

LAB 18: FILE SERVER FAILOVER CLUSTER

1. Chuẩn bị

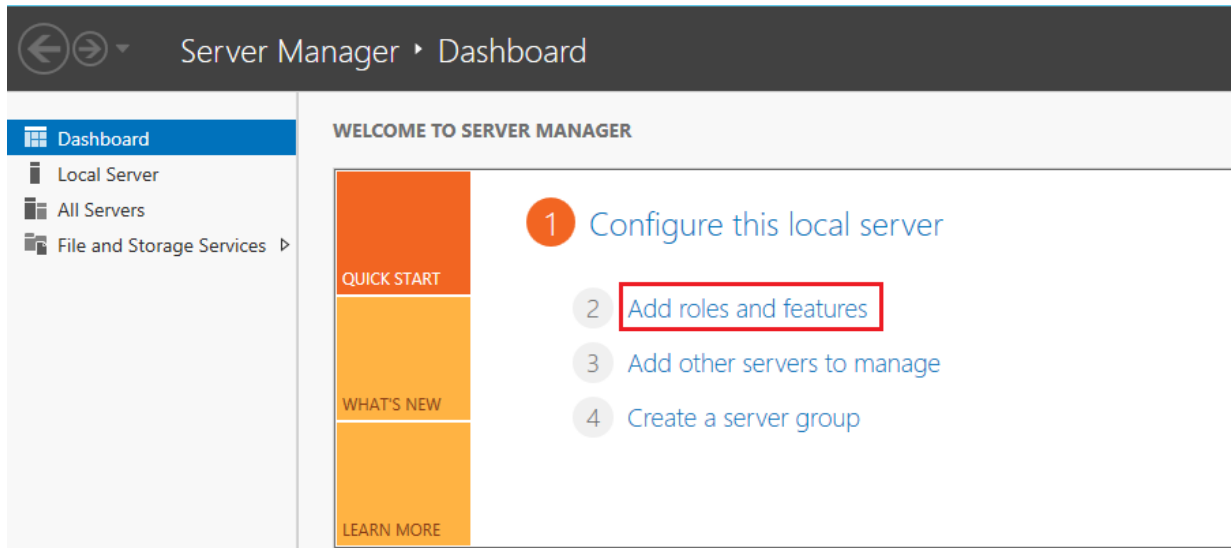
- + Một máy DC đóng thêm vai trò Share-storage, add thêm ổ cứng nữa
- + 2 Máy đóng vai trò làm file server, cài đặt thêm tính năng failover clustering

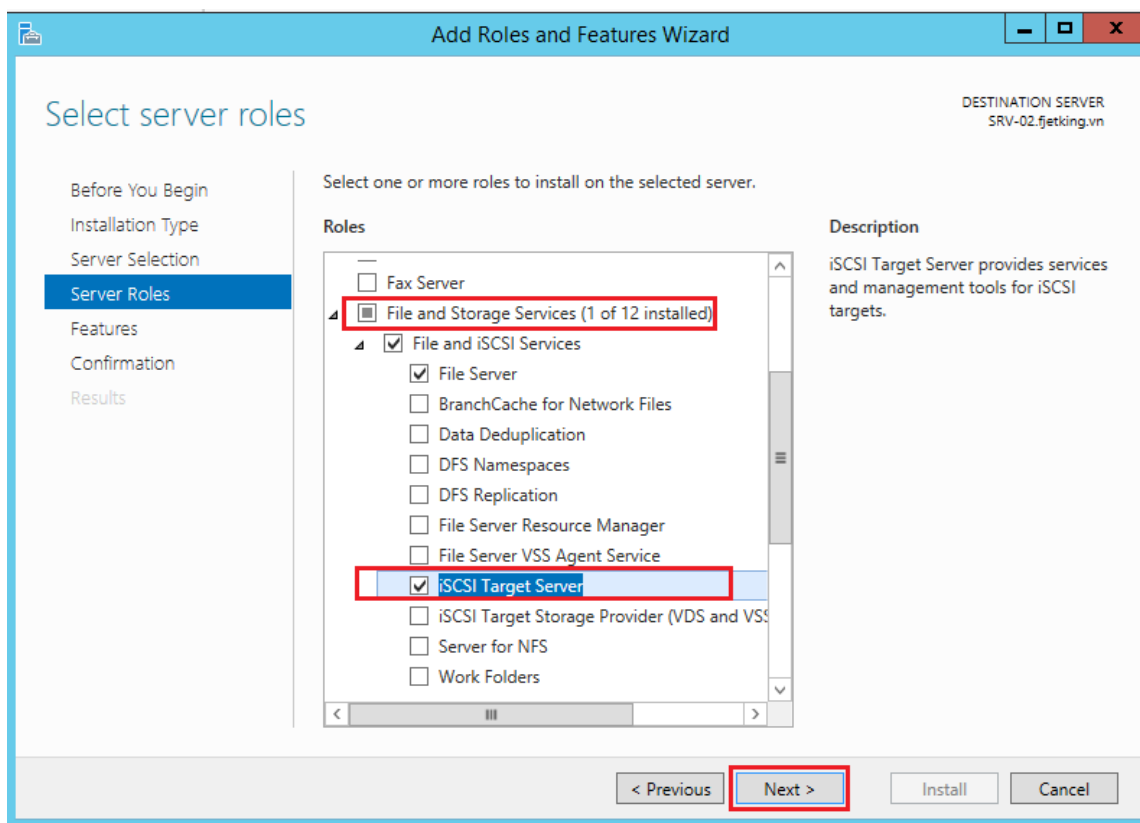
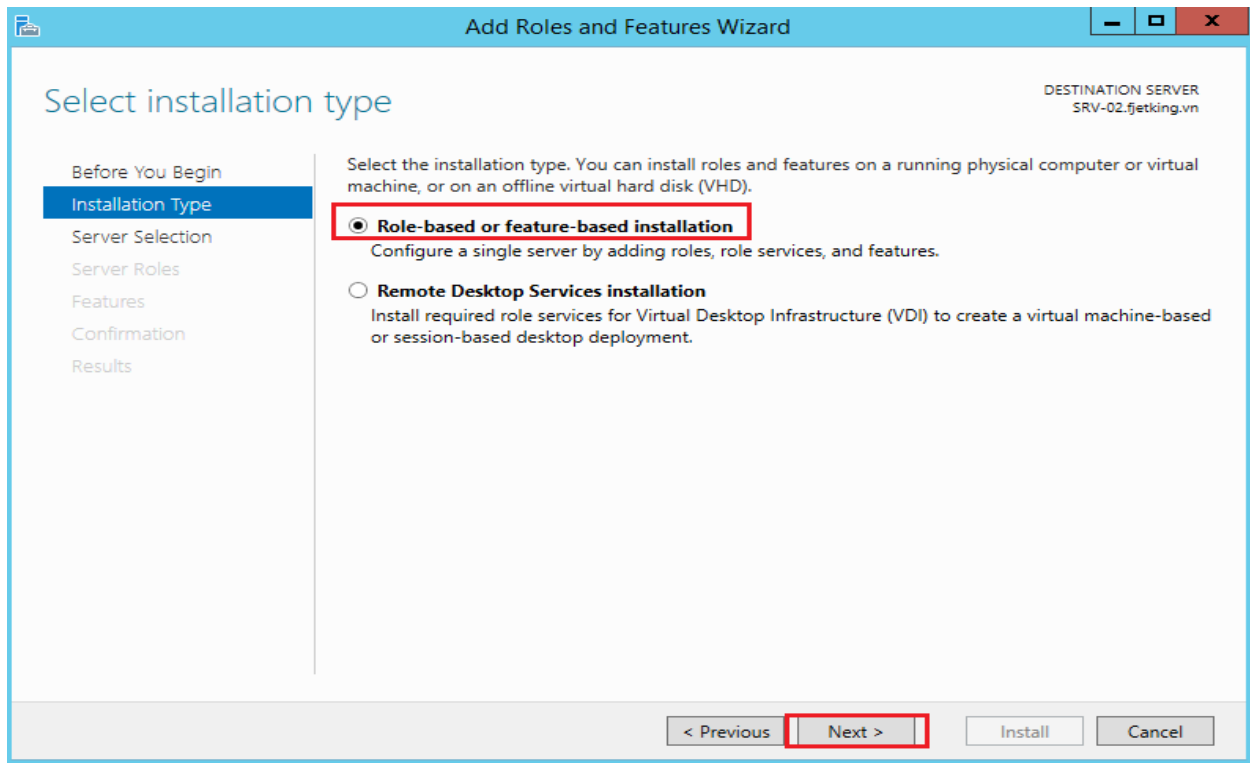
2. Tiến hành

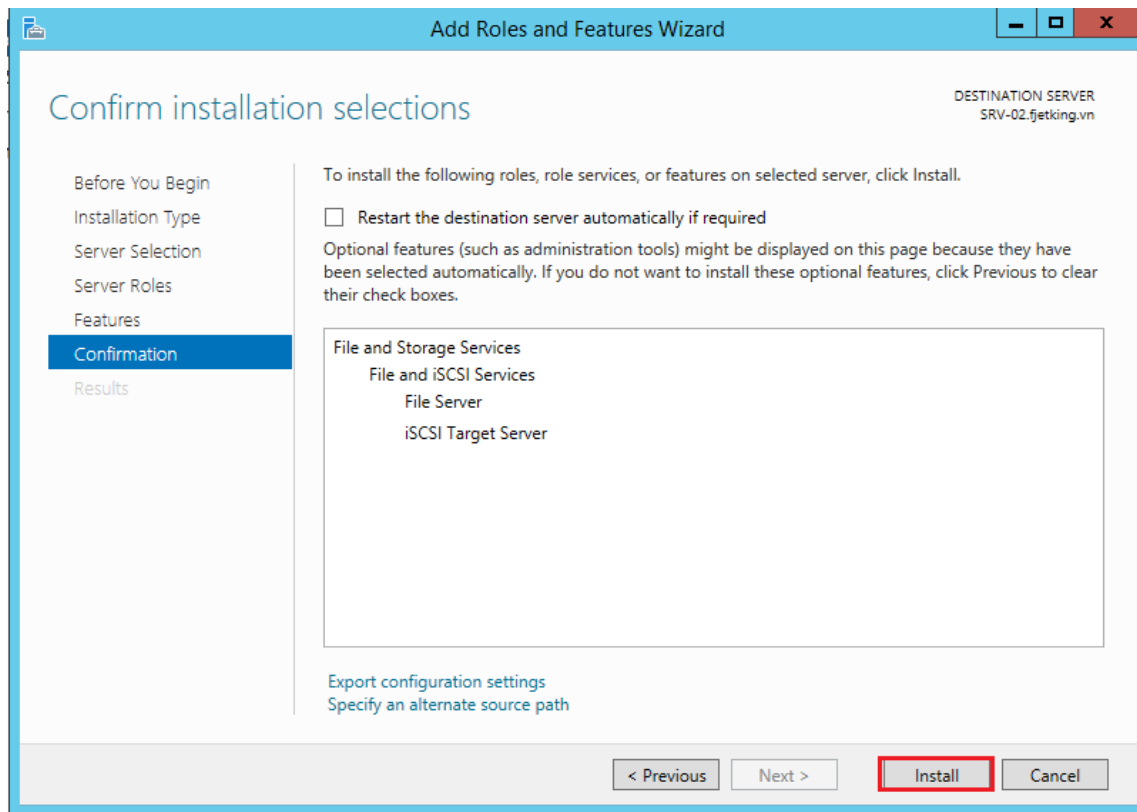
2.1. Tạo share storage trên máy DC

- + Trên máy DC tiến hành add thêm 2 ổ cứng và tạo share storage cho file server:

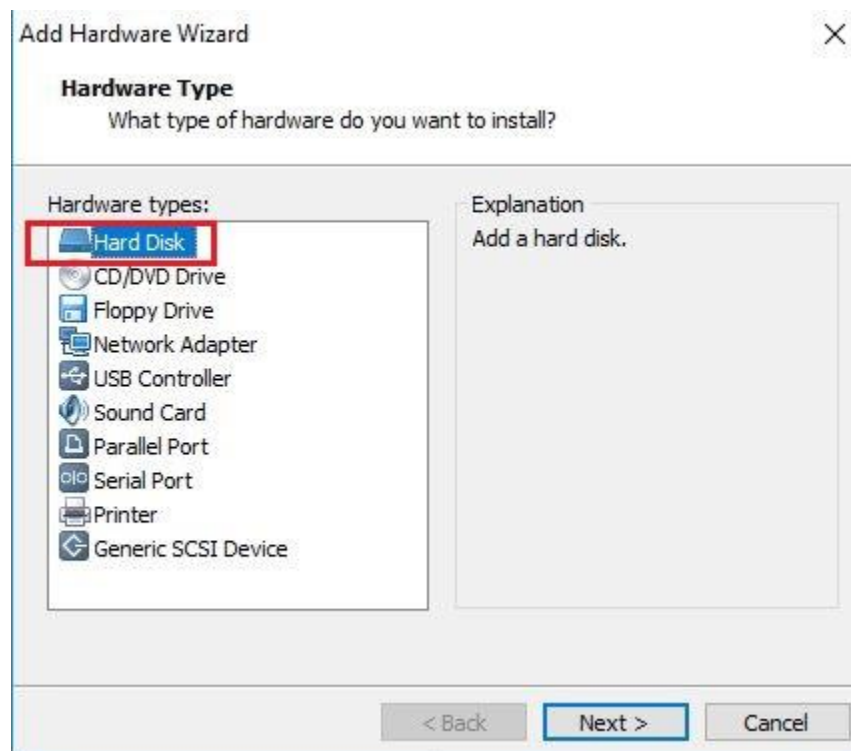
Trên *DC*, cài đặt dịch vụ *iSCSI Targer server*







Add thêm 2 HDD vào DC:



Add Hardware Wizard ✕

Select a Disk Type
What kind of disk do you want to create?

Virtual disk type

☐ IDE (Cannot be added while the VM is powered on)

☒ **SCSI (Recommended)**

☐ SATA

Mode

☐ Independent
Independent disks are not affected by snapshots.

☒ Persistent
Changes are immediately and permanently written to the disk.

☐ Nonpersistent
Changes to the disk are discarded when you power off or restore a snapshot.

< Back Next > Cancel

Add Hardware Wizard ✕

Select a Disk
Which disk do you want to use?

Disk

☒ **Create a new virtual disk**
A virtual disk is composed of one or more files on the host file system, which will appear as a single hard disk to the guest operating system. Virtual disks can easily be copied or moved on the same host or between hosts.

☐ Use an existing virtual disk
Choose this option to reuse a previously configured disk.

☐ Use a physical disk (for advanced users)
Choose this option to give the virtual machine direct access to a local hard disk.

< Back Next > Cancel

Add Hardware Wizard

×

Specify Disk Capacity
How large do you want this disk to be?

Maximum disk size (GB):

32

Recommended size for Windows Server 2012: 60 GB

☐ Allocate all disk space now.
Allocating the full capacity can enhance performance but requires all of the physical disk space to be available right now. If you do not allocate all the space now, the virtual disk starts small and grows as you add data to it.

☒ Store virtual disk as a single file:
☐ Split virtual disk into multiple files
Splitting the disk makes it easier to move the virtual machine to another computer but may reduce performance with very large disks.

< Back

Next >

Cancel

Add Hardware Wizard

×

Specify Disk File
Where would you like to store the disk file?

Disk file
One disk file will be created for each 2 GB of virtual disk capacity. File names for each file beyond the first will be automatically generated using the file name provided here as a basis.

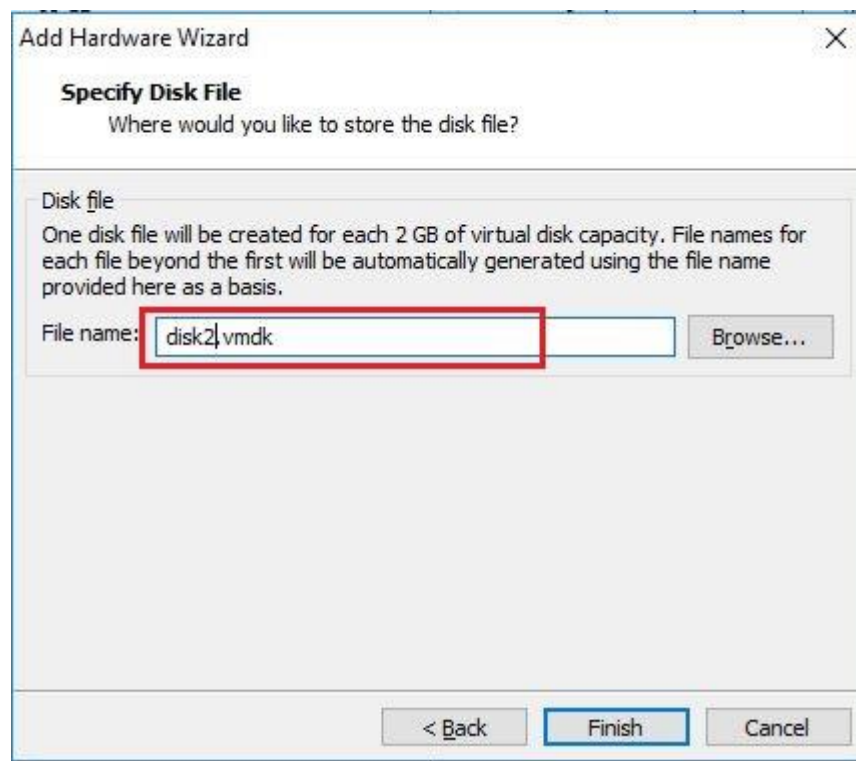
File name: disk1\vmrk

Browse...

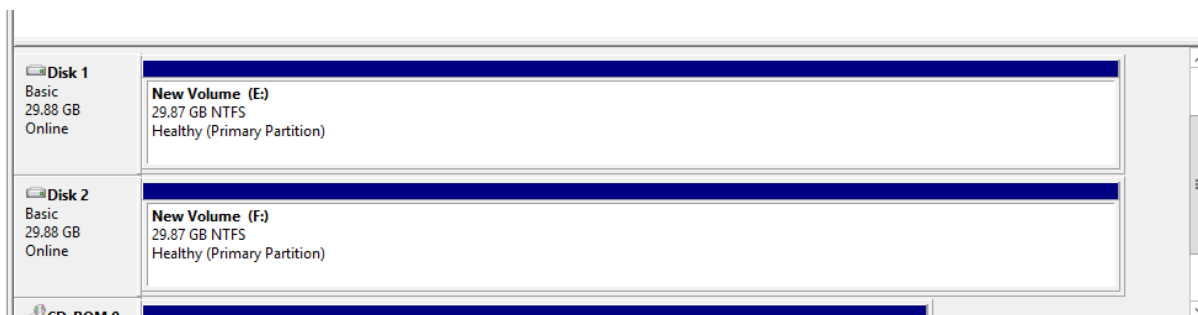
< Back

Finish

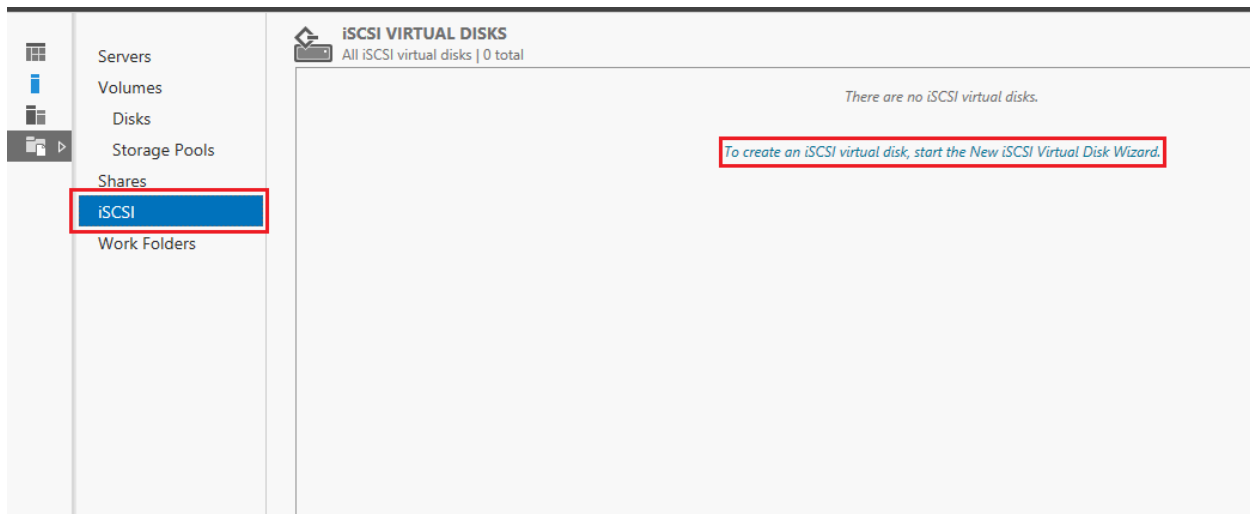
Cancel



Mở diskmgmt.msc để khởi tạo các ổ đĩa và partitions:



- Tạo iSCSI Virtual Disk:



Select iSCSI virtual disk location

ISCSI Virtual Disk Location

ISCSI Virtual Disk Name

ISCSI Virtual Disk Size

ISCSI Target

Target Name and Access

Access Servers

Enable authentication ser...

Confirmation

Results

Server:

| Server Name | Status | Cluster Role | Owner Node |
|-------------|--------|---------------|------------|
| SRV-02 | Online | Not Clustered | |

The list is filtered to show only servers with the iSCSI Target Server role installed.

Storage location:

Select by volume:

| Volume | Free Space | Capacity | File System |
|--------|------------|----------|-------------|
| C: | 50.8 GB | 59.7 GB | NTFS |
| E: | 31.9 GB | 32.0 GB | NTFS |
| F: | 31.9 GB | 32.0 GB | NTFS |
| G: | 31.9 GB | 32.0 GB | NTFS |

The iSCSI virtual disk will be saved at \ISCSI\VirtualDisk on the selected volume.

Type a custom path:

Browse...

< Previous

Next >

Create

Cancel

Specify iSCSI virtual disk name

iSCSI Virtual Disk Location

iSCSI Virtual Disk Name

iSCSI Virtual Disk Size

iSCSI Target

Target Name and Access

Access Servers

Enable authentication ser...

Confirmation

Results

Name:

vDisk1

Description:

Path:

E:\iSCSIVirtualDisks\vDisk1.vhdx

Specify iSCSI virtual disk size

iSCSI Virtual Disk Location

iSCSI Virtual Disk Name

iSCSI Virtual Disk Size

iSCSI Target

Target Name and Access

Access Servers

Enable authentication ser...

Confirmation

Results

Free space: 31.9 GB

Size:

31.9

GB

☒ Fixed size

This type of disk provides better performance and is recommended for servers running applications with a high I/O workload. It does not change when data is added or deleted.

☒ Clear the virtual disk on allocation

Note: Un-selecting is NOT RECOMMENDED. Clearing a disk to zero will remove any fragments of data that remain.

☐ Dynamically expanding

This type of disk provides better use of physical storage space and is recommended for servers running applications that are created and grows as data is written to it.

☐ Differencing

This type of disk is associated in a parent-child relationship with another disk that you want to leave intact. You can delete the child disk and easily revert the changes later.

Parent virtual disk path:

Browse...

Assign iSCSI target

iSCSI Virtual Disk Location

iSCSI Virtual Disk Name

iSCSI Virtual Disk Size

iSCSI Target

Target Name and Access

Access Servers

Enable authentication ser...

Confirmation

Results

Assign this iSCSI virtual disk to an existing iSCSI target or create a new target for it.

☐ Existing iSCSI target:

| Target Name | Initiator IDs | Description |
|-------------|---------------|-------------|
| | | |

☒ New iSCSI target

Specify target name

iSCSI Virtual Disk Location

iSCSI Virtual Disk Name

iSCSI Virtual Disk Size

iSCSI Target

Target Name and Access

Access Servers

Enable authentication ser...

Confirmation

Results

Name:

Description:

Add initiator ID

Select a method to identify the initiator:

☐ Query initiator computer for ID (not supported on Windows Server 2008 R2, Windows 7, or earlier):

☐ Select from the initiator cache on the target server:

iqn.1991-05.com.microsoft:sv1.j1708a.com
iqn.1991-05.com.microsoft:sv2.j1708a.com

☒ Enter a value for the selected type

Type: Value:

Add initiator ID

Select a method to identify the initiator:

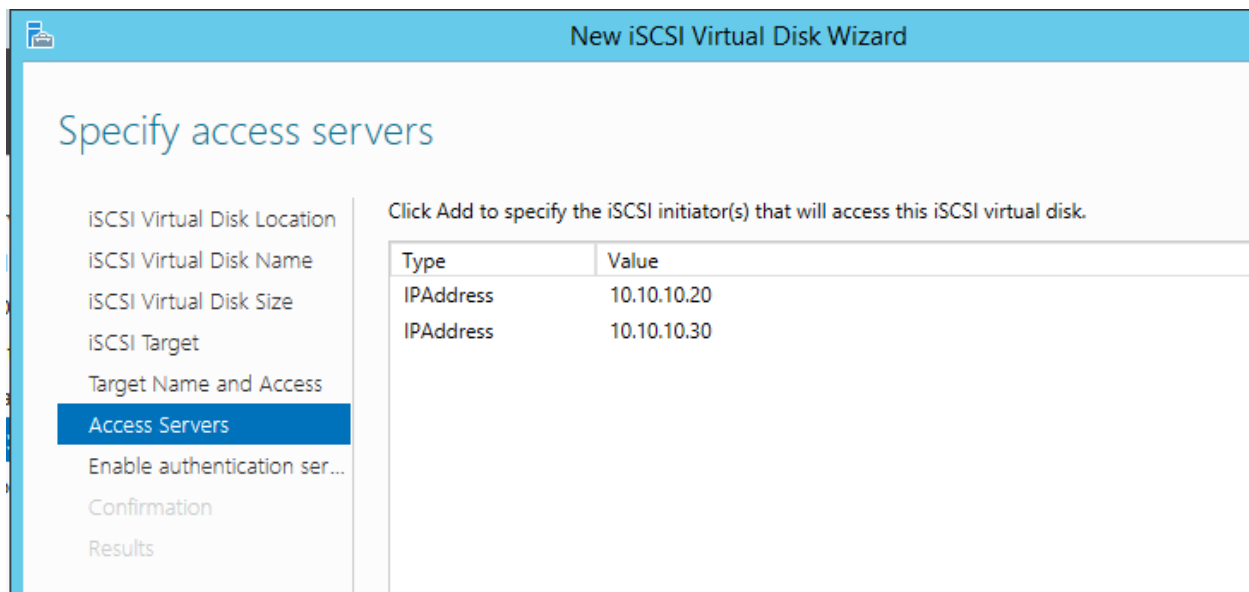
☐ Query initiator computer for ID (not supported on Windows Server 2008 R2, Windows 7, or earlier):

☐ Select from the initiator cache on the target server:

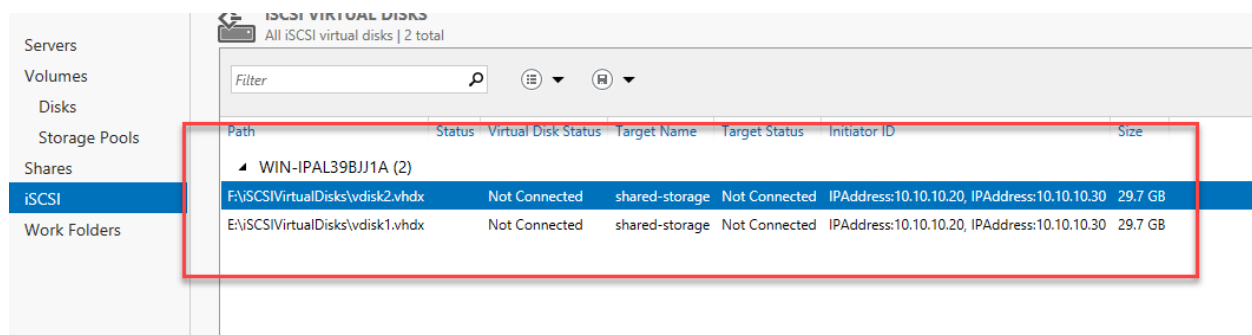
iqn.1991-05.com.microsoft:sv1.j1708a.com
iqn.1991-05.com.microsoft:sv2.j1708a.com

☒ Enter a value for the selected type

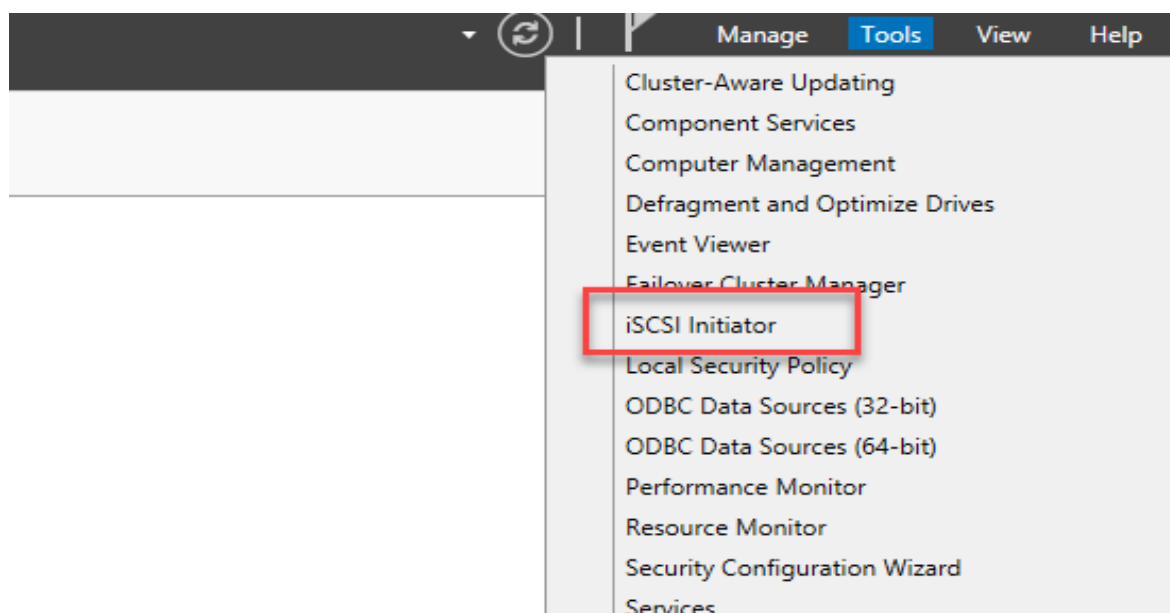
Type: Value:

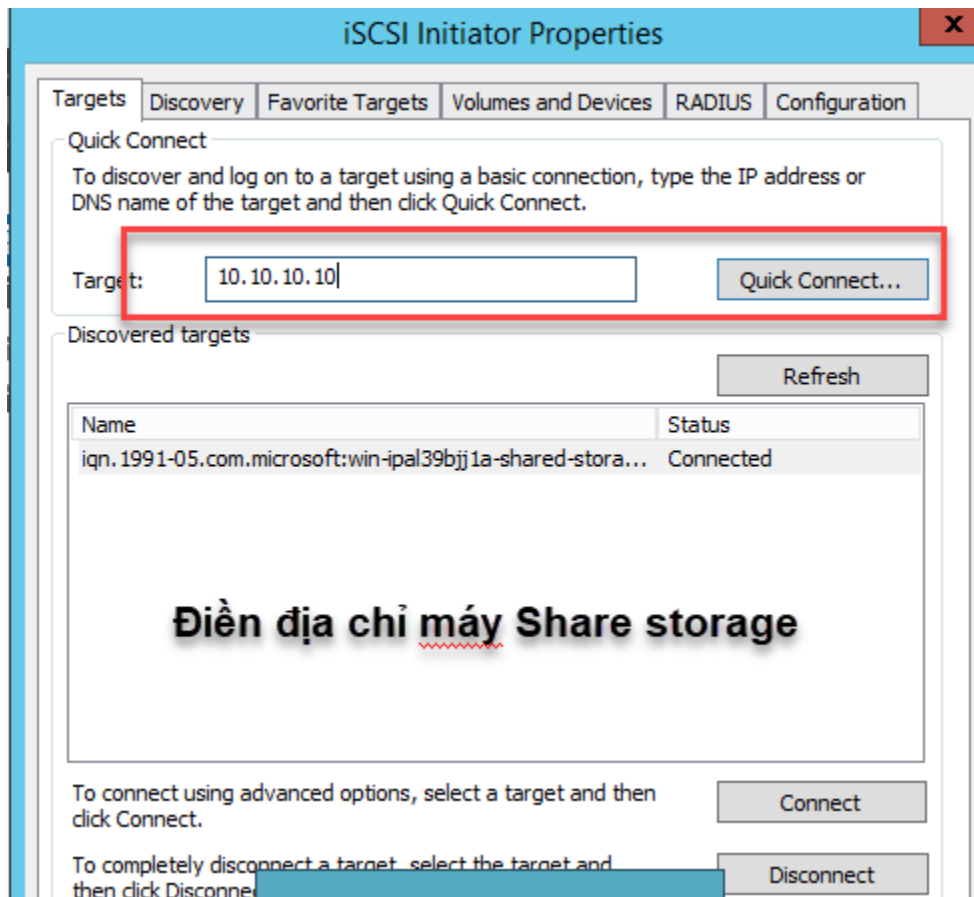


Làm tương tự với disk 2 ta được kết quả như sau:

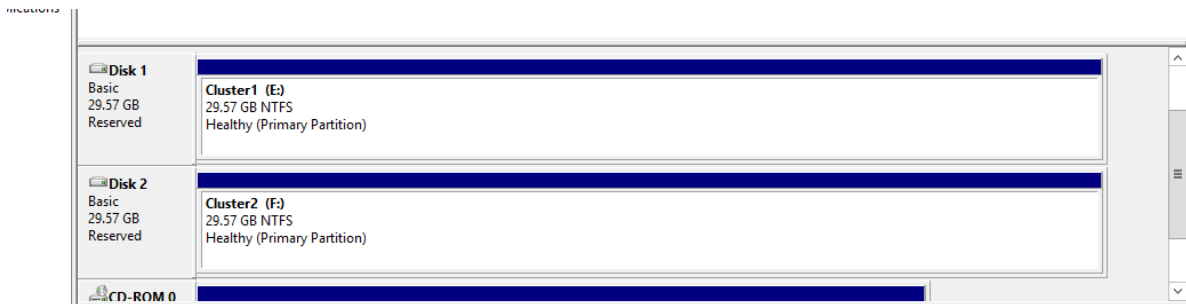


2.2. Kết nối máy file server vào share storage



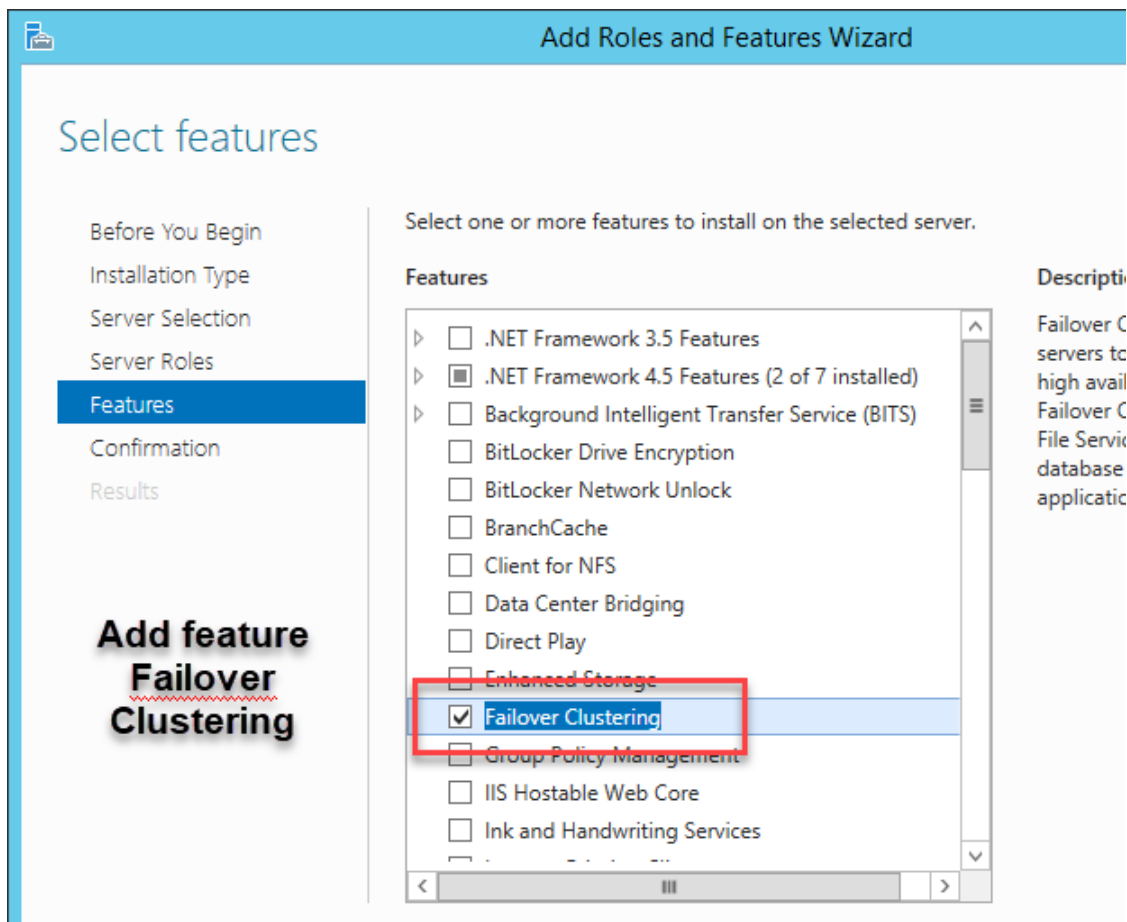
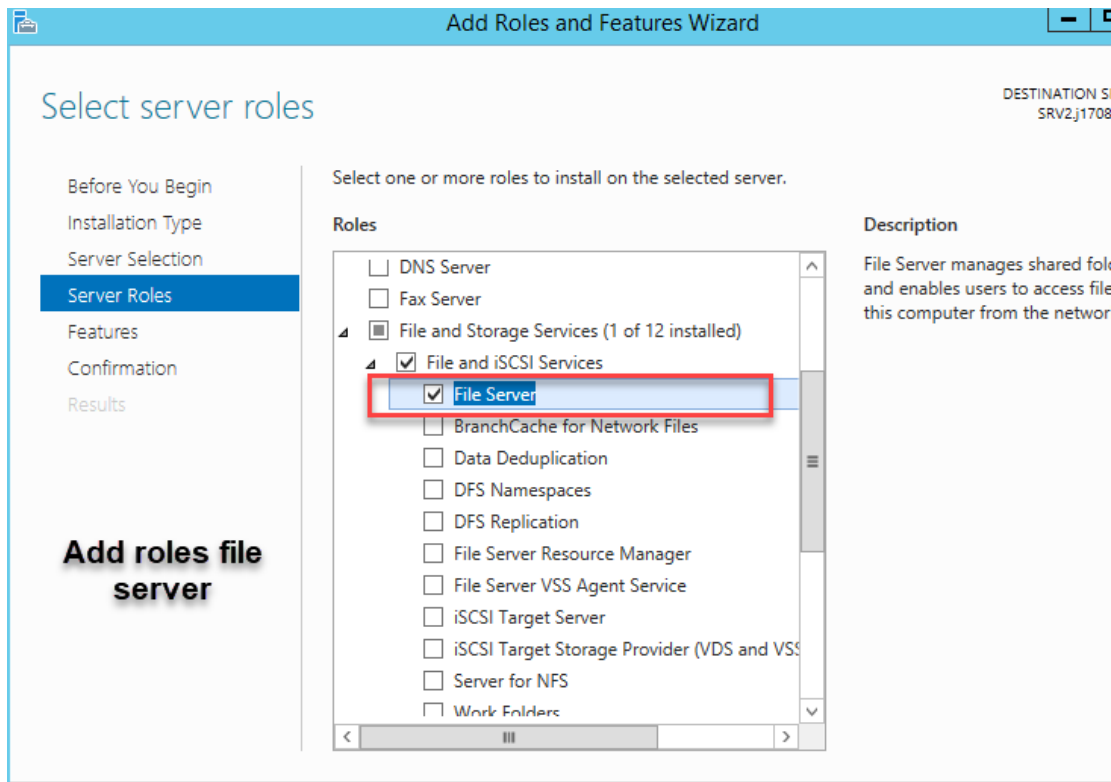


+ Sau khi kết nối ta tạo các partition như sau trên máy file server số 1:

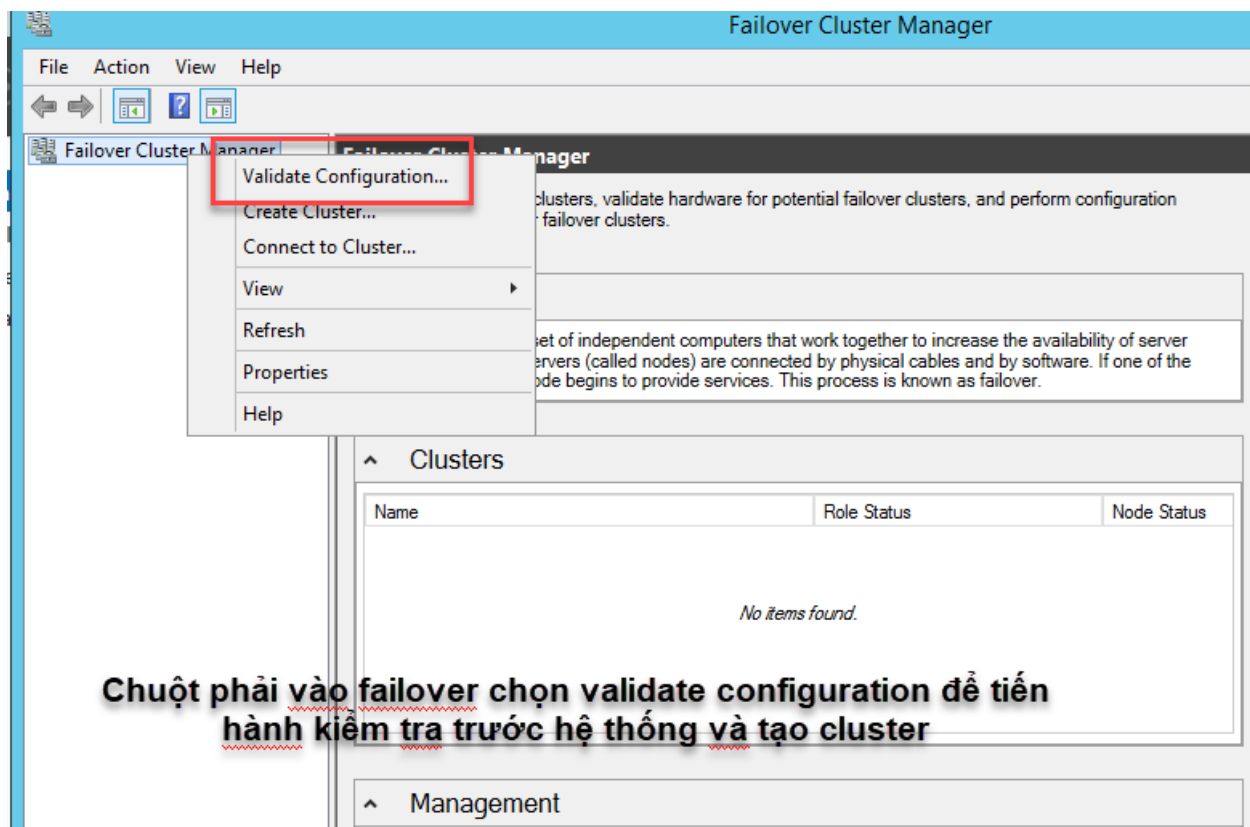
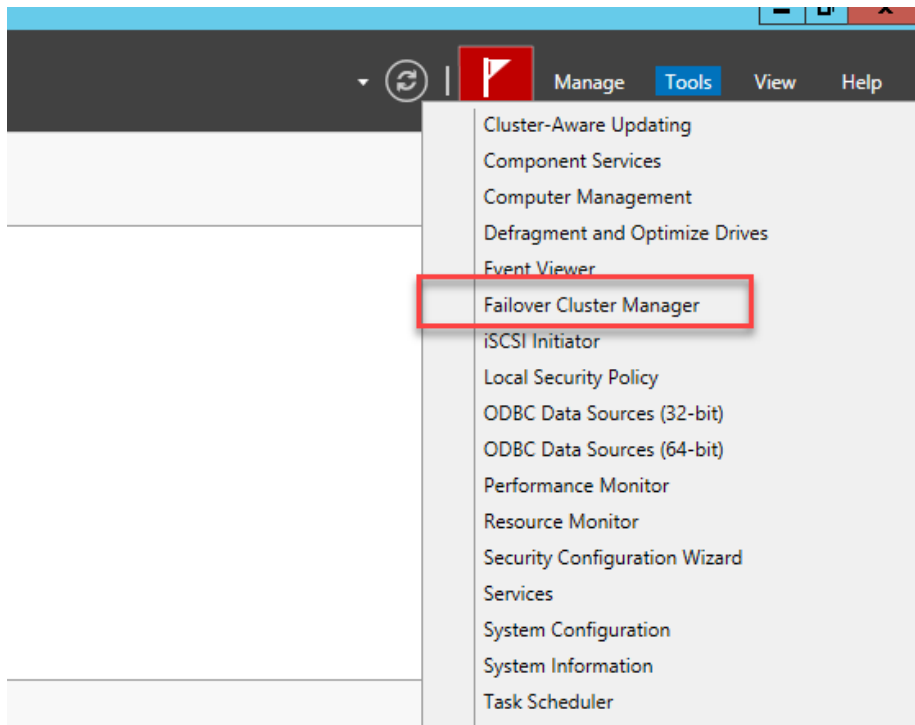


+ Kết nối tương tự đối với máy file server thứ 2 ta có thể thấy trên máy đây cũng nhận các partition mà ta vừa tạo.

2.3. Cài đặt Role File server và feature Failover Clustering trên 2 máy File server



2.4. Triển khai cụm Cluster cho File server



Chuột phải vào failover chọn validate configuration để tiến hành kiểm tra trước hệ thống và tạo cluster

Validate a Configuration Wizard

Select Servers or a Cluster

Before You Begin

To validate a set of servers, add the names of all the servers.
To test an existing cluster, add the name of the cluster or one of its nodes.

Enter name:

Selected servers:

- SRV1j1708a.com (cluster)
- SRV2j1708a.com (cluster)

điền tên 2 máy file server dùng để tạo cluster

< Previous Next > Cancel

Validate a Configuration Wizard

Testing Options

Before You Begin

Choose between running all tests or running selected tests.

The tests examine the Cluster Configuration, Hyper-V Configuration, Inventory, Network, Storage, and System Configuration.

Microsoft supports a cluster solution only if the complete configuration (servers, network, and storage) can pass all tests in this wizard. In addition, all hardware components in the cluster solution must be "Certified for Windows Server 2012 R2."

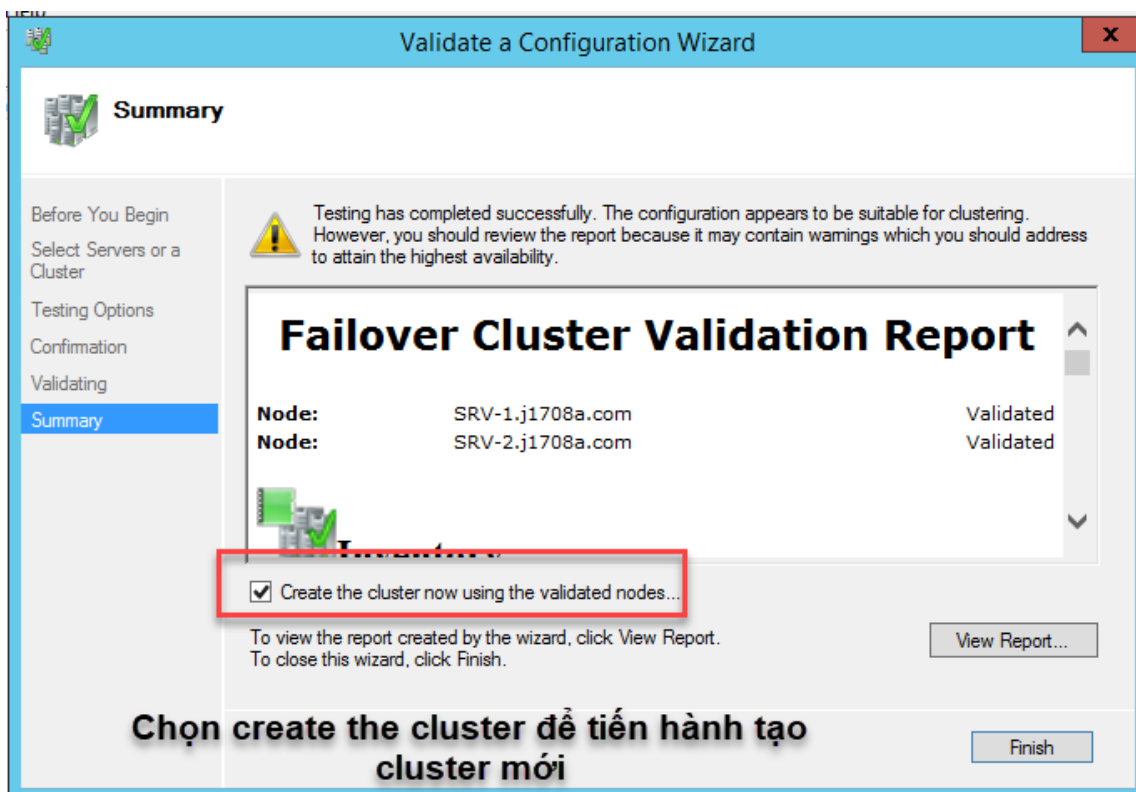
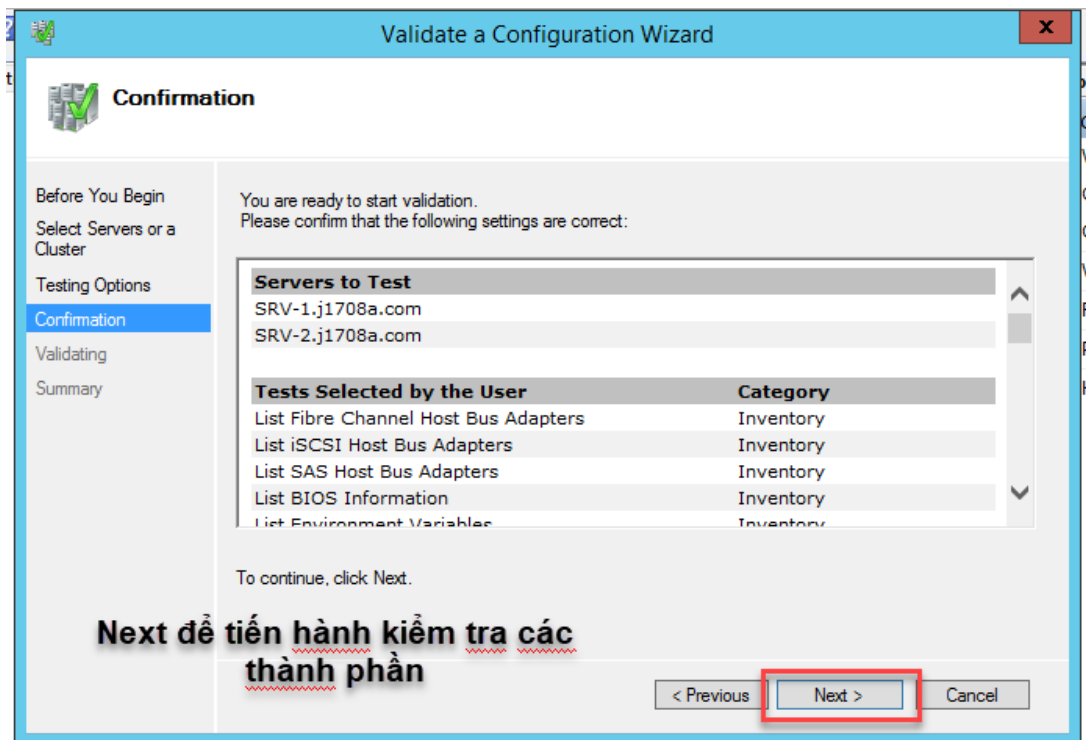
☒ Run all tests (recommended)

☐ Run only tests I select

Chọn run test all và next

[More about cluster validation tests](#)

< Previous Next > Cancel



Create Cluster Wizard

Access Point for Administering the Cluster

Before You Begin

Access Point for Administering the Cluster

Confirmation

Creating New Cluster

Summary

Type the name you want to use when administering the cluster.

Cluster Name:

The NetBIOS name is limited to 15 characters. One or more IPv4 addresses could not be configured automatically. For each network to be used, make sure the network is selected, and then type an address.

| | Networks | Address |
|-------------------------------------|---------------|--------------------|
| <input checked="" type="checkbox"/> | 10.10.10.0/24 | 10 . 10 . 10 . 111 |

Điền tên cluster và IP ảo cho cluster

< Previous

Next >

Cancel

Create Cluster Wizard

Confirmation

Before You Begin

Access Point for Administering the Cluster

Confirmation

Creating New Cluster

Summary

You are ready to create a cluster.
The wizard will create your cluster with the following settings:

Cluster:

Node:

Node:

IP Address:

cluster-share

SRV-2.j1708a.com

SRV-1.j1708a.com

10.10.10.111

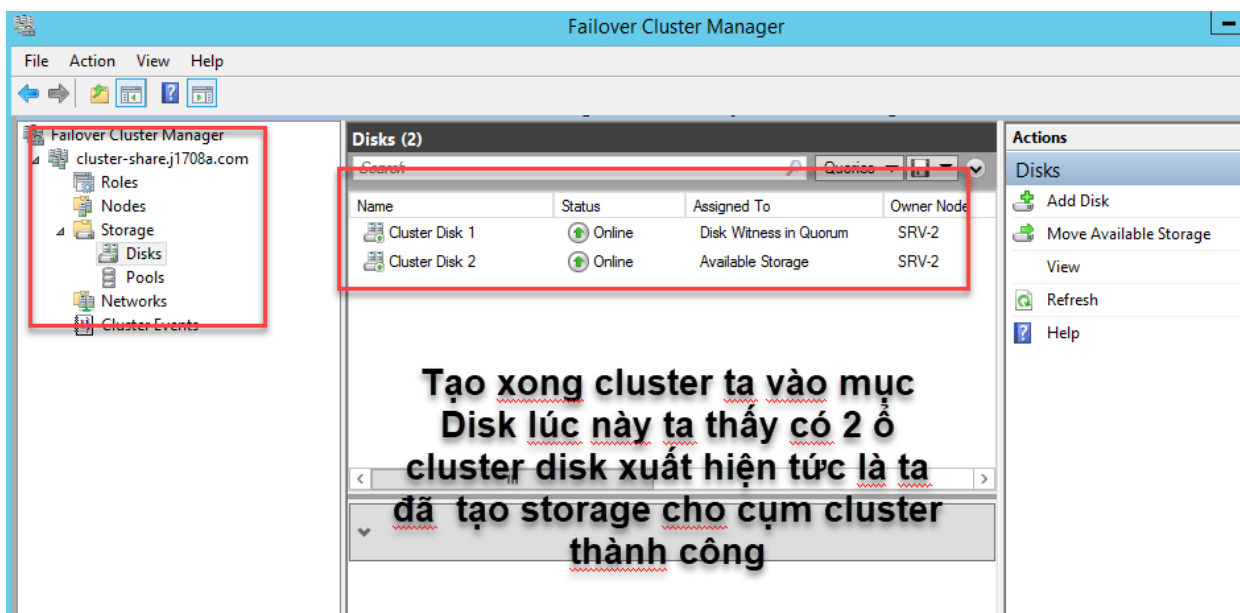
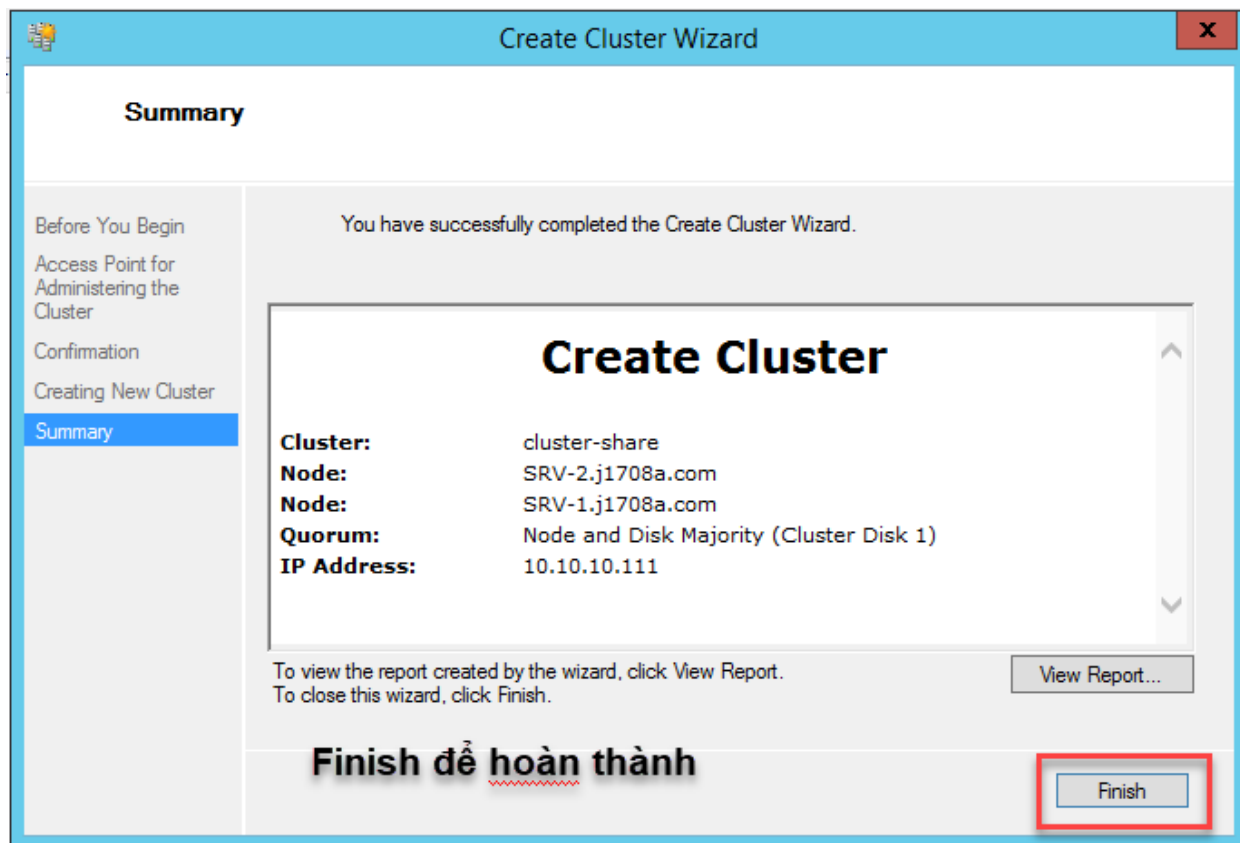
☒ Add all eligible storage to the cluster.

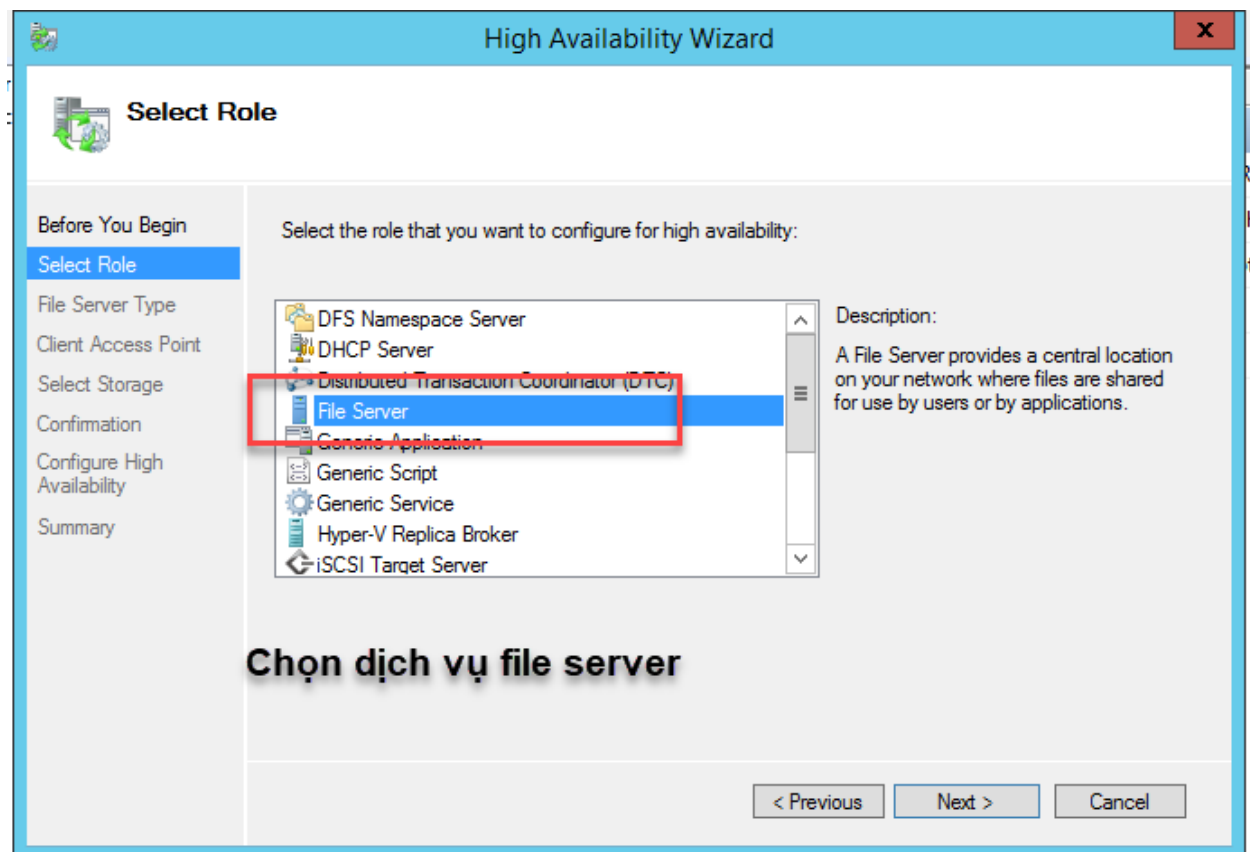
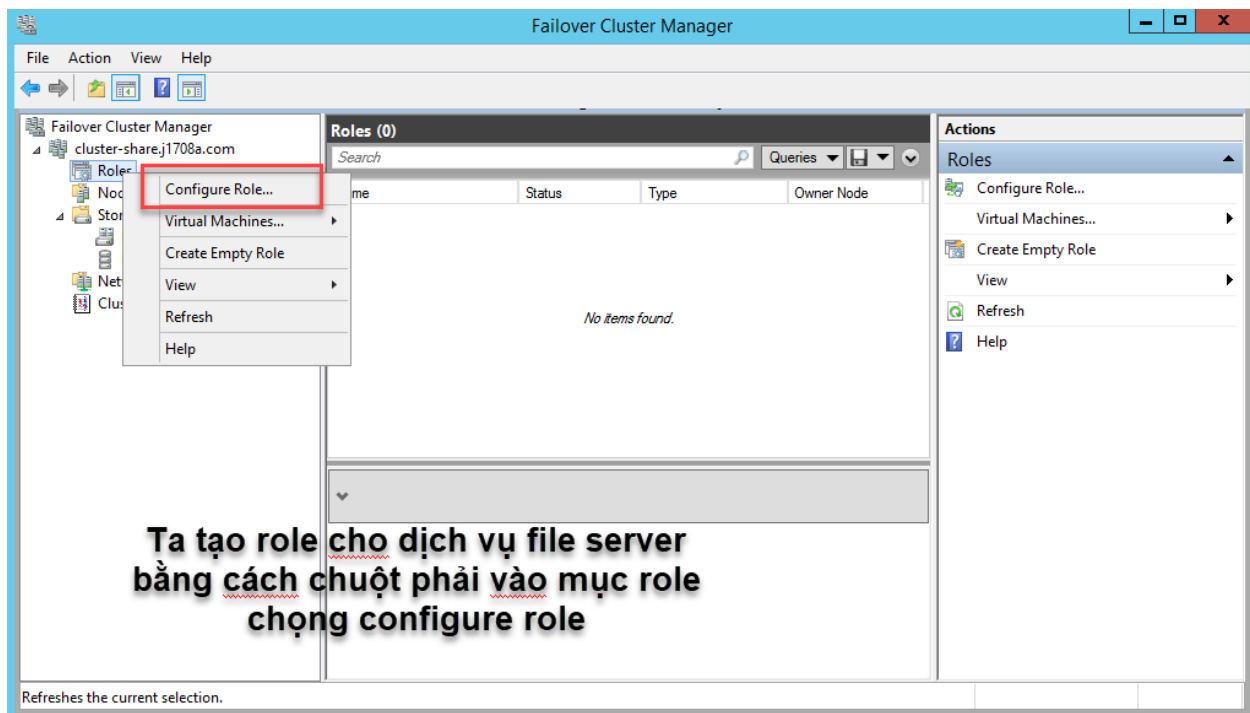
To continue, click Next.

< Previous

Next >

Cancel





High Availability Wizard

File Server Type

Before You Begin

Select Role

File Server Type

Client Access Point

Select Storage

Confirmation

Configure High Availability

Summary

Select an option for a clustered file server:

☒ **File Server for general use**

Use this option to provide a central location on your network for users to share files or for server applications that open and close files frequently. This option supports both the Server Message Block (SMB) and Network File System (NFS) protocols. It also supports Data Deduplication, File Server Resource Manager, DFS Replication, and other File Services role services.

☐ Scale-Out File Server for application data

Use this option to provide storage for server applications or virtual machines that leave files open for extended periods of time. Scale-Out File Server client connections are distributed across nodes in the cluster for better throughput. This option supports the SMB protocol. It does not support the NFS protocol, DFS Replication, or File Server Resource Manager.

Chọn file server for general use

[More about clustered file server options](#)

High Availability Wizard

Client Access Point

Before You Begin

Select Role

File Server Type

Client Access Point

Select Storage

Confirmation

Configure High Availability

Summary

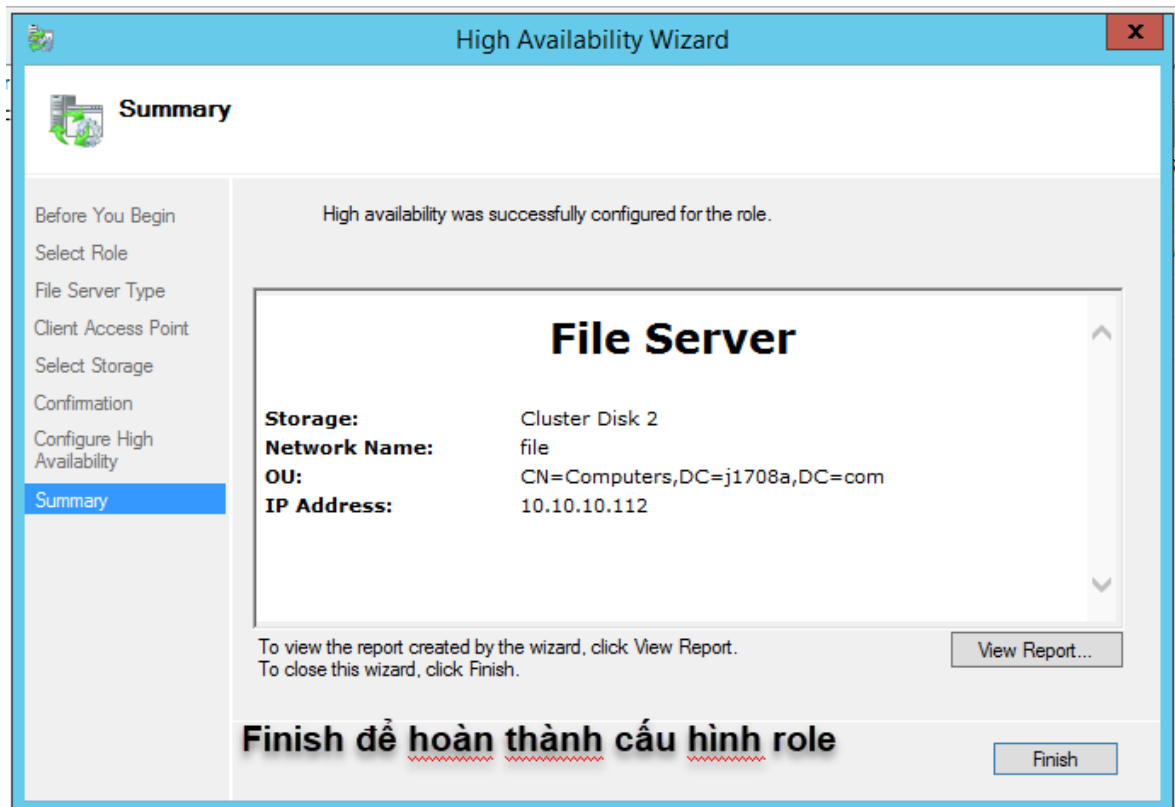
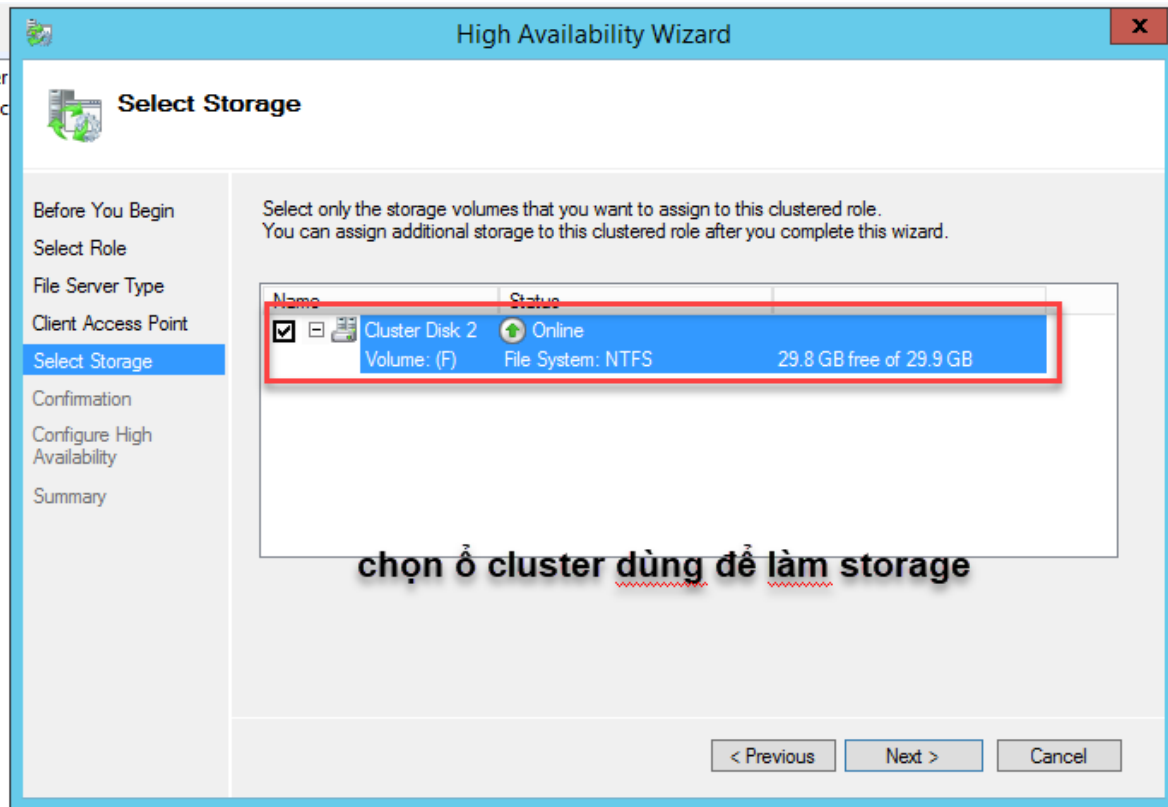
Type the name that clients will use when accessing this clustered role:

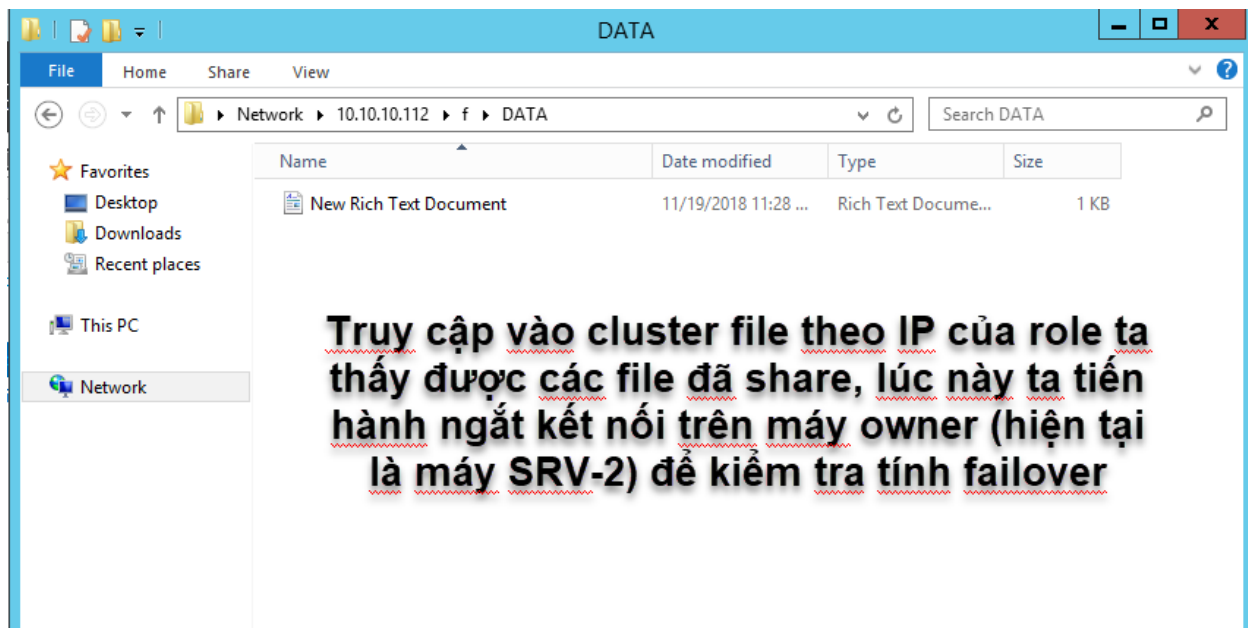
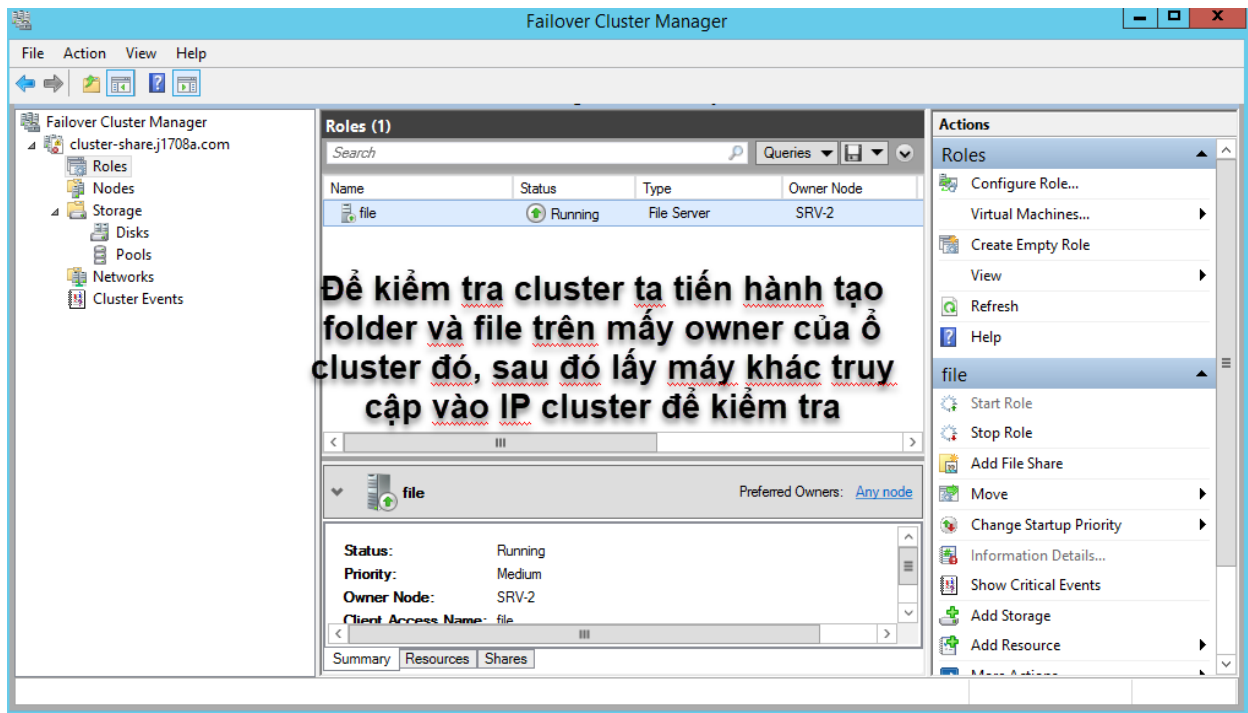
Name:

i The NetBIOS name is limited to 15 characters. One or more IPv4 addresses could not be configured automatically. For each network to be used, make sure the network is selected, and then type an address.

| | Networks | Address |
|-------------------------------------|---------------|--------------------|
| <input checked="" type="checkbox"/> | 10.10.10.0/24 | 10 . 10 . 10 . 112 |
| | | |

Điền tên và địa chỉ IP cho role của dịch vụ file server, các máy client sẽ truy cập vào ổ cluster theo IP này





Nodes (2)

Queries
▼
▼

| Name | Status | Assigned Vote | Current Vote |
|-------|--------|---------------|--------------|
| SRV-1 | Up | 1 | 1 |
| SRV-2 | Down | 1 | 1 |

Actions

- Nodes
- Add Node...
- View
- Refresh
- Help

Ngắt kết nối máy SRV-2 ta thấy node srV-2 đã down

Disks (2)

Queries
▼
▼

| Name | Status | Assigned To | Owner Node |
|----------------|--------|------------------------|------------|
| Cluster Disk 1 | Online | Disk Witness in Quorum | SRV-1 |
| Cluster Disk 2 | Online | file | SRV-1 |

Actions

- Disks
- Add Dis
- Move A
- View
- Refresh
- Help

Lúc này owner của cluster đã đc chuyển sang máy SRV-1

DATA

File Home Share View

←

→

↑

Network

10.10.10.112

f

DATA

▼

↻

Search DATA

🔍

| Name | Date modified | Type | Size |
|------------------------|----------------------|---------------------|------|
| New Rich Text Document | 11/19/2018 11:28 ... | Rich Text Docume... | 1 KB |

★ Favorites

Desktop

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Recent places

This PC

Network

Sử dụng một máy khác truy cập vào cluster ta vẫn thấy file đang share trên máy SRV-2, như vậy là cấu hình failover cluster đã thành công.