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How to Install Python 3 on Ubuntu 18.04 or 20.04

December 12, 2019

PYTHON

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Introduction

Python is a popular programming language often used to write scripts for operating systems. It's versatile enough for use in web development and app design.

In this tutorial you will learn how to install Python 3.8 on Ubuntu 18.04 or Ubuntu 20.04.



Prerequisites

- A system running Ubuntu 18.04 or Ubuntu 20.04
- A user account with **sudo** privileges
- Access to a terminal window/command-line (**Ctrl+Alt+T**)
- Make sure your environment is configured to use Python 3.8

Option 1: Install Python 3 Using apt (Easier)

This process uses the **apt package manager** to install Python. There are fewer steps, but it's dependent on a third party hosting software updates. You may not see new releases as quickly on a third-party repository.

Most factory versions of Ubuntu 18.04 or Ubuntu 20.04 come with Python pre-installed. [Check your version of Python](#) by entering the following:

```
python --version
```

If the revision level is lower than 3.7.x, or if Python is not installed, continue to the next step.

Step 1: Update and Refresh Repository Lists

Open a terminal window, and enter the following:

```
sudo apt update
```

Step 2: Install Supporting Software

The software-properties-common package gives you better control over your package manager by letting you add PPA (Personal Package Archive) repositories. Install the supporting software with the command:

```
sudo apt install software-properties-common
```

```
sofija@sofija-VirtualBox:~$ sudo apt install build-essential zlib1g-dev libncurses5-dev libgdbm-dev libnss3-dev libssl-dev libreadline-dev libffi-dev wget
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following additional packages will be installed:
  cpp cpp-7 dpkg-dev fakeroot g++ g++-7 gcc gcc-7-base gcc-8-base
  libalgorithm-diff-perl libalgorithm-diff-xs-perl libalgorithm-merge-perl
  libasan4 libatomic1 libc-dev-bin libc6-dev libcc1-0 libcilkrts5
  libdpkg-perl libfakeroot libgcc-7-dev libgcc1 libgomp1 libitm1 liblsan0
  libmpx2 libnsspr4-dev libnss3 libquadmath0 libssl1.1 libstdc++-7-dev
  libstdc++6 libtinfo-dev libtsan0 libubsan0 linux-libc-dev make manpages-dev
Suggested packages:
  cpp-doc gcc-7-locales debian-keyring g++-multilib g++-7-multilib gcc-7-doc
```

Step 3: Add Deadsnakes PPA

Deadsnakes is a PPA with newer releases than the default Ubuntu repositories. Add the PPA by entering the following:

```
sudo add-apt-repository ppa:deadsnakes/ppa
```

The system will prompt you to press enter to continue. Do so, and allow it to finish. Refresh the package lists again:

```
sudo apt update
```

Step 4: Install Python 3

Now you can start the installation of Python 3.8 with the command:

```
sudo apt install python3.8
```

Allow the process to complete and verify the Python version was installed successfully:

```
python --version
```

```
sofija@sofija-VirtualBox:~$ python3 --version
Python 3.8.2
```

Option 2: Install Python 3.7 From Source Code (Latest Version)

Use this process to download and compile the source code from the developer. It's a bit more complicated, but the trade-off is accessing a newer release of Python.

Step 1: Update Local Repositories

To update local repositories, use the command:

```
sudo apt update
```

Step 2: Install Supporting Software

Compiling a package from source code requires additional software.

Enter the following to install the required packages for Python:

```
sudo apt install build-essential zlib1g-dev libncurses5-dev libgdbm-dev li
bnss3-dev libssl-dev libreadline-dev libffi-dev wget
```

```
sofija@sofija-VirtualBox:~$ sudo apt install build-essential zlib1g-dev libncurses5-dev libgdbm-dev libnss3-dev libssl-dev libreadline-dev libffi-dev wget
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following additional packages will be installed:
  cpp cpp-7 dpkg-dev fakeroot g++ g++-7 gcc gcc-7-base gcc-8-base
  libalgorithm-diff-perl libalgorithm-diff-xs-perl libalgorithm-merge-perl
  libasan4 libatomic1 libc-dev-bin libc6-dev libcc1-0 libcilkrts5
  libdpkg-perl libfakeroot libgcc-7-dev libgcc1 libgomp1 libitm1 liblsan0
  libmpx2 libnsspr4-dev libnss3 libquadmath0 libssl1.1 libstdc++-7-dev
  libstdc++6 libtinfo-dev libtsan0 libubsan0 linux-libc-dev make manpages-dev
Suggested packages:
  cpp-doc gcc-7-locales debian-keyring g++-multilib g++-7-multilib gcc-7-doc
```

Step 3: Download the Latest Version of Python Source Code

To download the newest release of Python Source Code, navigate to the `/tmp` directory and use the **wget** command:

```
cd /tmp
```

```
wget https://www.python.org/ftp/python/3.7.5/Python-3.7.5.tgz
```

```
sofija@sofija-VirtualBox:~/tmp$ wget https://www.python.org/ftp/python/3.8.3/Python-3.8.3.tgz
--2020-06-05 16:45:55-- https://www.python.org/ftp/python/3.8.3/Python-3.8.3.tgz
Resolving www.python.org (www.python.org)... 151.101.196.223, 2a04:4e42:2e::223
Connecting to www.python.org (www.python.org)|151.101.196.223|:443... connected
HTTP request sent, awaiting response... 200 OK
Length: 24067487 (23M) [application/octet-stream]
Saving to: 'Python-3.8.3.tgz'

Python-3.8.3.tgz 100%[=====] 22,95M 4,01MB/s in 7,4s

2020-06-05 16:46:03 (3,09 MB/s) - "Python-3.8.3.tgz" saved [24067487/24067487]
```

Note: The source code is different from the software found on the main download page. At the time this article was written, Python 3.7.5 was the latest version available.

Step 4: Extract Compressed Files

Next, you need to [extract the `tgz` file](#) you downloaded, with the command:

```
tar -xf Python-3.8.3.tgz
```

Step 5: Test System and Optimize Python

Before you install the software, make sure you test the system and optimize Python.

The `./configure` command evaluates and prepares Python to install on your system. Using the `--optimization` option speeds code execution by 10-20%.

Enter the following:

```
cd python-3.8.3
```

```
./configure --enable-optimizations
```

This step can take up to 30 minutes to complete.

Step 6: Install a Second Instance of Python (recommended)

To create a second installation of Python 3.835, in addition to your current Python installation, enter the following:

```
sudo make altinstall
```

It is recommended that you use the **altinstall** method. Your Ubuntu system may have software packages dependent on Python 2.x.

(Option) Overwrite Default Python Installation

To install Python 3.8.3 over the top of your existing Python, enter the following:

```
sudo make install
```

Allow the process to complete.

Step 7: Verify Python Version

Enter the following:

```
python3 --version
```

Note: If you are starting with Python and are still looking for the right IDE or editor, see our comprehensive overview of the [best Python IDEs and code editors](#).

Using Different Versions of Python

If you used the **altinstall** method, you have two different versions of Python on your system at the same time. Each installation uses a different command.

Use the **python** command to run commands for any older Python 2.x version on your system. For example:

```
python --version
```

To run a command using the newer version, use **python3**. For example:

```
python3 --version
```

It is possible to have multiple major (3.x or 2.x) versions of Python on your system. If you have Python 3.7.x and Python 3.8.x both installed, use the second digit to specify which version you want to use:

```
python3.7 --version
```

```
python3.8 --version
```

Conclusion

You should now have a working installation of Python 3 on your Ubuntu system. Next, consider [installing PIP for Python](#) if you haven't already.

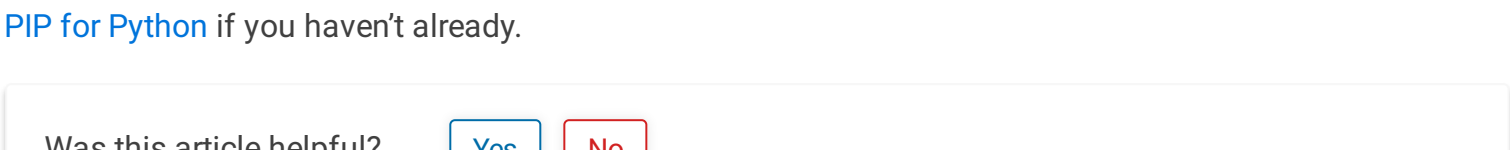
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Sofija Simic is an aspiring Technical Writer at phoenixNAP. Alongside her educational background in teaching and writing, she has a lifelong passion for information technology. She is committed to unscrambling confusing IT concepts and streamlining intricate software installations.

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