



CELIA-E Python3 Manual

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Overview

This document explains the procedures to install Python3 on CELIA and run a simple python program.



Installing Python3 package

To install the Python3 packages, use the apt tools included with the Debian distribution running on CELIA:

sudo apt-get update

sudo apt-get install python3

This will install Python3 on the system.

To verify the Python version installed, simply execute the following command:

python3 -V

At the moment of creation of this document, the version installed is 3.9.2:

```
debian@localhost:~$ python3 -V
Python 3.9.2
debian@localhost:~$ █
```

The pip version installed is 20.3.4:

```
debian@localhost:~$ pip -V
pip 20.3.4 from /usr/lib/python3/dist-packages/pip (python 3.9)
debian@localhost:~$ █
```

Section 0 shows how to upgrade Python to a newer version.



Running a simple Python program

Create a new file on the system and call it **python_simple.py**. Add the following line into the file:

`print("Hello, World!")`

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

Save it and now execute it using the following command:

`python3 python_simple.py`

The result should be the following:

```
debian@localhost:~$ python3 python_simple.py
Hello, World!
debian@localhost:~$
```

That is all, Python3 is installed and ready to use.



Installing Python 3.12.4 and PIP 24.0 on CELIA-E

Check the current installed version of Python and Pip on the device (The system should show python 3.9.2 and pip 20.3.4):

python3 -V && pip -V

```
debian@localhost:~$ python3 -V && pip -V
Python 3.9.2
pip 20.3.4 from /usr/lib/python3/dist-packages/pip (python 3.9)
```

Let's upgrade these versions to the latest stable versions available.

This section was based on:

https://wiki.crowncloud.net/?How_to_Install_Python_3_12_on_Debian_12

Ensure the system is updated by running:

sudo apt-get update -y

sudo apt-get upgrade -y

Install all the necessary packages to build Python from source (copy all the lines below):

***sudo apt-get install -y build-essential libssl-dev zlib1g-dev libbz2-dev \
libreadline-dev libsqlite3-dev wget curl llvm libncurses5-dev libncursesw5-dev \
xz-utils tk-dev libffi-dev liblzma-dev python3-openssl git***

Download the Python Source Code:

wget <https://www.python.org/ftp/python/3.12.4/Python-3.12.4.tgz>

Extract the Archive:

tar -xvzf Python-3.12.4.tgz

Configure the build:

cd Python-3.12.4

./configure --enable-optimizations

Install Python (This step will take a while to complete):

sudo make altinstall



Using *altinstall* instead of *install* prevents it from replacing the system's default Python interpreter (which could cause system tools to malfunction).

Verify the installation:

Check if Python 3.12.4 has been installed successfully:

python3.12 -V

```
debian@localhost:~$ python3.12 -V
Python 3.12.4
debian@localhost:~$
```

Check if PIP 24.0 has been installed successfully:

pip3.12 -V

```
debian@localhost:~$ pip3.12 -V
pip 24.0 from /usr/local/lib/python3.12/site-packages/pip (python 3.12)
debian@localhost:~$
```

At this point, we can test Python 3.12.4 using the same application used on section 0. The only difference is that we need to specify `python3.12` instead of `python3` when running the application:

```
debian@localhost:~$ python3.12 python_simple.py
Hello, World
debian@localhost:~$
```