

CiB-9470V1

Oobe Setup

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Safety Measures

Computer components and electronic circuit boards can be damaged by discharges of static electricity. Working on computers that are still connected to a power supply can be extremely dangerous. Follow these guidelines to avoid damage to the storage system or injury to yourself.

- Always disconnect power when carrying out work inside the unit.
- If possible, wear a grounded wrist strap when carrying out work inside the unit. Alternatively, discharge any static electricity by touching the bare metal chassis of the unit case, or the bare metal body of any other grounded appliance.
- Hold electronic circuit boards by the edges only. Do not touch the components on the board unless it is necessary to do so. Do not flex or stress the circuit board.
- Leave all components inside the static-proof packaging until you are ready to install the component.

Equipment Location

This equipment should only be accessed by SERVICE PERSONNEL or by USERS who have been instructed about the reasons for the restrictions applied to the location. Access is through the use of a TOOL or lock and key, or other means of security, and is controlled by the authority responsible for the location.

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Guide Summary

This guidance is written in purpose providing users a general process in the initial setup stages and configuration of DataON Clusters-in-a-Box (CiB-9470V1). The configuration software (OOBE Wizard) is pre-installed in our CiB-9470V1 and users can choose the most proper way to integrate the CiB-9470V1 into their own storage environment.

About the content

This document is specifically targeted on software installation and configuration of DataON CiB-9470V1 system. It does not convey the content with administrative details such as assigning user permissions, Domain and Active Directory configuration, setting up DHCP servers.

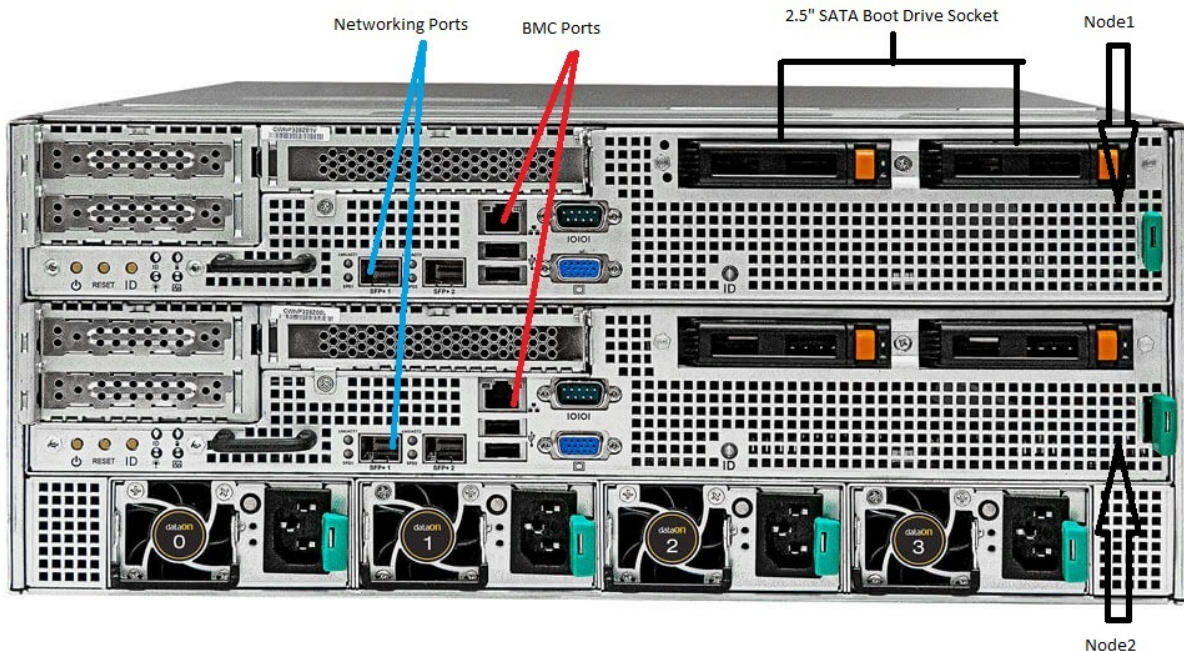
Declarations

This document is solely to provide users a quick and smooth guide in starting deploying DataON CiB-9470V1 product. The appropriate software vendor should be treated as the definitive resource for Software/Operating System setup. Information conveyed by this document is provided with the best intent, paradoxically DataON cannot be held responsible for errors or omissions in associate with this document.

I. General Configuration Walkthrough

CiB-9470V1 Cabling and initial setups

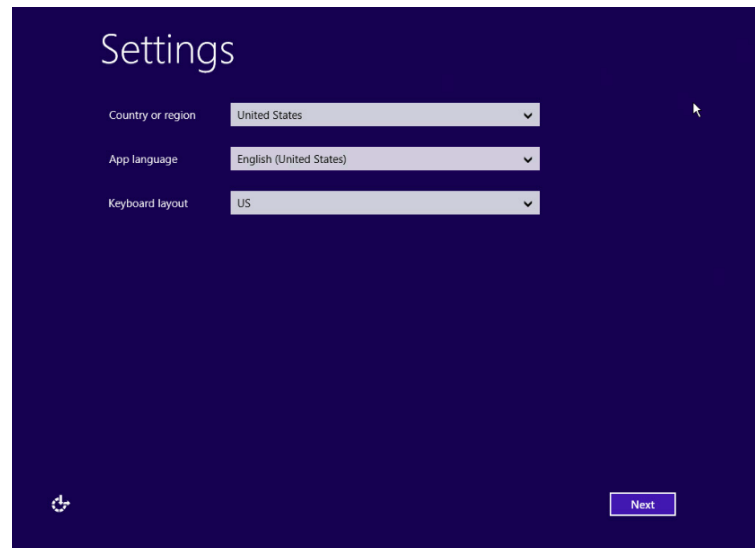
1. As you can see below, **orange arrows** stand for the **management ports*** and the **blue arrows** stand for networking ports. Please connect all the management ports and networking ports with corresponding cables. The ports which are not noted below, can be disconnected.



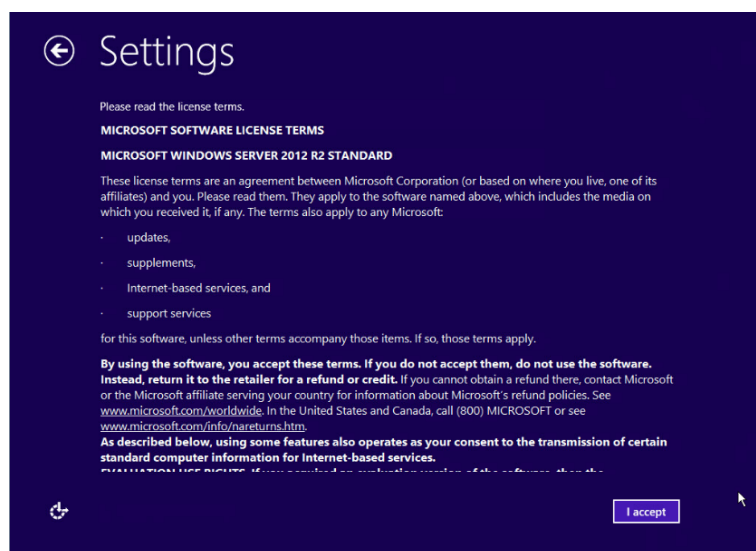
2. Prepare both nodes on screen as shown below. Please use **Node1** to configure your CiB-9470V1 by clicking “Yes” on the screen. Node2 will imitate the configurations as you make on Node1 automatically from this point on. Hence, it is **NOT** necessary to switch between Node1 and Node2 in order to finish the configuration.*



CAUTION: don't configure both nodes at same time, OS will crash.

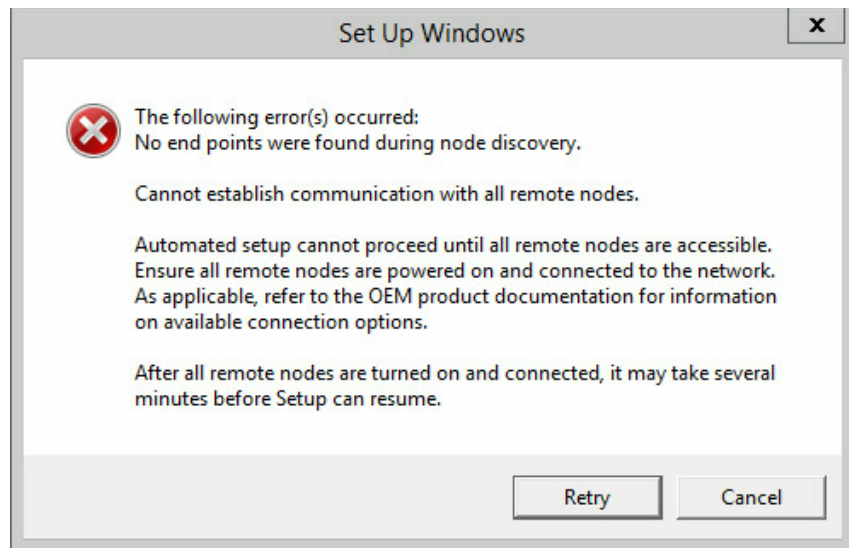


3. On next screen, click 'I accept'.

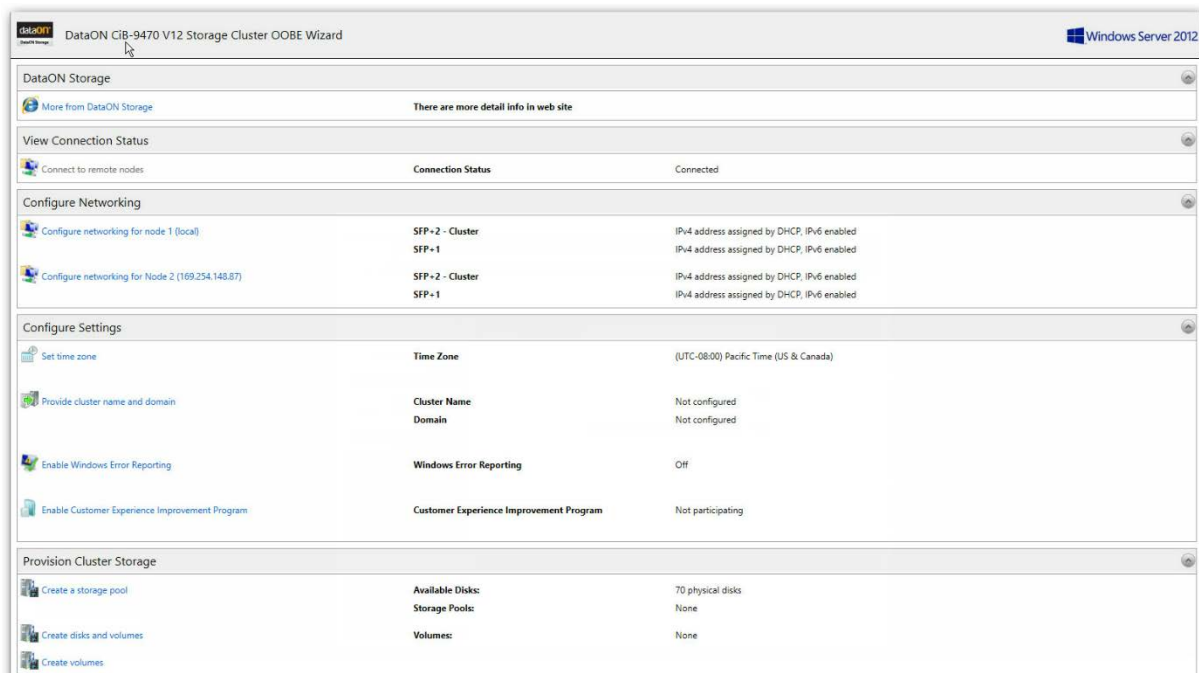




***Troubleshooting:** If users see a pop-up window as shown below, please go to page 47.



After around 30 seconds wait time, you will see the OOB setup screen as shown below, please make sure under “View Connection Status” column, the connection status shows “connected”.



Afterward, under “Configure Networking” column, users can find networking information for each of the 2 nodes. “NIC0-Cluster” stands for the heartbeat* cable pre-installed inside CiB-9470V1. “NIC1-Right” stands for the [networking port](#) (the blue arrow) mentioned in page 4. Moreover, each node has a default heartbeat IP address* (169.254.xxx.xxx) assigned by DHCP.

Configure Networking		
Configure networking for node 1 (local)	SFP+2 - Cluster	IPv4 address assigned by DHCP, IPv6 enabled
	SFP+1	IPv4 address assigned by DHCP, IPv6 enabled
Configure networking for Node 2 (169.254.148.87)	SFP+2 - Cluster	IPv4 address assigned by DHCP, IPv6 enabled
	SFP+1	IPv4 address assigned by DHCP, IPv6 enabled

-The figure above shows the networking status when no net-working card is installed in CiB-9470V1.







***CAUTION:** Please **NEVER** change the heartbeat IP address at this point because the change may cause the 2 nodes can't identify each other and resulting a system failure.



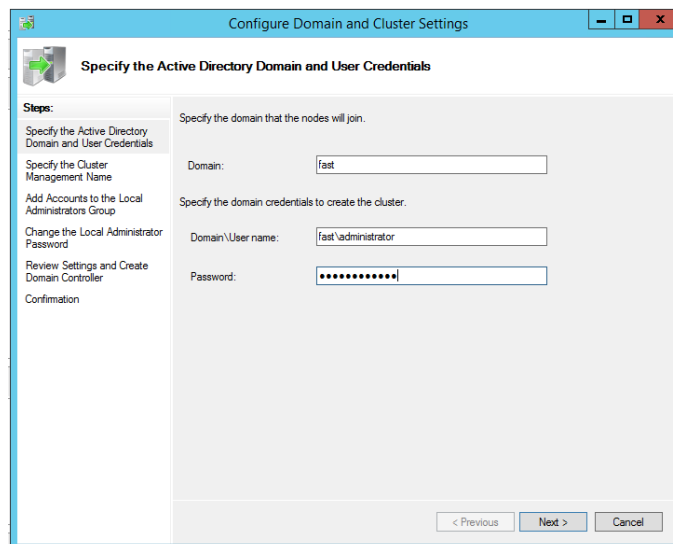
***CAUTION:** We recommend to use extra network adapter to teaming, please don't use onboard NIC 1 and NIC 2 teaming.

CiB-9470V1 Provide Cluster Name and Domain

To add the CiB-9470V1 under an existing Hyper-V environment, please click on “provide cluster name and domain” option:

Configure Settings		
 Set time zone	Time Zone	(UTC-08:00) Pacific Time (US & Canada)
 Provide cluster name and domain	Cluster Name	Not configured
	Domain	Not configured
 Enable Windows Error Reporting	Windows Error Reporting	Off
 Enable Customer Experience Improvement Program	Customer Experience Improvement Program	Not participating

Then, users can see a pop-up window as shown below:



Provide the name and password of your existing Hyper-V environment and hit the “Next” button, then users would have to name the CiB-9470V1 as you are creating a new virtual machine under Hyper-V. If needed, change the nodes name:

The screenshot shows the 'Specify the Cluster Management Name' step in the 'Configure Domain and Cluster Settings' wizard. The left pane lists the steps: 'Specify the Active Directory Domain and User Credentials' (selected), 'Specify the Cluster Management Name', 'Add Accounts to the Local Administrators Group', 'Change the Local Administrator Password', 'Review Settings and Create Domain Controller', and 'Confirmation'. The main pane contains the following fields and options:

- Cluster management name: MBS22
- ☐ Change node name
- Node 1 (local) name: MBS22-N1
- Node 2 (169.254.201.14) name: MBS22-N2

At the bottom are buttons for '< Previous', 'Next >', and 'Cancel'.

Click “Next” to confirm adding the 9470V1 under the domain you provide:

The screenshot shows the 'Add Accounts to the Local Administrators Group' step in the 'Configure Domain and Cluster Settings' wizard. The left pane lists the steps: 'Specify the Active Directory Domain and User Credentials', 'Specify the Cluster Management Name', 'Add Accounts to the Local Administrators Group' (selected), 'Change the Local Administrator Password', 'Review Settings and Create Domain Controller', and 'Confirmation'. The main pane contains the following elements:

- The domain account specified will be added to the local Administrators group for each node.
- Add other domain users or groups as needed.
- Account to add: fast\administrator (selected in a list box)
- Buttons: Add..., Remove

At the bottom are buttons for '< Previous', 'Next >', and 'Cancel'.

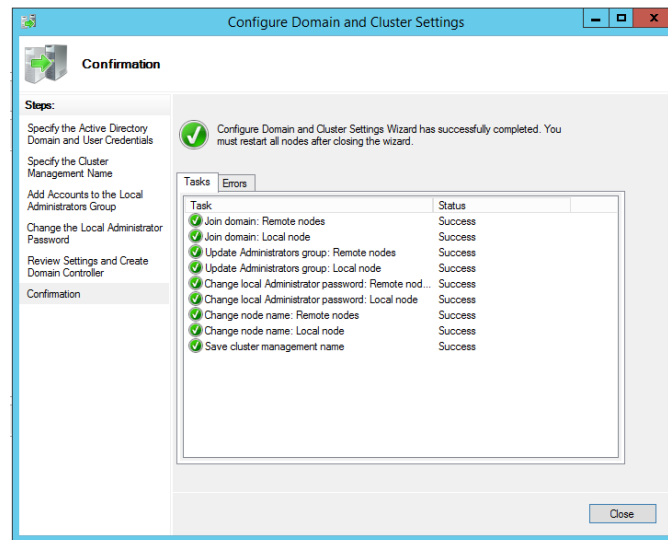
Click “Next” to proceed, and then, setup a password for “local administration groups”:

The screenshot shows the 'Change the Local Administrator Password' step in the 'Configure Domain and Cluster Settings' wizard. The window has a title bar with the text 'Configure Domain and Cluster Settings'. On the left, a 'Steps' pane lists the following steps: 'Specify the Active Directory Domain and User Credentials', 'Specify the Cluster Management Name', 'Add Accounts to the Local Administrators Group', 'Change the Local Administrator Password' (which is the current step), 'Review Settings and Create Domain Controller', and 'Confirmation'. The main area contains the instruction: 'Specify a new password for the local Administrator account. The new password will be applied to each server node.' Below this, there are two password input fields: 'New password:' and 'Confirm password:'. Both fields are filled with a series of dots. At the bottom right, there are three buttons: '< Previous', 'Next >', and 'Cancel'.

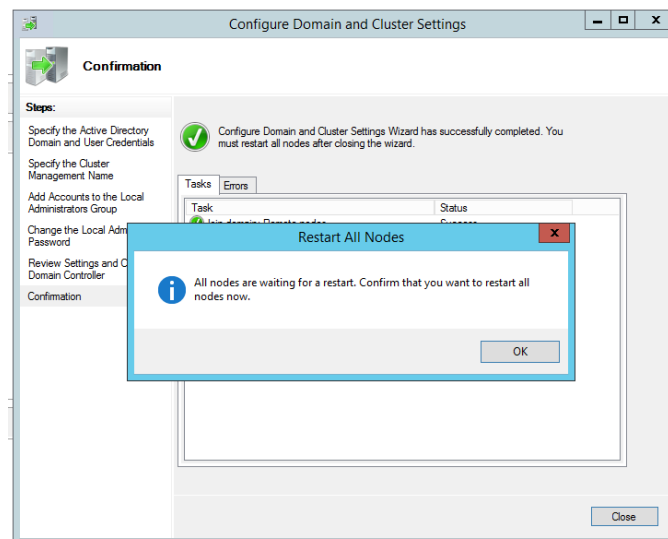
In the next window, confirm all information shown and click “Create”:

The screenshot shows the 'Review Settings and Create Domain Controller' step in the 'Configure Domain and Cluster Settings' wizard. The window has a title bar with the text 'Configure Domain and Cluster Settings'. On the left, the 'Steps' pane is the same as in the previous window, but 'Review Settings and Create Domain Controller' is now the selected step. The main area contains the instruction: 'To create and configure the domain with the following settings, click Create.' Below this, there is a scrollable list of 'Domain settings':
- 'An existing domain is being used.'
- 'Cluster domain: fast.dataonstorage.com'
- 'Cluster name: MBS22'
- 'Node 1 (local) name: MBS22-N1'
- 'Node 2 (169.254.201.14) name: MBS22-N2'
- 'Local Administrator password: [REDACTED]'
- 'Accounts added to local Administrators group: fast\administrator'
At the bottom of the settings list, it says: 'Domain enablement takes several minutes. Do not shutdown nodes until this task is c...'. At the bottom right, there are three buttons: '< Previous', 'Create', and 'Cancel'.

Click “Close” when the process is finished:



Upon completion, the wizard will ask to restart both nodes. Click “OK” to reboot (the remote node will reboot automatically; users do not need to switch between nodes to complete the restart). After restarting*, users can begin **creating a storage pool**.



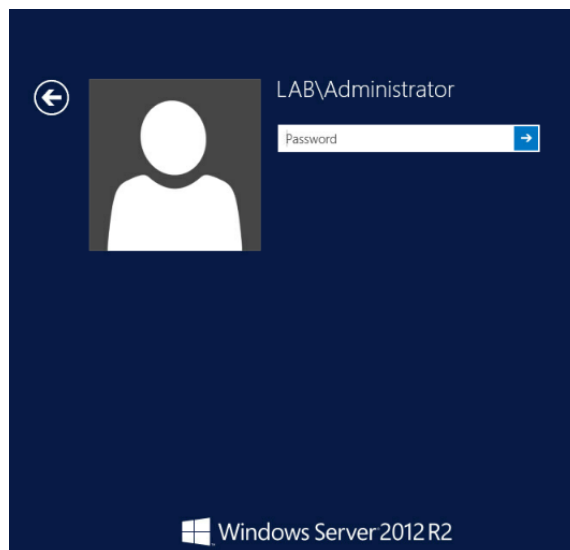
***Note:** Users must login as the administrator of the cluster’s domain.



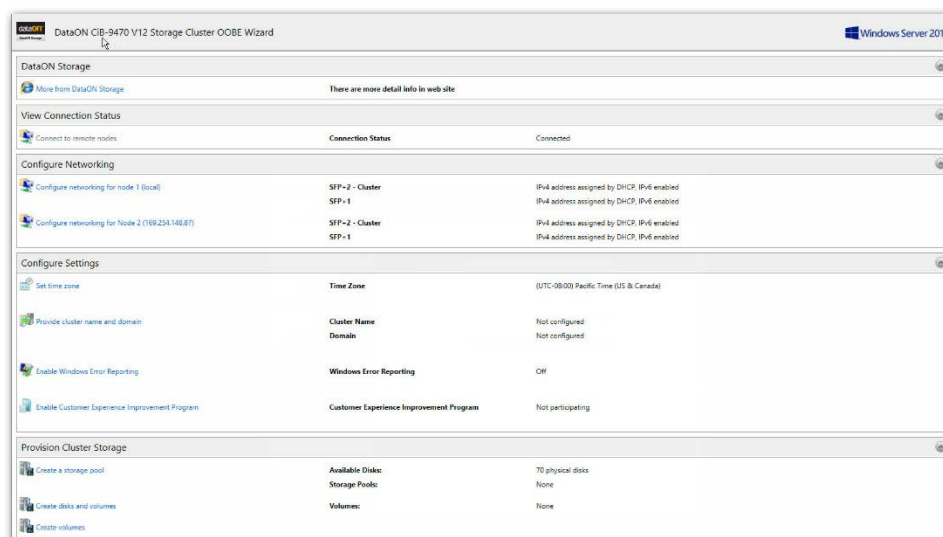
***Note:** After you have joined domain and set the name of the node, you may change heartbeat NIC to static IP address.

CiB-9470V1 Creating Storage Pool

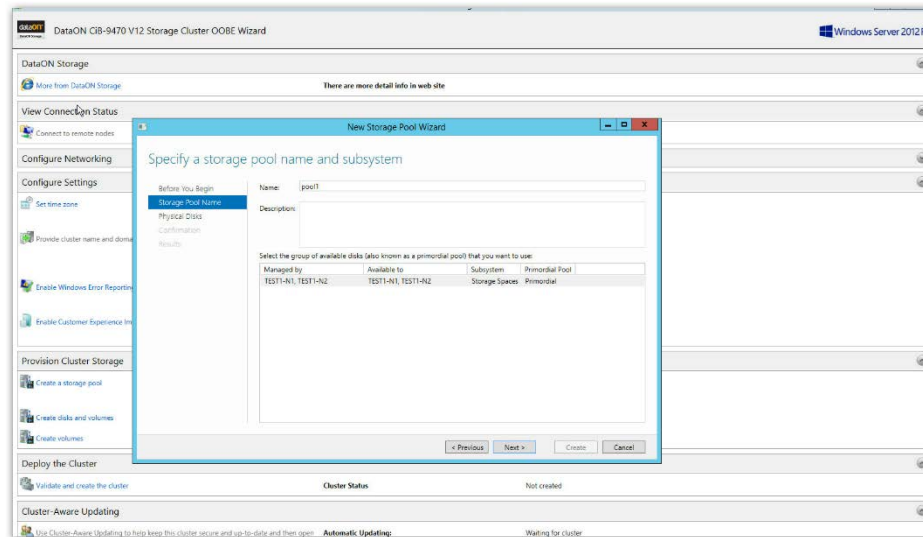
Once on login screen, login your domain password page 8.



1. In the following step in OOB Wizard, please select 'Create a storage pool'.



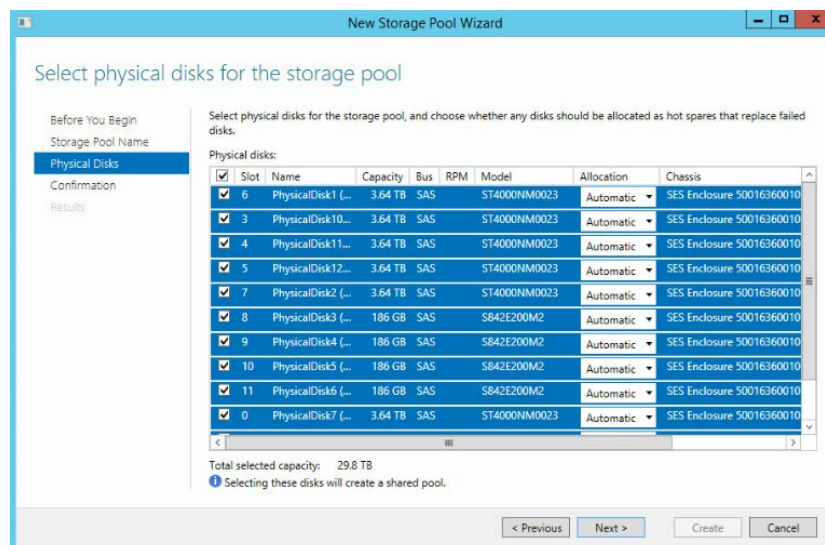
2. Please provide a pool name for the storage pool, optional description and assign a group of available disks for the storage pool. When completed, select 'Next'.



Pool Name: pool1

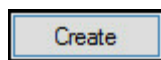
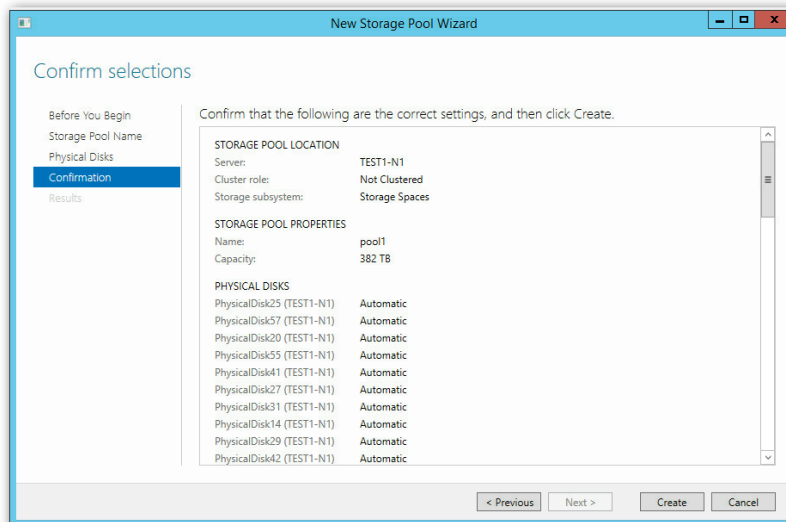
Next >

3. Select physical disks you would like to assign for the storage pool*. When completed, select 'Next'.



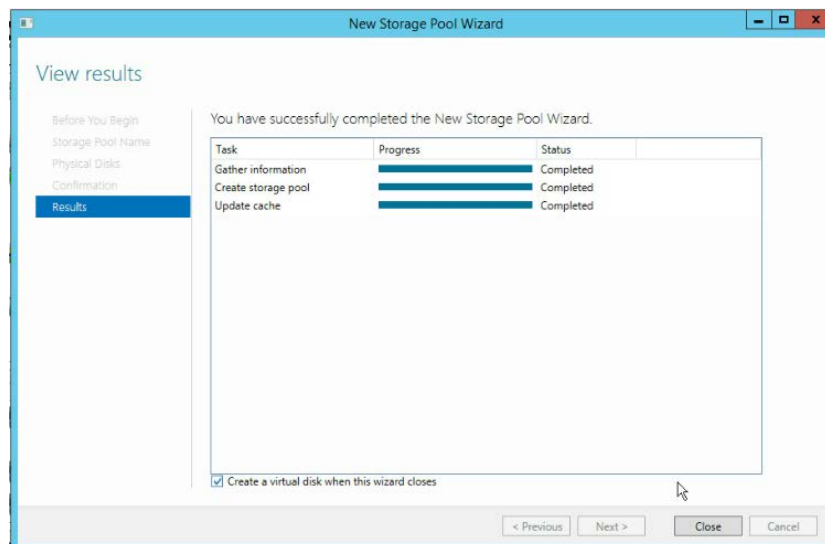
Next >

4. Confirm selections. When completed, select 'Create'.



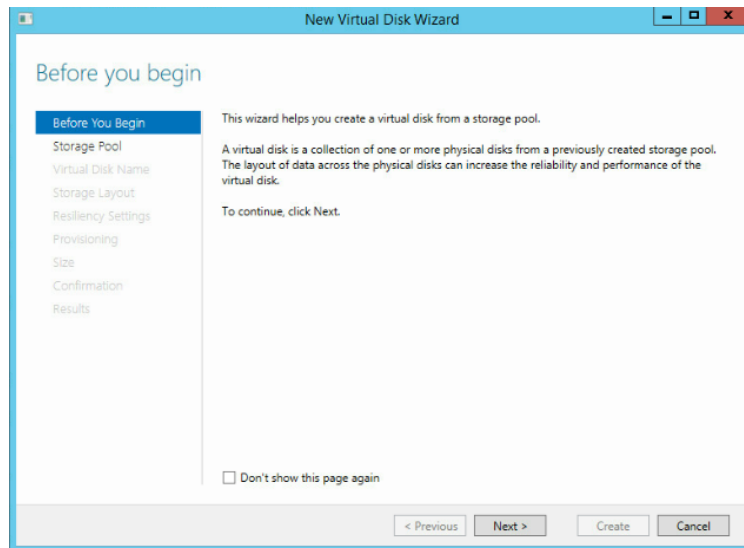
***Note:** If users create a tier-storage, please notice that you need you assign the SSDs and HDDs in a same pool.

- When completed with storage pool, select 'Create a virtual disk when this wizard closes' and click 'Close'.

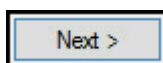
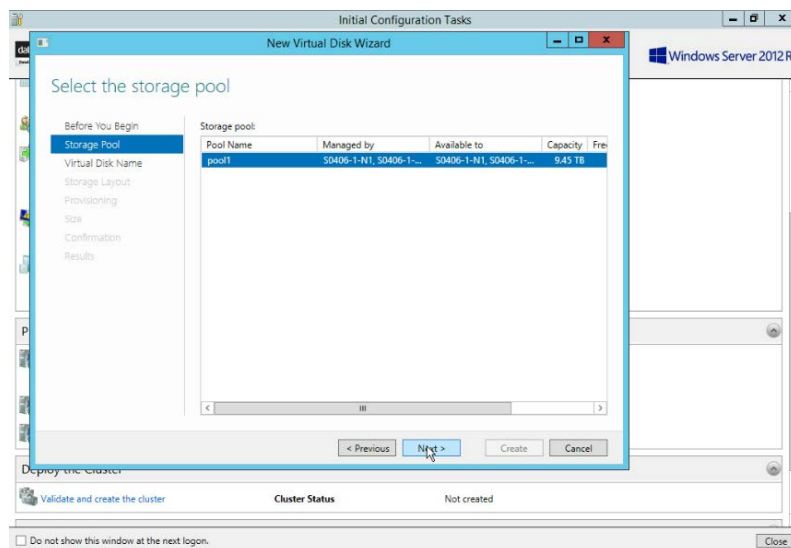


CiB-9470V1 Creating Virtual Disk (Failover Witness Volume)

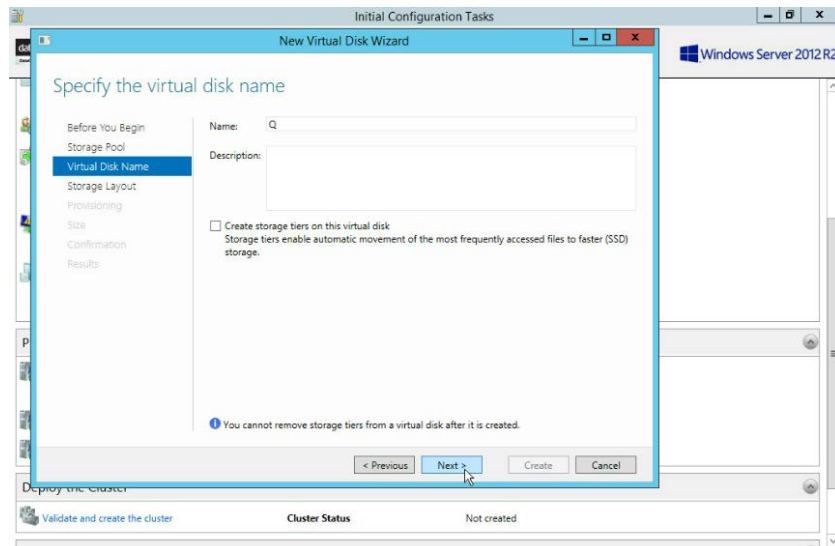
1. Click 'Next'.



2. Select your storage pool and then click 'Next'.



- Specify your virtual disk name and optional description. For “Failover Witness volume”, do **NOT** select “tier storage” option. When completed, click ‘Next’.



Create a Failover Witness Volume named : Q

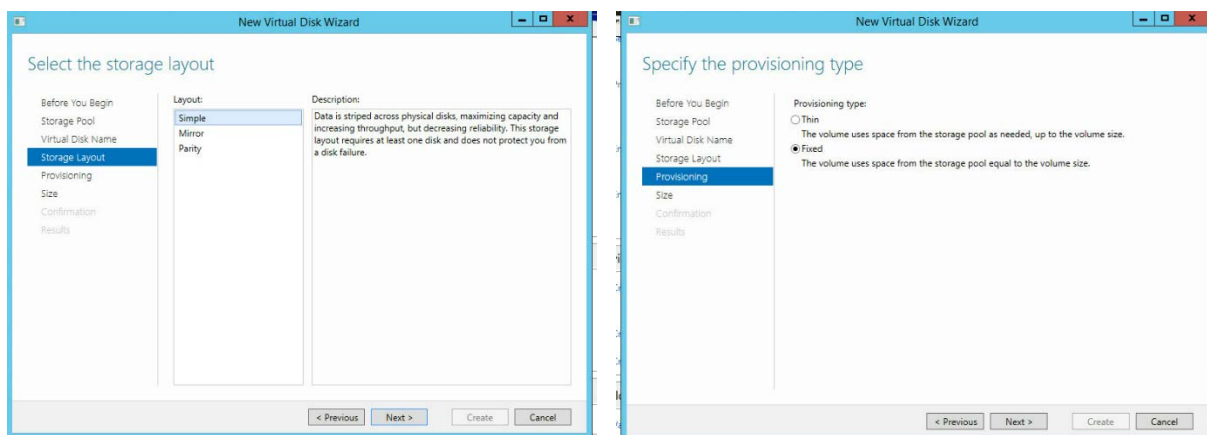
Next >



***CAUTION:** Please at least create two virtual disk, one for quorum disk and one for data disk for crate cluster.

- Specify your storage layout. There are 3 options: Simple, Mirror or Parity. Select one and click ‘Next’.

- **Simple Layout:**

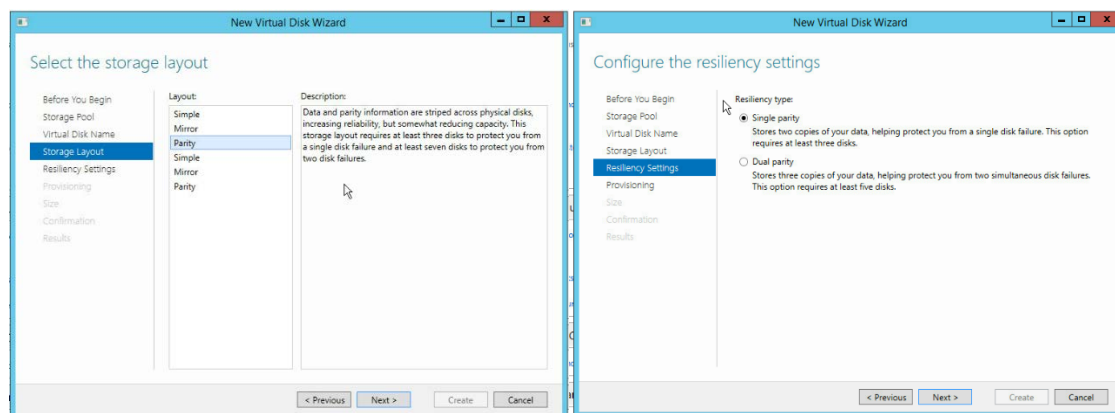


Please select the provisioning type. When completed, click ‘Next’.



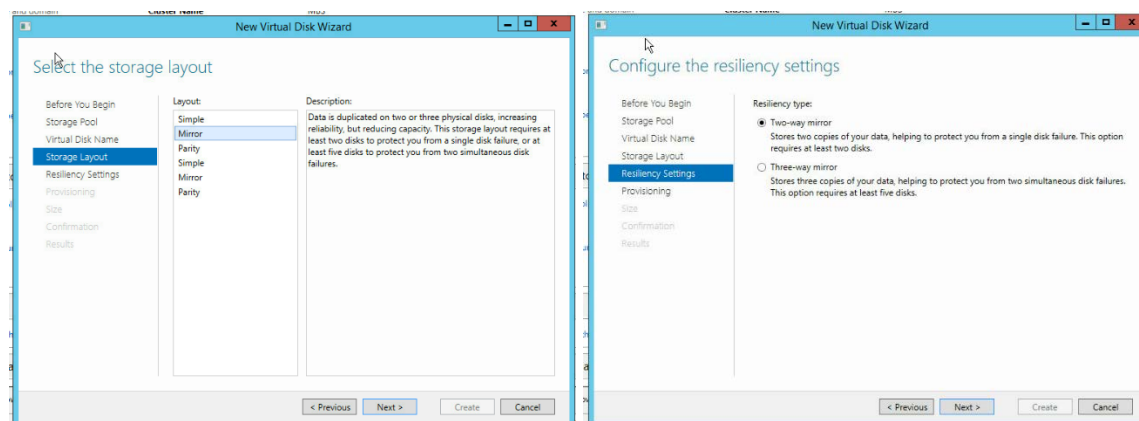
For “Simple Layout”, users can NOT choose “Resiliency Settings”. The OOB wizard will skip the step to “Provisioning”

- Parity Layout



As for “Parity Layout”, users can choose from “Single Parity” or “Dual Parity” as their options for “Resiliency Settings”.

- Mirror Layout



As for “Mirror Layout”, users can choose from “Two-Way Mirror” or “Three-Way Mirror” as their options for “Resiliency Settings”.

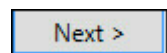
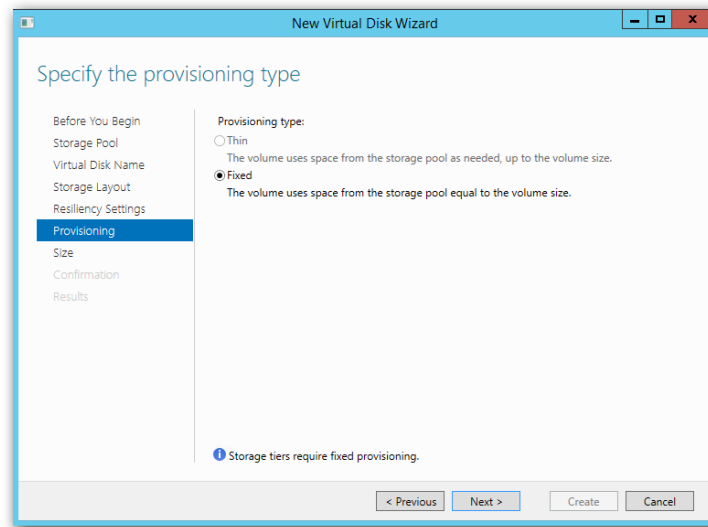


Note* Select proper resiliency type and click “Next”. **In this documentation, we use ‘Mirror’ layout as our example.**

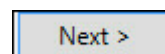
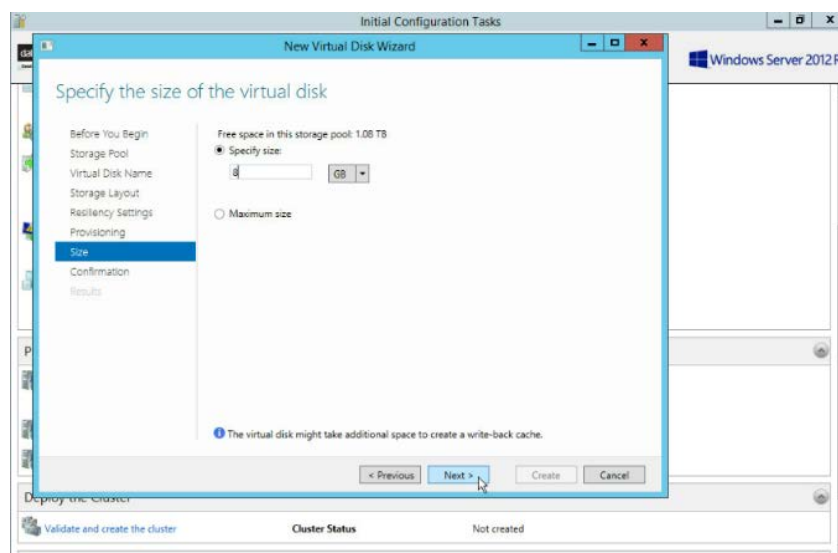
For further information about the layout types, please refer to:

<https://technet.microsoft.com/en-us/library/jj822938.aspx>

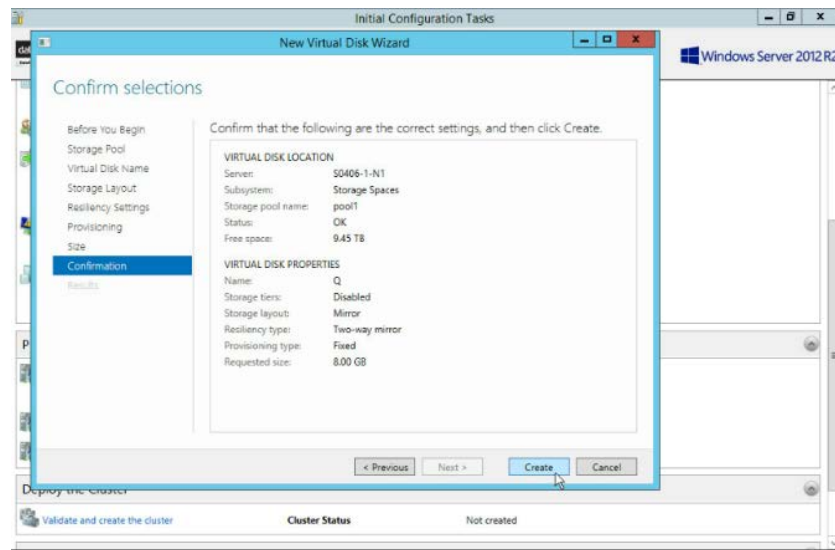
5. Select the virtual disk's provisioning type. When completed, click 'Next'.



6. Specify size of the virtual disk. When completed, click 'Next'. The system will automatically assign the virtual disk which has the smallest volume to be the 'Failover Witness VD', please make sure you assign proper volume to your virtual disks.

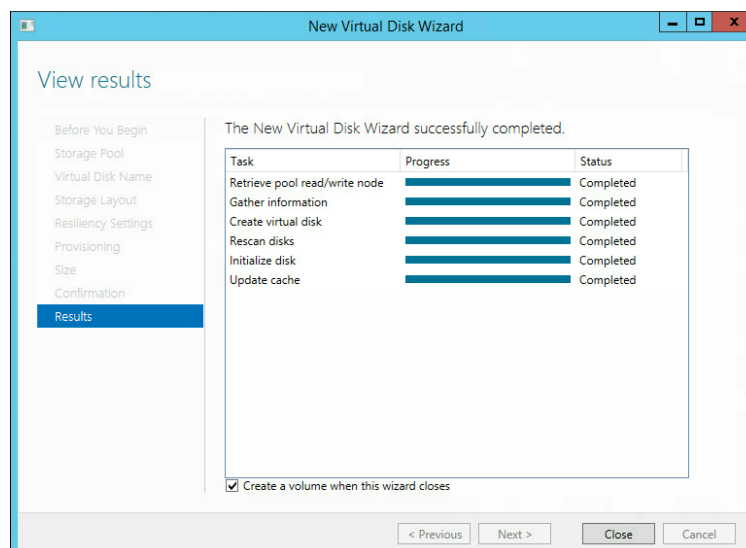


7. Confirm settings on the virtual disk. When completed, click 'Create'.



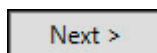
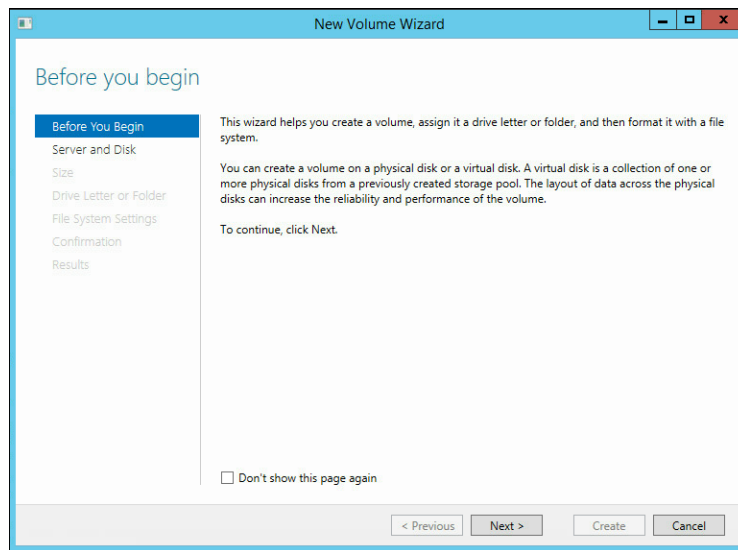
Create

8. Upon completion of creation of virtual disk, select 'Create a volume when this wizard closes' and click 'Close'.

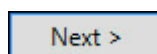
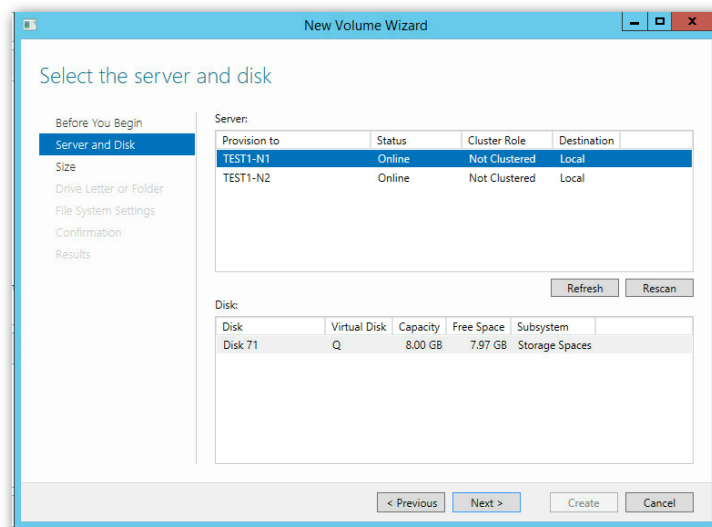


Close

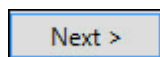
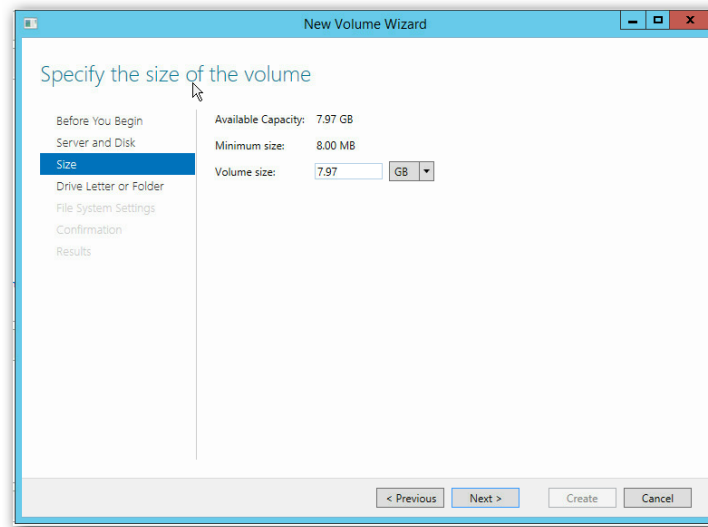
9. Click 'Next'.



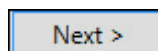
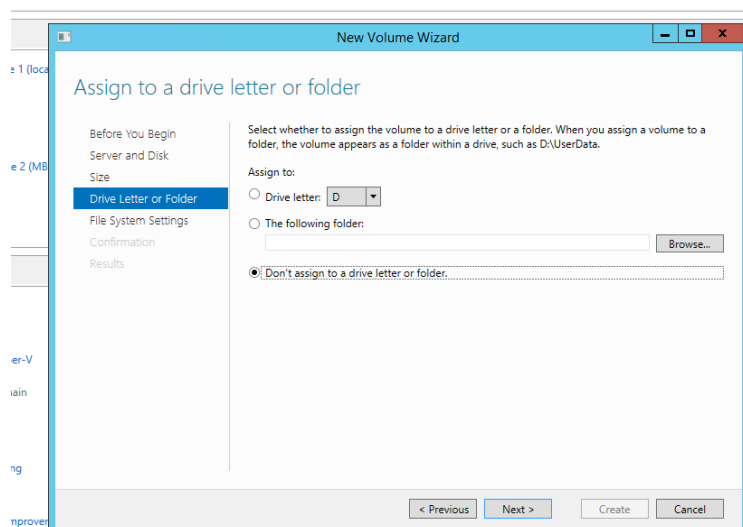
10. Select your server and disk to create your volume disk from. When completed, click 'Next'.



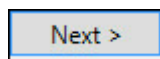
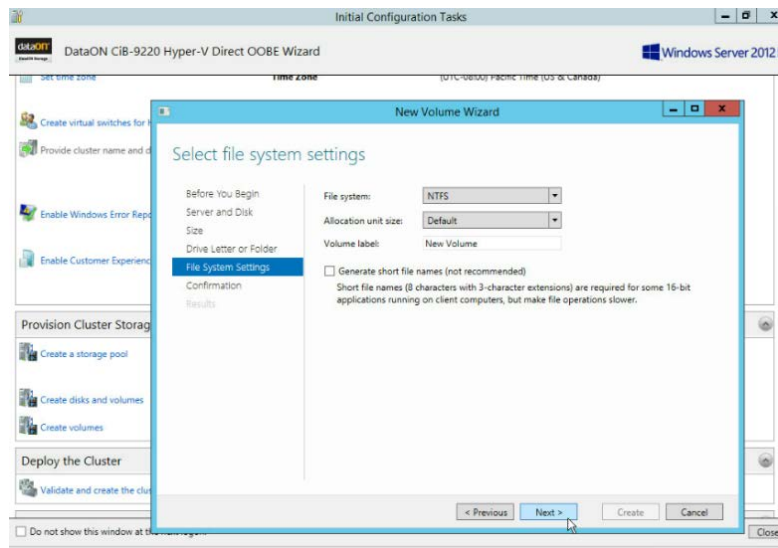
11. Specify the size of the volume disk. When completed, click 'Next'.



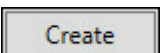
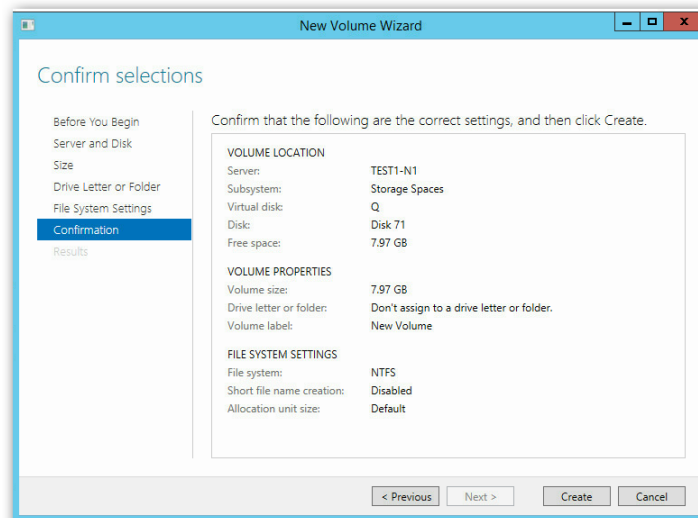
12. At the step shown below, select 'Don't assign to a drive letter or folder' if users need to add virtual disks under cluster-shared volume and the letter assigned here will disappear.



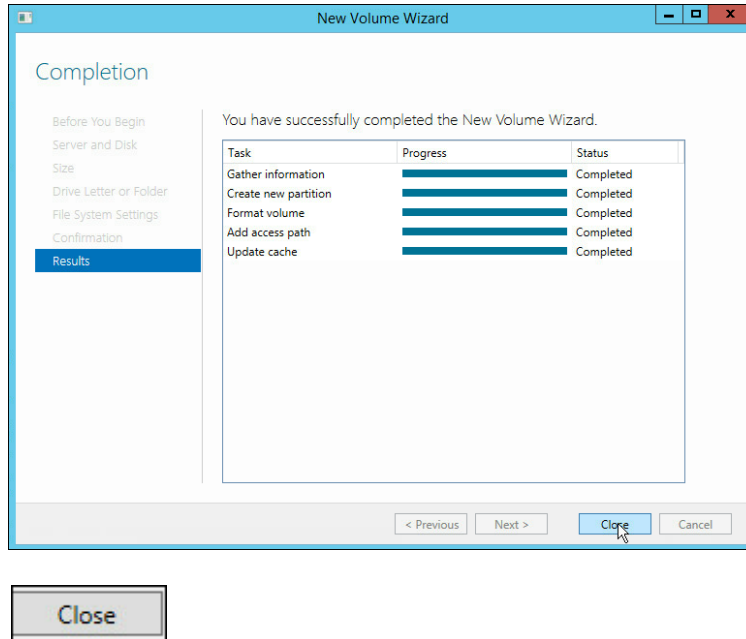
13. Specify file system settings as NTFS for the volume disk. When completed, click 'Next'.



14. Confirm settings for the volume disk. When completed, click 'Create'.



15. Upon completion of the volume, click 'Close'.

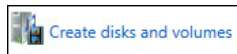
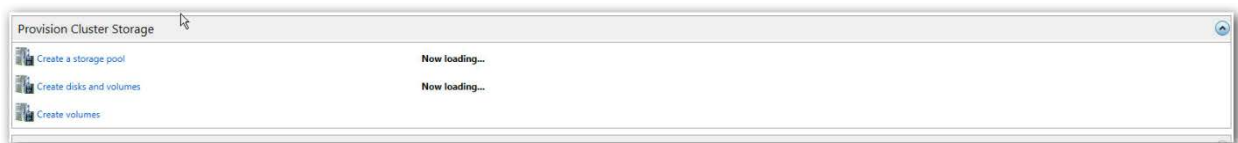


At this point, you have created a Failover Witness Volume for your system successfully. In the following steps, we will show you how to create virtual disks and volumes, including how to setup a tier-storage virtual disk.

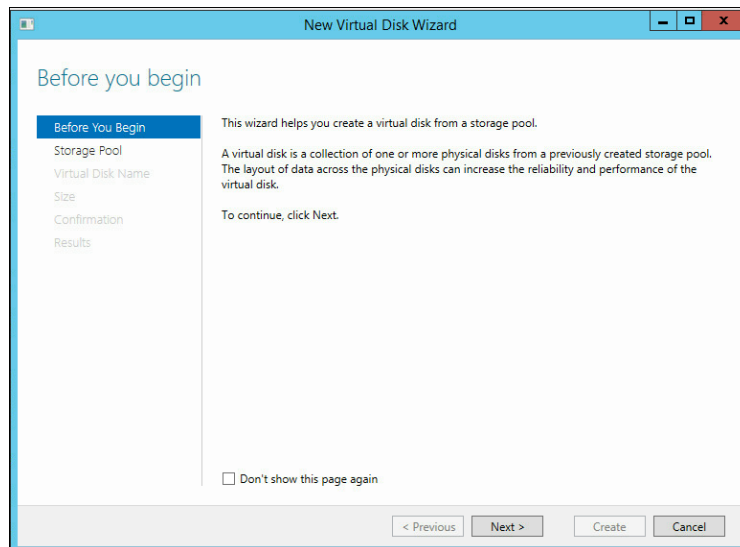
CiB-9470V1 Creating Virtual Disks and Volumes (including tier-storage setup)

In the following section, we will show you how to create Virtual Disks and corresponding Volumes of each disk. Users can create as many Virtual Disks as needed according to the instructions below.

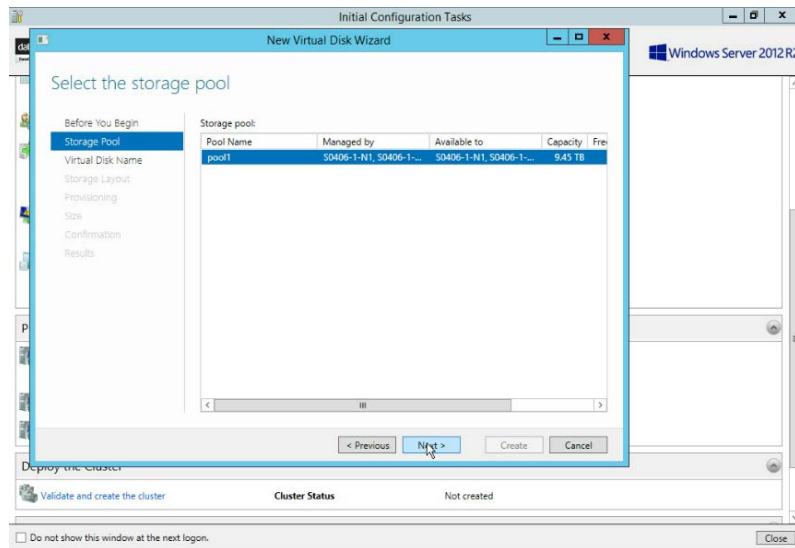
1. On OOBE, click 'Create disks and volumes' to create your data volume.



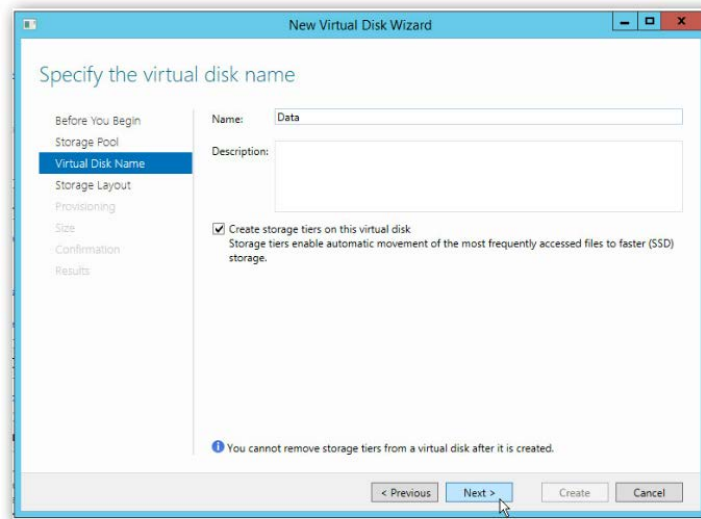
2. Click 'Next'.



3. Select storage pool. When completed, click 'Next'.



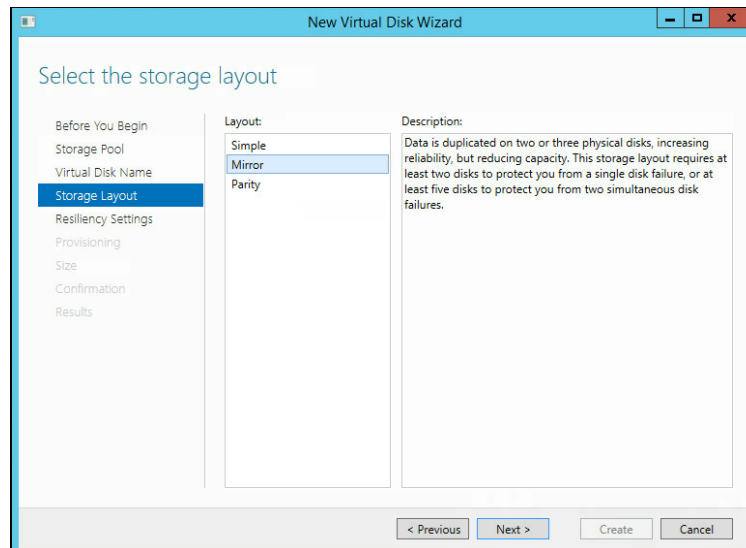
4. Specify virtual disk name and optional description for the data volume. Mark 'Create storage tiers on this virtual disk' if users need storage tiers on VDs. When completed, click 'Next'.



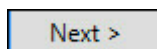
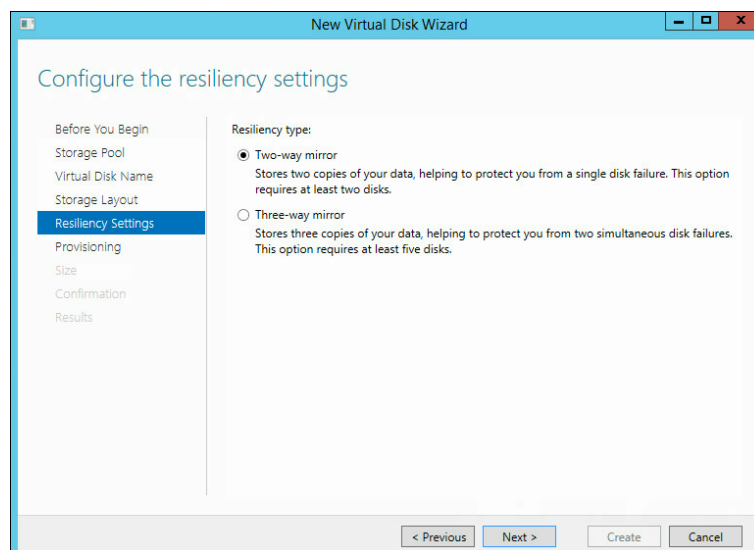
- ☒ Create storage tiers on this virtual disk
Storage tiers enable automatic movement of the most frequently accessed files to faster (SSD) storage.

Next >

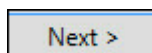
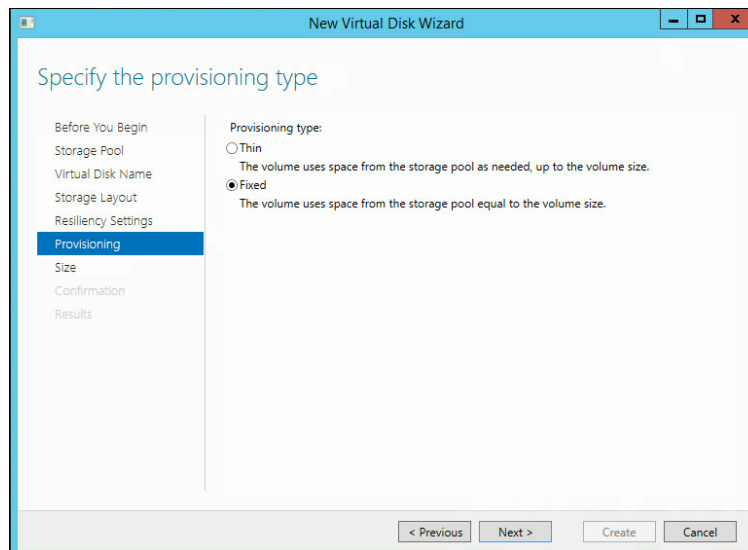
5. Select storage layout for the data volume. When completed, click 'Next'.



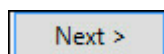
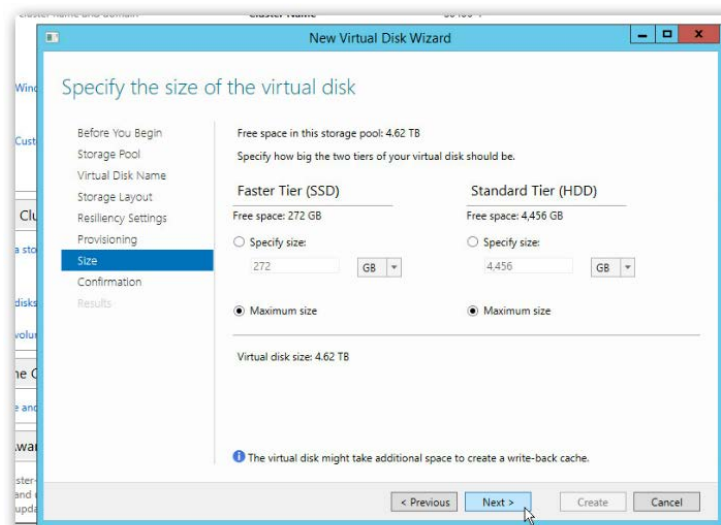
6. Select resiliency settings for the data volume. When completed, click 'Next'.



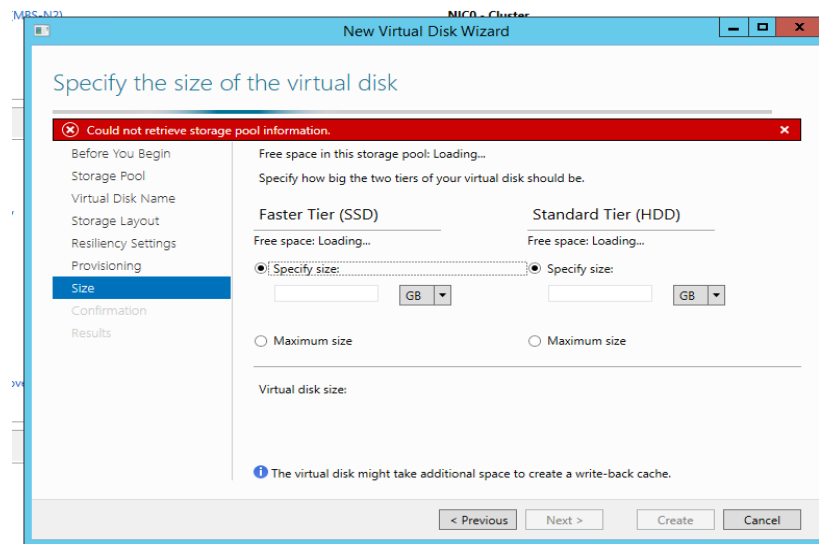
7. Choose the provisioning type for the data volume. When completed, click 'Next'.



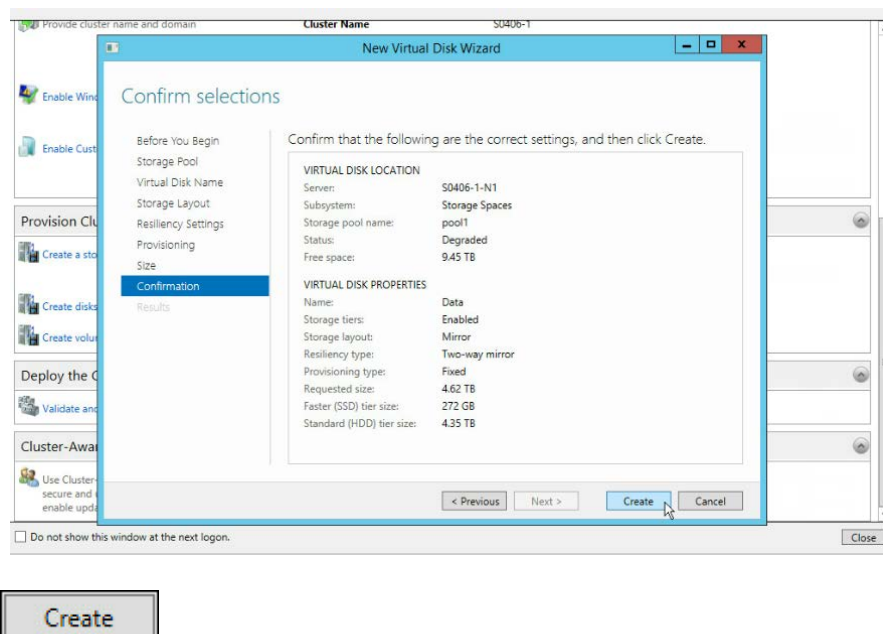
8. Specify the volume* of SSD and HDD that you wish to assign for the virtual disk respectively. When completed, click 'Next'.



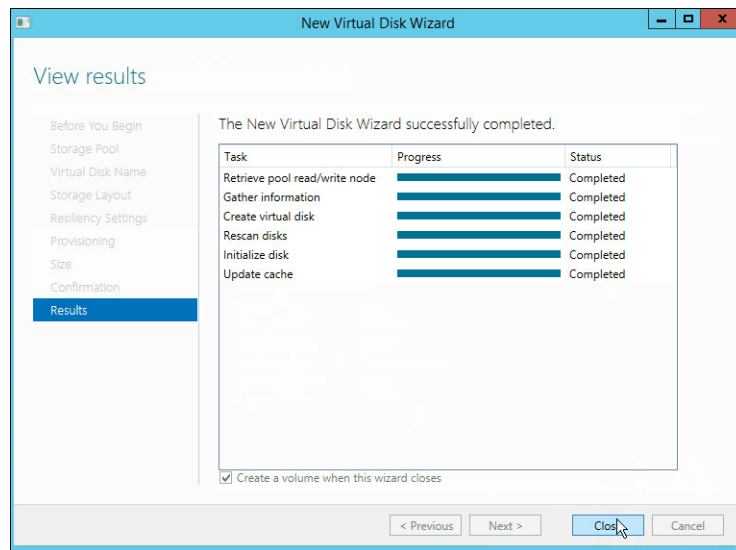
*Troubleshooting: we have seen an issue that users may occasionally encounter as the figure shown below. Please refer to page 44 for troubleshooting.



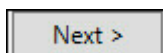
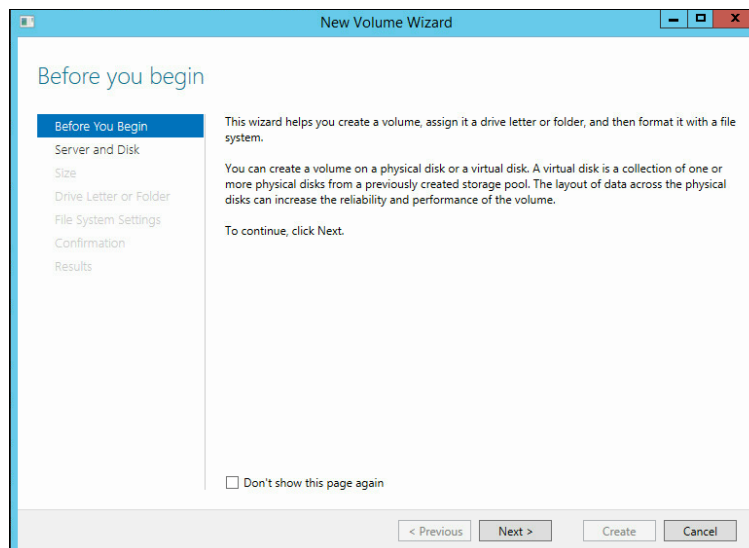
9. Confirm settings and volume assignment. When completed, click 'Create'.



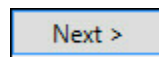
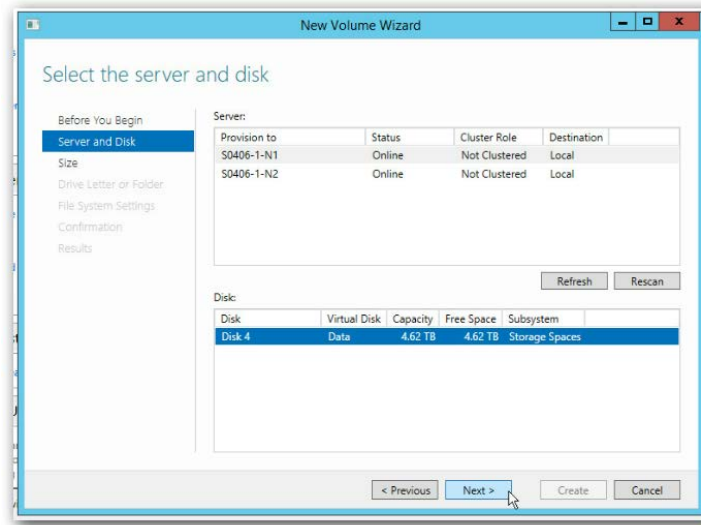
10. When completed, select 'Create a volume when this wizard closes' and click 'Close'.



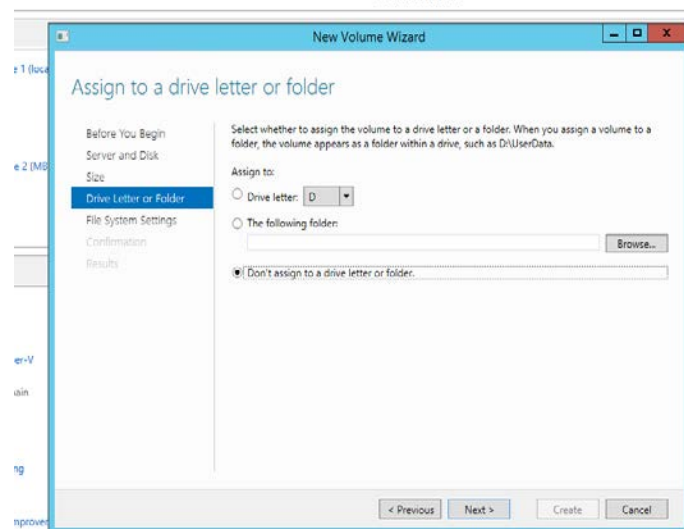
11. Then, users need to create volume for new virtual disk created. Click 'Next'.



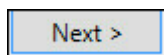
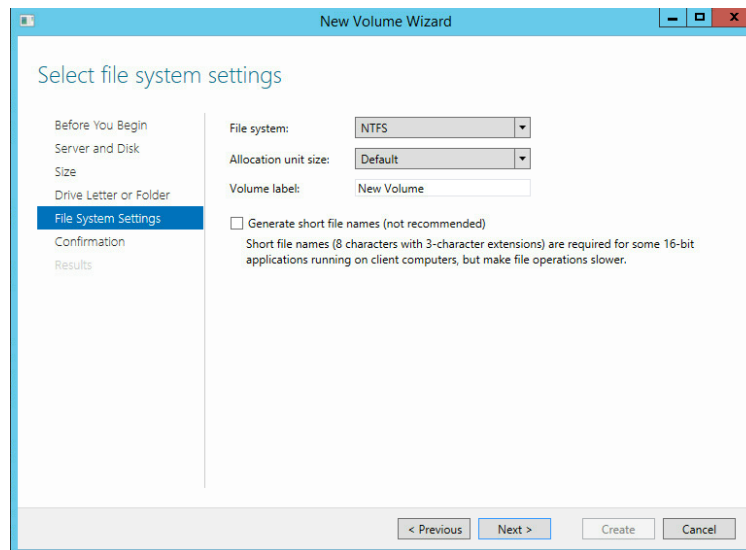
12. Select your server and disk to create your volume from. When completed, click 'Next'.



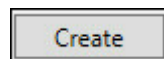
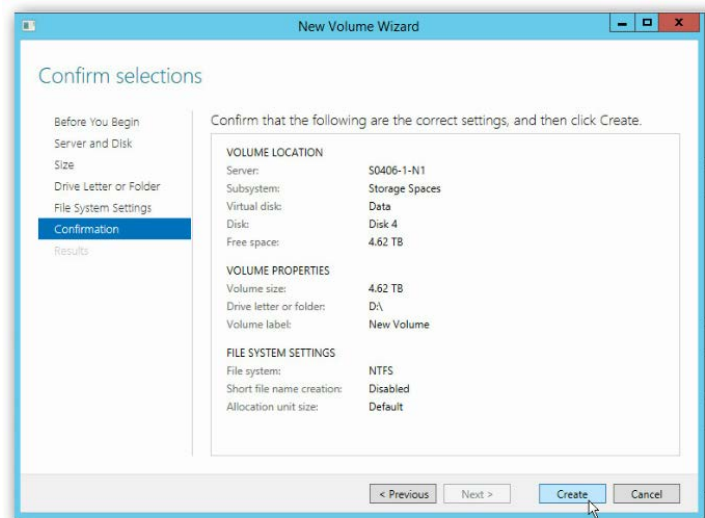
13. At the step shown below, select 'Don't assign to a drive letter or folder' since users need to add virtual disks under cluster-shared volume later and the letter assigned here will disappear.



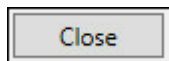
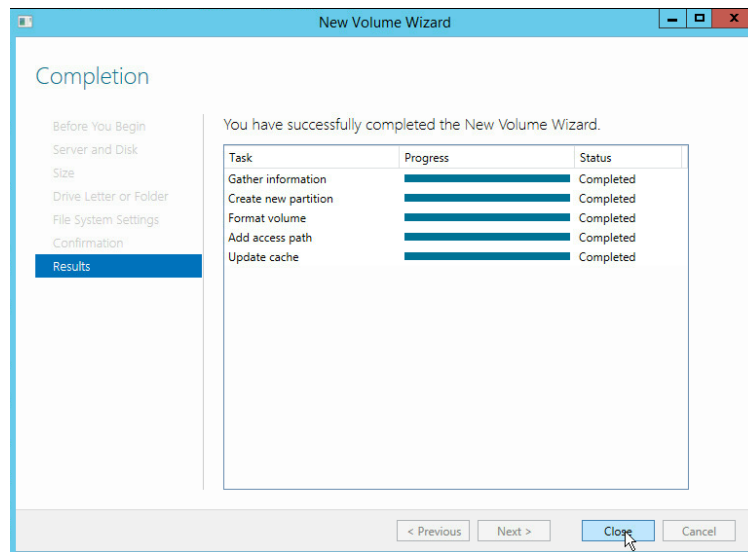
14. Specify system settings for the volume. When completed, click 'Next'.



15. Confirm volume selections. When completed, click 'Create'.

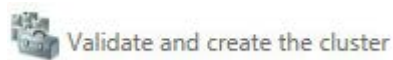
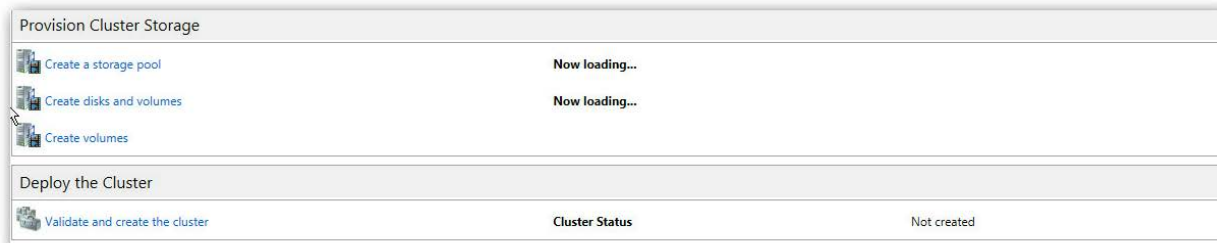


16. Upon completion, click 'Close'.

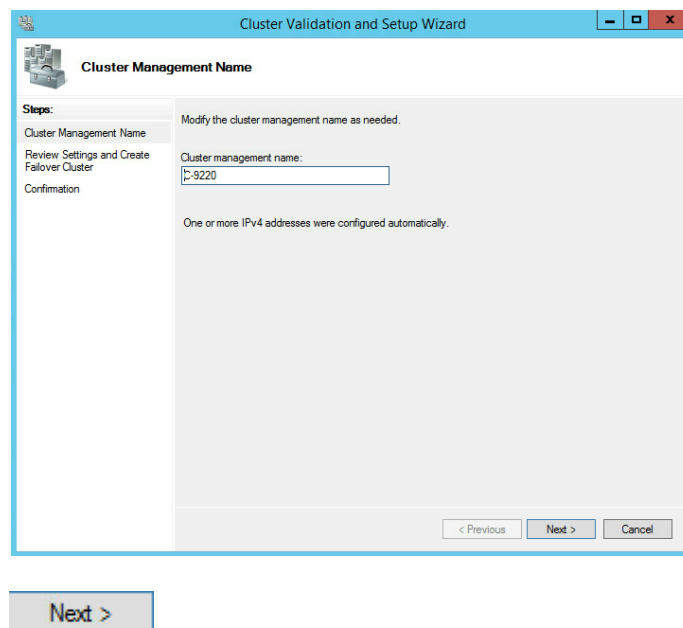


CiB-9470V1 Validation and Creation of the Cluster

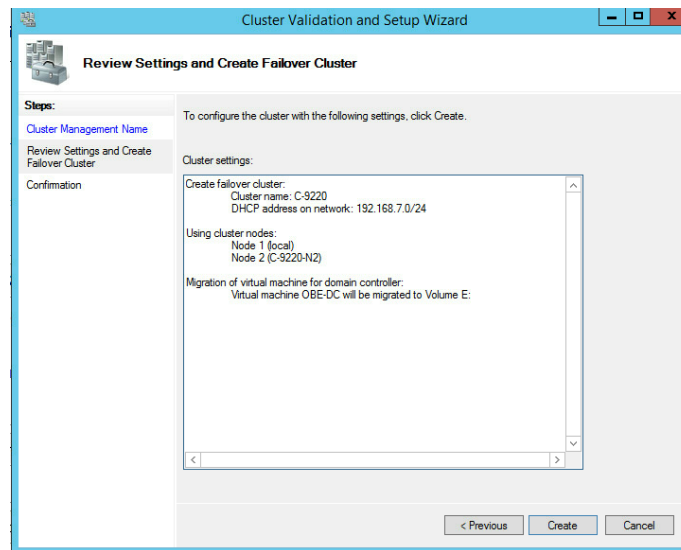
1. On OOB setup, click on 'Validate and create the cluster'.



2. Specify cluster management name. When completed, click 'Next'.

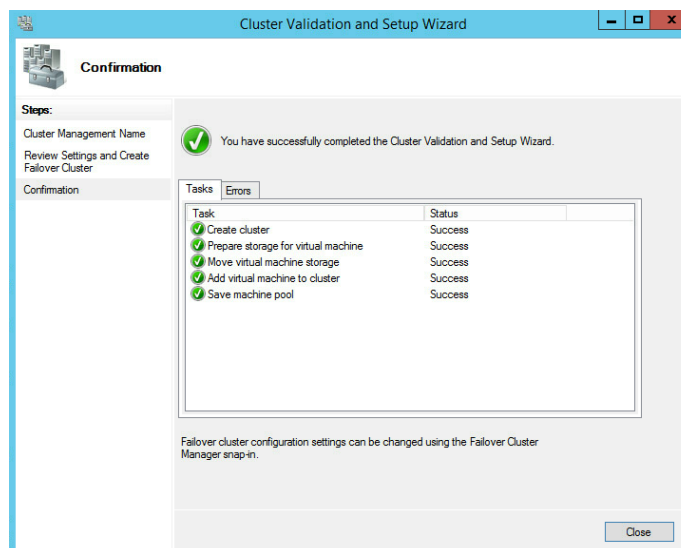


3. Verify cluster settings. When completed, click 'Create'.



Create

4. Once completed, OOB setup success.



5. Afterward, go to “failover cluster manager” and add all volumes to “cluster shared volume”:



6. Select all volumes which you wish to add:

Name	Status	Assigned To	Owner Node	Disk Number	Capacity	Information
Cluster Disk 1	Online	Available Storage	SOFSS2	74	373 GB	
Q	Online	Disk Witness in Quorum	SOFSS3	99	8.00 GB	
V1	Online	Available Storage	SOFSS2	99	1.96 TB	
V2	Online	Available Storage	SOFSS2	103	1.96 TB	
V3	Online	Available Storage	SOFSS2	102	1.96 TB	
V4	Online	Available Storage	SOFSS2	101	1.96 TB	
V5	Online	Available Storage	SOFSS2	104	1.96 TB	
V6	Online	Available Storage	SOFSS2		1.96 TB	

Context menu for V6:

- Bring Online
- Take Offline
- Simulate Failure
- Add to Cluster Shared Volumes
- More Actions
- Remove

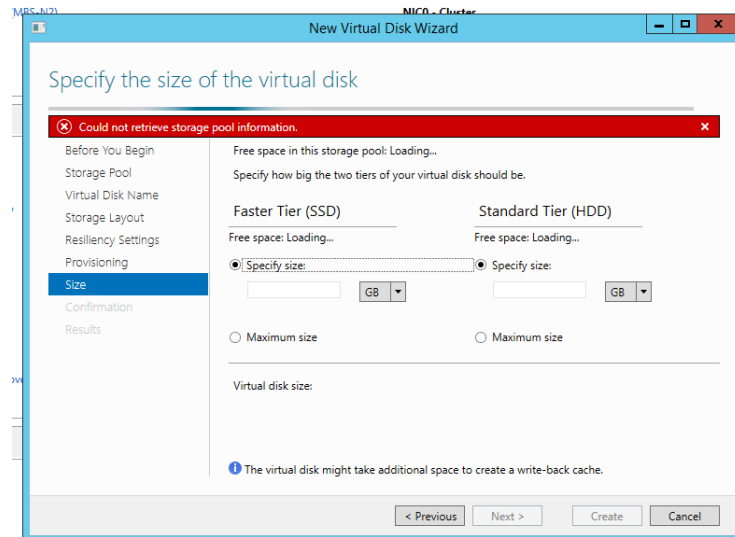
7. After few seconds waiting, you would be seeing the change made:

Name	Status	Assigned To	Owner Node	Disk Number	Capacity	Information
Cluster Disk 1	Online	Available Storage	SOFSS2	74	373 GB	
Q	Online	Disk Witness in Quorum	SOFSS3	99	8.00 GB	
V1	Online	Cluster Shared Volume	SOFSS2	101	1.96 TB	
V2	Online	Cluster Shared Volume	SOFSS3	100	1.96 TB	
V3	Online	Cluster Shared Volume	SOFSS3	102	1.96 TB	
V4	Online	Cluster Shared Volume	SOFSS2	101	1.96 TB	
V5	Online	Cluster Shared Volume	SOFSS2	100	1.96 TB	
V6	Online	Cluster Shared Volume	SOFSS2	99	1.96 TB	

III. CiB-9470V1 Troubleshooting

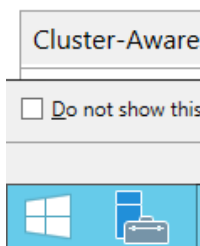
A. Failure in the process of creating virtual disks

- Users may encounter this issue while creating virtual disks as shown below:

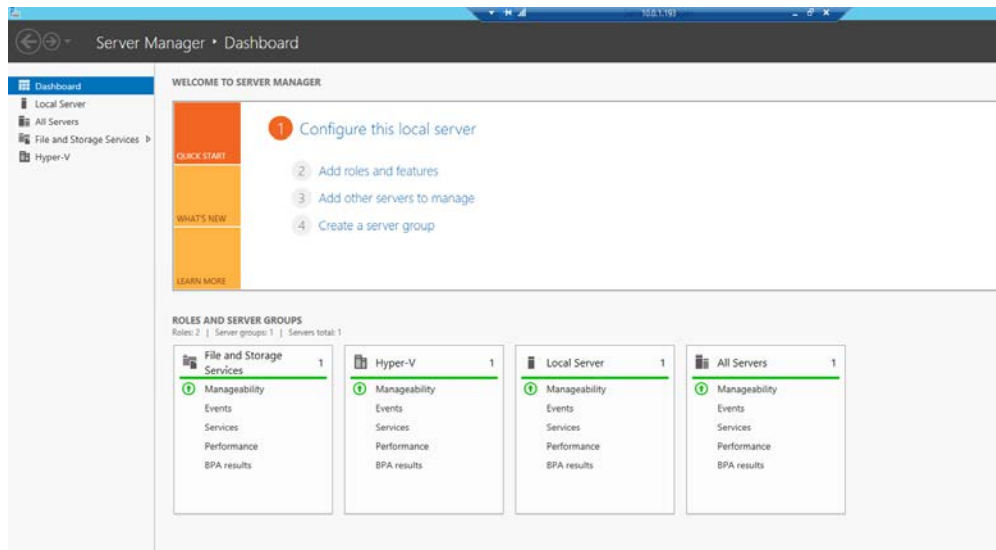


-Therefore, users need to use traditional way to create VD's. Please see following steps.

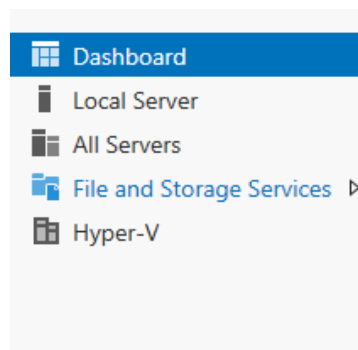
1. Please find the icon for "server manager" which is pinned on taskbar and click on it. The icon is right beside windows button.



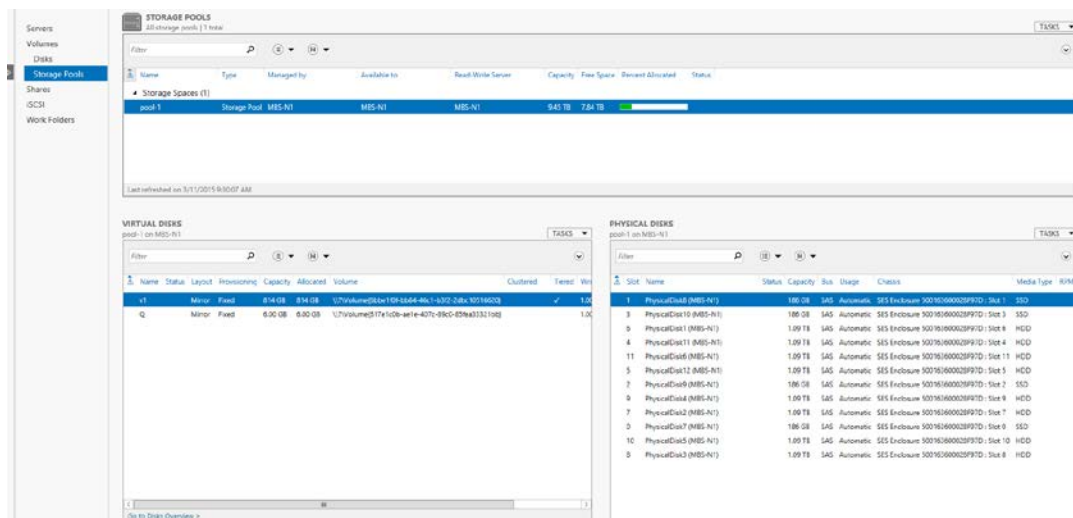
2. Then, you will see a screen as shown below:



3. Please find the “file and storage service” option on the left side and click on it:



4. Then, users can see the pool and virtual disks which have been created:



5. Right-Click on “pool-1” and create “New Virtual Disk”:

The screenshot displays the DataOn Storage Pools management console. On the left sidebar, 'Storage Pools' is selected. The main area shows a table of storage pools. 'pool-1' is highlighted, and a context menu is open with 'New Virtual Disk...' selected. Below the storage pools table, there are sections for 'VIRTUAL DISKS' and 'PHYSICAL DISKS'.

Name	Type	Managed by	Available to	Read-Write Server	Capacity	Free Space	Percent Allocated	Status
pool-1	Storage Pool	MBS-N1	MBS-N1	MBS-N1	9.45 TB	7.04 TB		

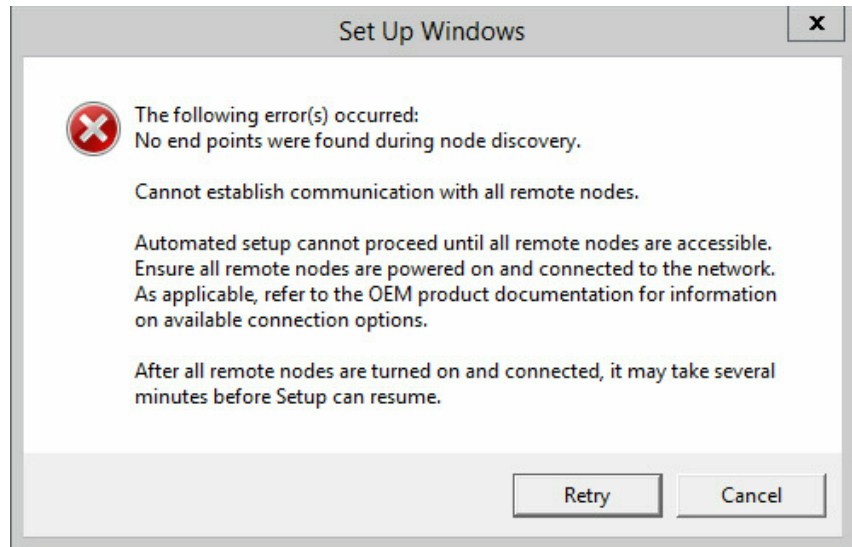
Name	Status	Layout	Provisioning	Capacity	Allocated	Volume	Clustered	Tiered	Wt
v1	Minor	Fixed		814 GB	814 GB	\\7Volume\State10F-bb04-46c1-b9f2-28bc10716670			1.0
Q	Minor	Fixed		600 GB	600 GB	\\7Volume\817e1c0b-ac1e-407c-89c0-83ea33321bb1			1.0

Slot	Name
1	PhysicalDisk8 (MBS-N1)
3	PhysicalDisk10 (MBS-N1)
6	PhysicalDisk11 (MBS-N1)
4	PhysicalDisk6 (MBS-N1)
11	PhysicalDisk12 (MBS-N1)
5	PhysicalDisk12 (MBS-N1)
2	PhysicalDisk9 (MBS-N1)
9	PhysicalDisk4 (MBS-N1)
7	PhysicalDisk2 (MBS-N1)
0	PhysicalDisk7 (MBS-N1)
10	PhysicalDisk5 (MBS-N1)
8	PhysicalDisk3 (MBS-N1)

Afterward, users will see a pop-up window which is same as the OOB wizard populates, follow the steps to finish creating virtual disks.*

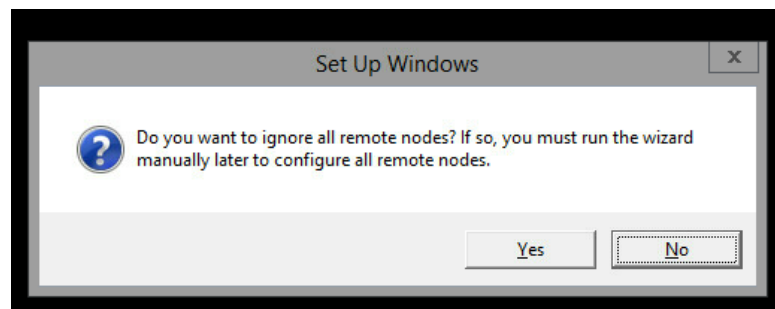
B. Communication Failure With Other Node During Initial Steps

- If users see a pop-up window as shown below, please refer to the following steps:

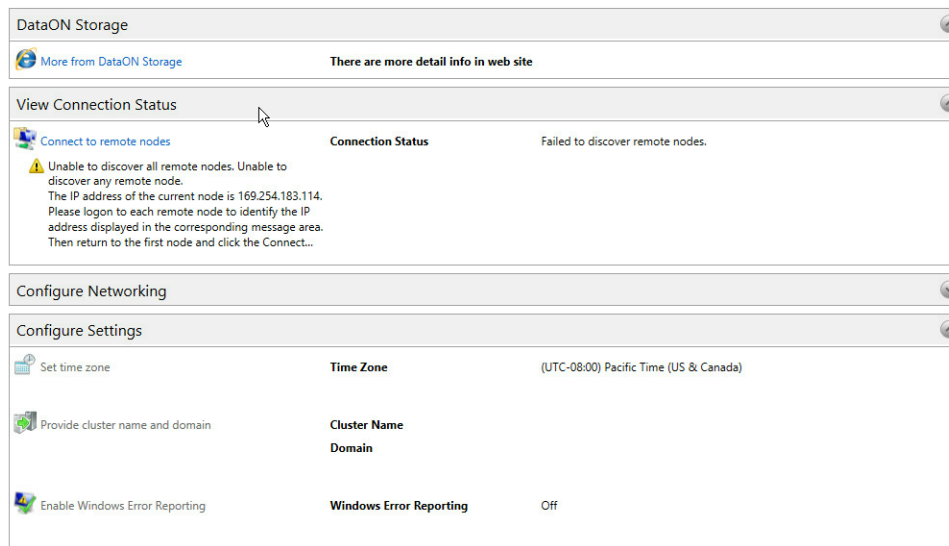


1. In this case, users can press Alt+Tab to move to the window above and use Tab or Right Arrow to highlight "cancel" option and cancel.

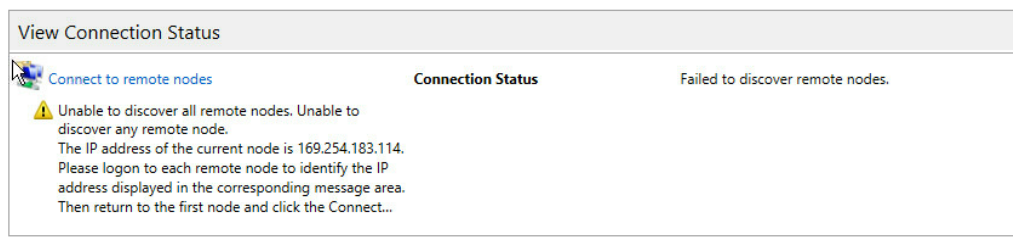
Afterward, users can expect to see the screen below:



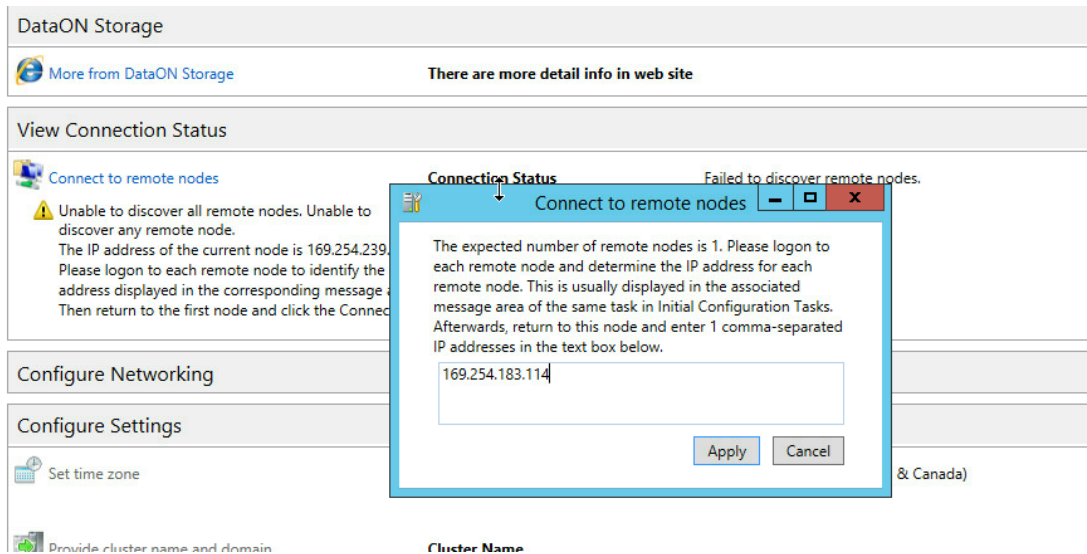
- Click on “Yes”, switch to Node2 and repeat the step 1 and 2. Upon completion, users should see the following screen on both Node1 and Node2.



- We use Node2 as the master node as an example, then Node1 becomes the “remote node”. The IP address of each node is shown under “Connection Status” column as the figure shows:



4. Go to the master node (which is Node2 in our case), click on “Connect to remote nodes), type the IP address of the node users wish to connect (Node1) and click “Apply”:



5. After 5-10 seconds, users can expect to see a screen as follows:

View Connection Status		
Connect to remote nodes	Connection Status	Connected
Configure Networking		
Configure networking for node 1 (local)	NIC2 - Left	Not connected
	NIC0 - Cluster	IPv4 address assigned by DHCP, IPv6 enabled
	NIC1 - Right	IPv4 address assigned by DHCP, IPv6 enabled
Configure networking for Node 2 (169.254.183.114)	NIC2 - Left	Not connected
	NIC1 - Right	IPv4 address assigned by DHCP, IPv6 enabled
	NIC0 - Cluster	IPv4 address assigned by DHCP, IPv6 enabled

6. Hereafter, users can finish the configuration through basic steps as we have shown earlier.