

## Trainer Notes:

**Note:** Once the student completes the ONTAPADM labs please inform support to reset the PODs to DATAPROT images, since in our environment we use two different images for ONTAPADM and DATAPROT classes.

Do not continue with DATAPROT class on same ONTAPADM image which may results in storage outage. This will lead to shut down the images in all the PODs, which will need to reset the PODs to initial state to access the images back.

## Module 0: Welcome

### Exercise 1: Checking the Exercise Equipment

**Note:** In our lab environment we use AD and Jumphost as a same server and the IP is set to **192.168.0.253**. So, use **DNS, NTP and Gateway** as **192.168.0.253** throughout the lab.

### Task 2: Configure PuTTY Saved Session

**Page13\_Step2-7:** After changing the Font click **OK**.

### Task 3: Verify that Required License Codes Are Installed

**Page15\_Step3-1:** The screenshot may vary with the license installed so kindly refer the below image. Since the **Volume encryption license works only in hardware and the working is subjected to the region it is deployed.**

```
cluster1:~> license show
(system license show)
Serial Number: 1-80-000008
Owner: cluster1
Package      Type      Description      Expiration
-----
Base         license   Cluster Base License
S3           demo     S3 License       3/21/2022 16:00:00

Serial Number: 1-81-0000000000000004034389062
Owner: cluster1-02
Package      Type      Description      Expiration
-----
NFS          license   NFS License      -
CIFS         license   CIFS License     -
SnapRestore  license   SnapRestore License
SnapMirror   license   SnapMirror License
FlexClone    license   FlexClone License
SnapVault    license   SnapVault License

Serial Number: 1-81-0000000000000004082368507
Owner: cluster1-01
Package      Type      Description      Expiration
-----
NFS          license   NFS License      -
CIFS         license   CIFS License     -
SnapRestore  license   SnapRestore License
SnapMirror   license   SnapMirror License
FlexClone    license   FlexClone License
SnapVault    license   SnapVault License
14 entries were displayed.

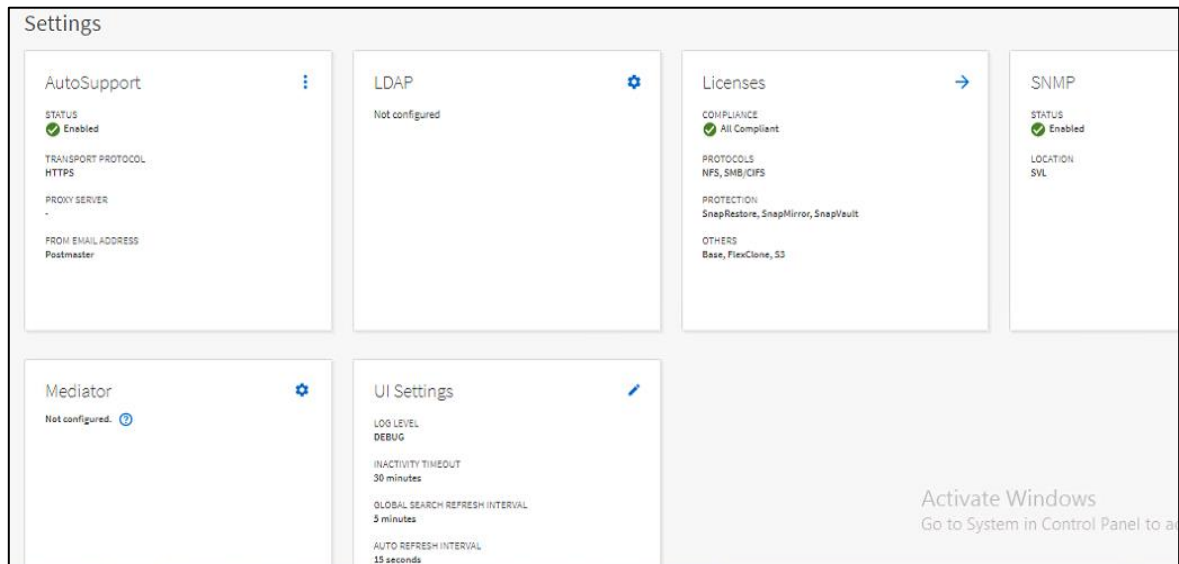
cluster1:~> █
```

## Module 2: Cluster Setup

### Exercise 2-1: Exploring ONTAP Management UIS

#### Task 6: Explore ONTAP System Manger

**Page33\_Step6-29:** The screenshot will vary so kindly refer the below image.

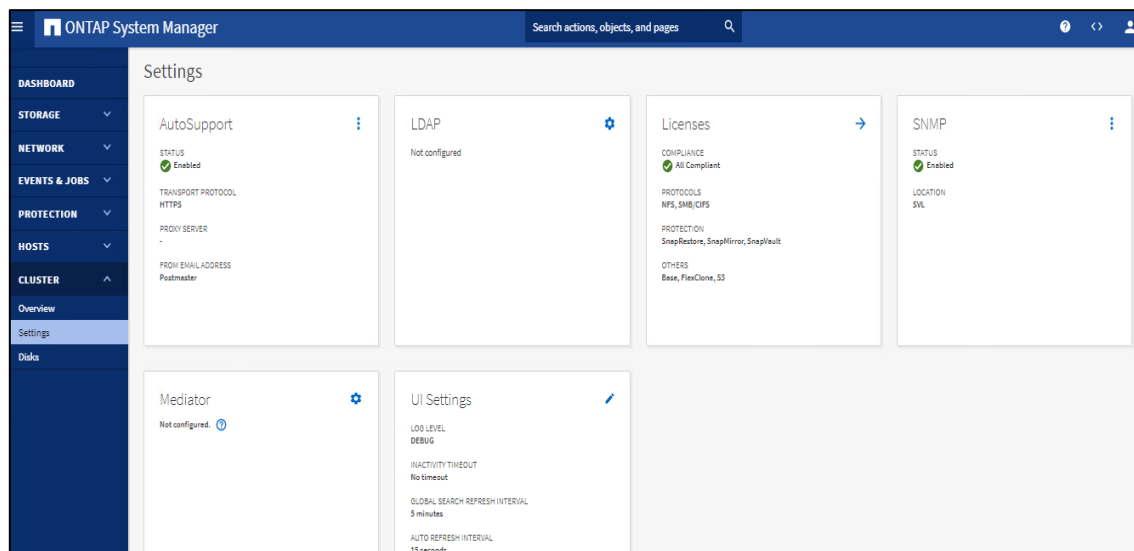


## Module 3: Cluster Management

### Exercise 3-1: Managing ONTAP Cluster and Administrators

#### Task 2: Explore Licensing

**Page38\_Step2-1:** The screenshot will vary so kindly refer the below image.



### Task 3: Configure Cluster Time and Assign an NTP Server

**Page40\_Step3-3:** The **Time Zone** will be **Asia/Singapore** therefore **DATE AND TIME** in the screenshot will vary so kindly follow the below image.



**Page40\_Step3-4:** The **Time Zone** for the Windows and Linux will be pre-configured to **Asia/Singapore**.

## Module 5: Physical Storage Management

### Exercise 1: Managing Physical Storage

#### Task 3: Create Aggregate

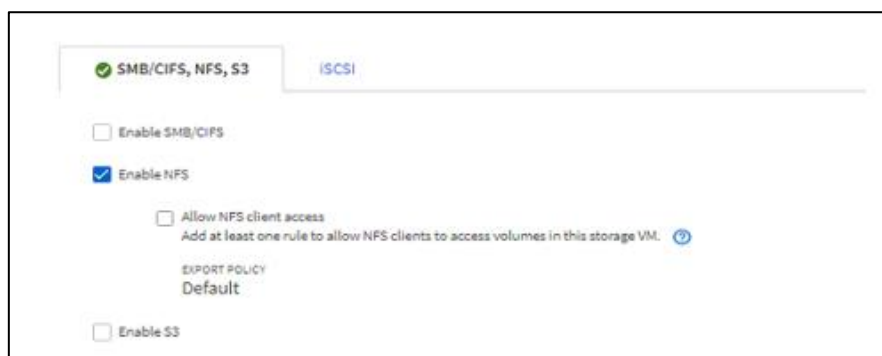
**Page69\_Step 3-2 & 3-3:** In this task **Storage Recommendation** Usable value will vary in the **Add Local Tier** window.

## Module 7: Data Access

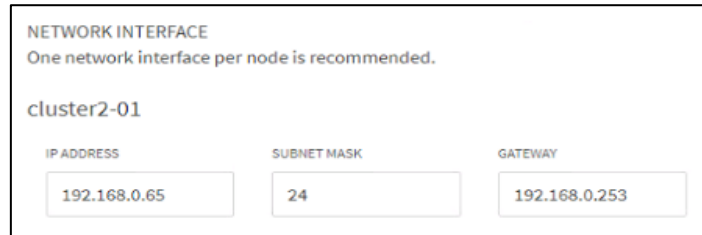
### Exercise 1: Configuring NAS Protocols in an SVM

#### Task 1: Configure an SVM to Host the NFS Protocol

**Page92\_Step1-5:** The screenshot will vary for Access Protocol window so follow the below image.



**Page93\_Step1-8:** Use Gateway as **192.168.0.253** instead of **192.168.0.1** follow the below screenshot.



NETWORK INTERFACE  
One network interface per node is recommended.

cluster2-01

IP ADDRESS	SUBNET MASK	GATEWAY
192.168.0.65	24	192.168.0.253

## Exercise 2: Configuring the SMB Protocol in an SVM

### Task 1: Configure an SVM to Host the SMB Protocol

**Page105\_Step1-9:** Change the **Gateway IP address** as **192.168.0.253** instead of using **192.168.0.1**.



☒ Reuse the data interface used for NFS protocol

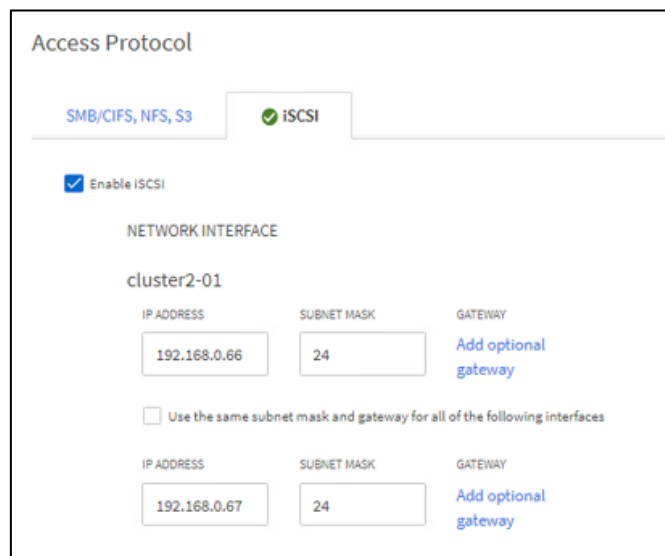
IP ADDRESS	SUBNET MASK	GATEWAY
192.168.0.65	24	192.168.0.253

**Save** Cancel

## Exercise 3: Configure an iSCSI in an SVM

### Task 3: Use System Manager to Configure an SVM for iSCSI

**Pg121\_Step3-5:** The screenshot will vary for Access Protocol window so follow the below image.



Access Protocol

SMB/CIFS, NFS, S3 **iSCSI**

☒ Enable iSCSI

NETWORK INTERFACE

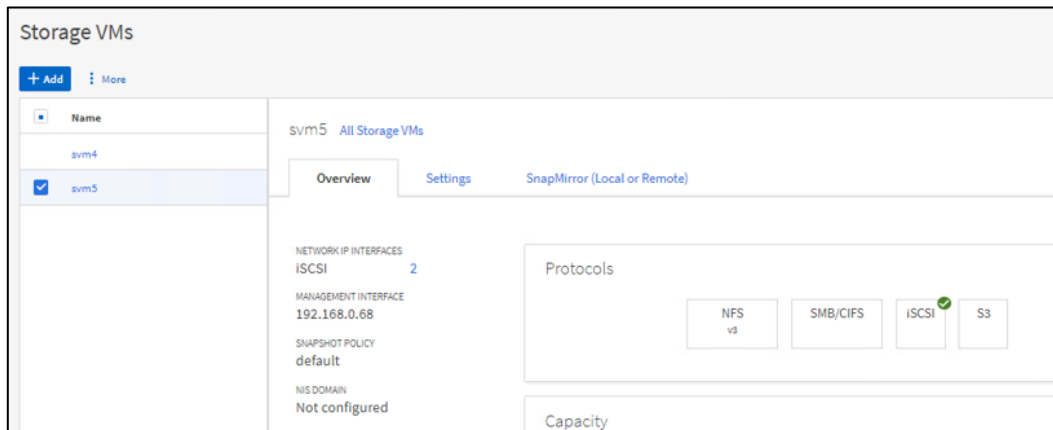
cluster2-01

IP ADDRESS	SUBNET MASK	GATEWAY
192.168.0.66	24	Add optional gateway

☐ Use the same subnet mask and gateway for all of the following interfaces

IP ADDRESS	SUBNET MASK	GATEWAY
192.168.0.67	24	Add optional gateway

**Page123\_Step3-9:** The Screenshot for the Storage VMs will vary so refer the below image.



**Task 5: Access the iSCSI-Attached LUN from the Windows Host**

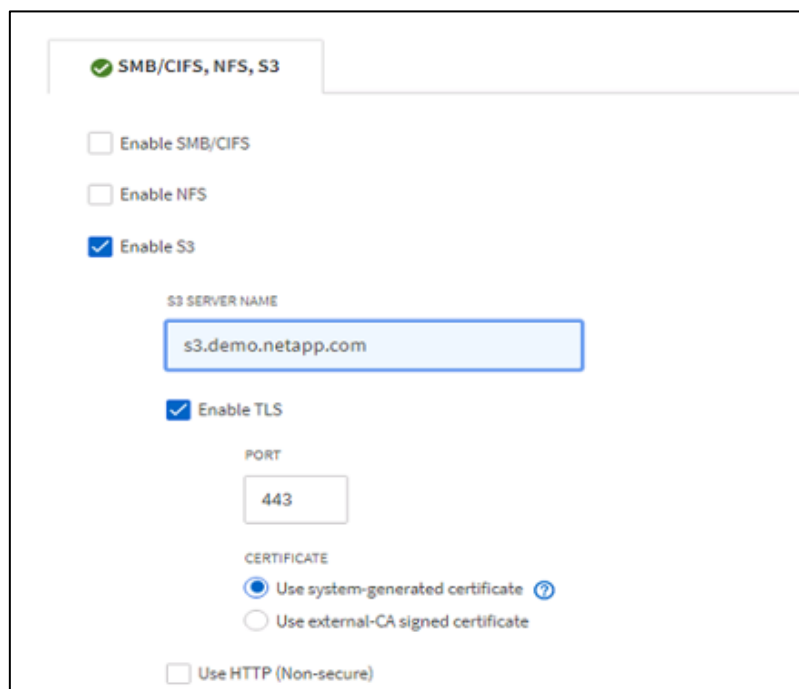
**Page134\_Step5-3:** The **Initialization** of the disk will be done in **Step5-6**.

**Page134\_step5-6:** Right click **Disk 1** then select **Initialize Disk** and click **OK**.

#### Exercise 4: Configuring the S3 Protocol in an SVM

**Task 1: Configure an S3 Protocol in a Storage VM**

**Page138\_Step1-5:** The screenshot will vary for Access Protocol window so follow the below image.



**Page139\_Step1-7:** Use the **Gateway IP address** as **192.168.0.253** instead of **192.168.0.1**.

**Page142\_Step1-19:** Save the File as **svm6cert.crt** in the **Downloads** folder.

## Exercise 5: Managing the NAS Storage VMs

### Task 1: Migrate and Rehome a NAS Data LIF

**Note:** Before starting to migrate and rehome the NAS data lif do the following in the cluster1 putty session.

```
cluster1: :> network interface modify -vserver svm2 -lif  
          svm2_cifs_nfs_lif1 -auto-revert false
```

```
cluster1::> network interface modify -vserver svm2 -lif svm2_cifs_nfs_lif1 -auto  
-revert false
```

```
cluster1: :> network interface show -vserver svm2 -fields auto-revert
```

```
cluster1::> network interface show -vserver svm2 -fields auto-revert  
vserver lif                auto-revert  
-----  
svm2     svm2_cifs_nfs_lif1 false  
cluster1::> █
```

**Page162\_Step1-17:** The home node for the LIF **svm2\_cifs\_nfs\_lif1** will be **cluster1-02**.

## Module 9: Storage Efficiency

### Exercise 1: Managing Storage Efficiency

#### Task 1: Explore Thin Provisioning

**Page150\_Step1-2 & Step1-3:** Give **yes**, if any warning prompts appears while creating aggregate.

## Bonus Module: Create a FlexGroup Volume

### Task 1: Create a FlexGroup Volume

**Page187\_Step 1-7:** Give **yes** twice, if any warning prompts appears while enabling 64-bit identifiers and creating the FlexGroup Volume.

## Module 10: Cluster Maintenance

### Task 2: Verify Cluster Health with Config Advisor

**Page198\_Step2-16:** After clicking **Shutdown** to exit the Config Advisor click **Confirm Shutdown**.

### Task 4: Change the Cluster Admin Password

**Page199\_Step4-6:** You can't use the **Last 6 password** while resetting the password for **Cluster1** so use the new password for the **Cluster1**.