

Instructions to Recompile NVIDIA driver for WES

Problem:

System patches with *kernel updates* can create problems for the WES machine that require a recompile of the graphics driver. These symptoms may include slow and choppy graphics rendering on the Four Dimensional Stormcell Investigator (FSI) or problems in launching X windows. If your FSI on WES does not appear fast and responsive when you first start up, you should perform the following test:

1. At a shell prompt on the WES machine, type in “**glxinfo | grep direct**”, and hit return to see if “**direct rendering: Yes**” exists (“direct rendering: No” indicates you need to recompile).
2. Shut down all D2D sessions and FSI sessions. Open a shell window on one of the two monitors that supports running FSI and type **glxgears**.
3. The desired result should be from 6,000 – 12,000+ FPS. If your result is not in this range and/or your direct rendering is set to “No”, please follow the instructions below to recompile your video driver.

Solution:

1. Visit the NVIDIA Driver Downloads website:
<http://www.nvidia.com/Download/index.aspx?lang=en-us>
2. Using the pull down menus, enter the following values
 - a. Product Type: **GeForce**
 - b. Product Series: **GeForce 7 Series**
 - c. Operating System: **Linux 32-bit**
 - d. Language: **English (US)**
 - e. Click the Search button.
3. This should display a page with “**Linux Display Driver – x86**” at the top
4. Follow the download instructions on this page to download the driver file. If you would like more background on installing the driver, read the README file linked on this page.
 - a. Under “STEP 2” when you download:

NVIDIA-Linux-x86-169.09.pkg1.run (version number XXX.XX may change),

you will need to save it to disk, and then transfer it over to the WES machine.

5. On your WES box when logged in as root, type **/sbin/init 3** to exit the X Server and go to runlevel 3 (Press Enter to bring up command prompt).

6. Go to the directory containing the downloaded driver file:

NVIDIA-Linux-x86-169.09.pkg1.run

7. As user root, run the executable by typing:

sh NVIDIA-Linux-x86-169.09.pkg1.run

which will:

- a. Extract the contents of the archive
 - b. Run the contained nvidia-installer utility which provides an interactive interface to walk through the installation.
8. Read the license and click "**Accept**".
 9. If the installer says it has to uninstall the existing driver to install the new NVIDIA driver, click "**Yes**".
 10. When the installer is run, it will determine if it has a precompiled kernel interface for the kernel you are running. If it does not have one:
 - a. It will check if there is one on the NVIDIA FTP site (assuming you have an Internet connection), and download it
 - b. If one cannot be downloaded, either because the FTP site cannot be reached or because one is not provided, the installer will check your system for the required kernel sources and compile the interface for you.
 - i. The source code for your kernel must be installed for compilation to work. If you don't have it, you need to determine your kernel version and download source rpms. You may need to check with your regional focal point on where to download the rpm.
 1. As user root type **uname -a** and look for the kernel version like "**# SMP**" where # is the version number.

For example, if the kernel version is “**1SMP**”, download the file:

kernel-smp-devel1.rpm

from the Redhat website using your RHN subscriber login, and install it by issuing the following command as user root:

rpm -Uhv kernel-smp-devel1.rpm

- c. Click “**OK**” and go through the entire installation until it comes to the point when it asks to modify the “**xorg.conf**” file. At this point click “**No**”. Your xorg.conf already uses the correct driver. You are only updating libraries and the kernel module to match your current kernel.
11. If you do not receive any error messages, reboot the machine. If the machine boots up successfully to X, you are done installing the new driver.