



Exercise 28.1: Making Sure KVM is Properly Set up



Very Important

- The following labs are best run on a physical machine running **Linux** natively.
- It may be possible to run them within a Virtual Machine running under a hypervisor, such as **VMWare** or **Virtual Box**, or even **KVM**. However, this requires **nested virtualization** to be running properly.
- Whether or not this works depends on the particular hypervisor used, the underlying host operating system (i.e., **Windows**, **Mac OS** or **Linux**) as well as the particular variant, such as which **Linux** or **Windows** version as well as the particular kernel.
- Furthermore it also depends on your particular hardware. For example, we have found nested virtualization working with **VMWare** on various **x86.64** machines but with **Oracle Virtual Box** only on some.
- If this works, performance will be poor as compared to running on native hardware, but that is not important for the simple demonstrative exercises we will do.
- Your mileage will vary! If it does not work we cannot be responsible for helping you trying to get it rolling.

1. First check that you have hardware virtualization available and enabled:

```
$ grep -e vmx -e svm /proc/cpuinfo
```

where `vmx` is for **INTEL** CPUs and `svm` for **AMD**. If you do not see either one of these:

- If you are on a physical machine, maybe you can fix this. Reboot your machine and see if you can turn on virtualization in the BIOS settings. Note that some IT personnel may make this impossible for “security” reasons, so try to get that policy changed.
 - You are on a virtual machine running under a hypervisor, and you do not have nested virtualization operable.
2. If for either of these reasons, you do not have hardware virtualization, you **may** be able to run **virt-manager**, but with weak performance.
 3. You need all relevant packages installed on your system. One can work hard to construct an exact list. However, exact names and requirements change with time, and most enterprise distributions ship with all (or almost all) of the software you need.
 4. The easiest and best procedure is to run the script we have already supplied to you:

```
$ ./ready-for.sh --install LFS201
```

where we have done the hard work.

Alternatively, on **RPM** systems you can do some overkill with:

```
$ sudo yum|dnf|zypper install kvm* qemu* libvirt*
```

It is not a large amount of storage space to do it this way.

On **Debian** package based systems including **Ubuntu** you will have to do the equivalent with your favorite package installing procedure.



Very Important

- Do not run **libvirt** at the same time as another hypervisor as dire consequences are likely to arise. This can easily include crashing your system and doing damage to any virtual machines being used.



- We recommend both **stopping** and **disabling** your other hypervisor as in:

```
$ sudo systemctl stop vmware  
$ sudo systemctl disable vmware
```

or

```
$ sudo systemctl stop vboxdrv  
$ sudo systemctl disable vboxdrv
```