

IEEE UEMCON 2021 IoT Workshop

Installing QEMU on Windows 10

2021-11-28

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SUMMARY

This document shows how to install the QEMU virtual machine system on Windows 10.

This is for [UEMCON 2021](#)

DETAILS

This is Part **1 QEMU-Install** of the Preparation for the distributed Raspberry Pi workshop.

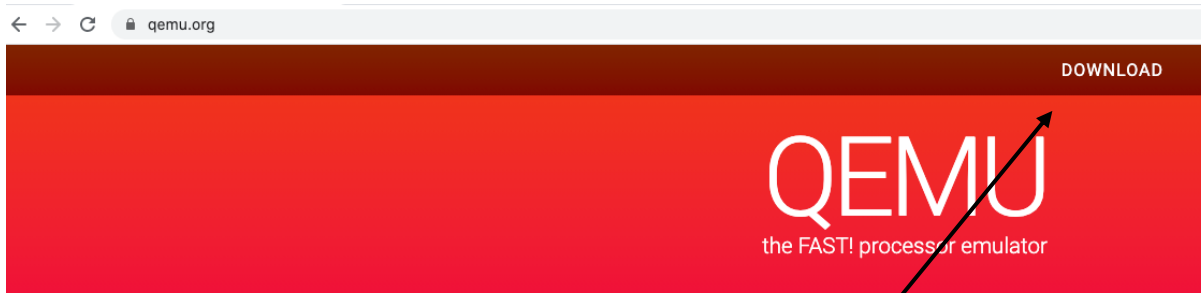
Complete all of [Part 1](#) of the preparation at least a day before the workshop.

[Part 1](#) has several sub-steps. In most cases with 15MBit internet connections, we expect Part 1 to take several hours. Part 1 may require up to 2GB of storage.

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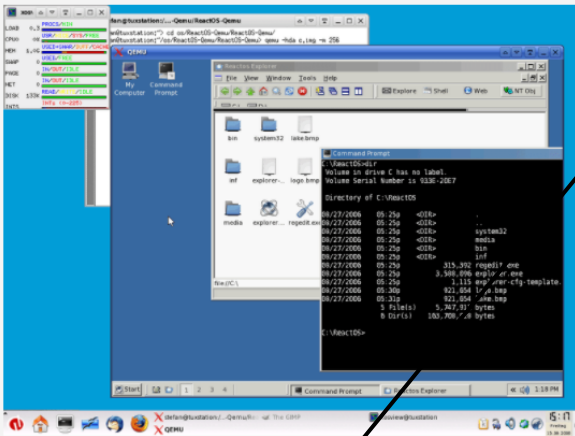
STEPS

STEP 1: GO TO WWW.QEMU.ORG



What is QEMU?

QEMU is a generic and open source machine emulator and virtualizer.



```
[test@donizetti ~]$ qemu-arm ./ls --color /
bin      etc      lib64    mnt      root    srv      system-upgrade-root  var
boot    home    lost+found  opt      run      sys
dev      lib      media    proc    sbin    system-upgrade  usr
[test@donizetti ~]$ uname -a
Linux donizetti 4.6.7-300.fc24.x86_64 #1 SMP Wed Aug 17 18:48:43 UTC 2016 x86_64
x86_64 x86_64 GNU/Linux
[test@donizetti ~]$ file ./ls
./ls: ELF 32-bit LSB executable, ARM, EABI5 version 1 (SYSV), dynamically linked
interpreter /lib/ld-linux-armhf.so.3, for GNU/Linux 3.0.0, stripped
[test@donizetti ~]$
```

Select Download

Download QEMU

Linux	macOS	Windows
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Stefan Weil provides binaries and installers for both **32-bit** and **64-bit** Windows.

Version numbering

Since version 3.0.0, QEMU uses a time based version numbering scheme:

major

incremented by 1 for the first release of the year

minor

reset to 0 with every major increment, otherwise incremented by 1 for each release from git master

micro

always 0 for releases from git master, incremented by 1 for each stable branch release

Select Windows

Download QEMU

Linux	macOS	Windows
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Select 64-bit or 32-bit installer

Almost all Windows 10 machines are 64-bit machines

Download the installer (about 180MB).

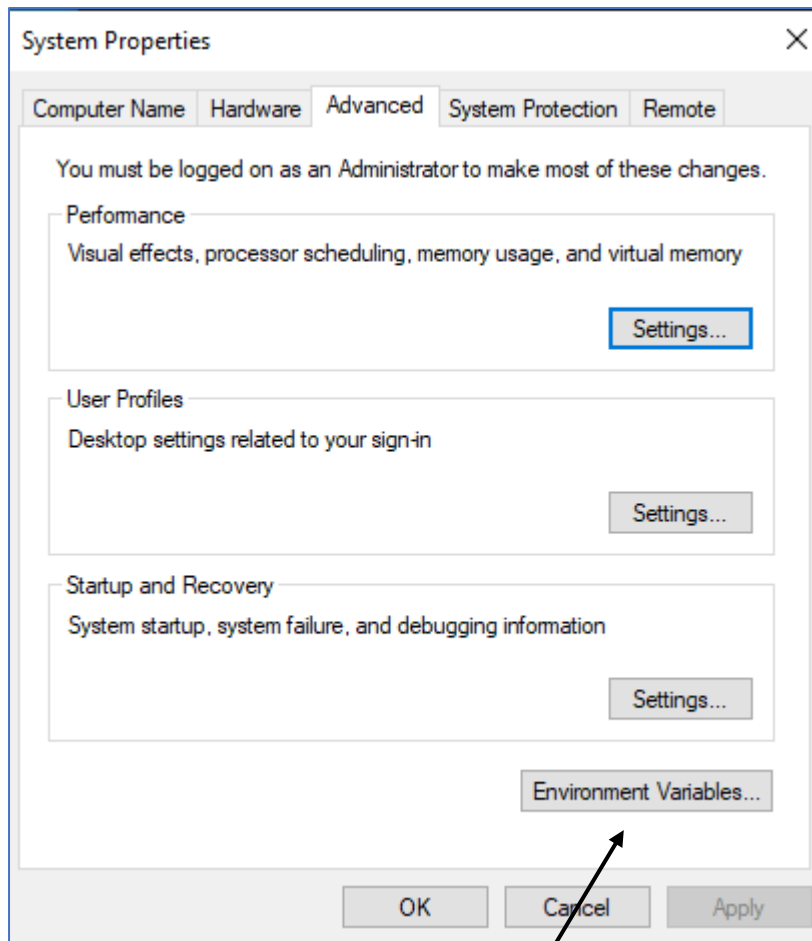
Run the installer once it is downloaded

Ensure you agree with the terms-and-conditions

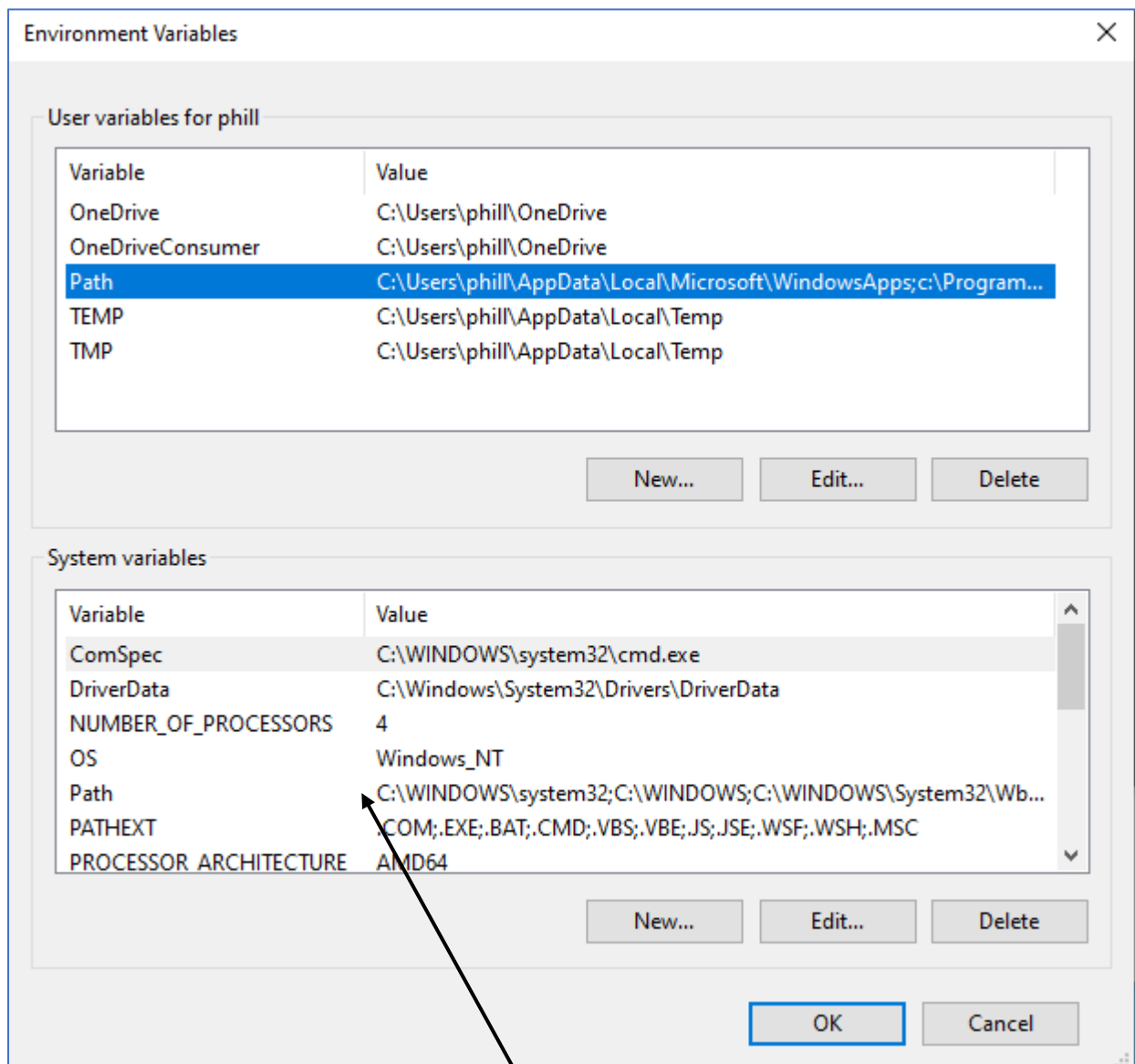
STEP 2: UPDATE ENVIRONMENT VARIABLES

The standard location for installing QEMU is [C:\Program Files\qemu\](#)

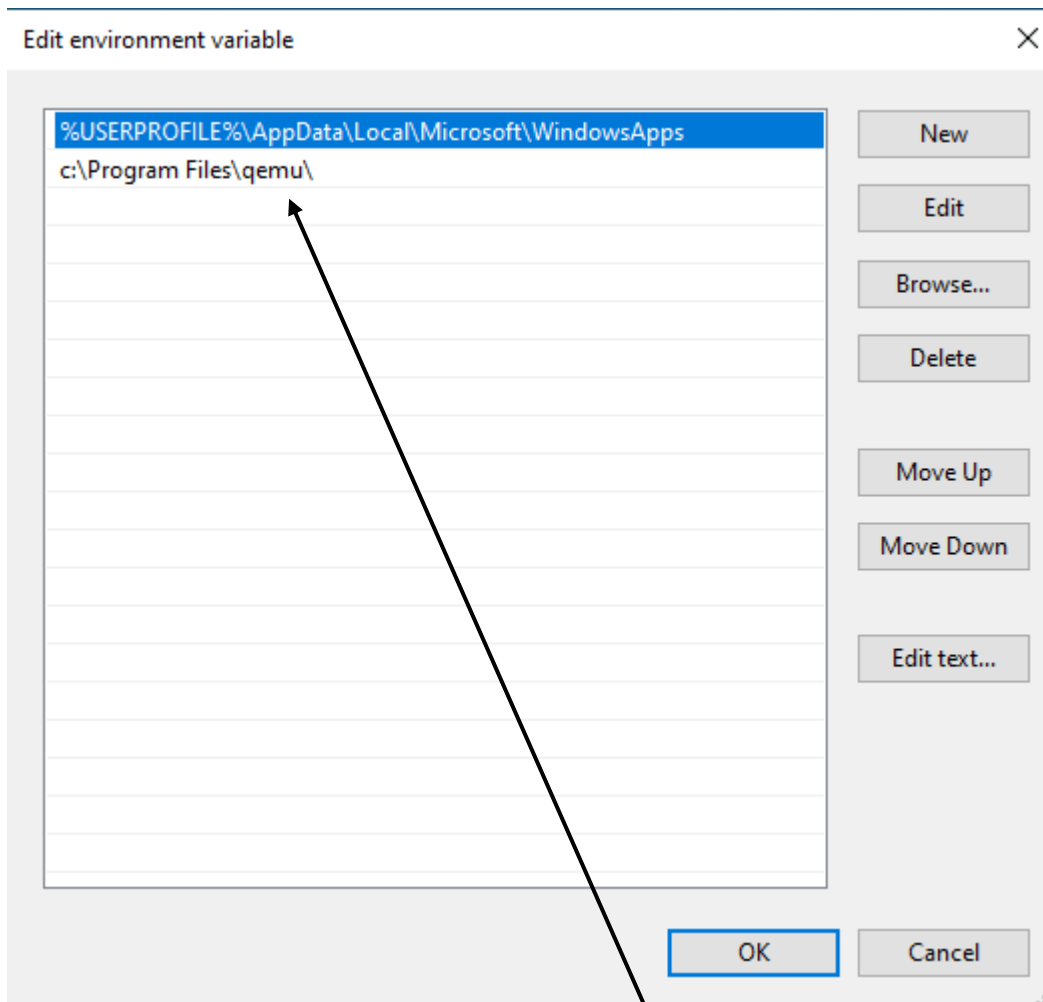
This must be set up in the system properties



Select Environment Variables



Select the **Path** Environment Variable



Add **C:\Program Files\qemu** to a new line

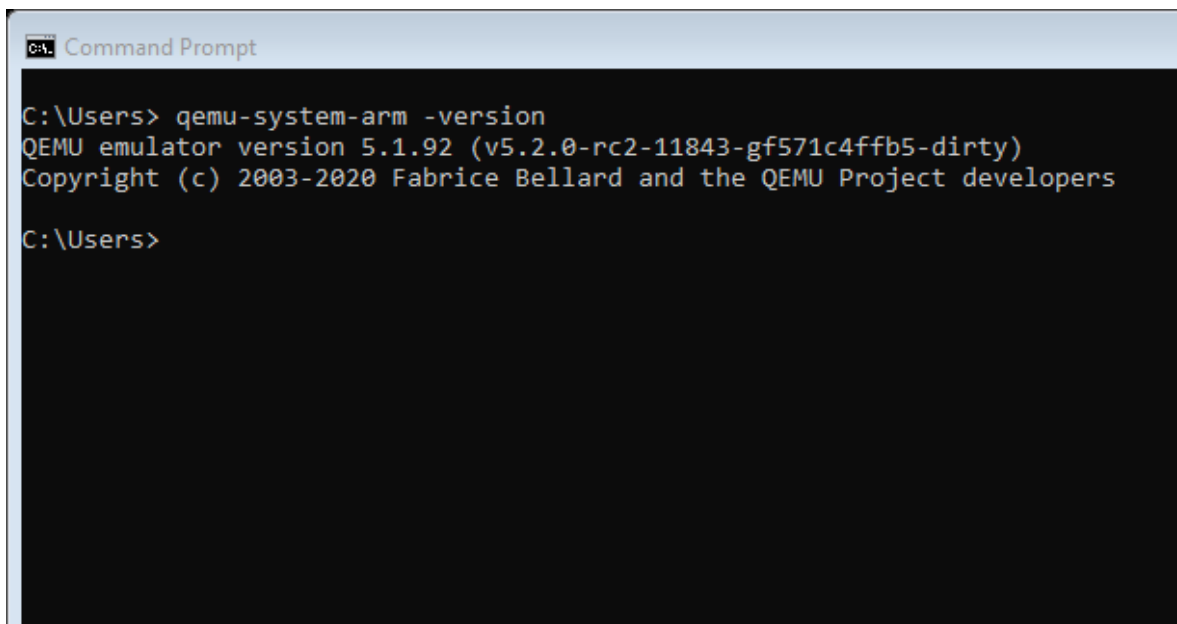
Select OK to each of the following

1. Edit Environment Variable
2. Environment Variables
3. System Properties

STEP 3 SANITY CHECK QEMU INSTALL

Open a new Terminal and verify the version of qemu-system-arm is 5.1.92:

Get a Command Prompt (a terminal)



```
Command Prompt
C:\Users> qemu-system-arm -version
QEMU emulator version 5.1.92 (v5.2.0-rc2-11843-gf571c4ffb5-dirty)
Copyright (c) 2003-2020 Fabrice Bellard and the QEMU Project developers
C:\Users>
```

Windows 10> qemu-system-arm -version

QEMU emulator version 5.1.92
Copyright (c) 2003-2020 Fabrice Bellard and the QEMU Project developers

NOTES

The QEMU system requires under 2GB on disk.