

Weather Event Simulator HP Replacement Machine Disk Image Installation Instructions

These are the official instructions for configuring the new WES machines according to the WES Implementation and Operations Plan (available at <http://www.wdtb.noaa.gov/tools/wes/admin.htm>). If the local WES Installation Focal Point and the WES Training Focal Point have not read this IOP document and completed the WES 7.1 training module in the LMS, please complete prior to installing the disk image.

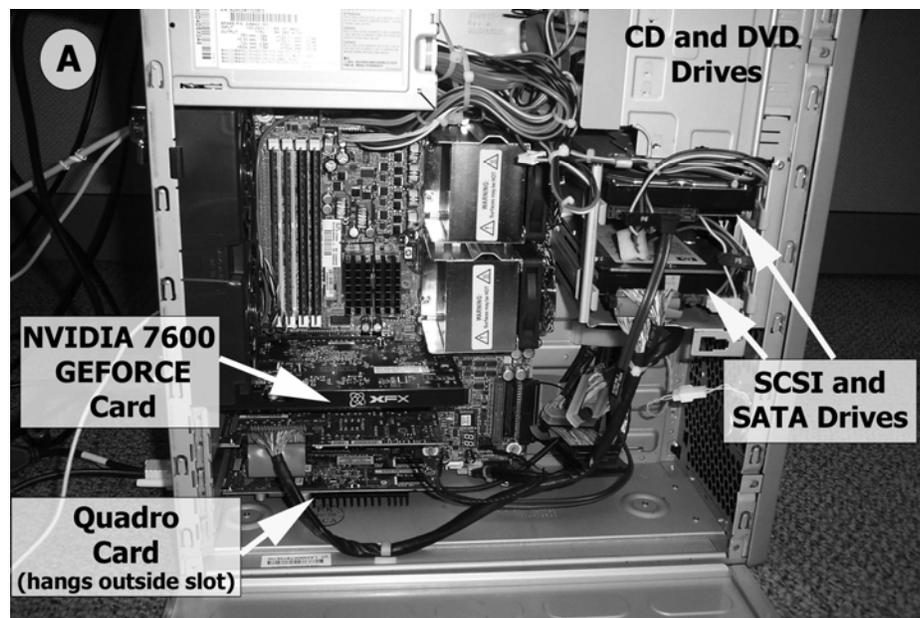
This package contains:

- a DVD with the HP WES replacement machine disk image, the WES 7.1 test case, and a PDF copy of these instructions
- a bootable CD with Red Hat Enterprise Linux Version 4 (Update 4), required to install the disk image from the DVD
- these printed instructions

It is imperative to have a valid Redhat Enterprise Workstation license to install the included disk image, which contains a Redhat Enterprise 4 operating system. It is expected that most sites will shut down the previous WES box and use that license for the new WES machine. For these reasons, these materials **may not** be redistributed. If you experience any problems with the installation, send e-mail to the WES support list (wes@infolist.nws.noaa.gov).

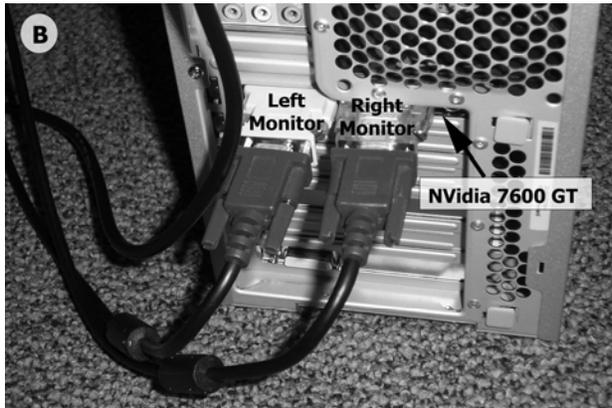
These instructions assume the hardware installation instructions have been followed:

- The Quadro video card was moved to the x8 PCIe slot (Figure A). Note that some of the card's pins will hang outside the slot. This is OK for this workstation implementation
- The NVidia 7600 GEFORCE GT video card was installed in the x16 PCIe slot (Figure A)

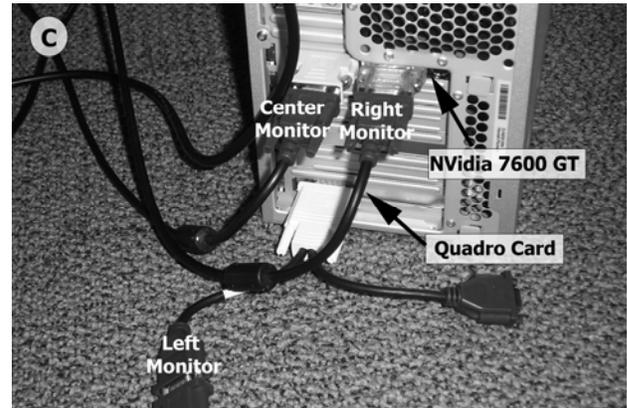


- The 250 GB SATA hard drive was installed in a slot below the DVD (Figure A)
- The video monitors are hooked up as shown in Figures B and C.

Dual Monitor Layout



Triple Monitor Layout



If the monitors **are not** LCD flat panels, then look in the existing `/etc/X11/xorg.conf` file to find the current sync and refresh settings for each monitor (the **bold** lines below):

```
Section "Monitor"
    Identifier          "Monitor0"
    VendorName         "Monitor Vendor"
    ModelName          "SDM-HS95P"
    DisplaySize        380 300
    HorizSync         28.0 - 65.0
    VertRefresh      57.0 - 63.0
    Option              "dpms"
End Section
```

During step 6, below, use these values to modify the `xorg.conf` file that is included in the disk image.

These instructions will install the disk image onto the small 32 GB SCSI disk (labeled `/dev/sda`). The large 250 GB SATA disk (`/dev/sdb`) is available for data storage.

Steps to Restore Disk Image to HP WES Machine

1. The machine in its factory state likely will try to boot from the large 250GB SATA disk. These steps show how to change the boot order.
 - a. Power on the machine and hit **F-10** (Setup) to edit the BIOS settings.
 - b. Under **Storage**, select **Controller Order**

- c. Use the arrow keys to change the order. The Seagate drive needs to be first, and the integrated SATA drive needs to be second.
 - d. Hit the **ESC** key to get to the main menu. Then save changes and exit.
2. Boot into a system recovery shell, using the included bootable CD for Red Hat Enterprise 4. This rescue mode shell exists only in memory, so the initial configurations specified below are only temporary. The only permanent changes that occur are the ones that deal with the disks (/dev/sda and /dev/sdb). Put the CD in the CD (top) drive and boot the machine.
 - a. At the **boot:** prompt, type **linux rescue**
 - b. On the screen that asks to choose a language, **English** should be default, so choose **OK**.
 - c. On the screen that asks about the type of keyboard, **us** should be default, so choose **OK**.
 - d. On the screen that asks about network interfaces, choose **No**.
 - e. On the Rescue screen, choose **Skip**.

3. The 250 GB large disk in its factory condition comes with a single 500 MB partition with FreeDOS. Use a command like **fdisk** or **parted** to repartition the disk into one large partition. The instructions in this step use **fdisk** to create a new partition (/dev/sdb1) which will be mounted at /data.

```
# fdisk /dev/sdb <ENTER>    (starts fdisk utility on /dev/sdb)
> n <ENTER>                (create new partition)
> p <ENTER>                (a primary partition)
> 1 <ENTER>                (numeral one)
> 1 <ENTER>                (start with first cylinder)
> <ENTER>                  (accept default last cylinder of 30401)
> p <ENTER>                (print list of partitions)
```

You should see:

```
/dev/sdb1    1    30401    244196001    83    Linux
```

```
> w <ENTER>                (write to disk and exit fdisk)
```

4. Make a Linux ext3 filesystem on the large disk (/dev/sdb).

```
# mke2fs -b 4096 -j /dev/sdb1
# tune2fs -i 0 -c 0 /dev/sdb1
```

5. Put the DVD into the DVD (bottom) drive. It likely will not automount, and the rescue mode shell probably will not have a device file for the DVD, so we will make one and mount the DVD.

```
# mknod /dev/dvd b 22 64
# mkdir /mnt/dvd
# mount /dev/dvd /mnt/dvd
```

6. Restore the disk image to the small disk (/dev/sda). This step may take longer than 30 minutes to complete.

```
# dd if=/mnt/dvd/wes_71_image.gz | gunzip | dd of=/dev/sda
```

When it's finished, you should see:

```
56567615+1 records in
56567615+1 records out
71132960+0 records in
71132960+0 records in
```

7. Remove the CD and reboot the machine (i.e., logout) to the default configuration that was just transferred to the small drive. Do not remove the DVD yet as the WES 7.1 test case still needs to be installed on the large data disk.

```
# logout
```

8. Login as root (password is **root!!**) and remove two special files created to improve the disk image compression.

```
# rm /zero1
# rm /tmp/zero1
```

9. Make the /data directory world readable and writable. This is important so the fxa and postgres accounts can manipulate the case data.

```
# chmod ago+rwX /data
```

10. The default settings in the disk image are for a dual-monitor configuration using LCD flat panels. If you have a triple-monitor setup, then copy the included xorg.conf file that contains the triple monitor settings.

```
# cp /local/video_config/HPWes_xorg.conf.triple.wdtb /etc/X11/xorg.conf
```

If you have monitor settings to change from above, make them now, and restart the x-server (CTRL-ALT-BACKSPACE).

11. Logout from the root account and login as user fxa (password: **fxapass**)

12. The next two steps install the WES 7.1 test case for use with the WES 7.1 software that was pre-installed with the disk image. The large SATA disk should be mounted as /data. If the DVD did not automount, mount it now.

```
# mount /media/cdrecorder
```

13. Install the WES 7.1 test case.

```
$ mkdir /data/awips  
$ cd /media/cdrecorder  
$ ./wes7.1_testcase_install
```

14. Verify the WES 7.1 installation by following the instructions included in Chapter 5 (page 10) of the WES. 7.1 User Guide (located at [/awips/fxa/INSTALL_WES71.pdf](#)).
15. Continue with standard WES customization and configuration (e.g., Chapters 6-9 of the WES 7.1 User Guide).
16. When the installation process is complete, provide feedback via the installation survey at this URL: <https://apps.weather.gov/survey/survey.php?sid=43>
17. Consult your Regional WES Policy document for any regional-specific guidance (available at <http://www.wdtb.noaa.gov/tools/wes/admin.htm>)