

Practical No : 05

Practical Title: Setup your own cloud for Software as a Service (SaaS) over the existing LAN in your laboratory. In this assignment you have to write your own code for cloud controller using open-source technologies to implement with HDFS. Implement the basic operations may be like to divide the file in segments/blocks and upload/ download file on/from cloud in encrypted form.

Objectives:

- To set your own cloud for SaaS over existing LAN
- To implement the basic operations may be like to divide the file in segments/blocks

Hardware Requirements :

- Pentium IV with latest configuration

Software Requirements :

- Ubuntu 20.04, VMware ESXi cloud

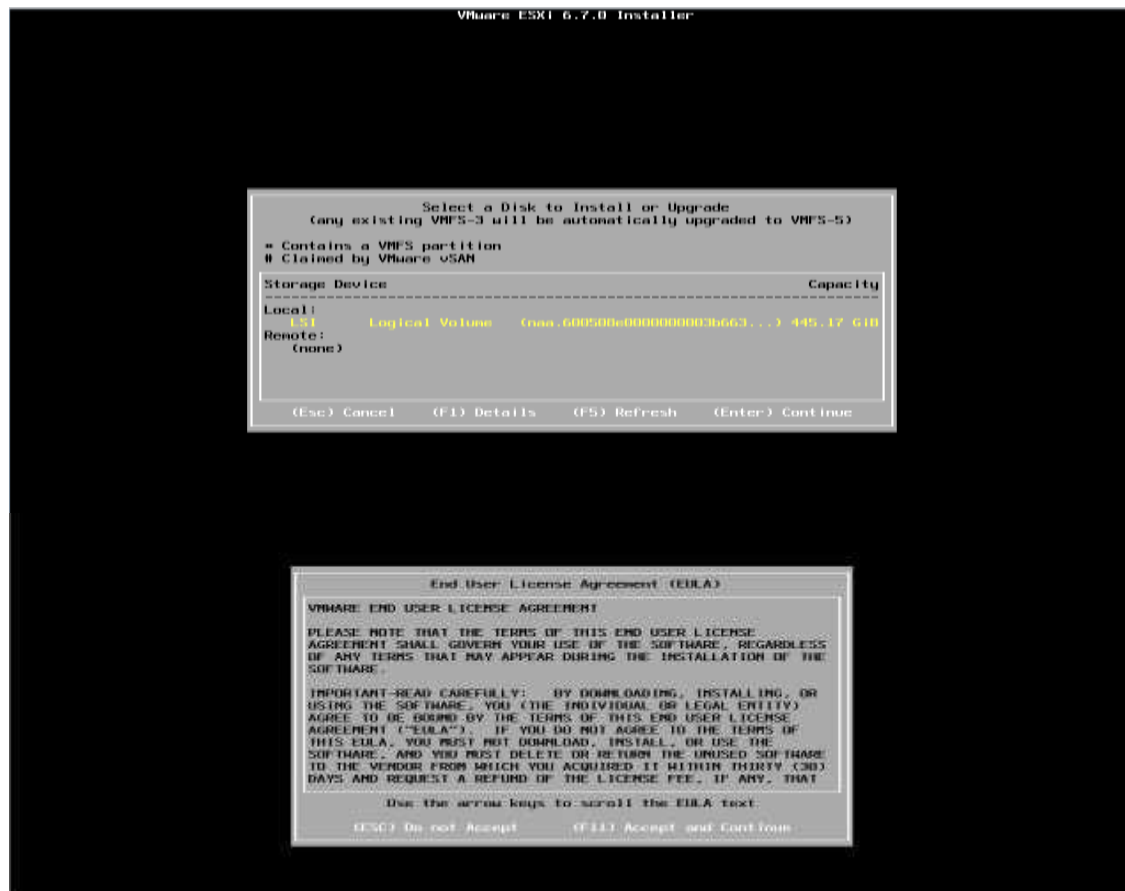
Theory:

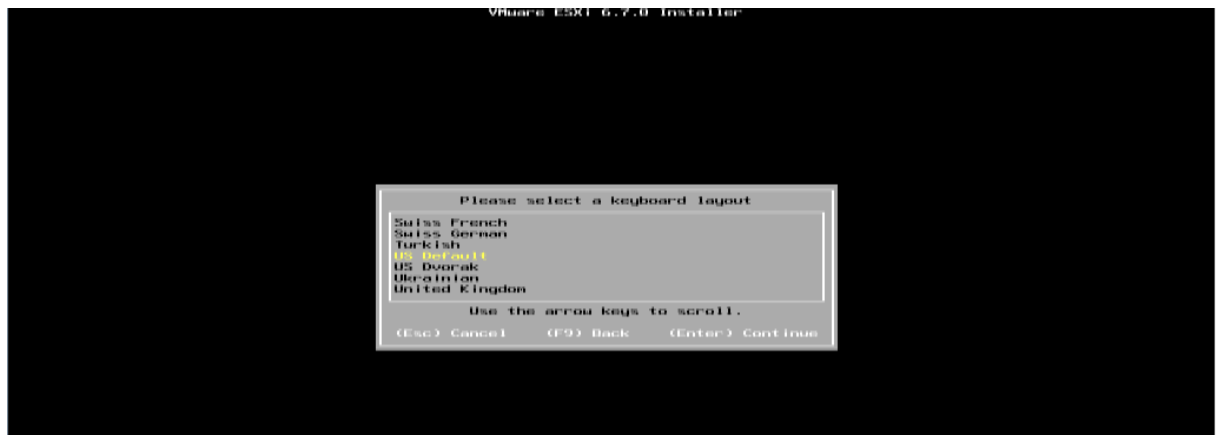
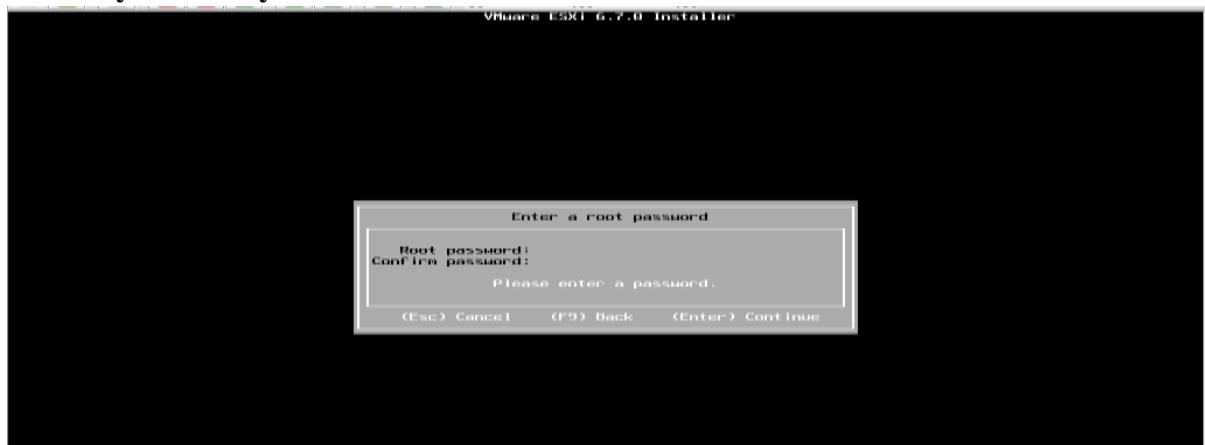
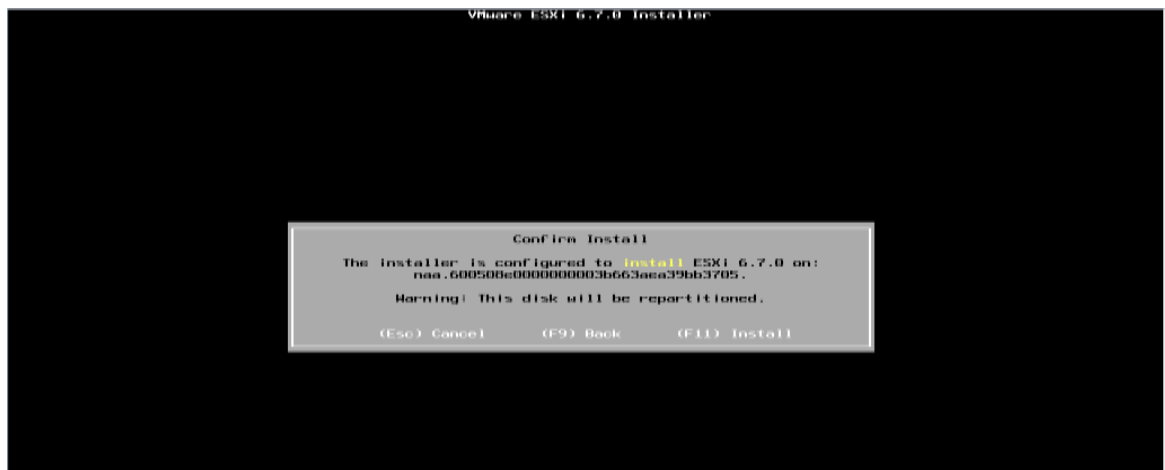
Here we are installing VMware ESXi cloud

- Host/Node ESXi installation:-
- **ESXi Hardware Requirements:-**
 - ESXi 6.7 requires a host machine with at least two CPU cores.
 - ESXi 6.7 supports 64-bit x86 processors
 - ESXi 6.7 requires the NX/XD bit to be enabled for the CPU in the BIOS.
 - ESXi 6.7 requires a minimum of 4 GB of physical RAM. It is recommended to provide at least 8 GB of RAM to run virtual machines in typical production environments.
 - To support 64-bit virtual machines, support for hardware virtualization (Intel VT-x or AMD RVI) must be enabled on x64 CPUs.
 - One or more Gigabit or faster Ethernet controllers. For a list of supported network adapter models.
 - SCSI disk or local, non-network, RAID LUN with unpartitioned space for the virtual machines.

[illegible]

Accept Agreement:



Select storage :**Select Keyboard Layout :****Set NodeESXi Root Password :**

Installation complete (Reboot) CLI interface to configuration



CLI Interface to Configuration:



Configure Management Network

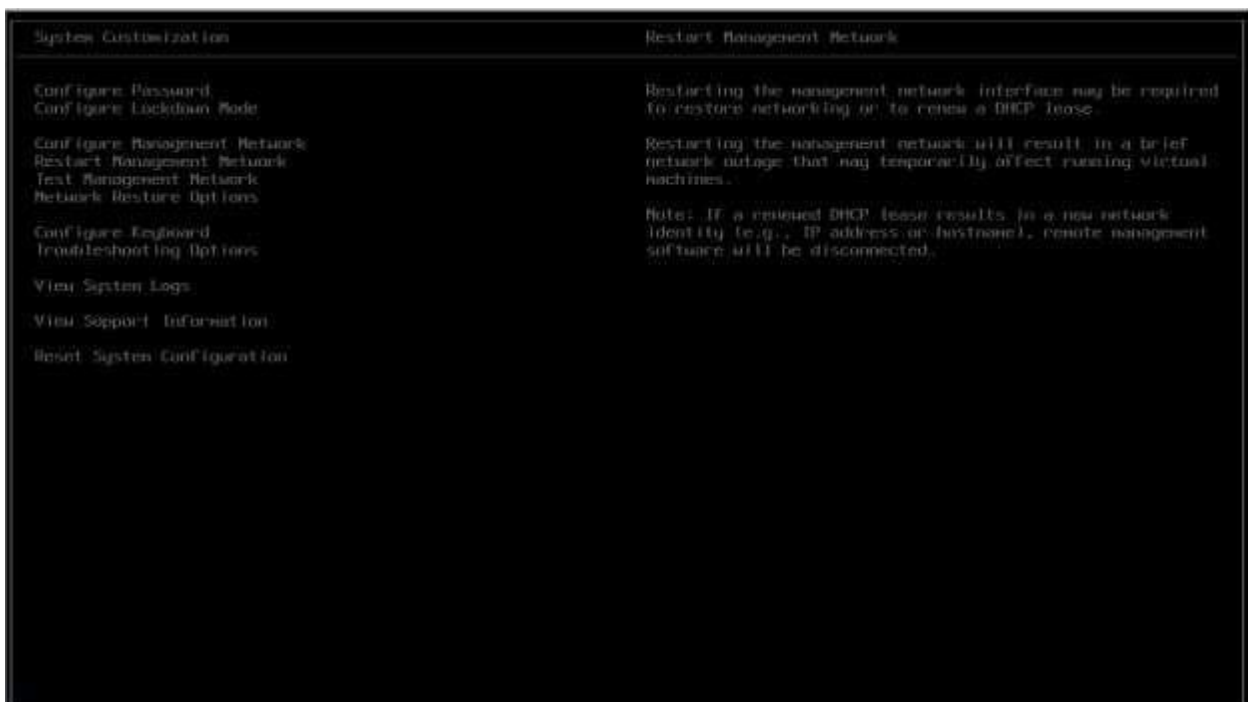


Set IPV4



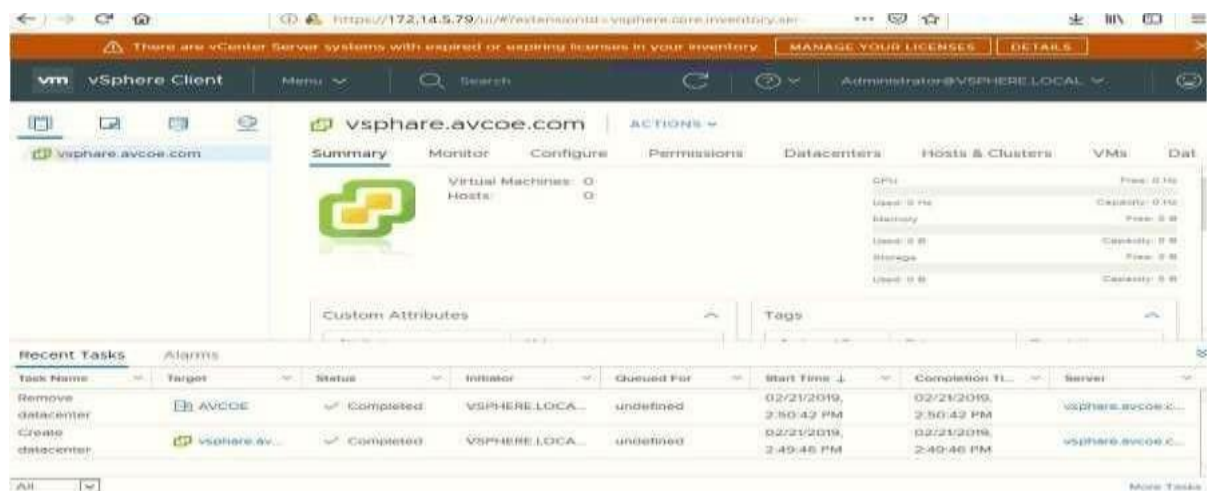
Set DNS Server :

Restart Management Network

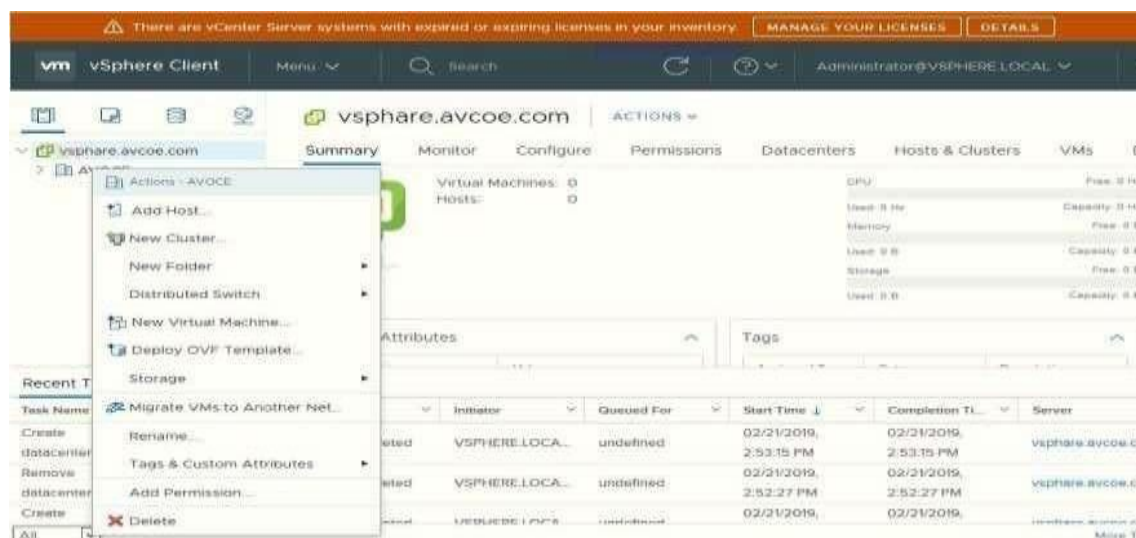
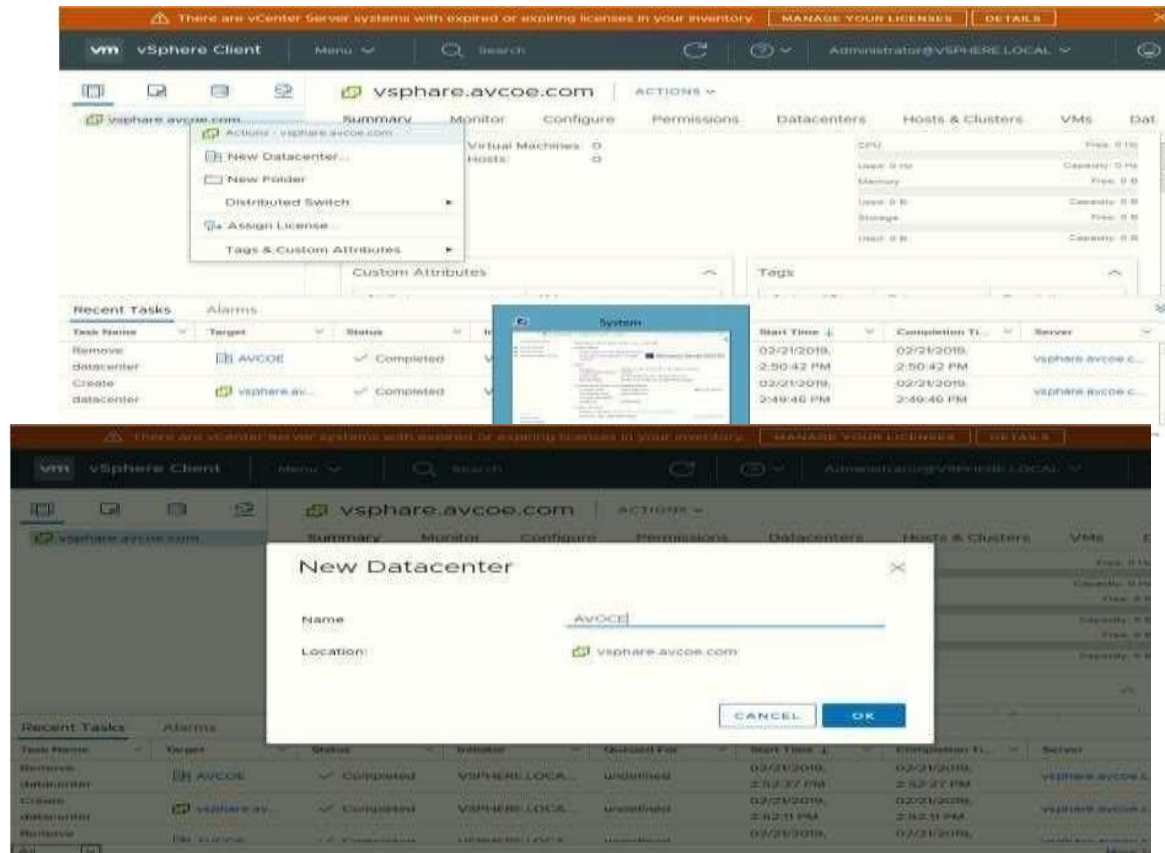


GUIAccess :**ClusterSetup**

- **CreatingDatacenter**
- **CreatingCluster**
- **Adding Hosts incluster**
- **Resourcesafteraddingcluster.**
- **DRS**
- **Failover**

VCenter Access:

Create Datacenter:

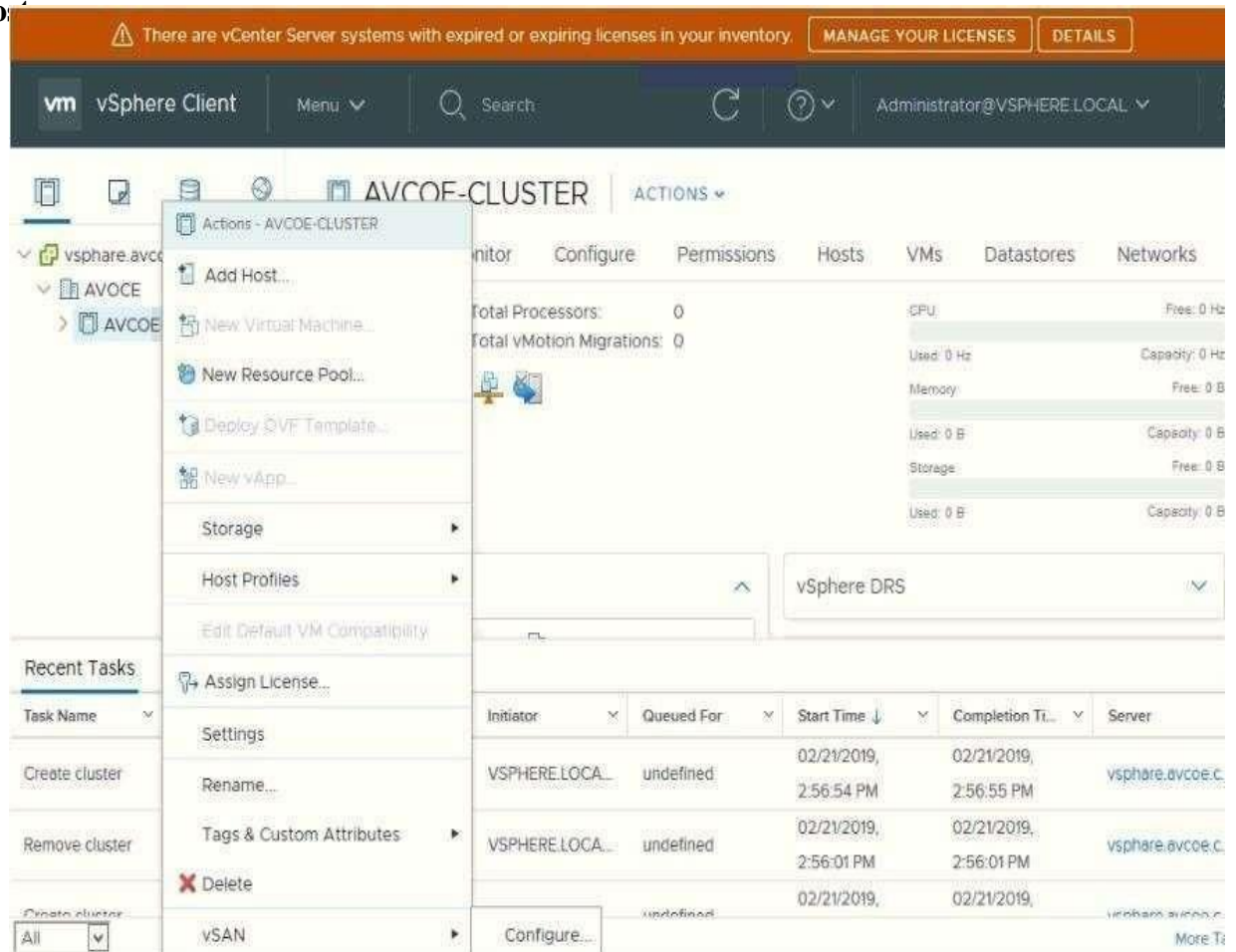


Create cluster :

Assign cluster name :



Add host

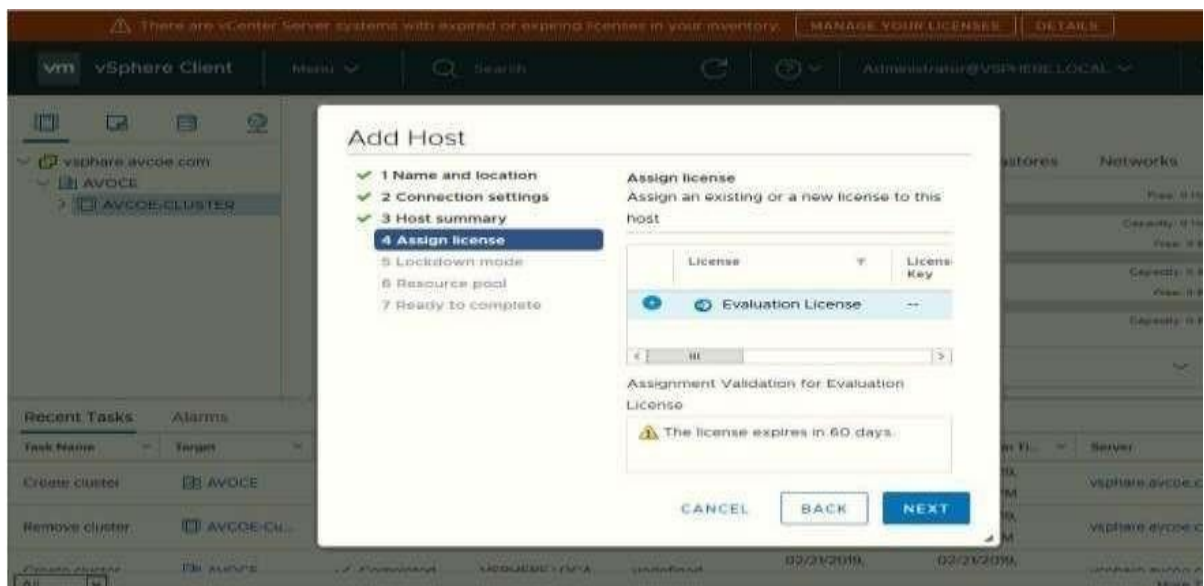


Add host IP :



Enter host cred

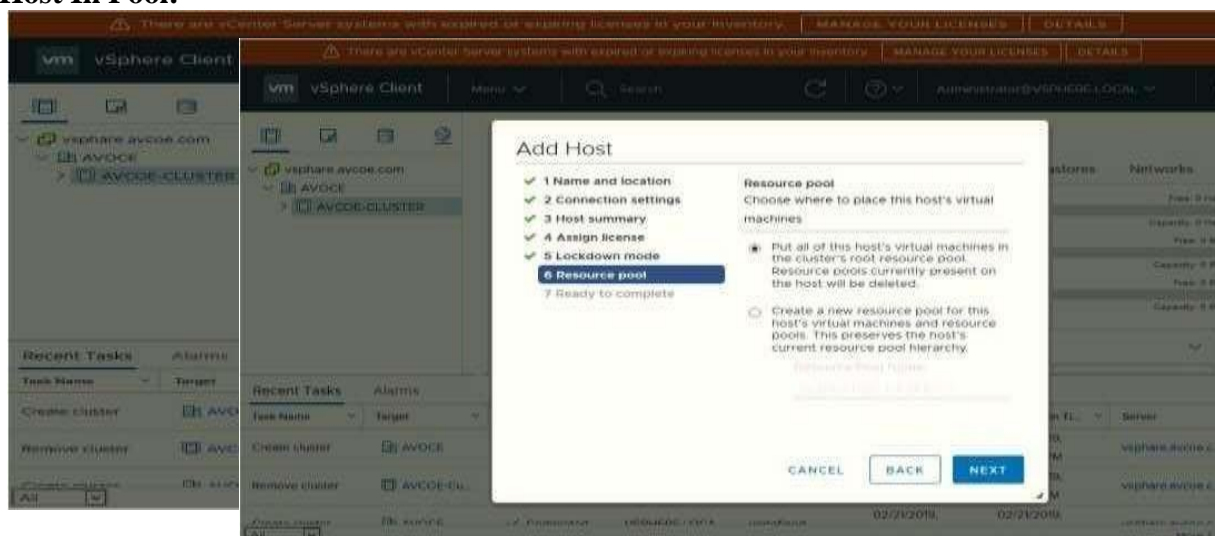




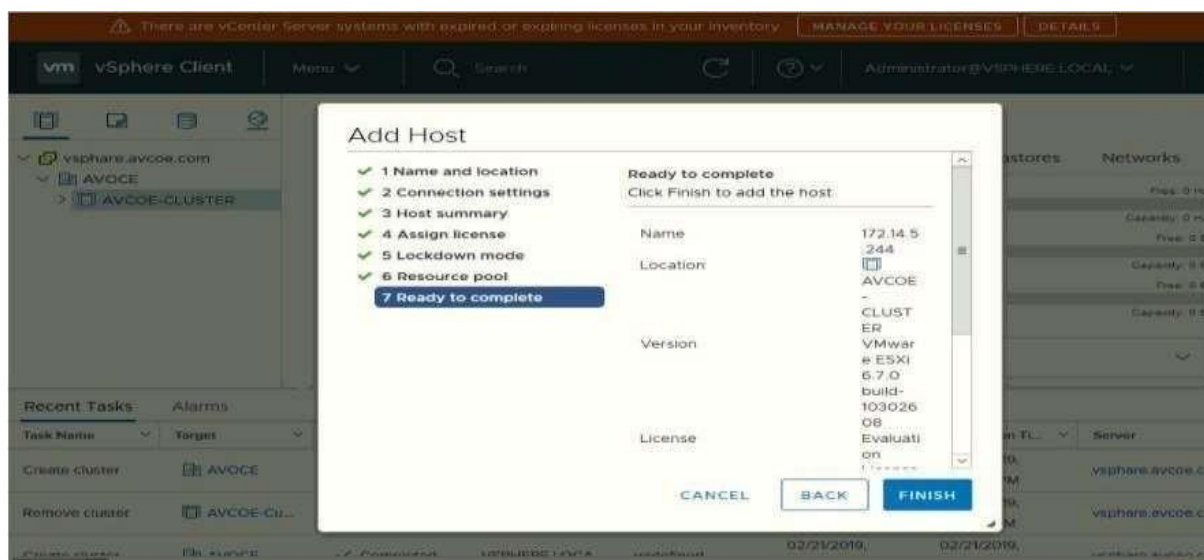
Hot summary :

Lock Down mode:

Add Host In Pool:



Finish:



Host View and View Config:

Cluster View and Configuration:

The screenshot shows the vSphere Client interface with the Host View selected for the host 172.14.5.245. The left sidebar shows the hierarchy: vsphere.avcoe.com > AVCOE-CLUSTER > 172.14.5.245. The main panel displays the Summary tab with the following details:

- Hypervisor:** VMware ESXi, 6.7.0, 10302808
- Model:** HP Z420 Workstation
- Processor Type:** Intel(R) Xeon(R) CPU E5-1607 v2 @ 3.00GHz
- Logical Processors:** 4
- NICs:** 1
- Virtual Machines:** 0
- State:** Connected
- Uptime:** 0 second

Resource usage is shown on the right:

- CPU:** Free: 11.97 GHz, Used: 0 Hz, Capacity: 11.97 GHz
- Memory:** Free: 15.93 GB, Used: 0 B, Capacity: 15.93 GB
- Storage:** Free: 923.68 GB, Used: 1.42 GB, Capacity: 924 GB

The Recent Tasks table at the bottom shows:

Task Name	Target	Status	Initiator	Queued For	Start Time	Completion TL	Server
Configuring vSphere HA	172.14.5.245	6%	System	156 ms	02/21/2019, 3:04:54 PM		vsphere.avcoe.c...
Add host	AVCOE-CL...	✓ Completed	VSPHERE.LOCA...	undefined	02/21/2019, 3:04:48 PM	02/21/2019, 3:04:54 PM	vsphere.avcoe.c...
Configuring	172.14.5.245	✓ Completed	System	64 ms	02/21/2019, 3:04:54 PM	02/21/2019, 3:04:54 PM	vsphere.avcoe.c...

The screenshot shows the vSphere Client interface with the Cluster View selected for the cluster AVCOE-CLUSTER. The left sidebar shows the hierarchy: vsphere.avcoe.com > AVCOE-CLUSTER > 172.14.5.244 > 172.14.5.245. The main panel displays the Summary tab with the following details:

- Total Processors:** 8
- Total vMotion Migrations:** 0

Resource usage is shown on the right:

- CPU:** Free: 21.39 GHz, Used: 2.55 GHz, Capacity: 23.94 GHz
- Memory:** Free: 25.9 GB, Used: 2.96 GB, Capacity: 31.85 GB
- Storage:** Free: 1.8 TB, Used: 2.34 GB, Capacity: 1.8 TB

The Recent Tasks table at the bottom shows:

Task Name	Target	Status	Initiator	Queued For	Start Time	Completion TL	Server
Configuring vSphere HA	172.14.5.245	✓ Completed	System	156 ms	02/21/2019, 3:04:54 PM	02/21/2019, 3:05:34 PM	vsphere.avcoe.c...
Add host	AVCOE-CL...	✓ Completed	VSPHERE.LOCA...	undefined	02/21/2019, 3:04:48 PM	02/21/2019, 3:04:54 PM	vsphere.avcoe.c...
Configuring	172.14.5.244	✓ Completed	System	64 ms	02/21/2019, 3:04:54 PM	02/21/2019, 3:04:54 PM	vsphere.avcoe.c...

Conclusion: Like this we have configure VSphere Private Cloud