Andrew Baca
CS480
Assignment #1
January 19th, 2019

PART 1

Purpose:

In this assignment, our task was to install 64-bit OpenSUSE Leap 15.0 Linux onto our vmware virtual machines and establish a connection from the physical computer we are working on to the virtual machine, as well as enable the machine to be accessed from anywhere via the ssh command.

General Steps Taken:

1. I started by using ssh into csvm with X11 forwarding enabled and creating a snapshot of the initial virtual machine titled **before lab 1**. I will also configure the settings on the virtual machine to ask the user if they would like to take a snapshot whenever the machine is powered off.

2. Next, I powered on the virtual machine to firmware and we changed the following settings:
    - set the Supervisor password to: **baca1234**
    - changed the booting sequence to **CD → HDD → Network**
    - checked the date and time, saved the changes, and exited (F10), creating another snapshot titled with the date and time it was taken.

3. I powered the virtual machine on into firmware once again to make sure my settings from (2) were correct, and proceeded to the Linux Installation Page. Once I had reached the first page of the Linux installation, I clicked F4, and made sure DVD was chosen as the source. From here, I chose the installation option on the first page and proceeded to the next steps.

4. I left the keyboard preference as English, and went on to configure the network preferences, entering the following information:
    - Hostname: **andrew**
    - Domain Name: **cs480.cs.nmsu.edu**
    - Network Interfaces: *static IP address:* **192.168.8.12**
    - Netmask: **255.255.255.0**
    - User Interface: **Text Mode**

I also made sure that the DHCP was NOT being used and the Routing/Gateway, Domain Name, and Nameservers were leave empty.

5. For the Partitioning, I went to the start with existing partitions options within the expert partitioner, and entered in the following partitions:
- /dev/sda1 **BIOS Boot Partition** with a size of **8 MiB,** mount left empty
- /dev/sda2 **Linux Swap Swap** with a size of **2 GiB**, mount left empty
- /dev/sda3 **Linux Native BtrFS** with a size of **11.0 GiB**, mounted on **/**
- */dev/*sda4 **Linux Native Ext4** with a size of **rest of the disk (26.99 GiB),**mounted on **/extra**

I encountered some difficulties with the BIOS Boot Partition and the Linux Swap Swap as far as how to leave the mounts. I mounted them onto a default the first time around, and when I reverted to a previous snapshot, I left the mounts for these two empty.

6. Next, I set the clock to Denver, Mountain time and proceeded to configure NTP, setting the server to **192.168.8.1,** and selected "Run NTP as daemon" as well as "Save NTP Configuration"

7. From here, I created a user for myself, adding in this information:

- Full Name: **Andrew Baca**
- Username: **andrew**
- Password: **NhheePcO**

I made sure NOT to use the same password as administrator and I made sure NOT to have automatic login.

8. Next, I created a **root** password to be **andrew1234**

9. I got to the Installation Settings Page and checked a few settings:

- I first went to Software → details. In there I made sure that autocheck was selected under dependencies. I used the patterns tab, and made sure that no packages under Games, Office Software, Multimedia were selected.
- From there, I went back, and went to Default systemd target: and made sure it was on Text Mode
- Finally, I enabled Firewall and SSH service plus opened the SSH port

Once these settings were good, I proceeded to install, skipping the update messages, which took about 10 minutes in total.

10. After the Installation, I let the machine boot from the internal disk, and once it was booked, I did the following:

- went to etc/hosts and added **192.168.8.1 lbc.cs480.cs.nmsu.edu lbc** to the last line.
- Checked the connection to lbc using **ping lbc** and terminating with Ctrl + C. Note that I saw 0% packet loss.
- Logged into lbc using abaca@lbc
- Logged back on to my virtual machine using andrew@andrew
- Logged out of both and shut down the virtual machine

11. Lastly, I created a snapshot called "**Original Installation**" , powered the machine back onto firmware, and changed to boot setting to boot HDD first, and saved the settings, leaving my VM on.

Passwords:

Supervisor (firmware): **baca1234**
Local User – Username- **andrew** Password- **NhheePcO**
Username- **root** Password- **andrew1234**

Notes: I had to Revert to Previous Snapshots in this assignment due to password and username issues. I also did not do the mounts correctly for the partitions the first time around

PART 2

1. You can use the terminal command **man tty** to read about the terminal driver. On Linux machines, you can use the **man 4 tty** command, in which 4 represents the section where the specific manual page is in relating to device drivers and network protocols.
If a manual page is kept in a certain local path /usr/local/share/man, you can find out what path is on by using the **manpath** command, and set it to override the default path using **export MANPATH=/home/ share/localman:/usr/local/share/man**
2. The Linux kernel is a free, open source, collaborative Operating System kernel. Linux is is the most widely used Operating System worldwide across multiple environments, from single computers and smartphones, to networks of computer systems. Linux Distributions are the Linux kernel attached with packages you can run as commands on the system, and there are a couple hundred different distributions, which can cause problems such as different file structures from system to system and available and certain commands available on one system may not be available on another system. Continuous development on the Linux Kernel with updates happening on a regular basis is being worked on everyday by hundreds of companies and well over a thousand developers as well as open source contributors. There are updates on a regular basis for Linux kernels ranging anywhere form 8-12 weeks, and sometimes even bi-annually depending on which distribution you are using and how stable you want the release opposed to how how new you want the release. Whenever Code is added to Linux, it is not directly added to the kernel right away, it has to be "signed off" by rounds of reviewers before it is added on the kernel.
3.

- Linux Mint would be an ideal distribution of Linux to use on a home office computer for several reasons including the OS being free of charge, Desktop friendly, a nice Graphical User Interface opposed to Command Line Interface, a wide user base with help forums, and multiple years of support. I would also consider Debian because it is also free and widely used, meaning plenty of help blogs and over a thousand contributors worldwide.
- openSUSE would be and ideal distribution to use in a computer lab because it comes packaged with YaST, which is a system setup and configuration tool aimed to help administrators with things such as networks, updates, and other configurations.
- Red Hat would be and ideal distribution to use on a corporate server because a corporation potentially has capitol to afford the licensing for Red Hat, which comes along with support and consulting services to keep Servers running stable, easy scalability, and a proven track record with many businesses and corporations.
- Either Red Hat or CentOS would be an ideal distribution to run a server cluster that runs the database for a shipping company. If they can afford and are willing to pay for Red Hat, this is a perfectly feasible option. If the shipping company is still smaller scale, I would suggest they consider CentOS, because it is nearly identical to Red Hat, however it is free. The costumer support may net be as readily available with CentOS opposed to Red Hat, but they are nearly identical besides a few proprietary tools

Assignment Summary

Time Spent on this assignment: Approximately 7 hours

-3 hours spent installing Linux, doing the lab part, reverting to prior snapshot
-2 hours with part 1 of the lab report
-2 hours with part 2 of the lab report

Overall thoughts: This assignment was interesting in the respect that normally OS distributions are already installed on most systems once we buy it, so it is cool to add in the manual settings, partitions,

times, and preferences ourselves before actually using the system. One part that I found confusing or a bit tricky was the use of the partitions. Overall, this assignment was pretty straightforward, new content, and had a bit of a learning curve.