Deploy Networking

Having a reliable network up and running is essential for our class environment. In this lab, you will provision a router as well as adapt the network settings of your ESXi server to match the environment that has been provided by the network team. Full details are covered in the course video on how to accomplish this.
To accomplish this, we have some basic tasks:

- Ensure that a LAN network is available and accessible to your VMs
- Provision a WAN network on the VLAN 3696 using vmnic1 to get internet access
- Create a VMkernel interface on vmnic0
- Mount a NFS datastore on 172.16.87.2/NFS

ToDo

You have two servers provisioned in the IA Lab which you should be able to access via the ESXi web interface. In class, we used the IP's 10.1.1.101 and 10.1.1.102, if you followed our IP scheme. In order to bring our network up, we must do the following to *both* servers:

- Modify the default Port Group, VM Network, to be a LAN and configure it to use your cluster VLAN
- Create a WAN Port Group on VLAN 3696 using the same vSwitch as your LAN
- Create a new virtual switch for our CoLo_Uplink and create the necessary Port Groups and DHCP configured VMkernel interfaces on vmnic0
- Mount our class's NFS share for ISO's, located on 172.16.87.2/NFS, as a datastore called ISO

Once the configuration is completed on each server, a router virtual machine is required to serve as a gateway between our LAN and the WAN. To accomplish this, you need to provision a pfSense virtual machine on *one* of your two ESXi servers. It's up to you to pick which one

- Create a new VM with two network interfaces and appropriate settings for pfSense
- Install the pfSense operating system using the ISO from the ISO datastore
- Once installed, configure pfSense by ensuring the proper interfaces are associated with WAN and LAN by comparing the MAC addresses in pfSense to what is assigned to the virtual machine
- Once interfaces are assigned, swap the default LAN subnet to what we're using, 10.1.1.0/24
- Log into the web interface of pfSense and modify the DHCP settings to use 172.16.3.100 and 172.16.3.101 as the DNS servers

Once you've completed the pfSense setup, you can reconfigure your admin machine to use DHCP. At that point, you should be able to log in through the captive portal and access the internet.

Once you have internet, create two new Windows VMs. For the VMs, use the following settings:

- Name the machine DC01
- For guest OS family/version select Windows Server 2016 or later(64-bit)
- Store the VM on an appropriate datastore and ensure the VM is on your LAN network
- Use the ISO, en_windows_server_2019_17763.737.190906.iso to install Windows
- The other default settings for the VM can remain
- Power on the VM and complete the Windows installation
    - Note that to launch the windows installer, you have to hit a key to make it kick off when you first start the VM
    - Ensure that you choose Windows Server 2019 Standard Evaluation (Desktop Experience) when prompted

- Once Windows is completely installed and booted up, install VMware tools
    - From the Actions menu of the VM, select Guest OS>Install VMware Tools
    - Once selected, browse to the 'CD Drive' inside of Windows where you'll find the VMware tools installer. Complete the installation.

Submissions

- **Submit two screenshots showing the ISO datastore mounted on *each* of your ESXi servers**
- **Submit a screenshot showing that your admin machine is using DHCP**
- **Submit a screenshot showing that you can access the internet from your admin machine**
- **Submit a screenshot showing that you've created a Windows VM & that it has VMware tools installed**