

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.

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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, VMwareESXi cloud

Theory:

Here we are installing VMwareESXi cloud

Host/NodeESXi installation:- ESXiHardwareRequirements:-

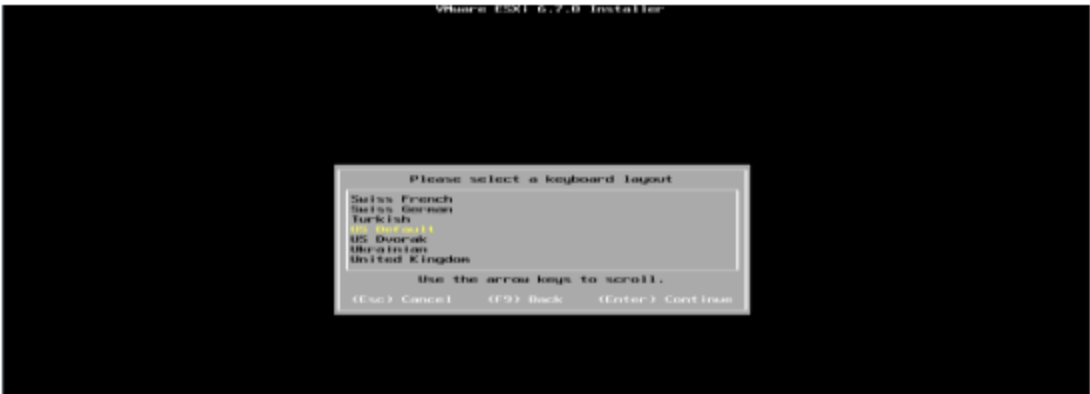
- ESXi6.7requiresahostmachinewithatleasttwoCPUcores.
- ESXi6.7supports64-bitx86processors
- ESXi6.7requirestheNX/XDbit to be enabled for the CPU in the BIOS.
- ESXi6.7requiresaminimumof4GBofphysicalRAM.Itisrecommended to provide atleast 8 GB of RAM to run virtual machines in typical productionenvironments.
- Tosupport64-bitvirtualmachines,support for hardware virtualization (IntelVT-xor AMDRVI) mustbeenabledonx64CPUs.
- One or more Gigabit or faster Ethernet controllers. For a list of supportednetwork adapter models.
- SCSI disk oralocal,non-network,RAIDLUN with unpartitioned space for the virtualmachines ForSerialATA(SATA), a disk connected through supported SAS controller or supported on board SATA controllers. SATA disks are considered remote not local. These disks are not used as a scratch partition by default be cause they are seen as remote.

ESXiInstaller:

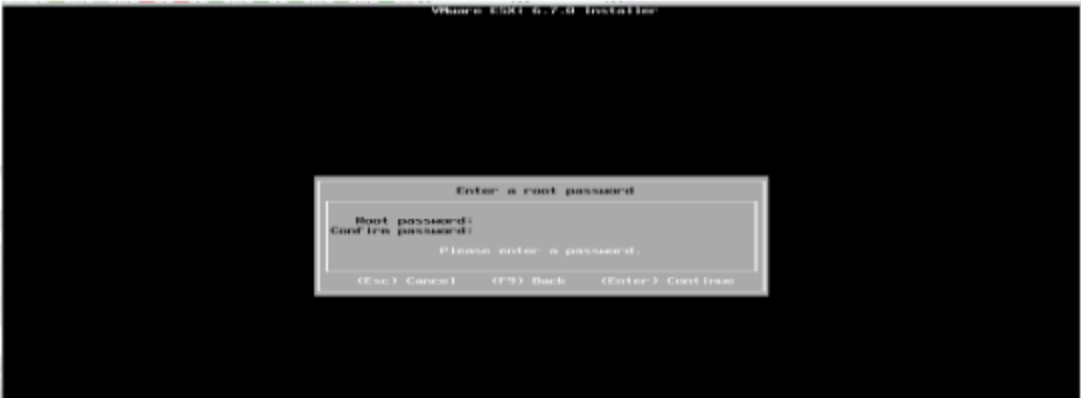
Accept Agreement:



Select storage :



Select Keyboard Layout :



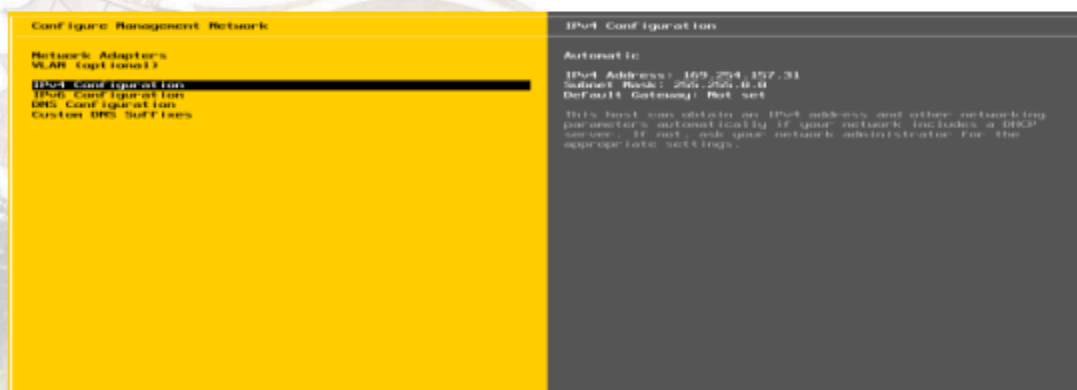
Set NodeESXi Root Password :



Installation complete (Reboot) CLI interface to configuration



CLI Interface to Configuration:



Configure Management Network



Set IPV4



Set DNServer :

Restart Management Network

Restart Management Network

System Customization

Configure Password
Configure Lockdown Mode

Configure Management Network
Restart Management Network
Test Management Network
Network Restore Options

Configure Keyboard
Troubleshooting Options

View System Logs

View Support Information

Reset System Configuration

Restart Management Network

Restarting the management network interface may be required to restore networking or to renew a DHCP lease.

Restarting the management network will result in a brief network outage that may temporarily affect running virtual machines.

Note: If a renewed DHCP lease results in a new network identity (e.g., IP address or hostname), remote management software will be disconnected.

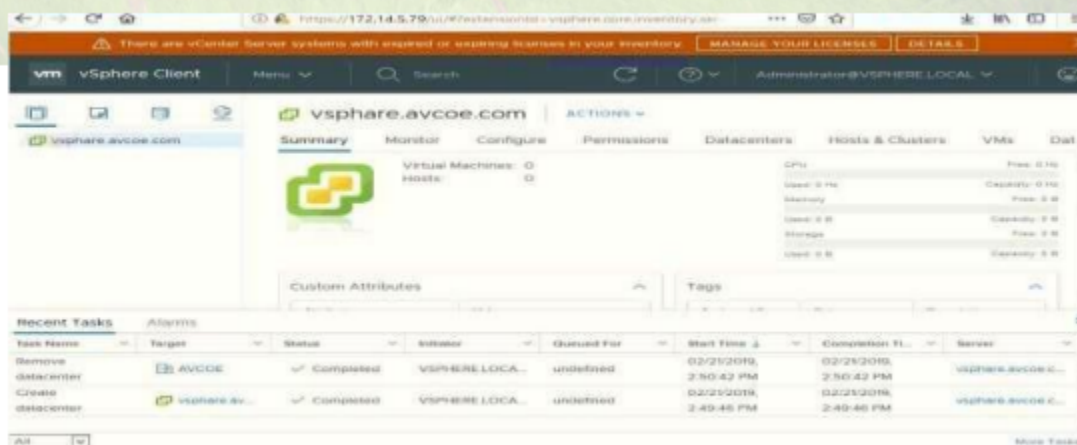
GUIAccess :



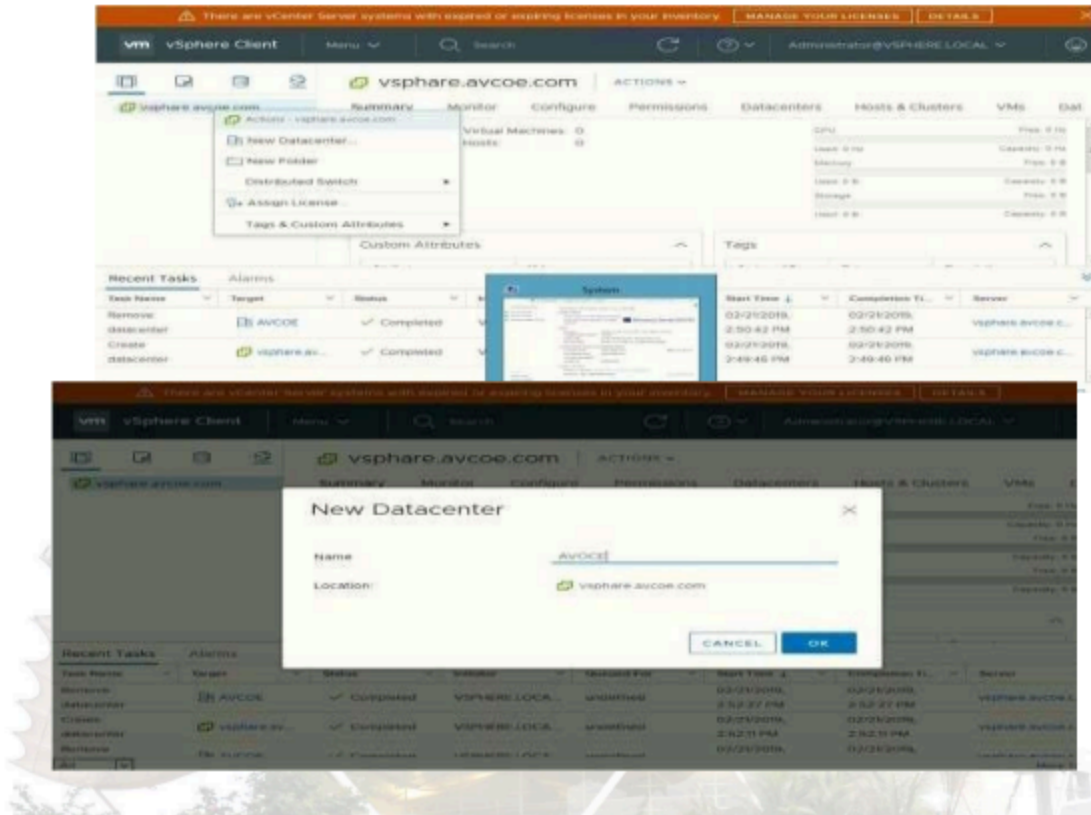
ClusterSetup

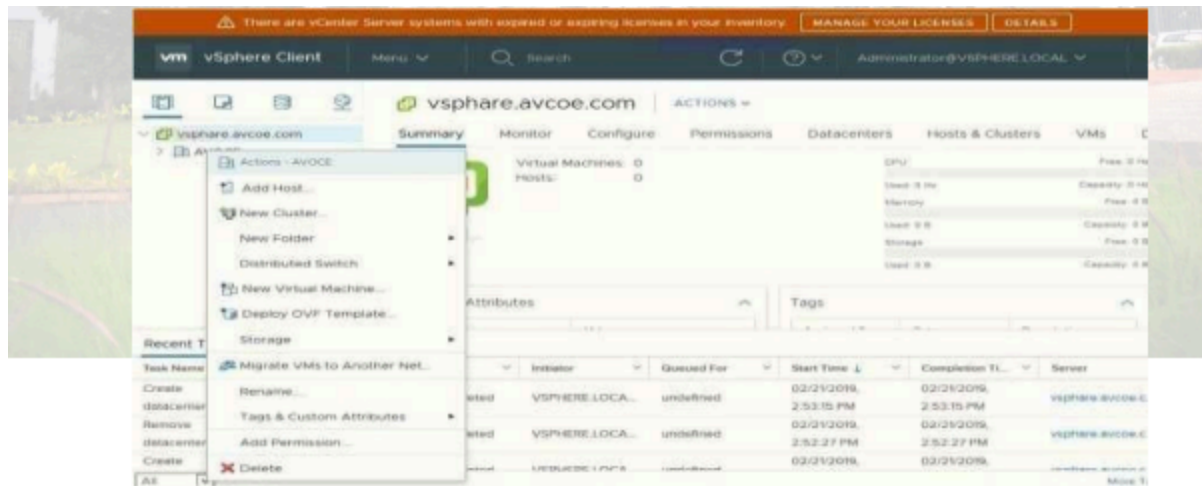
- CreatingDatacenter
- CreatingCluster
- Adding Hosts incluster
- Resourcesafteraddingcluster.
- DRS
- Failover

VCenter Access:



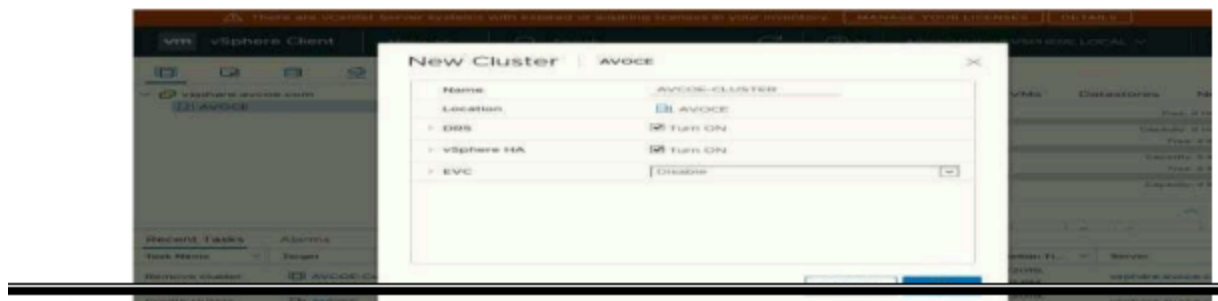
Create Datacenter:





Create cluster :

Assign cluster name :



Add host .:

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

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
undefined	undefined	02/21/2019,	02/21/2019,	undefined

Recent Tasks

Task Name
Create cluster
Remove cluster
Create cluster

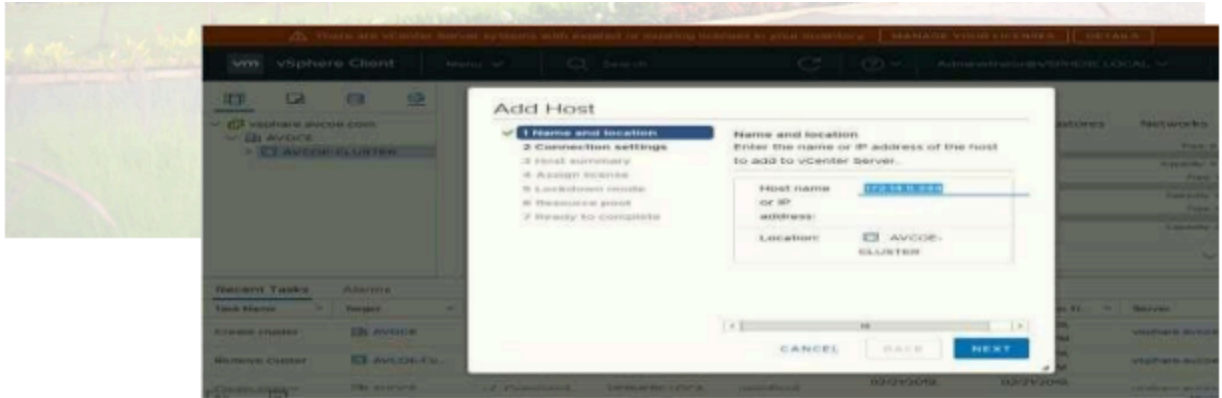
Task Name: All

Actions - AVCOE-CLUSTER

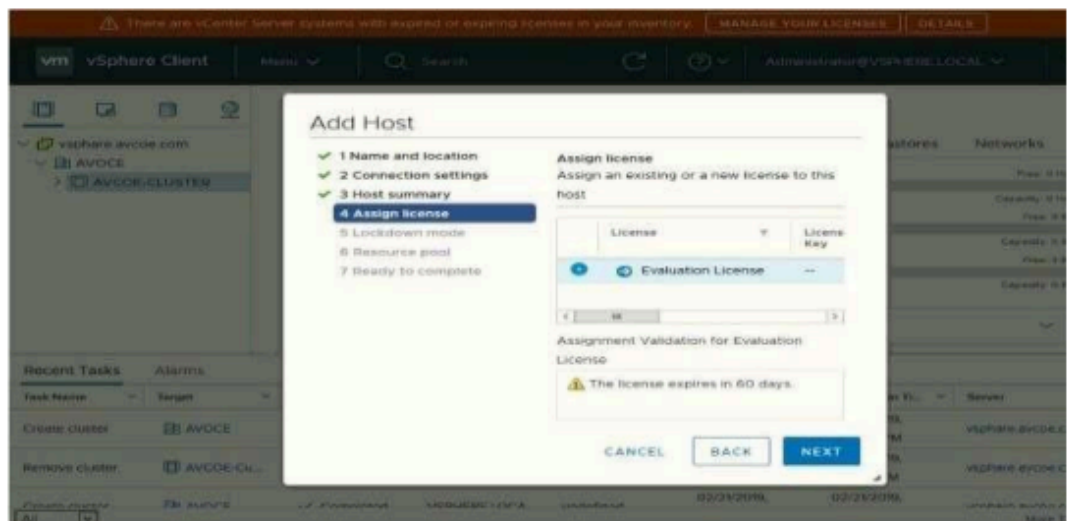
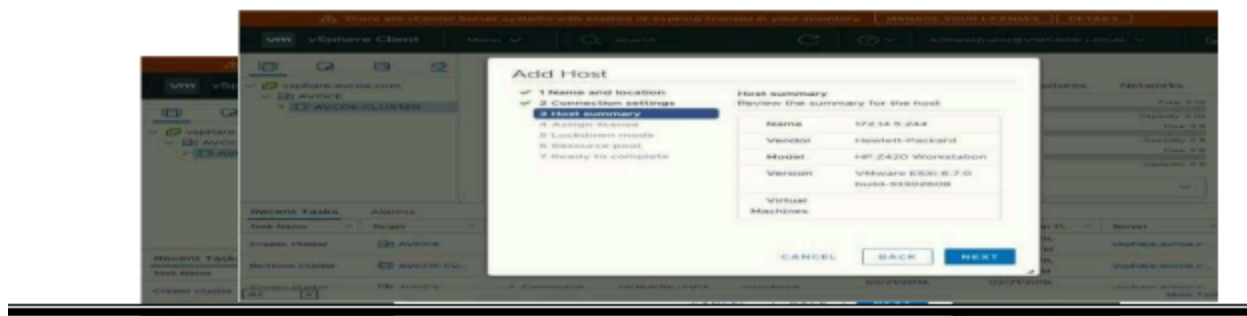
- Add Host...
- New Virtual Machine...
- New Resource Pool...
- Deploy OVF Template...
- New vApp...
- Storage
- Host Profiles
- Edit Default VM Compatibility
- Assign License...
- Settings
- Rename...
- Tags & Custom Attributes
- Delete
- vSAN

Configure...

Add host IP :



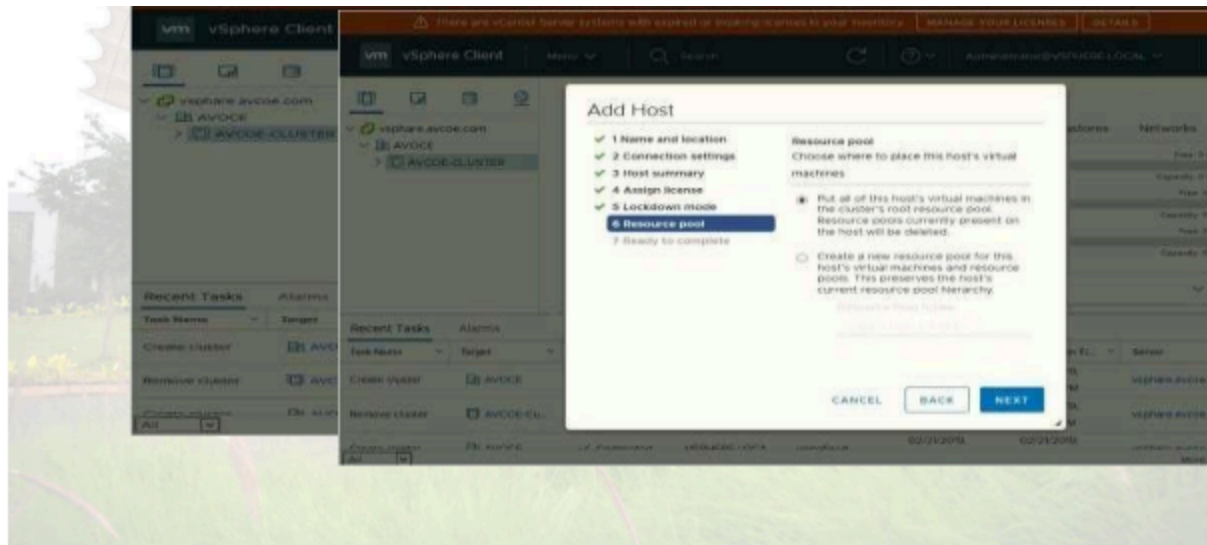
Enter host credential :



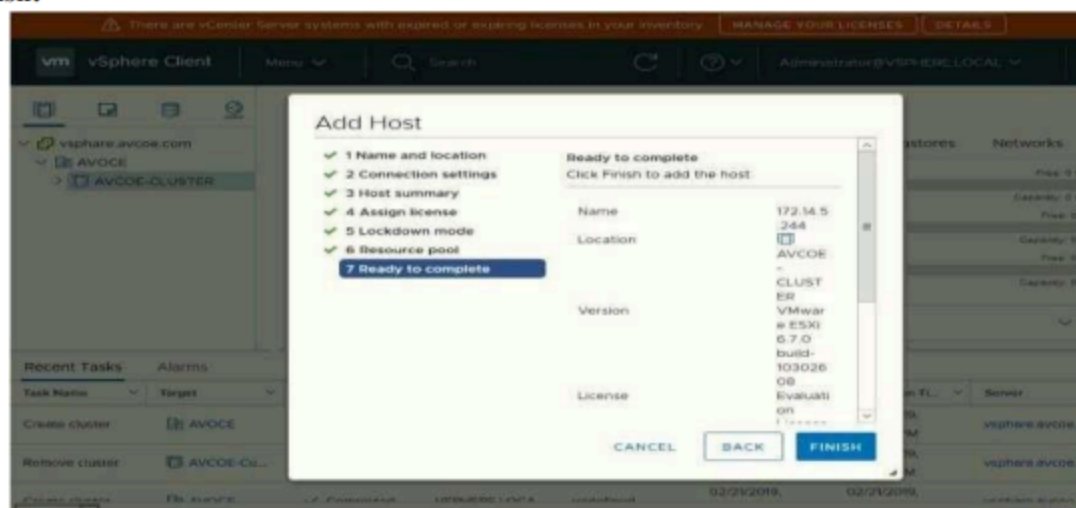
Hot summary :

Lock Down mode:

Add Host In Pool:



Finish:



Host View and View Config:

Cluster View and Configuration:

The image displays two screenshots of the vSphere Client interface, overlaid on a background image of a modern building with a glass facade.

Top Screenshot: Host View (172.14.5.245)

The interface shows the vSphere Client with the host 172.14.5.245 selected. The left sidebar shows the hierarchy: vsphere.avcoe.com > AVCOE > AVCOE-CLUSTER > 172.14.5.245. The main panel displays the host's configuration and resource usage.

Host Configuration:

- Hypervisor: VMware ESX, 6.7.0, 10302608
- Model: H47 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:

- CPU: Free: 11.87 GHz, Used: 0.1%
- Memory: Free: 15.93 GB, Used: 0.9%
- Storage: Free: 923.55 GB, Used: 1.42 GB

Recent Tasks:

Task Name	Target	Status	Initiator	Queued For	Start Time	Completion Time	Server
Configuring vSphere HA	172.14.5.245	6%	System	156 ms	02/21/2019, 3:04:54 PM		vsphere.avcoe.com
Add host: AVCOE-CL	AVCOE-CL	Completed	VSPHERE.LOCAL	undefined	02/21/2019, 3:04:48 PM	02/21/2019, 3:04:54 PM	vsphere.avcoe.com
Configuring	172.14.5.245	Completed	System	8.8 ms	02/21/2019, 3:04:54 PM	02/21/2019, 3:04:54 PM	vsphere.avcoe.com

Bottom Screenshot: Cluster View (AVCOE-CLUSTER)

The interface shows the vSphere Client with the cluster AVCOE-CLUSTER selected. The left sidebar shows the hierarchy: vsphere.avcoe.com > AVCOE > AVCOE-CLUSTER. The main panel displays the cluster's configuration and resource usage.

Cluster Configuration:

- Total Processors: 8
- Total vMotion Migrations: 0

Resource Usage:

- CPU: Free: 21.39 GHz, Used: 2.88 GHz
- Memory: Free: 25.9 GB, Used: 2.96 GB
- Storage: Free: 1.5 TB, Used: 2.94 GB

Related Objects: vSphere DRS

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vm vSphere Client Menu Search Administrator@VSPHERE.LOCAL

AVCOE-CLUSTER ACTIONS

Summary Monitor Configure Permissions Hosts VMs Datastores Networks

Total Processors: 8
Total vMotion Migrations: 0

CPU: Free: 21.39 GHz
Used: 2.58 GHz Capacity: 25.94 GHz

Memory: Free: 25.9 GB
Used: 2.96 GB Capacity: 31.85 GB

Storage: Free: 1.8 TB
Used: 2.84 GB Capacity: 1.8 TB

Related Objects: vsphere DRS

Recent Tasks Alarms

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	8.8 ms	02/21/2019,	02/21/2019,	vsphere.avcoe.c...

All More Tasks

Conclusion: Like this we have configure VSphere Private Cloud