

# Blockchain Technical Notes

## Installing QEMU on Windows 10/11

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### SUMMARY

This document shows how to install the QEMU virtual machine system on Windows 10/11.

This is for Blockchain Tech Notes, by Phillip G. Bradford

### DETAILS

This is Part **1 QEMU-Install** of the Preparation for the virtual Raspberry Pi set up.

**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

The image shows the QEMU website at [www.qemu.org](http://www.qemu.org). The website has a red header with the QEMU logo and the tagline "the FAST! processor emulator". A "DOWNLOAD" button is visible in the top right corner. Below the header, there is a section titled "What is QEMU?" with the text "QEMU is a generic and open source machine emulator and virtualizer." To the left of this text is a screenshot of a Windows desktop showing a QEMU window and a command prompt. To the right is a terminal window showing the output of the `qemu-arm ./ls --color /` command, which lists the contents of the root directory of a virtual machine.

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      system-upgrade      usr
dev      lib      media    proc     sbin     system-upgrade
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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always 0 for releases from git master, incremented by 1 for each stable branch release

Select 64-bit or 32-bit installer

Almost all Windows 10 machines are 64-bit machines

Download the installer (about 180MB).

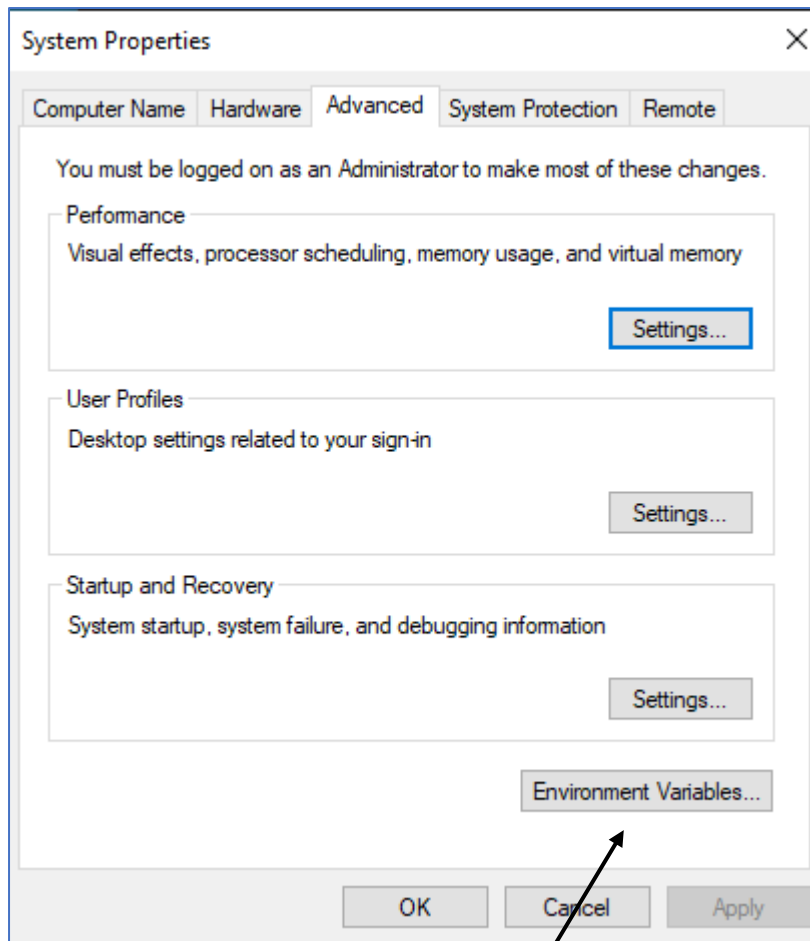
Run the installer once it is downloaded

Ensure you agree with the terms-and-conditions

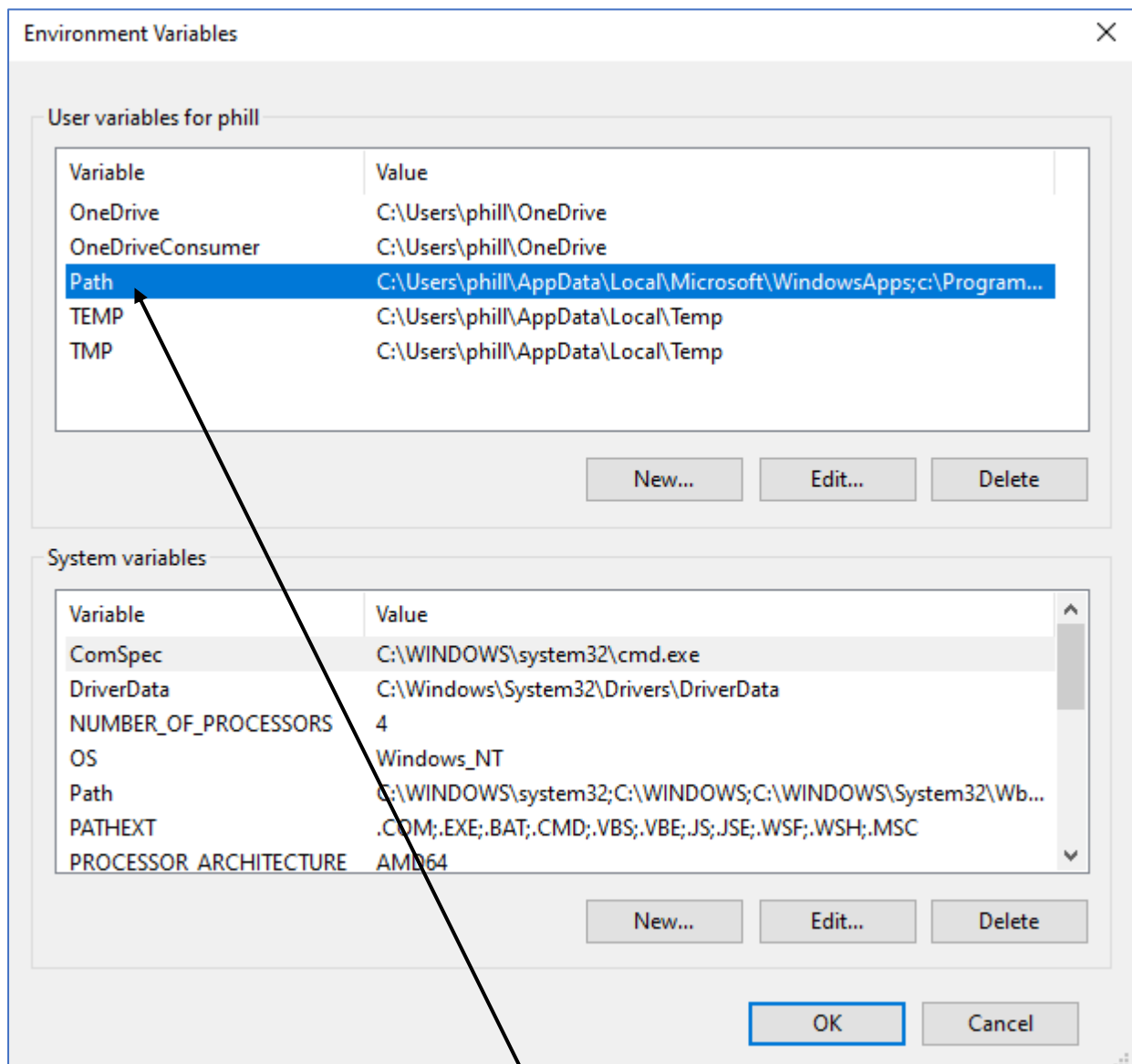
## STEP 2: UPDATE ENVIRONMENT VARIABLES

The standard location for installing QEMU is <C:\Program Files\qemu\>

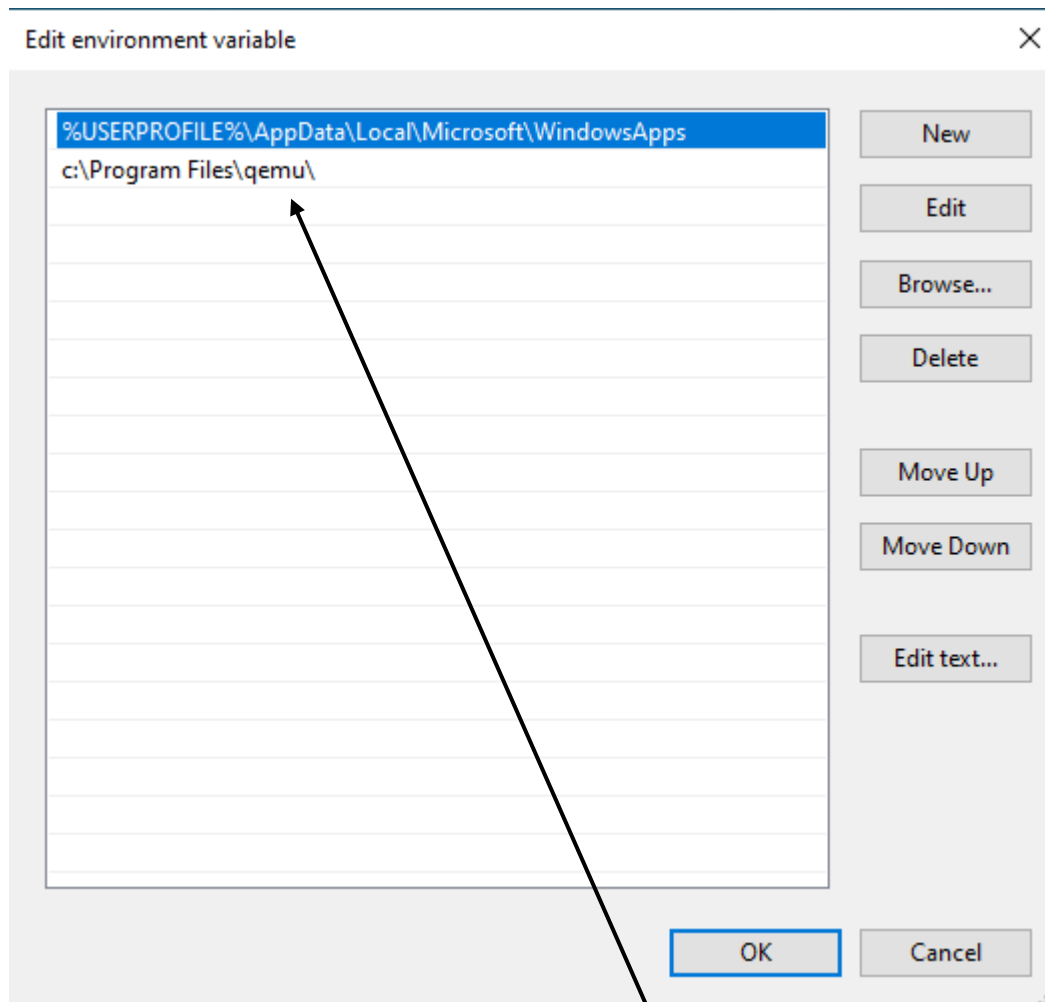
This must be set up in the system properties



Select Environment Variables



Select the **Path** Environment Variable



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

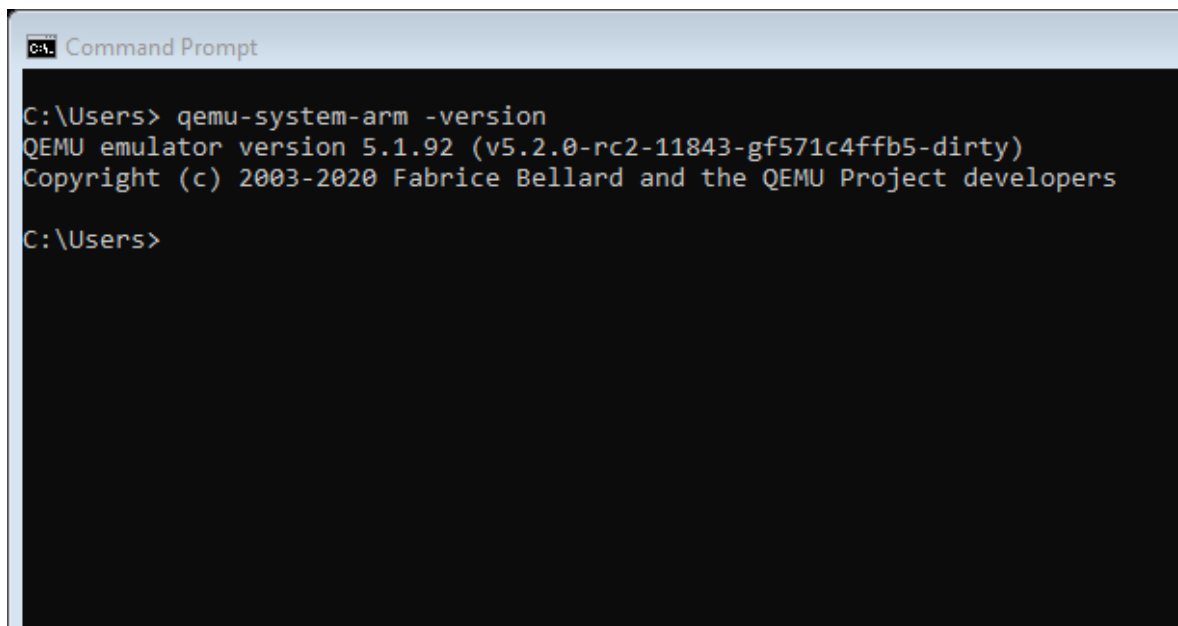
Select OK to each of the following

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.