

5. Node Disk Expanding Capacity



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Expanding Capacity Overview



Capacity of a virtual datastore can be expanded by adding more nodes or disks to it. Before expanding capacity via node, storage network interface of the new node should be specified. Steps of capacity expansion include the followings:

- 1) Select virtual datastore for which you want to expand capacity.
- 2) Select a type to expand capacity.
- 3) Specify use of disks.
- 4) Confirm configurations.

Prerequisite

For 2 replica (2 data copies), a pair of hard disks is required to mount on nodes. Cluster node hard disks must be balanced, if node 1 have 2 hard disk, node 2 must have 2 hard disk as well. If the number of hard disk is imbalance, it cannot form data disk pair, leftover disk can only configured as spare disk.

Expanding Capacity Configuration



Path: Storage > Virtual Storage > Expanding Capacity

The screenshot displays the Sangfor storage management interface. At the top, there are three tabs: 'Summary', 'Virtual Storage', and 'Other Datastores'. The 'Virtual Storage' tab is active. Below it, there's a sub-menu with 'Virtual Datastores', 'Physical Disks', 'Shared Disks', 'iSCSI Virtual Disks', and 'Storage Policy'. The 'Virtual Datastores' sub-menu is selected. In the main area, there's a toolbar with 'Refresh', 'New', 'Expand Capacity' (highlighted with a red box), and 'Settings'. Below the toolbar, the 'VirtualDatastore1' is selected, showing a 'Normal' status. The 'Basics' section lists various metrics: Datastore Type (Ordinary datastore), Host Count (3), HDDs (10), SSDs (6), Cache Space (7.2%), VM Count (162), IO Read (12.8 KB/s), and IO Write (5.3 MB/s). On the right, a capacity bar shows 'Capacity: 36.26 TB in total'. Below the bar, a legend indicates 'Used' (29.1 TB) and 'Available' (7.2 TB). Further details include '2-replica Storage Capacity' (3.6 TB) and '3-replica Storage Capacity' (2 TB).

Expanding Capacity Configuration



Steps

1. Select virtual datastore.

There is a list displaying information of virtual datastore: datastore name, total capacity, free space, the number of nodes, the number of disks that have been used and the number of free disks. From the list, select the datastore for which you want to expand capacity.

Expand Capacity ×

1 Select Virtual Datastore

2 Select Node

3 Select Disks

4 Use of Disk

5 Confirm

Select the virtual datastore for which you want to expand capacity.

	Name	Datastore Type	Total	Free	Nodes	Disks Used	Disks Available
<input checked="" type="radio"/>	VirtualDatastore1	Ordinary datastore	36.3 TB	7.2 TB	3	16	3

Expanding Capacity Configuration



Steps

2. Select nodes to be expand.

Note: When new nodes selected, it will be node expansion.

Expand Capacity

×

✓ Select Virtual Datastore

2 Select Node

3 Select Disks

4 Use of Disk

5 Confirm

ⓘ If you select the nodes which have not been added to any virtual datastore, they will be attached to this datastore after capacity expansion completes.

Select the nodes to expand capacity of the datastore (VirtualDatastore1):

2 node(s) selected

<input checked="" type="checkbox"/>	Node Name	Node IP	Datastore	Toal SSDs	Free SSDs	Toal HDDs	Free HDDs
<input checked="" type="checkbox"/>	Node-1	192.168.20.3	VirtualDatastore1	4	2	4	1
<input checked="" type="checkbox"/>	Node-3	192.168.20.5	VirtualDatastore1	2	0	4	1

Expanding Capacity Configuration



Steps

3. Select disks to be added to the datastore.

Expand Capacity

✓ Select Virtual Datastore

✓ Select Node

3 Select Disks

4 Use of Disk

5 Confirm

Select disks to be added to the datastore

Selected: 2 SSDs, 1 HDDs

Quick Select

✓	Disk	Type	Size
✓	Node-1		
✓	Disk 7	SATA SSD	447.13 GB
✓	Disk 0	SATA SSD	447.13 GB
-	Disk 4	<div>✗</div> SATA HDD	3.64 TB
✓	Node-3		
✓	Disk 2	SATA HDD	3.64 TB

Expanding Capacity Configuration



Steps

4. Configure use of disk.

In this step, you will see the following information of available disks(system disk is not listed): disk name, disk type, disk size and use of disk. Then, you should specify use of those disks by clicking “**Edit Disk Group**”. Disks that are added to virtual storage can be used as data disk or cache disk.

Notes: If none of the above uses is selected for disk, it may not associate with virtual storage.

Expand Capacity

✓ Select Virtual Datastore

✓ Select Node

✓ Select Disks

Expand All

Collapse All

Edit Disk Group

	Disk 0	SSD	447.1 GB
▼ Node: Node-3			
Disk Group	Disk	Type	Disk Size
Group 1	Disk 1	SSD	447.1 GB
	Disk 4	HDD	3.6 TB
Group 2	Disk 0	SSD	447.1 GB
	Disk 3	HDD	3.6 TB
	Disk 5	HDD	3.6 TB
Free	Disk 2	HDD	3.6 TB

Expand Capacity

✓ Select Virtual Datastore

✓ Select Node

✓ Select Disks

4 Use of Disk

5 Confirm

Expand All

Collapse All

Restore Defaults

About Disk Grouping

► Node: Node-1

Data disk : 3 Cache disk : 2 Free : 2

▼ Node: Node-3

Data disk : 3 Cache disk : 2 Spare disk : 1 + New Disk Group

Disk Group	Disk	Type	Disk Size	Use of Disk	Operation
Group 1	Disk 1	SSD	447.1 GB	Cache disk	Edit
	Disk 4	HDD	3.6 TB	Data disk	
Group 2	Disk 0	SSD	447.1 GB	Cache disk	Edit
	Disk 3	HDD	3.6 TB	Data disk	
	Disk 5	HDD	3.6 TB	Data disk	
Free	Disk 2	HDD	3.6 TB	Spare disk	

Expanding Capacity Configuration

Steps

5. Confirm configuration.

After configuring use of disk, type virtual datastore name and admin password to confirm capacity expansion operation.

Expand Capacity

✓ Select Virtual Datastore

✓ Select Node

✓ Select Disks

✓ Use of Disk

5 Confirm

Confirm Configuration of Virtual Datastore (VirtualDatastore1)

3	36.39 TB -> 40.03 TB ⓘ	7% ⓘ	19.96 TB ⓘ	10.89 TB ⓘ
Nodes	Raw Capacity	Cache Disk Ratio	2-replica Storage Capacity	3-replica Storage Capacity

Configurations:


Node Name	Disk Groups	Cache Disks	Data Disks	Free Disks	Data Disk Size	Cache Disk Size
Node-3	2	2	4	0	14.55 TB	894.26 GB
Node-2	2	2	4	0	14.55 TB	894.26 GB
Node-1	2	2	3	3	10.92 TB	894.26 GB

Prev

OK

Cancel

Confirm



Are you sure you want to expand capacity for the virtual datastore (VirtualDatastore1)?

Once added, node or disk cannot be removed and disk will be formatted and emptied.

Virtual Datastore:

Enter your password to confirm this operation:

OK

Cancel