**How To Install Python 3 and Create Virtual Environment in Centos, Redhat and Amazon Linux**

The scope of this post is to install Python 3 for a user and create a virtual environment in Centos, Redhat or Amazone Linux. Linux comes with Python 2.7 and the best practice is not to mess with. This is because Linux OS has some dependency and upgrading it to 3 may cause problems. If you are developing with Python 3, I recommend to install it for a user. Knowing how to create virtual environments becomes handy for serverless microservice development, too.

Let’s get started.

1. Download Python Installation Package

You first need to get the installation link (<https://www.python.org/downloads/release/python-364/>). Today, python-3.6.4 is the latest version. Let’s create a directory called python3 in your home directory and download it there and unzip it.

[cc lang="bash" tab\_size="4" lines="-1" theme="mac-classic" line\_numbers="false"]

mkdir ~/python3

cd python3

wget https://www.python.org/ftp/python/3.6.4/Python-3.6.4.tar.xz

tar xf Python-3.\*

cd Python-3\*

[/cc]

1. Install it with Pip

We first need to install Development Tools for Linux. Then, configure the installation path and include pip upgrade.

[cc lang="bash" tab\_size="4" lines="-1" theme="mac-classic" line\_numbers="false"]

sudo yum groups install "Development Tools"

./configure --prefix=/home/ec2-user/pythonfin --with-ensurepip=upgrade

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1. Build

You first need to install openssl-devel otherwise you will get pip requires SSL/TSL error. Then you can build it.

[cc lang="bash" tab\_size="4" lines="-1" theme="mac-classic" line\_numbers="false"]

sudo yum install zlib-devel bzip2-devel sqlite sqlite-devel openssl-devel

make

[/cc]

1. Install for the user

When you don't want to overwrite the python executable (safer, at least on some distros yum needs python to be 2.x, such as for RHEL6), you can install python3.\* as a concurrent instance to the system default with an altinstall as below

[cc lang="bash" tab\_size="4" lines="-1" theme="mac-classic" line\_numbers="false"]

make altinstall

[/cc]

1. Create Shortcut For Installed Python 3

This makes it easier for the creation of virtual environments.

[cc lang="bash" tab\_size="4" lines="-1" theme="mac-classic" line\_numbers="false"]

export python3=/home/ec2-user/pythonfin/bin/python3.6

export pip3=/home/ec2-user/pythonfin/bin/pip3.6

[/cc]

1. Install virtualenv and Create Virtual Environment

You can use the environment variables created in the previous step. In the command below, you are creating it in the pythonfin folder where Python 3 is installed.

[cc lang="bash" tab\_size="4" lines="-1" theme="mac-classic" line\_numbers="false"]

$pip3 install virtualenv

$python3 -m venv lambda (this creates environment in the pythonfin folder)

[/cc]

1. Activate Environment

Once you activate the environment, any installation with pip will go there. The python command uses the python binary for the environment.

[cc lang="bash" tab\_size="4" lines="-1" theme="mac-classic" line\_numbers="false"]

source /home/ec2-user/pythonfin/lambda/bin/activate

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You are ready to go!