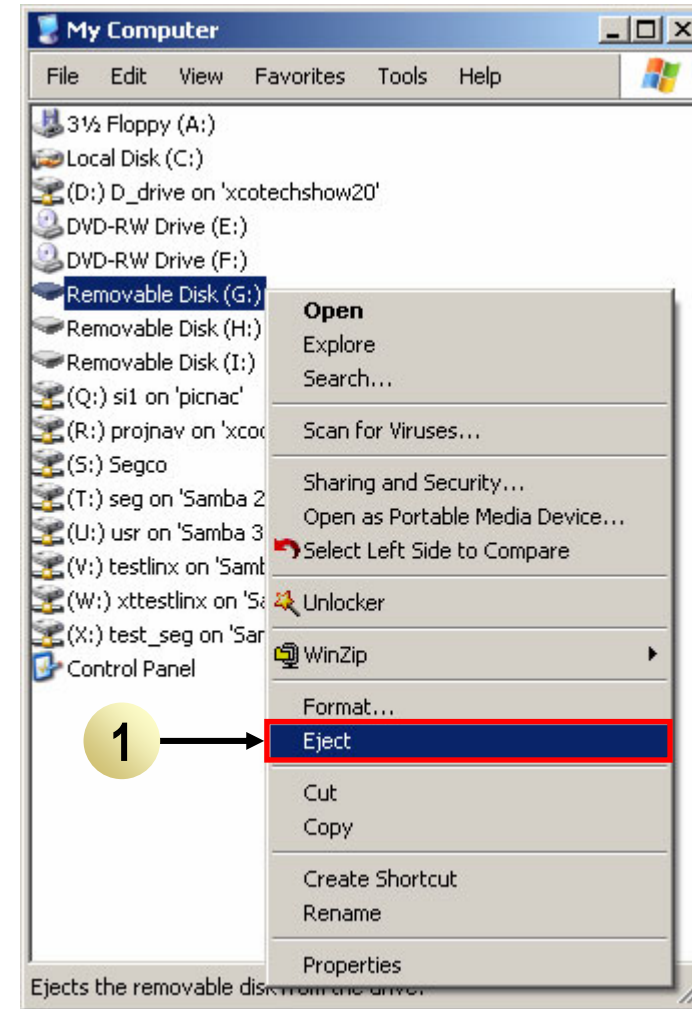
Drive Partitions

- 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)



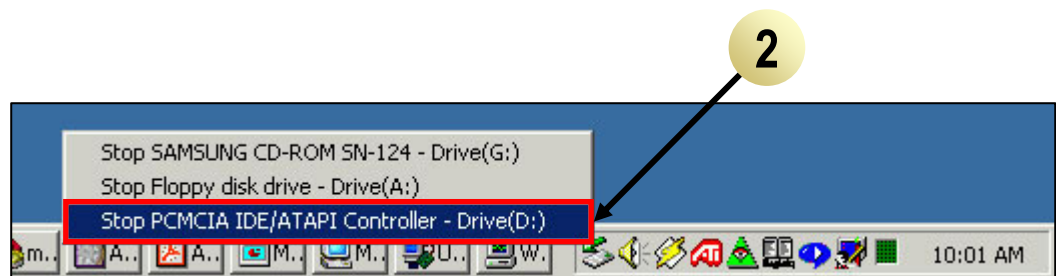
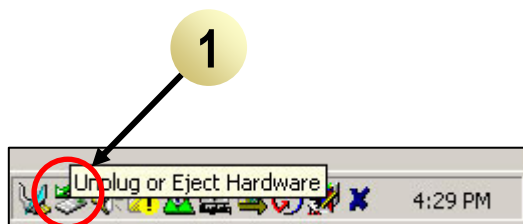
Remove the CompactFlash

- 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



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)



CompactFlash IDs

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

The image shows a Windows Computer Management window with a context menu open over Disk 0. The 'Properties' option is highlighted with a red box and a yellow circle labeled '1'. To the right, the 'Disk 0 Properties' dialog box is open, showing the 'General' tab. The 'Hardware Vendor' field is highlighted with a red box and a yellow circle labeled '2', displaying 'SanDisk SDCFB-512'. Below this, the 'Volumes contained on this disk:' section shows a table with two volumes: (C:) with a capacity of 393 MB and (E:) with a capacity of 95 MB.

Volume	Capacity
(C:)	393 MB
(E:)	95 MB