Updated QEMU Emulator installation instructions for Spring 2023 (Windows)

1. Check if you are running 32-bit or 64-bit windows
    a. You can run the following command in a command prompt to check:

        wmic OS get OSArchitecture

2. If your account is an administrator:
    a. Download the QEMU installer here:

        32-bit: https://qemu.weilnetz.de/w32/2021/qemu-w32-setup-20211215.exe

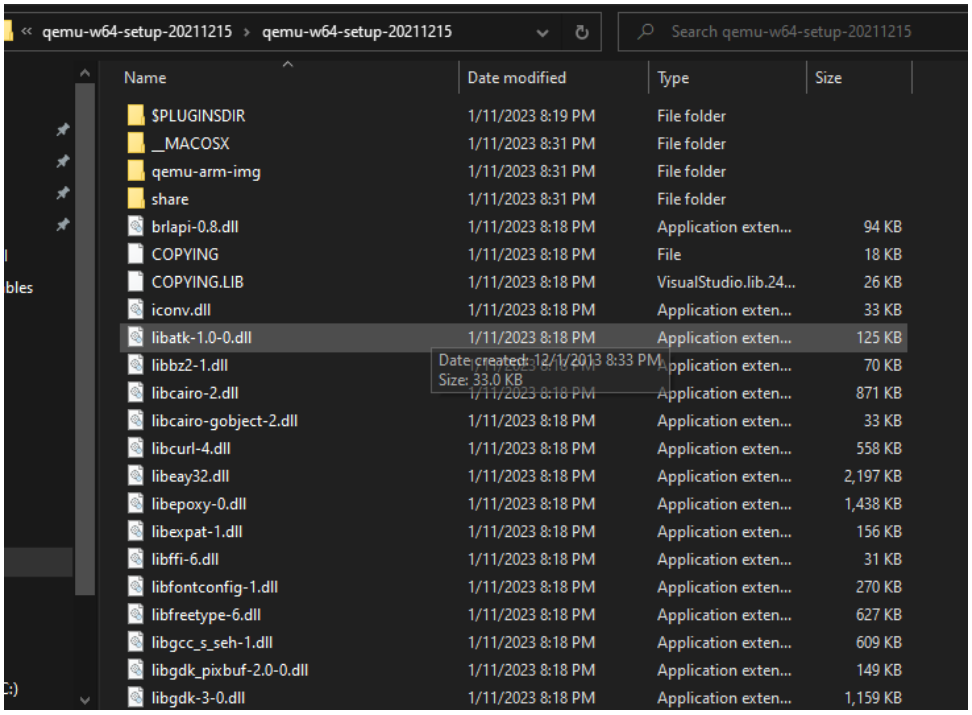
        64-bit: https://qemu.weilnetz.de/w64/2021/qemu-w64-setup-20211215.exe

    b. Run the installer with administrator privileges. Restart the computer if promted
    c. Download the zip folder located here: https://drive.google.com/file/d/1C12uSIH37IZQgV9X0am8pBpwsP1laumL/view
    d. Extract the installed zip folder
    e. Navigate within the extracted folder to qemu-arm-img, then Windows Scripts
    f. Continue at step 4
3. If your account is not an administrator:
    a. Download the QEMU *binary* located here:

        32-bit: https://www.cise.ufl.edu/~utt.zachery/qemu-w32-setup-20211215.zip

        64-bit: https://www.cise.ufl.edu/~utt.zachery/qemu-w64-setup-20211215.zip

    b. Extract the installed zip folder and note the path of the folder (as it will be used in step d/e)
    c. Download the zip folder located here: https://drive.google.com/file/d/1C12uSIH37IZQgV9X0am8pBpwsP1laumL/view
    d. Extract this zip folder into the folder from step 3b, so that the __MACOSX and qemu-arm-img folders are in the same directory as the $PLUGINSDIR and SHARE directories. Your folder should look something like this:



e. Navigate into the qemu-arm-img folder, then into Windows Scripts
f. Right click start.bat, and then click edit. If Windows Smart Screen presents a warning, select More info, and then Run Anyway
g. Change the path in the call command so that the path to the qemu-system-aarch64.exe is the same. In case of the screenshot above, the new path would be "..\..\qemu-system-aarch64.exe"

start.bat before the changes

```
set NCPU=2
set MEM=1G

call "C:\Program Files\qemu\qemu-system-aarch64.exe" -smp %NCPU% -m %MEM% -M virt -cpu cortex-a5
^
                    -initrd ../initrd.img-4.9.0-4-arm64 ^
                    -kernel ../vmlinuz-4.9.0-4-arm64 -append "root=/dev/sda2 console=ttyAMA0" ^
                    -global virtio-blk-device.scsi=off ^
                    -device virtio-scsi-device,id=scsi ^
                    -drive file=../disk.qcow2,id=rootimg,cache=unsafe,if=none ^
                    -device scsi-hd,drive=rootimg ^
                    -device e1000,netdev=net0 ^
                    -netdev user,id=net0,hostfwd=tcp::3101-:22 ^
                    -nic user,model=virtio-net-pci ^
                    -nographic
```

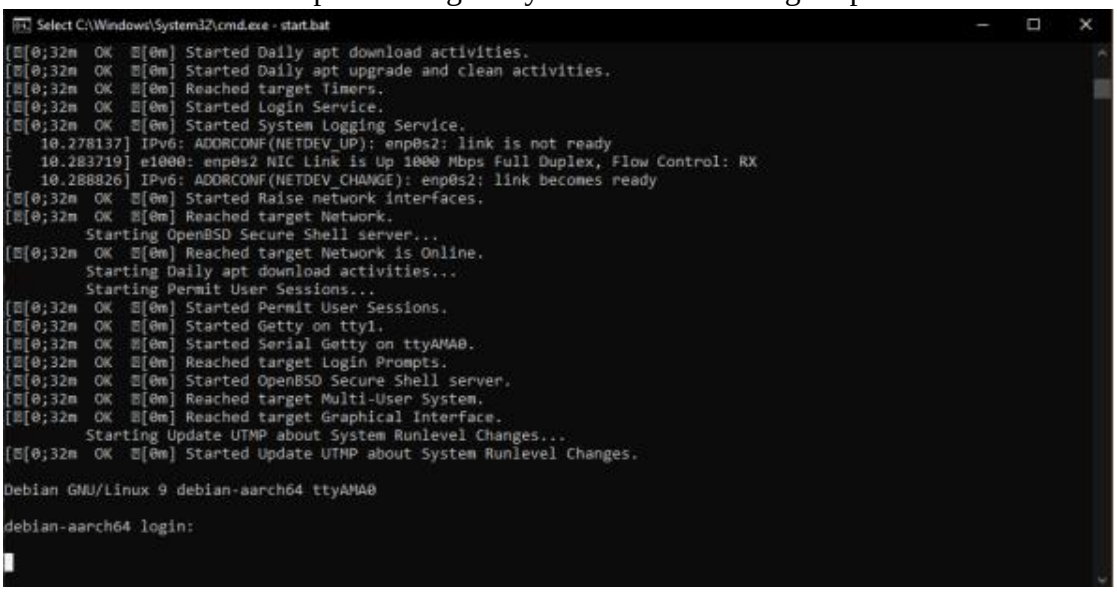
start.bat after the changes

```
set NCPU=2
set MEM=1G

call "..\..\qemu-system-aarch64.exe" -smp %NCPU% -m %MEM% -M virt -cpu cortex-a57  ^
                    -initrd ../initrd.img-4.9.0-4-arm64 ^
                    -kernel ../vmlinuz-4.9.0-4-arm64 -append "root=/dev/sda2 console=ttyAMA0"
                    -global virtio-blk-device.scsi=off ^
                    -device virtio-scsi-device,id=scsi ^
                    -drive file=../disk.qcow2,id=rootimg,cache=unsafe,if=none ^
                    -device scsi-hd,drive=rootimg ^
                    -device e1000,netdev=net0 ^
                    -netdev user,id=net0,hostfwd=tcp::3101-:22 ^
                    -nic user,model=virtio-net-pci ^
                    -nographic
```

h. Continue to step 4

4. Regardless of whether your account is an administrator:
    a. To launch the emulator, run the start.bat file (by either clicking on it, or running the command “start start.bat” in a command prompt at the script’s location)
    b. Wait until the screen stops scrolling and you see the following output



    c. Execute the “connect.bat” script the same way
    d. Enter the password “root”

5. View the tutorial “*How to use the Emulator”* for mounting, assembling and executing an assembly file.