Firmware programming instructions for BF609 EVSK

There is one image that needs to be programmed for the BF609 EVSK:

- Vision Application Demo Programmed into SD Card

This document discusses how to program this SD card with the firmware image.

Required hardware and software

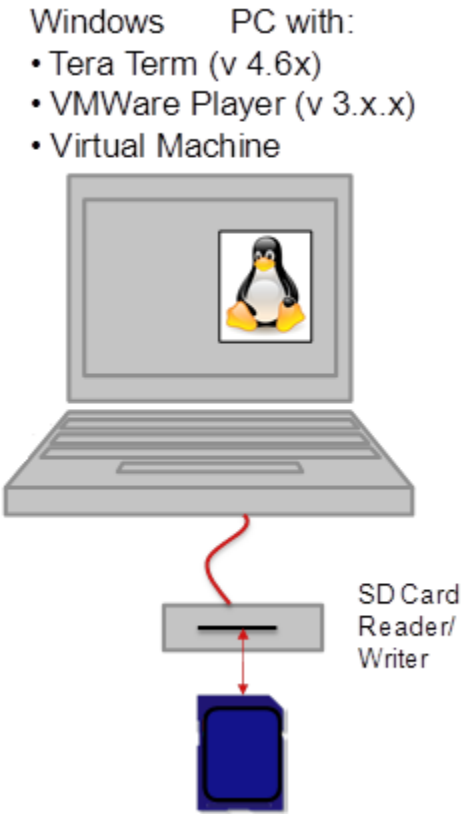
Required Hardware:

- PC running Windows XP
  - At least 2GB of memory installed
  - USB port
- External SD Card adapter

Required Software:

- VMWare Player (v5.0.0 or later)
- Ubuntu 10.4 VMware image, preconfigured with TFTP server already running
- BF609 EVSK Firmware Package (zip file), which includes:
  - Root filesystem tar file (VisionApp.ldr)
  - SD card make script (make_sdcard.sh)

The following diagram shows the hardware setup required to program the images into the board.



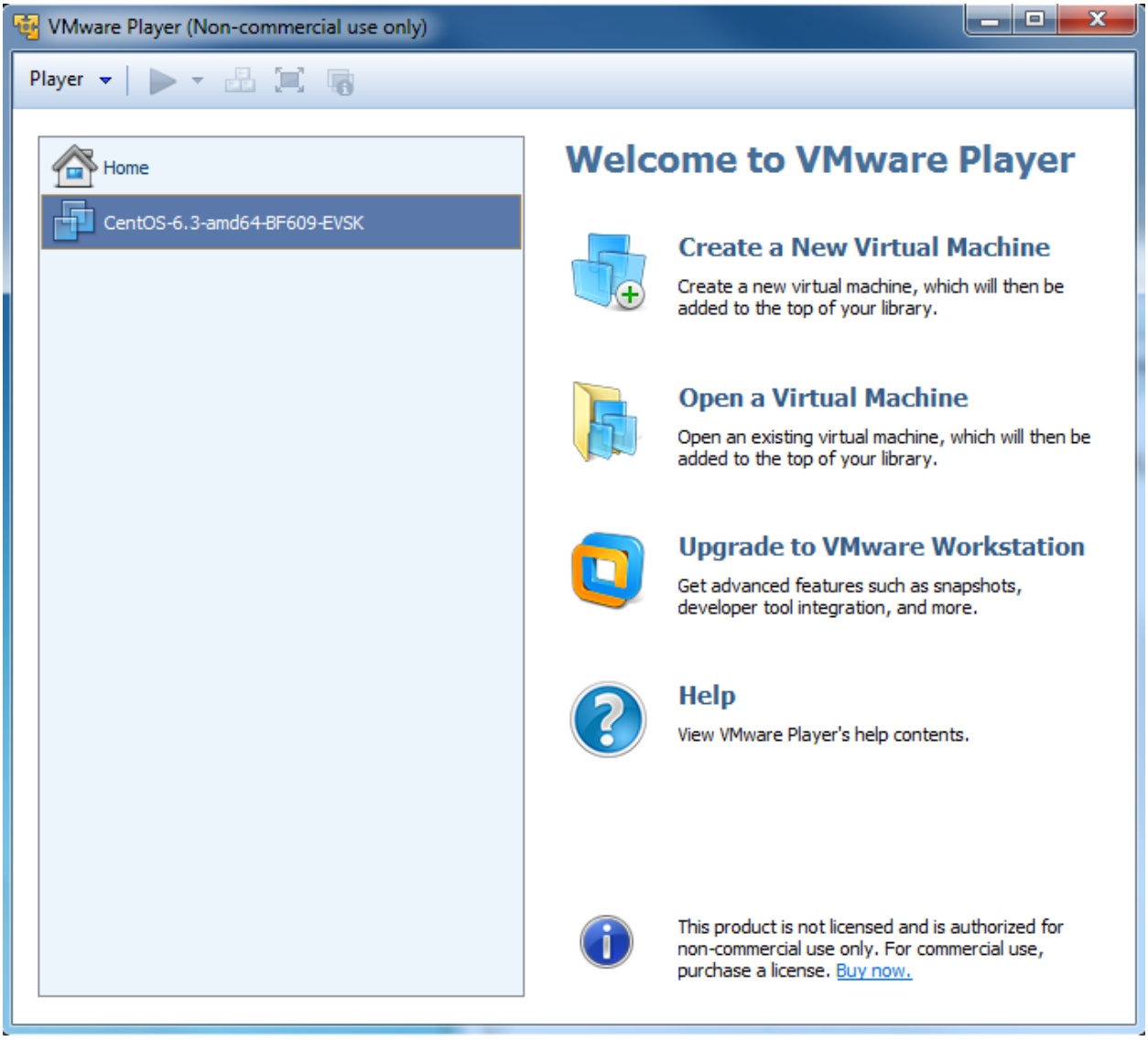
On lab production workstation:

1. Launch VMware, select Centos (BF609 EVSK) virtual machine and play the virtual machine.

Step 1) Unpacking the Firmware Package

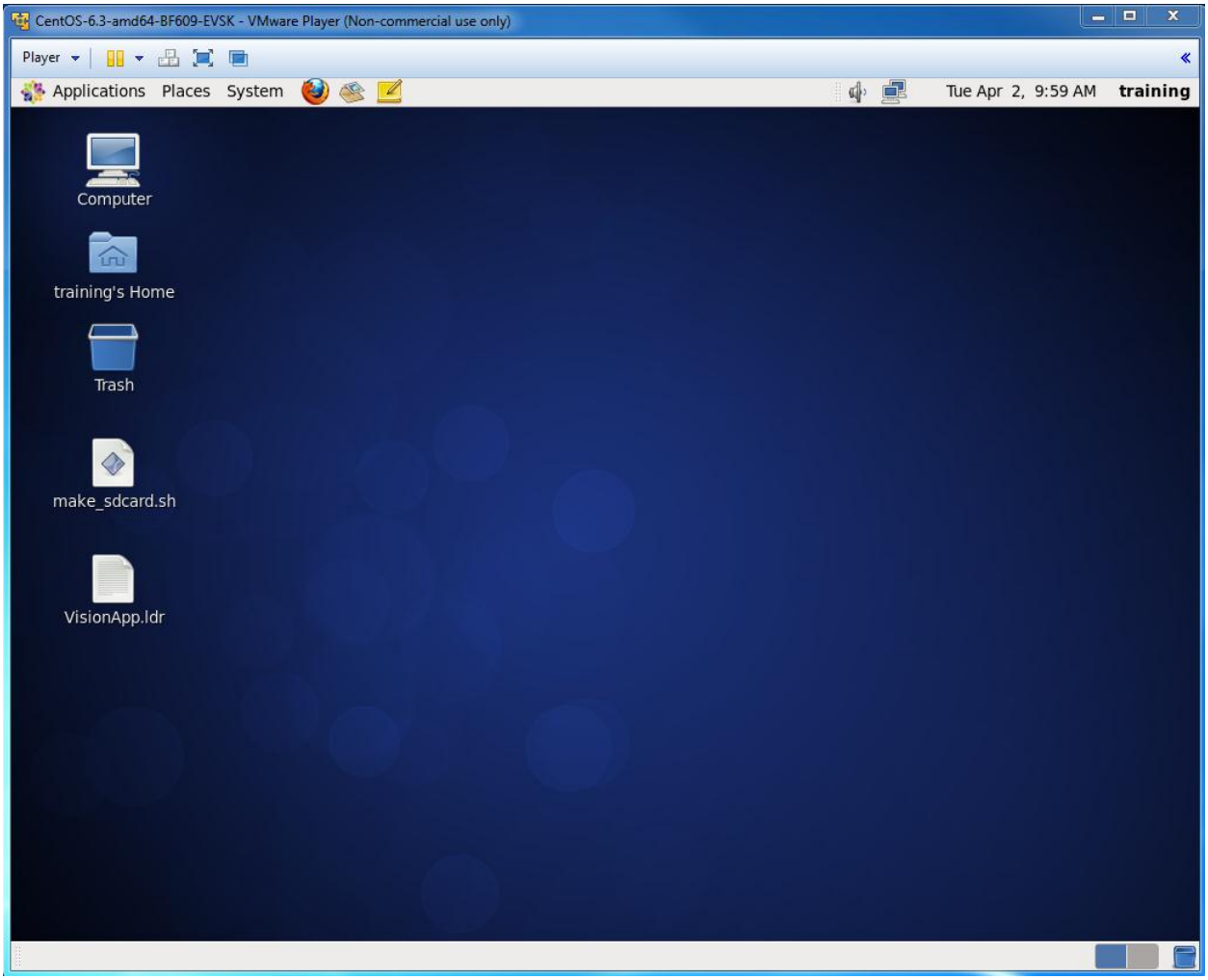
Note: This step needs only be done once per host configuration or test workstation setup)

1) Open VMware Player and start the CentOS 6.3 virtual machine for BF609 EVSK. Select the training user to login to the desktop environment, the password is **Avnet**

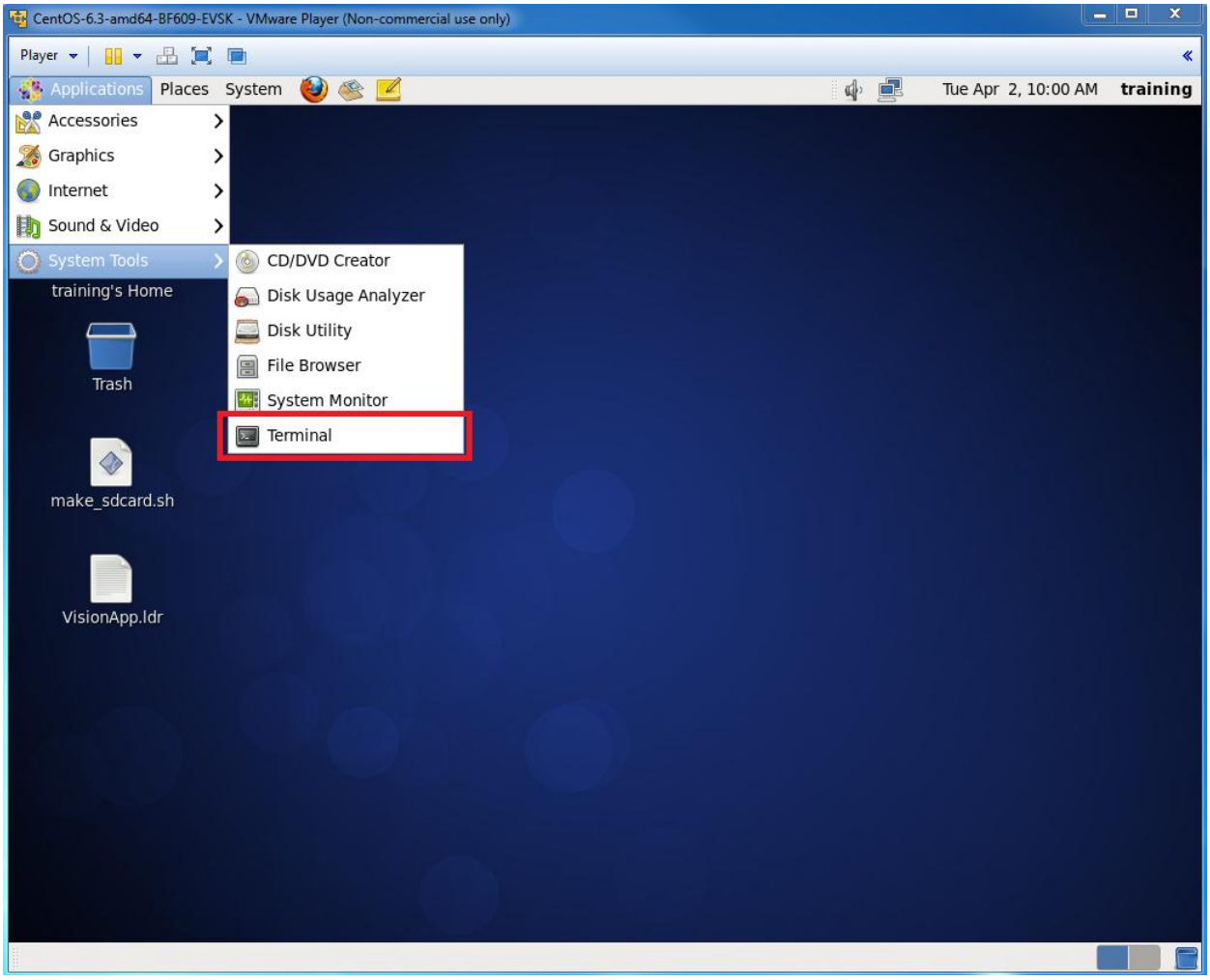


2) Drag and drop the following files from the **Production Test** folder into the VMware Player window:
    a. Vision Application image file (VisionApp.ldr)
    b. SD card make script (make_sdcard.sh)

    When you are done you should see something like this:



3) On the CentOS Desktop, open a terminal session using the **Applications→System Tools→Terminal** menu item.

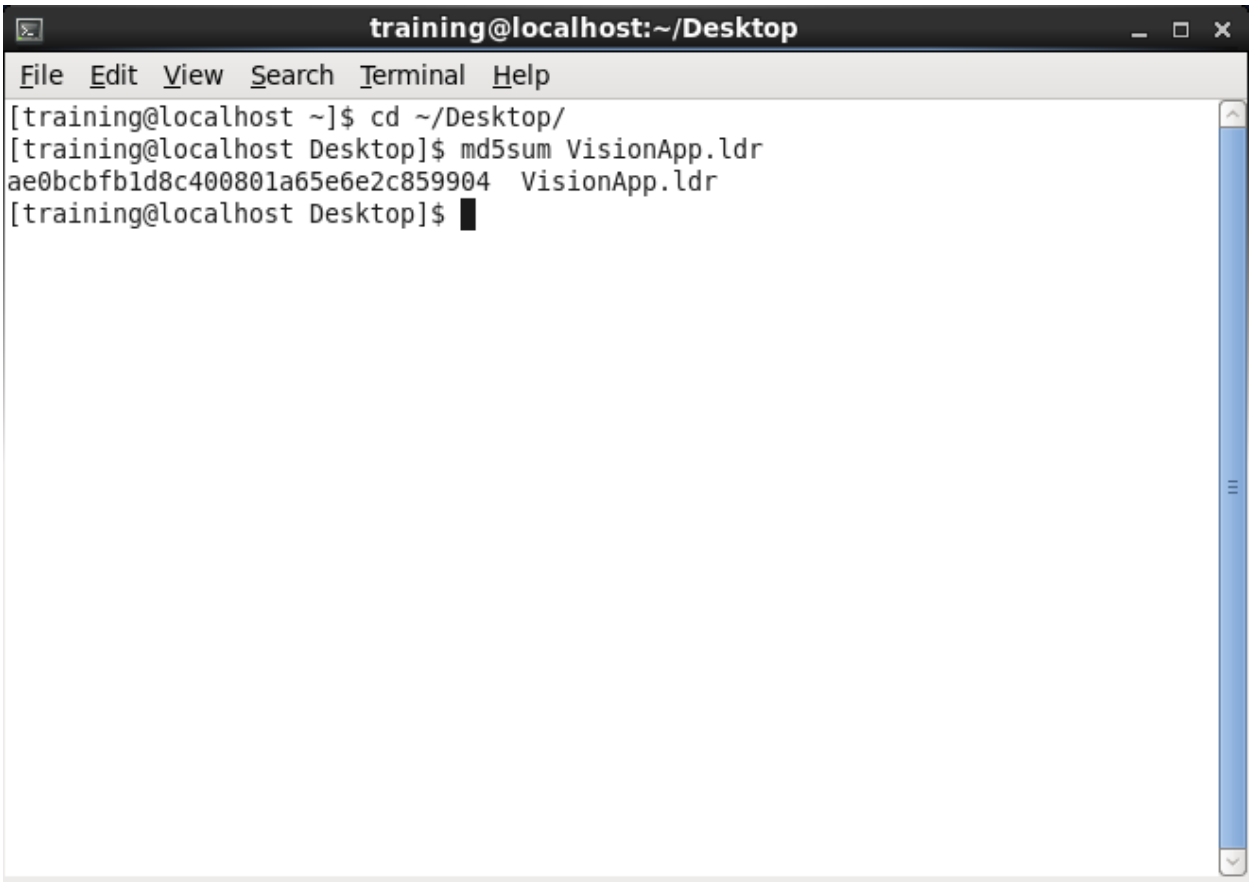


4) In the terminal window, type the following commands to check the firmware archive:

```
$ cd ~/Desktop

$ md5sum VisionApp.ldr
```

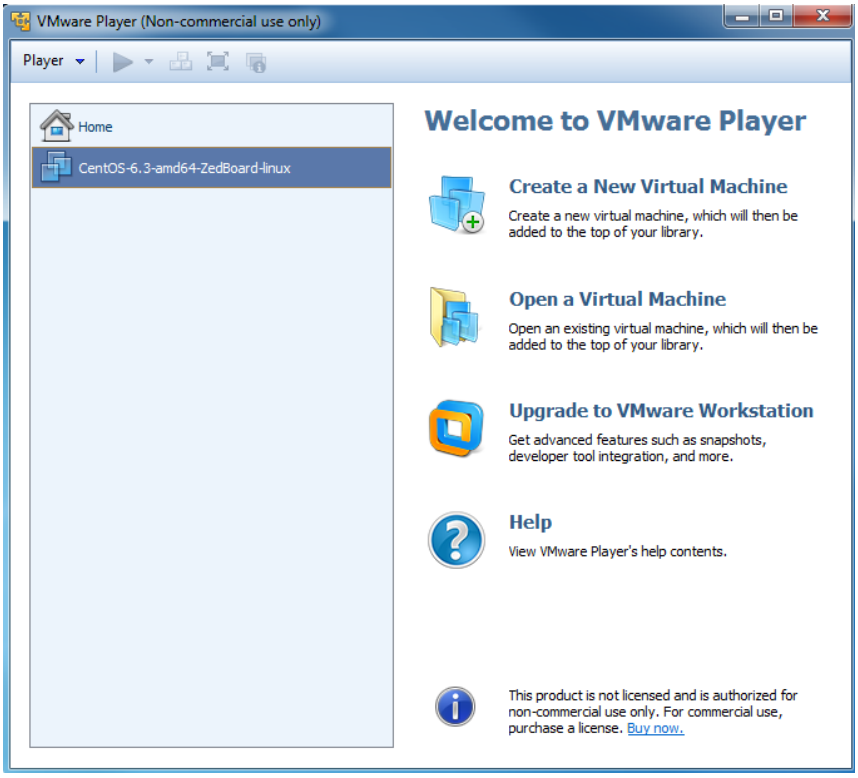
The result for the MD5 checksum command should match the string **ae0bcbfb1d8c400801a65e6e2c859904** and if the checksums do not match, the firmware image is corrupt or out of date.



5) The production configuration setup is now complete.

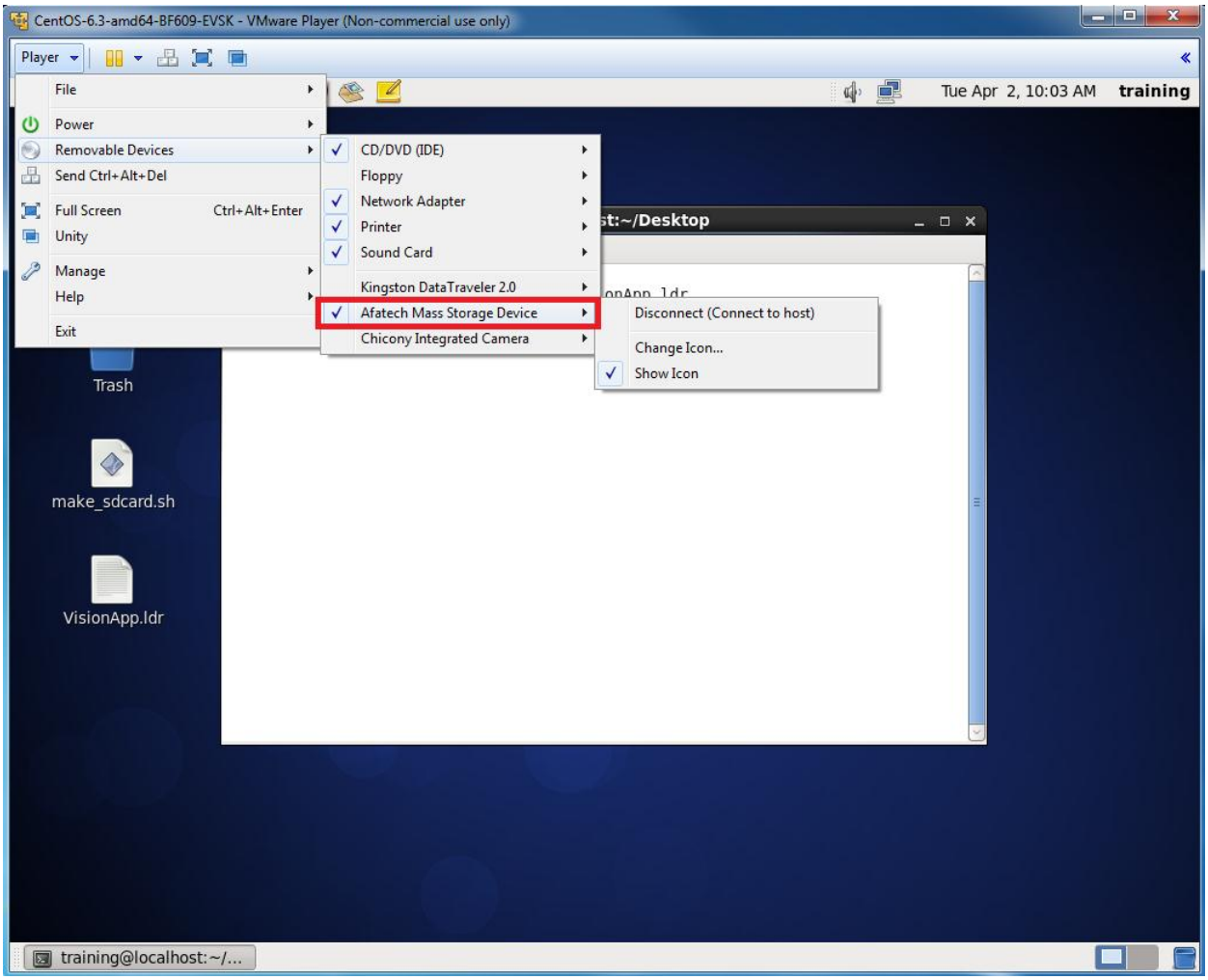
Step 2) Configuring the SD Card

1) If the VMware guest OS is not already opened, start the CentOS 6.3 virtual machine for BF609 EVSK. Select the training user to login to the desktop environment, the password is **Avnet**

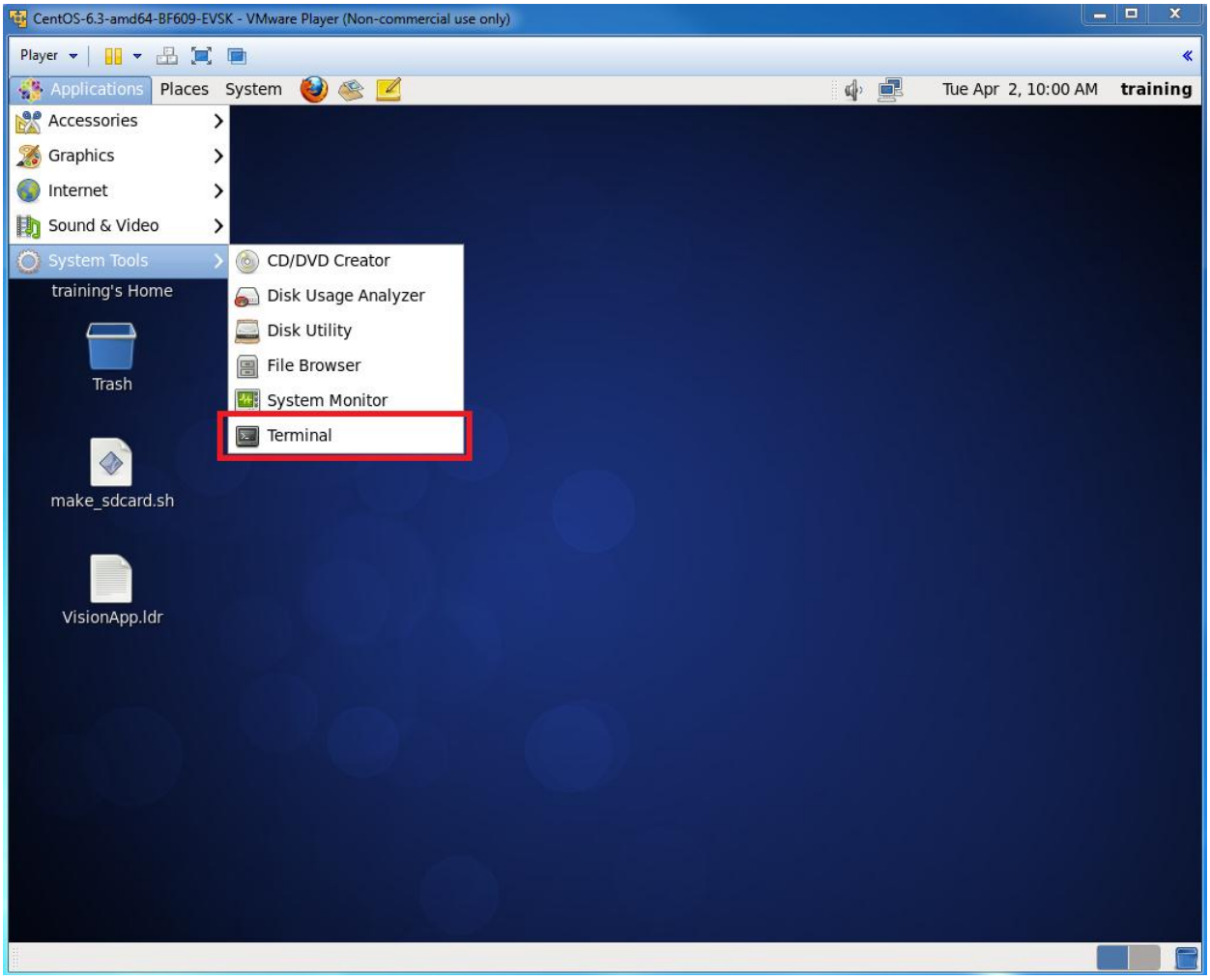


2) Connect your SD card USB adapter to the computer without an SD card inserted.

3) In the VMware Player window locate the **Player→Removable Devices** menu item and search through the list of devices to locate the device that represents the SD card reader. If the SD card reader device is already selected with a check mark adjacent to it, move on to the next step. Otherwise, connect the device to the guest OS by selecting the **Connect** menu item under the device listing. The device will automatically be removed from the Windows host OS and enumerated under the CentOS guest OS.



4) In the CentOS guest OS, open a terminal session if one is not already open.

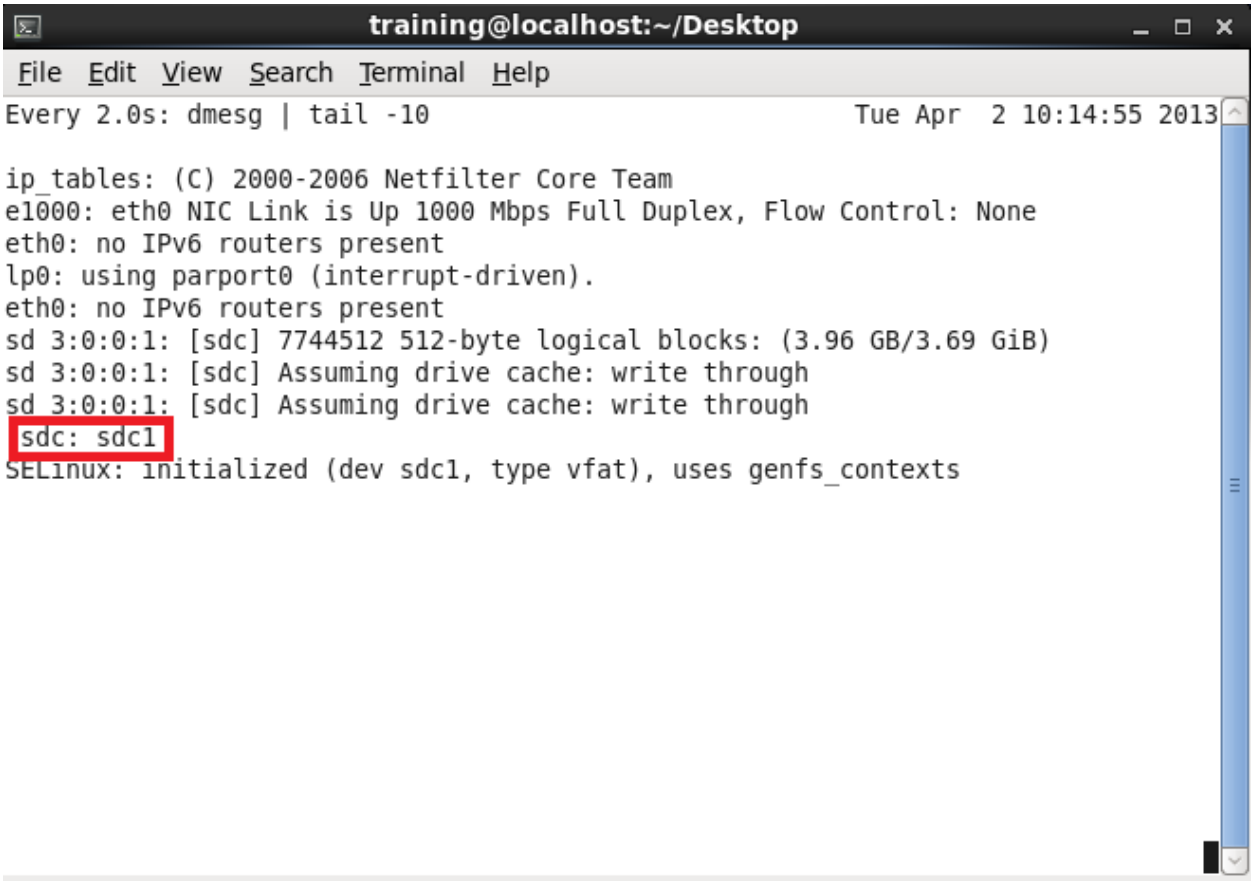


5) Type the following commands into the terminal window to launch the **watch** utility:

```
$ cd ~/Desktop

$ watch "dmesg | tail -10"
```

6) Plug in the SD Card to the SD Card adapter. You should see something like this:



a. In the above snapshot, the text "sdc" is highlighted this represents the disk device of the SD card that was insterted. The "sdc1" represents the first partition on the device that was used for this example but is not significant for this firmware programming operation. The last letter you see on the disk device may be different on your host (sdb, sdc, sdd, etc.). ***Make a note of this device for the next steps.***

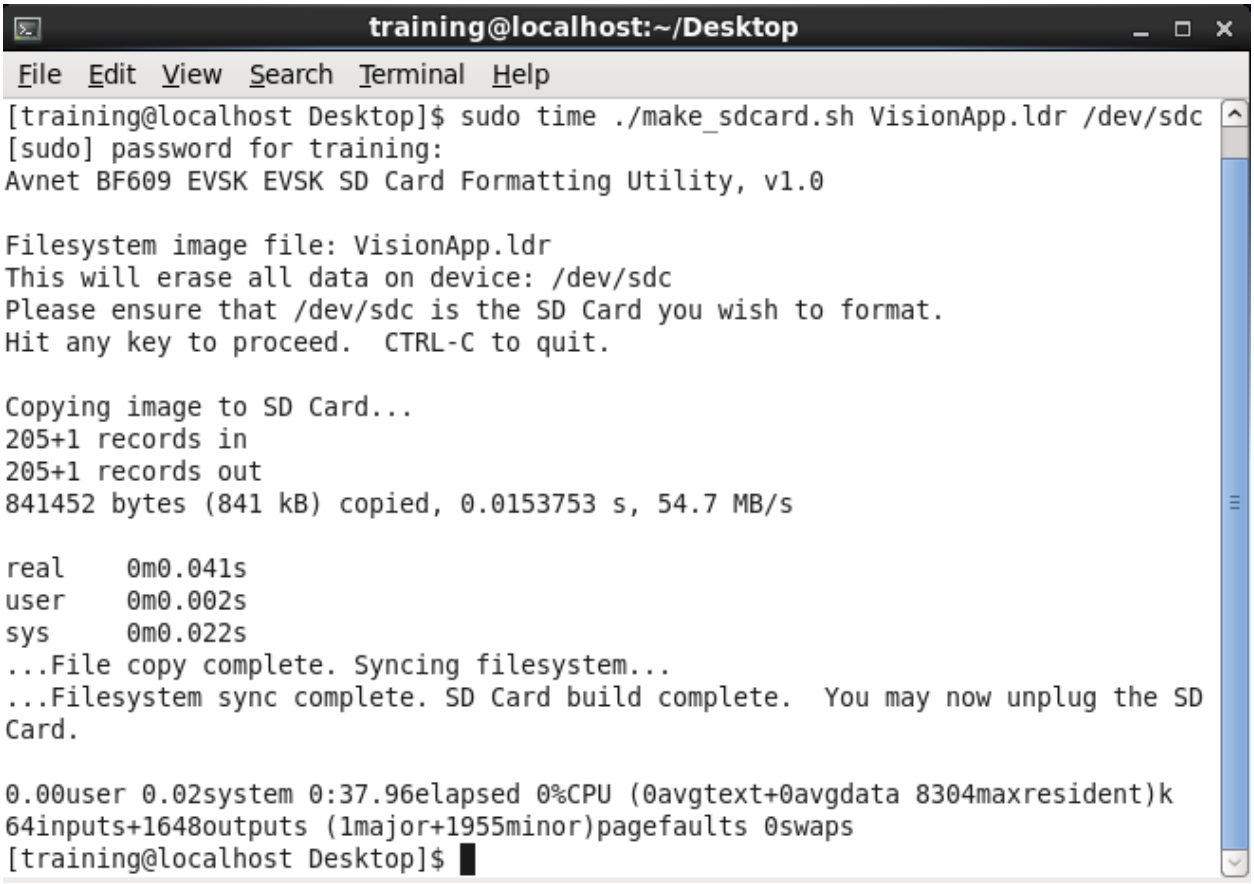
b. Exit the **watch** utility by hitting CTRL-c to return to the command prompt.

7) Run the following command in the terminal window to begin writing the firmware image to the SD Card:

```
$ sudo time ./make_sdcard.sh VisionApp.ldr /dev/sd{b,c,d}
```

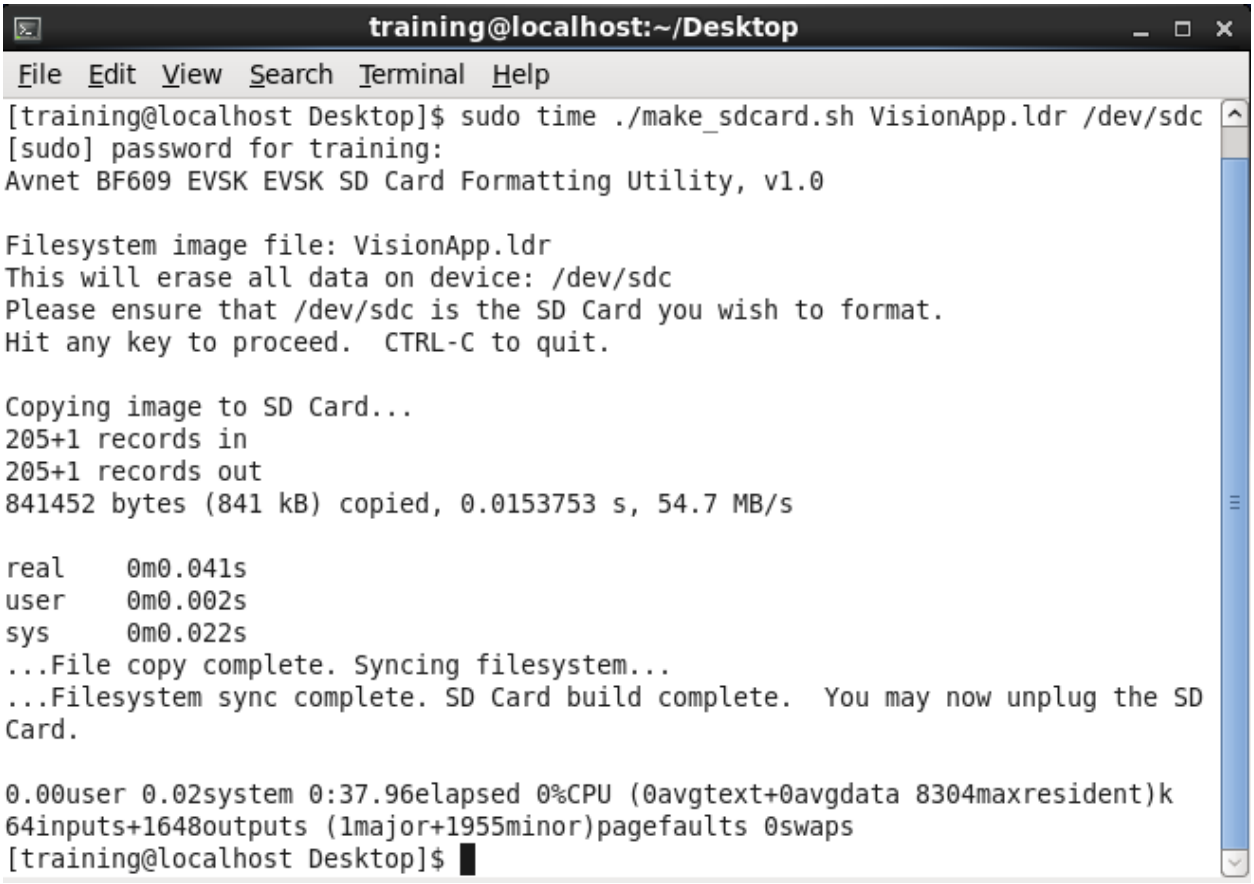
Where the **b,c,d** suffix is the letter you discovered during step 1 above. You may also be prompted for the sudo password for the training user, enter the password **Avnet**

An example of this command is shown in the image below.



Follow the prompts to hit any key to proceed with the firmware and selected disk configuration. You will not have to press any additional keys until the programming process is complete. This step can take 10 to 20 seconds depending on the system configuration.

8) When you see the completion prompts and time report, the SD card programming is complete and the SD Card can be removed from the USB adapter.



HINT: Use the up arrow at the command prompt to repeat commands used in recent history.

NOTE: When done with all programming, close the VMware player from the **Player→Exit** menu selection.

Version History

Version	Date	Description/Change
1.0	02 Apr 2013	Initial Revision