

Record of installation of JupyterLab on 64 bit Raspberry Pi OS to act as a server for browser access to JupyterLab remotely and including from iPad

From https://downloads.raspberrypi.org/raspios_arm64/images/raspios_arm64-2021-05-28/ downloaded 2021-05-07-raspios-buster-arm64.zip
Flashed to 32GB SD card with Balena Etcher
Booted on RPI4

Tick use English language Next
New password Next
Set Up Screen tick this screen shows a black border Next
Select wifi network Skip (cabled)
Update software Skip
Setup Complete Restart
Raspberry > Preferences > Raspberry Pi Configuration> Interfaces enable SSH and VNC

In terminal
sudo apt-get update
sudo apt-get full-upgrade
sudo reboot
mkdir Developer
sudo apt-get update
sudo apt-get install wolfram-engine
From <https://github.com/conda-forge/miniforge> downloaded Miniforge3-Linux-aarch64

In terminal in Downloads bash Miniforge3-Linux-aarch64.sh
Chose to Initialise miniforge3
Restart Terminal
conda create -n rp395 python=3.9.5
conda activate rp395
which python shows /home/pi/miniforge3/envs/rp395/bin/python
python -V shows Python 3.9.5
which pip shows /home/pi/miniforge3/envs/rp395/bin/pip
pip install jupyterlab
conda install -c conda-forge vtk
ONE AT A TIME or small groups for these packages as had problem with pip solving dependencies if all on one line as listed.
pip install numpy sympy matplotlib pandas plotly bokeh scipy seaborn statsmodels octave-kernel ipympl ipyvtklink vispy jupyter_rfb vpython pyvista QtPy scilab-kernel
pip install watermark ipywidgets
sudo apt-get install octave
sudo apt-get install scilab
pip install gnuplot_kernel
python -m gnuplot_kernel install - -user
conda install -c conda-forge xeus-cling

```
From julialang.org/downloads downloaded 64bit AArch64 of v1.6.2
Unzipped tar to /home/pi/julia-1.6.2
In -s /home/pi/julia-1.6.2/bin/julia /home/pi/miniforge3/envs/rp395/bin/julia
julia
using Pkg
Pkg.add("IJulia")
Pkg.add("Plots")
Pkg.add("DifferentialEquations")
Pkg.add("StaticArrays")
Pkg.add("BoundaryValueDiffEq")
Pkg.add("OrdinaryDiffEq")
Pkg.add("Sundials")
Pkg.add("SciMLBase")
Pkg.add("Plotly")
Pkg.add("PlotlyBase")
exit()
```

```
From https://nodes.org/en/downloads/current downloaded Linux binaries ARMv8
Extract files from node-v16.8.0-Linux-arm64.tar.xz to /home/pi/node-v16.8.0
In -s /home/pi/node-v16.8/bin/node /home/pi/miniforge3/envs/rp395/bin/node
```

```
conda install -c conda-forge pyvista
conda install -c conda-forge xeus-cling
```

```
From github.com/WolframResearch/WolframLanguageForJupyter.git downloaded
WolframLanguageForJupyter-master.zip
Unzipped to home/pi/wolfram
In p395 environment in Wolfram directory created
./configure-jupyter.wls add
sudo apt-get purge dillo
sudo apt install r-base r-base-core r-base-dev
R
install.packages('IRkernel')
yes
yes
IRkernel::installspec()
quit()
n
```

```
sudo apt install code
code
Installed my VScode additions
```

```
jupyter-lab build
jupyter labextension list
jupyter kernelspec list
jupyter nbextension list
```

jupyter-lab Verify working with test notebook available in Solutions at <http://bunsen.site> Then shutdown

Running as a service seemed to run once then not again but here are the commands.

Instead can do:

```
jupyter notebook --generate-config
```

```
jupyter notebook password
```

In Terminal on Pi

```
Jupyter-lab - -no-browser - -ip=RPI4IP - - port=8888 - -notebook-dir=/home/pi/Developer
```

Service setup tried:

```
sudo nano /etc/systemd/system/jupyter.service
```

```
[Unit]
```

```
Description=Jupyter Lab
```

```
[Service]
```

```
Type=simple
```

```
PIDFile=/run/jupyter.pid
```

```
ExecStart=/bin/bash -c "/home/pi/miniforge3/condabin/conda activate rp395 && /home/pi/miniforge3/envs/rp395/bin/jupyter-lab --ip="0.0.0.0" --no-browser --notebook-dir=/home/pi/Developer"
```

```
User=pi
```

```
Group=pi
```

```
WorkingDirectory=/home/pi/Developer
```

```
Restart=always
```

```
RestartSec=10
```

```
[Install]
```

```
WantedBy=multi-user.target
```

```
sudo systemctl enable jupyter.service
```

```
sudo systemctl daemon-reload
```

```
sudo systemctl start jupyter.service
```

```
sudo reboot
```

```
sudo systemctl status jupyter.service WAIT A WHILE AFTER RESTART?
```