RIT-Dubai

NSSA244 Virtualization

Fall 2023

Lab 3 – ESXi and vCenterDeployment

In this lab, you will be performing the following tasks:

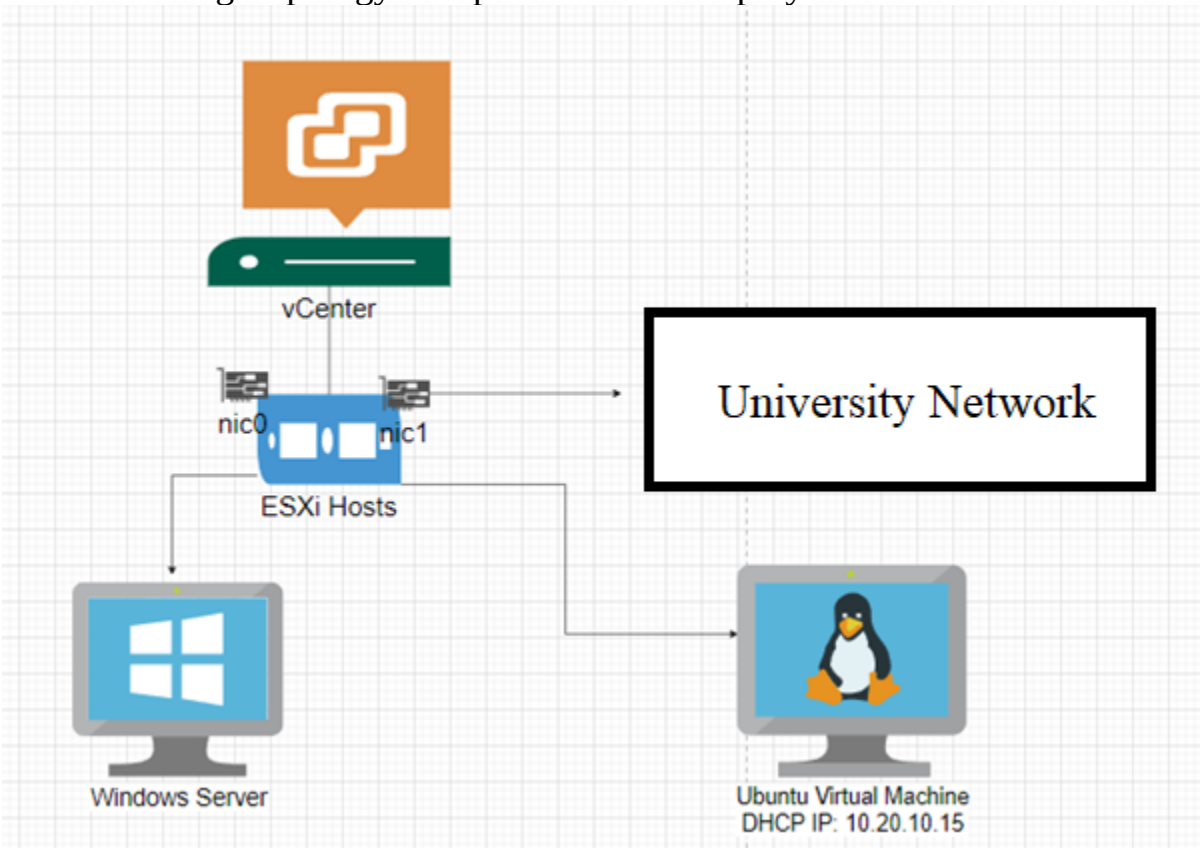
- Setting Up our ESXi host and Storage
- Create a Virtual Machine on the ESXi server
- Setting up the vCenter
- Install Active Directory (enable DHCP, DNS)

Introduction

VMWare ESXi is well known for hosting virtualized environments for companies who have thousands of employees. It runs on the type 1 hypervisor and takes minimal space on the bare metal server.

The goal of this lab is to set up ESXI Server, running on a DELL EMC Server which will host the VCenter, and 2 virtual machines, windows active directory server and ubuntu machine. And then login from the ubuntu to the Windows active directory server.

The following Topology is expected for this deployment:



1. Setting Up our ESXi host and Storage (20%)

To set up and run an ESXi host, you need to download and flash DellEmc Server.

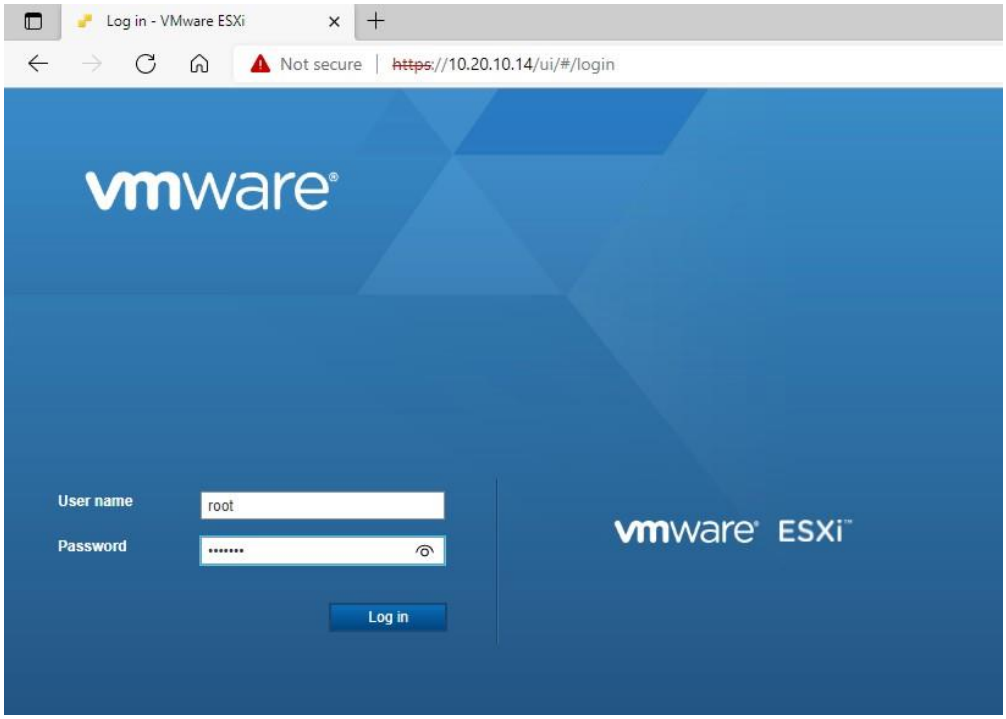
Download and flash ESXi image on to a USB using the following link:

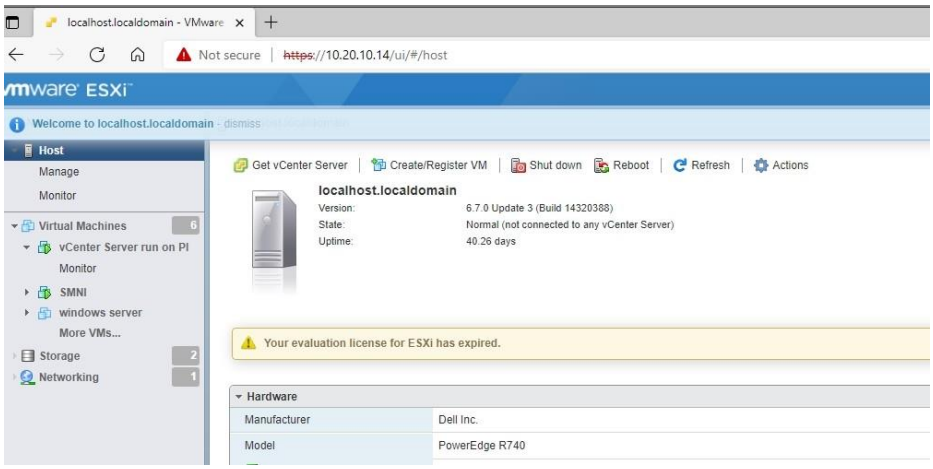
https://www.vmware.com/products/esxi-and-esx.html

Once the installation is complete, you will have an option to give the server a static IP address or IP address via DHCP.

The ESXi host client comes with a web interface. The host client is an HTML5-based client for connecting to and managing individual ESXi hosts. Through this you can perform administrative tasks to manage the host resources such as virtual machines, networking, and storage.

The following figures show the web interface, through which you will login to our ESXi host and manage the server.





The next step is to create a new Datastore for the new VM that will be created.

Follow the steps:

New Datastore -> VMFS datastore -> Use Full Disk

2. Create Virtual Machines (30%)

To make your first VM, you have to upload an ISO image onto the server itself.

Use the Ubuntu Arm Image which can be found here.

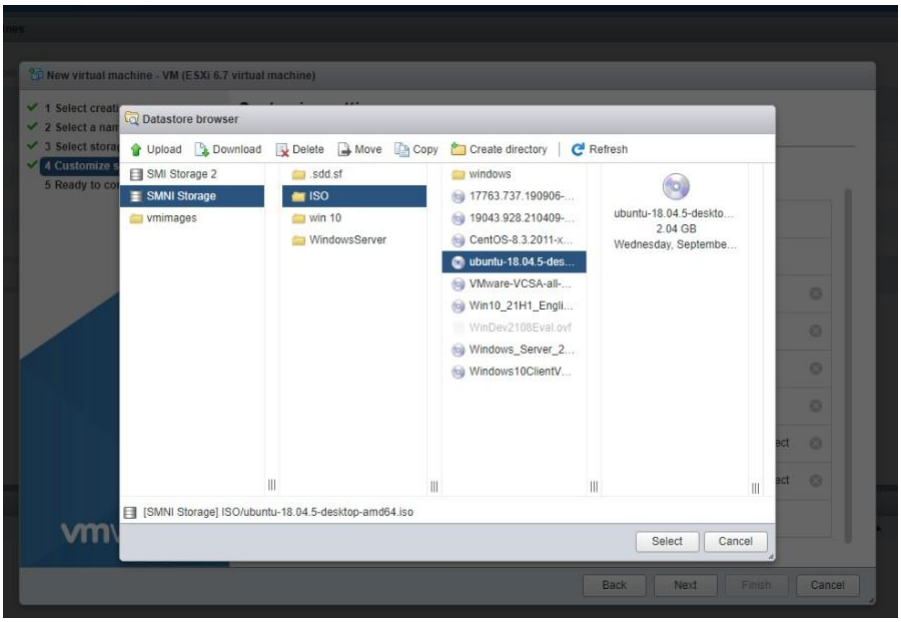
ESXi server is up and running successfully, let us now set up the virtual machines on the ESXi server. For this we will use Ubuntu 18.04.5 desktop ISO image.

First, upload the ISO image onto the datastore.

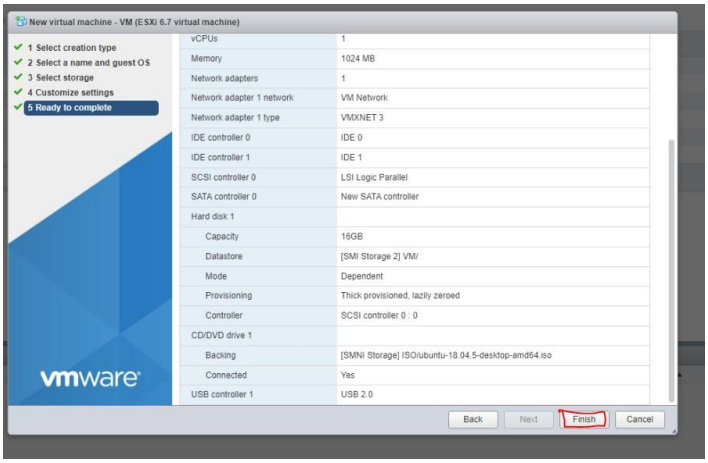
Then, creating and configuring the Virtual Machine.

After that, customize the new VM.

Go to **CD/DVD** and then choose Datastore ISO from the dropdown menu.



Lastly, hit **finish.**



The virtual machine is now ready and we can hit the **power on** button to start the virtual machine.

You can now configure the virtual machine, hostname, username, password.

Once the installation is complete, remove the installation medium and restart.

Test if the machine has an internet connection. This is done by pinging any public IP address on the internet (i.e. Google's public DNS server 8.8.8.8)

3. Setting up a vCenter Server (30%)

Bearing in mind that it is not practical to configure every ESXi host individually as datacenters hold hundreds of servers.

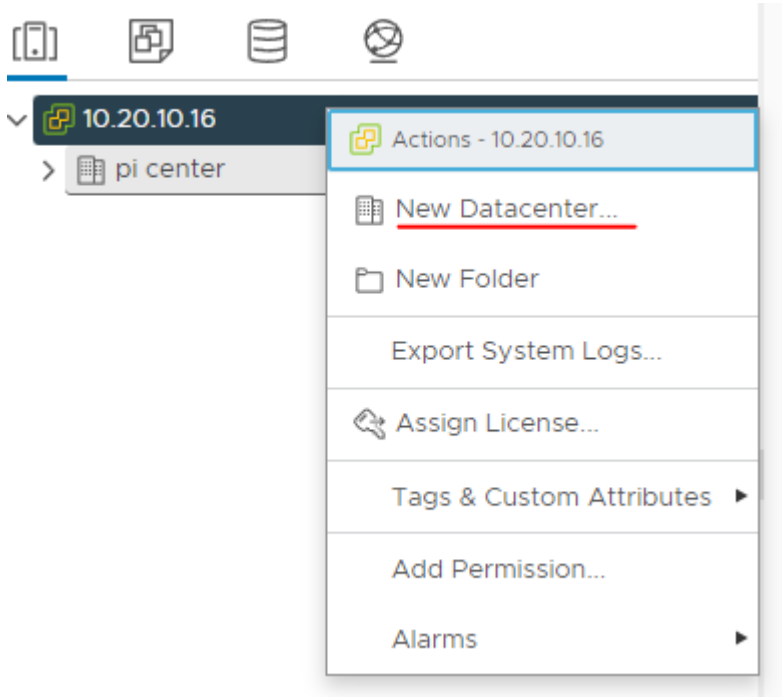
In order to combat this, we will set up a vCenter Server. A vCenter server is a centralized management utility. Which allows us to manage virtual machines and numerous ESXi hosts from a single centralized location.

- First step to setting up a vCenter Server is to download the vCenter Server Appliance from VMware site.
- Next step is to go to the mounted disc and navigate to the **win32** folder, which contains the **installer.exe** GUI application. Do install.
- For the deployment target, enter the ESXi host IP.
- give our vCenter a name and password, which will be the credentials later used to logon to the vCenter Server.
- Choose deployment size and storage location.
- Lastly, configure the network settings.

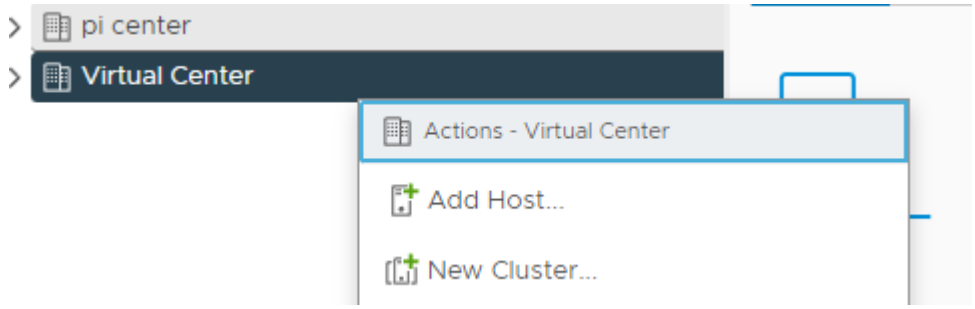
When the installation is completed successfully open the ESXi Host webpage and login with credentials.

Now, to add the ESXi host to the vCenter Server:

First right click and add a new DataCenter.



After adding the datacenter, right click and add a new host which will be our ESXi host.



Now add our ESXi host, enter the IP and its credentials. And then click finish once you are done.

4. Install Active Directory (enable DHCP, DNS) (20%)

In order to install the active directory server we need to upload a windows server ISO image onto our ESXi host. Download the windows server ISO image from microsoft's website. Once done downloading upload the ISO image of the windows server onto the storage.

Now that the image is uploaded, configure the windows server power it up.

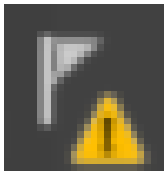
After powering up the windows server, install the following services:

- Active Directory Domain Services
- DNS server
- DHCP server

To install these services, open the server manager application and navigate to Manage → Add Roles and Features.

From the features select Active Directory Domain Services, DHCP server and DNS server.

After the installation is complete, you will see a caution mark next to the flag icon.



When you open it, you will need to do configuration for your services.

For the Active Directory Service configuration, select the option to **promote this server to a domain controller**

Do the configuration.

Then, configure the DHCP. Go to Tools in the server manager and click on DHCP. Go to IPv4 and add a scope.

Once you have installed and configured ADDC and DHCP, you can check the server information in the command line, using the following commands:

- ☐ **Get-ADDomain**
- ☐ **Get-DhcpServerInDC**
- ☐ **Get-DhcpServerv4Scope**

Create test users by going opening the server manager and navigating to Tools → Active Directory Users and Computers. Right click on the domain, and add a new user.

Let us go back to the ubuntu machine we previously created. Power up the ubuntu machine. Go to network configuration and click on the plus sign. Select automatic DHCP for ipv4. You can test that there is an active connection by pinging our DNS.

Using the realm command, you can login to the Active Directory Domain.

Submission

Take screenshots of ALL steps and add some explanation.

Submit your report to the dropbox before the due date (NO LATE SUBMISSION)