How to install Nvidia drivers to Fedora / CentOS / RHEL workstation with secure boot

27.08.25

Pegasi Knowledge
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- **UPDATE:** added Fedora 42 support
- **UPDATE:** added kernel update notes

Just did this myself and wrote it down here. How to get your NVidia card working with NVidia drivers using UEFI secure boot. A compact list of commands to execute.

Download drivers and prepare packages

Centos / RHEL

```
lcpci | grep -i nvidia
```

Identify model and download latest Linux drivers from NVidia.

Add necessary software

```
dnf groupinstall "Development Tools"
dnf install libglvnd-devel elfutils-libelf-devel
```

Fedora 42

Lets use rpmfusion here. Cuda is optional if need gpu for llm etc.

```
sudo dnf install
https://mirrors.rpmfusion.org/free/fedora/rpmfusion-free-release-$(rpm -E
%fedora).noarch.rpm
https://mirrors.rpmfusion.org/nonfree/fedora/rpmfusion-nonfree-release-$(rpm
-E %fedora).noarch.rpm
sudo dnf config-manager setopt fedora-cisco-openh264.enabled=1
sudo dnf update
sudo dnf install gcc dkms make elfutils-libelf-devel bc tar xz perl which
git
sudo dnf install akmod-nvidia xorg-x11-drv-nvidia-cuda #cuda is optional
```

Add dev tools to do secure boot handling.

```
sudo dnf install kmodtool akmods mokutil openssl
```

Secure boot extras

Make a certificate, import it and reboot. We will use this key/cert with NVidia driver installer.

Fedora 42 latest preferred way

This may work with RHEL / Centos as well.

```
kmodgenca -a
mokutil --import /etc/pki/akmods/certs/public_key.der
sync
reboot
```

Centos / RHEL traditional way

```
openssl req -new -x509 -newkey rsa:2048 -keyout
/etc/pki/akmods/private/private_key.priv -outform DER -out
/etc/pki/akmods/certs/public_key.der -nodes -days 36500 -subj "/CN=Graphics
Drivers"
mokutil --import /etc/pki/akmods/certs/public_key.der
sync
reboot
```

Disable Nouveau

Check that /etc/default/grub contains following (nouveau.modeset=0 may not be helpful but here anyway):

```
GRUB_CMDLINE_LINUX="<stuff deleted from here> rd.driver.blacklist=nouveau
modprobe.blacklist=nouveau nouveau.modeset=0"
```

```
grub2-mkconfig -o /boot/grub2/grub.cfg
```

Disable nouveau module by creating vim /etc/modprobe.d/nvidia.conf and adding:

```
blacklist nouveau
options nouveau modeset=0
```

Build initramfs

```
sudo dracut --force
sudo sync
sudo reboot
```

If this does not produce nvidia driver enroll at boot, try explicit nvidia driver inclusion in dracut command:

```
sudo rm -f /usr/lib/dracut/dracut.conf.d/99-nvidia-dracut.conf
sudo dracut -fvv --add-drivers "nvidia nvidia-drm nvidia-modeset nvidia-uvm"
sudo sync
sudo reboot
```

Centos / RHEL: Install Nvidia driver

If doing driver install from Nvidia downloaded driver. With Fedora we already did this with rpmfusion.

Use the credentials we created earlier to support secure boot. Answer “yes” to installation of NVIDIA's 32-bit compatibility libraries, overwrite existing libglvnd files and automatic update of your X configuration file.

```
systemctl isolate multi-user.target
sh NVIDIA-Linux-x86_64-440.82.run -s --module-signing-secret-
key=/etc/pki/akmods/private/nvidia.key --module-signing-public-
key=/etc/pki/akmods/certs/nvidia.crt
reboot
```

If boot is not successful do:

```
systemctl restart systemd-logind
reboot
```

Kernel updates Centos / RHEL

When a kernel update is due you need to do the following:

- Update kernel (and other packages)
- Reboot
- Run the previous NVIDIA install command
- Reboot

So start with update and reboot:

```
dnf update
reboot
```

Then log in again, open root shell and locate the previous install command:

```
history | grep NVIDIA
```

Here you get a list including the latest setup command in a line looking like this:

```
112  sh /home/user/Downloads/NVIDIA-Linux-x86_64-450.80.02.run -s --module-signing-secret-key=/etc/pki/akmods/private/nvidia.key --module-signing-public-key=/etc/pki/akmods/certs/nvidia.crt
```

Just re-run the command by typing the line number preceded by “!”:

```
!112
```

And have another reboot:

```
sync
reboot
```

That should cover the update procedure.

Kernel updates Fedora 42

When a kernel update is due you need to do the following:

- Update kernel (and other packages)
- Reboot

If problems lets force module re-create and generate new initrd. Let it boot to text mode, wait and press alt-f2 and run:

```
sudo akmods --force --kernels "$(uname -r)"
sudo dracut --force /boot/initramfs-$(uname -r).img $(uname -r)
sudo reboot
```