Install the GPU – Ubuntu 18.04

1 Abbreviations and acronyms

KMS **K**ernel **M**ode **S**oftware

2 Introduction

This document describes how to install the graphic card used with OpenNet under Ubuntu 18.04.

3 Install the hardware

Install the graphics card used for processing in the PCIe expansion slot that is closest to the processor. This is usually one of the expansion slots that offer the best performance.

Important: Ideally, the graphics card used for processing should not be used for display, as this adds processing delays which in some cases may prevent processing of all received packets.

4 Install the compilation tools

Before installing NVIDIA's drivers, the compilation tools need to be installed.

1. In a terminal, execute the following commands

```
sudo apt install g++
sudo apt install make
```

5 Black listing "nouveau"

If you only use the computer developing and compiling application, without running them, you don't need to disable the "nouveau" driver and install NVIDIA drivers.

NVIDIA drivers can't be installed when the "nouveau" driver is active. If the installation is attempted while the "nouveau" driver is active, it will fail, but it will perform the procedure shown here (except for restarting the computer).

1. Add the file `nvidia-installer-disable-nouveau.conf` to the `/etc/modprobe.d` folder and add the 2 following lines to it

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

2. In a terminal, execute the command

```
sudo update-initramfs -u
```

3. Restart the computer

6 Install the CUDA Toolkit

IMPORTANT Don't install "CUDA Toolkit 10.1". OpenNet work with "CUDA Toolkit 10.0".

1. Download the "CUDA Toolkit 10.0" from the NVIDIA's web site. This a file with the ".run" extension.
2. In a terminal, execute the command

```
sudo sh cuda_10.1.105_418.39_linux.run
```

3. Restart the computer
4. In a terminal, execute the command

```
lsmod | grep nvidia
```

5. Verify that the NVIDIA's drivers are listed
6. In a terminal, execute the command

```
nvidia-smi
```

7. Verify that the graphic card is shown

6.1 Add CUDA to the path

1. Edit the `.bashrc` file and add the following lines to it

```
PATH=$PATH/usr/local/cuda-10.1/bin
export PATH
LD_LIBRARY_PATH=$LD_LIBRARY_PATH:/usr/local/cuda-10.1/lib64
export LD_LIBRARY_PATH
```