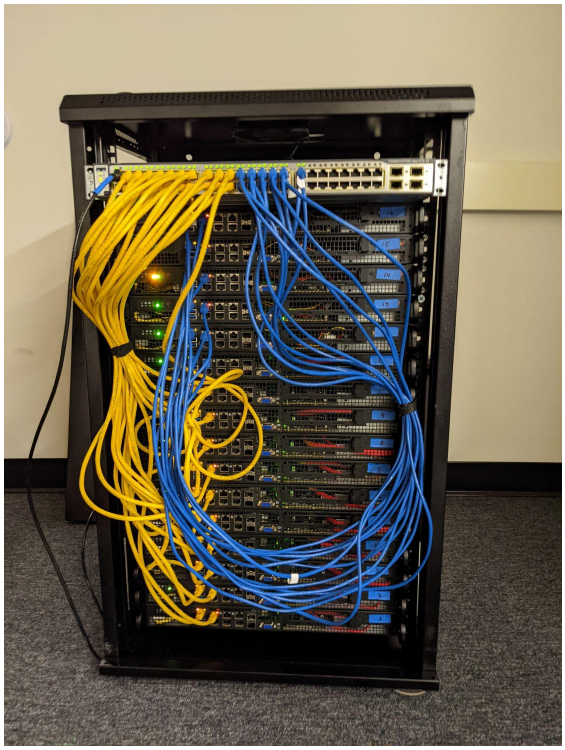
Updated 8/31/23

Milestone 1 - ESXi and Basic Networking

💡You have been assigned your own physical server, located in a fully functional but tiny data center in Joyce. You will be assigned either the odd or even rack depending on your section. Your job will be to access and install ESXi 8x on this server and deploy basic services such as networking, firewall and a management virtual machine.



Milestone Description

This milestone has 4 parts. These include

Installation of ESXi on your SuperMicro Server

The rough steps you will take, document and test include.

- Access the server console iKVM (note, in previous classes we used IPMI, however we are constrained for IP addresses).
- Boot to an ESXi8 Installer USB Stick
- Install ESXi 8

- Configure the Management Network

> 💡This will be a chaotic exercise with multiple students vying for time with the physical servers, be patient.

Configuration of Data Stores

Once ESXi is installed you will configure your extra disk as a repository for your Virtual Machines and ISOs

Creating an Internal Virtual Network

Just as you've seen in classes before, where you've had your own LAN, we will create a virtual switch and portgroup for our own Enterprise Network

Configuring your Firewall and Management System

Ok, your virtual resources also need to communicate externally, we will do this by creating a firewall with one leg on Joyce/CYBER and the other on your virtual LAN.

Resources

- Network Assignments
- Network Architecture
- Example Journal Entries for this week.

> 💡These exported tech journal entries represent both some configuration advice as well as the expectations for your journal entries in future. You can use these as a point of reference but make sure you create your own technical documentation that represents your systems.

    - ESXi Configuration on SuperMicro
    - Configuring the DataStores
    - Configuring a vSwitch, Portgroup and an Internal Network
    - pfSense
        - Mgmt

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General Steps:

I. Start your Tech Journal
II. Installing ESXi
    A. Review your Super-Micro assignments
    B. Plug a ESXi installer USB into your Super
    C. Access your Super via a browser using the IPMI IP Address
    D. IPMI username is: cncs-sysadmin. Password will be emailed to you
    E. Use the iKVM for the install - F11 allows you to boot to USB
    F. Select **smaller** drive to install to
    G. Mostly defaults during installation
    H. Grab your DHCP IP
    I. Configure with your static IP and DNS
III. Configuring Datastores
    A. Access VSphere via web **(Deliverable 1)**
    B. Add/Rename datastores so that they are "datastore1-super*X*" and "datastore2-super*X*" where X is your super # (**Deliverable 2)**
    C. Create an ISO folder in Datastore 2
    D. Upload xubuntu and pfsense ISOs from Cyber-Share X:
IV. Create VSwitch
    A. vSwitch.pdf (**Deliverable 3)**
V. Create pFsense Firewall and LAN Management workstation
    A. Start the pfSense VM install (pf.pdf)
    B. Create Management VM (mgmt1.pdf)
    C. Complete pfSense VM configuration pf.pdf
    D. Deliverable 4
VI. Make sure that your Tech Journal is Awesome

Deliverables

1. Screenshot showing login via superX.cyber.local where X is your assign host number

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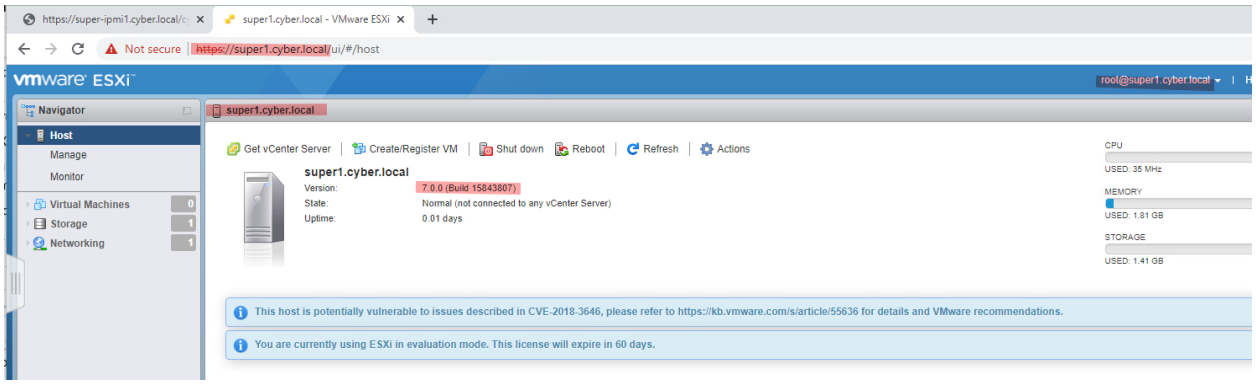
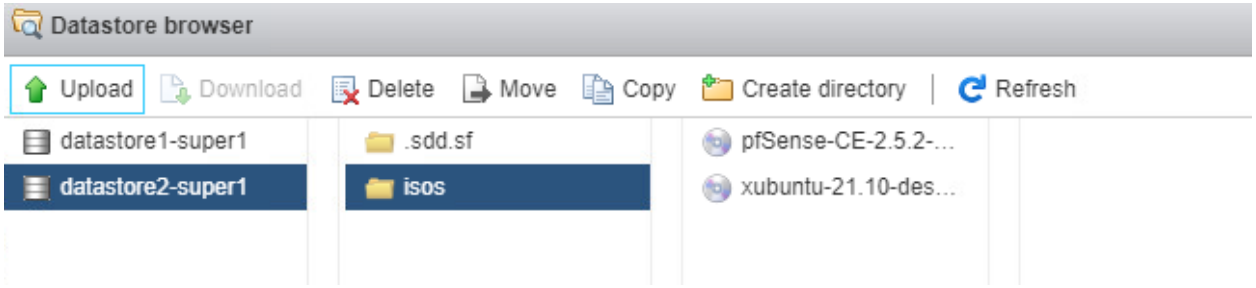
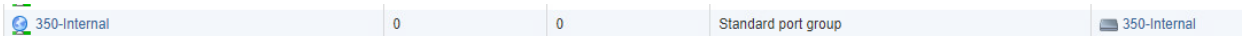


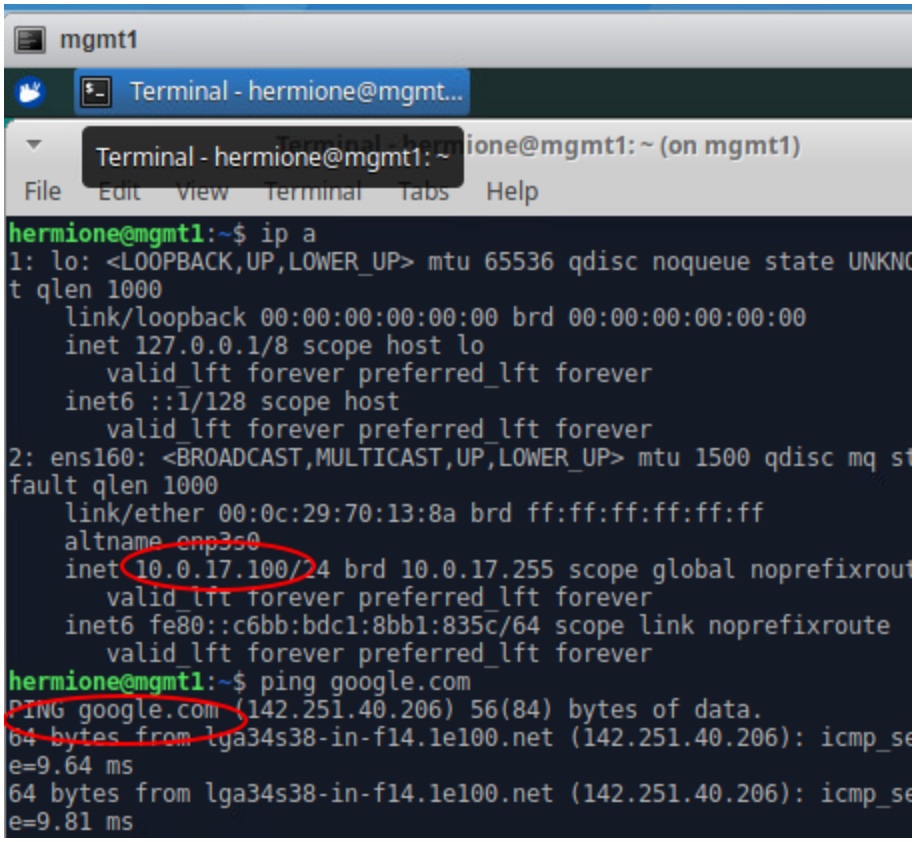
2. Screenshot showing your two datastores, where the second one has a directory of two iso files



3. Screenshot showing your virtual switch and associated port group



4. Screenshot from your mgmt1 box showing your 10.0.17.0/24 address as well as your successful ping to an internet host



5. The Journal. Your journal should be neat, organized and above all useful and complete. The resources above show the expectations for your journal. Remember the journal has both a technical aspect as well as a reflection component. This can be interweaved as shown in the example. One thing to keep in mind is where you struggled and where you spent your time and any tips and tricks for your future self. Provide a github link to a landing page of your course repo on github. Your milestone adventures should be easily navigated. Make sure you've invited agoldstein333 and rtgillen to your github page if private.