

How To Install Python 3 and Set Up a Programming Environment on Ubuntu 18.04 [Quickstart]

Introduction

Python is a flexible and versatile programming language, with strengths in scripting, automation, data analysis, machine learning, and back-end development.

This tutorial will walk you through installing Python and setting up a programming environment on an Ubuntu 18.04 server. For a more detailed version of this tutorial, with better explanations of each step, please refer to [How To Install Python 3 and Set Up a Programming Environment on an Ubuntu 18.04 Server](#).

Step 1 — Update and Upgrade

Logged into your Ubuntu 18.04 server as a sudo non-root user, first update and upgrade your system to ensure that your shipped version of Python 3 is up-to-date.

```
$ sudo apt update
$ sudo apt -y upgrade
```

```
sudo apt update
```

```
sudo apt -y upgrade
```

Step 2 — Check Version of Python

Check which version of Python 3 is installed by typing:

```
$ python3 -V
```

You'll receive output similar to the following, depending on when you have updated your system.

```
python3 -V
```

You'll receive output similar to the following, depending on when you have updated your system.

```
Output  
Python 3.6.7
```

Step 3 — Install pip

To manage software packages for Python, install **pip**, a tool that will install and manage libraries or modules to use in your projects.

```
$ sudo apt install -y python3-pip
```

Python packages can be installed by typing:

```
sudo apt install -y python3-pip
```

Python packages can be installed by typing:

```
$ pip3 install package_name
```

Here, `package_name` can refer to any Python package or library, such as Django for web development or NumPy for scientific computing. So if you would like to install NumPy, you can do so with the command `pip3 install numpy`.

```
pip3 install numpy
```

Step 4 — Install Additional Tools

There are a few more packages and development tools to install to ensure that we have a robust set-up for our programming environment:

```
$ sudo apt install build-essential libssl-dev libffi-dev python3-dev
```

```
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```

Step 5 — Install venv

Virtual environments enable you to have an isolated space on your server for Python projects. We'll use **venv**, part of the standard Python 3 library, which we can install by typing:

```
$ sudo apt install -y python3-venv
```

```
sudo apt install -y python3-venv
```

Step 6 — Create a Virtual Environment

You can create a new environment with the `pyvenv` command. Here, we'll call our new environment `my_env`, but you can call yours whatever you want.

```
$ python3.6 -m venv my_env
```

```
python3.6 -m venv my_env
```

Step 7 — Activate Virtual Environment

Activate the environment using the command below, where `my_env` is the name of your programming environment.

```
$ source my_env/bin/activate
```

Your command prompt will now be prefixed with the name of your environment:

```
(my_env) sammy@ubuntu:~/environments$
```

```
source my_env/bin/activate
```

Step 8 – Test Virtual Environment

Open the Python interpreter:

```
(my_env) sammy@ubuntu:~/environments$ python
```

Note that within the Python 3 virtual environment, you can use the command `python` instead of `python3`, and `pip` instead of `pip3`.

You'll know you're in the interpreter when you receive the following output:

```
Python 3.6.5 (default, Apr  1 2018, 05:46:30)
[GCC 7.3.0] on linux
Type "help", "copyright", "credits" or "license()" for more
>>>
```

```
Python 3.6.5 (default, Apr  1 2018, 05:46:30)
[GCC 7.3.0] on linux
Type "help", "copyright", "credits" or "license" for more information.
>>>
```

Now, use the `print()` function to create the traditional Hello, World program:

```
>>> print("Hello, world!")
```

```
Output
Hello, world!
```

Python

```
print("Hello, World!")
```

Step 9 – Deactivate Virtual Environment

Quit the Python interpreter:

```
>>> quit()
```

Then exit the virtual environment:

```
(my_env) sammy@ubuntu:~/environments$ deactivate
```