Resources for building your own test environment

Base hardware:

Processor:

Intel Core 2 Duo, i5 or i7 or higher with Intel VT-x

AMD Athlon 64 FX or higher with AMD-V

In order to determine whether or not your CPU can run virtualization, please visit either AMD or Intel product information for your processor:

http://products.amd.com/en-us

https://www-ssl.intel.com/content/www/us/en/products/processors.html

Memory:

8GB or higher

Storage:

Windows takes up around 30GB, Linux takes up roughly 4-8 depe

Software:

Hypervisors:

Host OS	**Best, but not free**	**Second Best, but free**
Microsoft Windows	VMware Workstation	Oracle VirtualBox
Apple OSX	VMware Fusion	Oracle VirtualBox
Linux	VMware Workstation	Oracle VirtualBox

Operating Systems that we will be using in the courses:

Microsoft:

Server 2016 Standard

Windows 10 Enterprise

Linux:

Ubuntu 16.04 – Information Page List of Download Mirrors Install Guide

CentOS 7 - Information Page List of Download Mirrors Install Guide

Kali Linux – Information Page List of Download Mirrors Install Guide

Fedora 25 – Information Page List of Download Mirrors Install Guide

Building your environment process:

Additional Resources:

Enabling Intel VT and AMD-V virtualization hardware extensions in BIOS –

https://docs.fedoraproject.org/en-US/Fedora/13/html/Virtualization_Guide/sect-Virtualization-Troubleshooting-Enabling_Intel_VT_and_AMD_V_virtualization_hardware_extensions_in_BIOS.html

VMware Compatibility Matrix:

https://www.vmware.com/resources/compatibility/search.php?deviceCategory=software

Steps to build your environment:

1. Check to make sure your hardware is up to minimum specifications
2. Make sure virtualization is turned on in your BIOS
3. Download all software
4. Install your hypervisor
5. Install your operating system according to the corresponding installation guides. Remember that each virtual machine has its own hard drive.

Tips for successful management of virtual machines:

1. Use NAT for your networking
2. Use one virtual hard disk for each of your virtual machines
3. SNAPSHOT after each successful major installation – this will save you if you mess something up! For example, after you have installed the operating system, save a snapshot. After you update for the first time, save a snapshot. After you have determined that you are safe to delete a snapshot, delete the previous snapshot. This process will help in the performance of your virtual machine. Never delete the newest snapshot however, this is your restore point.
4. The more RAM you have the better your environment will be. I use at least 16 GB in my laptop and 32 in my desktop for test environments, but that is with running multiple machines at once. You can get away with 8GB in your host, you just won't be able to run more than 1 or 2 Linux virtual machines and 1 additional Windows virtual machine.