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# Ubuntu Installation:

- Go to this link to download the latest version of ubuntu(**Ubuntu Desktop**):
  https://ubuntu.com/download/desktop#download
- Now to make USB bootable
  1. Download Rufus(https://rufus.ie/en/)
  2. In Boot Selection->Select the **iso** file of ubuntu downloaded
- After inserting USB and turning On the Computer press F12 key to go to **BOOT manager.**
  1. From there select USB and continue with installation
  2. Follow all the necessary steps to complete the installation.

# Setting up GPU:

Step 1: Install GPU driver
Step 2: Install the CUDA Toolkit version (with all the patches)
Step 3: Install CUDNN

## Step 1: Update or Install your GPU driver

Open a terminal and run the following 3 commands

---

```
sudo add-apt-repository ppa:graphics-drivers/ppa
sudo apt update
sudo apt install nvidia-390
```

---

Here I installed nvidia-390. You can choose which is suitable for your requirements.
Reboot your computer. To verify the installation, open a terminal and run the following command.

---

Nvidia-smi

---

The output should show the GPU name and the driver.

## Step 2: Install the CUDA Toolkit→ (9.0)

- go to https://developer.nvidia.com/cuda-90-download-archive and download the toolkit for linux, x86_64, ubuntu, 18.04, deb l
- once the download is complete, open a terminal in the directory the base installer is and run the follow commands

---

sudo dpkg -i cuda-repo-ubuntu1704-9-0-local_9.0.176-1_amd64.deb
sudo apt-key add /var/cuda-repo-9-0-local/7fa2af80.pub
sudo apt-get update
sudo apt-get install cuda

---

Run all the above commands according to the toolkit you have installed. You can check that in the Downloads directory by using ls command.

- download patch 1 and install (you should get a prompt to install once its done downloading)
- download patch 2 and install (you should get a prompt to install once its done downloading)
- open your .bashrc file with nano

---

sudo nano ~/.bashrc

---

- go to the last line and add the following lines (this will set your PATH variable)

---

export PATH=/usr/local/cuda-9.0/bin${PATH:+:$PATH}}
export
LD_LIBRARY_PATH=/usr/local/cuda-9.0/lib64${LD_LIBRARY_PATH:+:${LD_LIBRARY_PATH}}

---

## Step 3: Install CUDNN→ 7.0.5

- go to https://developer.nvidia.com/cudnn
- Select CUDNN 7.0.5 for CUDA 9.0
- download the cuDNN v7.0.5 Library for Linux (tar file)

- open a terminal in the directory the tar file is located
- unzip the tar file using the command

---

tar -xzvf cudnn-9.0-linux-x64-v7.tgz

---

Again you choose any compatible version of CUDNN and see the name in the downloads using this command ls.

- Run the following commands to move the appropriate files to the CUDA folder

---

sudo cp cuda/include/cudnn.h /usr/local/cuda/include
sudo cp cuda/lib64/libcudnn* /usr/local/cuda/lib64
sudo chmod a+r /usr/local/cuda/include/cudnn.h /usr/local/cuda/lib64/libcudnn*

---

# Installing tensorflow-gpu

I have used a conda environment for installing tensorflow

- create a conda environment by using the following command

---

conda create -n tf python=3.6 pip

---

- activate your environment using

---

source activate tf

---

run the following command to install tensorflow

---

pip install tensorflow-gpu==1.12.0

---

https://www.tensorflow.org/install/source#tested_source_configurations

You can scroll down on this website to see the compatibility of your python, CUDA, cudnn and tensorflow version.

# Test tensorflow-gpu

start a python interpreter in the terminal
run the following lines

---

```
>>> import tensorflow as tf
>>> hello = tf.constant('hello tensorflow')
```

```
>>> with tf.Session() as sesh:
>>>     sesh.run(hello)
```

---

the output should be

```
>>> 'hello tensorflow'
```