|  |  |
| --- | --- |
| Laboratory |  |
| *13* | *LTE Base Station Setup* |
|  | **Advanced Wireless Lab** |
| TLEN 5830 |  |
| Advanced Wireless Lab |  |

This lab is categorized into 4 parts.

1. Setting up the Hypervisor server (ESXi) and creating VMs- Centos and Windows Server 2012.
2. Network configuration of eNB
3. Installation of Required Software for the eNB interfacing.
4. Commissioning the eNB.
5. a) Setting up the Hypervisor Server

Collect the blank Hard-disks from the Professor. This will be the storage for the EPC, ESXi and other software that will be installed in the subsequent steps.

In the DLC 1B20 Lab, kindly use SOC 4 (team-1) and SOC 5 (team-2) servers. First the hypervisor software needs to be installed and the link for same can be found below:  
<https://my.vmware.com/en/web/vmware/evalcenter?p=free-esxi6>   
Please burn the software into a DVD, so that you can use the same in the server.

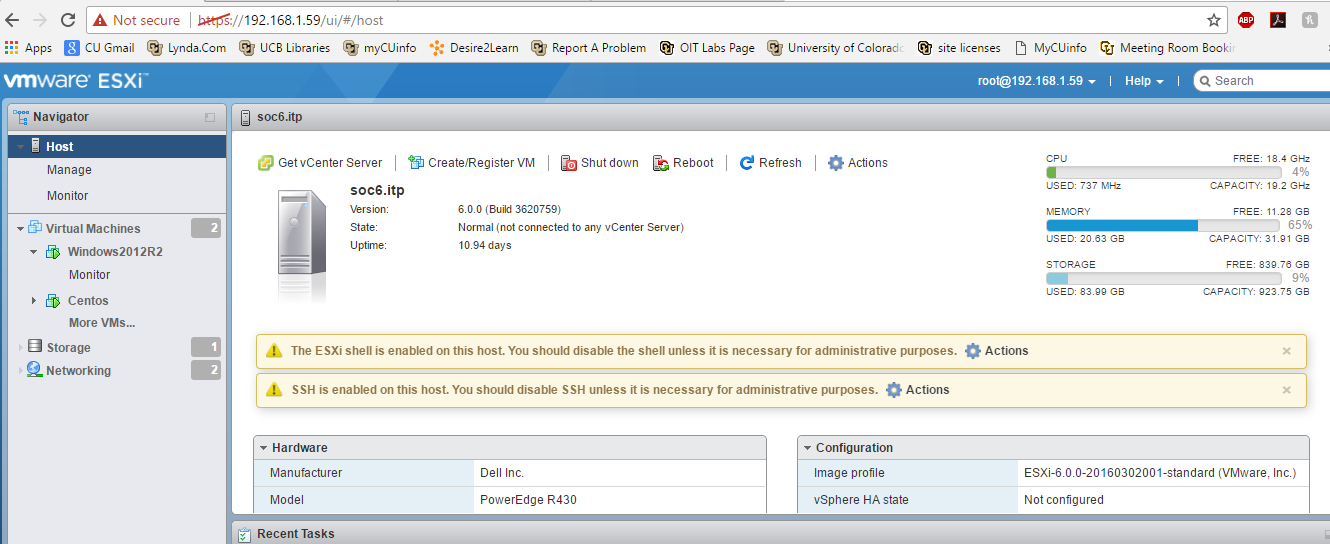
During the boot process, make sure that both the Hard-drives that you inserted are powered on as shown below:



Go into the boot manager and make the server boot from the ESXi software that you downloaded.

Give the default username as “root” and password as “password”. This is just to maintain an uniformity among the servers.

Note down the IP address that the server gets. This is the IP address that you need to browse into, for creating VMs.

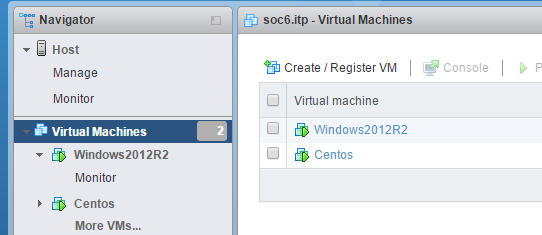


b) Creating the VMs

Once you are in the browser window of the server, go to **Storage** and **create a new datastore.** VMs are created in the datastore. We will be using a single datastore for both the VMs.

Once the datastore is created, import the image file of Windows Server 2012 R2 (64 bit) version.

Next, go to Virtual Machines and create a new VM.



Now make the VM point to the image that you uploaded and start the installation.

1. Network configuration of eNB

Switch on the eNB and wait for a static green light in the back. Once stable, console into it.

Username: root

Password: air4best

Check if you are able to console into the eNB with the default baud rate. If not, try increasing it.

Once you are in the shell, check the ip address of the eNB. There might be multiple interfaces and each might have its own IP. To actually check which eth interface you are connected to, refer to the mac address of the NIC below the eNB.

Disable the other eth interfaces. Change the IP of the connected interface to “192.168.1.71”. Now reboot the eNB.

Now check for the IP again and verify if the changes that you made are saved. The shell takes up the default ip of the interface from “/bsdata/ipaddr” and hence, this time make the modifications in this file.

If you are not able to disable the other eth interfaces, then assign them a static IP in a different subnet in the same file. This is to ensure that you are not confused about the eth interface which is being connected to.

Paste a screenshot of the file after your modification.

Again reboot and check the Ip address. Are the changes reflecting? Please paste a screen shot of the addresses after the change.

Now ping to the computer that the eNB is attached to. Make sure that both are in the same subnet.

Please attach a screen shot of the ICMP message to the eNB and from the eNB.

This ensures that the eNB is assigned a static IP and is part of the same subnet as the EPC, which will be configured in the subsequent steps.

1. Installing the required software on Windows R2 server

There are 3 main software to be installed on windows:

* + - Netspan
    - SQL Express (64 bit)
    - Web server (IIS)

But for Netspan to be installed, web server (IIS) and SQL server need to be installed.

Server manager is a built-in feature of windows server which is used to configure IIS.

Also, few options in the software installation may not be exactly as mentioned in the manual, but it gives an outline of the process.

Installation guide for IIS:



SQL Express software is free to download from Microsoft website. (just search for sql express 2014)

Installation guide for SQL:



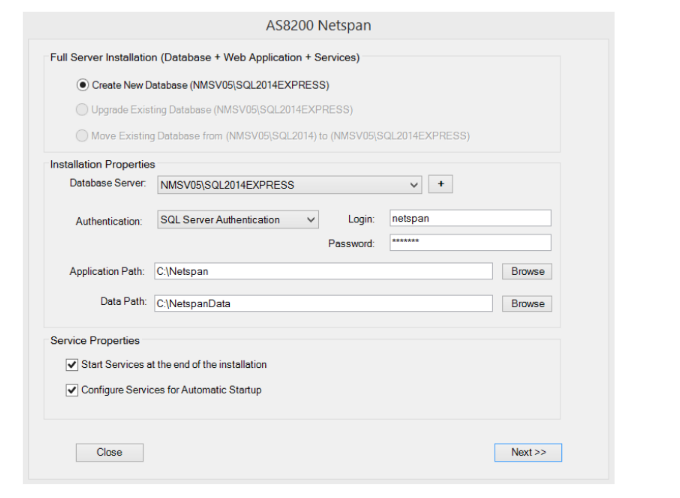
(note: when you are in the database engine configuration page in the manual, follow the manual procedure and click on ‘add current user’ instead of ‘add user’)

Installation of Netspan:

The installation file will be on the website

Extract the file and run the setup.

When you see the screen below:



Select the database server that you selected during IIS configuration (the server from the server pool). If you see server name with *WIN/…* it is referring to your local machine. Since you selected server from the server pool, please select the other server name.

Login: sa

Password: (the password that you provided in the database engine configuration during SQL installation)

And you should see the Netspan installing.

After it is installed, you can access the Netspan web GUI by going to <http://localhost/Netspan/startup/login.aspx> from the VM.

Login credentials:

Username: admin

Password: password

And you should be able to login to the netspan management UI.