Setting up Python and Jupyter with Conda environments on Linux or Mac OS X.

Written by Charles Deledalle on October 1, 2019

In the following I am assuming you are using Linux (for instance Debian/Ubuntu/Redhat/Gentoo), Bash and Gnome 3. I believe the procedure is very similar on Mac OS X.

1 Install and setting up conda

1. Download Anaconda: https://www.anaconda.com/distribution/. I recommend choosing Python 3 (but that does not really matter as you can always change the version latter on).

2. Install Anaconda by typing something similar to this

```
$ sh ~/Downloads/Anaconda3-5.2.0-Linux-x86_64.sh
```

3. Once installed, you can enable or disable conda as follows

```
$ conda activate
$ which python
/home/cdeledal/anaconda3/bin/python
$ conda deactivate
$ which python
/usr/bin/python
$ conda activate
$ which python
/home/cdeledal/anaconda3/bin/python
```

This can be useful since Python-based programs you may install on your Linux distribution (via `apt`, `rpm`, `portage` or whatever) are meant to be run with the default python version of your Linux distribution (the one localized at `/usr/bin/python`). If these programs run with Conda's python instead, you may encountered some hassle.

4. Check your installation by typing

```
$ python -c 'print("Hello World!")'
```

The message `Hello World!` should show up.

5. Useful commands are

```
$ conda help
$ conda install package
$ conda search package
$ conda list
```

2 Install Jupyter-notebook with a Gnome's launcher

1. Install Jupyter as follows

```
$ conda install jupyter
```

2. Check your installation by typing

```
$ jupyter-notebook
```

A notebook should open in your web browser.

3. If you are using Linux and you want to create a launcher to directly start your notebook with a single click, you can download the following script https://bitbucket.org/cdeledalle/misc/src/master/python/create_gnome_launcher_conda_jupyter_notebook.sh and run it as

```
$ bash create_gnome_launcher_conda_jupyter_notebook.sh
```

Add `--help` to see what types of customization you can do. An icon should appear in the Gnome's menu as:

Check the presence of this icon ⟶
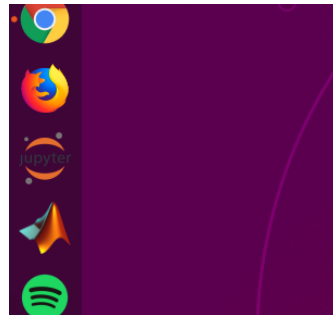
Click on the icon, and check that it starts a jupyter-notebook session.

3 Create virtual environments

1. Install `nb_conda_kernels` package

```
$ conda install nb_conda_kernels
```

This will link your different conda environments with ipython kernels into your jupyter notebook.

2. Define a list of default packages you want to install on all environments, for instance:

```
$ defpack="ipykernel numpy matplotlib imageio scipy opencv"
```

Note that you want `ipykernel` in order to see your environment in jupyter.

3. Create the environmenents of your choice, for instance (this may take a while)

```
$ conda create --name python-2.7 python=2.7 $defpack
$ conda create --name python-3.6 python=3.6 $defpack
$ conda create --name pytorch-2.7 python=2.7 pytorch $defpack
$ conda create --name pytorch-3.6 python=3.6 pytorch $defpack
$ conda create --name tf-cpu-2.7 python=2.7 tensorflow $defpack
$ conda create --name tf-cpu-3.6 python=3.6 tensorflow $defpack
$ conda create --name tf-gpu-2.7 python=2.7 tensorflow-gpu $defpack
$ conda create --name tf-gpu-3.6 python=3.6 tensorflow-gpu $defpack
```

4. You can access an environment as
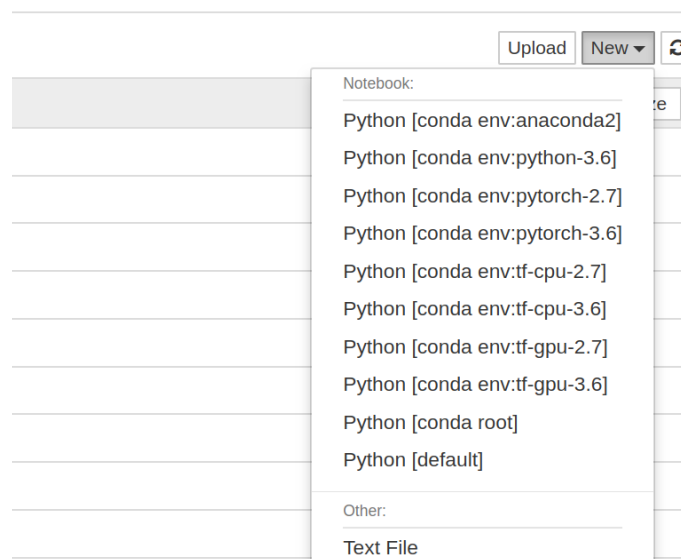
```
$ conda activate envname
```

5. You can list all environments as

```
$ conda env list
```

6. You can also see and select your environment from your Jupyter notebook

7. For more information

```
$ conda env --help
```