

Jupyter Lab plug-in installation

Jupyter Lab plug-in installation

1. Install Node.js
2. Enable plug-in
3. Install the expansion pack

Installing plugins can enhance the functionality of Jupyter Lab and provide more tools and features.

1. Install Node.js

- View the architecture of Raspberry Pi

```
uname -a
```

```
yahboom@raspberrypi:~$ uname -a
Linux raspberrypi 6.1.0-rpi7-rpi-2712 #1 SMP PREEMPT Debian 1:6.1.63-1+rpt1 (2023-11-24) aarch64 GNU/Linux
```

Select the Node.js version suitable for ARMv8 architecture to install




- Node.js download

```
https://nodejs.org/en/download/
```

Downloads

Latest LTS Version: 20.10.0 (includes npm 10.2.3)

Download the Node.js source code or a pre-built installer for your platform, and start developing today.

LTS Recommended For Most Users	Current Latest Features
 Windows Installer node-v20.10.0-x64.msi	 macOS Installer node-v20.10.0.pkg
 Source Code node-v20.10.0.tar.gz	

Windows Installer (.msi)

Windows Binary (.zip)

macOS Installer (.pkg)

macOS Binary (.tar.gz)

Linux Binaries (x64)

Linux Binaries (ARM)

Source Code

32-bit	64-bit	ARM64
32-bit	64-bit	ARM64
64-bit / ARM64		
64-bit	ARM64	
64-bit		
ARMv7	ARMv8	
node-v20.10.0.tar.gz		

Additional Platforms

Docker Image

Linux on Power LE Systems

Linux on System z

AIX on Power Systems

Official Node.js Docker Image	
	64-bit
	64-bit
	64-bit

- Unzip

Download the latest version of the binary file from the official website, unzip it, and name the folder the node folder:

```
cd Downloads/
tar -xjf node-v20.10.0-linux-arm64.tar.xz
mv -i node-v20.10.0-linux-arm64 node
```

```
yahboom@raspberrypi:~ $ cd Downloads/
yahboom@raspberrypi:~/Downloads $ ls
node-v20.10.0-linux-arm64.tar.xz
yahboom@raspberrypi:~/Downloads $ tar -xjf node-v20.10.0-linux-arm64.tar.xz
yahboom@raspberrypi:~/Downloads $ mv -i node-v20.10.0-linux-arm64 node
yahboom@raspberrypi:~/Downloads $ ls
node node-v20.10.0-linux-arm64.tar.xz
```

- Move binaries and add soft links

```
sudo mv ./node /usr/local
sudo ln -s /usr/local/node/bin/node /usr/bin/node
sudo ln -s /usr/local/node/bin/npm /usr/bin/npm
```

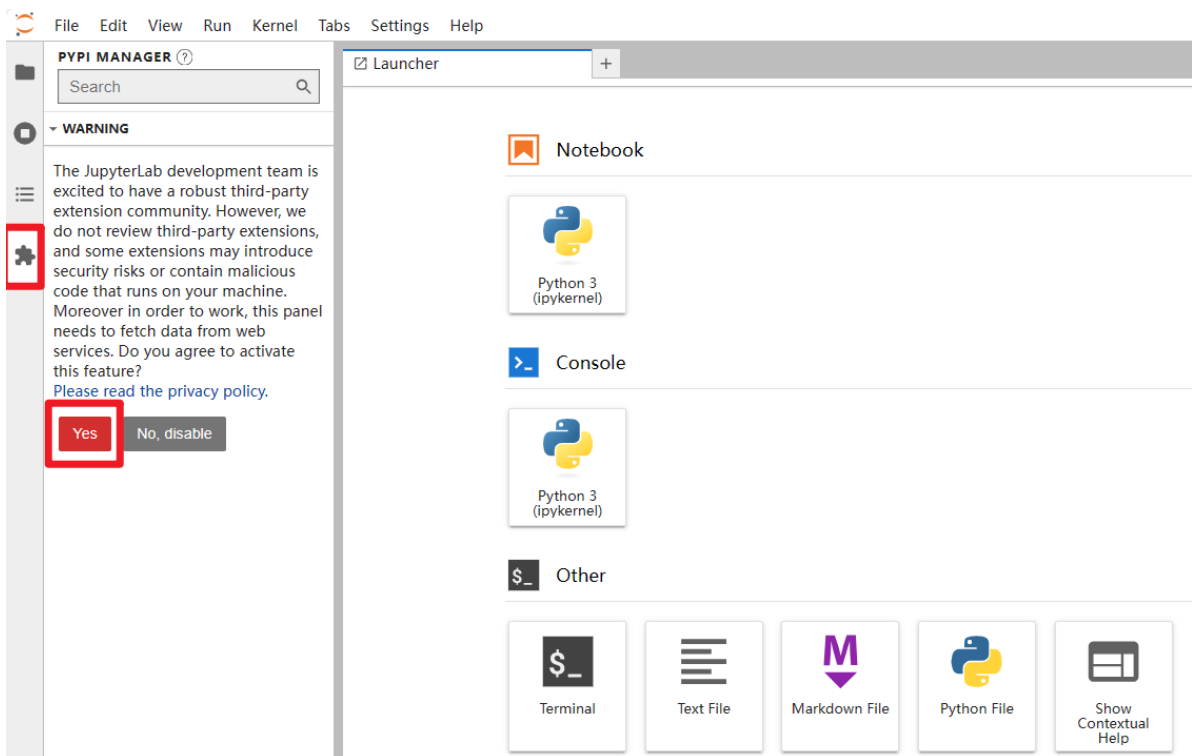
- Check whether node and npm are installed successfully

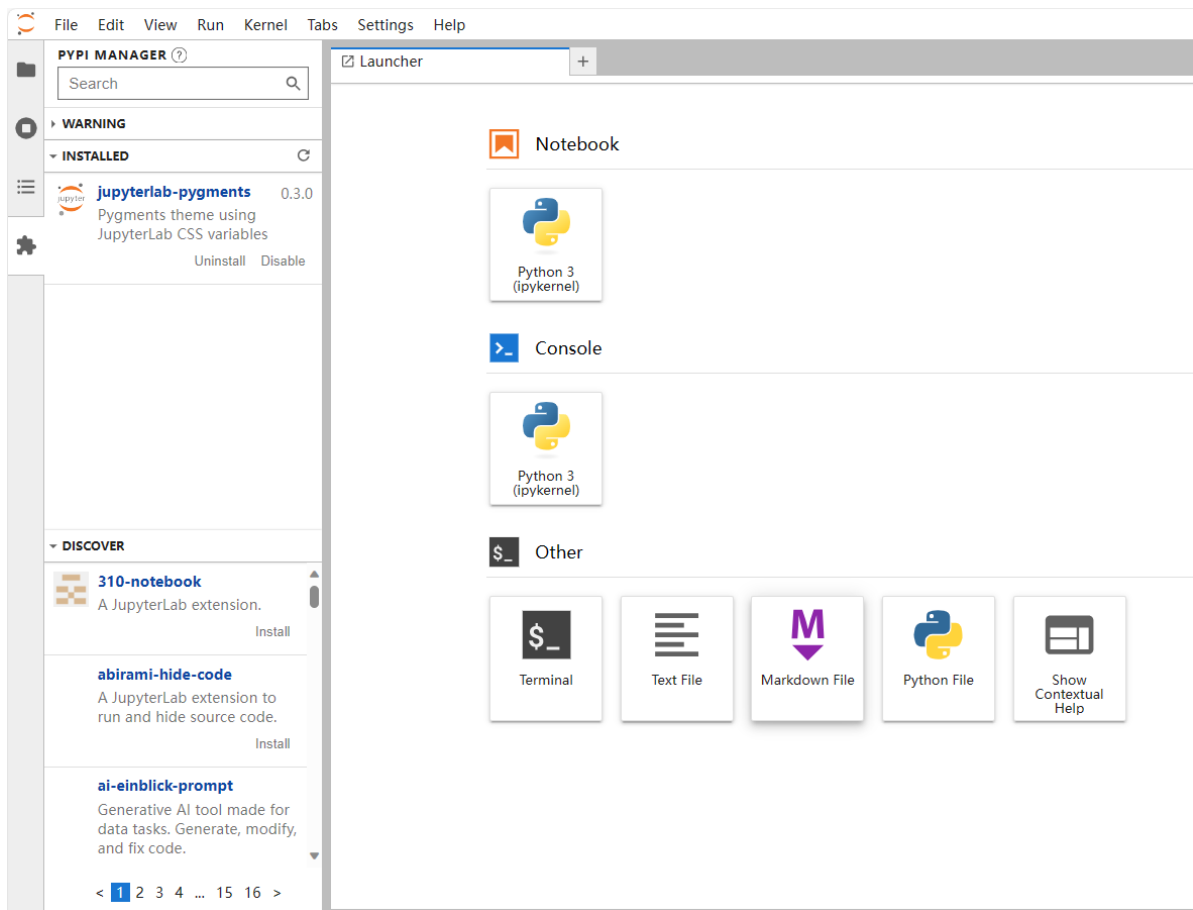
```
node -v && npm -v
```

```
pi@raspberrypi: ~/D..
pi@raspberrypi: ~/Downloads
File Edit Tabs Help
pi@raspberrypi:~ $ uname -a
Linux raspberrypi 6.1.0-rpi7-rpi-2712 #1 SMP PREEMPT Debian 1:6.1.63-1+rpt1 (2023-11-24) aarch64 GNU/Linux
pi@raspberrypi:~ $ cd Downloads/
pi@raspberrypi:~/Downloads $ tar -xJf node-v20.10.0-linux-arm64.tar.xz
pi@raspberrypi:~/Downloads $ mv -i node-v20.10.0-linux-arm64 node
pi@raspberrypi:~/Downloads $ sudo mv ./node /usr/local
pi@raspberrypi:~/Downloads $ sudo ln -s /usr/local/node/bin/node /usr/bin/node
pi@raspberrypi:~/Downloads $ sudo ln -s /usr/local/node/bin/npm /usr/bin/npm
pi@raspberrypi:~/Downloads $ node -v && npm -v
v20.10.0
10.2.3
pi@raspberrypi:~/Downloads $
```

2. Enable plug-in

Enable third-party expansion support in jupyter lab.





3. Install the expansion pack

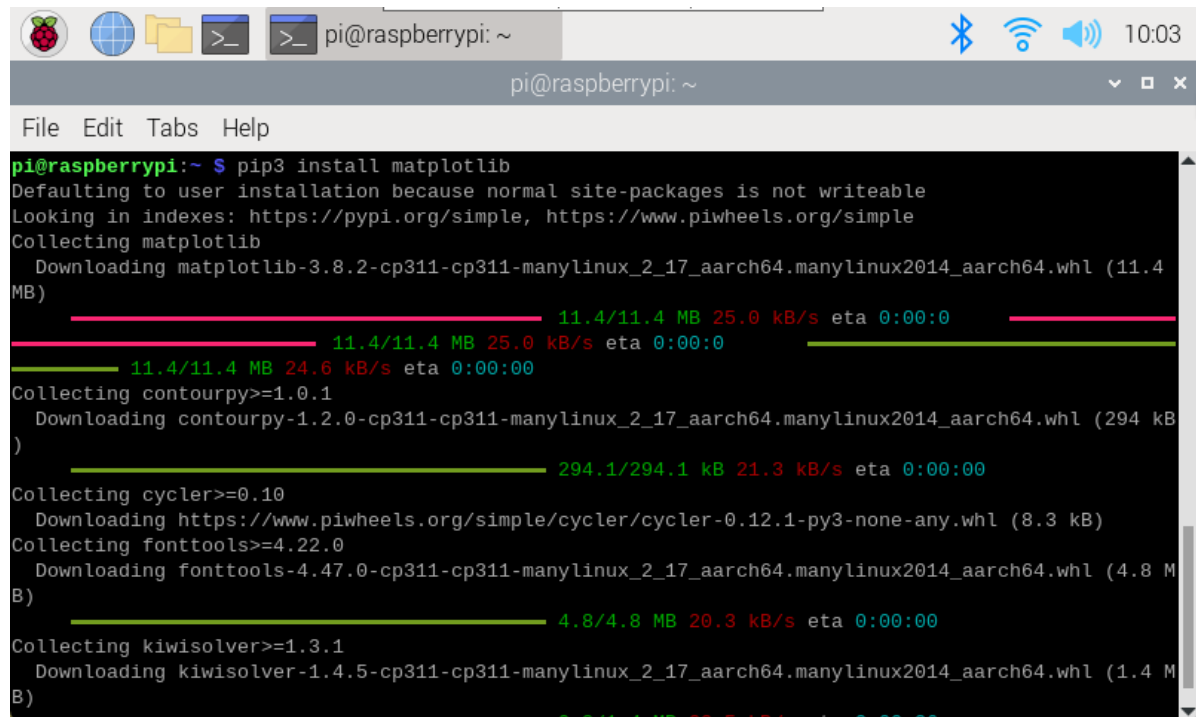
```
pip3 install ipywidgets
```

Provides functionality for creating interactive widgets in Jupyter Lab.

```
pi@raspberrypi: ~  
File Edit Tabs Help  
pi@raspberrypi:~ $ pip3 install ipywidgets  
Defaulting to user installation because normal site-packages is not writeable  
Looking in indexes: https://pypi.org/simple, https://www.piwheels.org/simple  
Collecting ipywidgets  
  Downloading https://www.piwheels.org/simple/ipywidgets/ipywidgets-8.1.1-py3-none-any.whl (139 kB)  
    ━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━ 139.4/139.4 kB 241.6 kB/s eta 0:00:00  
Requirement already satisfied: comm>=0.1.3 in /usr/local/lib/python3.11/dist-packages (from ipywidgets) (0.2.0)  
Requirement already satisfied: ipython>=6.1.0 in /usr/local/lib/python3.11/dist-packages (from ipywidgets) (8.18.1)  
Requirement already satisfied: traitlets>=4.3.1 in /usr/local/lib/python3.11/dist-packages (from ipywidgets) (5.14.0)  
Collecting widgetsnbextension~=4.0.9  
  Downloading https://www.piwheels.org/simple/widgetsnbextension/widgetsnbextension-4.0.9-py3-none-any.whl (2.3 MB)  
    ━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━ 2.3/2.3 MB 2.5 MB/s eta 0:00:00  
Collecting jupyterlab-widgets~=3.0.9  
  Downloading https://www.piwheels.org/simple/jupyterlab-widgets/jupyterlab_widgets-3.0.9-py3-none-any.whl (214 kB)  
    ━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━ 214.9/214.9 kB 7.9 MB/s eta 0:00:00  
Requirement already satisfied: decorator in /usr/local/lib/python3.11/dist-packages (from ipython>=6.1.0 to ipywidgets) (5.1.1)
```

```
pip3 install matplotlib
```

Features for creating various types of graphs and visualizations in Python, including line plots, scatter plots, histograms, and more.



The screenshot shows a terminal window on a Raspberry Pi. The window title is "pi@raspberrypi: ~". The terminal output shows the command "pip3 install matplotlib" being executed. The output indicates that the installation is defaulting to user installation because the normal site-packages is not writeable. It then shows the collection and downloading of matplotlib-3.8.2-cp311-cp311-manylinux_2_17_aarch64.manylinux2014_aarch64.whl (11.4 MB). The progress bar shows 11.4/11.4 MB downloaded at 25.0 kB/s with an eta of 0:00:00. Other dependencies like contourpy, cyclor, fonttools, and kiwisolver are also shown being collected and downloaded.

```
pi@raspberrypi:~ $ pip3 install matplotlib
Defaulting to user installation because normal site-packages is not writeable
Looking in indexes: https://pypi.org/simple, https://www.piwheels.org/simple
Collecting matplotlib
  Downloading matplotlib-3.8.2-cp311-cp311-manylinux_2_17_aarch64.manylinux2014_aarch64.whl (11.4 MB)
    _____ 11.4/11.4 MB 25.0 kB/s eta 0:00:00
    _____ 11.4/11.4 MB 24.6 kB/s eta 0:00:00
Collecting contourpy>=1.0.1
  Downloading contourpy-1.2.0-cp311-cp311-manylinux_2_17_aarch64.manylinux2014_aarch64.whl (294 kB)
    _____ 294.1/294.1 kB 21.3 kB/s eta 0:00:00
Collecting cyclor>=0.10
  Downloading https://www.piwheels.org/simple/cyclor/cyclor-0.12.1-py3-none-any.whl (8.3 kB)
Collecting fonttools>=4.22.0
  Downloading fonttools-4.47.0-cp311-cp311-manylinux_2_17_aarch64.manylinux2014_aarch64.whl (4.8 MB)
    _____ 4.8/4.8 MB 20.3 kB/s eta 0:00:00
Collecting kiwisolver>=1.3.1
  Downloading kiwisolver-1.4.5-cp311-cp311-manylinux_2_17_aarch64.manylinux2014_aarch64.whl (1.4 MB)
    _____ 1.4/1.4 MB 20.3 kB/s eta 0:00:00
```