

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:

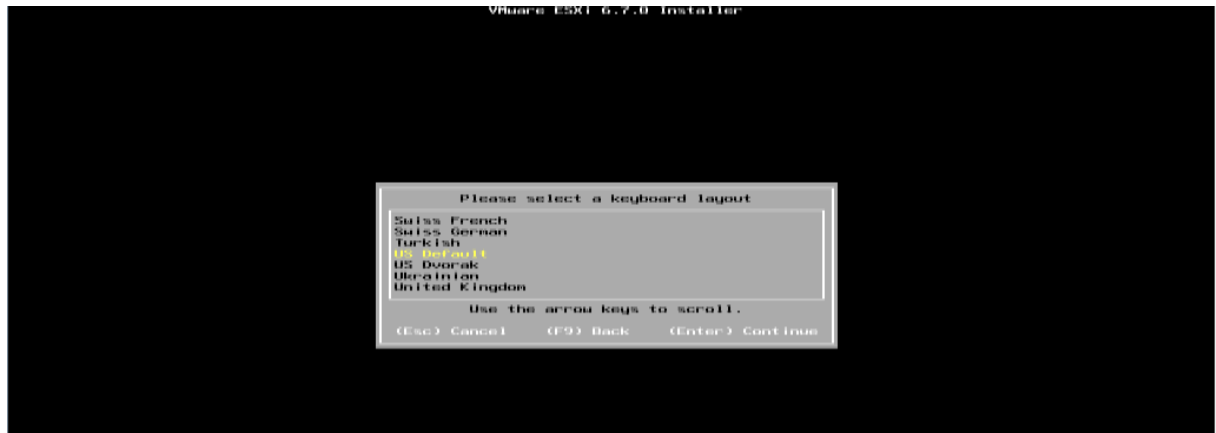
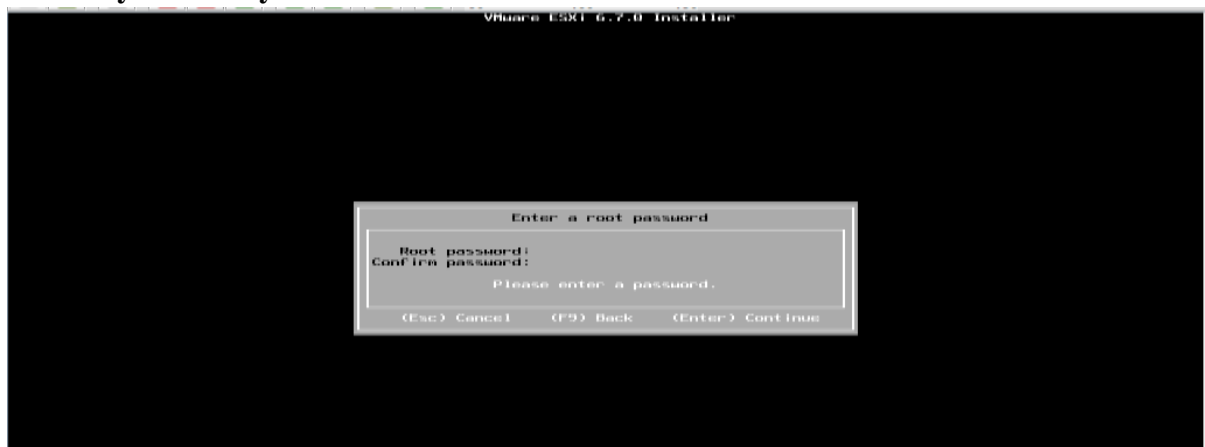
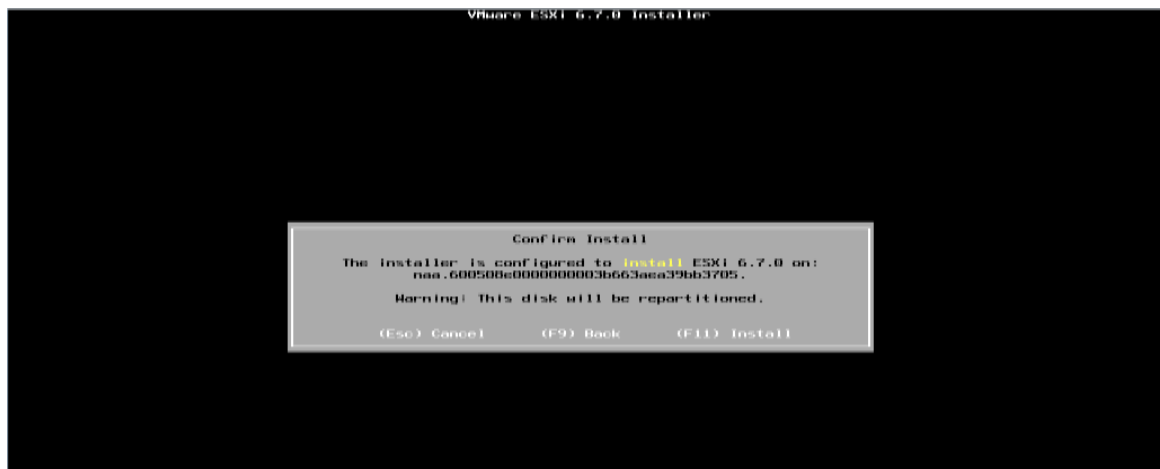
Here we are installing VMware ESXi cloud

- 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.

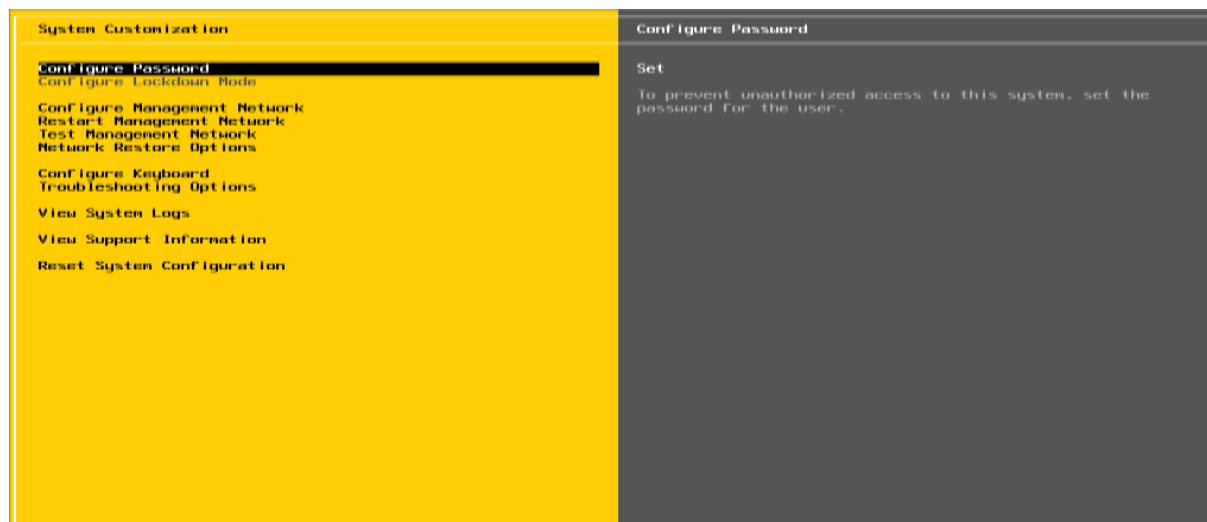
[illegible]

Accept Agreement:

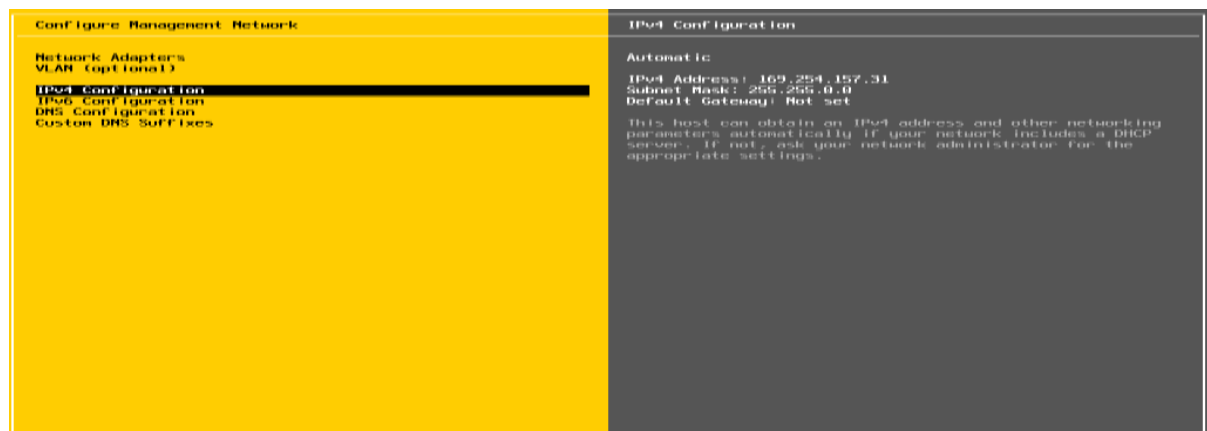


Select storage :**Select Keyboard Layout :****Set NodeESXi Root Password :**

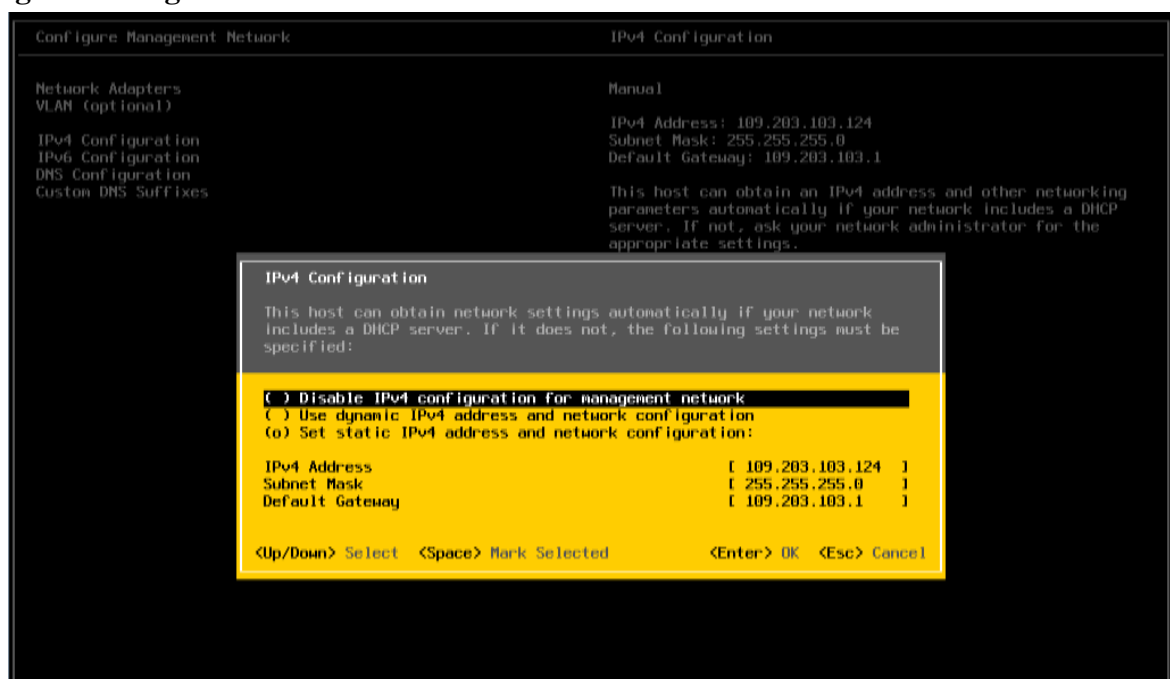
Installation complete (Reboot) CLI interface to configuration



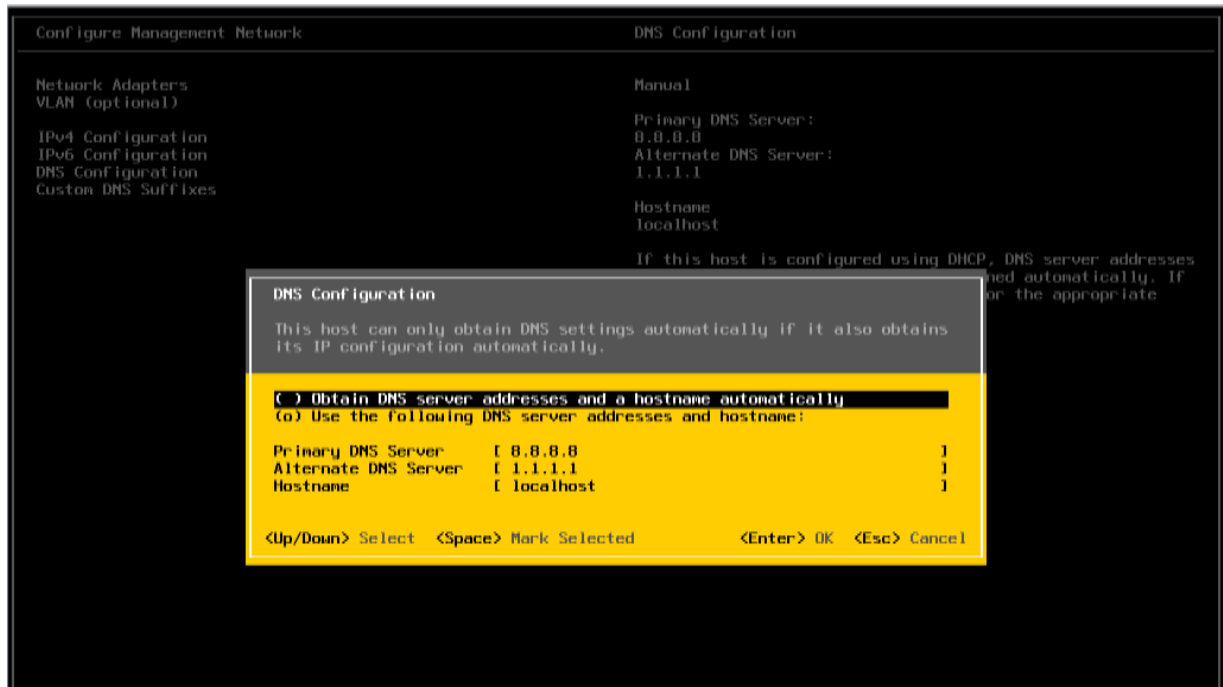
CLI Interface to Configuration:



Configure Management Network

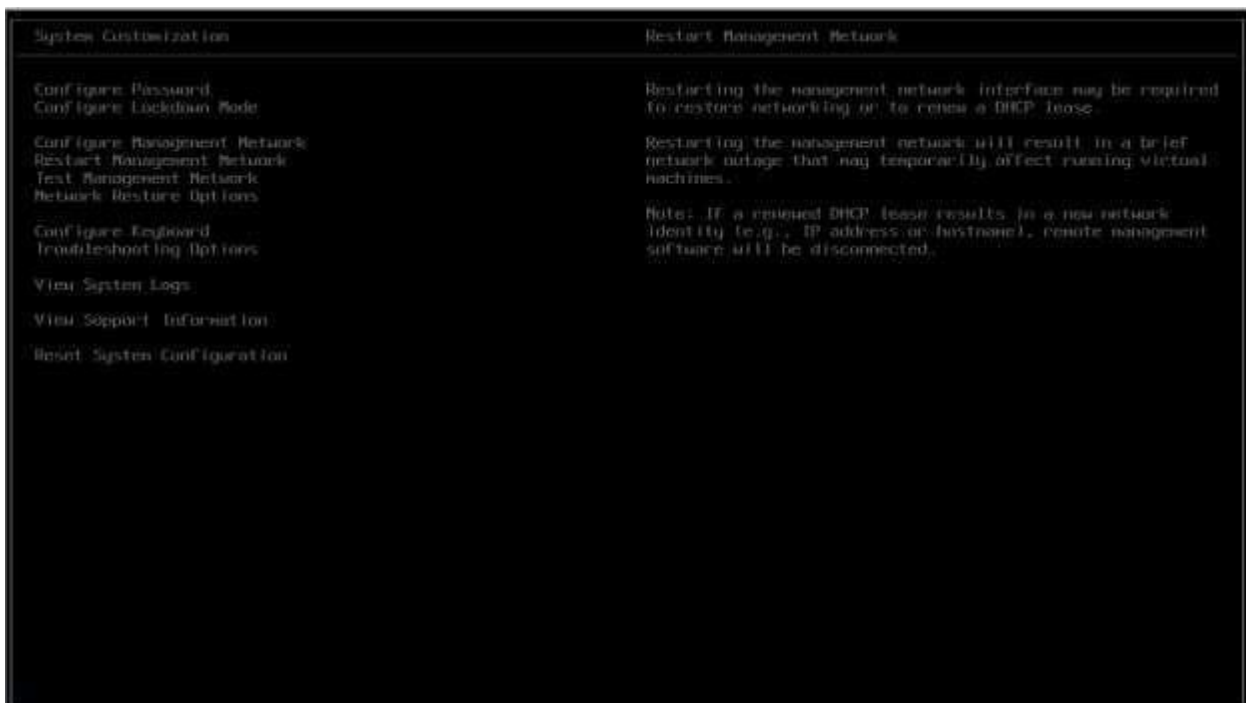


Set IPV4



Set DNSeriver :

Restart Management Network

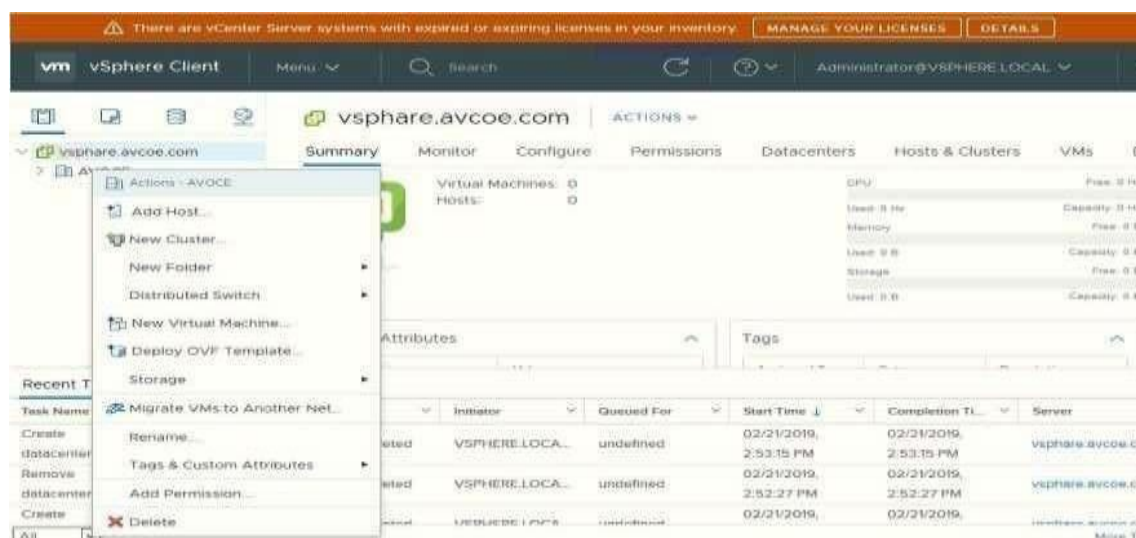
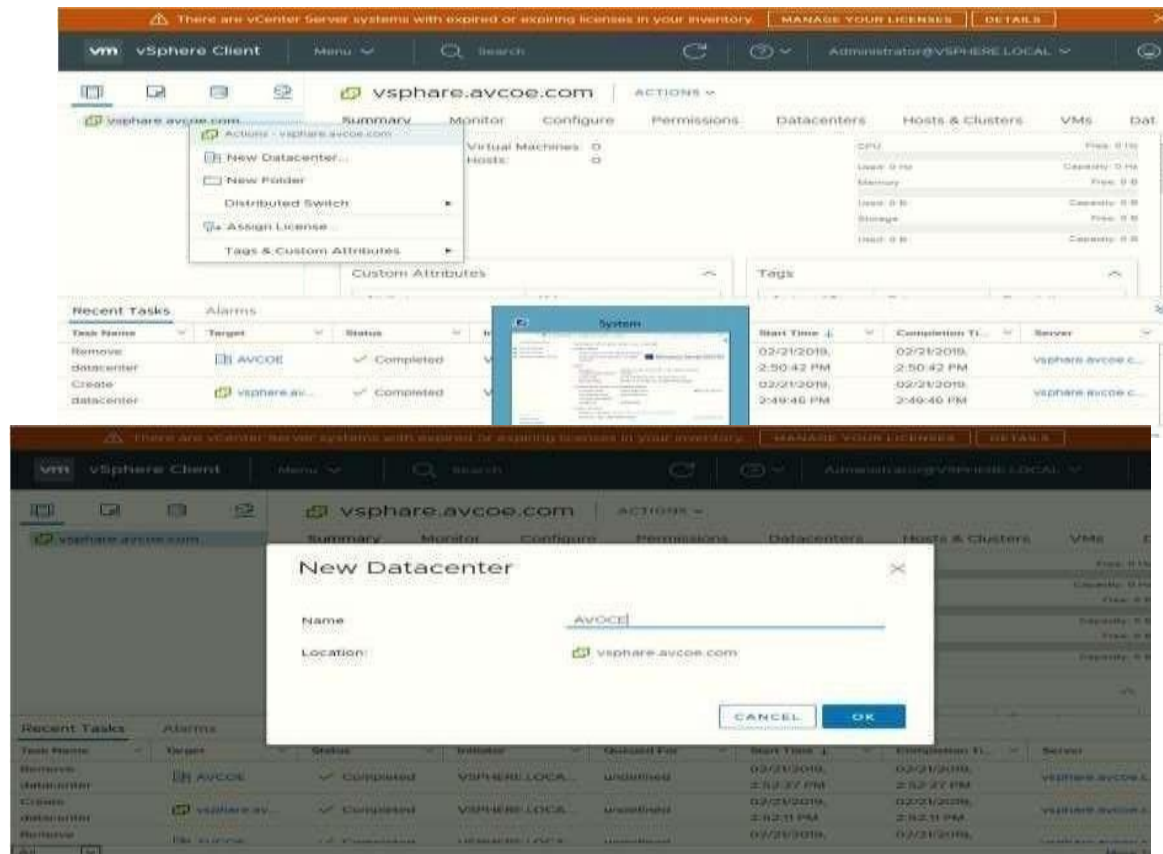


GUIAccess :**ClusterSetup**

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

VCenter Access:

Create Datacenter:



Create cluster :

Assign cluster name :



There are vCenter Server systems with expired or expiring licenses in your inventory. [MANAGE YOUR LICENSES](#) [DETAILS](#)

vm vSphere Client Menu Search Administrator@VSPHERE.LOCAL

AVCOE-CLUSTER

ACTIONS

- Actions - AVCOE-CLUSTER
 - Add Host...
 - New Virtual Machine...
 - New Resource Pool...
 - Deploy OVF Template...
 - New vApp...
 - Storage
 - Host Profiles
 - Edit Default VM Compatibility
 - Assign License...
 - Settings
 - Rename...
 - Tags & Custom Attributes
 - Delete
 - vSAN

Recent Tasks

| Task Name | Task Name | Task Name | Task Name | Task Name | Task Name |
|----------------|----------------|----------------|----------------|----------------|----------------|
| Create cluster | Create cluster | Create cluster | Create cluster | Create cluster | Create cluster |
| Remove cluster | Remove cluster | Remove cluster | Remove cluster | Remove cluster | Remove cluster |
| Create cluster | Create cluster | Create cluster | Create cluster | Create cluster | Create cluster |

Task Name

Settings

Rename...

Tags & Custom Attributes

Delete

vSAN

Configure...

Monitor Configure Permissions Hosts VMs Datastores Networks

Total Processors: 0

Total vMotion Migrations: 0

CPU

Free: 0 Hz

Used: 0 Hz

Capacity: 0 Hz

Memory

Free: 0 B

Used: 0 B

Capacity: 0 B

Storage

Free: 0 B

Used: 0 B

Capacity: 0 B

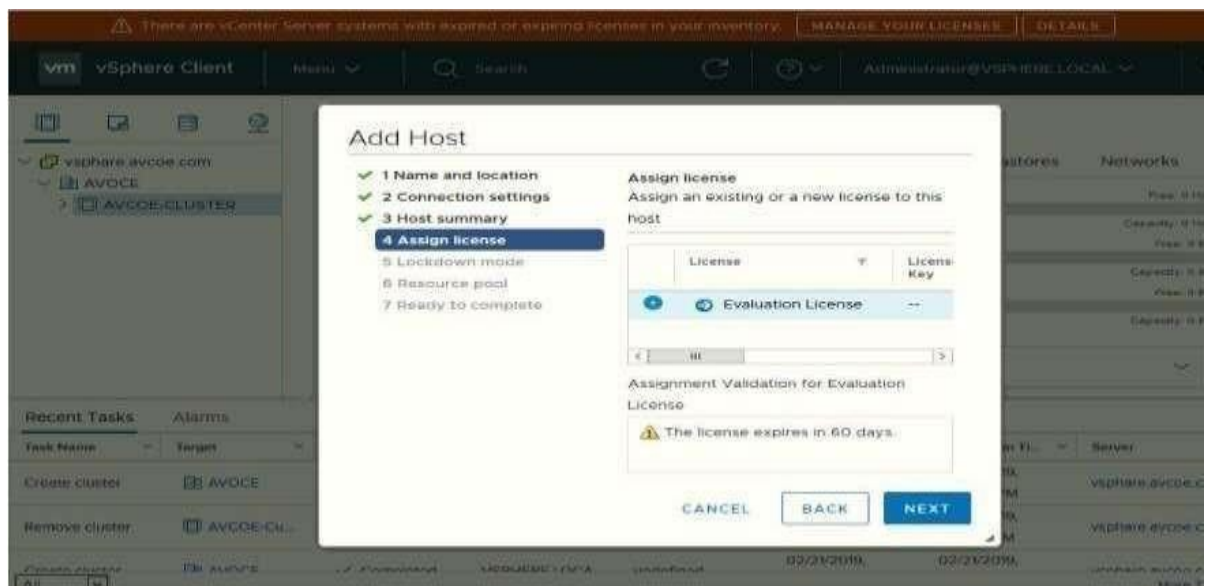
vSphere DRS

| Initiator | Queued For | Start Time | Completion Time | Server |
|---------------|------------|------------------------|------------------------|-----------------|
| VSPHERE.LOCAL | undefined | 02/21/2019, 2:56:54 PM | 02/21/2019, 2:56:55 PM | vsphere.avcoe.c |
| VSPHERE.LOCAL | undefined | 02/21/2019, 2:56:01 PM | 02/21/2019, 2:56:01 PM | vsphere.avcoe.c |
| VSPHERE.LOCAL | undefined | 02/21/2019, 2:56:01 PM | 02/21/2019, 2:56:01 PM | vsphere.avcoe.c |



The screenshot shows the vSphere Client interface with the 'Add Host' wizard open. The wizard is at Step 1: Name and location. The host name is '172.15.0.344' and the location is 'AVCDE-CLUSTER'. The background shows the vSphere Client interface with a top navigation bar and a left sidebar.

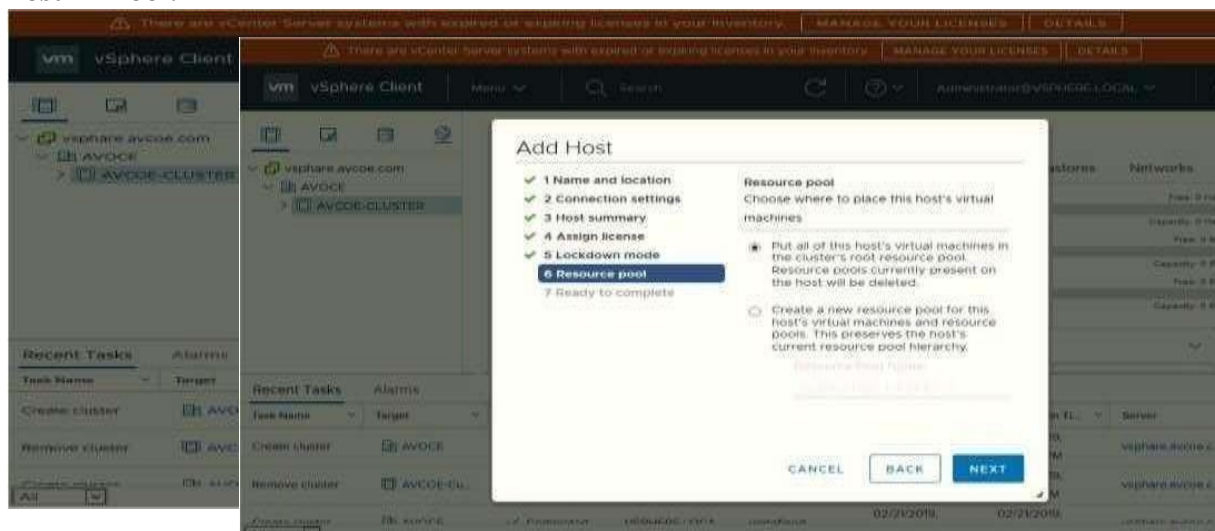
The screenshot shows the vSphere Client interface with the 'Add Host' wizard open. The wizard is at step 2, 'Host summary', which reviews the host details. The host name is '172.14.5.244', vendor is 'Hewlett-Packard', model is 'HP Z420 Workstation', and version is 'VMware ESX: 6.7.0 build-103026008'. The background shows the vSphere inventory with a cluster named 'AVOCES-CLUSTER'.



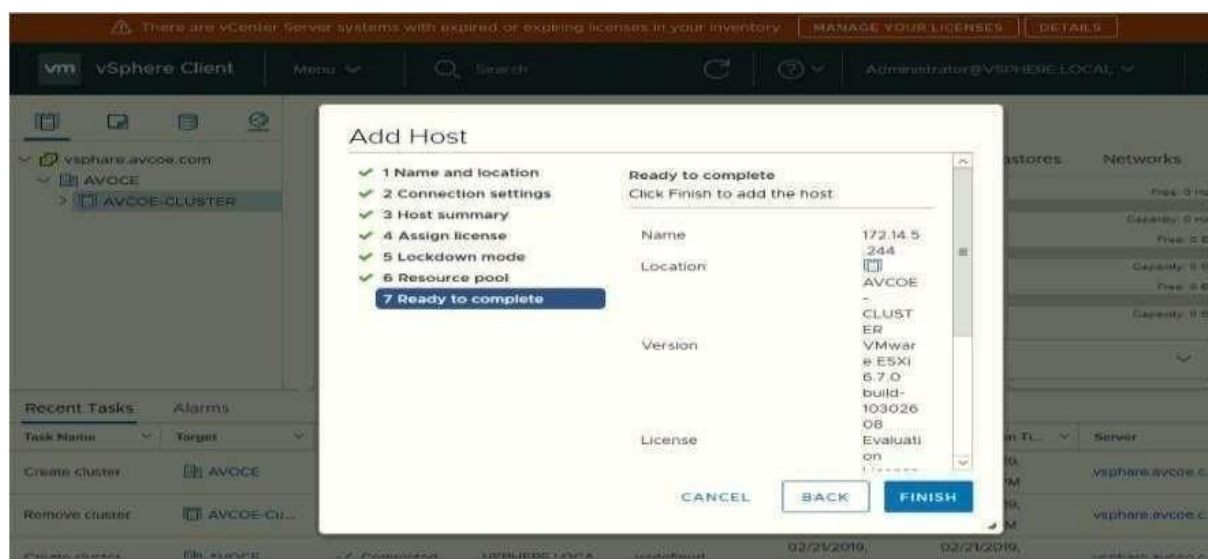
Hot summary :

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 inventory tree with 'AVCOE-CLUSTER' selected. The main pane displays the host's summary, including 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), and Uptime (0 second). The right pane shows resource usage for CPU, Memory, and Storage. The bottom pane shows a table of recent tasks.

| 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.LOCAL... | 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 | 84 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 inventory tree with 'AVCOE-CLUSTER' selected. The main pane displays the cluster's summary, including Total Processors (8), Total vMotion Migrations (0), and resource usage for CPU, Memory, and Storage. The right pane shows the vSphere DRS configuration. The bottom pane shows a table of recent tasks.

| 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.LOCAL... | 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 | 84 ms | 02/21/2019, 3:04:54 PM | 02/21/2019, 3:04:54 PM | vsphere.avcoe.c... |

Conclusion: Like this we have configure VSpere Private Cloud