

# ← Setting up the Environment

## Project 5

For this project, you will be *writing and compiling* your driver and game on thoth, but you will be *running* it in a small virtual machine. This is because you're not allowed to install drivers on thoth. (My god, can you imagine?)

## The VM

### [Here it is.](#)

This includes the **Windows version of the QEMU VM** and the **disk image** which you'll be testing your project on. Extract this file on your own computer.

### Windows users

To run the VM, double-click the `qemu-win.bat` file.

### Mac users

If you don't have Homebrew or MacPorts, first [install Homebrew](#). It's so useful.

If you use (or just installed...) Homebrew, run: `brew install qemu`

If you use MacPorts, run: `sudo port install qemu`

After installation, use the terminal to navigate to the directory that you extracted from the ZIP file.

Then run: `qemu-system-i386 tty.qcow2`

### Linux users

Install `qemu` with whatever package manager your distro uses, and run it using the `tty.qcow2` disk image. Kinda like Mac.

## Logging into the VM

No matter what platform you're using, once you get the VM running, you have to log in.

Username: **root**

Password: **root**

```
Checking root filesystem: done
Remounting root rw: done
Mounting devpts: done
Starting fsck for local filesystems.
Checking local filesystems: done
Enabling swap space: done
Setting hostname: done
Cleaning up system: done
Setting up interface lo: done
Running local start scripts.
Starting syslogd: done
Starting klogd: done
Starting DHCP for interface eth0: done
Starting SSH server: done
Starting inetd: done

ttylinux 6.0
Linux 2.6.23.1 on i686 arch

tiny.local login: root
Password:

Chop wood, carry water.

root@tiny ~ # _
```

I have no idea what that message means.

# AAAAAAAAA WHERE DID MY MOUSE GO

QEMU just trapped it. Look at the title bar on the QEMU window. It'll tell you what to press to release it.

## Shutting it down

Use the `poweroff` command to shut it down safely:

```

Setting up interface lo: done
Running local start scripts.
Starting syslogd: done
Starting klogd: done
Starting DHCP for interface eth0: done
Starting SSH server: done
Starting inetd: done

ttylinux 6.0
Linux 2.6.23.1 on i686 arch

tiny.local login: root
Password:

Chop wood, carry water.

root@tiny ~ # poweroff

System is going down for reboot or halt now.

Starting local stop scripts.
root@tiny ~ # Stopping inetd: done
Stopping SSH server: done
Shutting down interface eth0: done

```

If you don't do this and just close QEMU, the next time you start up, it'll say this:

```

VFS: Mounted root (ext2 filesystem) readonly.
Freeing unused kernel memory: 288k freed

--#      ttylinux 6.0      #==

Mounting proc: done
Mounting sysfs: done
Setting console loglevel: done
Setting system clock: done
Starting fsck for root filesystem.
e2fsck 1.39 (29-May-2006)
/dev/hda was not cleanly unmounted, check forced.
Pass 1: Checking inodes, blocks, and sizes
Pass 2: Checking directory structure
Pass 3: Checking directory connectivity
Pass 4: Checking reference counts
Pass 5: Checking group summary information

/dev/hda: ***** FILE SYSTEM WAS MODIFIED *****
/dev/hda: ***** REBOOT LINUX *****
/dev/hda: 435/262144 files (1.8% non-contiguous), 40977/2097152 blocks
WARNING: Errors found while checking root filesystem.
You can login as root now, the system will reboot after logout.
Give root password for system maintenance
(or type Control-D for normal startup):_

```

Type **root** for the password. Then **poweroff** and restart it.

I dunno if "unsafely" shutting it down will mess it up. Maybe?

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