

## 1. Nvidia 그래픽드라이버 확인 방법

A. # nvidia-smi

```

+-----+
| NVIDIA-SMI 440.64          Driver Version: 440.64          CUDA Version: 10.2   |
+-----+-----+-----+-----+-----+-----+
| GPU  Name                Persistence-M| Bus-Id        Disp.A | Volatile Uncorr. ECC |
| Fan  Temp  Perf    Pwr:Usage/Cap|      Memory-Usage | GPU-Util  Compute M. |
+-----+-----+-----+-----+-----+-----+
|   0   Quadro RTX 6000       On      | 00000000:00:06.0 Off |                  0    |
| N/A   25C    P8      11W / 250W | 0MiB / 22698MiB |         0%      Default |
+-----+-----+-----+-----+-----+-----+
|   1   Quadro RTX 6000       On      | 00000000:00:07.0 Off |                  0    |
| N/A   26C    P8      12W / 250W | 0MiB / 22698MiB |         0%      Default |
+-----+-----+-----+-----+-----+-----+

+-----+
| Processes:                                                       GPU Memory |
|  GPU       PID    Type    Process name                       Usage    |
+-----+-----+-----+-----+-----+-----+
| No running processes found                                     |
+-----+

```

- 위 이미지와 같이 출력된다면 그래픽드라이버 상태는 정상

```

ubuntu@ubuntu:~$ nvidia-smi
NVIDIA-SMI has failed because it couldn't communicate with the NVIDIA driver. Make sure that the latest NVIDIA driver is

```

- 위 이미지와 같이 출력된다면 그래픽 드라이버 재설치 필요
- NVIDIA-SMI has failed because it couldn't communicate with the NVIDIA driver. Make sure that the latest NVIDIA driver is installed and running.

## 2. Nvidia 그래픽드라이버 재설치 방법

A. 서버의 root 권한으로 전환

```
#sudo su -
```

B. Run 파일을 이용하여 설치

```
# wget http://kr.download.nvidia.com/XFree86/Linux-x86_64/440.64/NVIDIA-Linux-x86_64-440.64.run
```

```
# sh NVIDIA-Linux-x86_64-440.64.run
```

1. There appears to already be a driver installed on your system (version: 440.64). As part of installing this driver (version: 440.64), the existing driver will be uninstalled. Are you sure you want to continue?

```
There appears to already be a driver installed on your system (version: 440.64). As part of installing this driver (version: 440.64), the existing driver will be uninstalled. Are you sure you want to continue?
```

Continue installation

Abort installation

Continue installation

2. WARNING: nvidia-installer was forced to guess the X library path '/usr/lib' and X module path

```
WARNING: nvidia-installer was forced to guess the X library path '/usr/lib' and X module path '/usr/lib/xorg/modules'; these paths were not queryable from the system. If X fails to find the NVIDIA X driver module, please install the 'pkg-config' utility and the X.Org SDK/development package for your distribution and reinstall the driver.
```

OK

OK

3. WARNING: Unable to find a suitable destination to install 32-bit compatibility libraries.



OK

- 

OK

- |   |                 |               |                  |                        |                 |          |       |                    |             |
|---|-----------------|---------------|------------------|------------------------|-----------------|----------|-------|--------------------|-------------|
| +-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+ |                 |               |                  |                        |                 |          |       |                    |             |
| NVIDIA-SMI  |                 | 440.64        |                  | Driver Version: 440.64 |                 |          |       | CUDA Version: 10.2 |             |
| +-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+ |                 |               |                  |                        |                 |          |       |                    |             |
| GPU   | Name            | Persistence-M |                  | Bus-Id                 |                 | Disp.A   |       | Volatile           | Uncorr. ECC |
| Fan   | Temp            | Perf          | Pwr:Usage/Cap    | Memory-Usage           |                 | GPU-Util |       | Compute M.         |             |
| =====   |                 |               |                  |                        |                 |          |       |                    |             |
| 0   | Quadro RTX 6000 | Off           | 00000000:00:06.0 |                        | Off             |          |       | 0                  |             |
| N/A   | 27C             | P0            | 52W / 250W       |                        | 0MiB / 22698MiB |          | 0%    | Default            |             |
| +-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+ |                 |               |                  |                        |                 |          |       |                    |             |
| 1   | Quadro RTX 6000 | Off           | 00000000:00:07.0 |                        | Off             |          |       | 0                  |             |
| N/A   | 28C             | P0            | 43W / 250W       |                        | 0MiB / 22698MiB |          | 0%    | Default            |             |
| +-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+ |                 |               |                  |                        |                 |          |       |                    |             |
| +-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+ |                 |               |                  |                        |                 |          |       |                    |             |
| Processes:  |                 |               |                  |                        |                 |          |       | GPU Memory         |             |
| GPU   | PID             | Type          | Process name     |                        |                 |          | Usage |                    |             |
| =====   |                 |               |                  |                        |                 |          |       |                    |             |
| No running processes found                                    |                 |               |                  |                        |                 |          |       |                    |             |
| +-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+ |                 |               |                  |                        |                 |          |       |                    |             |

6. nvidia 튜닝 추가 진행

**nvidia-smi -pm 1**

# Set persistence mode: 0/DISABLED, 1/ENABLED

```
root@naga3218-0313:~# nvidia-smi -pm 1
Enabled persistence mode for GPU 00000000:00:06.0.
Enabled persistence mode for GPU 00000000:00:07.0.
All done.
```

**nvidia-smi -acp 0**

# Toggles permission requirements for -ac and -rac commands: 0/UNRESTRICTED, 1/RESTRICTED

```
root@naga3218-0313:~# nvidia-smi -acp 0
Applications clocks commands have been set to UNRESTRICTED for GPU 00000000:00:06.0
Applications clocks commands have been set to UNRESTRICTED for GPU 00000000:00:07.0
All done.
```

**nvidia-smi -ac "6501,1620"**

# MAX Mem, Graphics

```
root@naga3218-0313:~# nvidia-smi -ac "6501,1620"
Applications clocks set to "(MEM 6501, SM 1620)" for GPU 00000000:00:06.0
Applications clocks set to "(MEM 6501, SM 1620)" for GPU 00000000:00:07.0
All done.
```

```
| NVIDIA-SMI 440.64           Driver Version: 440.64          CUDA Version: 10.2
|-----+-----+-----+
| GPU   Name               Persistence-M | Bus-Id        Disp.A | Volatile Uncorr. ECC |
| Fan  Temp  Perf    Pwr:Usage/Cap |      Memory-Usage | GPU-Util  Compute M. |
|====+=====+====+=====+=====+=====+=====+=====+
|    0  Quadro RTX 6000     On          | 00000000:00:06.0 Off |                  0    |
| N/A   25C    P8         11W / 250W | 0MiB / 22698MiB |      0%       Default |
|-----+-----+-----+-----+-----+-----+-----+
|    1  Quadro RTX 6000     On          | 00000000:00:07.0 Off |                  0    |
| N/A   26C    P8         12W / 250W | 0MiB / 22698MiB |      0%       Default |
|-----+-----+-----+-----+-----+-----+-----+
|
| Processes:                                                       GPU Memory
|  GPU       PID    Type    Process name                       Usage
|=====+=====+=====+=====+=====+
| No running processes found
```