

Python Development

Pieter P

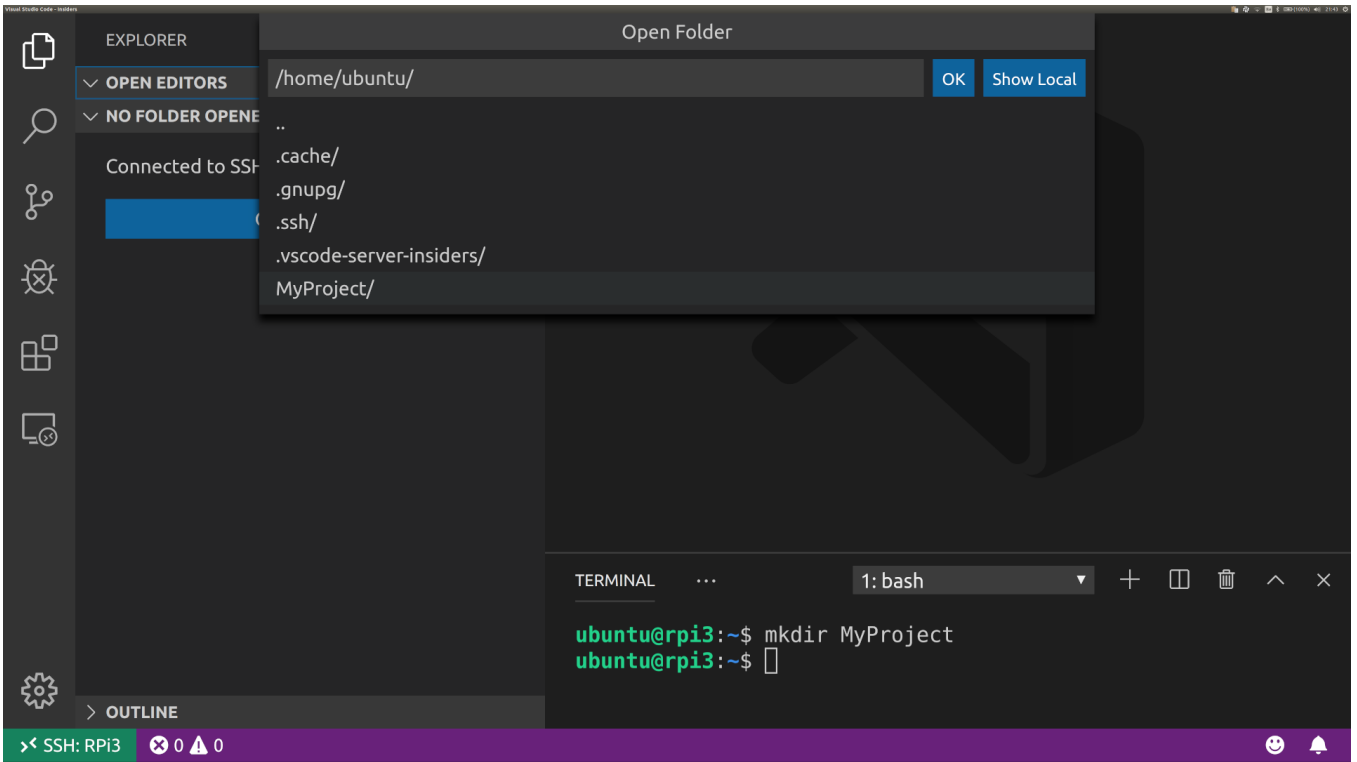
This is a quick guide on how to get remote Python development working on a Raspberry Pi 3. It allows you to open Visual Studio Code on your computer, while opening a workspace folder on the Raspberry Pi over SSH. All files are saved on the Pi, the terminal is on the Pi, the Python extension runs on the Pi, etc. but you can use the editor as if you were doing local development.

Raspberry Pi 3

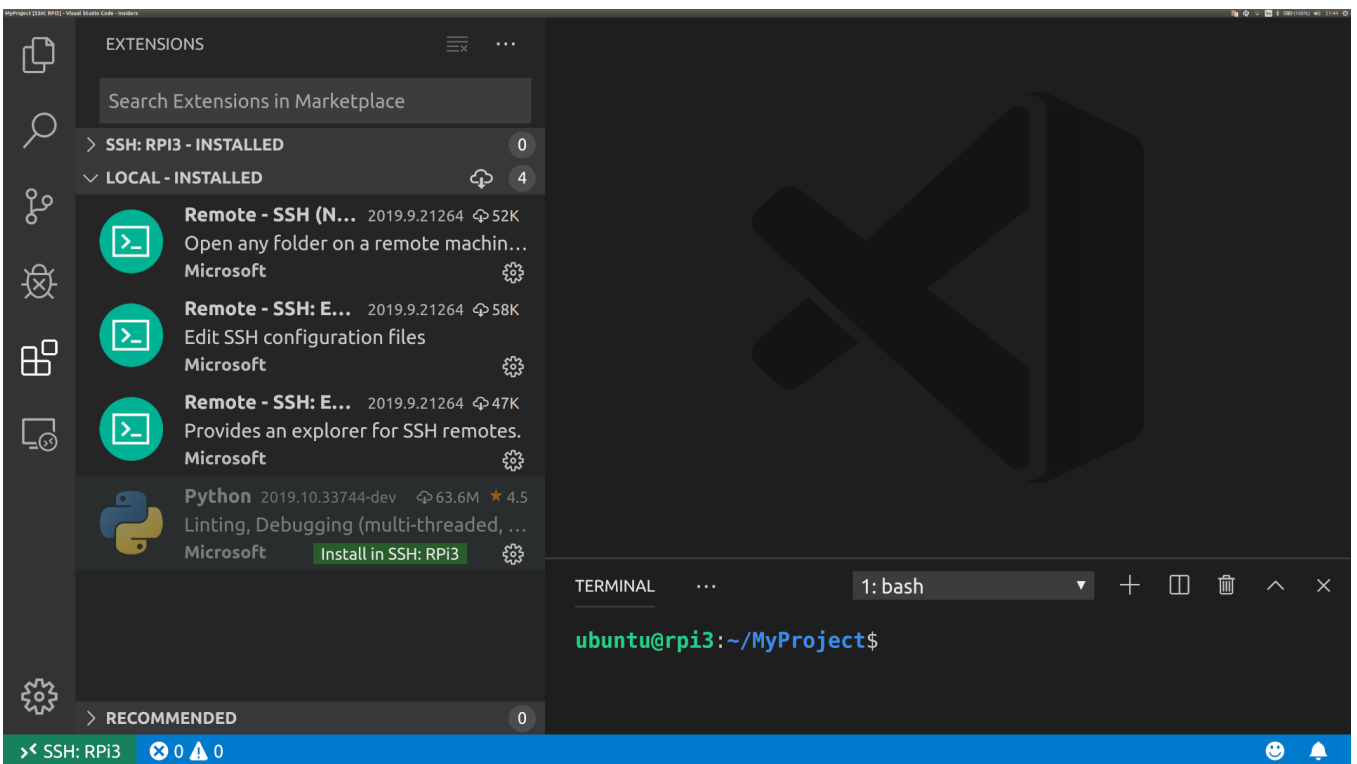
Install Ubuntu Server 18.04 or later and set it up to use over SSH as explained [here](#). It's important that you have the SSH configuration and that you're able to find the Pi on the network (using mDNS, DNS, or a fixed IP address).

Desktop

1. Install [Visual Studio Code](#).
2. Install the "Remote - SSH" extension and reload the window if necessary (CTR+Shift+P > Reload Window).
3. Hit Ctrl+Shift+P, type "Remote-SSH: Connect to Host..." and confirm with enter.
4. Choose your Raspberry Pi 3 SSH configuration and hit enter again.
5. The VS Code Server will now be installed to the Pi, this will take a moment.
6. Once it's finished, open a terminal in VS Code. This is a terminal on the Pi.
7. Create a workspace folder using `mkdir MyProject`, and open it in VS Code (Ctrl+K+O).
8. Open the extensions panel using Ctrl+Shift+X, search for the Python extension by Microsoft, and install it.
9. Clear the extension search field, and in the "Local - Installed" tab, click "Install in SSH: RPi3" next to the Python extension (green button).
10. When it's done installing, it'll say "Reload Required" (blue button). Click it to reload the window with the extension enabled.
11. In the bottom left corner, click "Select Python Interpreter" and select the Python version to use on the Pi.
12. Create a new Python file, add `print('Hello, World!')`, and save it.
13. Use Ctrl+Shift+P, type "Python: Run Python File in Terminal" and hit enter to run the file. This should print "Hello, world!" in the terminal.
14. That's it, you can now write Python code in VS Code as usual, even though the files are saved and executed on the Pi.



7. Opening the new project folder on the Raspberry Pi



9. Installing the Python Extension to the Raspberry Pi

The screenshot shows a code editor interface with a dark theme. On the left, the Explorer sidebar shows a project named 'MYPROJECT [SSH: RPI3]' containing a file 'hello-world.py'. The main editor area displays the contents of 'hello-world.py', which consists of two lines of Python code: `1 print('Hello, World!')` and `2`. Below the editor is a terminal window with the title '2: Python'. The terminal shows the command `ubuntu@rpi3:~/MyProject$ /usr/bin/python3 /home/ubuntu/MyProject/hello-world.py` and the output `Hello, World!`. The terminal prompt is `ubuntu@rpi3:~/MyProject$`. The status bar at the bottom indicates the connection is via SSH to RPi3, with 0 errors and 0 warnings. It also shows the current cursor position as 'Ln 2, Col 1', the file encoding as 'UTF-8', and the line ending as 'LF'. The Python language mode is selected.

13. Running a "Hello, World!" program on the Raspberry Pi