



ML405 CompactFlash Re-imaging Procedure



September 2006

Overview

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



Procedure

- This procedure restores the ML405 512 MB CompactFlash to as-shipped condition
- Can be used to install future updated CompactFlash disk images

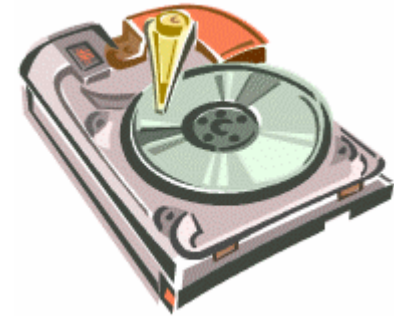




Warnings

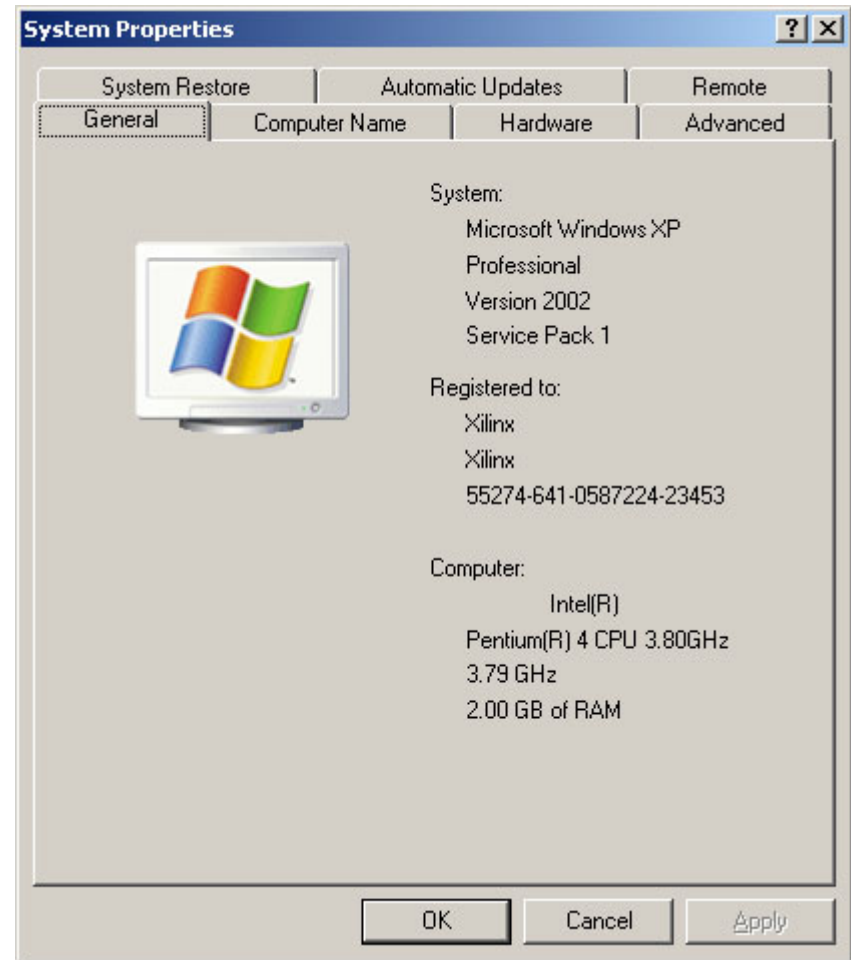


- This procedure will erase a hard drive
 - Make **sure** you are erasing the Compact Flash and not your PC's hard drive
 - Drive numbers mentioned in this procedure sometimes change when your PC reboots - verify the drive number **each time** this procedure is used
 - These tools **do not** check to 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 XP (NT 5.0)
 - **Version 2002 SP1**
 - **Right click on “My Computer” and select Properties to view your system properties**



Equipment Overview

- Silicon Systems SiliconDrive™ CF 512 MB CompactFlash™
 - Comes preloaded with hardware and software demonstration systems for ML405



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)
 - *ml405_cf.img.zip*
 - *cf_image_tools.zip*
 - Optional - *xcsc.zip*

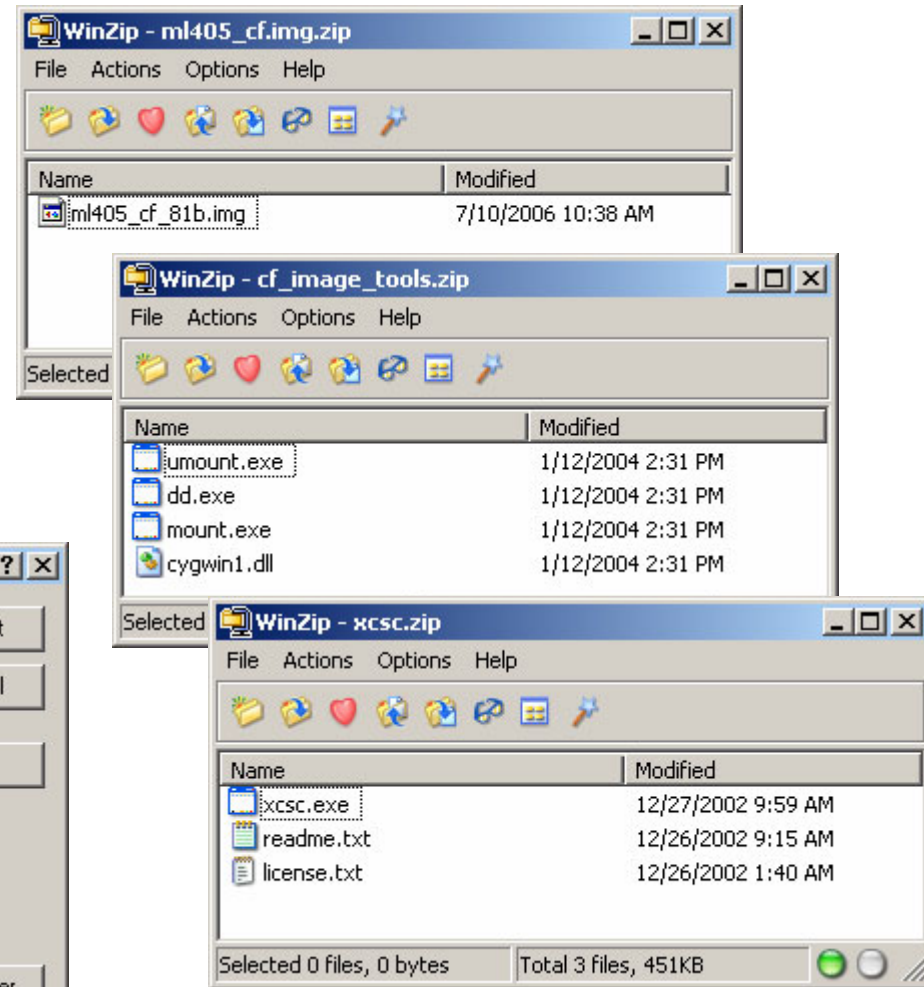
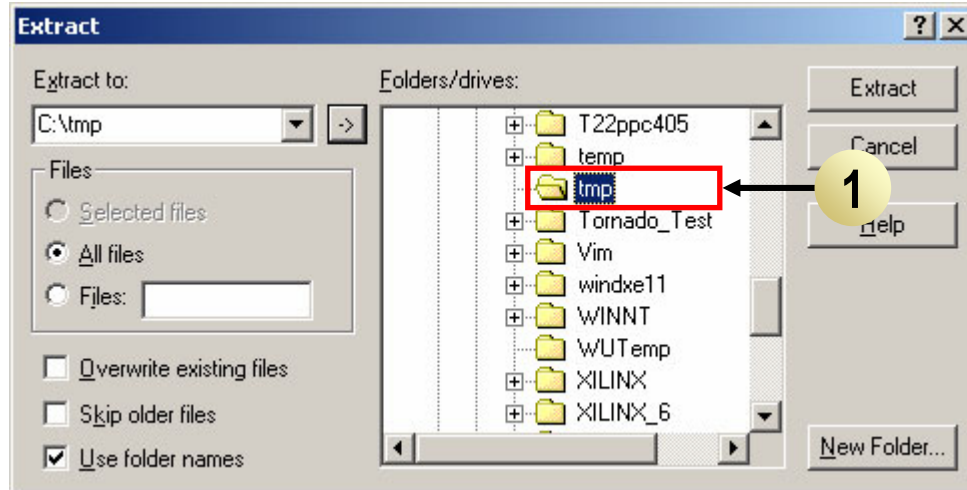
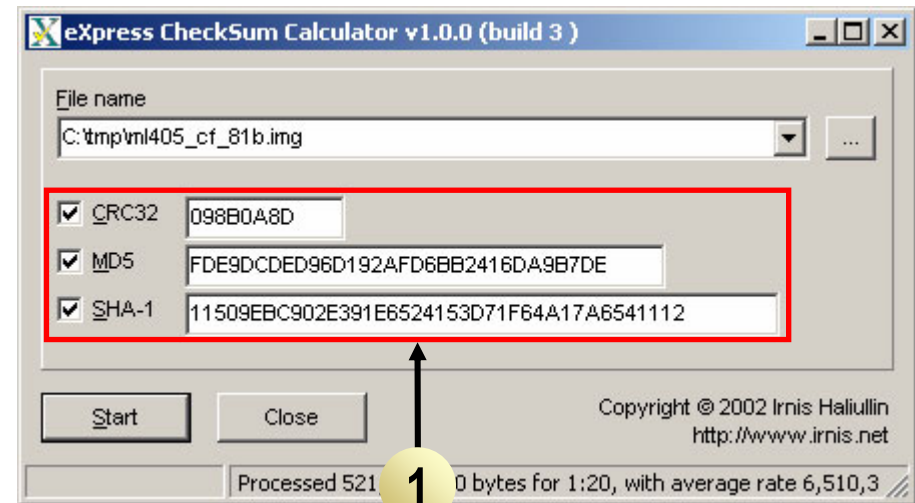
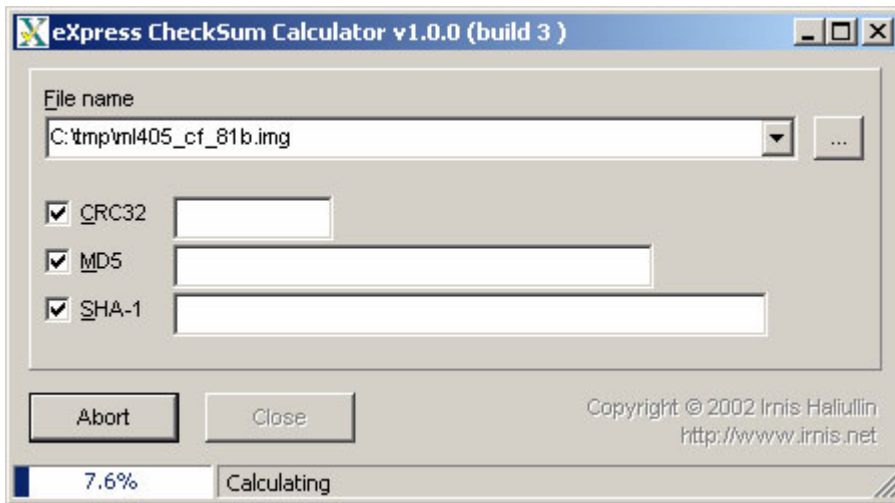


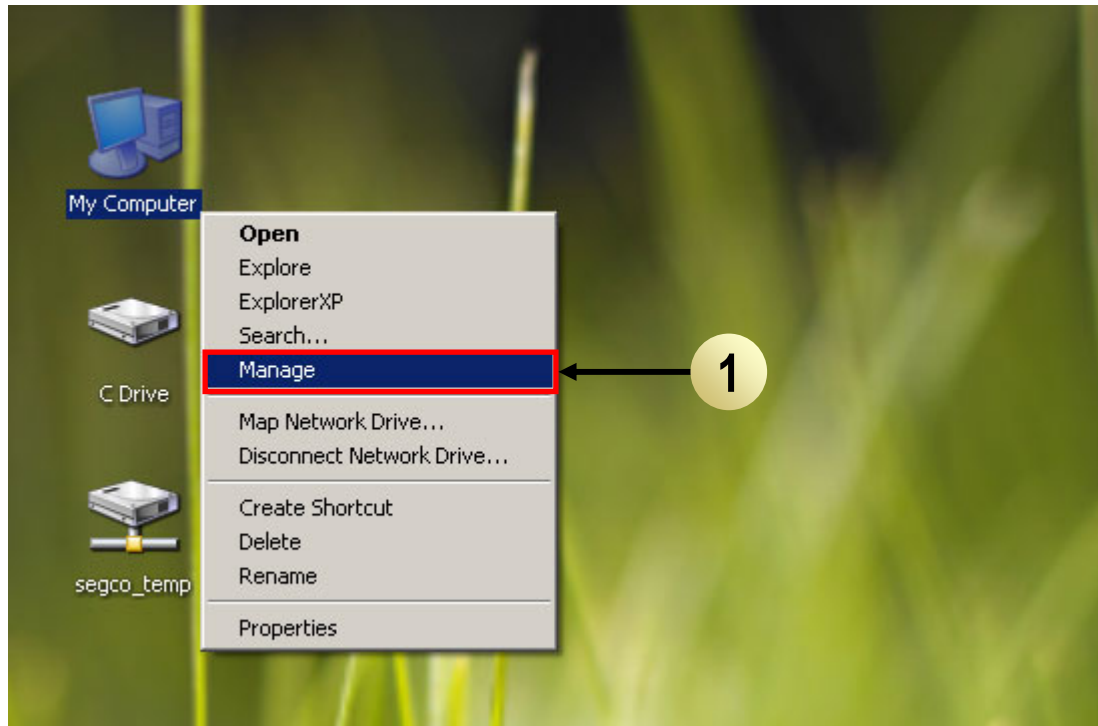
Image Checksum

- Optional - Run xcsc.exe on the image
 - These values (1) are for the *ml405_cf_81b.img*



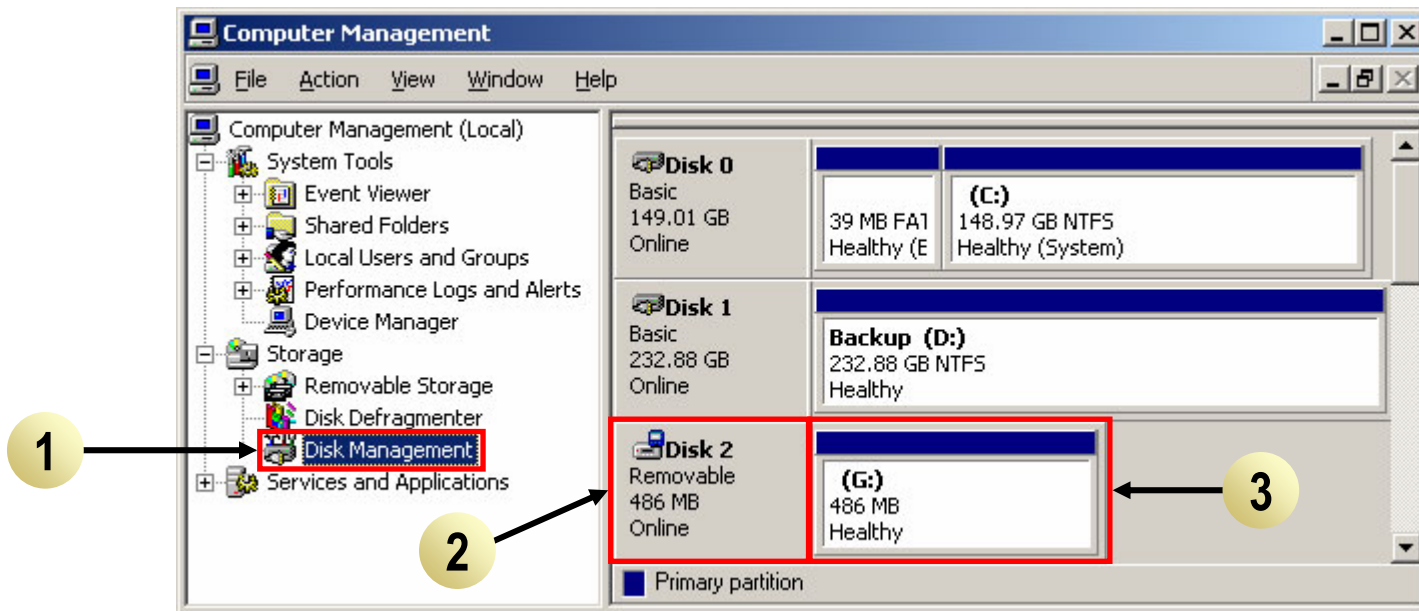
Determining the Drive Number

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



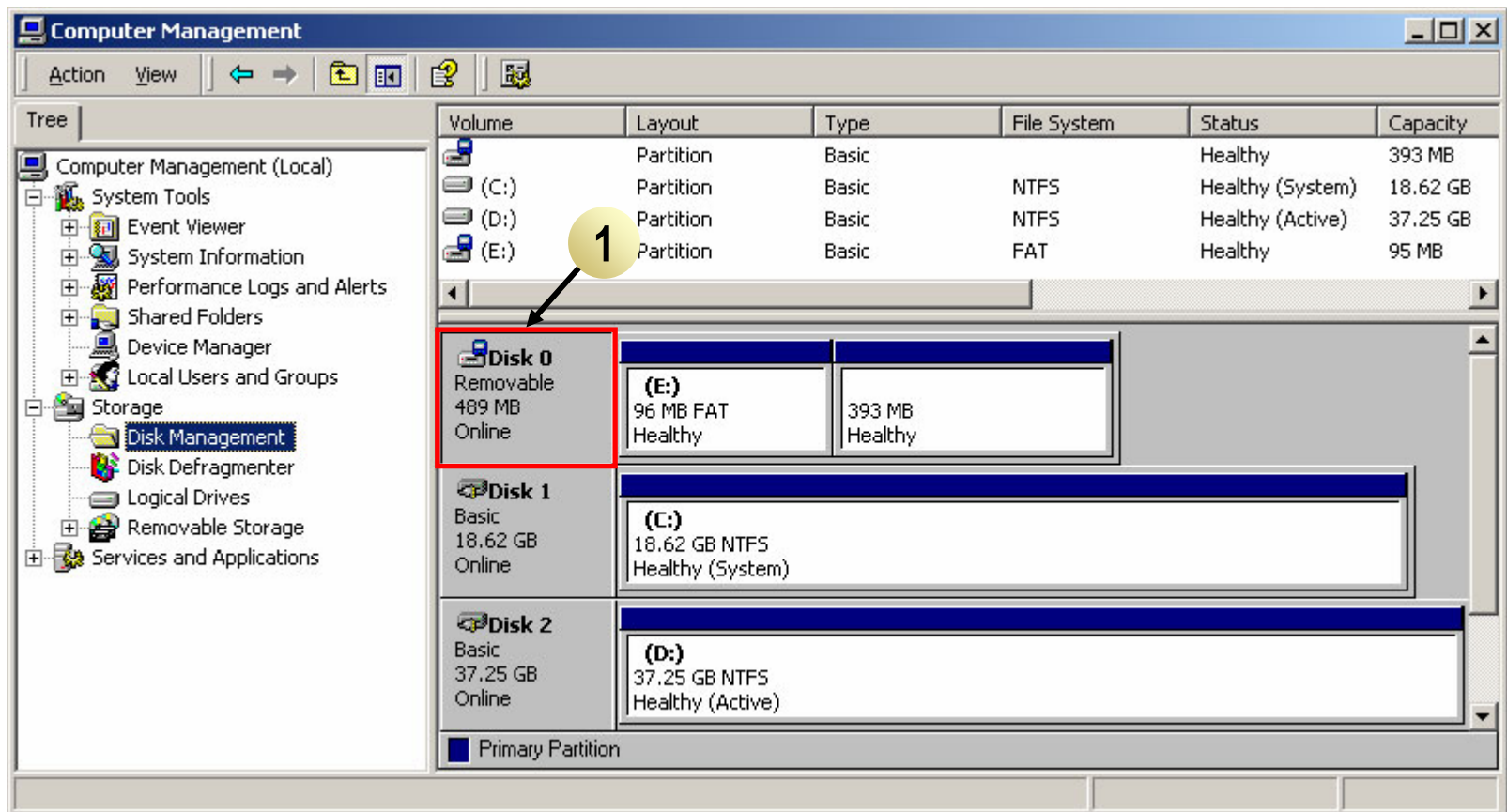
Determining the Drive Number

- 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”

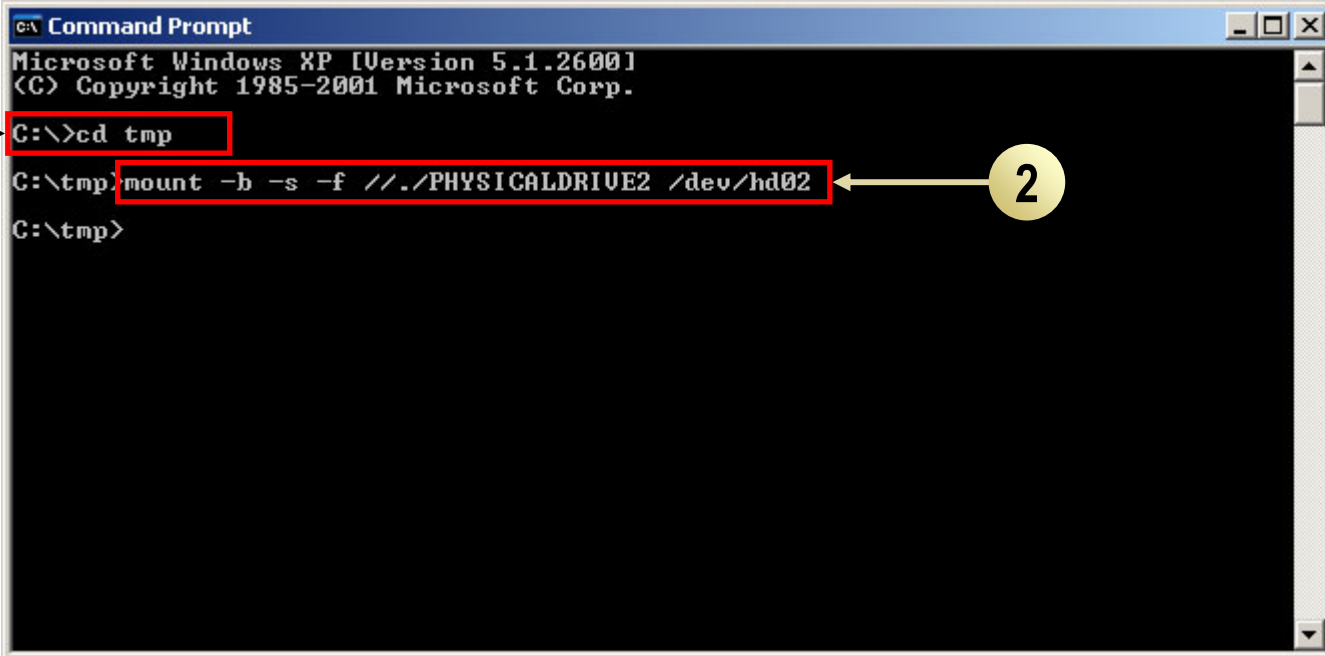


Mount the CompactFlash

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

mount -b -s -f ../PHYSICALDRIVE x /dev/hd0 x

- 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>
```

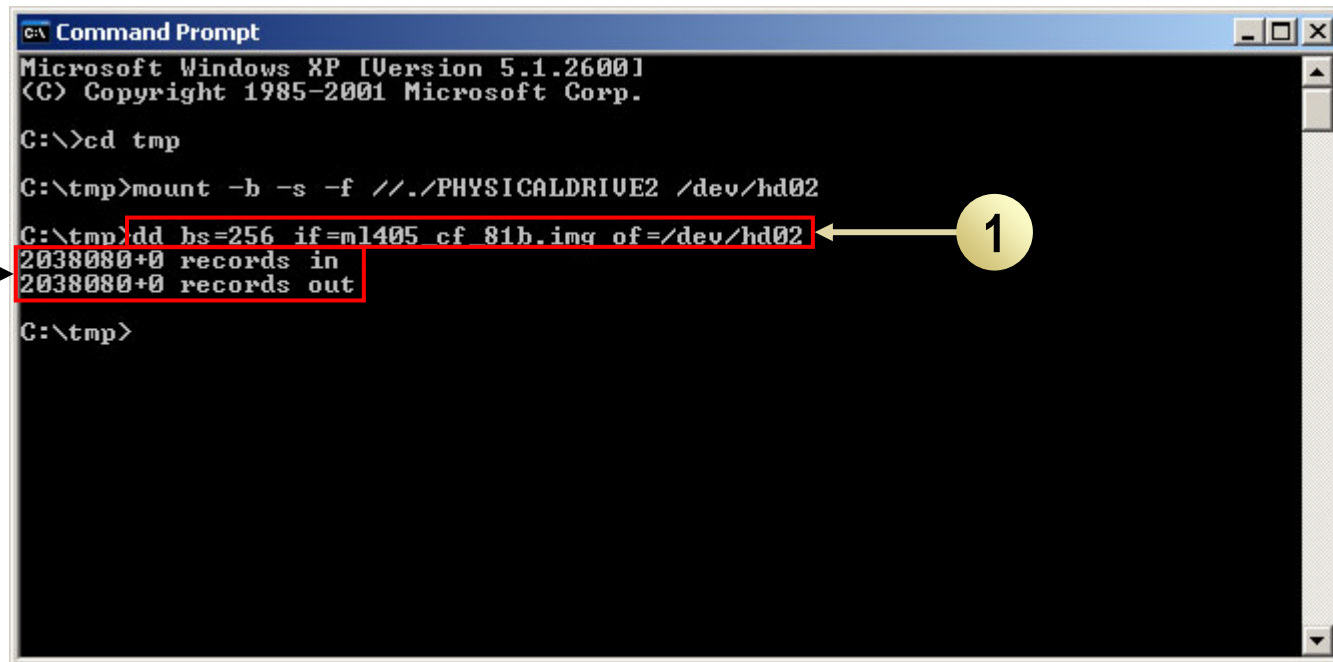
Image the CompactFlash

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

```
dd bs=256 if=ml405_cf_81b.img of=/dev/hd0x
```

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

- 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=ml405_cf_81b.img of=/dev/hd02
2038080+0 records in
2038080+0 records out

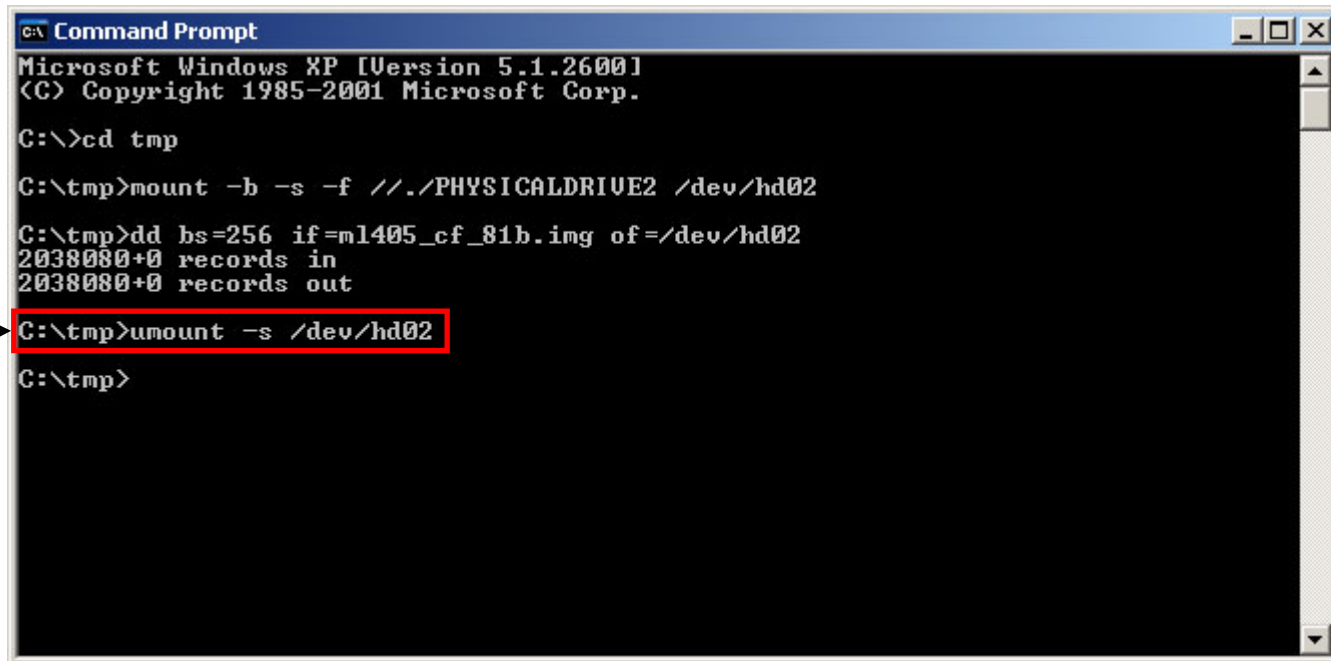
C:\tmp>
```

Unmount the CompactFlash

- Unmount the CompactFlash card (1)

`umount -s /dev/hd0x`

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



```
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=m1405_cf_81b.img of=/dev/hd02
2038080+0 records in
2038080+0 records out

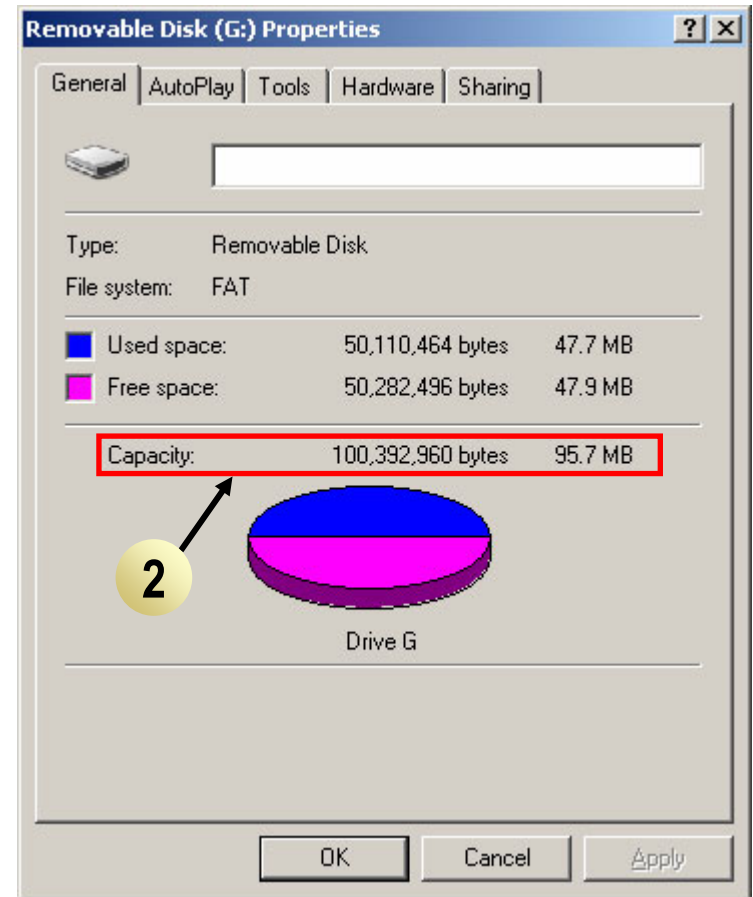
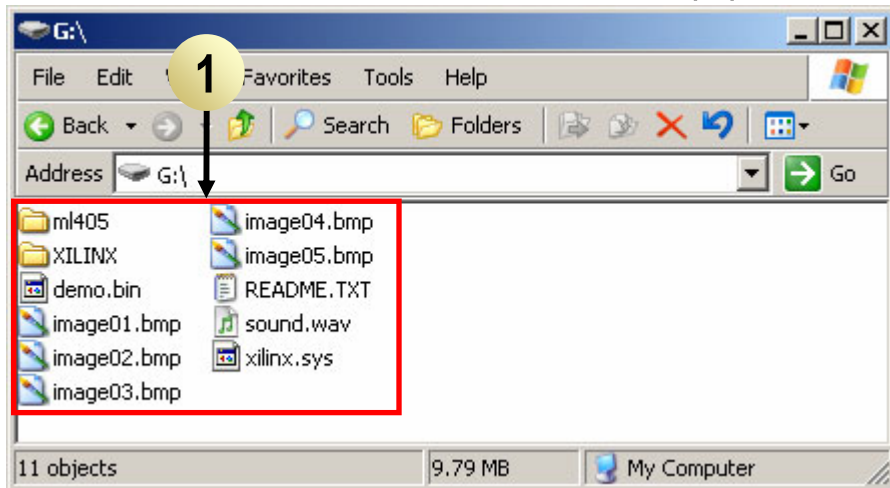
C:\tmp>umount -s /dev/hd02

C:\tmp>
```

1

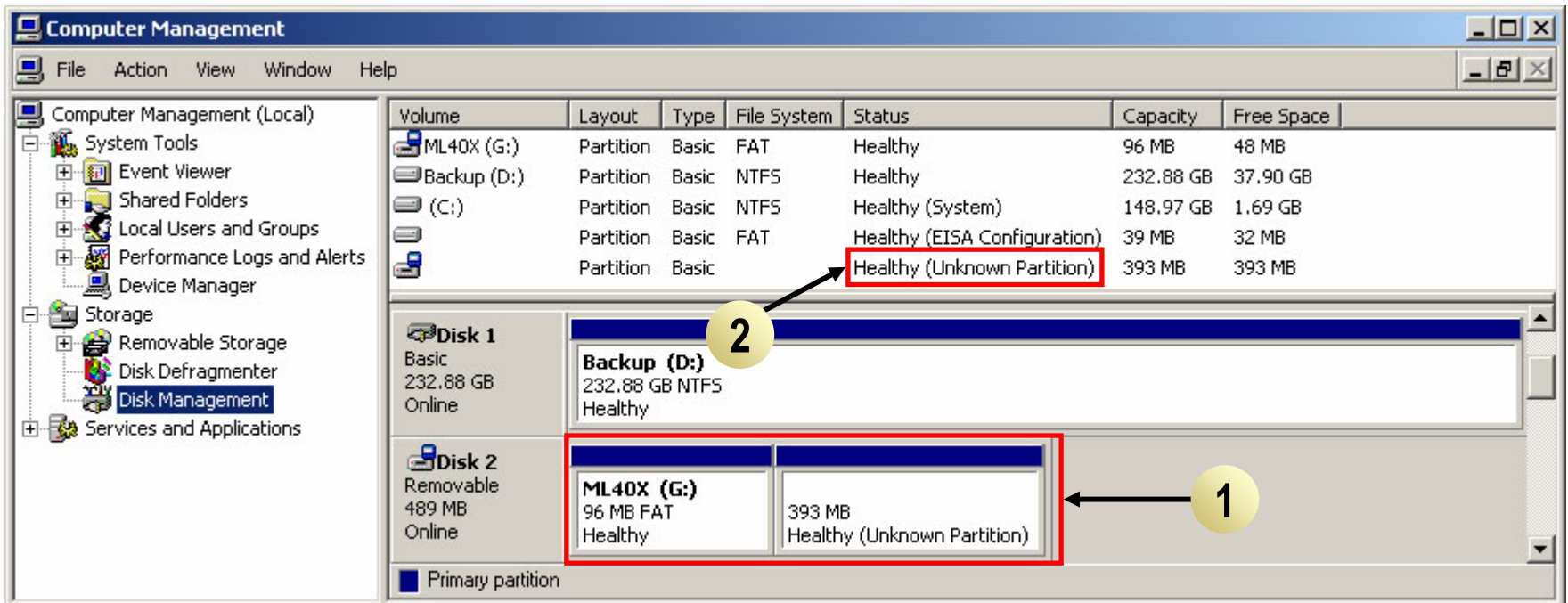
Drive Contents

- 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 95.7 MB space on the disk (2)



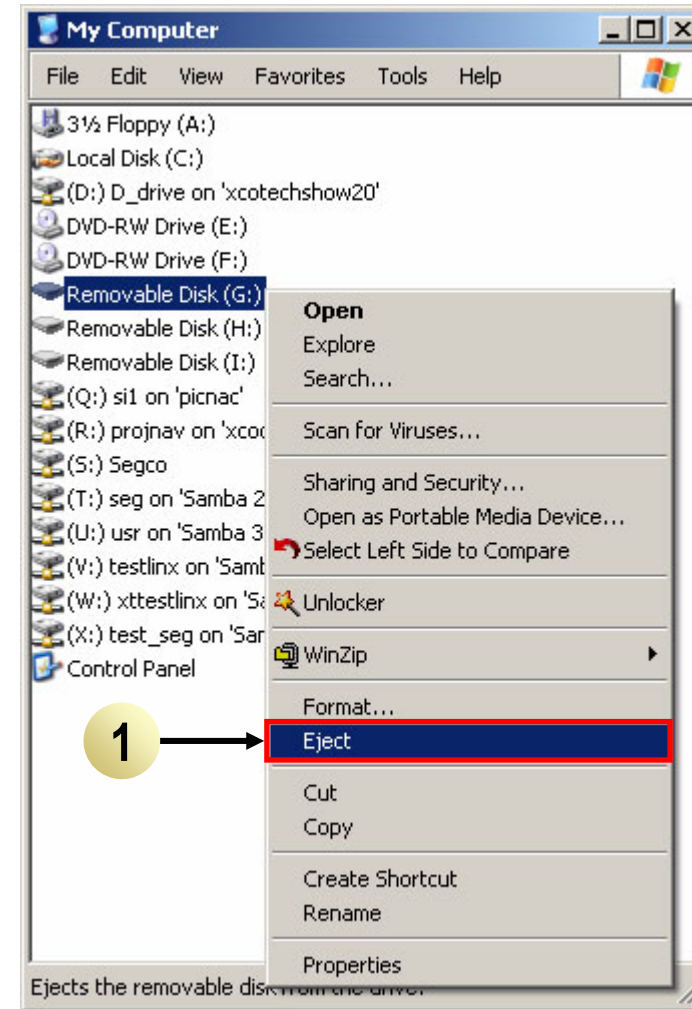
Drive Partitions

- 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)



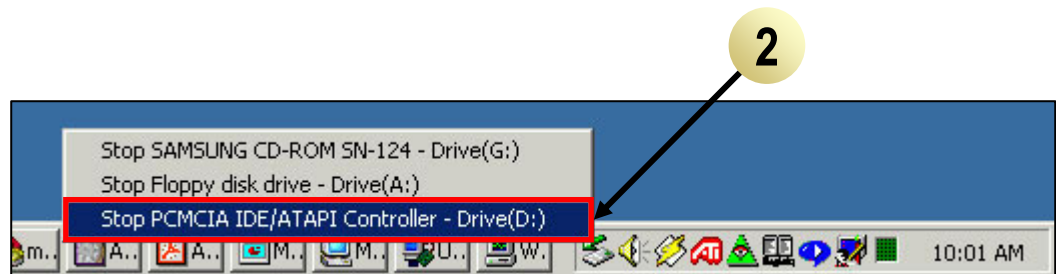
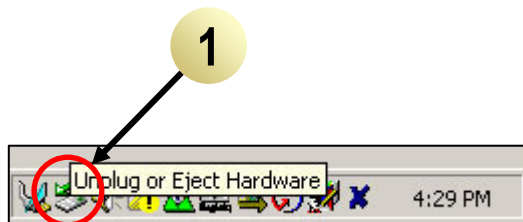
Remove the CompactFlash

- 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 screenshot shows the Windows Computer Management console. In the left pane, the 'Storage' folder is expanded to show 'Disk 0'. A context menu is open over 'Disk 0', with 'Properties' highlighted. A yellow circle with the number '1' points to the 'Properties' menu item. The main pane shows a table of volumes on Disk 0:

Volume	Layout	Type	File System
(C:)	Partition	Basic	NTFS
(D:)	Partition	Basic	NTFS
(E:)	Partition	Basic	FAT

Below the table, 'Disk 0' is listed as 'Removable', '489 MB', and 'Online'. A yellow circle with the number '2' points to the 'Hardware Vendor' field in the 'Disk 0 Properties' dialog box, which is highlighted with a red rectangle. The 'Hardware Vendor' field contains the text 'SanDisk SDCFB-512'. The 'Adapter Name' field contains 'PCMCIA IDE/ATAPI Controller'. The 'Volumes contained on this disk:' section shows a table:

Volume	Capacity
(E:)	95 MB

The 'Disk 0 Properties' dialog box has 'General' selected, and buttons for 'OK', 'Cancel', and 'Apply' are at the bottom.

