



ML505/506 CompactFlash Re-imaging Procedure



December 2007

Overview

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

Procedure

- This procedure restores the ML505 32 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

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



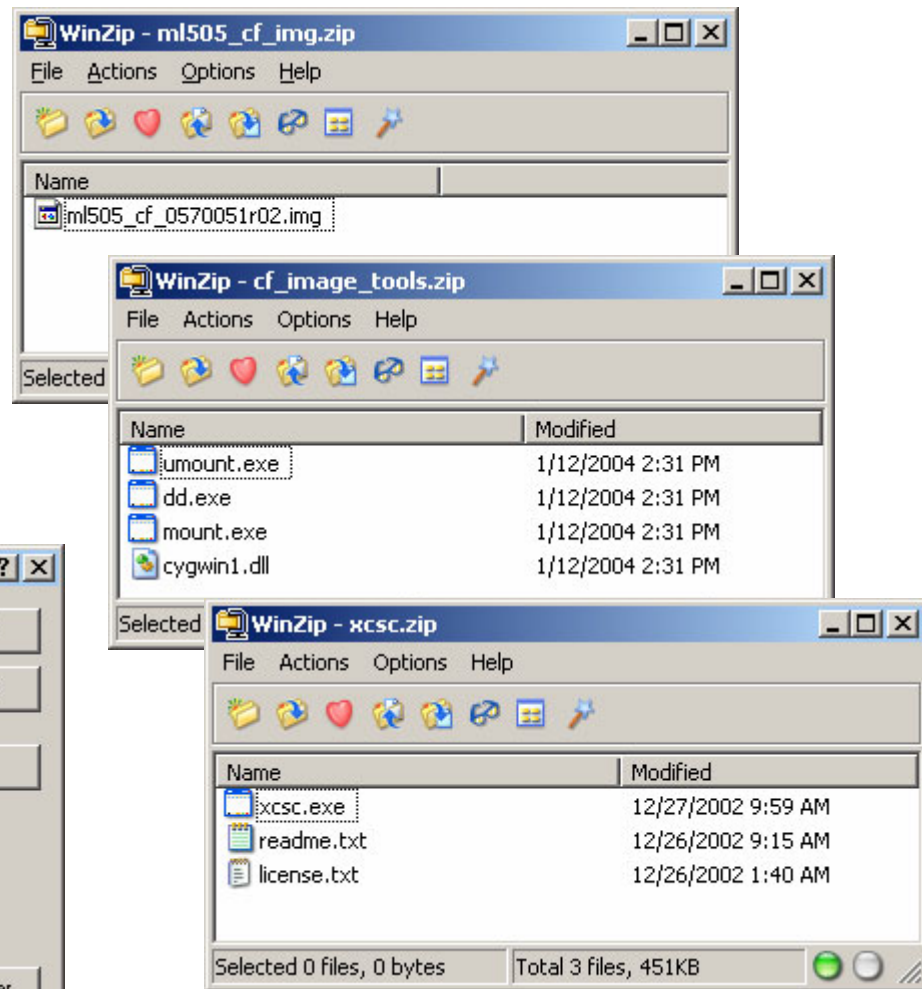
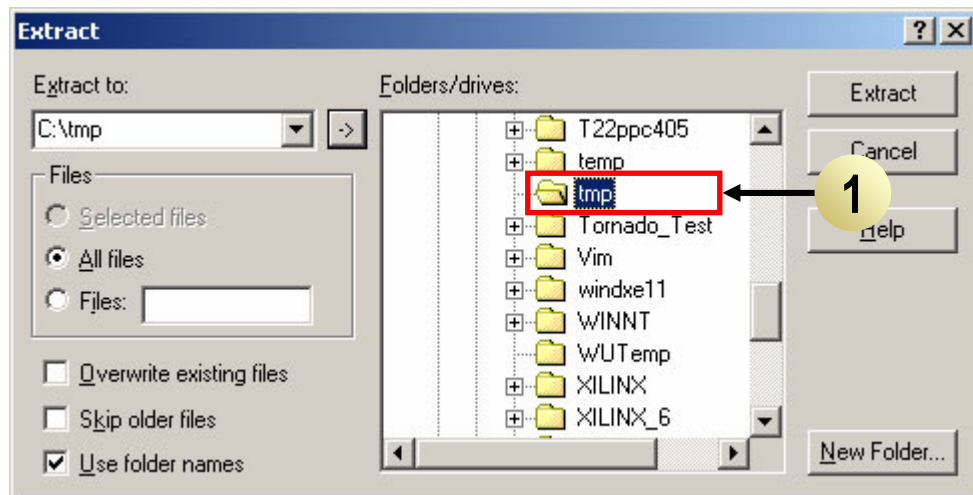
Equipment Overview

- 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

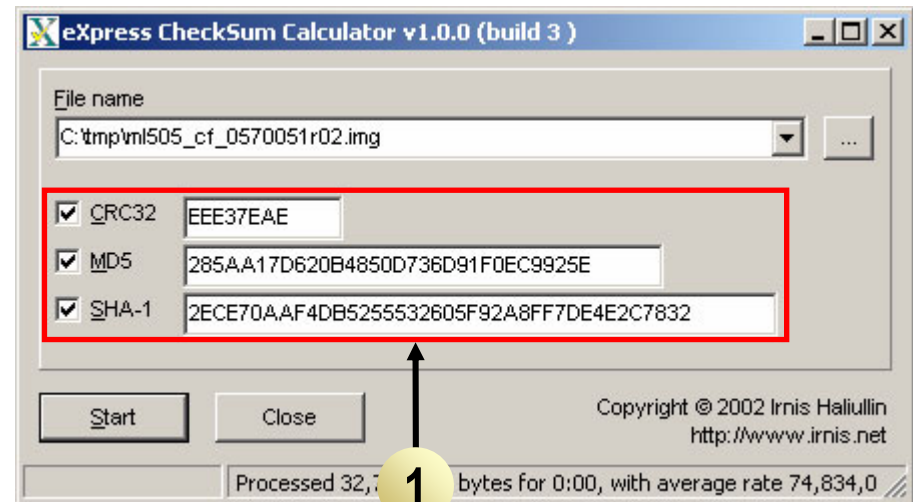
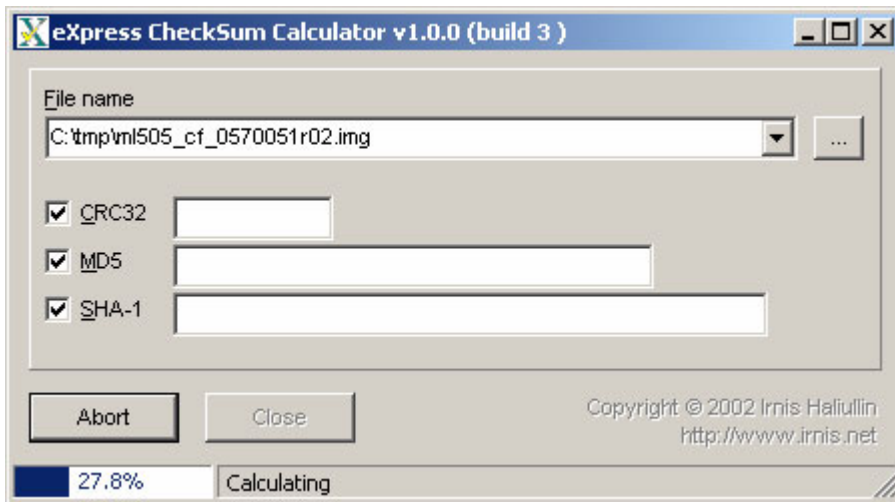
- Unzip these files to a temp directory (1)
 - ml505_cf_img.zip
 - cf_image_tools.zip
 - Optional - xcsc.zip



Note: For the ML506, use ml506_1080072r02.zip

Image Checksum

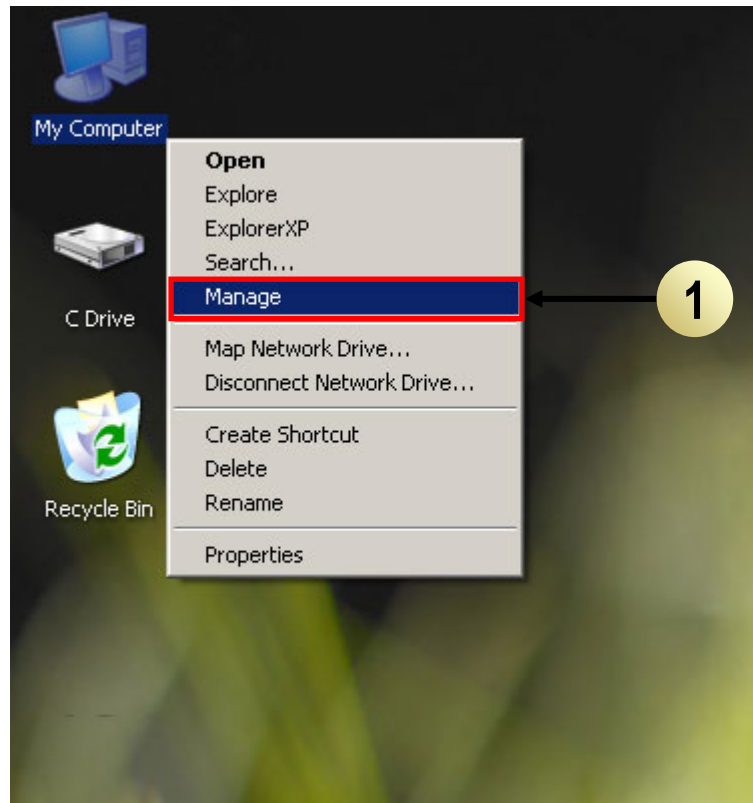
- Optional - Run **xcsc.exe** on the image
 - These values (1) are for the **ml505_cf_0570051r02.img**
 - The image CRC can be found on the download page for that specific image



Note: For the ml506_1080072r02.img md5 sum is 46b307d96ec30318847e5bef464302e8

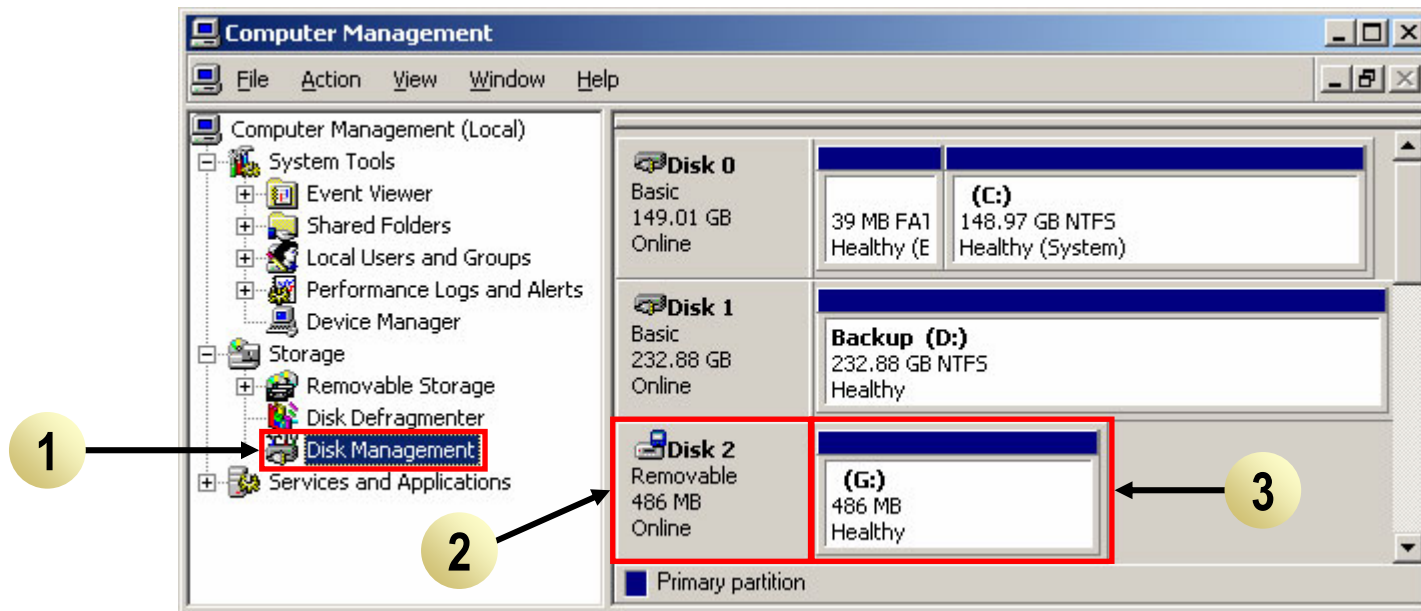
Determining the Drive Number

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



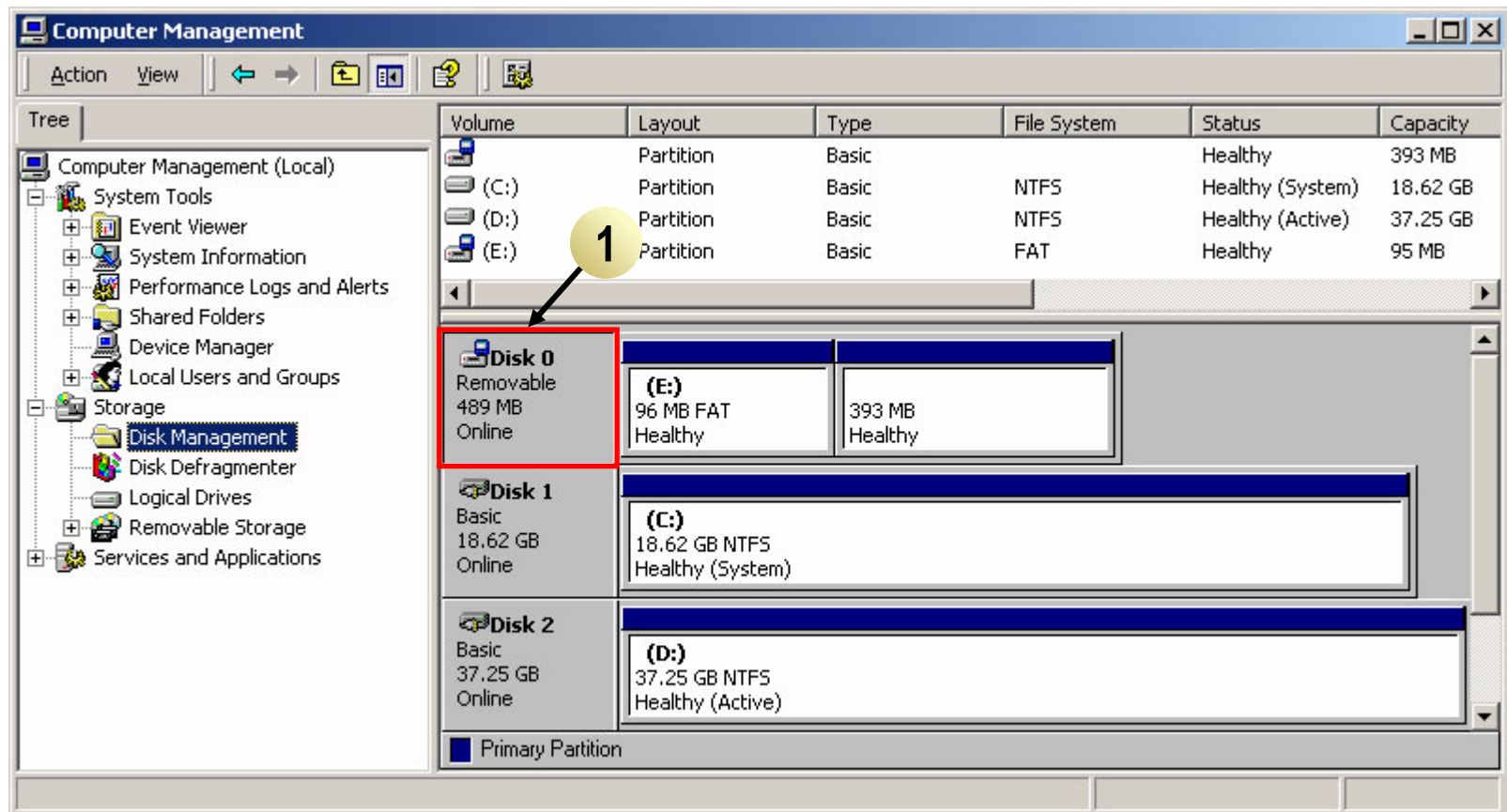
Determining the Drive Number

- 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”

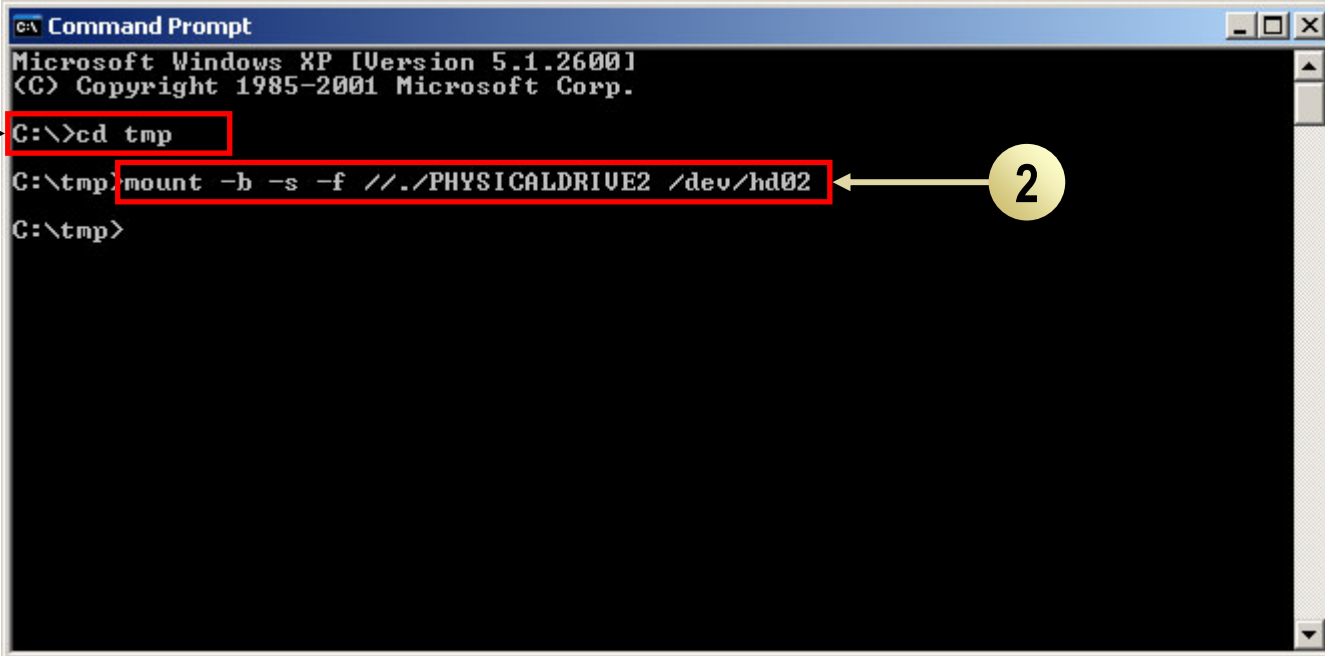


Mount the CompactFlash

- 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>
```

The screenshot shows a Windows Command Prompt window. The first command, `cd tmp`, is highlighted with a red box and a yellow circle labeled '1' with an arrow pointing to it. The second command, `mount -b -s -f ../PHYSICALDRIVE2 /dev/hd02`, is also highlighted with a red box and a yellow circle labeled '2' with an arrow pointing to it.

Image the CompactFlash

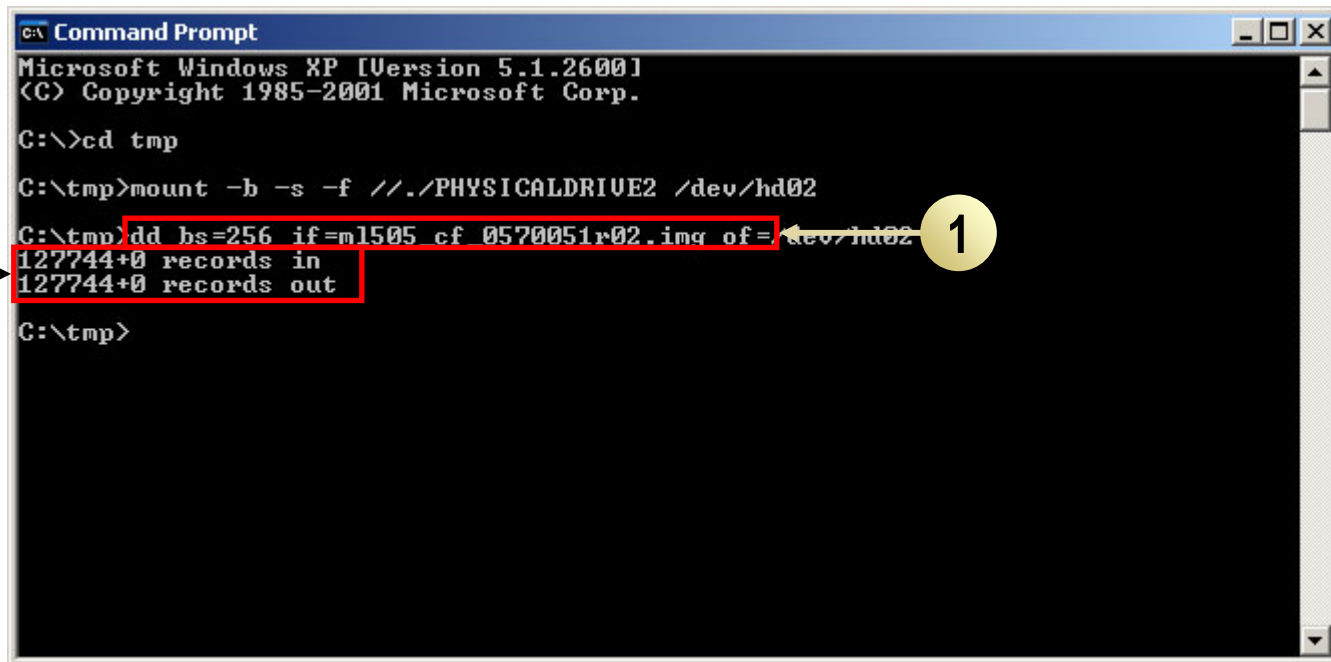
- Write the disk image to the CompactFlash card (1)

```
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)



```
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=ml505_cf_0570051r02.img of=/dev/hd02
127744+0 records in
127744+0 records out

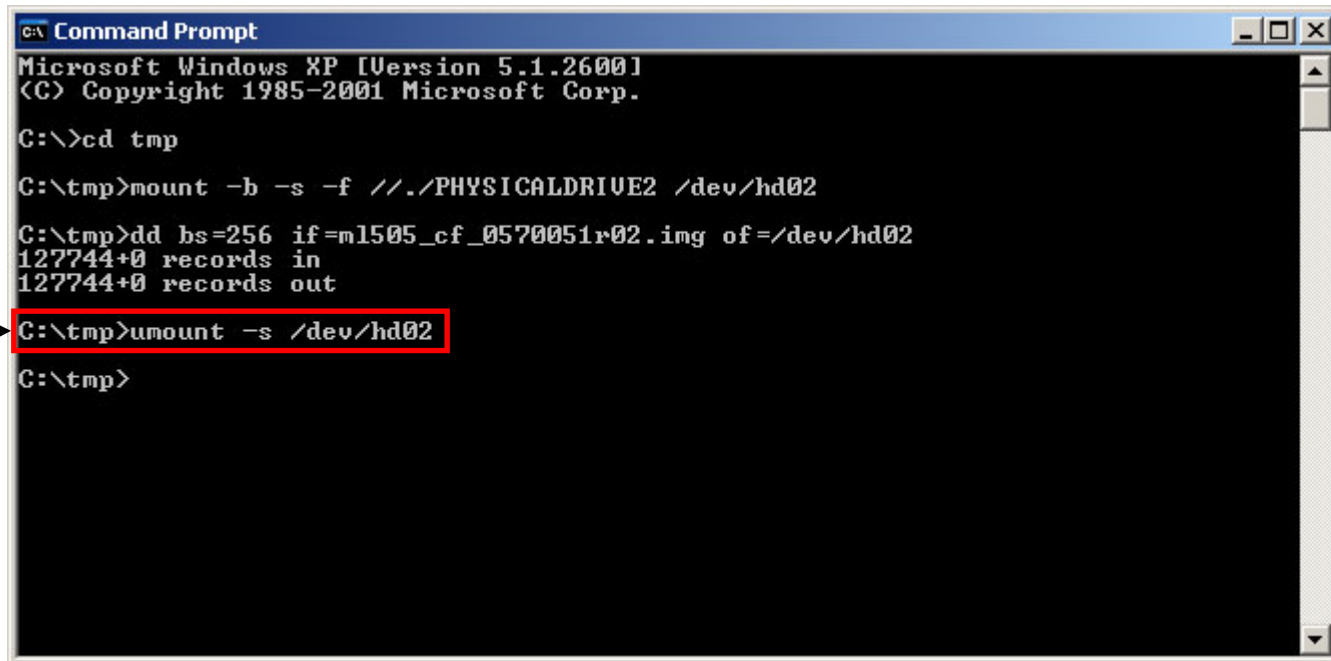
C:\tmp>
```

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

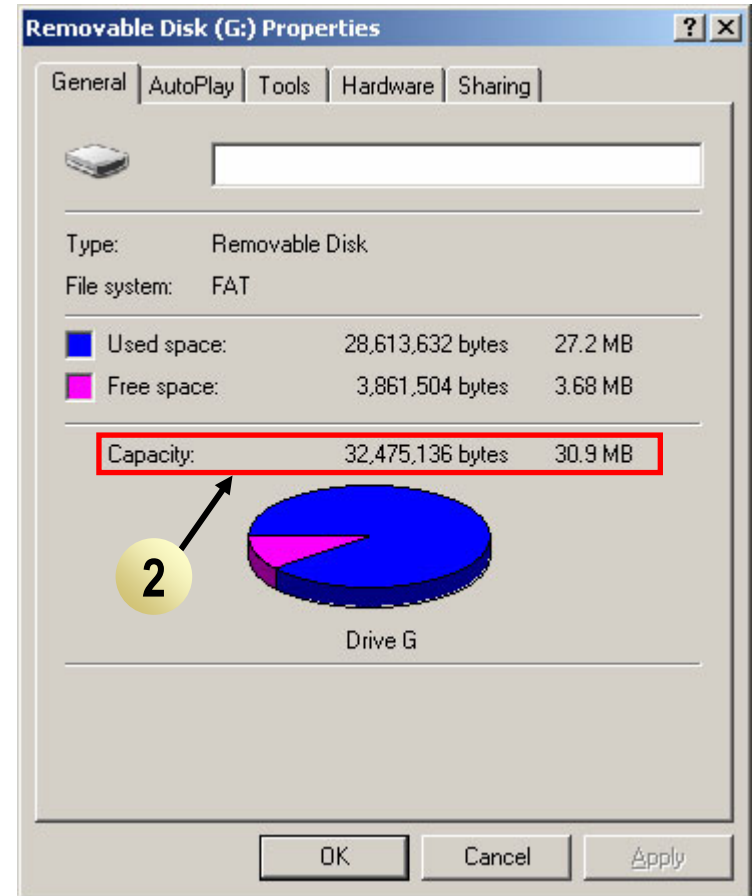
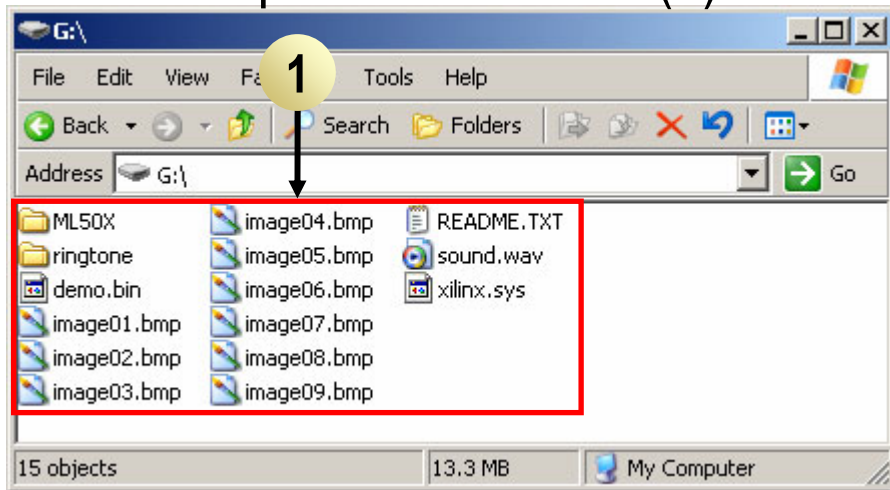
C:\tmp>mount -b -s -f ../PHYSICALDRIVE2 /dev/hd02

C:\tmp>dd bs=256 if=m1505_cf_0570051r02.img of=/dev/hd02
127744+0 records in
127744+0 records out

1 → C:\tmp>umount -s /dev/hd02
C:\tmp>
```

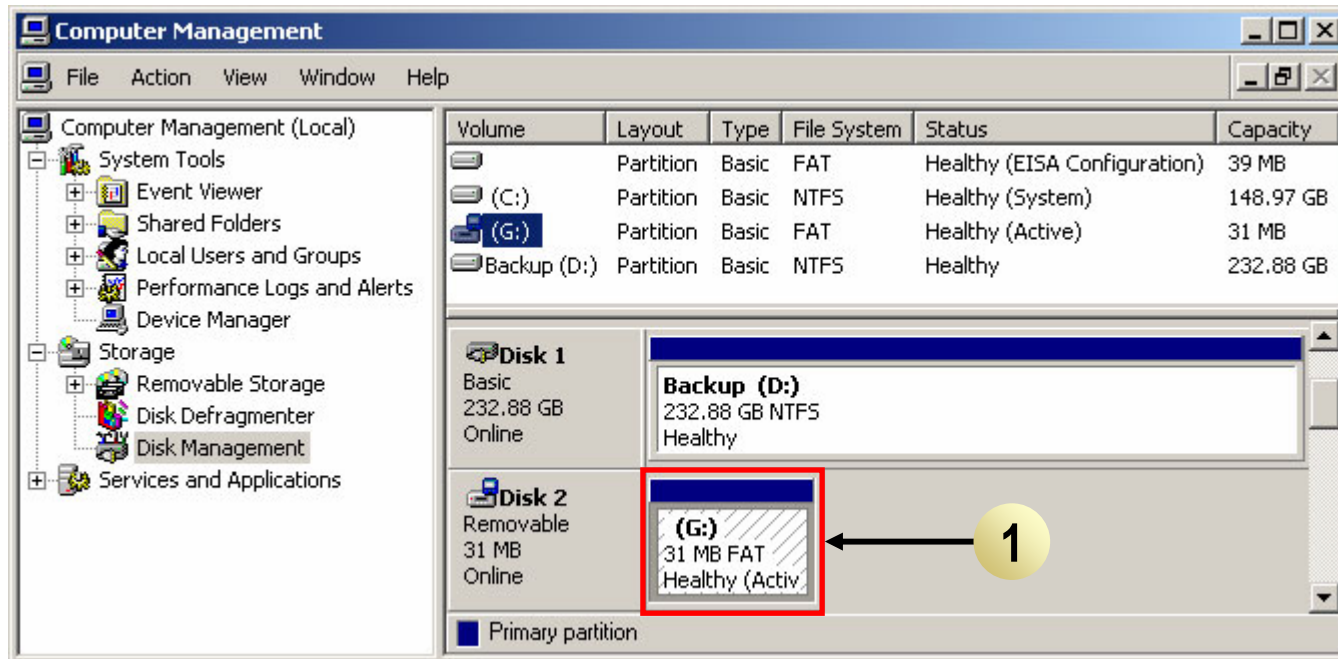
Drive Contents

- 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 30.9 MB space on the disk (2)



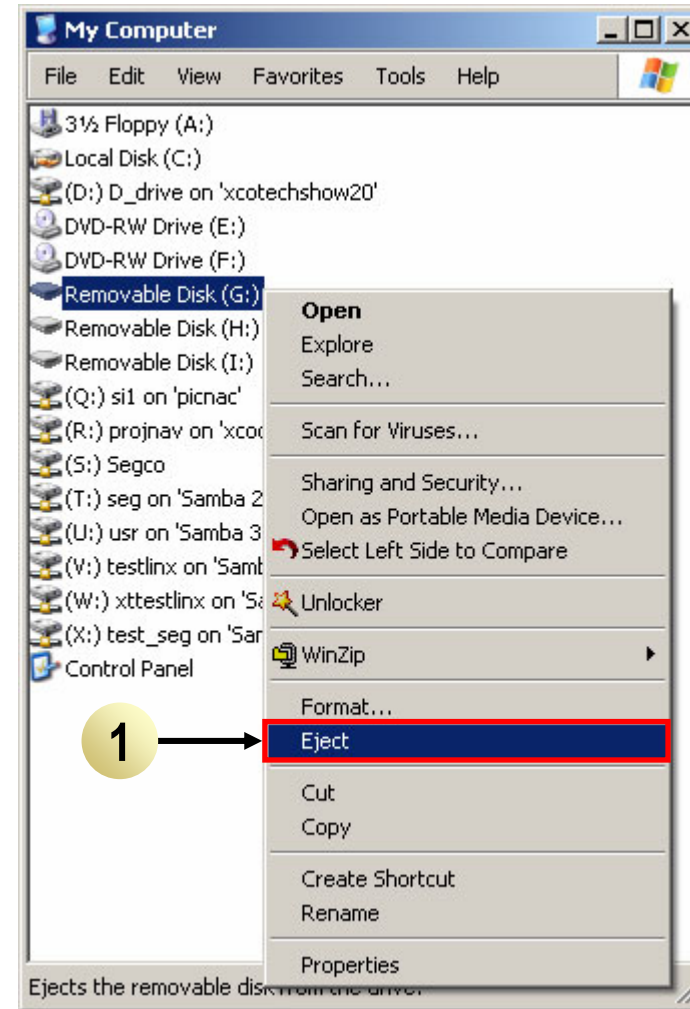
Drive Partitions

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



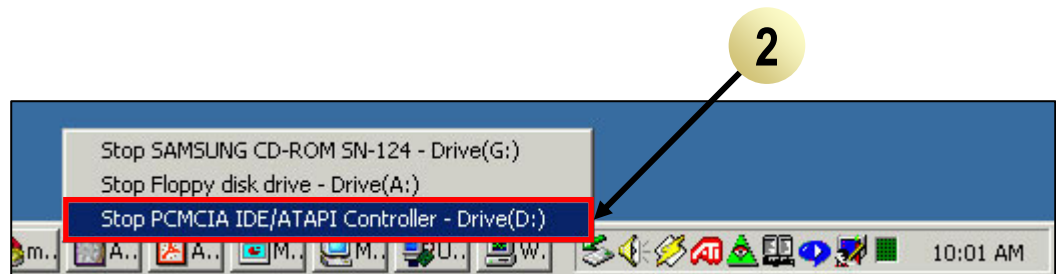
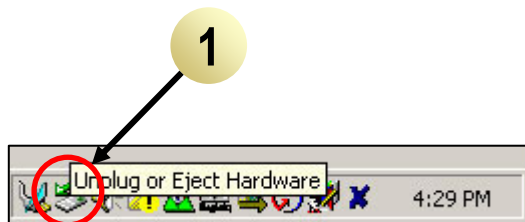
Remove the CompactFlash

- 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



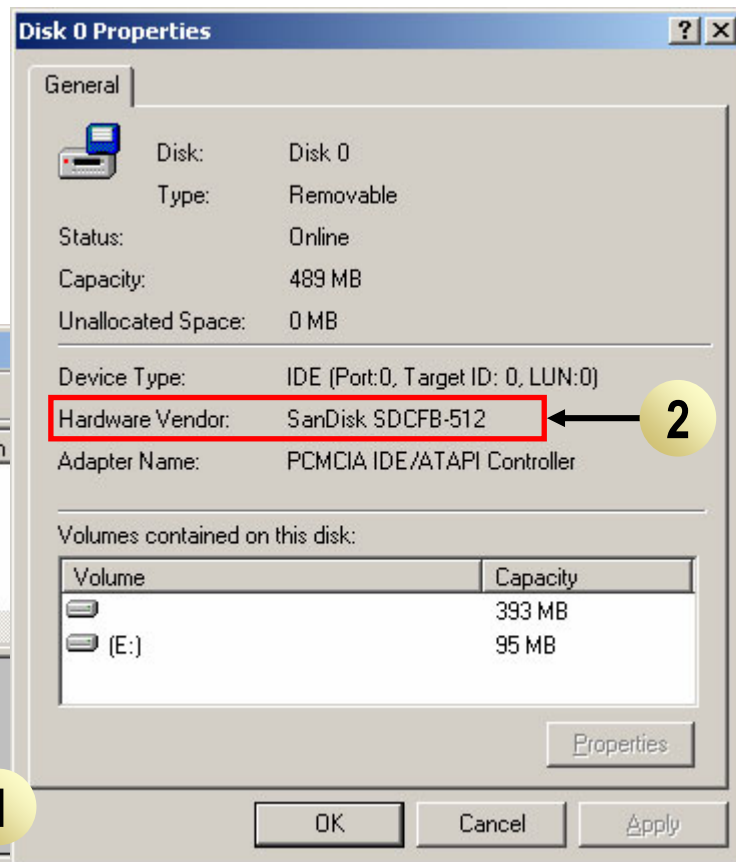
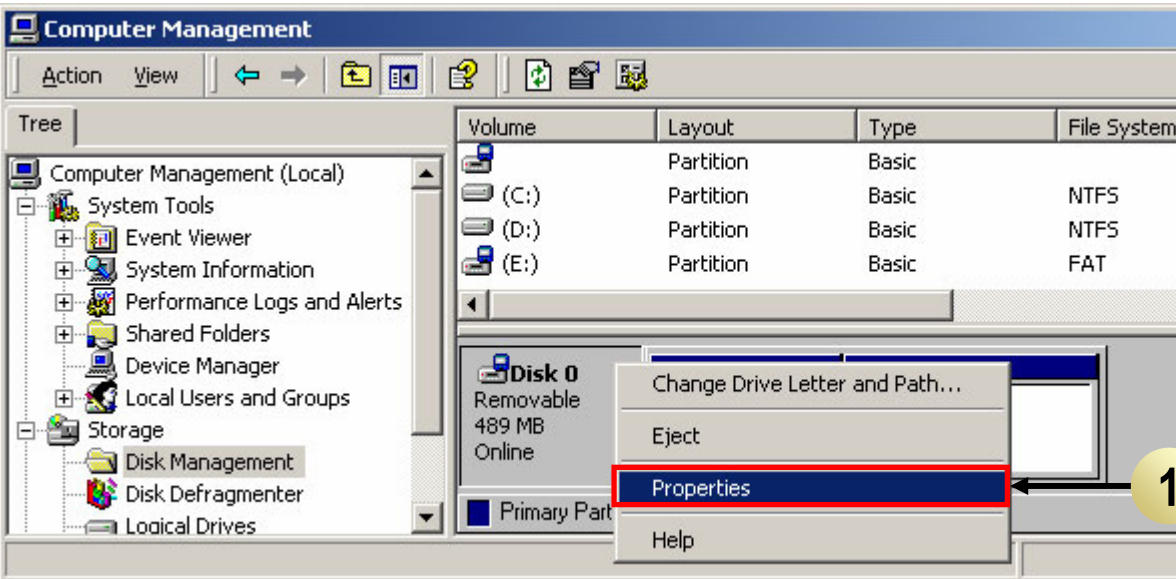
Remove the CompactFlash

- 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)



Documentation

- ML505/506
 - ML505 Overview
<http://www.xilinx.com/ml505>
 - ML506 Overview
<http://www.xilinx.com/ml506>
 - ML505/506 Evaluation Platform User Guide – UG347
http://www.xilinx.com/support/documentation/boards_and_kits/ug347.pdf
 - ML505/506 Getting Started Tutorial – UG348
http://www.xilinx.com/support/documentation/boards_and_kits/ug348.pdf
 - ML505/506 Schematics
http://www.xilinx.com/support/documentation/boards_and_kits/ml505_20061205_bw.pdf

Documentation

- Virtex-5
 - Silicon Devices
http://www.xilinx.com/products/silicon_solutions
 - Virtex-5 Multi-Platform FPGA
http://www.xilinx.com/products/silicon_solutions/fpgas/virtex/virtex5
 - 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
http://www.xilinx.com/support/documentation/user_guides/ug191.pdf
 - Virtex-5 FPGA DC and Switching Characteristics Data Sheet
http://www.xilinx.com/support/documentation/data_sheets/ds202.pdf

Documentation

- RocketIO
 - RocketIO GTP Transceivers
http://www.xilinx.com/products/silicon_solutions/fpgas/virtex/virtex5/capabilities/RocketIO_GTP.htm
 - RocketIO GTP Transceiver User Guide
http://www.xilinx.com/support/documentation/user_guides/ug196.pdf

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_manuels.htm

- ISE Development System Reference Guide - 9.2i

<http://toolbox.xilinx.com/docsan/xilinx92/books/docs/dev/dev.pdf>

- ISE Development System Libraries Guide - 9.2i

<http://toolbox.xilinx.com/docsan/xilinx92/books/docs/lib/lib.pdf>

Documentation

- Platform Studio
 - Embedded Development Kit (EDK) Resources
<http://www.xilinx.com/edk>
 - Embedded System Tools Reference Manual, EDK 9.2i – UG111
http://www.xilinx.com/ise/embedded/edk92i_docs/est_rm.pdf
 - MicroBlaze Processor Reference Guide – UG081
http://www.xilinx.com/ise/embedded/edk92i_docs/mb_ref_guide.pdf
 - EDK Concepts, Tools, and Techniques – XTP013
http://www.xilinx.com/ise/embedded/edk92i_docs/edk_ctt.pdf

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>