NAME: [redacted]
PROJECT #01

Changing to /home/ckelly/it341/[redacted]/reports

Current working directory is: /home/ckelly/[redacted]/volshlag/reports

-rw-r--r-- 1 [redacted] it341-1G 9200 Feb 11 20:51 report_01.txt

[redacted]

report_01
Project 1 Installing Ubuntu Server on a Virtual Machine.

24/01/18 -- Project 1 Begin:

In this Project we will be installing Ubuntu 16.04 LTS Server on our VMware VM.
We were assigned itvm26-1a as our Hostname, and it26 as our physical machine.

The first part of the project is to create our VM's on VMware, this was accomplished by using the "Typical" installation method, selecting the "I will install the operating system later", setting it up for Linux Ubuntu 64 bit, and finally setting our hostname to itvm26-1a, we then needed to point our directory that houses our VM to:
{C:/IT341/section1a} -- on Machine it26

The next step is to select the formatting for the hard drive (VHD), in this case we select multiple files, with a max size of 20GB's. We did not change any hardware settings but that can be done later. Our Next step is quite simply to load our ISO image as the virtual CD/DVD drive, this particular image was pre-downloaded and placed as:
{C:\OS_ISOs\Linux\Ubuntu\Server\ubuntu-16.04.1-server-amd64.iso}

Upon powering on our VM, we are welcomed by the Ubuntu iso's splash screen where we select the "Install Ubuntu Server" in the menu, after selecting "English" and "United States" as the default language and region, we selected "English (US)" as the keyboard layout manually (selecting no for auto-detect, and "English (US)" as country).

Be as correct in spelling/grammar as possible

Next we are prompted for our Hostname again (this time for the OS side), where we once again input "itvm26-1a". Next is the Username for our first user which will be the admin account, as instructed the username will be "sysadmin" with a password of our teamname and hostname "itvm26-1a" after confirming the password we need to choose the timezone and partition distribution.

USERNAME: sysadmin
PASSWORD: itvm26-1a

Several options are given to us for the partition distribution:
Guided - Use entire disk
Guided - use entire disk and set up LVM
Guided - use entire disk and set up encrypted LVM
Manual

We were instructed to NOT choose any LVM partition types, and choose the Guided - Use entire disk, this is most likely for a couple reasons, LVM requires a partition table to already be in place, as well as it creates a LVM group that is dynamically controlled between swap and root, and a boot in ext2. This may generate problems as our "hard drive" is virtual. We are given the order to install with guided - Use entire disk which
"will set up two partitions, one as the swap partition and an ext4 partition for the entire file system (/)" - Petersen Pg:55
Going with the default disk as well as accepting the changes to be written, we do not add a proxy, and do not want automatic updates.
While we do not any additional software to be added, it is required to still add the "standard system utilities". Finally we need to install a boot loader

which points the BIOS in the right direction to launch the OS, it also gives a splash screen to choose what OS to launch in case of a multiboot system.

As soon as the installation finishes, we shut down the virtual machine via VMware and removed the ISO from the virtual CD/DVD drive. This prevents it from automatically booting to it when we restart.

Due to time constraints, this is where we logged off and let the other team do their work. We deemed our install stable and safe to turn off.

-----END OF DAY-----

29/01/18 - Project 1 Continued:

When we last lefy our project we had just finished installation, our job for today will be finishing up project 1 which includes checking network and Internet connection and installing vital software.

Starting the VM we log into itvm26-1a via sysadmin and the password provided earlier. As the first command we give our VM is simply to ping a site with 5 packets, in this case www.yahoo.com:

{ping -c 5 www.yahoo.com
}

This command completed successfully.

Now that we've confirmed that we have a connection to the Internet, we now need to update our system and upgrade it, as there have been many software, security, and OS improvements since the time the ISO was released. We must use sudo (super user do) in order to run our update and upgrade commands successfully, as one needs to use the root (super user) account/user in order to have the permissions to edit, change, delete, or create anything to do with the OS system files.

{sudo apt-get update
}

After putting in sysadmin's password this command completed successfully.
Then:

{sudo apt-get upgrade
}

This command completed successfully.

Now that we are up to date we need to install openssh server, in the long run this will allow us to access the machine remotely.

{sudo apt-get install openssh-server
}

After answering "Y", this command completed successfully.

Having done this we logged out of the machine
{logout}
and powered off the VM via VMware. Once powered off, we took a snapshot naming it "Project 1 - Complete", the point of the snapshot is to create a save state or restore point to recover to if the machine fails for any reason, and to revert any changes made.

Snapshot location?

-----END OF PROJECT-----

REPORT QUESTIONS:

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1. What does LTS stand for, and what does that mean? Please explain.

ANSWER: LTS means Long Term Support, this is a stable distribution released every 6ish months, and is guaranteed support for 5 years. By using LTS versions you are ensuring stability, though not as bleeding edge as a rolling distribution you are getting the latest stable security and software updates, as well as support for hardware and software. For a server, which cannot afford any downtime, an LTS is HIGHLY recommended.

2. What is an LVM?(It stands for "logical volume manager".)Please explain what a logical volume is and what a logical volume manager does.

ANSWER: In Logical Volume Management, instead of having static, and hard defined sizes as in a standard partition table, a Logical volume houses a single partition that is dynamically sized, and will take up as much space as it requires, in the case of installing our server LVM would have made 2 LVM partitions, one being swap (similar to a page file on windows, overflow ram and temp-storage otherwise), and one being root. If we had a 20 GB HD our volumes would grow or shrink depending upon how much was being used. A Logical Volume Manager is the "Device" or software client that manages these logical volumes, and can change their size without needing to unmount and play with a partition table. This may not work too well under our Virtual software though as the hard drive is virtual in itself.

3. Please explain what the sudo command is, how it is used, and why we need it.

ANSWER: The sudo command or super user do, is a command prefix used when a user wishes to make changes to files or settings that require the highest privileges. Super user, also known as root, is a user with these privileges. And when a standard user uses these privleges they are mimicing this super user, therefore gaining the permission to access the files or settings they wish to change, the root, or super user's password is required to be able to call upon a command as sudo. BE WARNED!!! USING SUDO CAN BE DANGEROUS TO THE SYSTEM IF USED INCORRECTLY!!!

4 Please explain what apt-get is and why we use it.

ANSWER: apt-get is Ubuntu's Package Manager, this is a program group designated to installing, updating, installing, removing, upgrading and managing software packages, and OS security and feature updates and upgrades, this is similar to window's update software but it manages all software installed via itself (Manual installed software such as git clones, and make are excluded from this.) All Linux distro's have this, For Arch Linux it is pacman, some distro's use yaourt, and many other's. One key aspect with all these, is that they get their data from repositories, Some being officially supported by the distro, and others containing open-source software.

5. Please explain what "snapshots" are and why they are useful to us?

ANSWER: Snapshots are managed by VMware, they are basically save-states (if you are familiar with games), restore points (like in windows) , or most basically, they are backups, where one can reload to one if the machine ends up braking, or working in an undesired way. For us, as we do not want to need to do a reinstall, or may indeed make some mistakes along the way, these are vital, they also allow us to distinctly mark our progress, marking the end, and finishing of parts of projects to continue safely the next time, especially since we are working on public machines.

See next page ↓

Formatting **1.5** = Good, **1** = Acceptable, **0.5** = Needs Improvement, **0** = Unacceptable	1.5	/ 1.5
Writing Quality **1.5** = Good, **1** = Acceptable, **0.5** = Needs Improvement, **0** = Unacceptable	1.5	/ 1.5
Log Content **5** = Excellent, **4** = Good, **3** = Fair, **2** = Needs Improvement, **1** = Poor, **0** = Nothing/Minimal	4.9	/ 5.0
Questions Content **2** = Great, **1.5** = Good, **1**= Fair, **0.5** = Poor, **0** = Nothing/Minimal	2	/ 2.0
TOTAL	9.9	/ 10.0