Team Task: Server VM

By: Carlos Gerez Garcia, Christopher Ditto, and Mark Riley Slik

cit470
Task: Diagram

Team 10 Layer 3: outside zones' public IPv4 address assignments

public space (IPv4 subnet ID)	router	firewall (dynamic NAT)	static NAT	(broadcast)
157.201.22.72/29	157.201.22.73	157.201.22.74 470t10ra.cit.byui.edu	157.201.22.75- 157.201.22.78	157.201.22.79

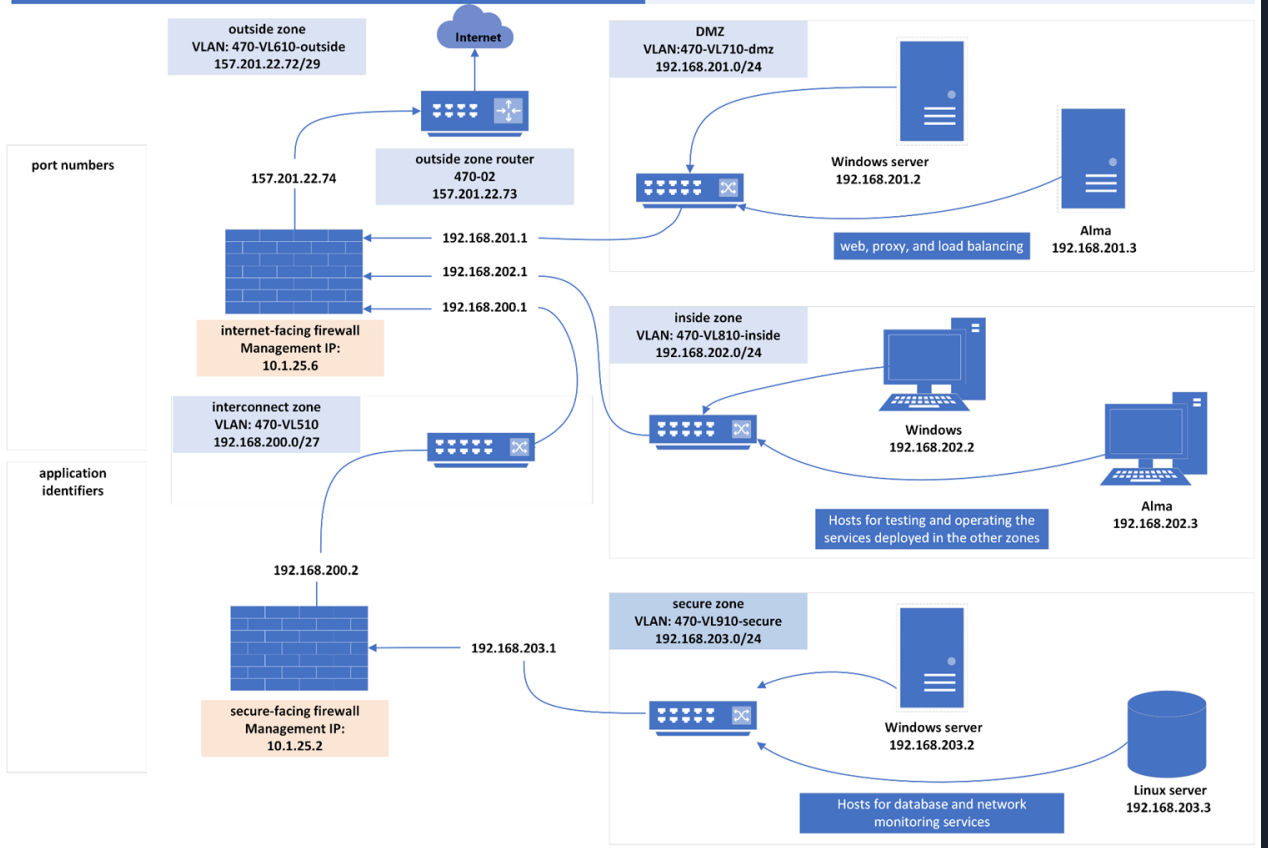


Diagram Outline for Team 10

Zone Information

Secure Zone

Vlan: 470-VL910-secure

192.168.203.0/24

Gateway 192.168.203.1

Windows server 192.168.203.2

Linux server 192.168.203.3

Inside Zone

Vlan: 470-VL910-secure

192.168.202.0/24

Gateway 192.168.202.1

Windows server 192.168.202.2

Alma server 192.168.202.3

DMZ

Vlan: 470-VL910-dmz

192.168.201.0/24

Gateway 192.168.201.1

Windows server 192.168.201.2

Alma server 192.168.201.3

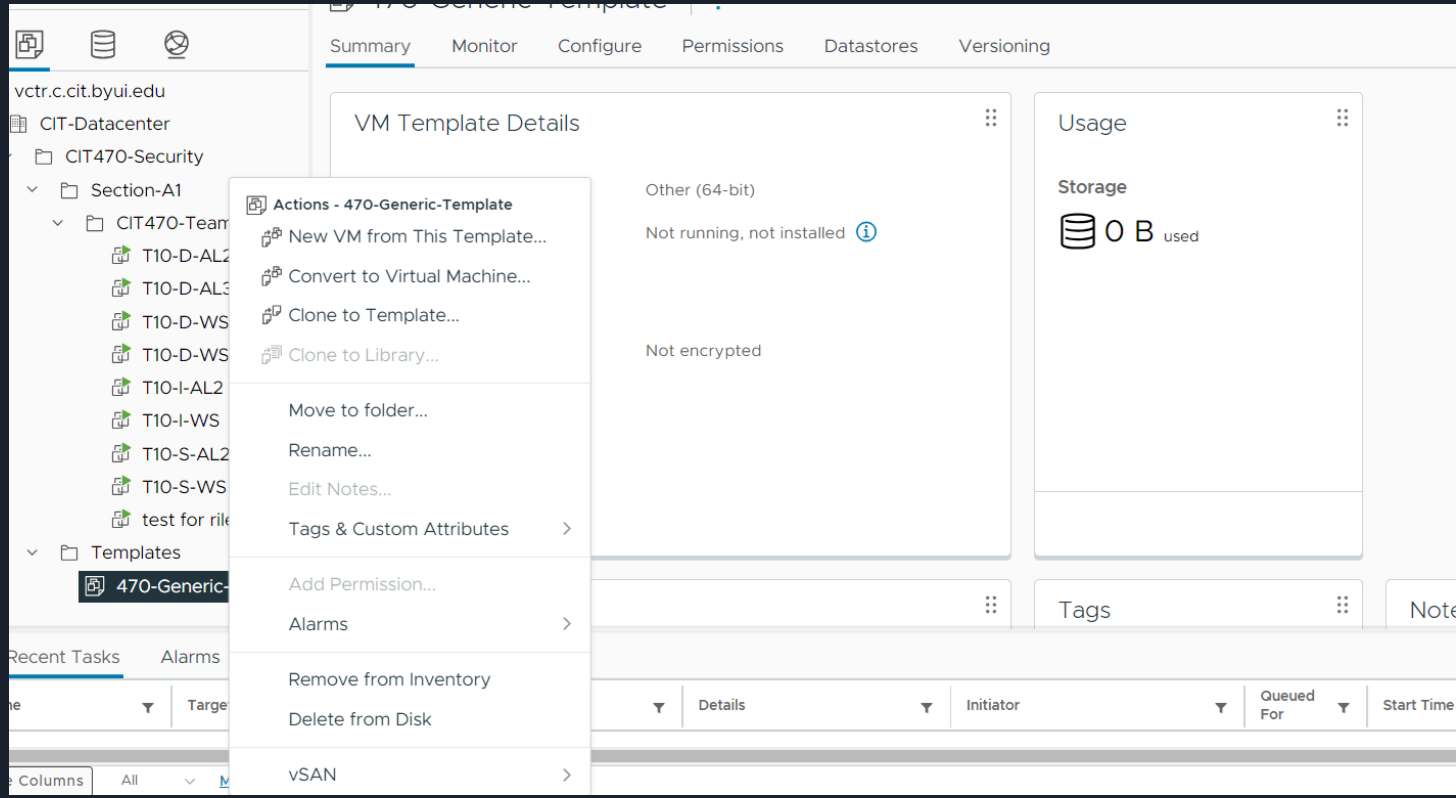
Startup

The following instruction work for any zone, but in our examples we are setting up a Secure zone with the exception of the Alma server which is setup in a different zone. These instructions work for any zone you just need to add in your own info.

How to Setup a Windows Server

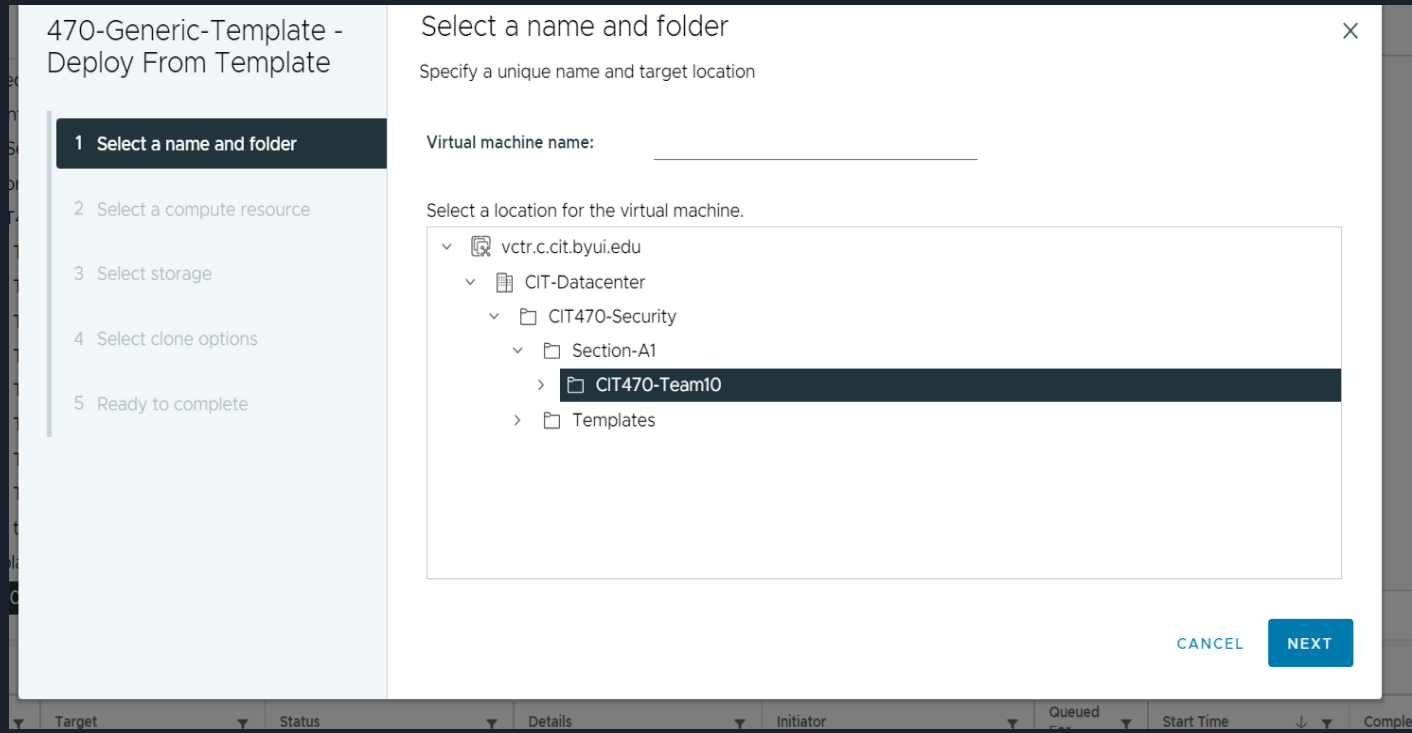
Step 1. Startup select

Inside of Vsphere right click the 470-Generic-Template and choose new Vm from this Template



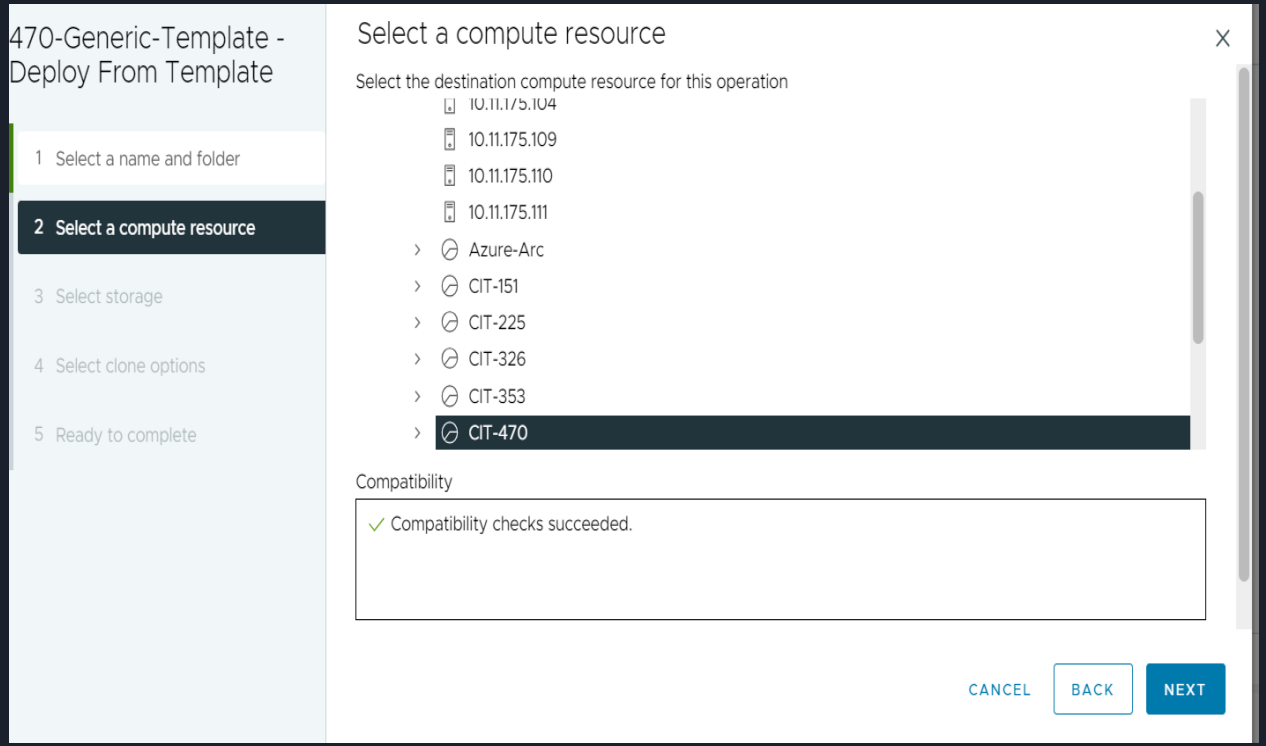
Step 2. Location and name

Choose your teams section inside of class of CIT 470. You must also name the VM as well make sure to agree with team before on a name scheme used for these server like T10-S-WS



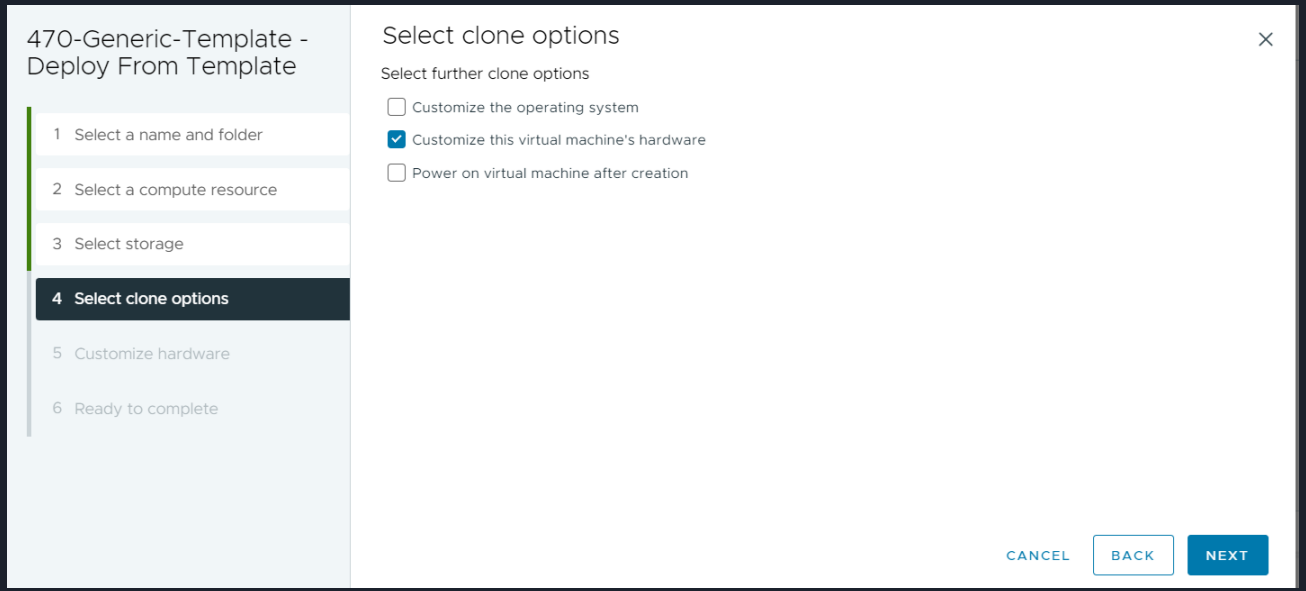
Step 3.Resource Allocation

The next step is select where the VM will pull resources from. Please make sure to select your correct class.



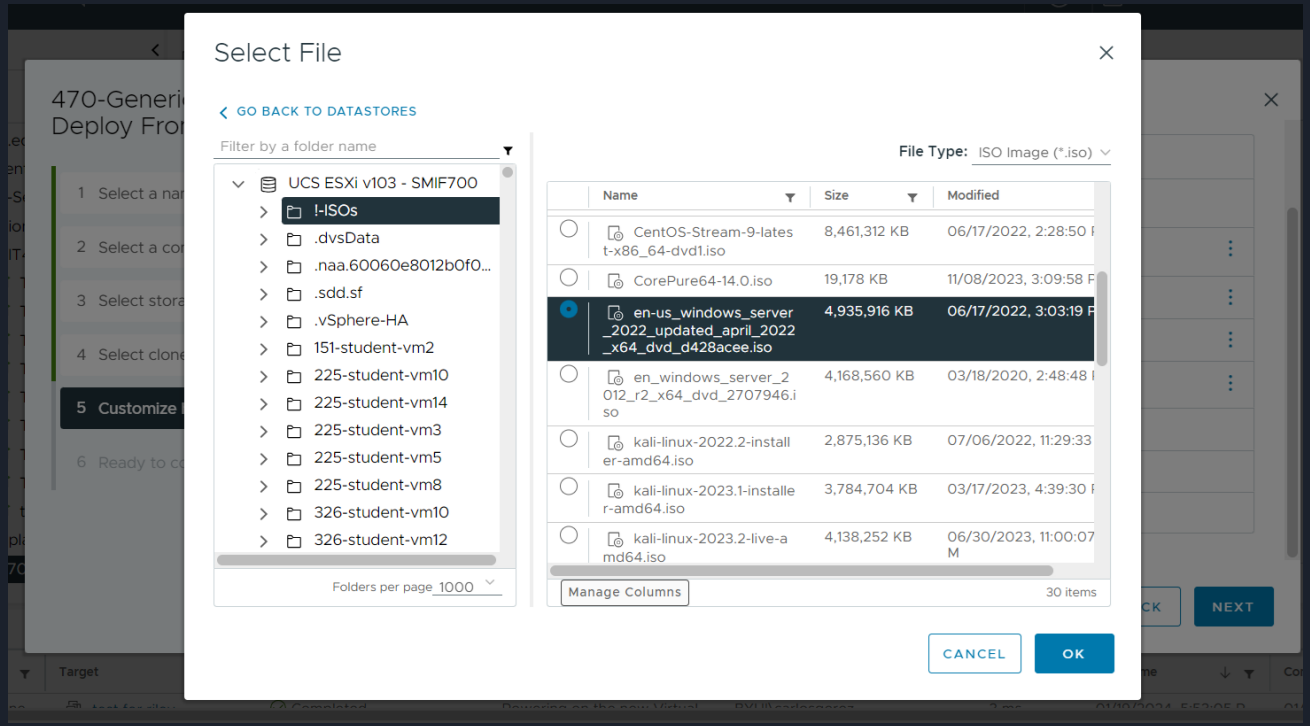
Step 4. Clone options

In this step you need to select Customize this virtual machines hardware so we can ensure it has the proper settings.



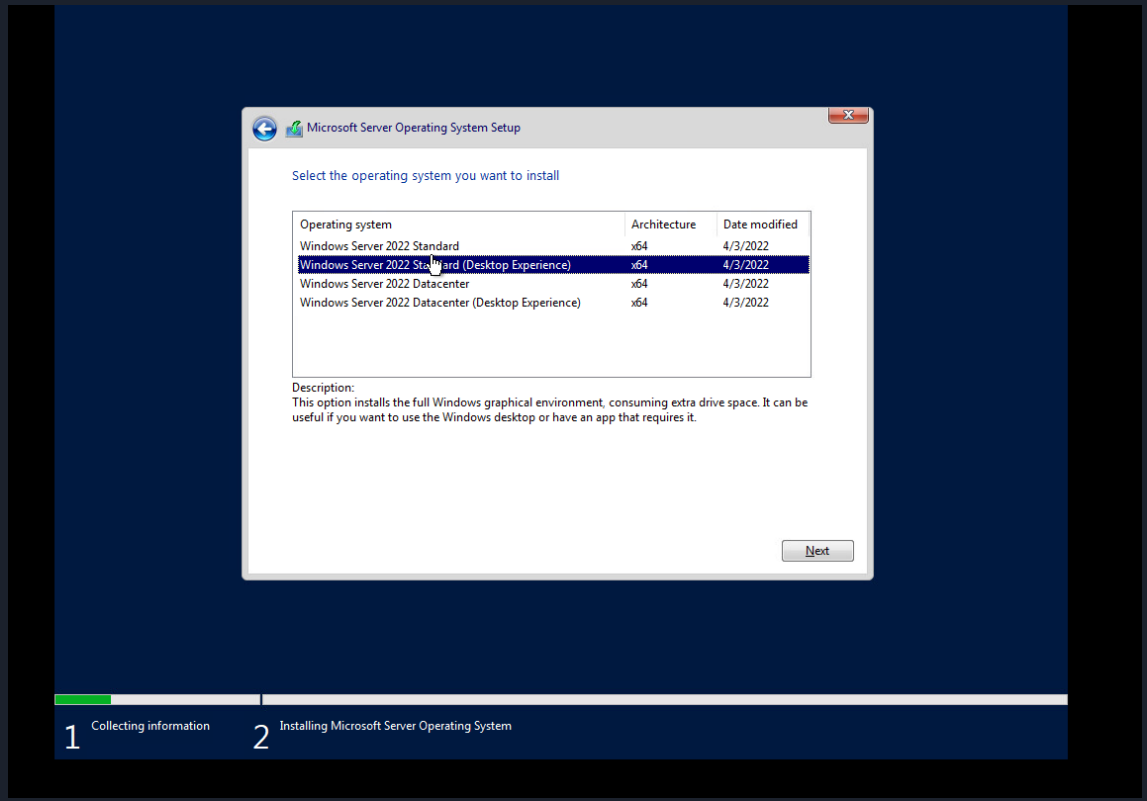
Step 5. ISO selection and other settings

After allowing the VM to be customized you will be shown screen with many different options . There are only three sections you need to worry about the SCSI controller needs to selected as “LSI Logic SAS.” the network adapter needs to match the correct zone and finally ISO for your machine , there many options you can browse inside the CD/DvD media but in this example we select the 2022 windows server.



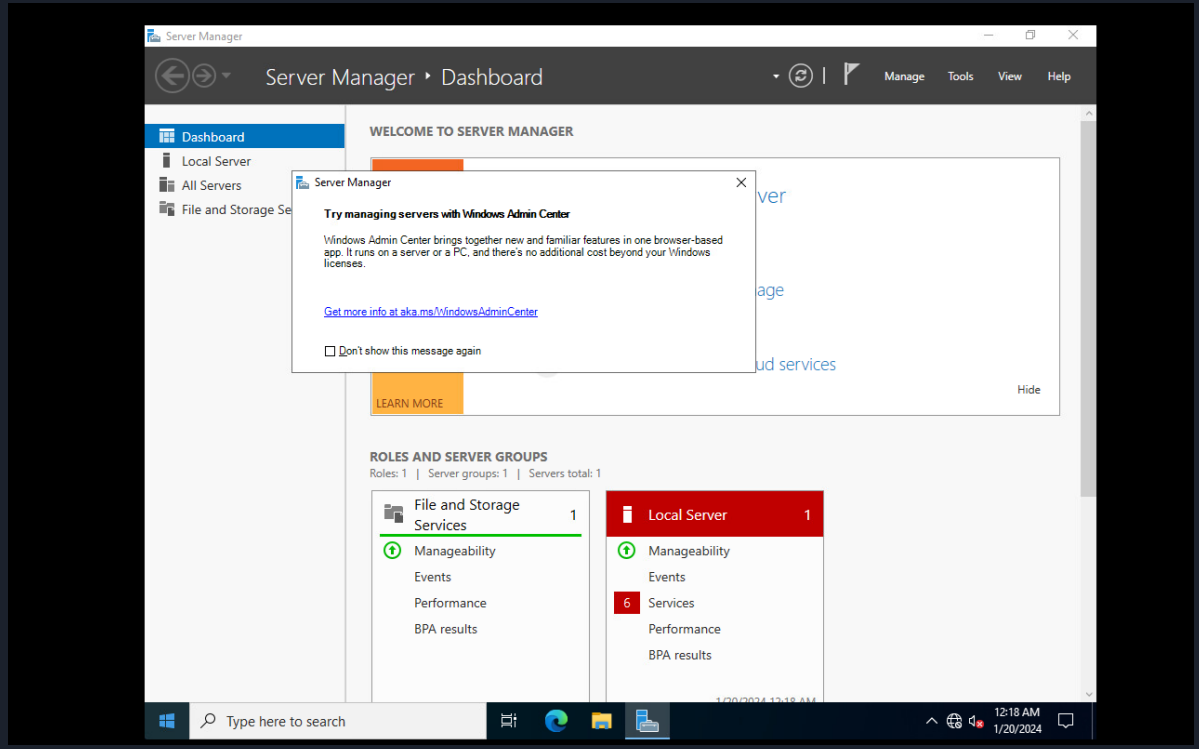
Step 6. Installing the OSI

Power on the newly made VM and start the install process. Follow the prompts until you get to the window asking for a product key, select I don't have a product key. This will take you too system setup window. You most choose which version of windows server 2022 you are going to install, select the standard desktop experience.



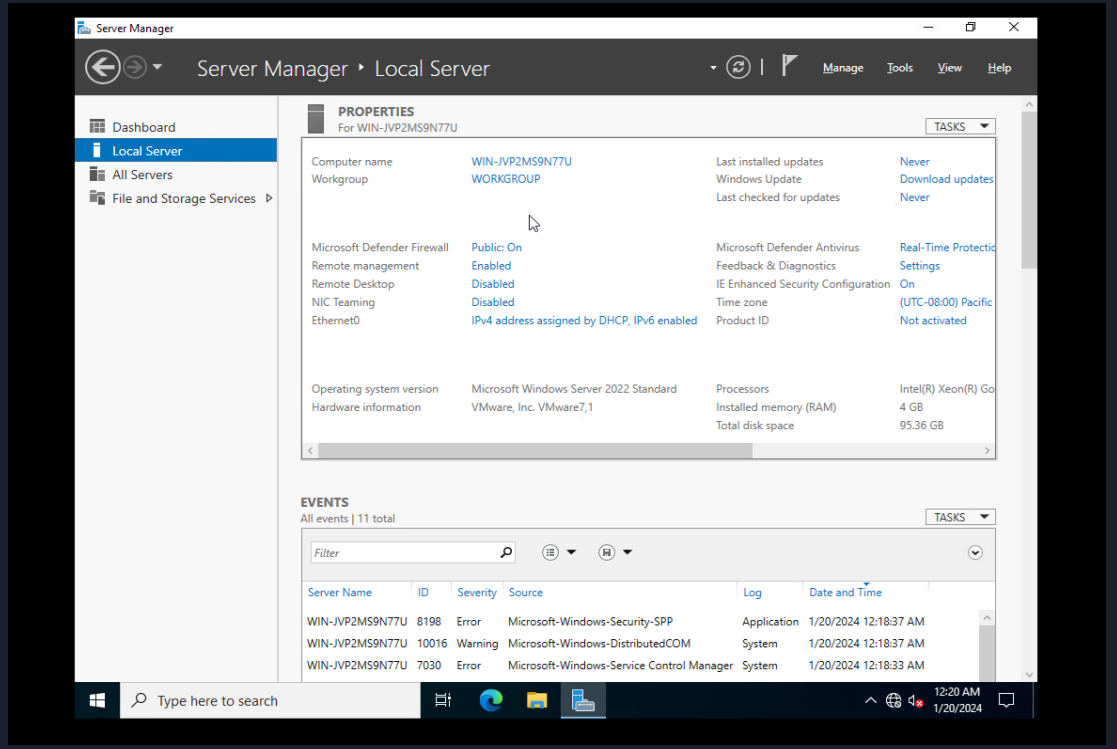
Step 7. Finish install

After choosing the version of windows server 2022 you need to accept the terms and condition and select custom install for how you wish to install this OSI. After all this you will finally be able to make an admin account and get into the OSI once you do you should locate the server manager.

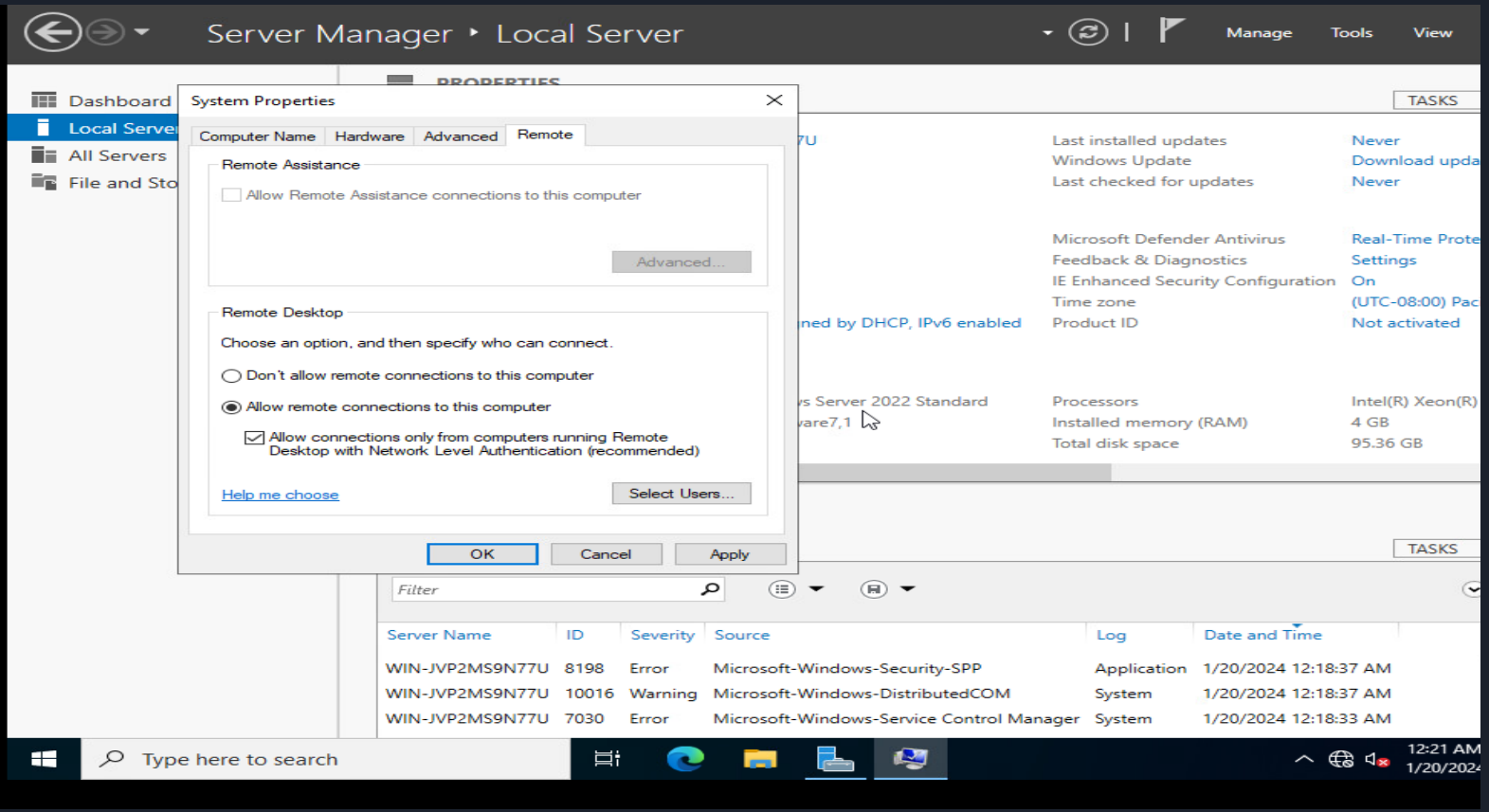


Step 8A. Server Manager

Select Local Server and disable and enable these setting. Allow Remote connections but turn off network level authentication. Next disable IE enhanced security

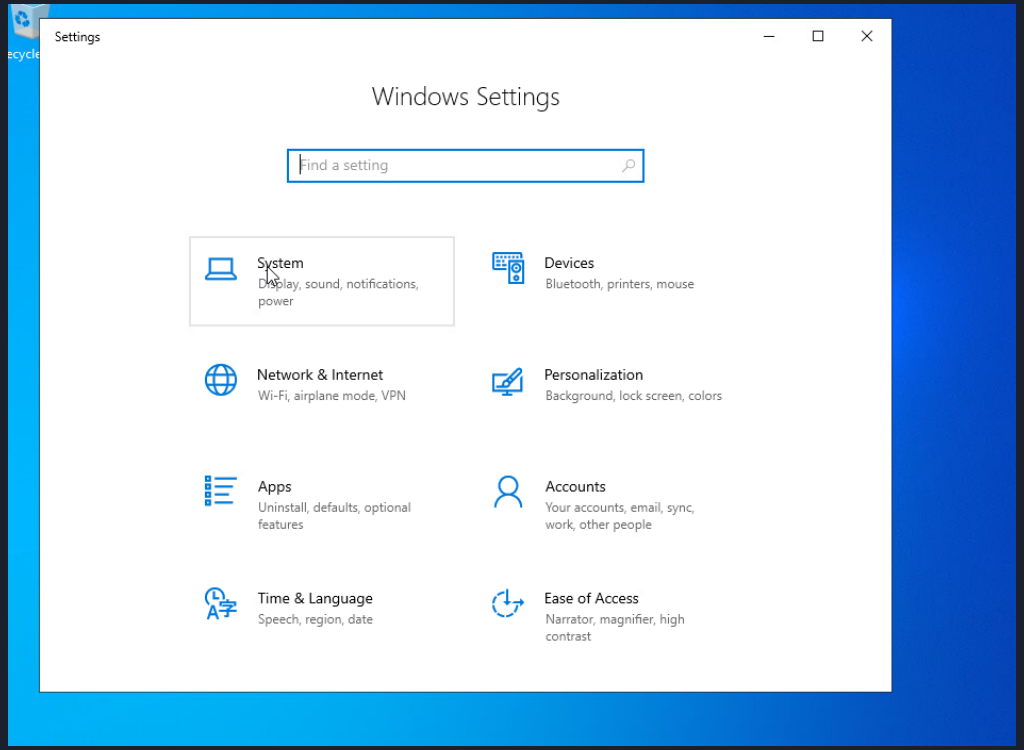


Step 8B.


Server Manager ▸ Local Server
Manage
Tools
View
Dashboard
Local Server
All Servers
File and Sto
PROPERTIES
TASKS
Last installed updates
Never
Windows Update
Download upda
Last checked for updates
Never
Microsoft Defender Antivirus
Real-Time Prote
Feedback & Diagnostics
Settings
IE Enhanced Security Configuration
On
Time zone
(UTC-08:00) Pac
ned by DHCP, IPv6 enabled
Product ID
Not activated
s Server 2022 Standard
Processors
Intel(R) Xeon(R)
vare7,1
Installed memory (RAM)
4 GB
Total disk space
95.36 GB
TASKS
Filter
Server Name
ID
Severity
Source
Log
Date and Time
WIN-JVP2MS9N77U 8198 Error Microsoft-Windows-Security-SPP Application 1/20/2024 12:18:37 AM
WIN-JVP2MS9N77U 10016 Warning Microsoft-Windows-DistributedCOM System 1/20/2024 12:18:37 AM
WIN-JVP2MS9N77U 7030 Error Microsoft-Windows-Service Control Manager System 1/20/2024 12:18:33 AM
System Properties
Computer Name
Hardware
Advanced
Remote
Remote Assistance
Allow Remote Assistance connections to this computer
Advanced...
Remote Desktop
Choose an option, and then specify who can connect.
Don't allow remote connections to this computer
Allow remote connections to this computer
Allow connections only from computers running Remote Desktop with Network Level Authentication (recommended)
Help me choose
Select Users...
OK
Cancel
Apply
Type here to search
12:21 AM
1/20/2024

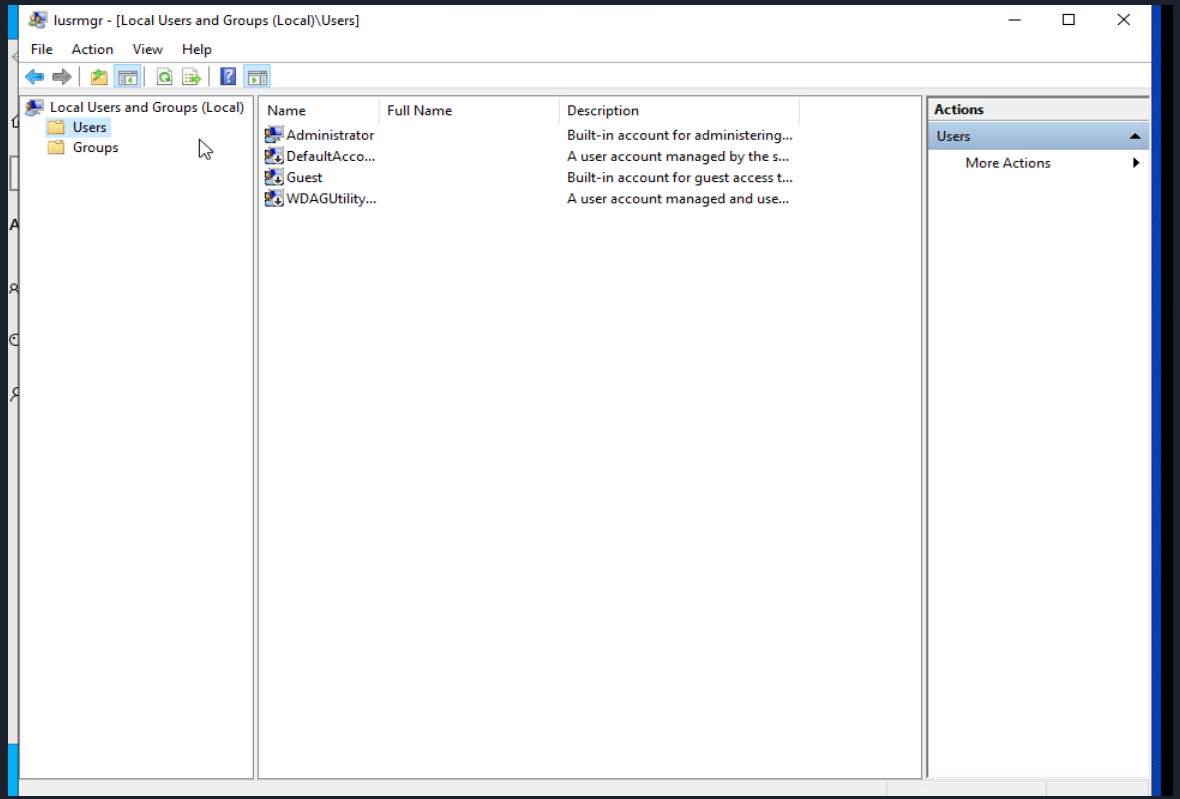
Step 9. Windows setting

The next step we going to change a few setting inside of windows setting. These changes will be made in System , Network & Internet, and Accounts. The first change will be in Accounts.



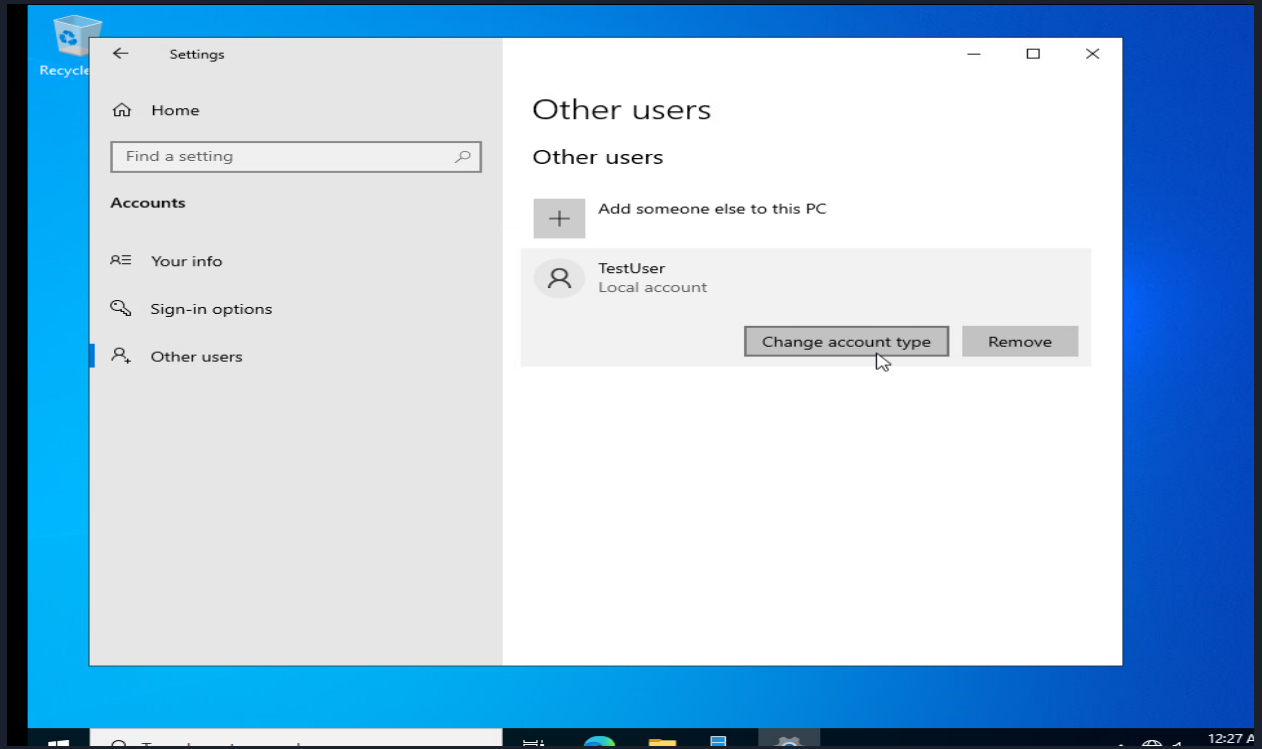
Step 10. Adding new users

Select Accounts and then other users. Inside of that window will be an option to add a new user. It will take you to new window with several options. In this window you need click on the actions tab and select create new user. Take this time to make a user for everyone in your group and set a password for the account.



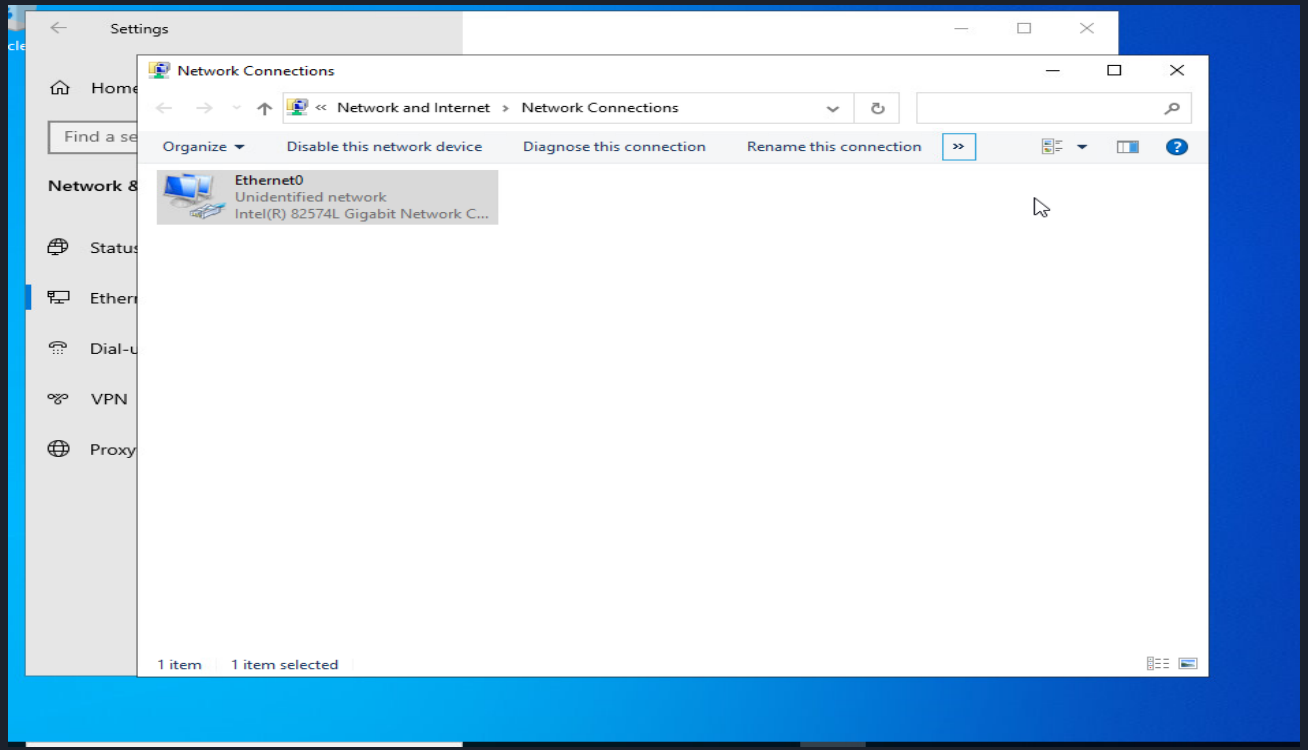
Step 11. Change Account Type

Back in the other windows in the accounts section you need to switch all the new user account types to Administrator so that you and your team can work on this machine as admins.



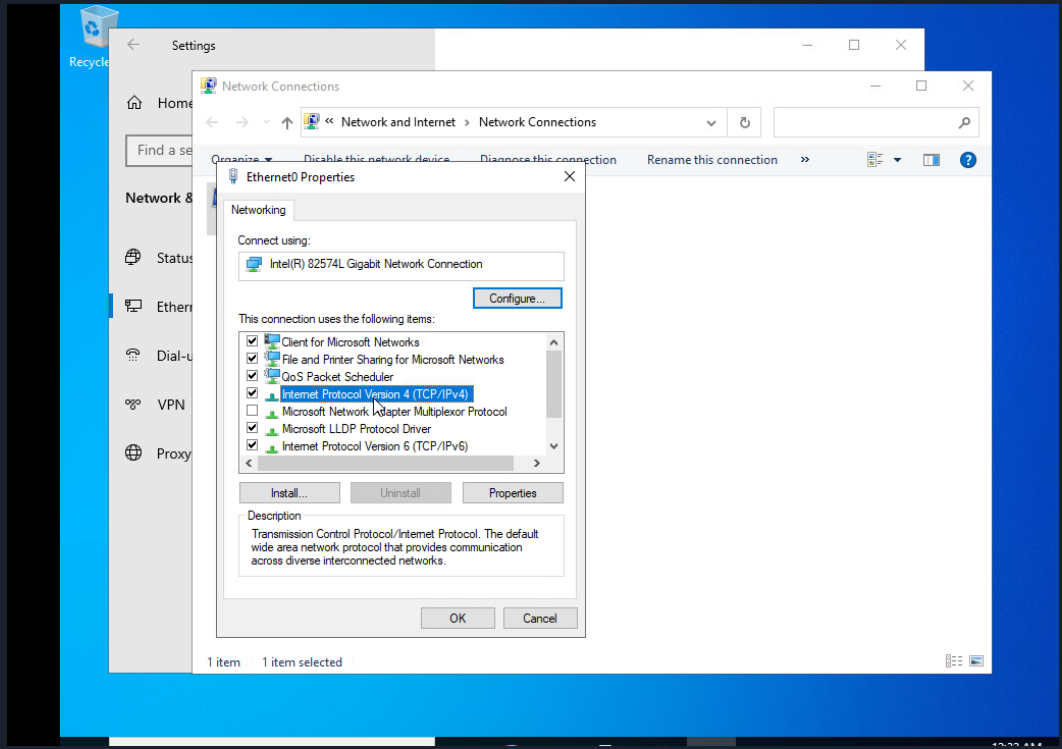
Step 12A. Ethernet and Internet settings

Now you need to back to window from step 9 and select the Ethernet and Internet option in there will be a section called Ethernet, click on it and look for the option highlighted in called Change Adapter options . It will take you too this window.



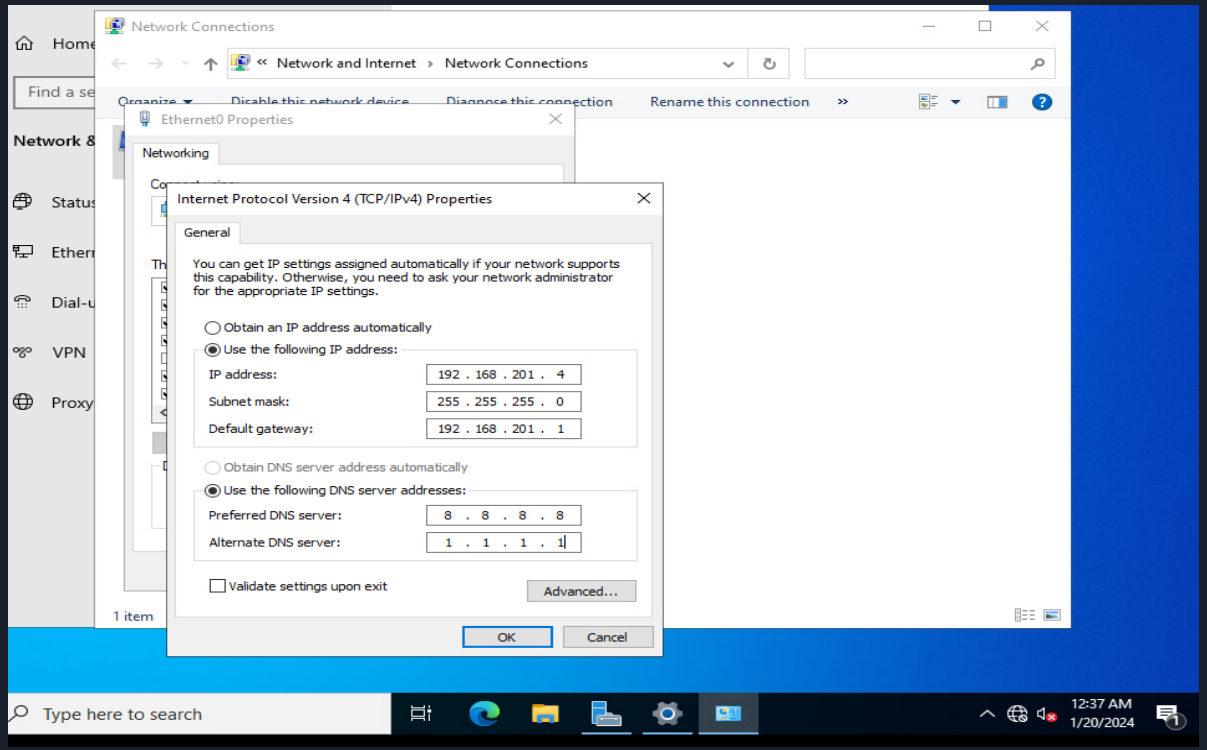
Step 12B. Changing Ipv4

In this window you need to click on the double arrows next to rename this connections. It will open a smaller window, in this smaller window you need to select Ipv4 and click on properties



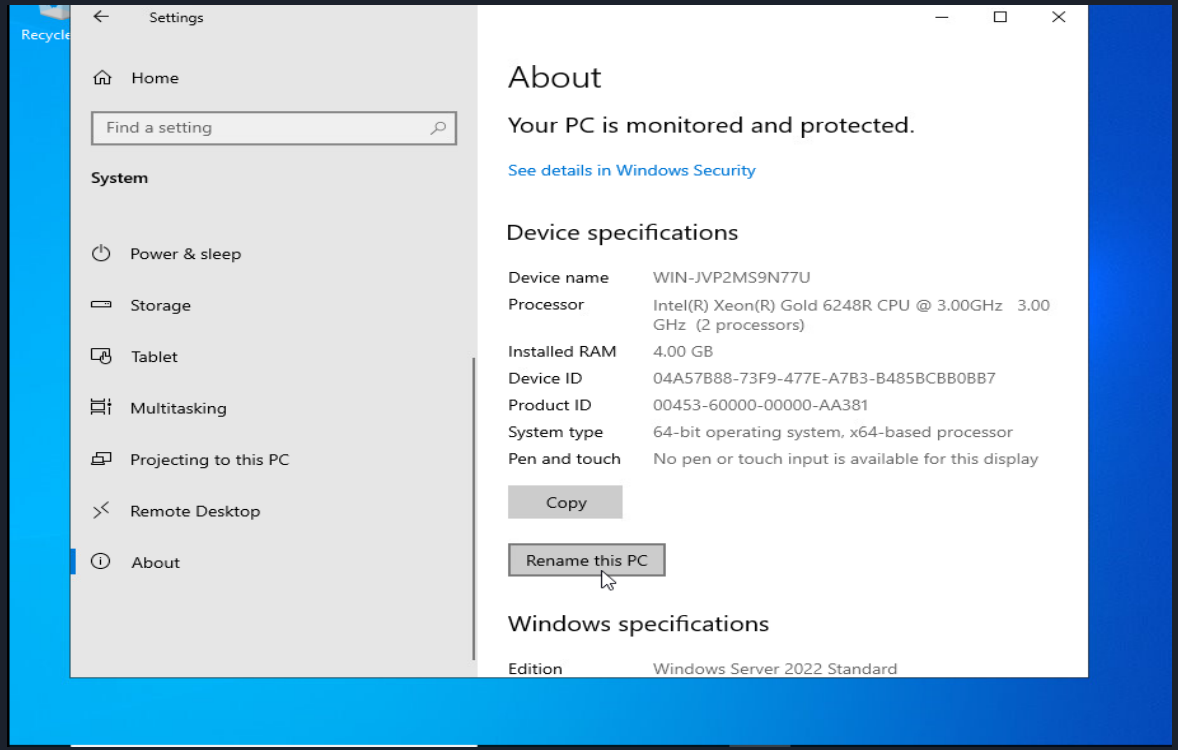
Step 12C. Setting Ip Address.

If you have follow the instructions you will see a new window that will give you the option to set this servers address. Fill out the Ip address that your team agreed upon before starting this assignment. Also fill out the subnet and default gateway from your teams diagram. You don't need to fill out the DNS right now but can choose to if you feel like it.



Step 13. Rename the device

Going back to step 9 click on the system icon and scroll down until you see the about page. Inside of here will be an option to rename the PC, you will need to rename this device to match what you called the VM , this will cause the VM to restart. This is last step you need to do for now but later you will need to ping this device.

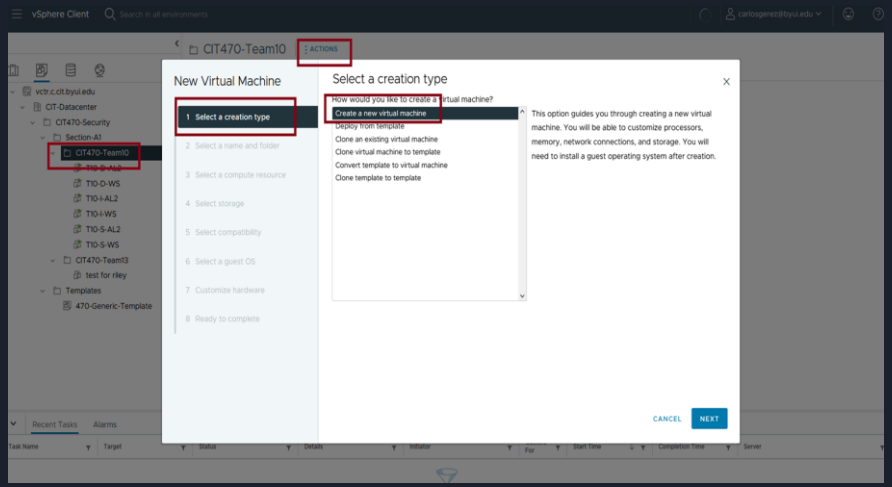


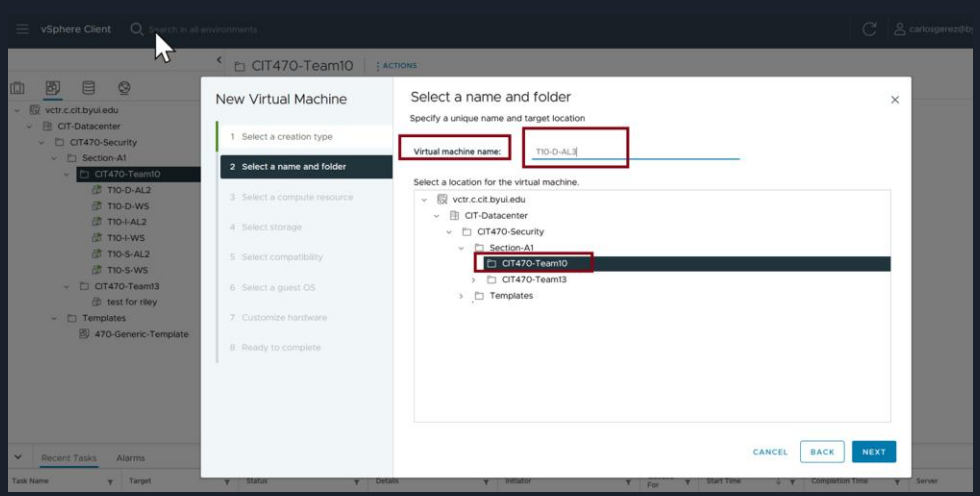
How to Setup an Alma Server

Step 1.

Click on Actions and select Create a new virtual machine

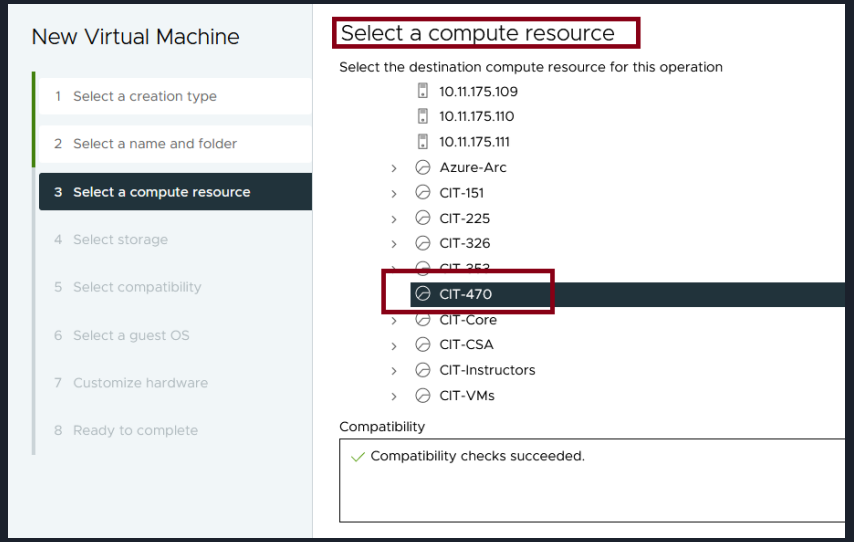
Give the new machine a name according to the teams chosen naming schematic. In this case it is T10-D-AL3

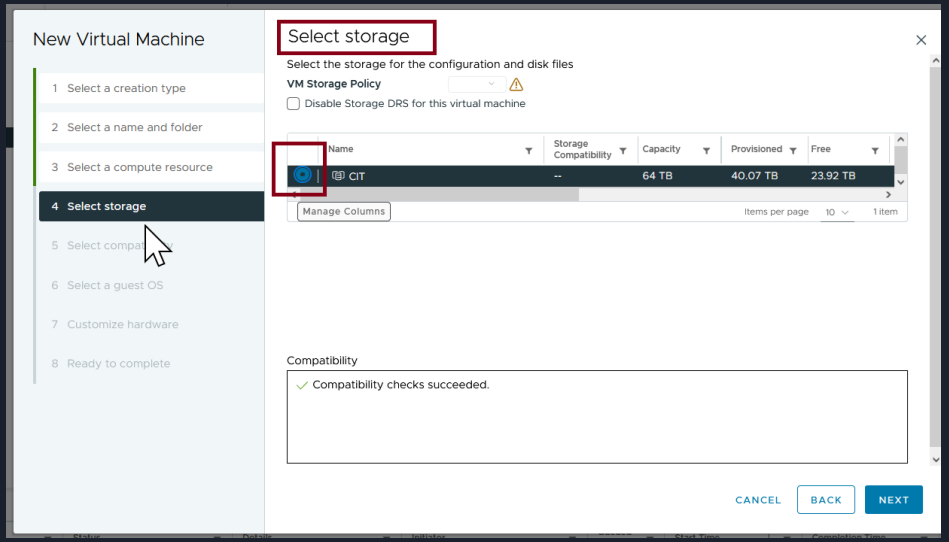




Step 2.

Select CIT-470 as the compute resource then select CIT as the storage area

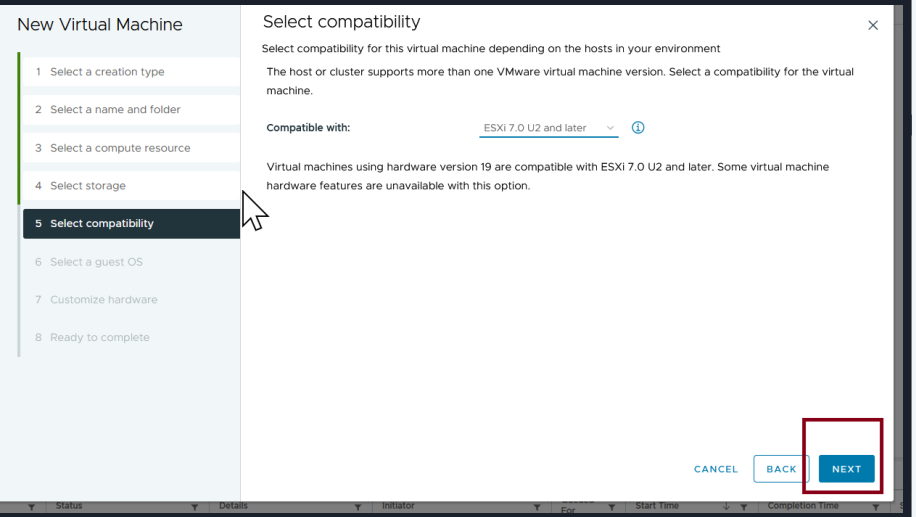


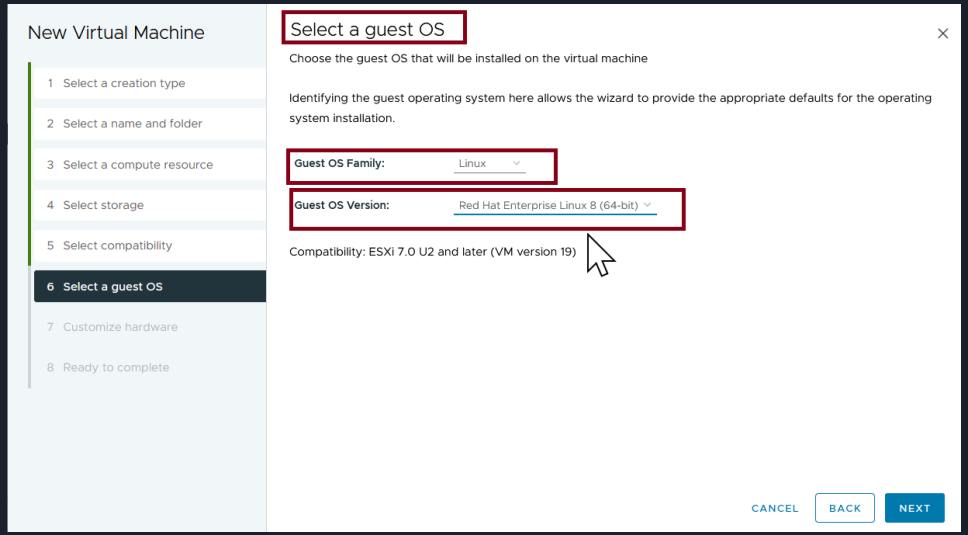


Step 3.

Select compatibility to ESXi 7.0 U2 and later

Select Linux as the guest OS Family and RedHat Enterprise Linux 8 (64-bit) as the Guest OS Version

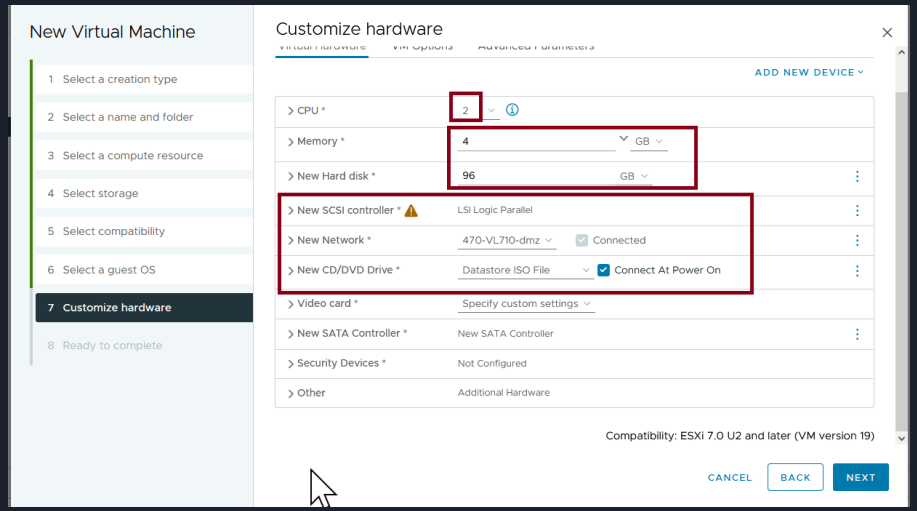


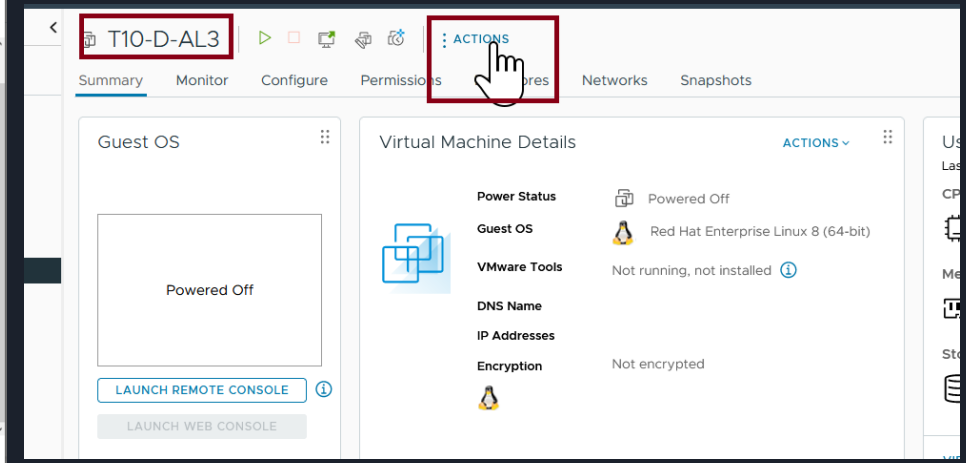


Step 4.

Customize hardware settings and check the Connect At Power On box

Select NEXT and then FINISH

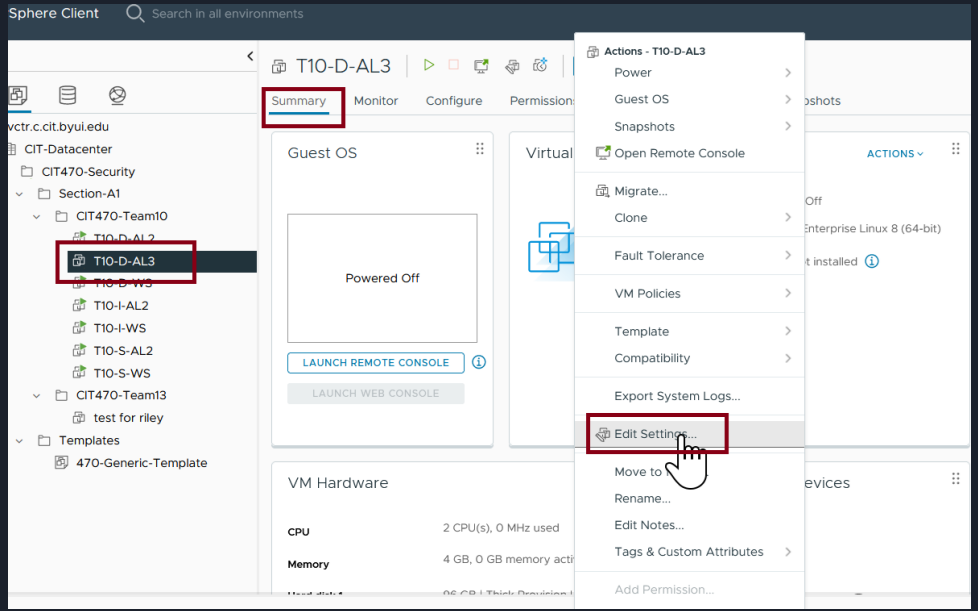


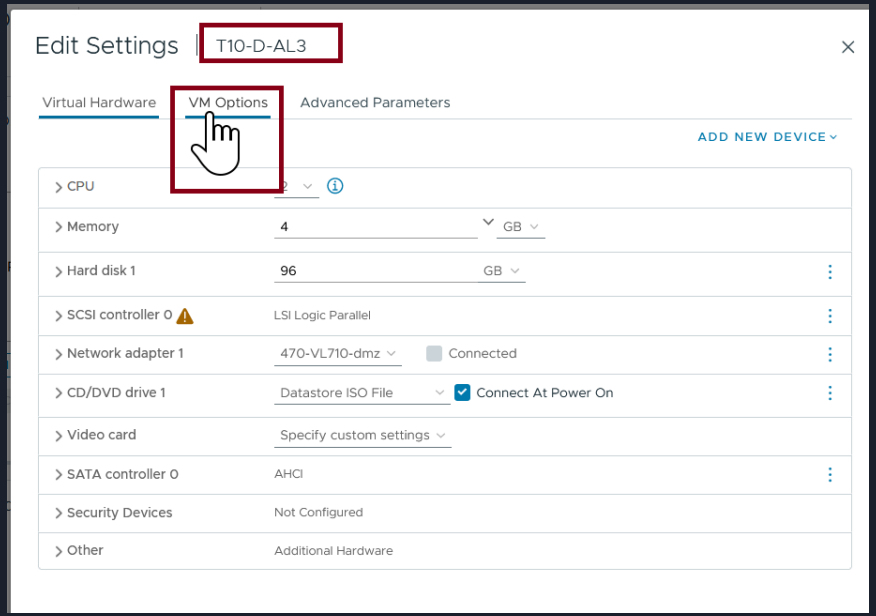


Step 5.

Under Summary open the Actions menu and select Edit Settings

Select the VM options Tab

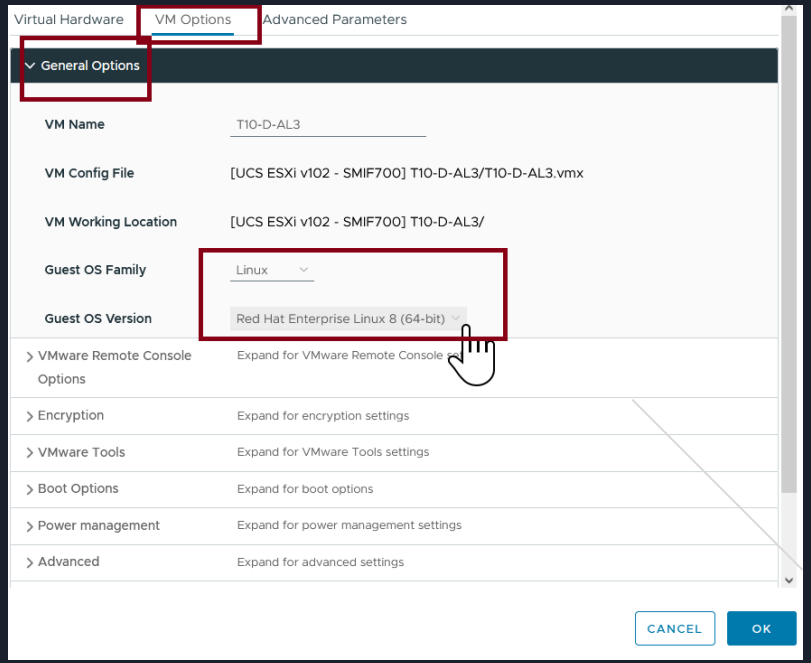


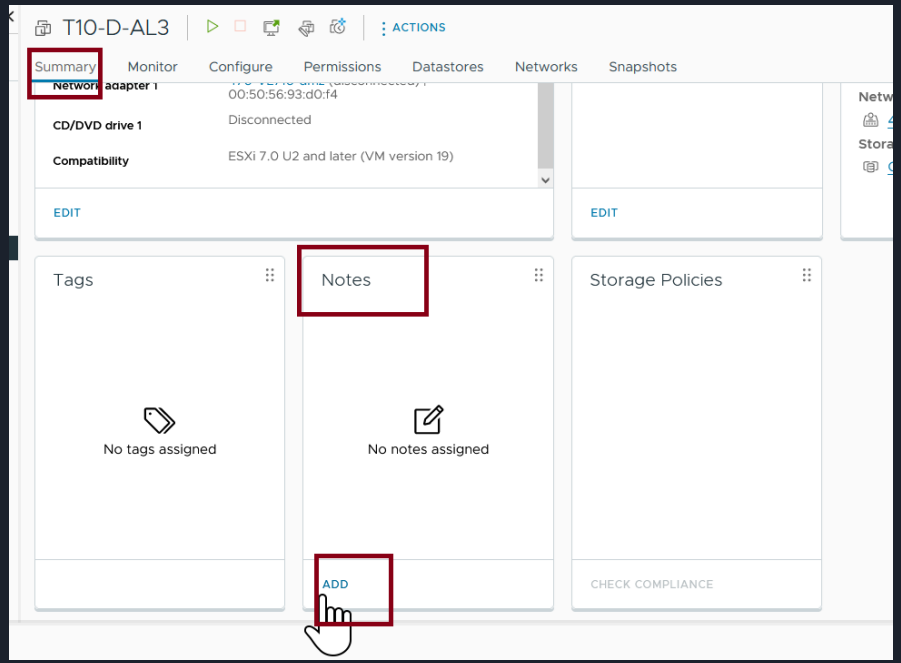


Step 6.

Under General Options, Select Guest OS family and select Linux then Under Guest OS Version select Red Hat Enterprise Linux 8 (64-Bit) Click OK

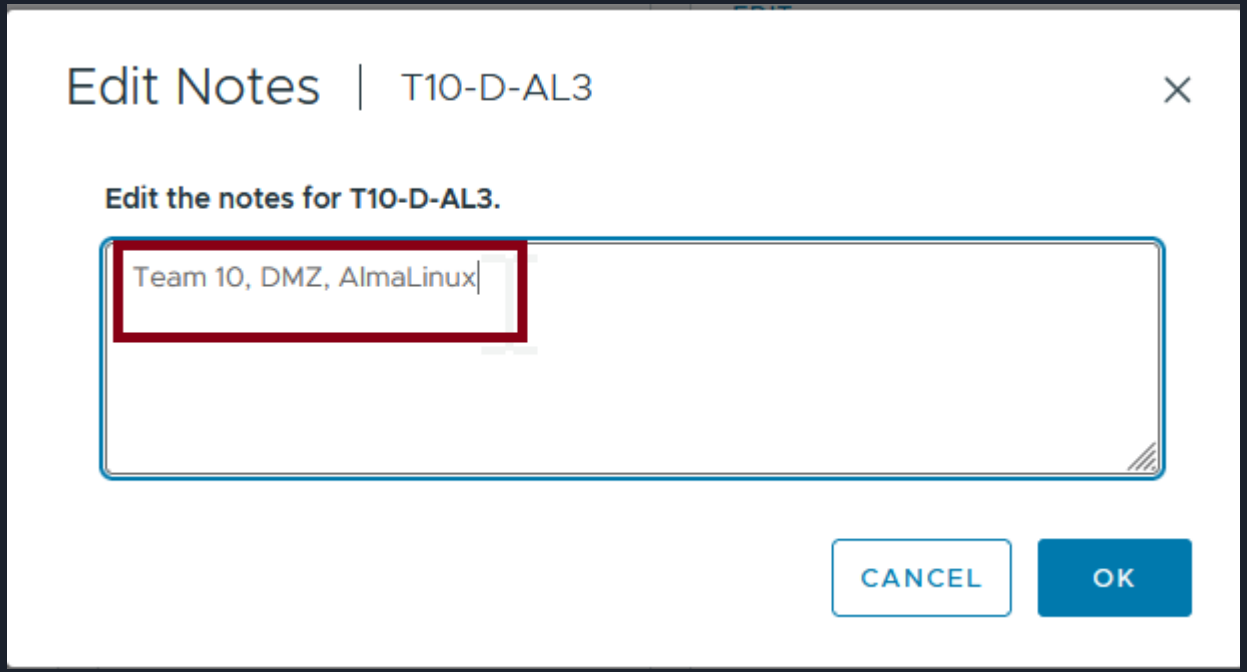
Under the Summary tab, scroll down to the notes section and click ADD





Step 7.

Enter the Team name, Zone, and OS

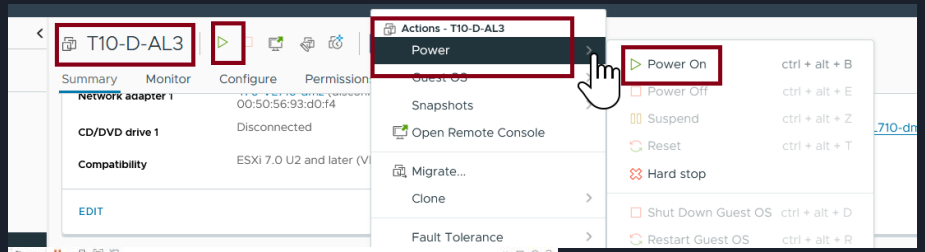


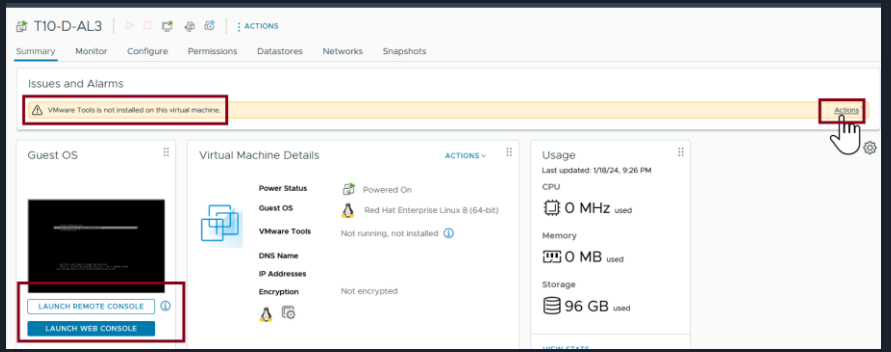
Step 8.

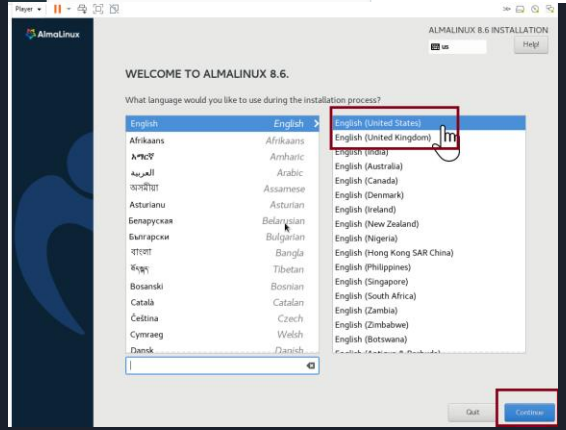
Power on the machine

When the vmWare tools is not installed warning pops up, click actions and then install vmware tools

Choose a language and click next



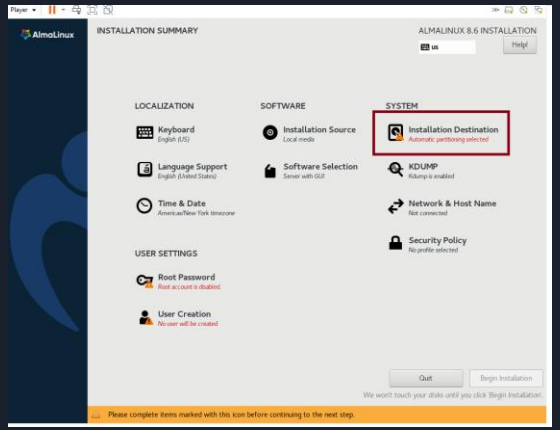


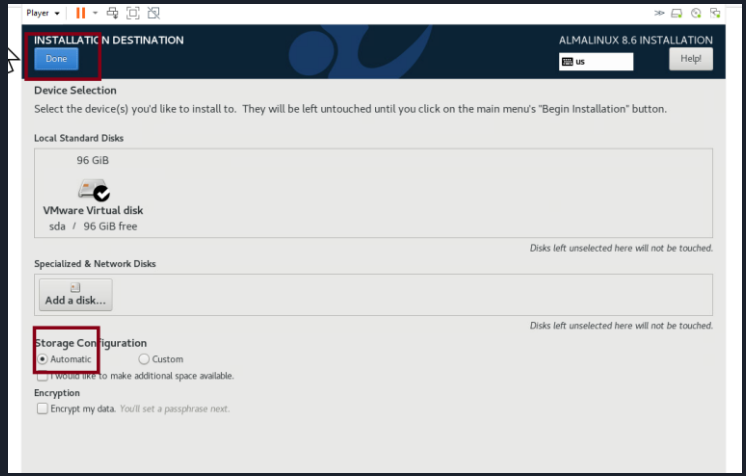


Step 9.

Click on Installation Destination

Set Storage Configuration to Automatic and click done



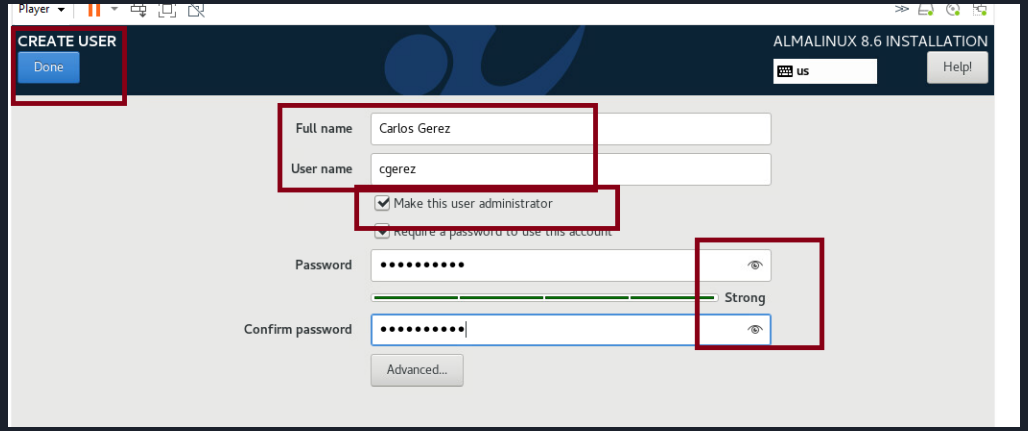


Step 10.

Select Time Zone

Create a user by filling in the needed information and checking the make Administrator box.

Make sure to create a strong password

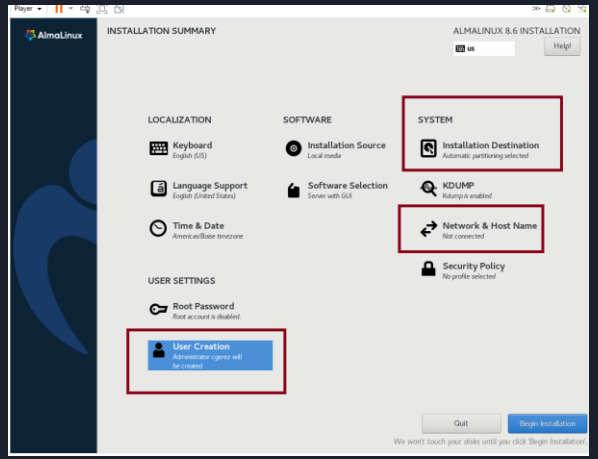


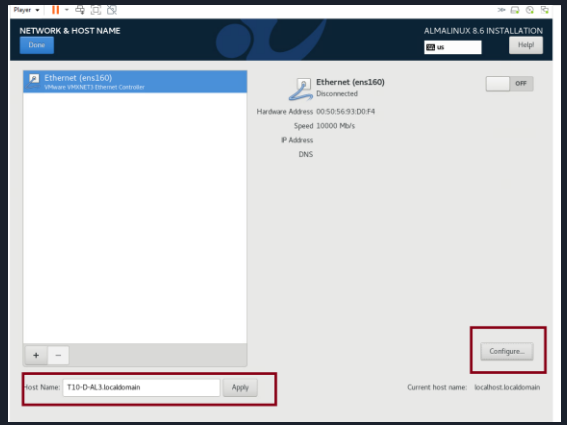
Step 11.

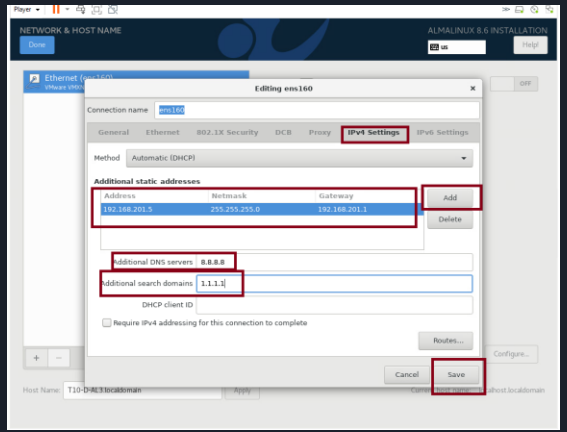
Click on Network & Hostname add the (machine name).localdomain to the host name field, click apply, and then click on Configure

Select IPv4 setting and add ip address, netmask, gateway then click Add

Add DNS addresses then click next

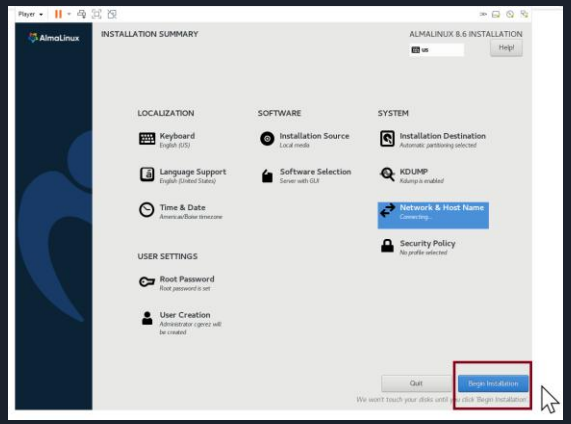


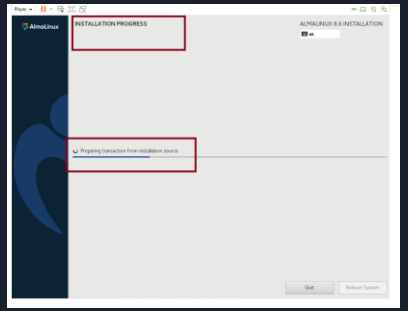


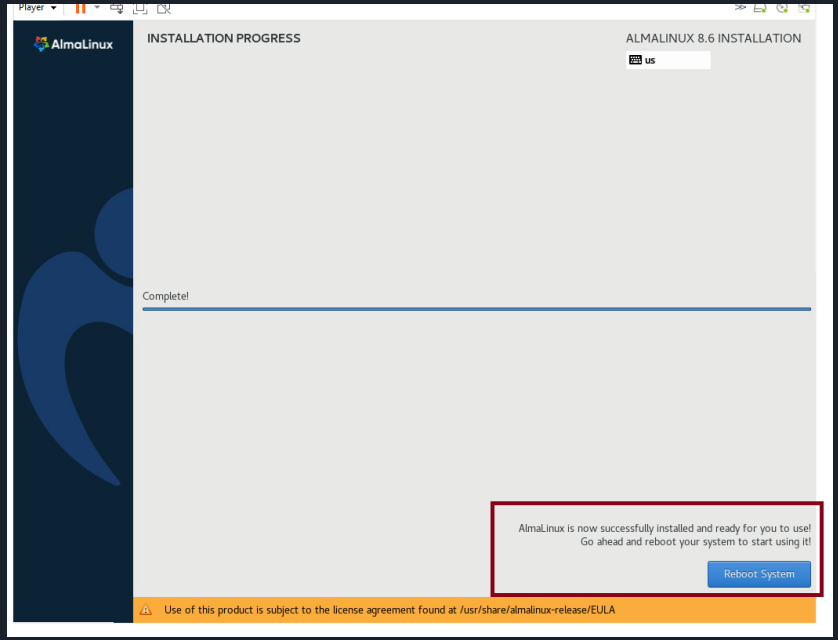


Step 12.

Select Begin Installation Process, wait for completion, and then reboot the system



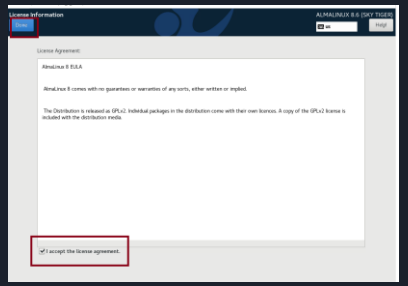


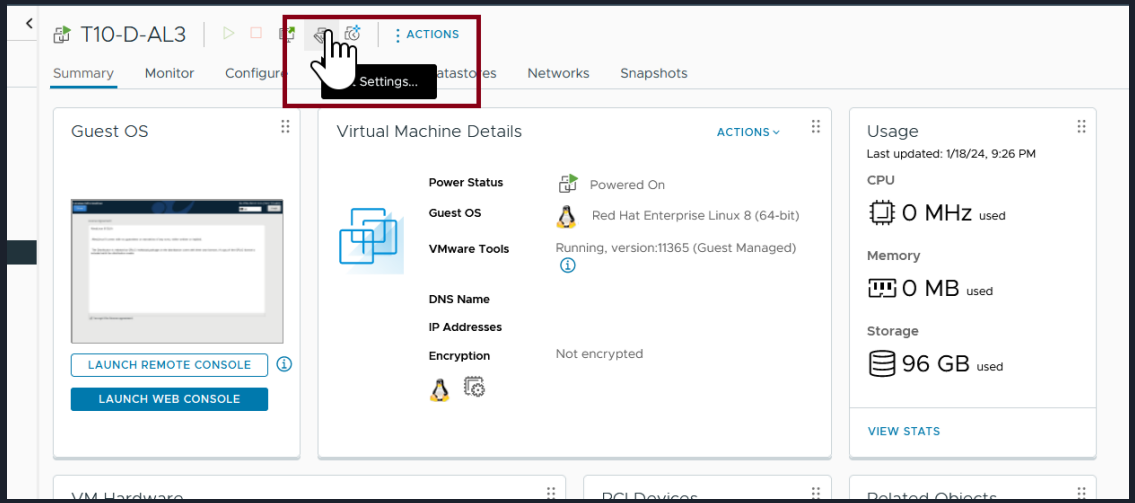


Step 13.

Accept the licensing agreement

Go Back to vSphere Client and select the Settings icon



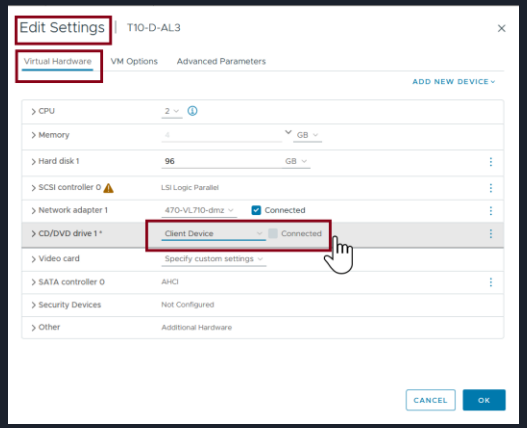


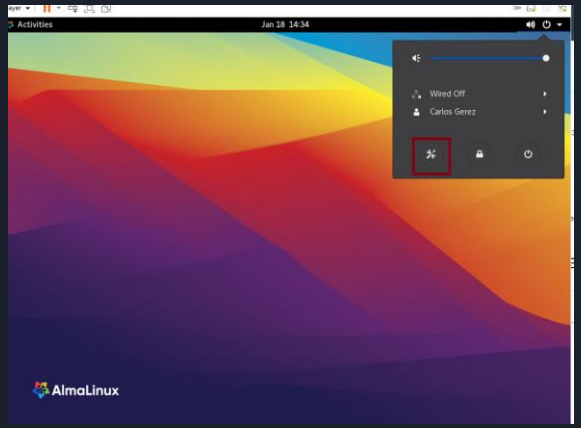
Step 14.

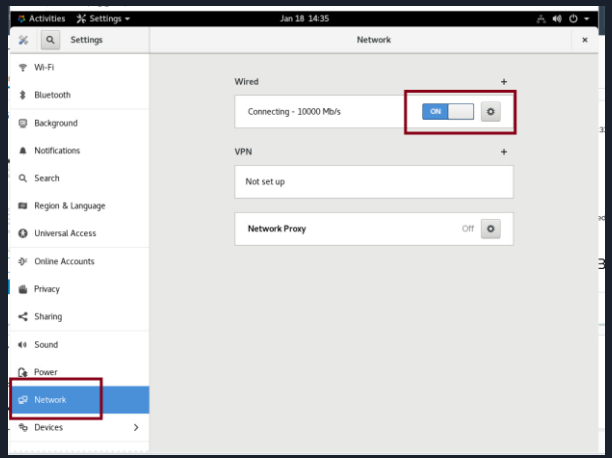
Under the Virtual Hardware tab > CD/DVD drive 1 use the dropdown arrow to remove the iso image and select Client Device

Go to the Alma Linux workstation and select settings from the dropdown then select network

Switch the Wired Selection on then click on the settings gear icon



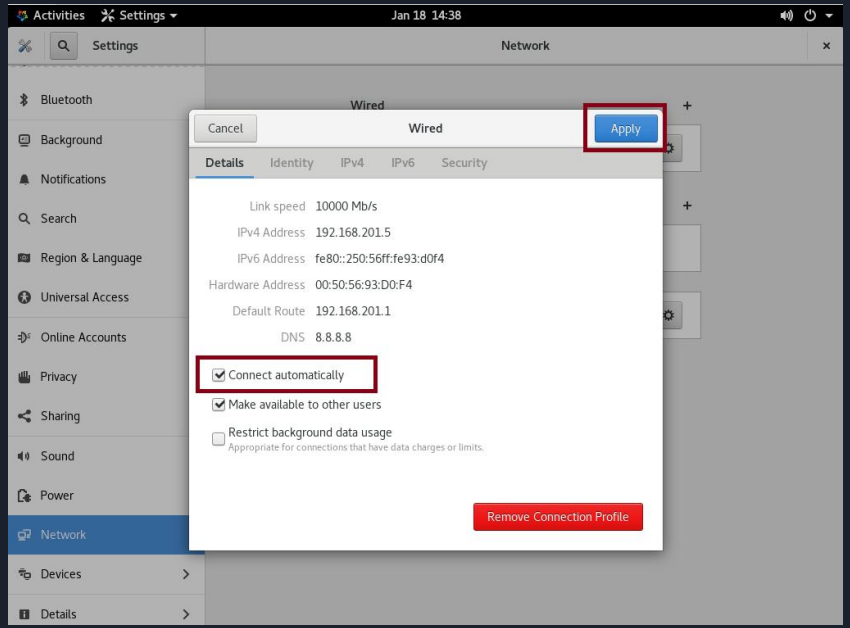


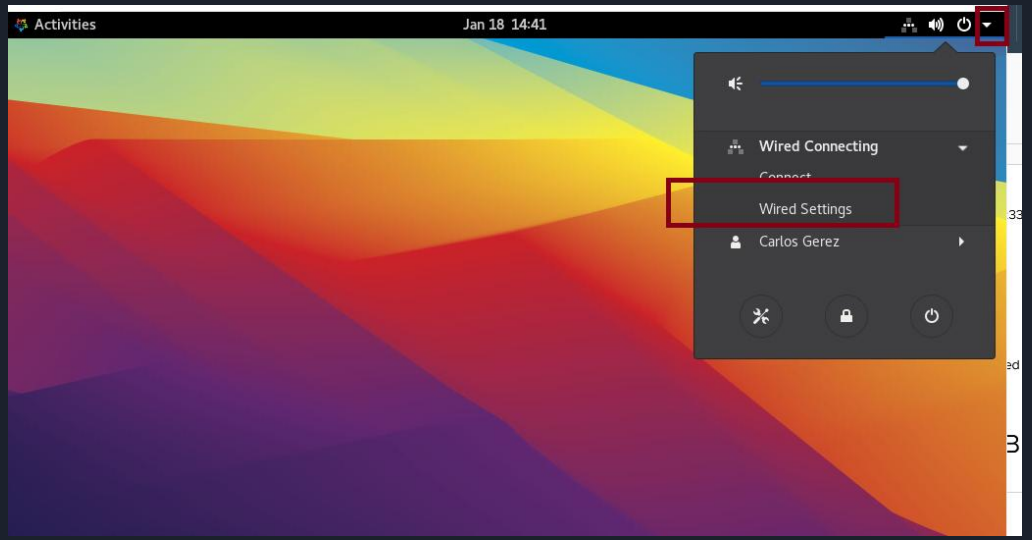


Step 15.

Check the Connect Automatically box and click Apply

Click on the Network Icon and go to Wired Settings



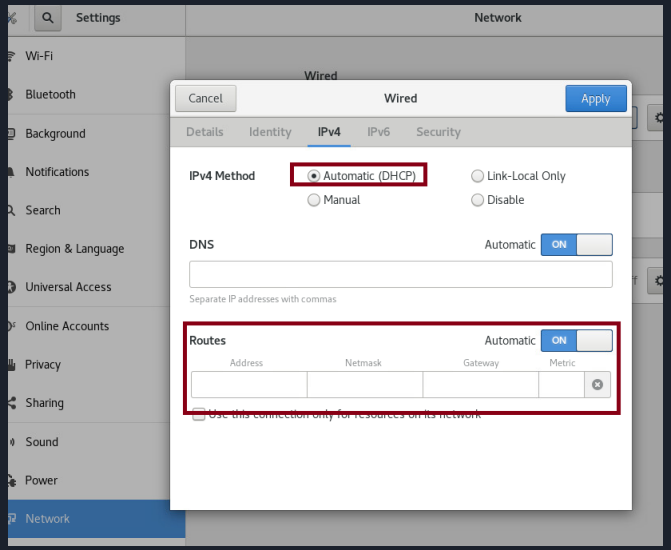


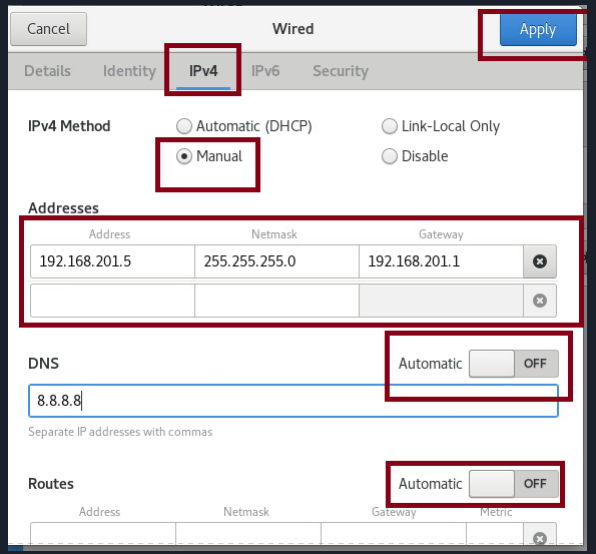
Step 16.

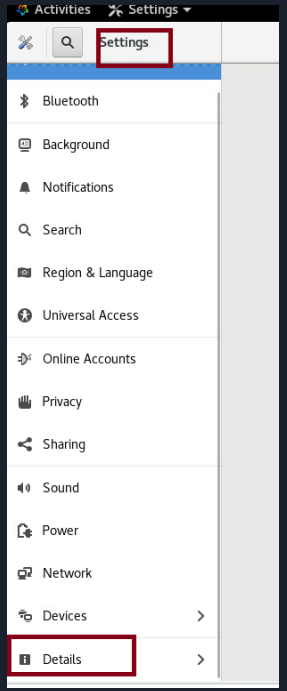
Under IPv4 settings change from Automatic (DHCP) to Manual

Make sure IP and DNS addressing is correct and click apply

Click on Settings and select Details



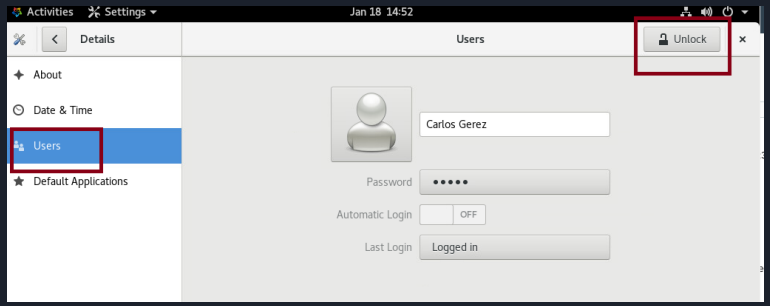


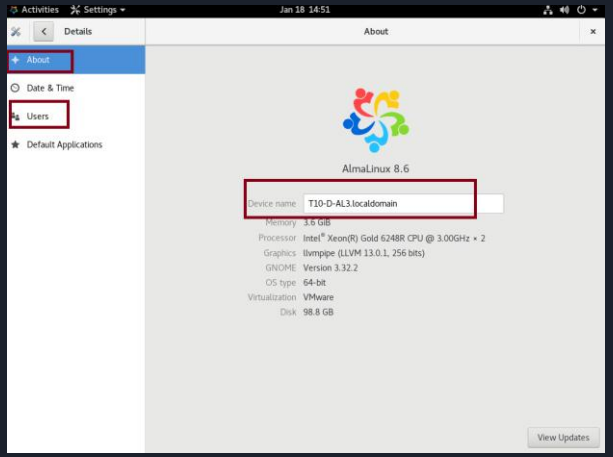


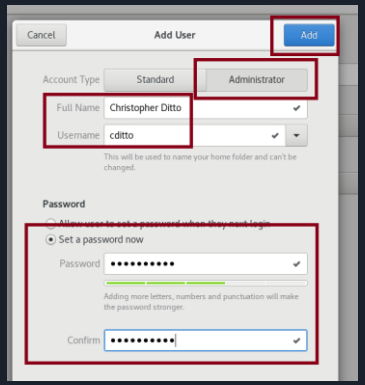
Step 17.

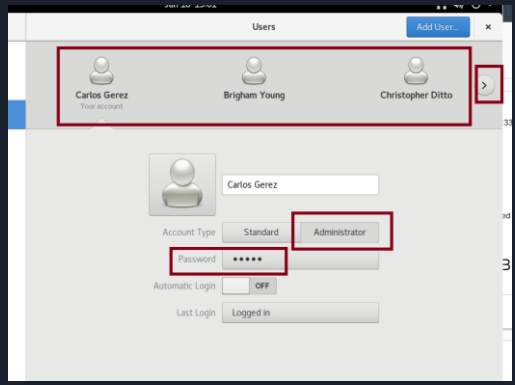
Click About and enter (machine name).localdomain to the Device Name Field

Click on Users Create a user with administrative authority for each team member and then one for The BYUI instructor using the username youngb and Name: Brigham Young





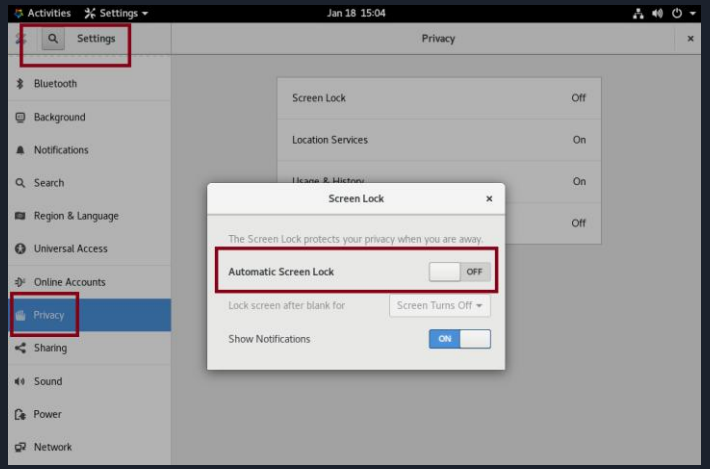


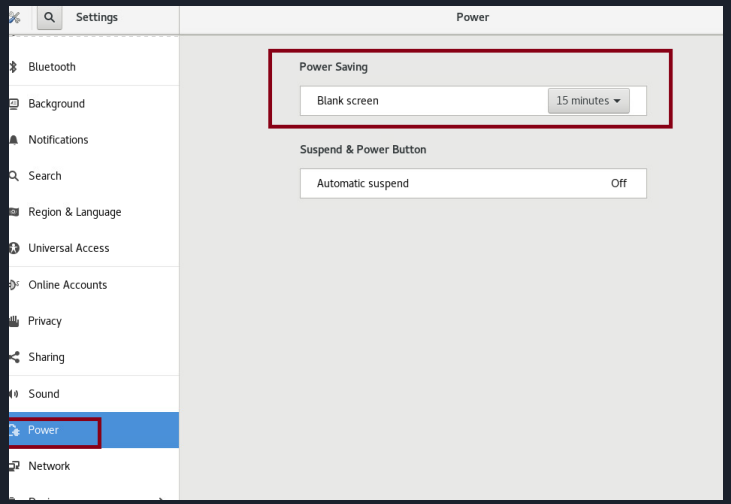


Step 18.

Under Settings Click on Settings>Privacy turn off Automatic Screen Lock

Under Settings>Power adjust Power Saving to desired specification

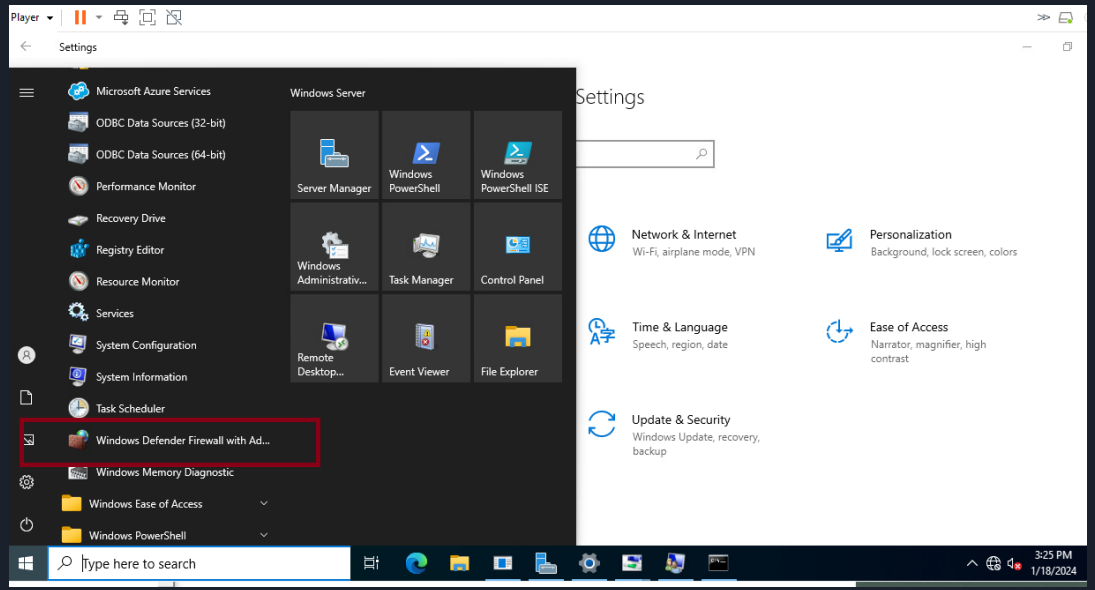




Challenges we faced

Inbound rule for Windows to accept ping requests.

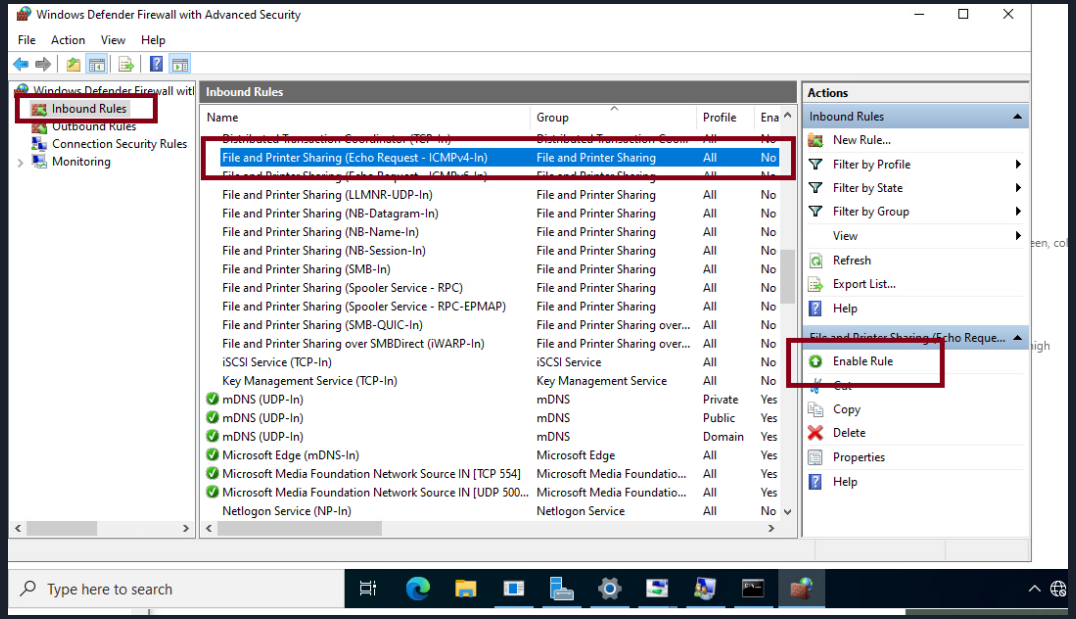
Open Windows Defender Firewall



Inbound rule for Windows to accept ping requests.

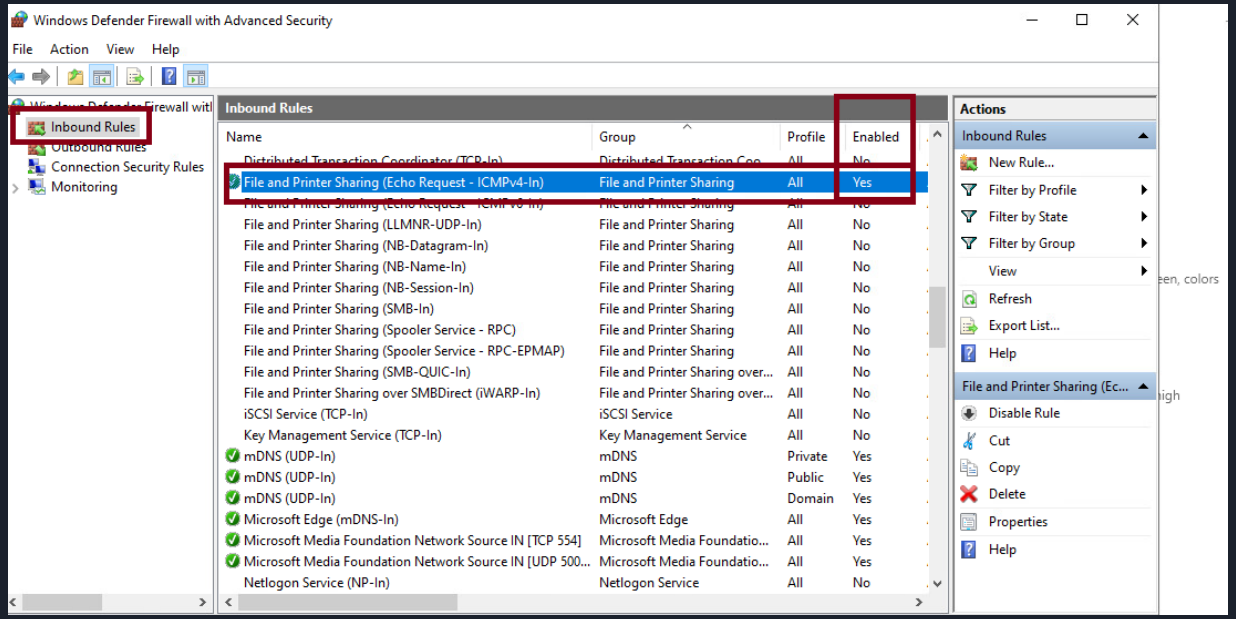
Click on Inbound Rules then select File and Printer Sharing(Echo Request - ICMPv4 in)

Select Enable Rule

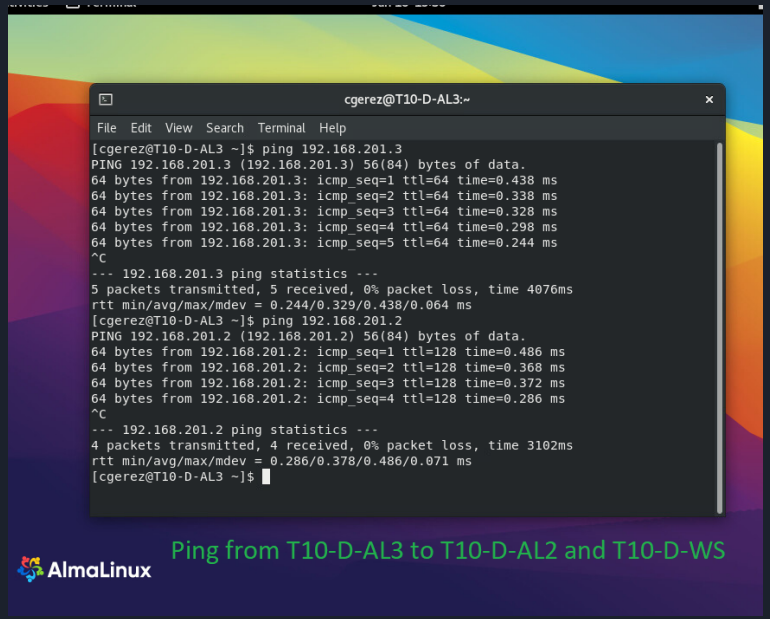


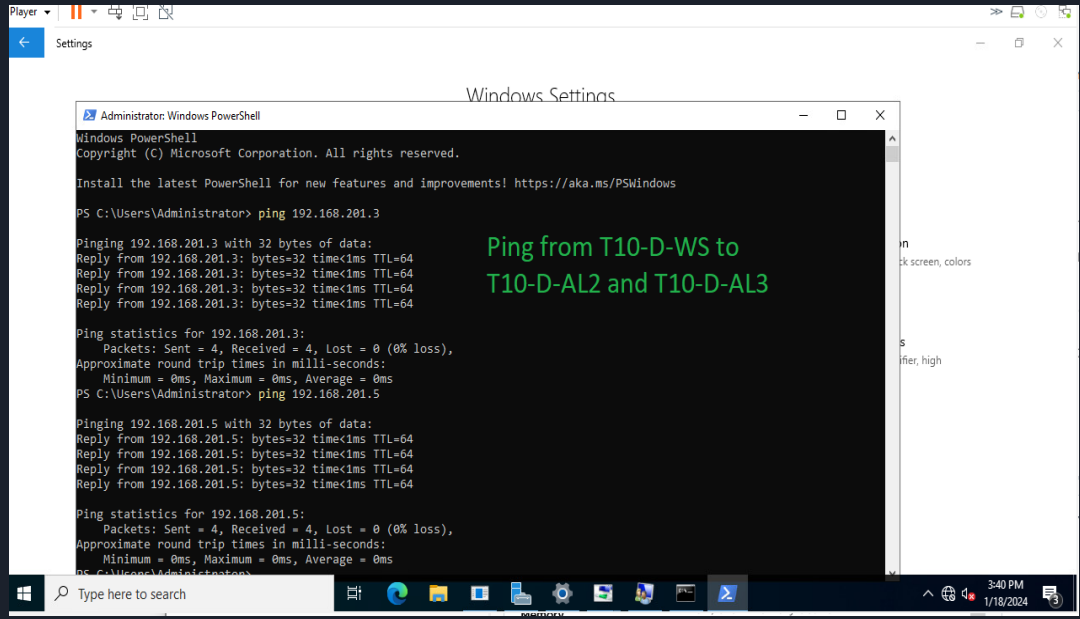
Inbound rule for Windows to accept ping requests.

The rule is now showing Enabled

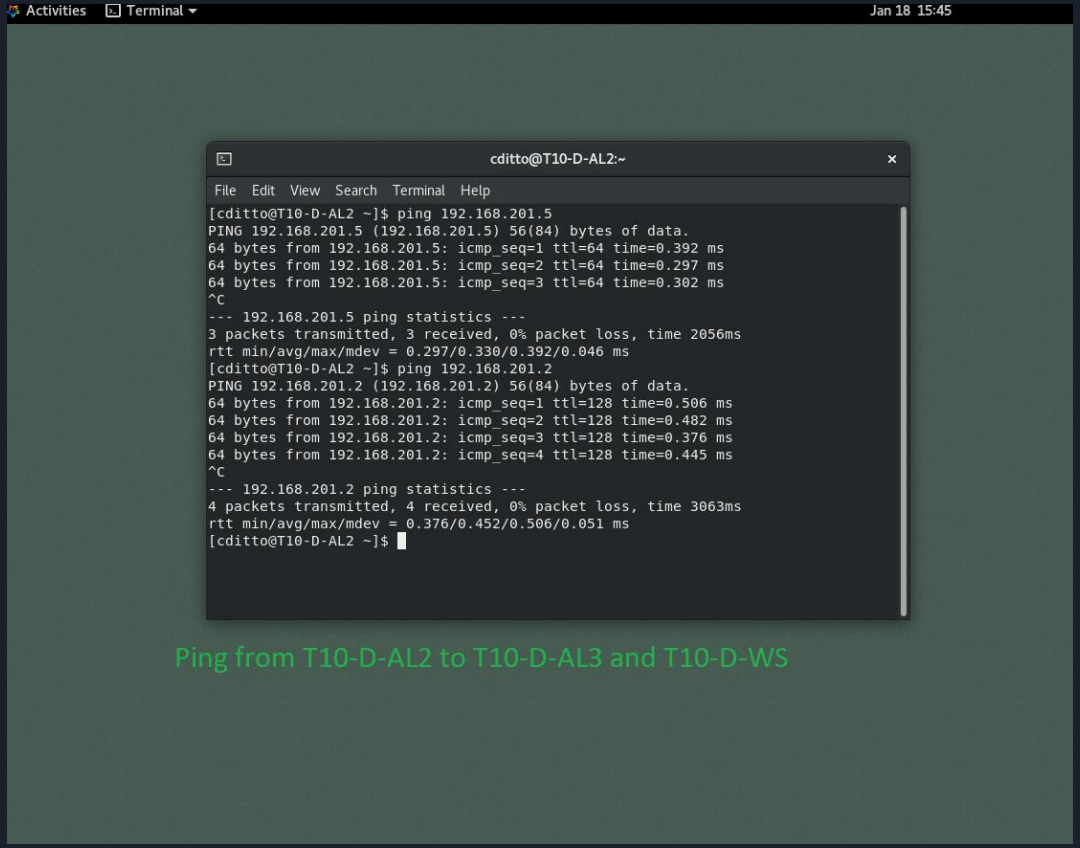


Ping from machines inside DMZ successful.





Ping from machines inside DMZ successful.



Ping from T10-D-AL2 to T10-D-AL3 and T10-D-WS

Useful links for sharing passwords databases:

1. This is a video about how to sync KeePass using Google Drive in Android and Windows devices.
   https://www.youtube.com/watch?v=-txzWZhZm9c&t=450s

1. Documentation about Google Drive synchronization between devices.
   https://support.google.com/drive/answer/10838124?hl=en#zippy=%2Csync-a-folder-with-google-drive-or-google-photos%2Cdownload-drive-for-desktop