Better Storage | Agile Solution

CiB-9220s

OOBE Setup

March 2015 Version 3.0

www.dataonstorage.com

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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 ground- ed 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.

Table of Contents

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-9220). The configuration software (OOBE Wizard) is pre-installed in our CiB-9220 and users can choose the most proper way to integrate the CiB-9220 into their own storage environment.

About the content

This document is specifically targeted on software installation and configuration of DataON CiB-9220 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-9220 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-9220 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.
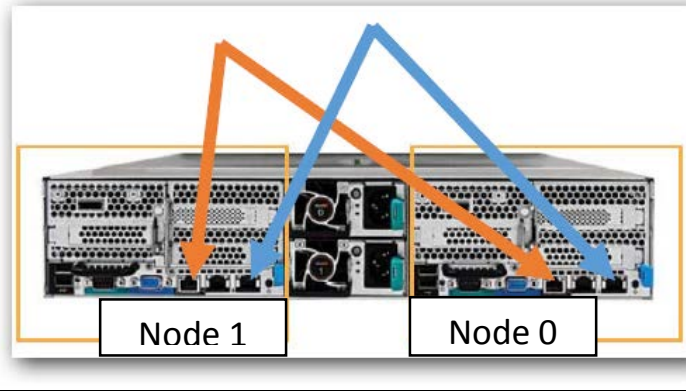
2. Prepare both nodes on screen as shown below. Please use **node 0** to configure your CiB-9220 by clicking "Yes" on the screen. Node 1 will imitate the configurations as you make on node 0 automatically from this point on. Hence, it is **NOT** necessary to switch between node 0 and node 1 in order to finish the configuration.*

⚠️ **CAUTION: don't configure both nodes at same time, OS will crash.**
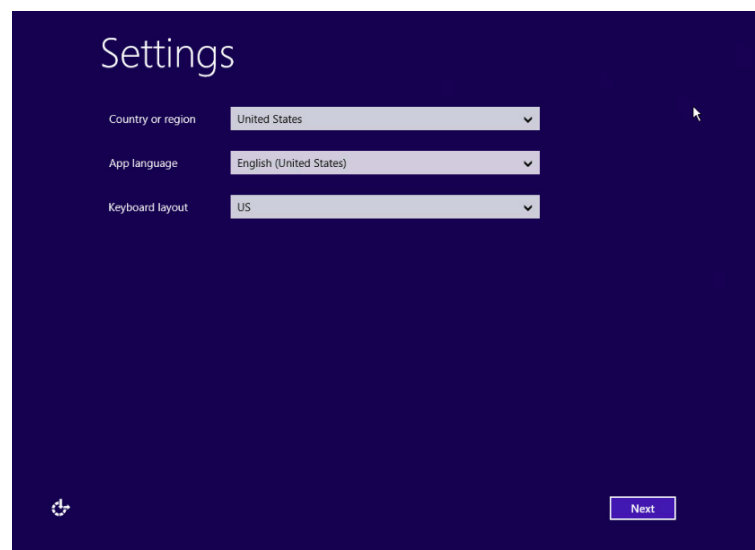
3. On next screen, click 'I accept'.
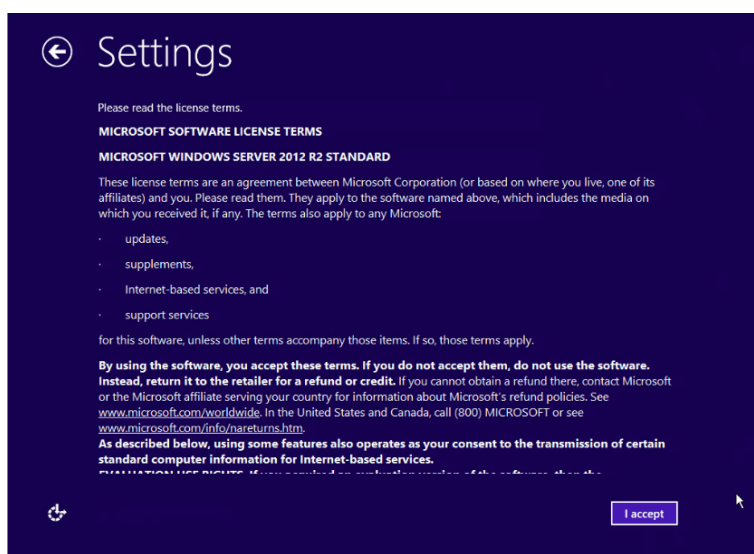
*Troubleshooting: If users see a pop-up window as shown below, please go to page 47.
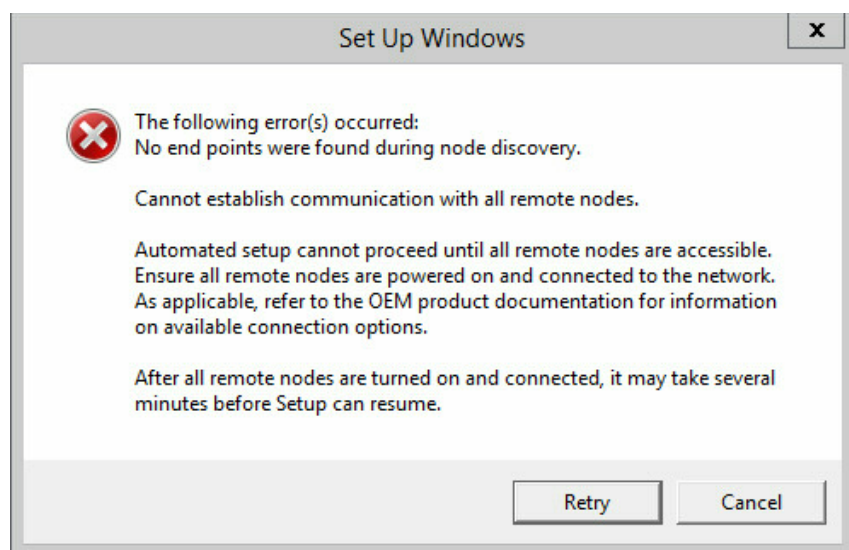
After around 30 seconds wait time, you will see the OOBE setup screen as shown below, please make sure under "View Connection Status" column, the connection status shows "connected".

DataON CiB-9220 Hyper-V Direct OOBE Wizard		
DataON Storage		
More from DataON Storage	There are more detail info in web site	
View Connection Status		
Connect to remote nodes	Connection Status	Connected
Configure Networking		
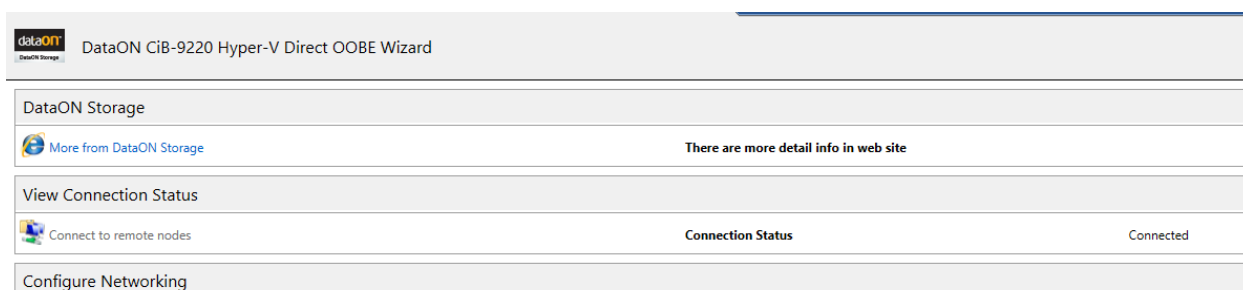
Afterward, under "Configure Networking" column, users can find networking information for each of the 2 nodes. "NIC0-Cluster" stands for the heartbeat* cable pre-installed inside CiB-9220. "NIC1-Right" stands for the networking port (the blue arrow) mentioned in page 4. Moreover, each node has a default heartbeat IP address* (169.254.xxx.xxx) assigned by DHCP.

Configure Networking		
Configure networking for node 1 (local)	NIC0 - Cluster	IPv4 address assigned by DHCP, IPv6 enabled
	NIC1 - Right	Not configured
	NIC2 - Left	Not connected
	vEthernet (ICT Virtual Switch -0)	IPv4 address assigned by DHCP, IPv6 enabled
Configure networking for Node 2 (MBS-N2)	NIC0 - Cluster	IPv4 address assigned by DHCP, IPv6 enabled
	NIC1 - Right	Not configured
	NIC2 - Left	Not connected
	vEthernet (ICT Virtual Switch -0)	IPv4 address assigned by DHCP, IPv6 enabled
Configure Settings		

-The figure above shows the networking status when no net-working card is installed in CiB-9220.

Configure Networking		
Configure networking for node 1 (local)	NIC1 - Right	IPv4 address assigned by DHCP, IPv6 enabled
	NIC2 - Left	Not connected
	Gigabit2	Not connected
	NIC0 - Cluster	IPv4 address assigned by DHCP, IPv6 enabled
	Gigabit1	Not connected
Configure networking for Node 2 (169.254.73.254)	Gigabit2	Not connected
	NIC0 - Cluster	IPv4 address assigned by DHCP, IPv6 enabled
	NIC2 - Left	Not connected
	NIC1 - Right	IPv4 address assigned by DHCP, IPv6 enabled
	Gigabit1	Not connected

- The figure above shows the networking status when two net-working cards are installed in CiB-9220.

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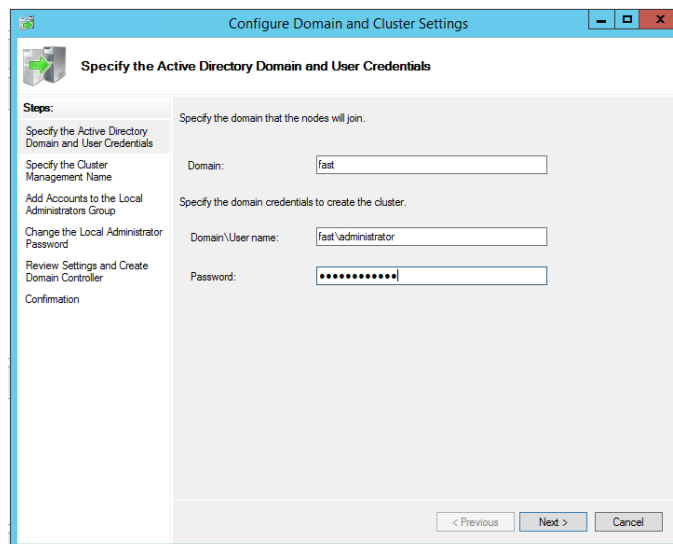
⚠ *CAUTION: We recommend to use extra network adapter to teaming, please don't use onboard NIC 1 and NIC 2 teaming.

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CiB-9220 Provide Cluster Name and Domain

To add the CiB-9220 under an existing Hyper-V environment, please click on "provide cluster name and domain" option:

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-9220 as you are creating a new virtual machine under Hyper-V. If needed, change the nodes name:

Click "Next" to confirm adding the 9220 under the domain you provide:

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

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

Click "Close" when the process is finished:
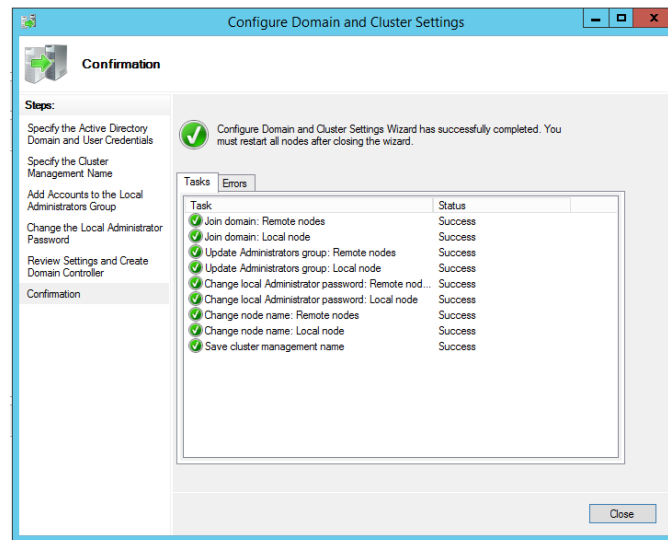
Upon completion, the wizard will ask to restart both nodes. Click "OK" to reboot (the remote node will reboot automatically; users do not need to switch between nodes to complete the restart). After restarting*, users can begin **creating a storage pool**.
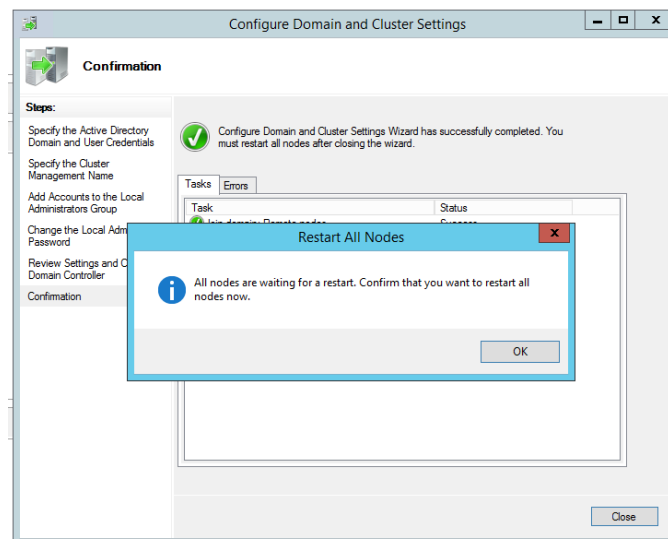
*Note: Users must login as the administrator of the cluster's domain.

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

CiB-9220 Creating Storage Pool

Once on login screen, login your domain password page 8.
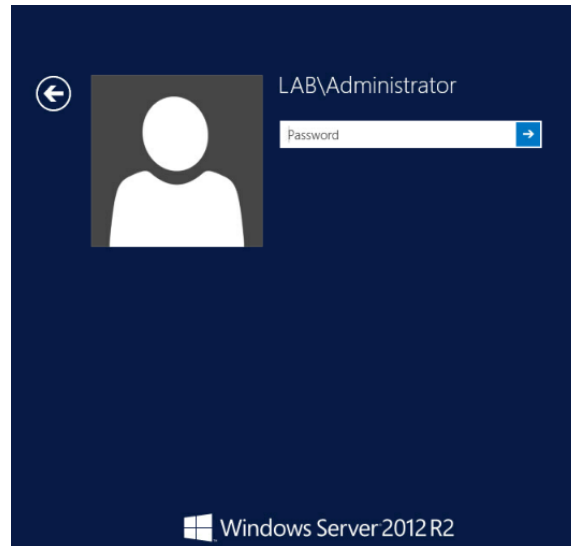
1. In the following step in OOBE Wizard, please select 'Create a storage pool'.
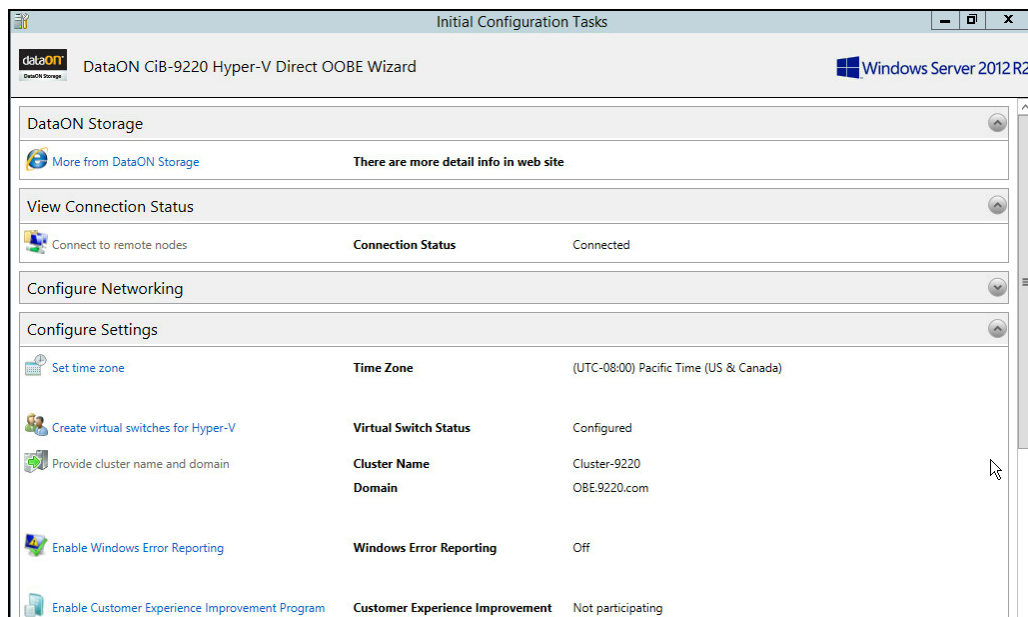
2. Please provide a pool name for the storage pool, optional description and assign a group of available disks for the storage pool. When completed, select 'Next'.
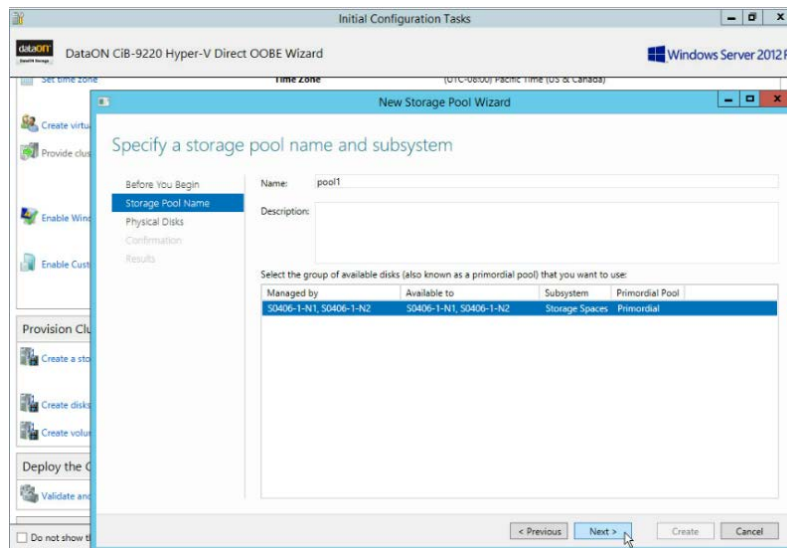
Pool Name: pool1
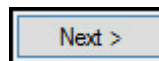
3. Select physical disks you would like to assign for the storage pool*. When completed, select 'Next'.
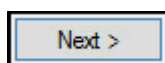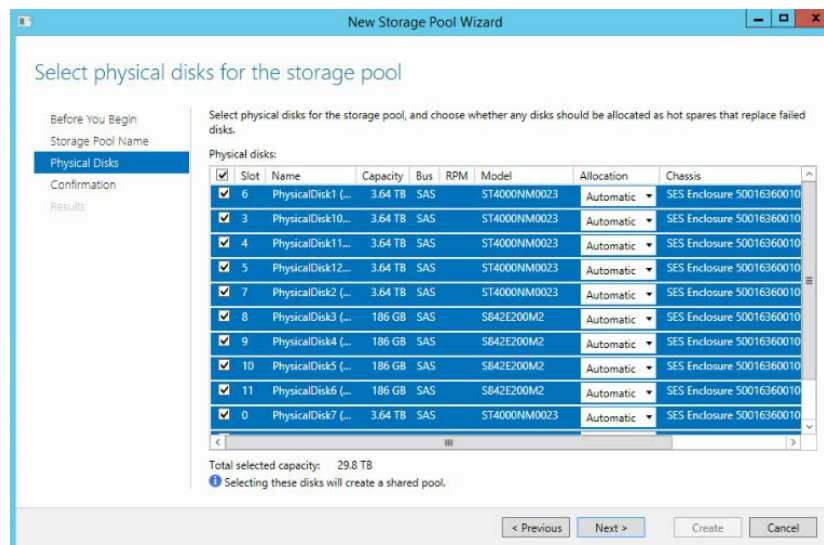
4. Confirm selections. When completed, select 'Create'.
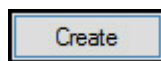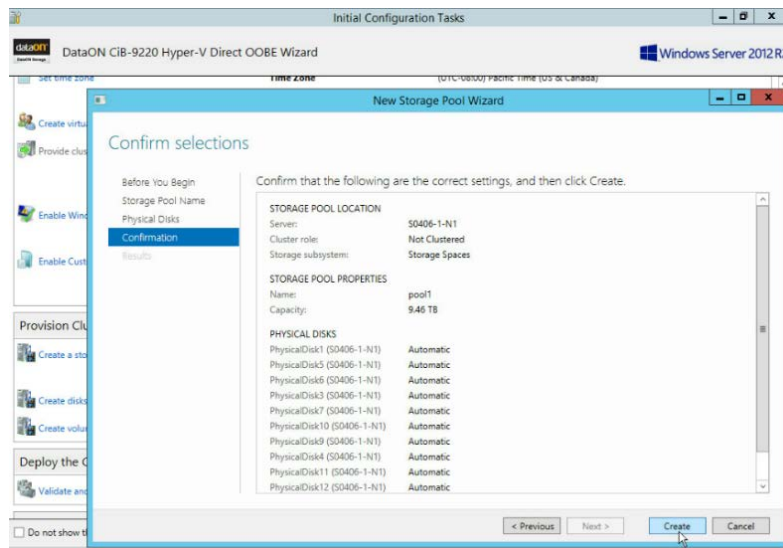
 *Note: If users create a tier-storage, please notice that you need you assign the SSDs and HDDs in a same pool.

5. When completed with storage pool, select 'Create a virtual disk when this wizard closes' and click 'Close'.
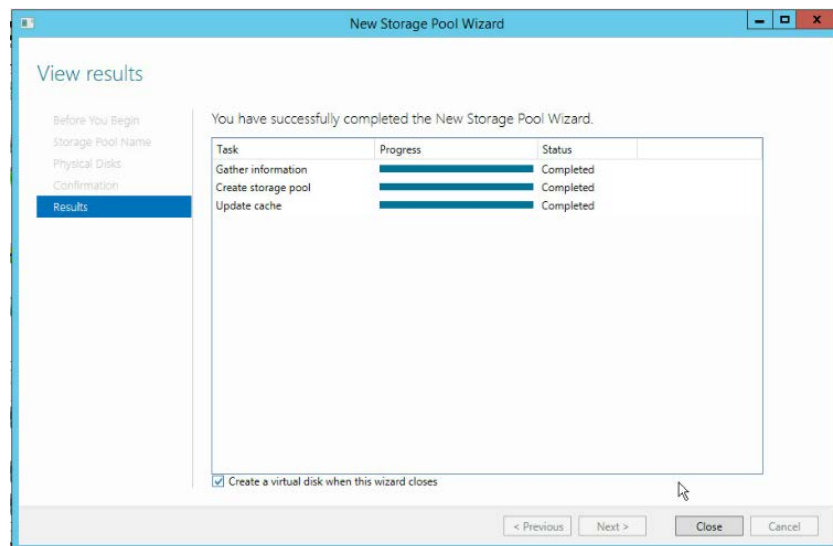
CiB-9220 Creating Virtual Disk (Failover Witness Volume)

1. Click 'Next'.
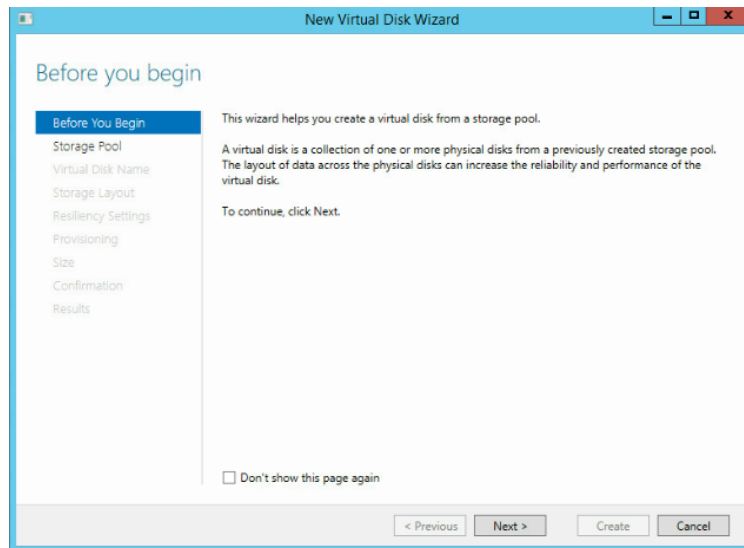
2. Select your storage pool and then click 'Next'.
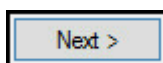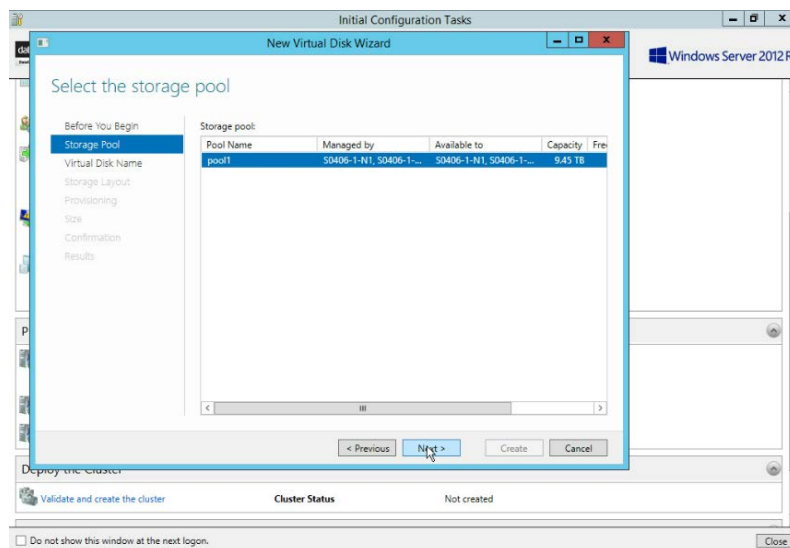
3. Specify your virtual disk name and optional description. For "Failover Witness volume", do **NOT** select "tier storage" option. When completed, click 'Next'.
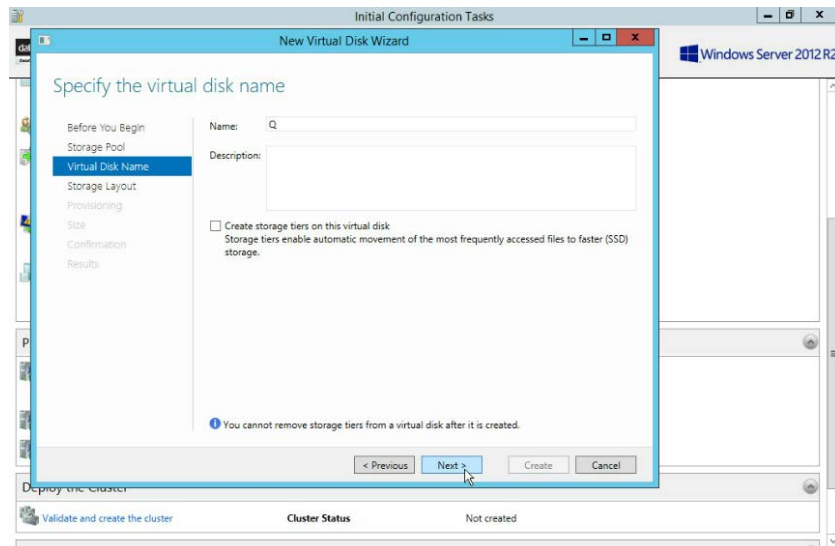
Create a Failover Witness Volume named : Q

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

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

- **Simple Layout**:
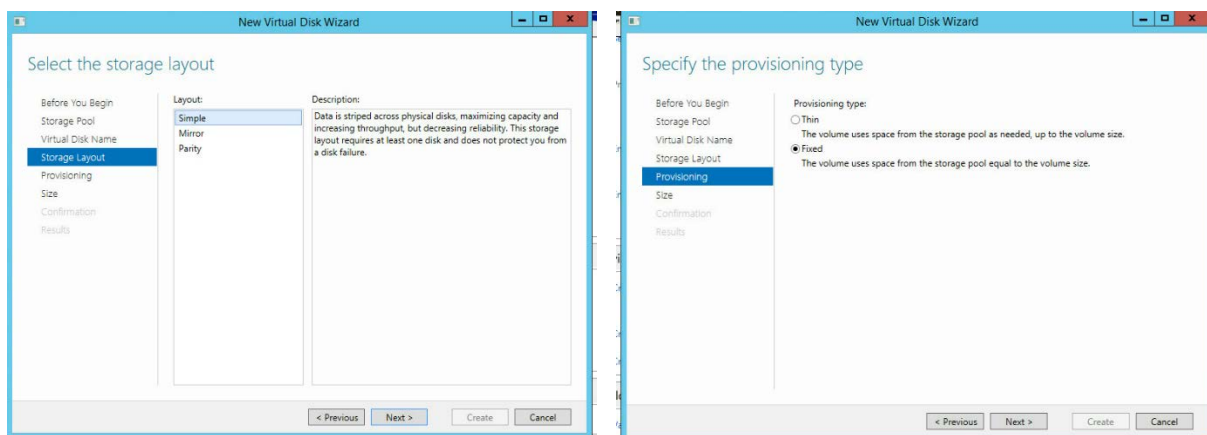
Please select the provisioning type. When completed, click 'Next'.

For "Simple Layout", users can NOT choose "Resiliency Settings". The OOBE wizard will skip the step to "Provisioning"

- **Parity Layout**
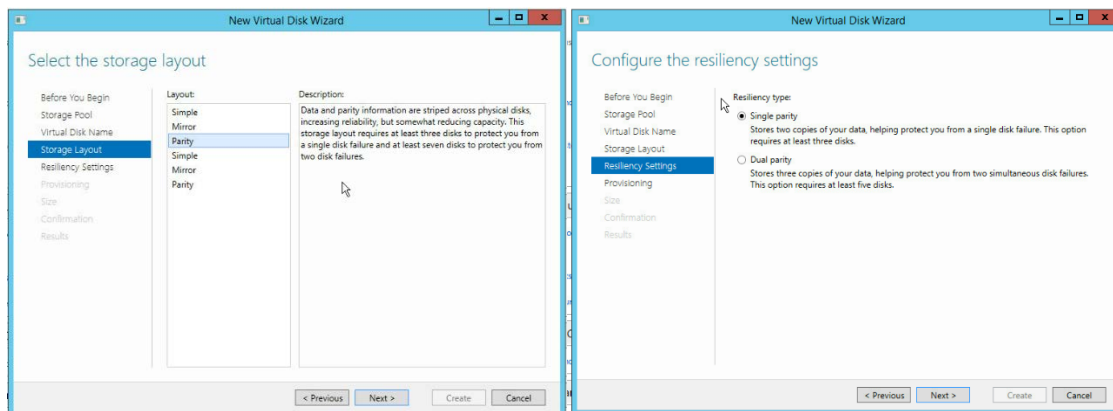
As for "Parity Layout", users can choose from "Single Parity" or "Dual Parity" as their options for "Resiliency Settings".

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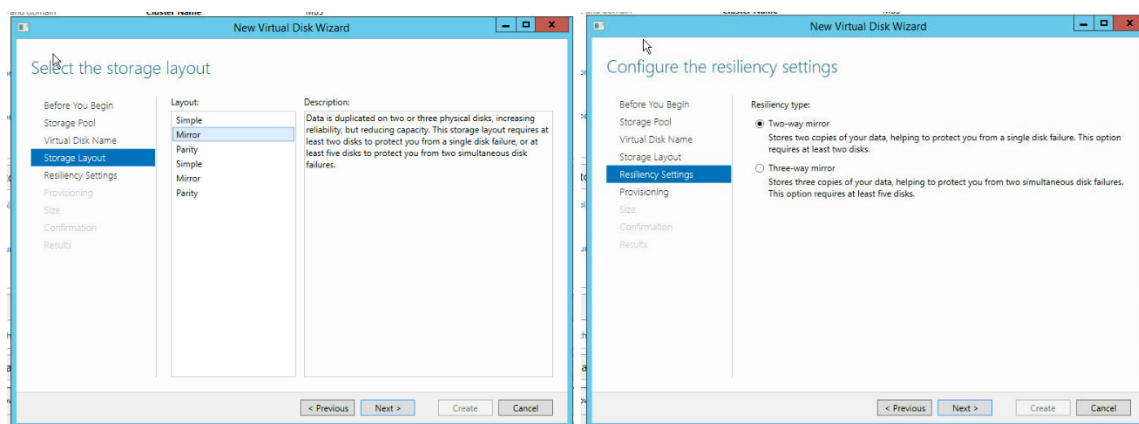
As for "Mirror Layout", users can choose from "Two-Way Mirror" or "Three-Way Mirror" as their options for "Resiliency Settings".

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'.
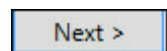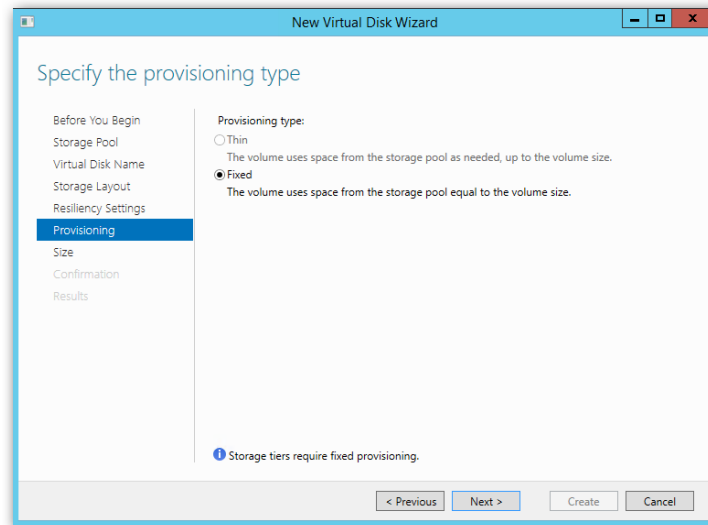
6. Specify size of the virtual disk. When completed, click 'Next'. <u>The system will automatically assign the virtual disk which has the smallest volume to be the 'Failover Witness VD', please make sure you assign proper volume to your virtual disks.</u>
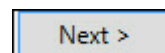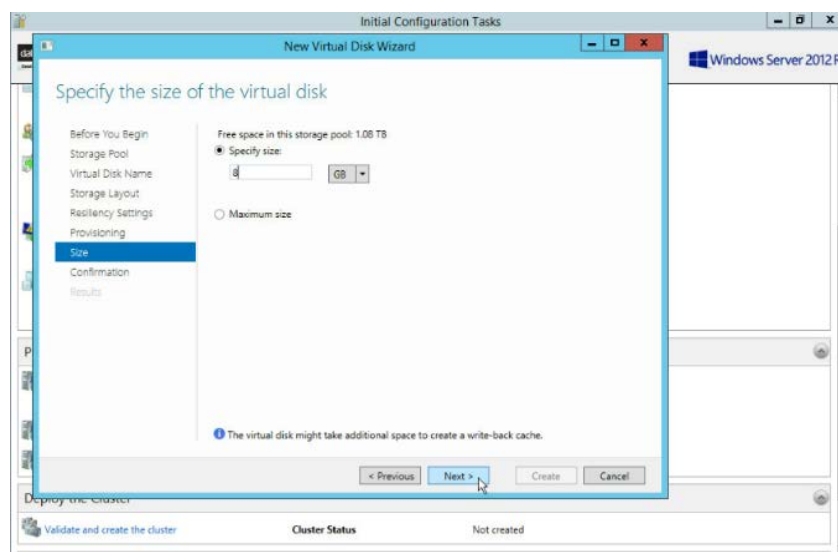
7. Confirm settings on the virtual disk. When completed, click 'Create'.
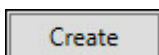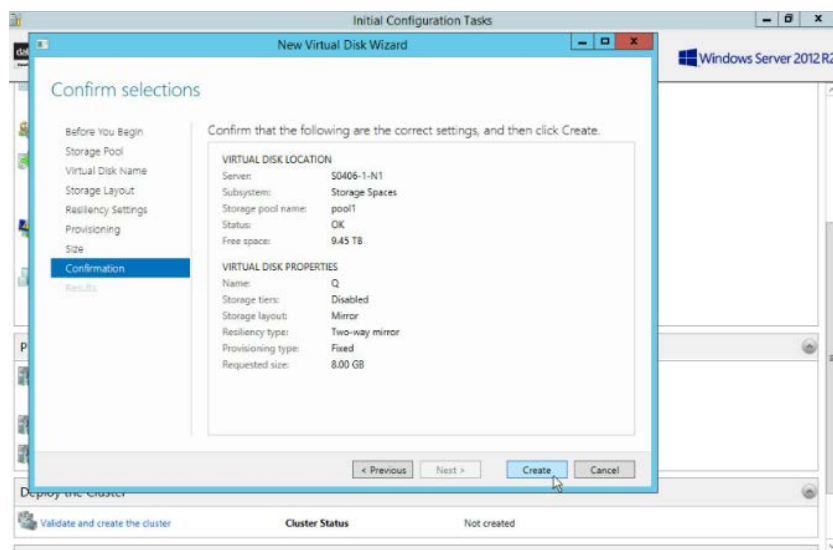
8. Upon completion of creation of virtual disk, select 'Create a volume when this wizard closes' and click 'Close'.
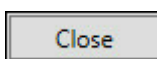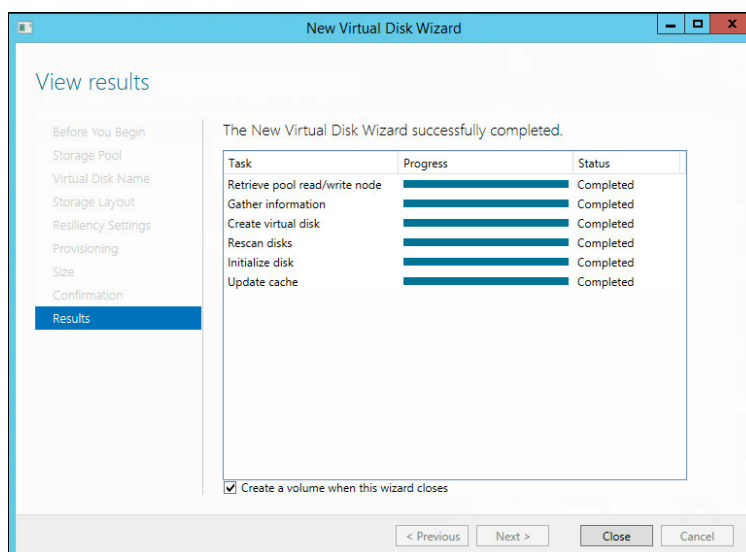
9. Click 'Next'.
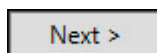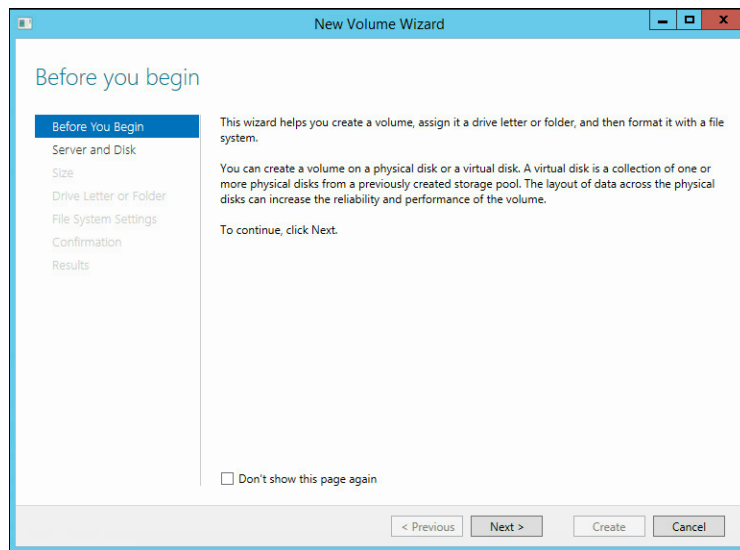
10. Select your server and disk to create your volume disk from. When completed, click 'Next'.
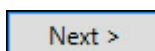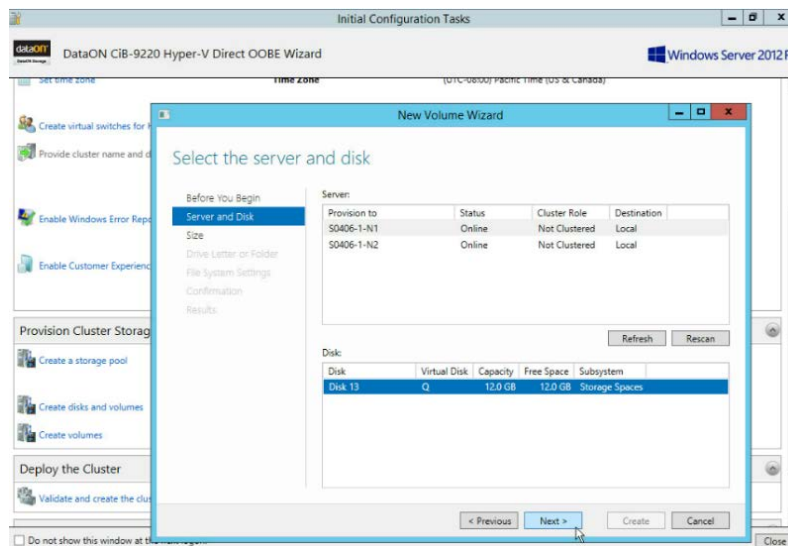
11. Specify the size of the volume disk. When completed, click 'Next'.
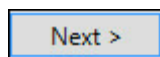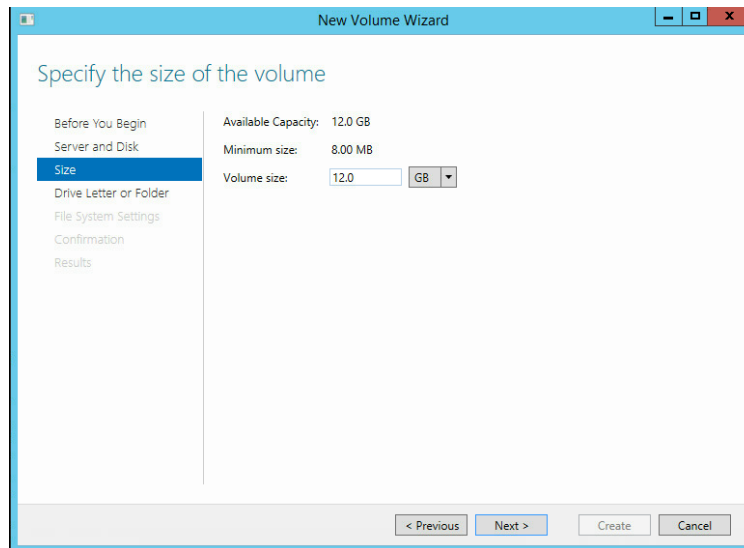
12. At the step shown below, select 'Don't assign to a drive letter or folder' if users need to add virtual disks under cluster-shared volume and the letter assigned here will disappear.
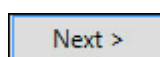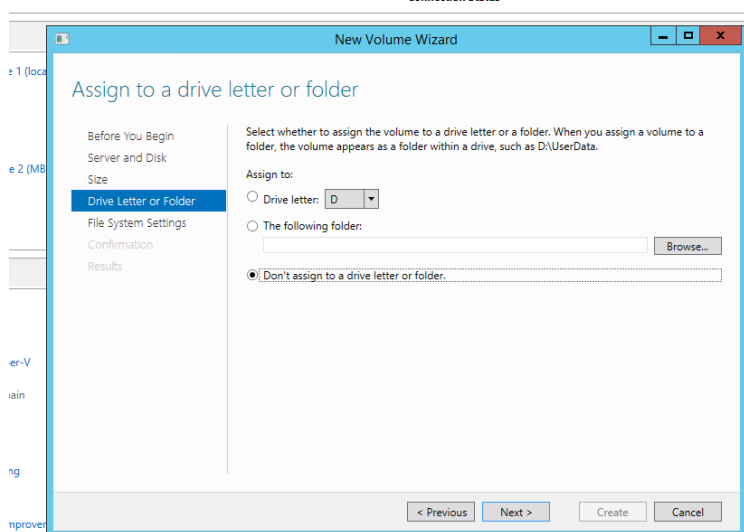
13. Specify file system settings as NTFS for the volume disk. When completed, click 'Next'.
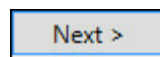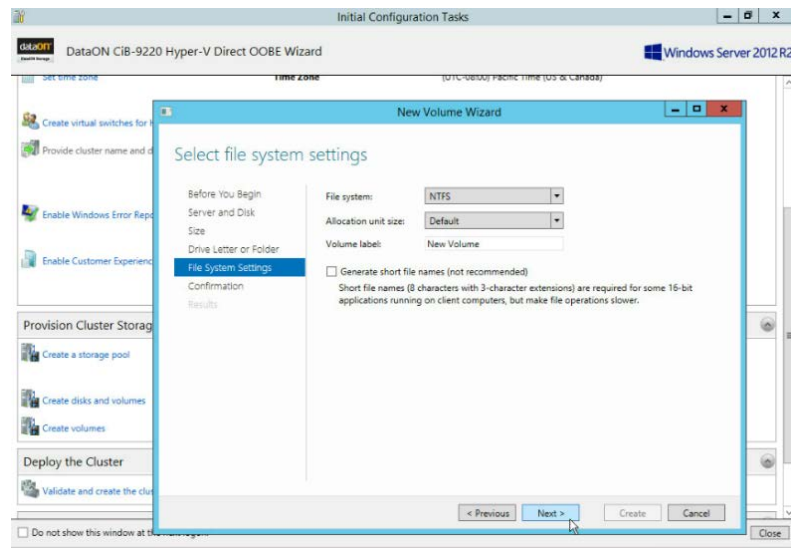
14. Confirm settings for the volume disk. When completed, click 'Create'.
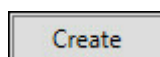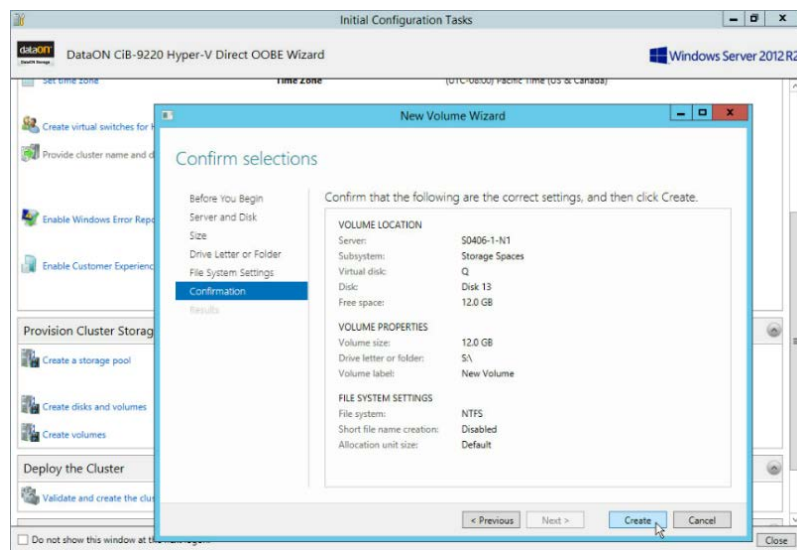
15. Upon completion of the volume, click 'Close'.
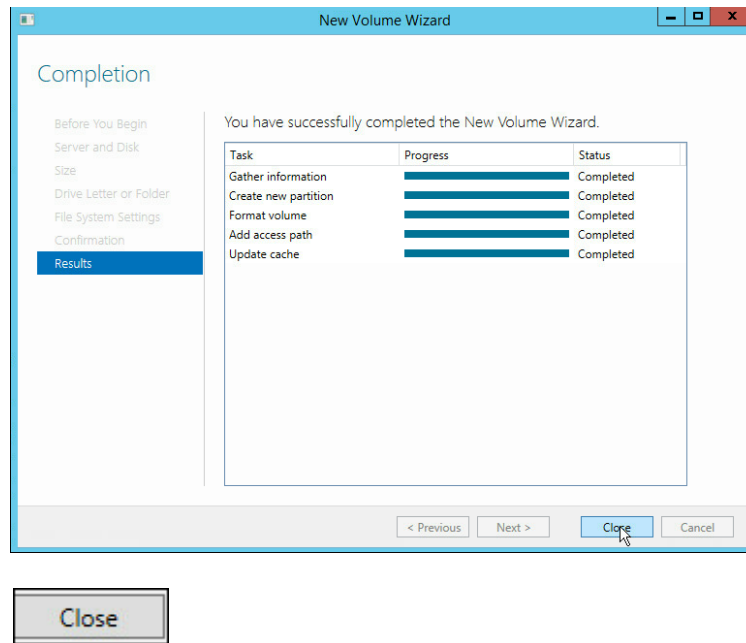
At this point, you have created a Failover Witness Volume for your system successfully. In the following steps, we will show you how to create virtual disks and volumes, including how to setup a tier-storage virtual disk.

CiB-9220 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.
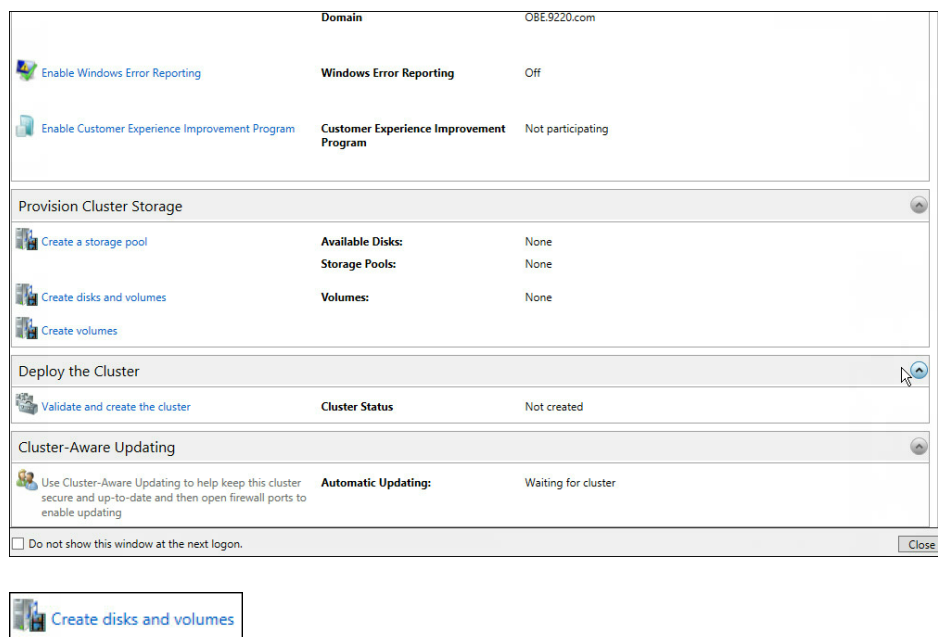
2. Click 'Next'.
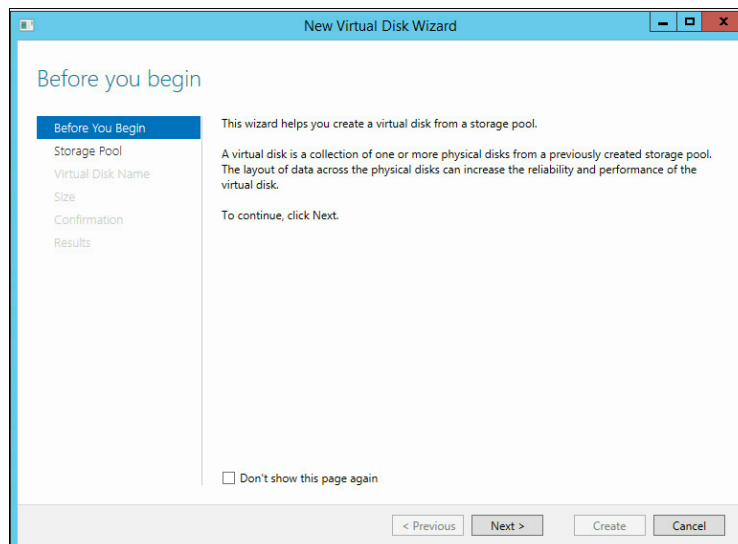
3. Select storage pool. When completed, click 'Next'.
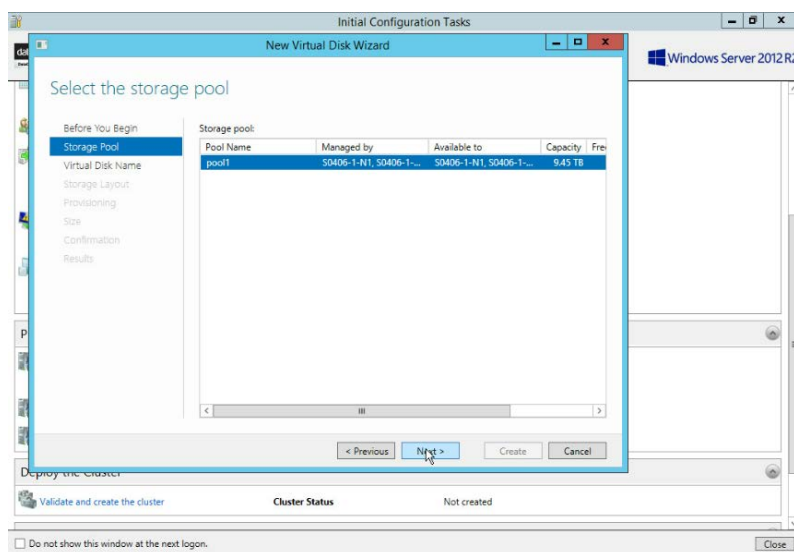
4. Specify virtual disk name and optional description for the data volume. Mark 'Create storage tiers on this virtual disk' **if users need storage tiers on VDs**. When completed, click 'Next'.

5. Select storage layout for the data volume. When completed, click 'Next'.
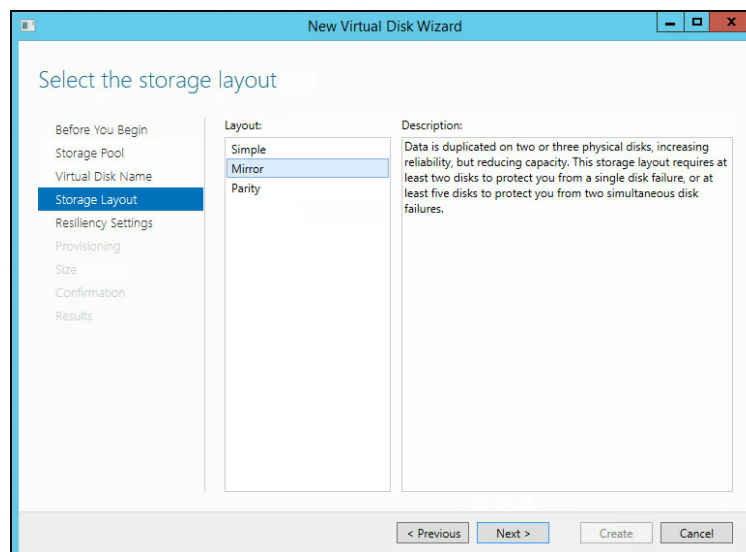
6. Select resiliency settings for the data volume. When completed, click 'Next'.
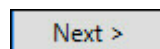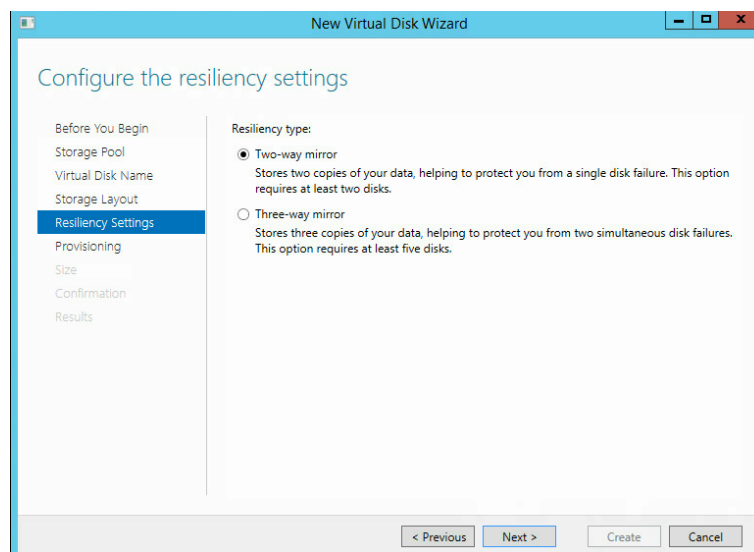
7. Choose the provisioning type for the data volume. When completed, click 'Next'.
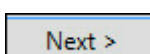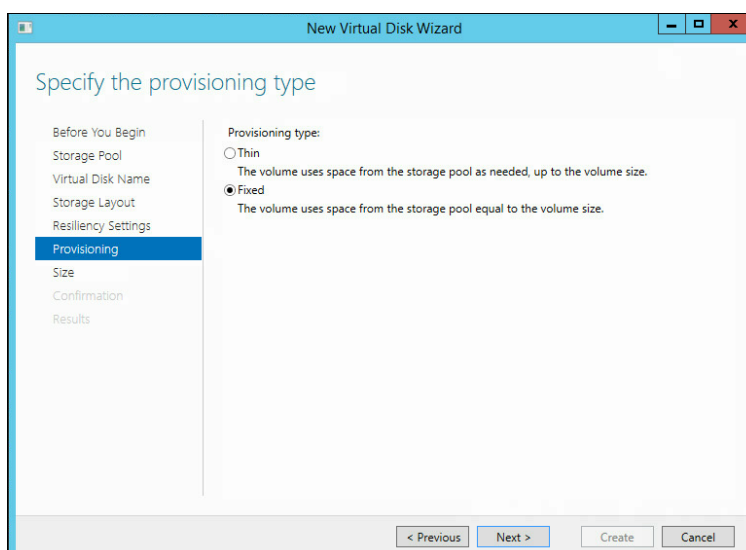
8. Specify the volume* of SSD and HDD that you wish to assign for the virtual disk respectively.
    When completed, click 'Next'.
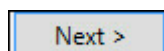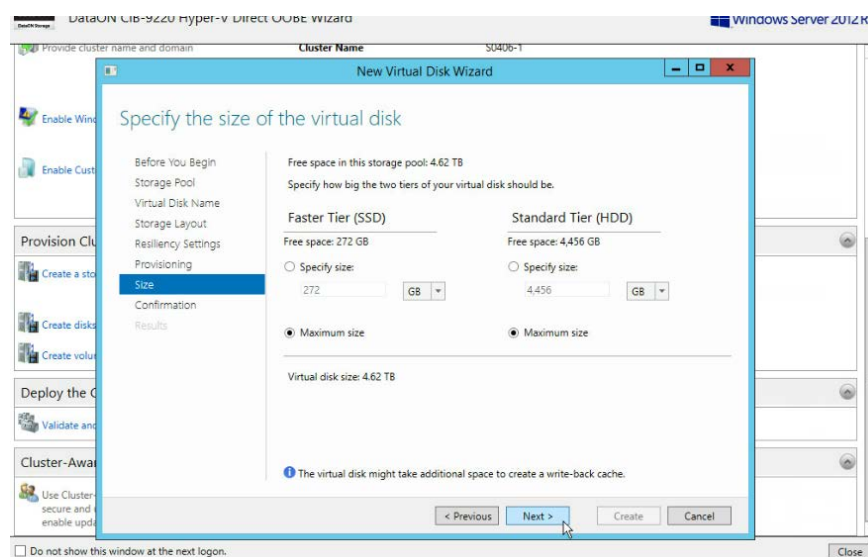
*Troubleshooting: we have seen an issue that users may occasionally encounter as the figure
shown below. Please refer to page 44 for troubleshooting.
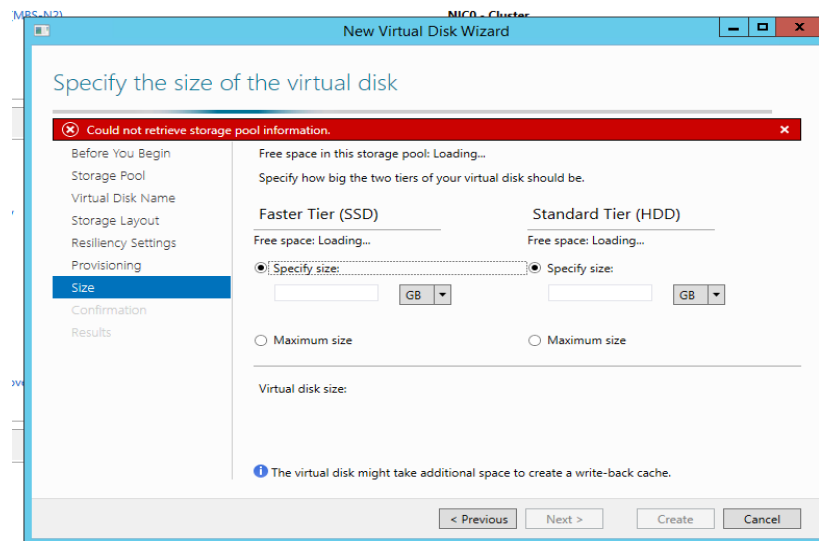
9. Confirm settings and volume assignment. When completed, click 'Create'.
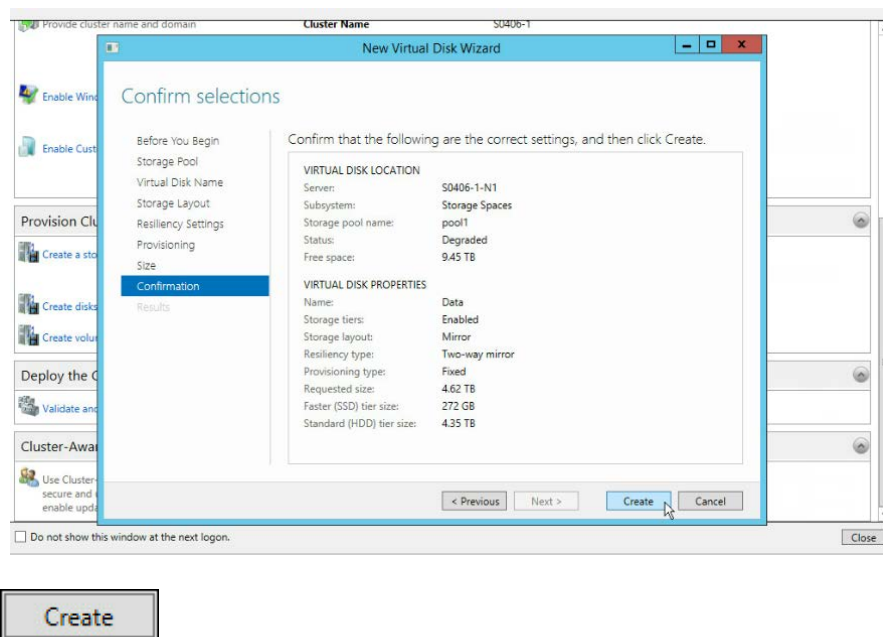
10. When completed, select 'Create a volume when this wizard closes' and click 'Close'.
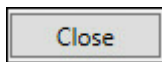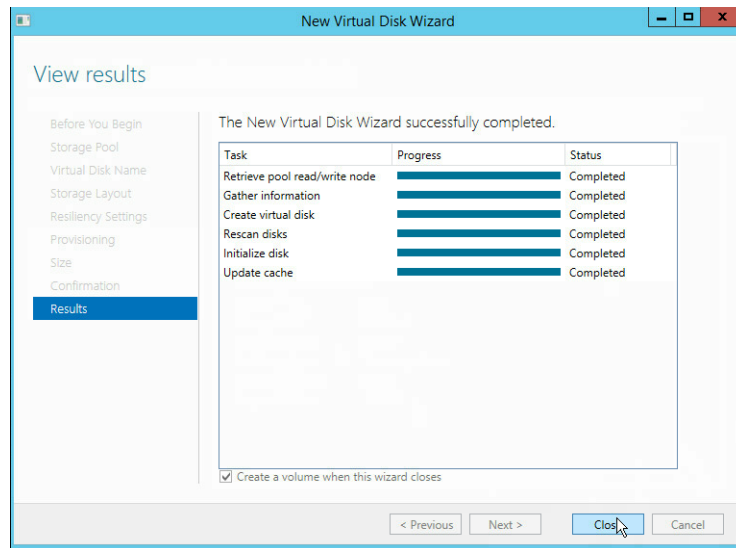
11. Then, users need to create volume for new virtual disk created. Click 'Next'.
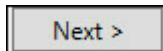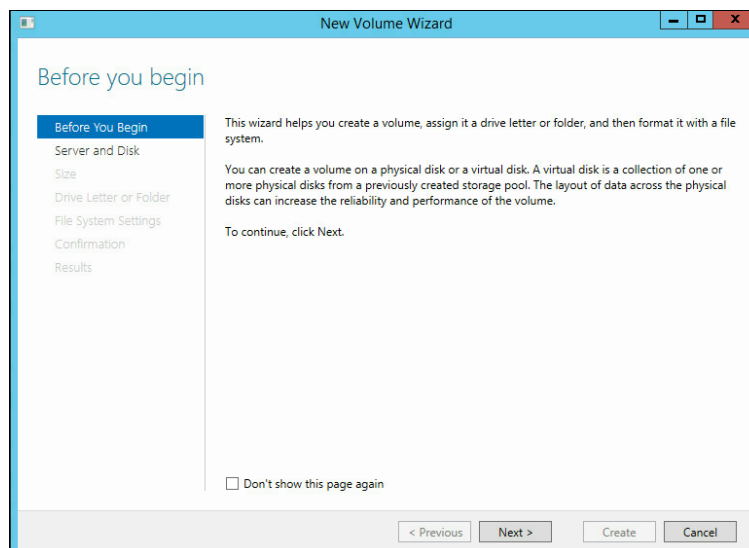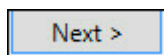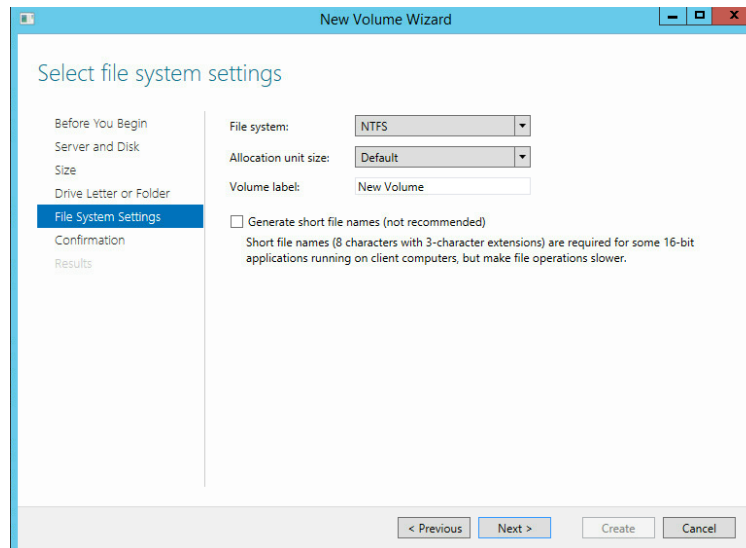

12. Select your server and disk to create your volume from. When completed, click 'Next'.
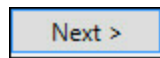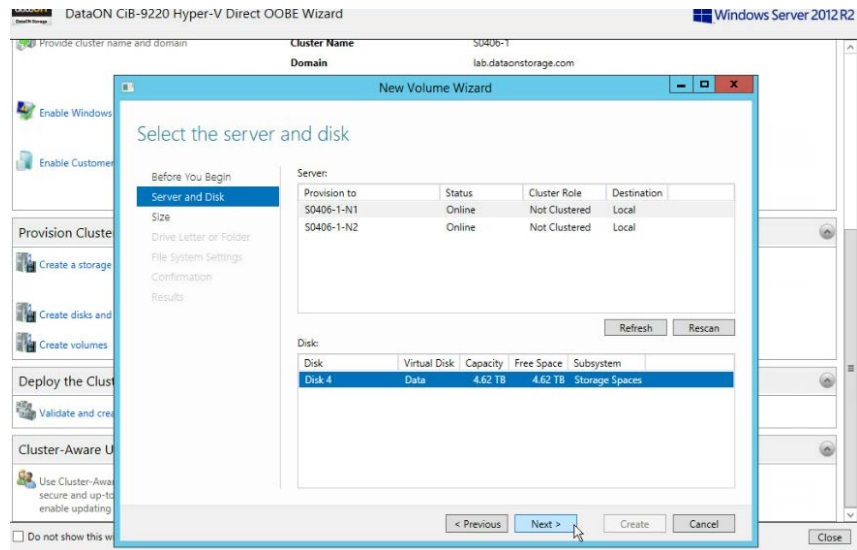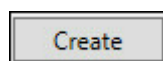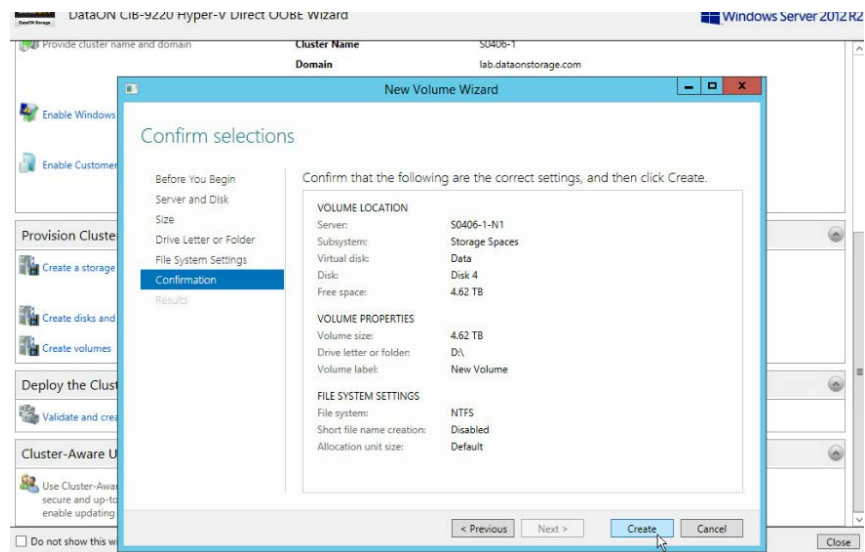
13. At the step shown below, select 'Don't assign to a drive letter or folder' since users need to add virtual disks under cluster-shared volume later and the letter assigned here will disappear.
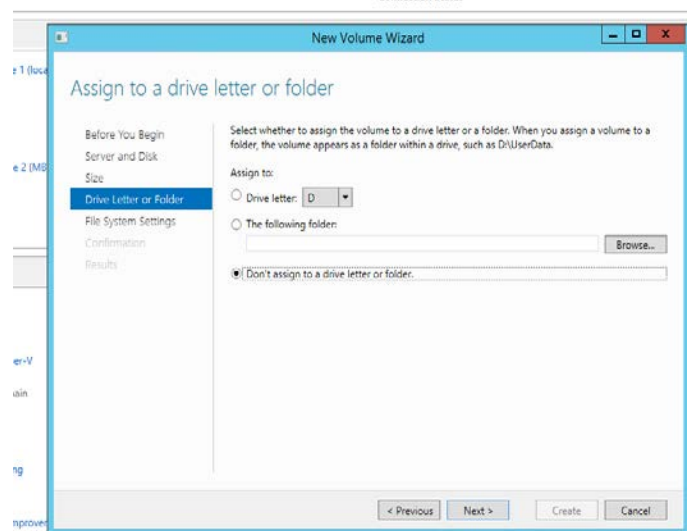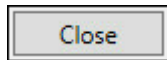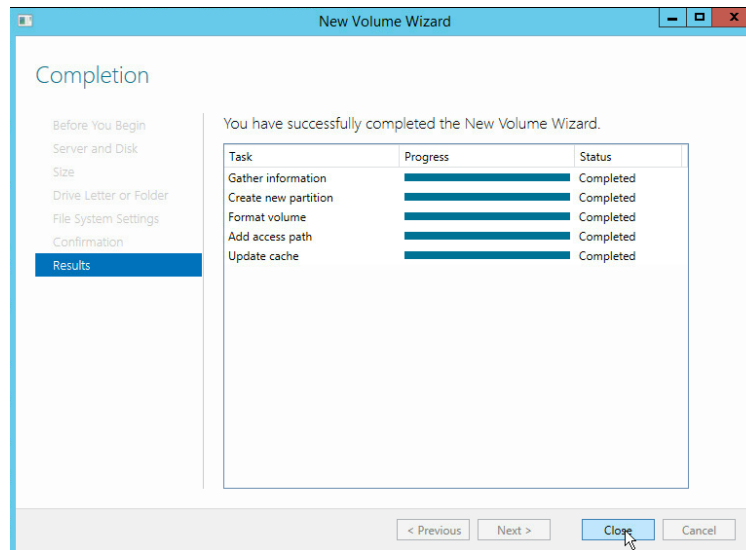

14. Specify system settings for the volume. When completed, click 'Next'.

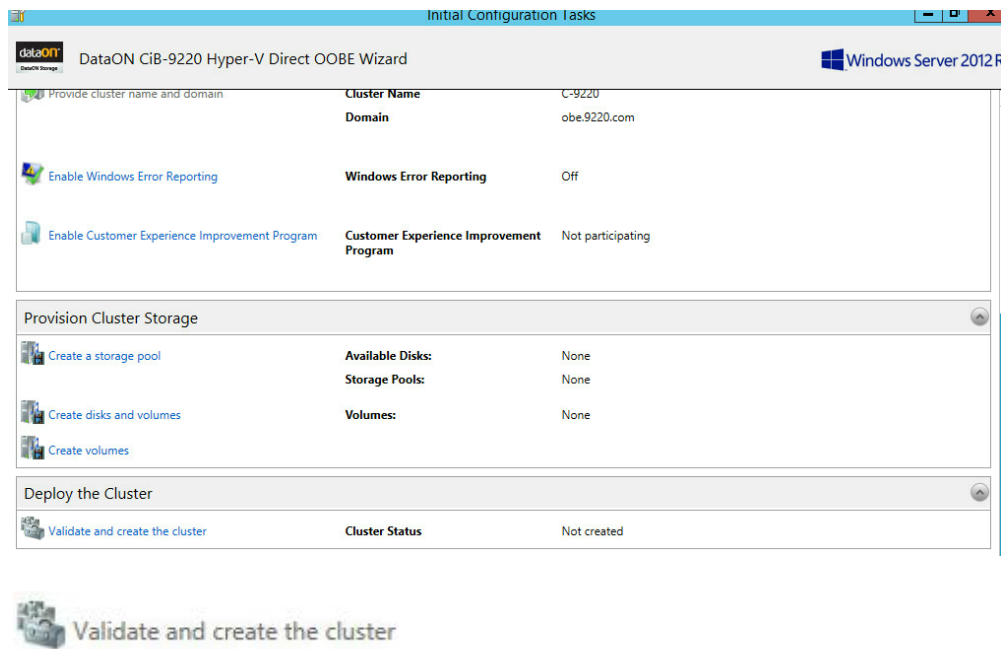15. Confirm volume selections. When completed, click 'Create'.
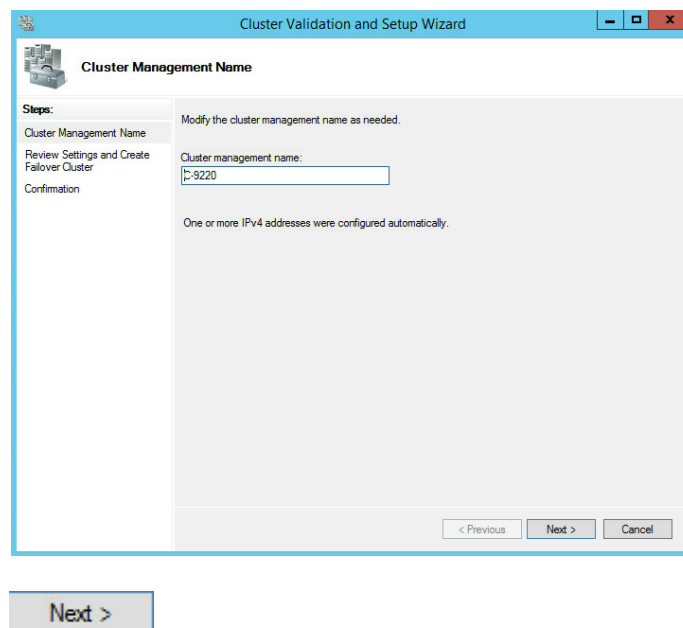

16. Upon completion, click 'Close'.

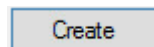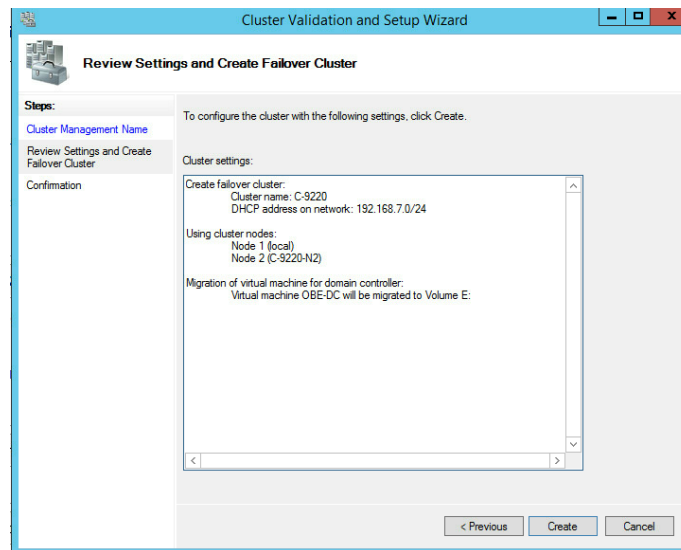**CiB-9220 Validation and Creation of the Cluster**

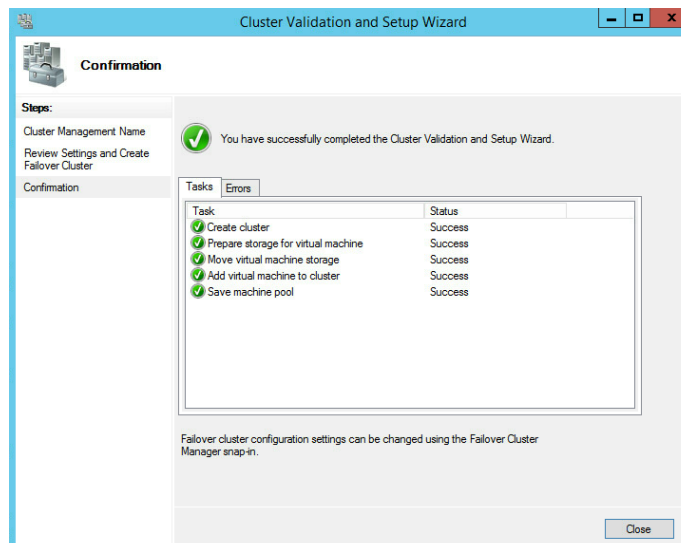1. On OOBE setup, click on 'Validate and create the cluster'.

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

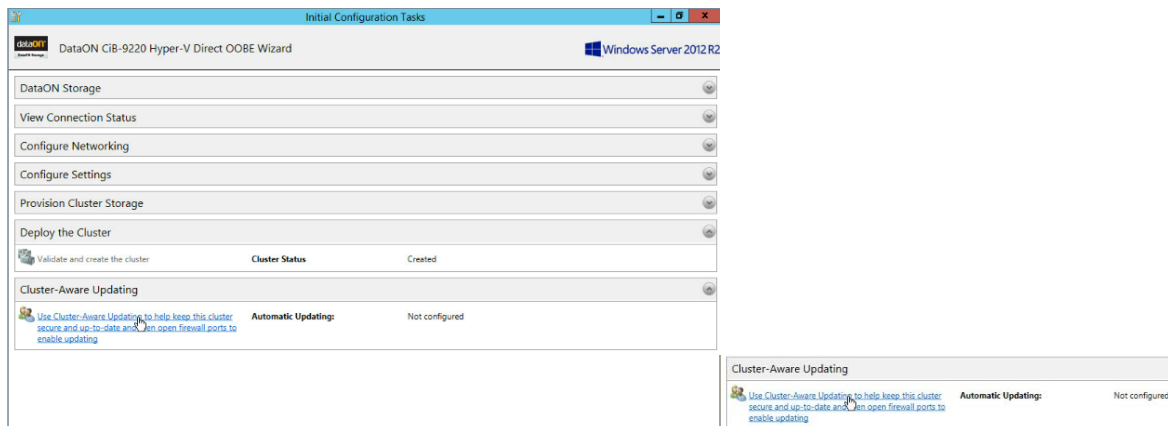3. Verify cluster settings. When completed, click 'Create'.

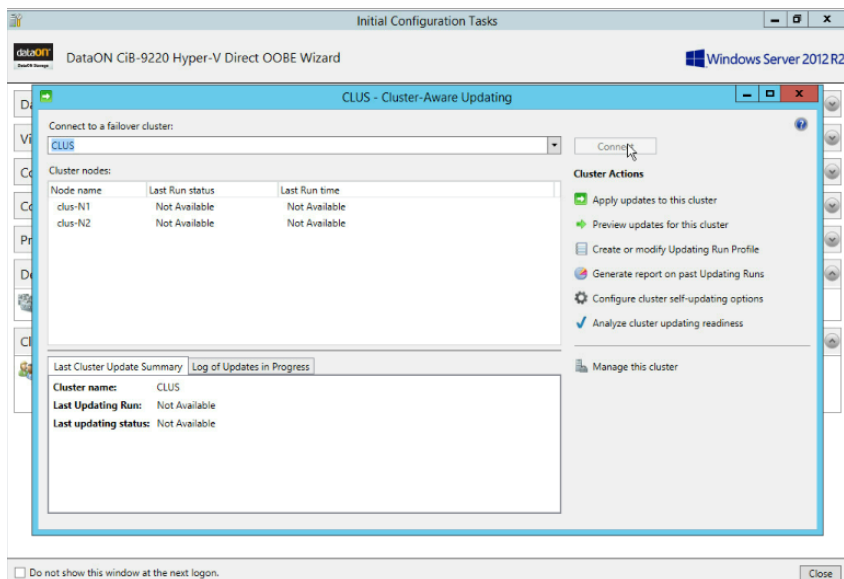4. Once completed, OOBE setup success.

# II. CiB-9220v – Cluster Aware Updating (CAU)

1. On OOBE setup, select option under Cluster-Aware Updating (shown below). This option will become available once cluster has been deployed.
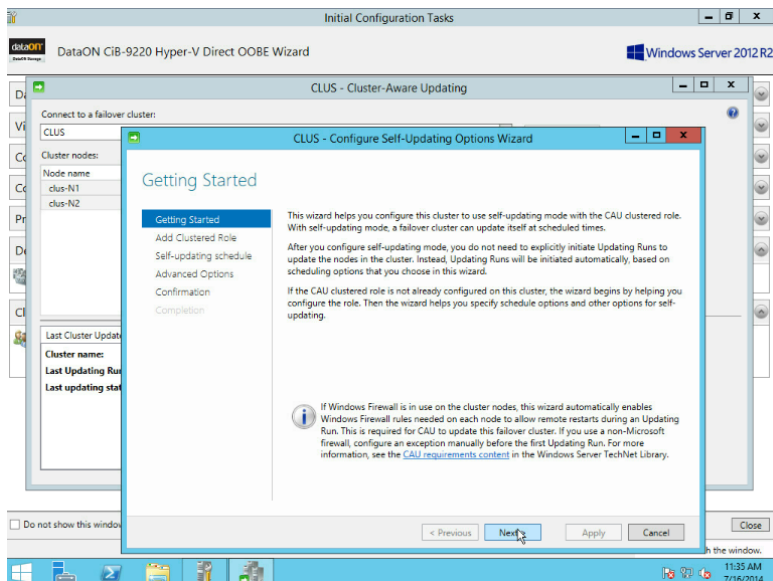

2. On window 'Cluster-Aware Updating', be sure to select your failover cluster and select 'Connect'.

3. Once you're connected to your cluster, select option 'Configure cluster self-updating options'.
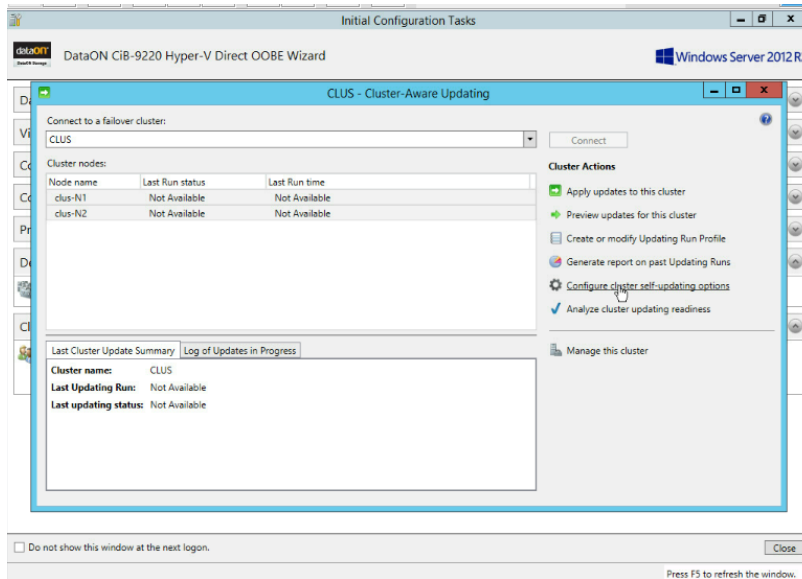

4. On 'Getting Started', select 'Next' to proceed on.

5. On 'Add Clustered Role', if needed, select options for 'Add the CAU clustered role with self-updating mode enabled to this cluster' and well option 'I have a prestaged computer object for the CAU clustered role' including specifying an optional prestaged computer object name.
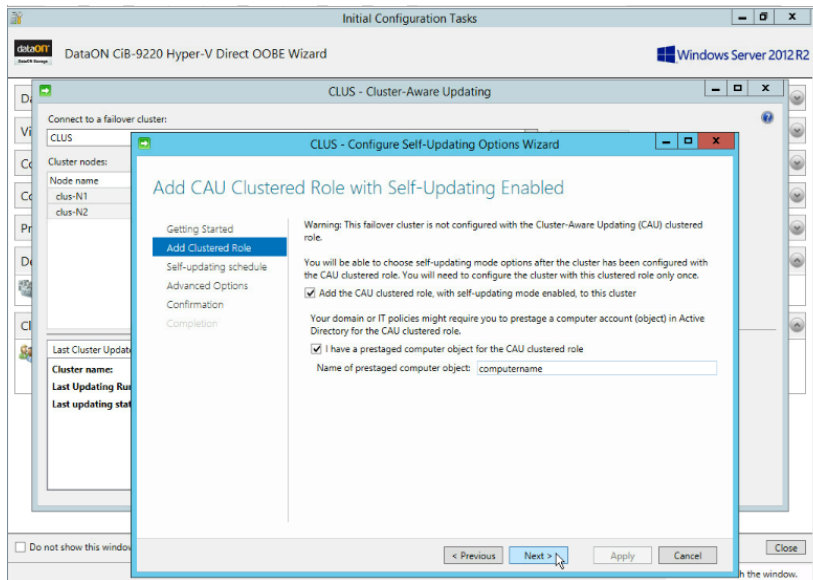

6. On 'Self-Updating schedule', specify your self-updating scheduling for configuration of CAU including starting date, start day / time, and occurrence of the day during the month. When ready, select 'Next'.
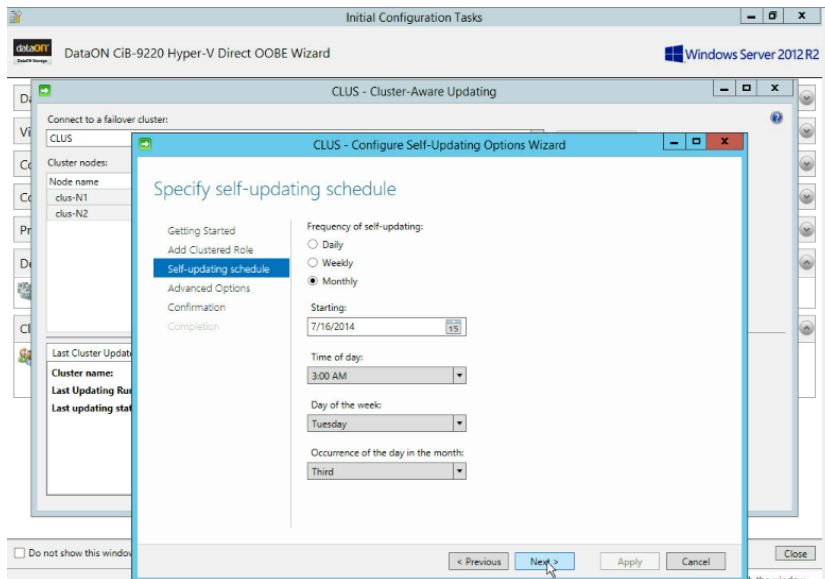
7. On 'Advanced Options', if needed, specify any optional parameters when running CAU including an optional field to run parameters via script file. When ready, select 'Next'.
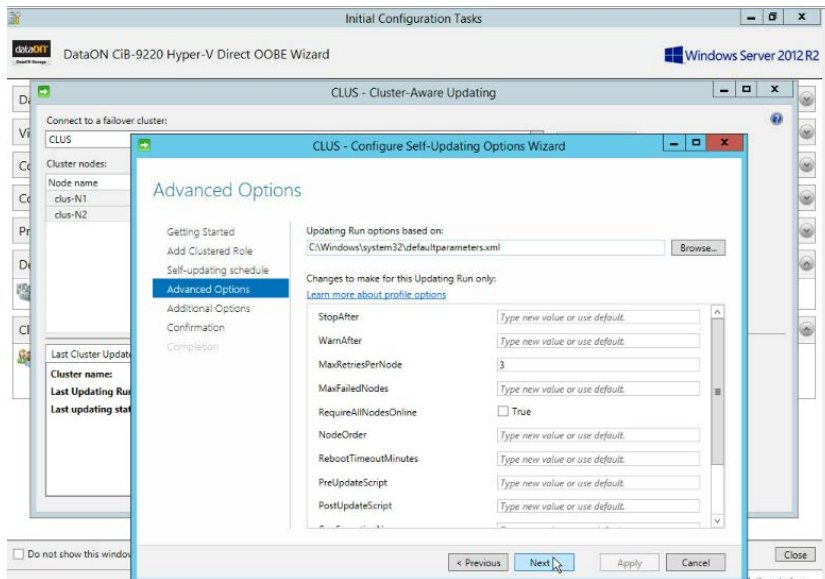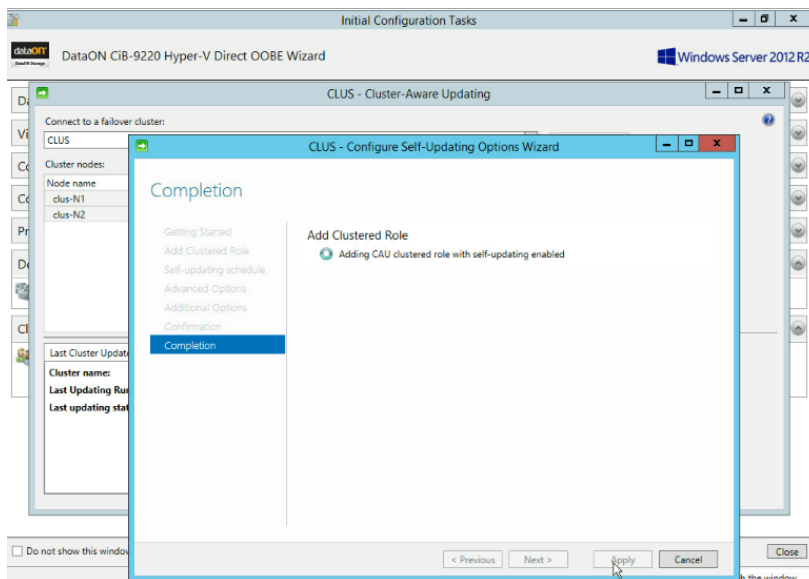

8. On 'Additional Update Options', if needed, select the optional field for Windows Update. When ready, select 'Next'.
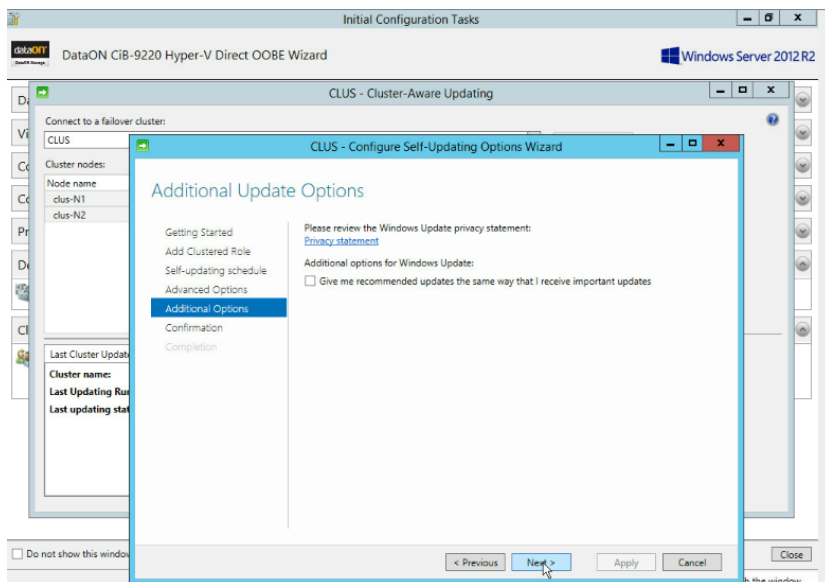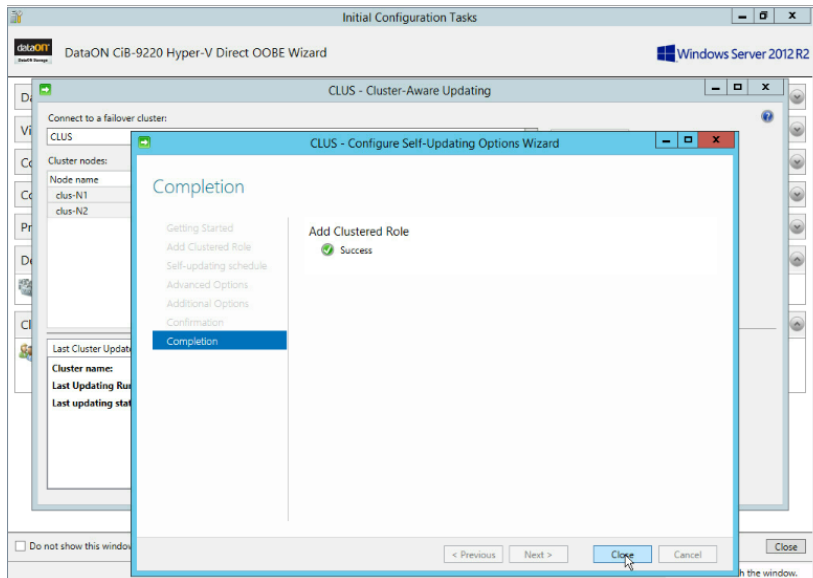
9. On 'Confirmation, verify that selected settings/parameters are correct. When ready, select 'Apply'.
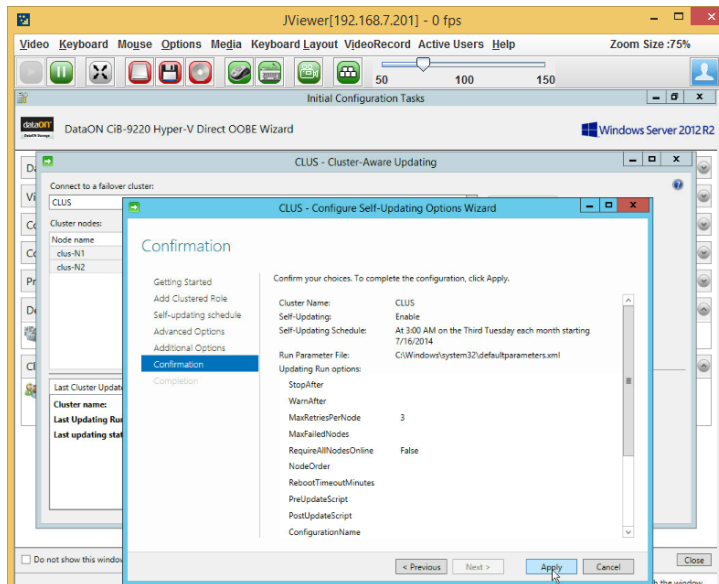

10. Wait as CAU clustered role is added with self-updating is done.

11. Once completed, select 'Close'.

12. On 'Cluster-Aware Updating', you have the optional choices to select 'Analyze cluster updating readiness' to verify that CAU can be implemented as well choose to utilize the option 'Preview updates for this cluster' to generate an update preview list for both nodes. Otherwise, the next required step is select 'Apply updates to this cluster' to start configuration and run an automated update run for your cluster.
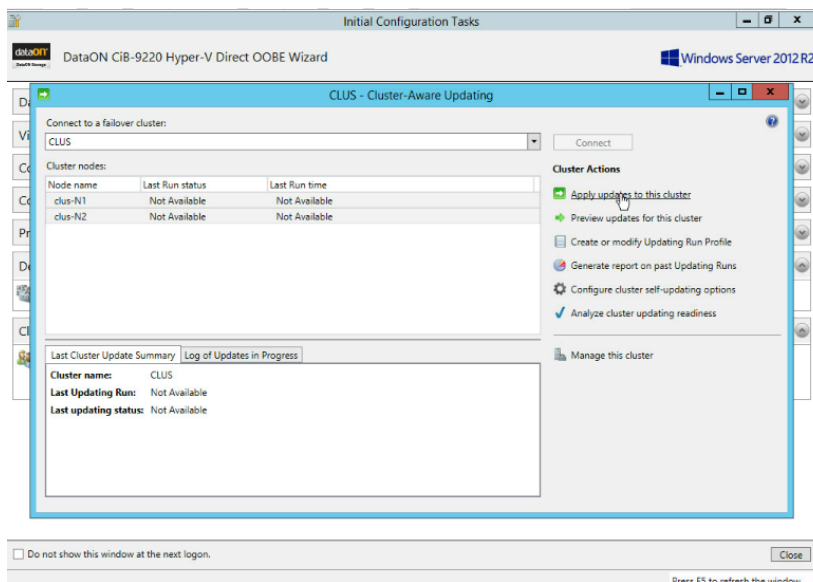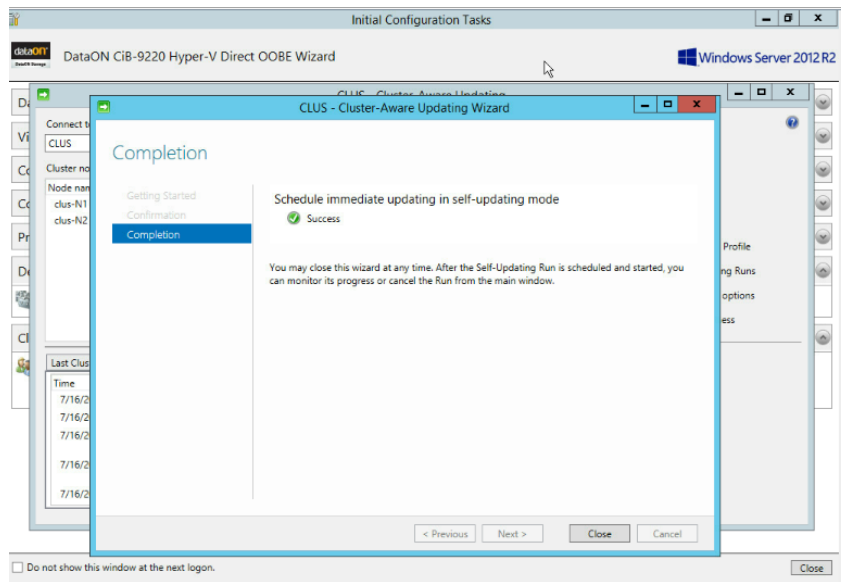
13. On 'Getting Started', when ready, select 'Next'.
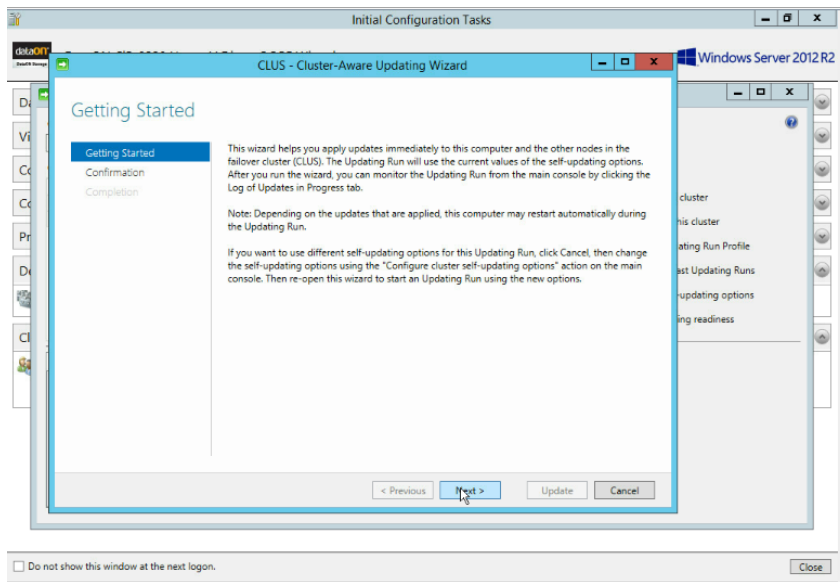
14. On 'Confirmation', verify correct settings shown. When ready, select 'Update'.
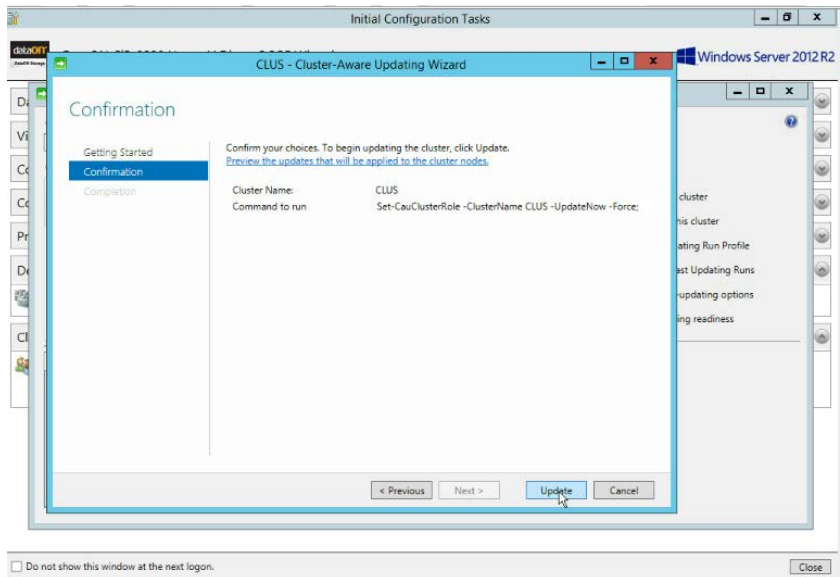
15. Shown below, the process of self-updating has started. When ready, select 'Close'.

16. Shown below, the process of self-updating has started as both nodes are being updated. One node will be brought down to maintenance mode while the other node will continue to be in standby mode. Depending on complexity of the updates, estimated time for completion may vary for both nodes.
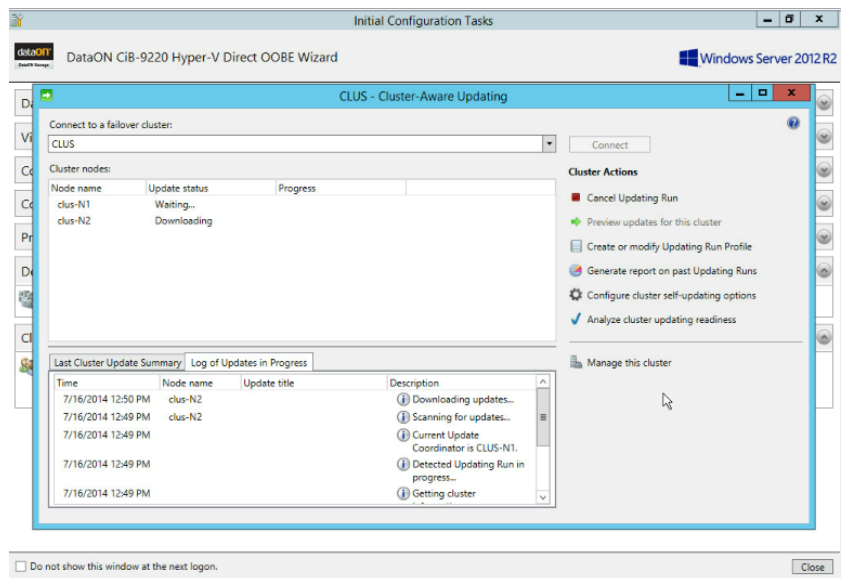
17. Once both nodes have been completed along with reboots to occur during the CAU process, the CAU process is completed. Upon final reboot on node 0, you can verify that CAU has been enabled via OOBE Wizard (shown below).
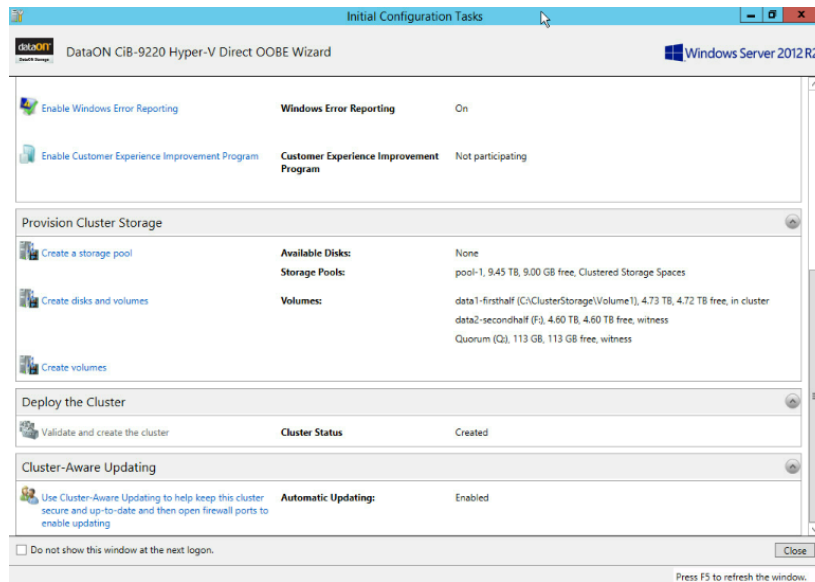
III. CiB-9220 Troubleshooting

A. Failure in the process of creating virtual disks

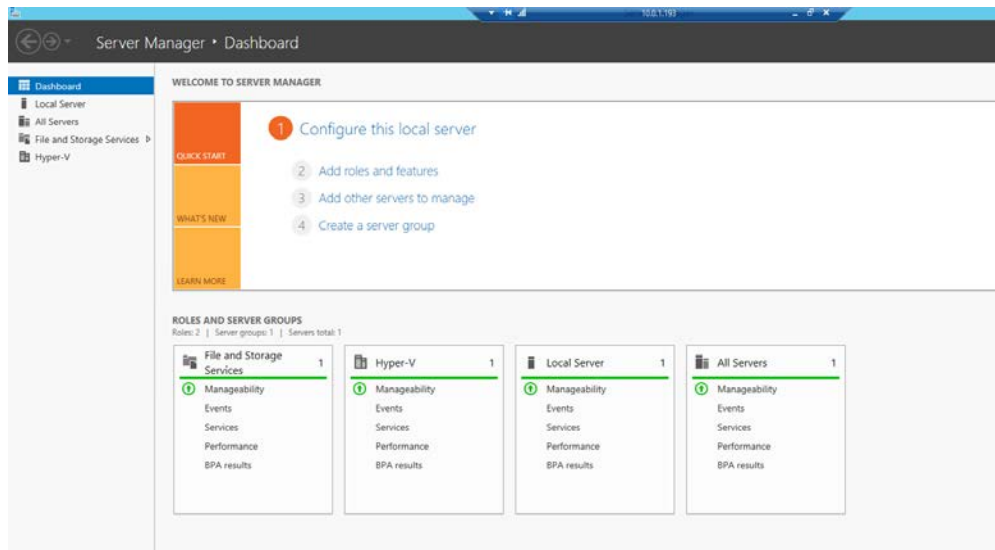- Users may encounter this issue while creating virtual disks as shown below:
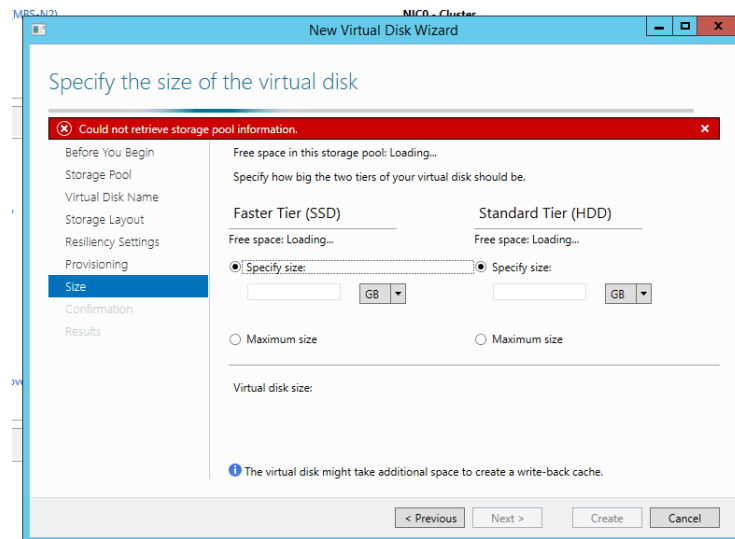
-Therefore, users need to use traditional way to create VDs. Please see following steps.
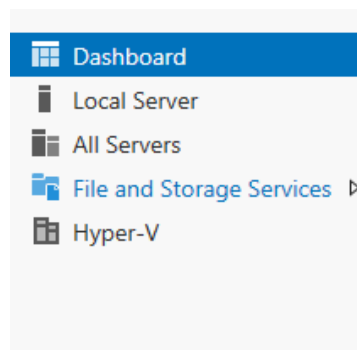
1. Please find the icon for "server manager" which is pinned on taskbar and click on it. The icon is right beside windows button.
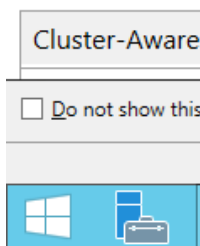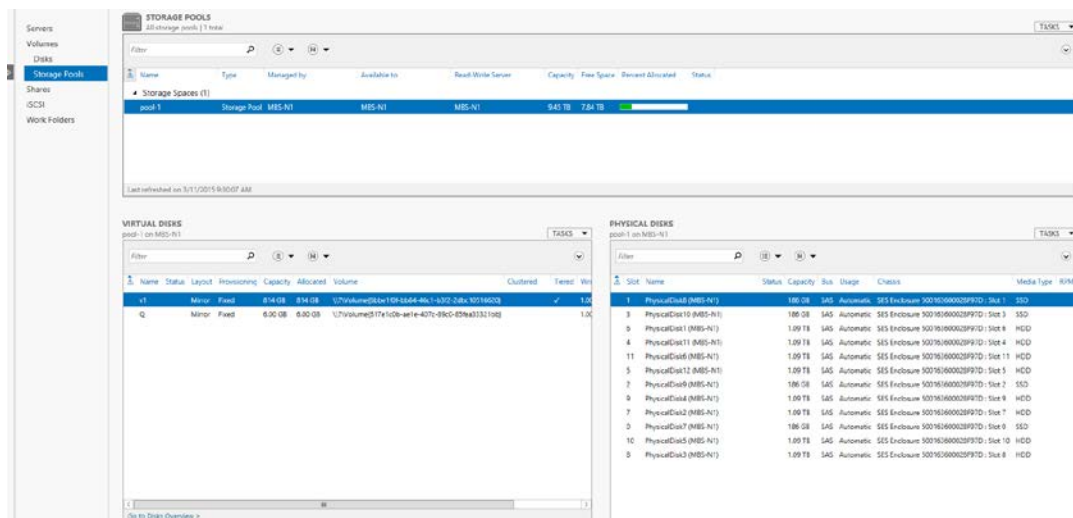
2. Then, you will see a screen as shown below:

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":

Afterward, users will see a pop-up window which is same as the OOBE wizard populates, follow the steps to finish creating virtual disks.*
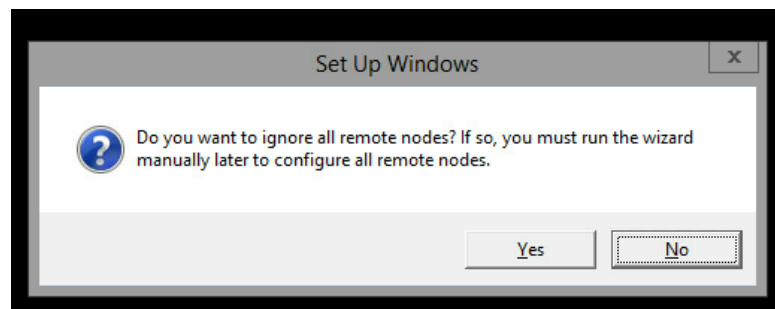
B. Communication Failure With Other Node During Initial Steps

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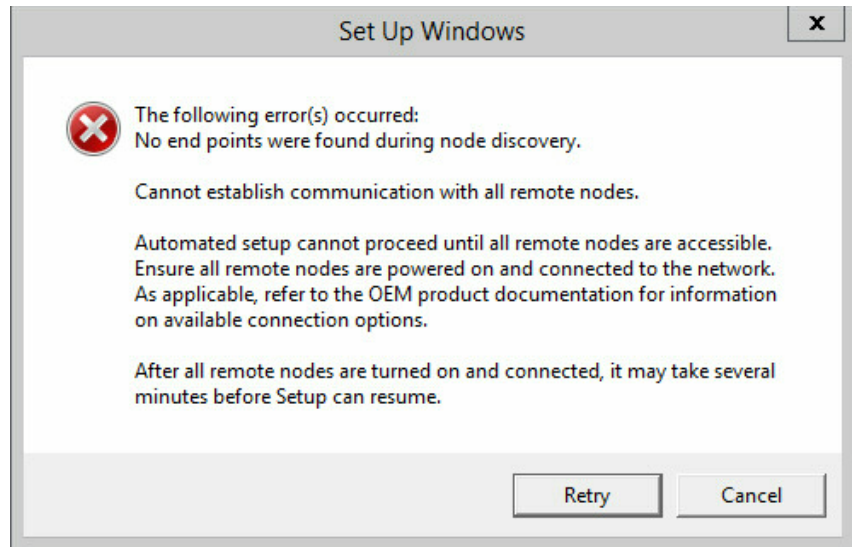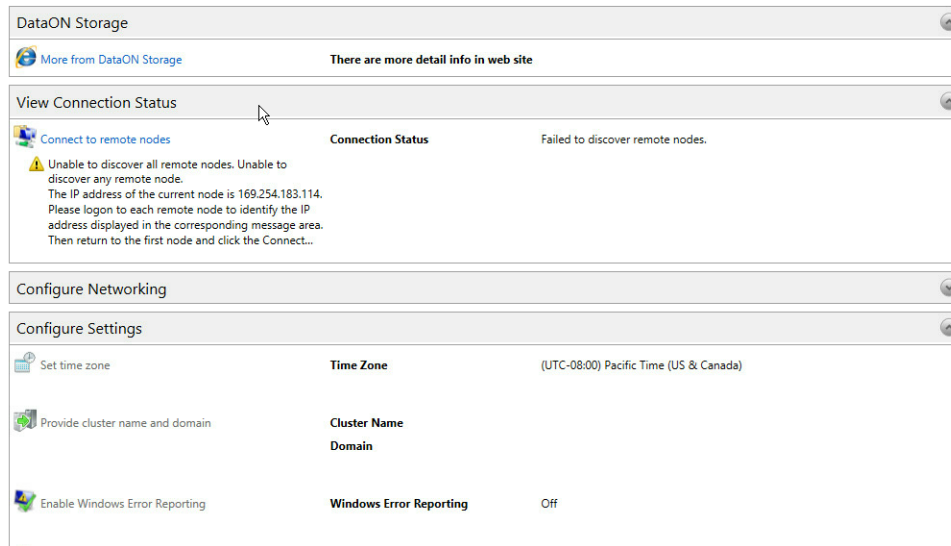

1. In this case, users can press Alt+Tab to move to the window above and use Tab or Right Arrow to highlight "cancel" option and cancel.
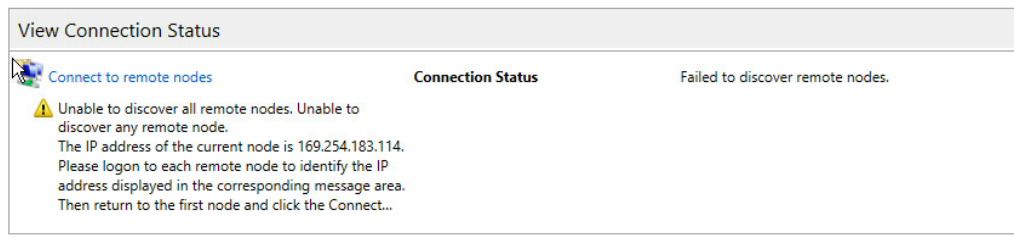
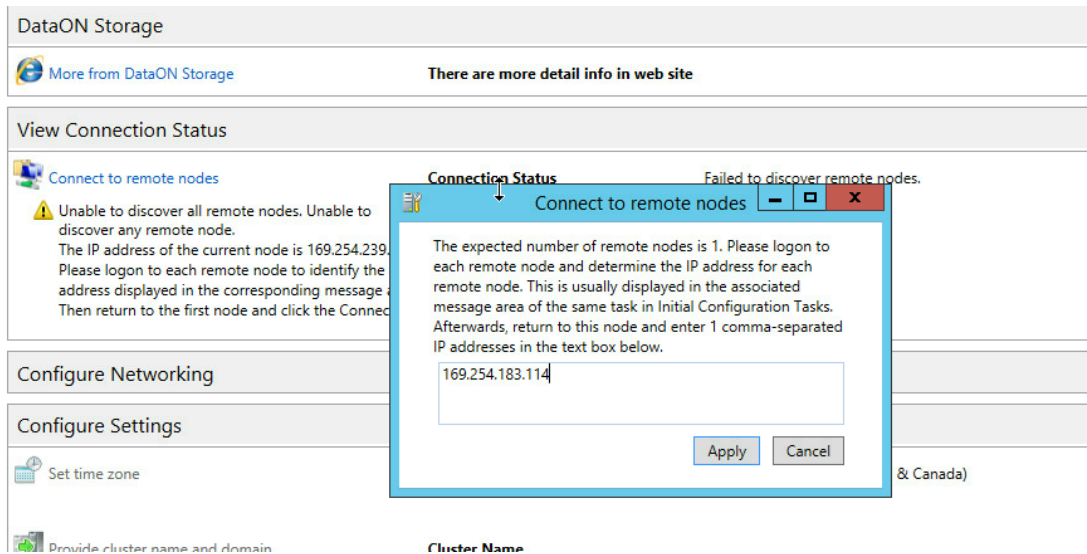Afterward, users can expect to see the screen below:

2. Click on "Yes", switch to Node 1 and repeat the step 1 and 2. Upon completion, users should see the following screen on both Node 0 and Node 1.

3. We use Node 1 as the master node as an example, then Node 0 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 Node 1 in our case), click on "Connect to remote nodes), type the IP address of the node users wish to connect (Node 0) and click "Apply":

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

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