

Implementing VMMs - requirements

Fidelity

OSes and applications work the same without modification (although we may modify the OS a bit)

Isolation

VMM protects resources and VMs from each other

Performance

VMM is another layer of software

...and therefore overhead (that needs to be minimized)

What needs to be virtualized?

Exactly what you would expect

- CPU
- Events (hardware and software interrupts)
- Memory
- I/O devices

Isn't this just duplicating OS functionality in a VMM?

- (yes) approaches will be similar to what we do with OSes
simpler in functionality, though (VMM much smaller than OS)
- (and no) but implements a different abstraction
hardware interface vs. OS interface