## [NVIDIA CUDA Installation Guide for Linux](https://docs.nvidia.com/cuda/cuda-installation-guide-linux/index.html#abstract)

<https://docs.nvidia.com/cuda/cuda-installation-guide-linux/index.html#download-nvidia-driver-and-cuda-software>

## [Pre-installation Actions](https://docs.nvidia.com/cuda/cuda-installation-guide-linux/index.html#pre-installation-actions)

* Verify the system has a CUDA-capable GPU.

lspci | grep -i nvidia

* Verify the system is running a supported version of Linux.

uname -m && cat /etc/\*release

* Verify the system has gcc installed.

gcc --version

* Verify the system has the correct kernel headers and development packages installed.

uname -r

* Download the NVIDIA CUDA Toolkit.

<https://developer.nvidia.com/cuda-downloads?target_os=Linux&target_arch=x86_64&target_distro=Ubuntu&target_version=1804&target_type=deblocal>

Check OS architecture

Uname -m

Operating system - Linux

Architecture - x86\_64

Distribution - Linux

Version - 18.04

Check linux version

cat /etc/os-release

CUDA installation

sudo dpkg -i cuda-repo-ubuntu1804-10-0-local-10.0.130-410.48\_1.0-1\_amd64.deb

sudo apt-key adv --fetch-keys https://developer.download.nvidia.com/compute/cuda/repos/ubuntu1804/x86\_64/7fa2af80.pub

sudo apt-get update

sudo apt-get install cuda

**Post installation actions**

[**https://docs.nvidia.com/cuda/cuda-installation-guide-linux/index.html#post-installation-actions**](https://docs.nvidia.com/cuda/cuda-installation-guide-linux/index.html#post-installation-actions)

The PATH variable needs to include /usr/local/cuda-10.0/bin

To add this path to the PATH variable:

**$** export PATH=/usr/local/cuda-10.0/bin${PATH:+:${PATH}}

In addition, when using the runfile installation method, the LD\_LIBRARY\_PATH variable needs to contain /usr/local/cuda-10.0/lib64 on a 64-bit system, or /usr/local/cuda-10.0/lib on a 32-bit system

* To change the environment variables for 64-bit operating systems:
* **$** export LD\_LIBRARY\_PATH=/usr/local/cuda-10.0/lib64\${LD\_LIBRARY\_PATH:+:${LD\_LIBRARY\_PATH}}
* Handle conflicting installation methods.