IEEE CCWC 2021   IoT Workshop

SSH: MacOS & Raspberry Pi

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Phillip G. Bradford[1]

SUMMARY

This document shows how to get SSH running between your RPIs and MacOS. It also shows how to install necessary systems.

This also shows how to install git on the RPIs.

DETAILS

SSH is the remote secure shell. The RPIs need their SSH server running so your host (MacOS) machine can interact directly with the RPIs.

Git is necessary to get some code for our RPIs.

[1] University of Conecticut, Stamford, CT USA, phillip.bradford@uconn.edu, phillip.g.bradford@gmail.com

STEP 1: CREATE TWO RASPBERRY PI FOLDERS

On your MacOS machine duplicate the folder ~/workshop/Rpi to two new folders:

RPi_1
RPi_2

In the workshop folder.

Each folder should have three files:

2020_12.qcow2
qemukernel
versatile-pb.dtb

Host> ls ~/workshop

RPi
RPi_1
RPi_2

STEP 2: TURN ON SSH ON RASPBERRY PIS

On each RPi enable and run SSH:

Rpi_*> sudo systemctl enable ssh

Rpi_*> sudo systemctl start ssh

Check the SSH status:

Rpi_*> sudo systemctl status ssh

You should get an indication that ssh is up and running.

STEP 3: RASPBERRY PI GIT INSTALLATION

pi@raspberry $ sudo apt-get install -y git
pi@raspberry $ git version

Git should be version 2.20.

You should do this next step with both RPI_1 and RPI_2.

Generate a public-secret key pair for RPI_1.

MacOS > ssh-keygen -t rsa

>>Type name of keyfile to use: "**rsa_rpi_1_2021_01_23**"
>>Type passcode: you may leave it empty
>>Repeat passcode: you may leave it empty

MacOS > ssh-keyscan -t rsa 127.0.0.1

Add the private key to the Mac keychain. Do this as follows,

MacOS > ssh-add -K ~/.ssh/rsa_rpi_1_2021_01_23

Then copy that ssh key file to the raspberry pi:

MacOS > *ssh-copy-id -i ~/.ssh/ rsa_rpi_1_2021_01_23.pub -p 5022 pi@localhost*
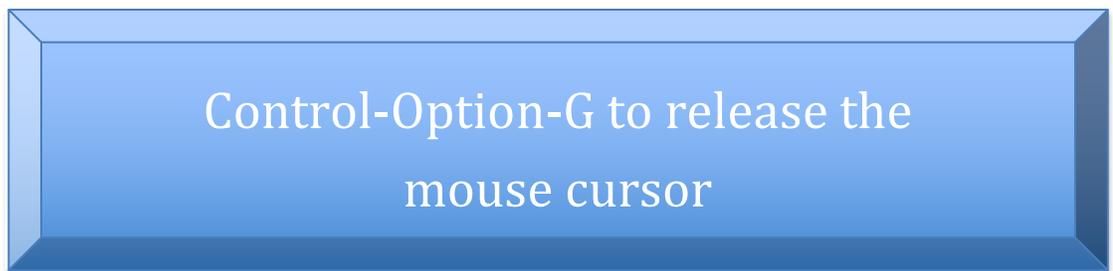
>>It will ask for the raspberry pi password.

Then test it by trying to connect to the raspberry pi with the following command. It should not ask you for a password:

MacOS > ssh -p 5022 pi@localhost

Do the same for RPI_2 using a key name rsa_rpi_2_2021_01_23

If your mouse cursor gets lost, then:

Control-Option-G to release the
mouse cursor

To shut down the Raspberry Pi gracefully, go to the Raspberry Pi's prompt and shut it down

RaspberryPi> sudo shutdown -h now