Lab Four

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1 Problem One

Q: What is the relationship between a guest operating system and a host operating system in a system like VMware? What factors need to be considered in choosing the host operating system?

There are a number of ways to run an operating system. They can be run on the hardware itself or in a virtual environment. Each of these choices have their boons and banes.

1.1 Guest OS vs Host OS

Host operating systems work directly with the hardware, with their only being one host OS running (so no multi-booting). Host OSes can also be referred to as "hypervisors". Guest operating systems are run over virtual machine software, such as VMware, meaning that there could be multiple guest OSes running concurrently. Guest OSes can be treated as though they were any other software, being able to interact with your host OS. The relationship is indirect, with the guest OS(es) being allowed resources from the host OS, but the guest OS(es) don't offer any of the hardware components to the host OS.

1.2 Choosing Host OSes

In order to choose a host operating system, a number of factors must be kept in mind. First and foremost, the host needs a virtual layer abstract the hardware. This is because each virtual machine needs their own dedicated components such as but not limited to: CPU, RAM, storage, and so on. Without the abstraction layer, a host OS may not have enough resources to allocate to the virtual machines to even get them to run.