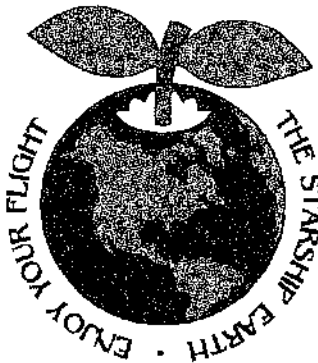


digital

DEC ALPHA Multia 166mhz Computer



STARSHIP COMPUTER COMPANY
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DEC Multia 166mhz ALPHA

Dear Multia Buyer:

Congratulations on buying a DEC Alpha Multia 166mhz. Please read the following pages. If you have any questions or have a problem, please call us at 603-659-2912, fax us at 603-659-5722 or e-mail us at ABSC@ameribusiness.mv.com.

Thanks,

STARSHIP COMPUTER COMPANY

Division of ABSC



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Upgrading the 4.33 Firmware on your DEC Alpha Multia 166MHZ

Included is a Firmware Upgrade floppy disk. To install the firmware on your machine simply:

1) Insert the disk on startup *after* you turn the machine on. You should see a brief video test and then more text coming up. You will see the disk light flash and the upgrade program will start automatically.

It will upgrade the SRM console and the Arc firmware.

After the disk has finished the program it will automatically take you to the Arc Console screen.

2) To re-enter the SRM console (necessary for DEC Unix) go to:

- A) the Supplementary Menu
- B) then into the System Setup Menu
- C) then to the Switch to OpenVMS or Digital Unix console.

3) At this point select Digital Unix, hit enter, and it will tell you that you must power-cycle to enter the console.

Turn off the machine from this point and turn it on again. This should get you to the SRM Console.

To Multia users who have already loaded the Arc console:

If you've already entered the Arc menu and you wish to upgrade your firmware, you must:

- 1) Go to the Supplementary Menu
- 2) From here go to Set up the System Menu
- 3) Then to the switch to OpenVMS or OSF console
- 4) Once here select OSF, hit enter, and turn the machine on and off
- 5) Insert the floppy into the drive and it will install the firmware

OPERATING SYSTEMS AVAILABLE

RED HAT LINUX Version 4.0 for Alpha: LINUX makes an excellent workstation and server and has an X Windows interface available. LINUX is speedy on the DEC Alpha 166 but requires a high degree of computer knowledge to load and operate.

Minimum Recommended: 32MB RAM & 340MB HD
Sources: Starship, Red Hat, Download from the Net



Windows NT 4.0 Workstation and Server: There is only one CDROM available from MicroSoft that loads any type of machine with NT 4.0. NT 4.0 is not as fast as LINUX but delivers acceptable performance especially if the recommendations in "SPEED OPTIMIZATION TIPS" are followed.

Minimum Recommended: 64MB RAM & 340MB HD
Sources: Starship, Microsoft Dealers



DEC UNIX 4.0 (OSF UNIX): DEC UNIX requires both a license (DEC #QL-MT4 AE-6Q - \$780) and media (DEC #QA-MT4 AA-H8 - \$340) to run. It also needs at least 64MB of RAM, a one gigabyte hard drive and either a fast CDROM (preferably 8X) or a DEC approved CDROM to load properly. Contact Starship if you need loading instructions. It's acceptably quick on the Multia but again requires a high degree of computer knowledge to load and operate.

Minimum Recommended: 64MB RAM & 1GB HD
Sources: Starship, DEC, DEC Resellers



NET BSD 1.12: NET BSD is an excellent operating system used by the scientific and university communities. It is downloadable and upgradeable for free or you can purchase CDROMs for a small price. It is fast on the Multia and has features that compare with any operating system, but again requires a high degree of computer knowledge to load and operate.

Minimum Recommended: 32MB RAM & 1GB HD
Sources: Starship, Download from the Net, NETBSD Resellers

The above recommendations are the current opinion of Starship Computer/ABSC and are not guaranteed. There may be other operating systems compatible with the Multia unknown to Starship Computer/ABSC

STARSHIP COMPUTER COMPANY & THE COMPUTER GUYS

Starship Computer Company sells DEC Alphas to customers around the world in the education, business and scientific communities. We sell and support cad/cam, engineering, video and production solutions on the Alpha. We have our own line of Alpha computers and a distributor for Aspen Systems, a DEC reseller.

We are the builders of the **Starship DEC Alpha Multia Farm** which incorporates ten DEC Alpha Multia 166 boards and sixteen drives in a case of our design and manufacture and links them with Ethernet, as well as the **Mini Farm**, which holds three boards and six drives. These are rendering farms and parallel processing units.

Starship was named primarily for what we hope people will do with our computers, and only partially for Kirk, Spock, Bones, Scotty & the crew.

Computer Guys, our sister company, does Macintosh & PC Consulting, Sales & Service. **Computer Guys** has sold Macs since their introduction and now sells them to customers around the world. **CG** also sells IBM and COMPAQ Servers & PCs at really good prices. We sell and support publishing, video and production solutions on the Mac and the PC. We also sell Motorola, UMAX and Power Computing mac clones. We also sell used and refurbished computers.

AMERICAN BUSINESS SERVICE CORP., the Environmental Side - **ABSC** has been in business since 1985 as an environmental technology and computer sales company. We were part of the Earth Day 1990 National Communications Company and published the Earth Day 1990 Calendar as well as organizing national photo contests and exhibits.

We were part of the team that developed an environmentally safe method of cleaning circuit boards. This product was sold to Arm & Hammer® and is now marketed as Armakleen®.

We are now working on a system that checks environmental quality in factories, office buildings and homes. The system is placed by the operator in the building and left for twenty-four hours. During the time period the system monitors light, heat, gases, radon, particles in the air, humidity, psycho-acoustic sound, regular sound and so on. It records the data from all sensors every thirty seconds, and then graphs the results. This gives a fairly clear picture of what factors are causing problems in the building. We expect to offer use of the system on a commercial basis in 1997.

STARSHIP COMPUTER

Price List

COST ITEM & DESCRIPTION

COMPUTERS

\$799	DEC Alpha Multia 166 MHZ with 24MB RAM/340MB HD	QUANTITY DISCOUNTS AVAILABLE
\$499	DEC Alpha Multia 166 MHZ with 0 MB RAM & 0 MB HD	
\$399	DEC ALPHA Multia Board & POWER SUPPLY - NO CASE OR MOUSE	

MEMORY UPGRADES

\$CALL (2) 8 MB SIMMs (70ns w/Parity)
 \$CALL (2) 16 MB SIMMs (70ns w/Parity)
 \$CALL (2) 32 MB SIMMs (70ns w/Parity)

**MEMORY PRICES MAKE THE STOCK
 MARKET LOOK RATIONAL! CALL FOR
 THE LATEST PRICES**

**ALL MEMORY IS BUILT
 WITH CHIPS FROM MAJOR
 SUPPLIERS AND HAS A
 LIFETIME WARRANTY**

HARD DRIVE UPGRADES

\$299	1Gig HD IBM DFRS	8ms.	7200 RPM	INT. NEW	3 YR WARRANTY
\$399	2Gig HD IBM DFRS	8ms.	7200 RPM	INT. RECERTIFIED	1 YR WARRANTY
\$349	2Gig HD HP	9.5ms.	5400 RPM	INT. NEW	1 YR WARRANTY
\$595	2Gig HD QT Atlas	7.8ms.	7200 RPM	INT. F/W NEW	1 YR WARRANTY
\$29	2X CDROM Toshiba 1/3 Height			NEW	30 day warranty

SERVICE CONTRACT COMING SOON!

PARALLEL PROCESSING CASES & DRIVE CASES

\$885	Parallel Processing (PPC-10) - Slots for 10 Multias/Power Supplies & 16 Drives
\$385	Mini Parallel Proc. (PPC-3) - Slots for 3 Multias/Power Supplies & 6 Drives
\$125	Two Bay Case With One 80 W. Power Supply - holds 3.5" & 5.25" drives
\$150	Four Bay Case With Two 60 W. Power Supplies - holds 3.5" & 5.25" drives

WindowsNT 4.0 Installation Guide

___ Step One: To install WindowsNT 4.0 on a Multia, you must first be in the Arc console menu. If you're still in the Multia SRM console (a text console), type arc at the >>> prompt.

___ Step Two: Put the WinNT 4.0 CD in the CDROM drive. Open the Arc menu to the Run Program selection.

___ Step Three: At this prompt, type cd:\alpha\arcinst.exe. This will bring up a partition screen.

___ Step Four: First create a 10mb partition. After formatting, create a second partition. Use the rest of the disk space for this partition.

___ Step Five: Exit arcinst and go to Install WinNT from CDROM in the supplementary menu. This installation is self explanatory. Place the install on the D: partition.

___ Step Six: After this install is complete, the machine will restart and boot to setup. Setup is also rather self explanatory, except for a few things.

When you select the network adapter, you need to select from the list of bindings. Select DEC Multia's ethernet controller. This will ensure proper networking.

___ Step Seven: After you complete this install you can initiate the sound driver by entering the Multimedia control panel in the WinNT control panels folder.

Select Devices at the top, then click add go to the bottom of the list and select Windows Sound System. You want the DMA at 3, the Port at 530, and the Interrupt at 9.

___ Step Eight: Once you restart you should get a start up sound. From here you should be ready to operate!

SPEED OPTIMIZATION TIPS FOR WINDOWS NT 4.0 WORKSTATION

- 1) Your machine has 24MB of 72 pin DRAM with true parity. Workstation recommends 16MB. It runs faster with 32MB and really goes with 64MB.
- 2) Make sure virtual memory is turned on.
- 3) Workstation needs enough hard drive space to swap files.
- 4) Workstation runs faster on defragmented disks.
- 5) Download the two Windows NT 4.0 Service Packs from www.microsoft.com and install them.

If you plan to fax, also download the MS Fax Pack.

- 6) Download FX32! from www.digital.com and install it.

This application allows you to run Windows and DOS apps on your machine. It also optimizes your programs to run on the Alpha AXP processor.

"NVRAM" Problem: Even though WinNT operates, you may get the "NVRAM" error message. To solve this problem:

___ Step One: Enter the Supplementary Menu from the Boot Menu. Go into the Setup System menu, then to Manage Boot Selection menu.

___ Step Two: Choose Verify Boot Selections. It will ask about three or four boot selections. Delete the boot selections each time.

___ Step Three: Exit to the System Setup Menu. Select the Supplementary Menu and then select Save Changes. The message should be gone now.

DEC Alpha Multia 166 MHZ SPECIFICATIONS

DOCUMENTATION AND TECHNICAL SUPPORT - *DEC did not include any documentation with these systems.* DEC's website has information under the Multia section. We have a lot of experience with these systems, and if we are unable to solve a problem, we have access to experts at DEC, MicroSoft and the LINUX community to help us.

Please call us at 603m 659-2912, fax us at 603 659-5722 or e-mail us at ABSC@ameribusiness.mv.com if you need help. There is a reprint of a \$95 DEC Service Manual in the price list if needed.

MEMORY - The Multia contains four SIMM slots which have *two banks for matched pairs (same maker, chip count & speed)*, so purchase SIMMs accordingly. The DEC specs call for 72-pin 70ns *true parity* SIMMs which interleave. It is possible to run the Multia on one pair of SIMMS. DEC recommends against non-parity and EDO, and that will void your warranty.

HARD DRIVE - For four primary reasons, *\$\$\$*, *Heat*, *Power* & *CDROM*, we recommend you go to an external 3.5" SCSI drive. Try to use the fastest drive available because a slow drive will pull the Multia down.

A) *\$\$\$* - 3.5" is much cheaper than a SCSI 2.5".

B) *Heat* - the Alpha chip runs very hot in normal applications. There is only a small fan cooling the chip, and any normal 3.5" drive will add far more heat in the box than a 2.5" drive will. The hotter the Alpha chip cooks, the slower it runs and the shorter it lives.

C) *Power* - There is only a 75 Watt power supply in the machine. The Alpha chip alone takes about half of that power, leaving very little for the floppy disk and the rest of the board, much less powering a juice hungry 3.5". And if drives are run on less power than they need, they tend to start malfunctioning.

D) *CDROM* - You need a SCSI CDROM to load software, and where in the Multia will you fit a CD? Time for an external drive box. Most Sonys & Toshibas seem to work with a few exceptions. CD-R writers don't agree with the firmware and some 8X+ don't work either. Please note that you will need to attach an active terminator to the exterior of this CDROM as with any external SCSI device.

FLOPPY DOOR - We have processed over one thousand of these machines so far. Of that number, about six have had floppy doors. We are trying to buy more from DEC, but so far we have had no luck.

WARRANTY & RETURN POLICY - All sales are final. DEC gave us a thirty day warranty on these systems and that is what we offer.

IDE - The Multia UDB comes with an IDE port located behind the disk and hard drive. Our best recommendation for use of IDE hardware is, *don't*. We don't know how to implement it and NT and LINUX have no drivers for IDE.

MONITORS - The Multia will support all DEC monitors and most VGA and SVGA monitors. *Please note that some monitors will not sync correctly with the Multia SRM Console. If this happens, type "ARC" after a few minutes. This will bring you to the ARC Console which will always sync with the monitor.*

VIDEO - The video is hard wired to 256 colors because of DEC's use of an old design. It will support up to 21" monitors at high resolutions, but only at 256 colors.

PCMCIA CARDS - Most Type I and Type II PCMCIA cards and modems will work in these slots. Software support is another matter.

SERIAL PORT & MODEMS - We have the cable that converts the single serial port to two serial ports, one with modem control. The design was borrowed from the \$157 DEC unit. Most serial and PCMCIA modems are compatible with the DEC Multia. Any problems encountered with modems are usually the result of a lack of software support. We recommend Windows NT 4 over version 3.51 for the best support of PCMCIA modems.

PARALLEL PROCESSING - Starship offers a full ten board unit with space for 16 hard drives and a three board unit with space for six hard drives. Under LINUX, UNIX or NETBSD these units can be set up as parallel processing units.

RENDERING FARMS - The PPCunits listed above function as rendering farms under WindowsNT 4.0, LINUX, UNIX and NETBSD. Most major 3-D and video programs run very quickly. Call **Starship** for advice.

LOADING A DEC ALPHA MULTIA 166MHZ. WITH RED HAT 4.0 LINUX

_____ Step 1: You need the following:

- 1) Red Hat 4.0 Linux Alpha CD-ROM (Supplied)
- 2) Milo/Linload Disk (Supplied)
- 3) 2 blank floppies
- 4) PC w/DOS(or something that will allow you to make these diskettes) with a CDrom
- 5) SCSI ROM Drive for Multia (Preferably Sony or Toshiba, they seem to work)

_____ Step 2: Creating the Boot and Root Floppies

- 1) Insert the Red Hat CD into a DOS based PC system and access the CD.
- 2) Copy rawrite.exe into your DOS directory as follows (MILO can't read a DOS floppy). In \dosutils on your Red Hat CD you'll see rawrite.exe. Copy it into your directory on your PC where DOS resides: \dos. Once rawrite is there, you can do a rawrite from your Red Hat CD onto your installed floppy.
- 3) On the Red Hat CD find \images\noname.img. Type in the following: rawrite -f noname.img -d a: -n. There should be no response errors. (A PC will be unable to read this floppy image now.) This is now your BOOT FLOPPY.
- 4) Insert a new floppy. On the Red Hat CD find \images\ramdisk.img, Rawrite -f ramdisk.img -d a: -n. There should be no response errors. This is now your ROOT floppy. You are now ready to load Red Hat Linux 4.0 onto your Multia system.

_____ Step 3: Creating the Boot Selection

- 1) Connect the CDrom and turn on the power to the system. It will take as long as 30 seconds before displaying anything on the screen -- don't let that throw you.

A scrambled screen should come up, followed by a blue screen. If the machine stops in the scrambled screen (leaving something that resembles

a >>> prompt), type arc. This will take you to the arc menu. Otherwise, you should find yourself at a blue screen where you should see Initializing messages. You may also see a screen that says Warning: the firmware has found a problem. This is normal; don't panic.

2) When you see the boot menu and the countdown timer, press an arrow key to stop it.

It's also possible that you'll see Error: Device error, press any key to continue -- especially if you have a factory-fresh Multia. Press any key, then immediately, as you'll probably be at the boot menu.

3) You're now at the Boot menu. Select Supplementary menu, with the arrow keys, then press enter. Now select Display hardware configuration to verify that the machine can see the CDrom drive. This information is on the second screen.

4) Back at the Supplementary menu, select Set up the system..., then Manage boot selection menu..., then Delete a boot selection... .

Delete any and all existing boot selections!

5) From the Boot selections menu, select Add a boot selection...

6) When prompted to select a system partition, select New system partition, then select Floppy disk.

7) At Enter Floppy Drive Number: enter 0.

8) At Enter the osloader directory and name:..., delete the existing text and enter linload.exe.

9) Is the operating system in the same partition as the osloader, select Yes

10) At Enter the operating system root directory, delete all characters from the default response, and enter milo.

11) At Enter a name for this boot selection, delete the existing answer and type floppy milo.

12) To Do you want to initialize the debugger at boot time, select no.

13) Go down to Setup Menu and press Enter

14) Go down to Supplementary menu, save changes, then press ENTER.

_____ Step 4: Loading Milo

1) Now it gets exciting! Put the milo floppy in the floppy drive, and select Boot menu, then Boot floppy milo. You'll see some load messages, and the floppy will chug for a while. Then you'll see the MLO> prompt.

2) Insert the BOOT floppy, and type:

```
boot fd0:vmlinux.gz root=/dev/fd0 load_ramdisk=1
```

You'll see some SCSI messages go by, and quite possibly a machine check message or two. If you have a termination problem with your scsi chain the machine will freeze at the scsi0 : 1host. Otherwise you should see a series of hash marks (###), and a bunch more messages.

Then you'll see:

```
VFS: Insert ROOT floppy to be loaded into ramdisk and press ENTER
```

3) At this time, remove the boot floppy and insert the root floppy. Press ENTER.

_____ Step 5: Installing

At this point, the true installation begins. Version 4.0 of Redhat has a much improved installation interface, and the majority of it is not complicated. This document covers only the major points of the installation.

1) You'll see two menus, the Monitor menu and the Registration menu. At the Monitor menu, select the type of monitor with the tab key and press return. Press return to leave the Registration menu.

2) At the Installation Method menu, choose Local CDROM, and place Red Hat 4.0 in your CDROM drive.

3) At the CDROM type menu, choose SCSI

4) At the Upgrade or Install menu, choose Install

5) Partition Menu. Here you'll need to partition your disks. Unfortunately, Redhat has not written a new disk utility, and you are forced to use the arcane fdisk. Select edit. (This document is written more for the internal disk that comes with the multia. If you are formatting a disk other than the 340, you'll need to know its heads, cylinders, and sectors. The term sda refers to the first drive on the chain, sdb the second... etc.)

When you partition, you need to make at least three partitions, one small (1-10mb) to hold boot files, the root partition (the largest of the partitions) and a swap partition (a good bet is at least the physical size of your RAM).

6) Type x . This takes you to an expert screen in fdisk.

Enter in the cylinders, sectors and heads of your hard disk. The following is an example for the 340mb internal drive that comes standard multia. Other drives will be different.

```
Type:c    682   (cylinders)
      h     16   (heads)
      s     63   (sectors)
```

This should show 2128896 blocks, done by $2112 \times 16 \times 63$ =(in this area, numbers may vary)

Type r to return to menu. This also saves parameters.

Delete any existing disk partitions, as follows (ignore warnings and error messages in this step):

```
Command (m for help):  d
Partition number (1-4): 4
Command (m for help):  d
Partition number (1-4): 3
Command (m for help):  d
Partition number (1-4): 2
Command (m for help):  d
Partition number (1-4): 1
```

Now create the desired partitions, but please note every drive is different. THIS IS ONLY AN EXAMPLE:

```
Command (m for help):  n
Command action /e extended /p primary partition: p
Partition number (1-4): 1
First cylinder (1-324): 1
Last cylinder or +size ...: +1440K (This must be followed)
Command (m for help):  t
Partition number (1-4): 1
Hex code (type L to list codes): 4
Changed system type of partition 1 to 4 (DOS 16-bit <32M)
Command (m for help):  n
Command action /e extended /p primary partition: p
```

```

Partition number (1-4): 2
First cylinder (4-324): 4
Last cylinder or +size ...: +300m
Command (m for help): n
Command action /e extended /p primary partition: p
Partition number (1-4): 3
First cylinder (292-324): 292
Last cylinder or +size ...: 324
Command (m for help): t
Partition number (1-4): 3
Hex code (type L to list codes): 82
Changed system type of partition 2 to 82 (Linux swap)
Command (m for help): w (Please note that on the 340m, the dos partition will be
1440k, the root will be about 300m, and the swap will use up the rest of the space,
usually 34m. Sizes will vary for different drives)

```

6) Back at the Disk Partitioning screen, select Done (unless you want to format more disks).

7) At Activate Swap Space, select your swap partition (usually /dev/sda3)

8) You'll see the Initializing Swap Space screen. This will take time - as long as ten minutes. Even longer with bigger drives. NOTE: At some point you will be prompted with a screen asking you about dos partitions. It will display your 1440k partition and ask if you'd like to initialize it as dos space. Select it and name it /dos. After you name the 1440k partition, go to ok and hit enter.

9) Select Root Partition: usually sda2

10) Partition Disk menu. Here you can add other partitions that will mount. Usually you just need to select OK.

11) At the Format Partitions menu, usually you just need to format sda2.

12) Package selection. Depending on what you need, you should install different software. If you're installing on disk larger than 400mb, install everything, otherwise you'll need to sort through the files and choose what you want. In this case, use tab to select Install Packages. Here you can see the size of the installation you're doing. If you want to install X-Windows on your machine, select the X-Windows System.

13) Select OK. The installation procedure will now format the SCSI disk and install the packages that you've selected. This will take about half an hour.

If the screen goes black (which it will), hit space bar to bring it back.

_____ Step 6: Configuration

Here you configure the machine to your systems specifications. These are suggestions - you'll need to select the options specific to your machine.

- 1) Mouse: usually PS/2
- 2) Graphics Adapter: ATI MACH 32
- 3) Network: (set this to your network specifications, ignore it if no network)
- 4) Time Zone: (whatever time zone you're in)
- 5) Keyboard type: (the keyboard you will be using)
- 6) Password: don't lose this! otherwise you'll need to reinstall.
- 7) Reinsert boot disk.
- 8) Install complete!

_____ Step 7: Reboot

The machine will now cycle back to the milo prompt through the arc menu. You will get a "Error: Failed to load kernel" message. Don't panic.

- 1) At the milo prompt type: `boot sda2:vmlinux.gz`

The machine will now start loading linux. Various programs will load and the machine will pause on the sendmail startup. Don't panic.

Red Hat Linux release 4.0 (Colgate)

Kernel 2.0.18 on an alpha

login:

- 2) Login with: root

- 3) The password is the one you entered at the password prompt.

- 4) At this point, insert the MLO floppy and type `dd if=/dev/fd0 of=/dev/sda1 bs=10240` and press enter.

This places the milo and linload files on the dos partition that was created earlier. You should see the floppy read for a while then it will read:

144+0 records in

144+0 records out

- 5) Type shutdown -h now

Wait for the The system has halted message, then power your machine off and on.

_____ Step 8: Autoboot setup

Once again, you'll get the "Inconsistent bla bla" screen again, and then you'll be at the boot menu.

- 1) Select Supplementary menu
- 2) Select Set up the system
- 3) Select Manage boot selection
- 4) Select Add a boot selection
- 5) Select SCSI Bus 0 Hard Disk 0 Partition 1 (occasionally, this will not be present. If this is the case, select New system partition. Here select the SCSI Bus 0..)
- 6) Enter the osloader directory. Delete existing text and type:linload.exe
- 7) For "Is the operating system in the same partition as the osloader?" select Yes
- 8) Enter the operating system root directory. Delete existing text and enter: milo
- 9) Enter name for boot selection: this is your choice, though most commonly Linux is used.
- 10) Enter No for "Do you want to initialize the debugger at boot time?"
- 11) Select Change boot selection
- 12) Select the boot selection you created: Linux
- 13) Use the up arrow key until the line reads: OSLOADOPTIONS
- 14) Replace the text with: boot sda2:vmlinux.gz Hit return, then esc.
- 15) Select Setup menu

16) Select Autoboot

17) At "Should the machine autoboot?" Press enter to select yes.

18) Set an appropriate delay for the machine to boot. Selecting 0 may make it more difficult to solve any problems that may occur. 5 is a good bet.

19) Select Supplementary menu, save changes

20) Hit esc till you arrive at the arc menu.

..

21) Select Boot Linux and enjoy your flight.

_____ Step 9: X-Windows Setup

The X-Windows setup is optional, and you need to have the X-Windows package installed before you can run.

1) In Linux, insert the Red Hat CDROM (disk 1) into the CDROM drive and type: `mount /dev/scd0 mnt`

2) Type: `cp /mnt/X/Xtga-ELF-EV4-test.gz /` This copies the X-Windows server to the drive.

3) Type: `gunzip Xtga-ELF-EV4-test.gz`

4) Type: `cp Xtga-ELF-EV4-test /usr/X11R6/bin/XF86_TGA` This moves and renames the server into its appropriate directory.

5) Type: `cd /usr/X11R6/bin` This changes your directory.

6) Type: `chmod 4711 XF86_TGA` then: `cd /`

7) Type: `cp /mnt/X/axpbin-Xtga-BETA-0.2.README /` This copies the XConfig file to the drive.

8) Type: `vi axpbin-Xtga-BETA-0.2.README` This opens the Vi text editor. Here you need to delete the note from Jay Esterbrook to where the XF86 config file starts. Use the D key to remove each line.

9) You may have to modify the monitor section to force your monitor to

10) Use `x` to delete characters and `i` to insert characters. Use `esc` to toggle out of the edit mode.

11) To exit Vi, type `:w` which saves the file, then type `:q` note that you will have to be in the command mode to do this.

12) Type: `cp axpbin-Xtga-BETA-0.2.README /etc/X11/XF86Config` this copies and renames the XConfig file to the correct directory.

13) Type: `ln -sf /usr/X11R6/bin/XF86_TGA /etc/X11/X` this relinks the Xserver to application.

14) Type: `startx`

If your machine does not start X-windows, (or the monitor seems oddly out sync) you may need to configure your XF86Config file to your system.

If this is the case, delete the files you copied into the `/usr/XF86R6/bin` and the `/etc/X11` directories and start the X-windows installation over.

It could also be the case that you did not install the appropriate packages initially when you installed Red Hat.