# Environment Setup

## Ubuntu 14.04 or later

* [Website](http://www.ubuntu.com)
* [Download](http://www.ubuntu.com/download) and [install](https://help.ubuntu.com/14.04/installation-guide/) Ubuntu
* Dual-boot instructions?

## Ros (Jade)

* [Website](http://www.ros.org/)
* [Installation](http://wiki.ros.org/jade/Installation/Ubuntu) guide

**Quick Start Instructions (execute from bash shell):**

sudo sh -c 'echo "deb http://packages.ros.org/ros/ubuntu $(lsb\_release -sc) main" > /etc/apt/sources.list.d/ros-latest.list'

sudo apt-key adv --keyserver hkp://ha.pool.sks-keyservers.net:80 --recv-key 0xB01FA116

sudo apt-get update

sudo apt-get install ros-jade-desktop-full

sudo rosdep init

rosdep update

echo "source /opt/ros/jade/setup.bash" >> ~/.bashrc

source ~/.bashrc

source /opt/ros/jade/setup.bash

sudo apt-get install python-rosinstall

## Gazebo

* [Website](http://gazebosim.org/)
* Installation guides
  + Using ROS (recommended)

**Quick Start Instructions (execute from bash shell):**

sudo apt-get install gazebo5

sudo apt-get install ros-jade-gazebo-ros-pkgs

## Ros Bridge

* [Website](http://wiki.ros.org/rosbridge_suite)

**Quick Start Instructions (execute from bash shell):**

sudo apt-get install ros-jade-rosbridge-server

## Caffe

* [Website](http://caffe.berkeleyvision.org/)
* [Installation guide](http://caffe.berkeleyvision.org/installation.html#compilation).

**Quick Start Instructions (execute from bash shell):**

sudo apt-get install libprotobuf-dev libleveldb-dev libsnappy-dev libopencv-dev libhdf5-serial-dev protobuf-compiler

sudo apt-get install --no-install-recommends libboost-all-dev

sudo apt-get install libatlas-base-dev

sudo apt-get install libgflags-dev libgoogle-glog-dev liblmdb-dev

**Optional (required for GPU mode):**

**CUDA**: Install via the NVIDIA package instead of apt-get to be certain of the library and driver versions. [Install the library](https://developer.nvidia.com/cuda-downloads) and latest driver separately; the driver bundled with the library is usually out-of-date. This can be skipped for CPU-only installation.

**cuDNN for GPU acceleration(v3):** Register and download [here](https://developer.nvidia.com/cudnn).

git clone <https://github.com/BVLC/caffe.git>

cd caffe

cmake .

make all

make test

make runtest

***[If “make runtest” failed because libcudart not found***]

sudo ldconfig /usr/local/cuda/lib64