



SANtricity® software

SANtricity® Remote Storage Volumes

Installing and Using

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doccomments@netapp.com

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About this guide

This guide describes how to configure and use the Remote Storage Volumes feature in SANtricity System Manager.

Decide whether to use this guide

You use this guide when you want to use the Remote Storage Volumes feature in SANtricity System Manager.

This guide describes general concepts, setup, configuration, and recommended usage of the Remote Storage Volumes feature in the SANtricity System Manager.

The Remote Storage Volumes feature allows you to import data from an existing remote storage device onto an E-Series volume with minimal downtime. It can be used to help streamline the process for equipment upgrades and/or provide data migration capabilities to move data from non-E-Series devices to E-Series systems.

Note: For additional technical information on the Remote Storage Volumes feature, see the [Remote Storage Volumes Technical Report](#).

Understand Remote Storage Volumes

The Remote Storage Volumes feature comes with SANtricity System Manager on selected submodel IDs that allows data to be moved between a remote storage system and an E-Series storage system.

The primary benefit of the Remote Storage Volumes feature is to support importing data from a remote storage device directly to a local E-Series volume.

The systems need to be prepared for communication between each other. Each of the E-Series controllers needs to have at least one or more connections to the remote storage system.

When the local E-Series storage system and the remote storage system are configured to communicate via the supported I/O protocol, the remote storage device will need to go through a set of steps to be mapped to the local E-Series storage system. The SANtricity System Manager or SANtricity REST APIs can then be used to initiate and manage the import operation.

During the import operation, the target volume can be set up to handle I/Os that were previously being sent to the remote storage device. Any I/Os going to the target volume will then be propagated back to the remote storage device until the import operation has completed and the import has been disconnected.

System requirements

Your system must meet compatibility requirements for Remote Storage Volumes.

Supported protocols

For the initial release of the Remote Storage Volumes feature, support is only available for iSCSI and IPv4 protocols.

Refer to the [NetApp Interoperability Matrix Tool](#) for up-to-date support and configuration information between the host and E-Series (destination) array used for the Remote Storage Volumes feature.

Note: The Remote Storage Volumes feature only supports 512 block sizes.

Supported E-Series systems

Your E-Series system must meet compatibility requirements for Remote Storage Volumes.

E-Series storage systems must meet the following requirements for the initial release of the Remote Storage Volumes feature:

- The E-Series storage system must support iSCSI connections.
- The system must be running in duplex mode (both controllers present).
- Both E-Series controllers must be able to communicate with the remote storage through one or more iSCSI connections.

Hardware requirements

The appropriate connections and hardware must be set up before SANtricity System Manager, or the REST API can be used to initiate a remote storage volume import operation.

The minimum hardware required includes the following:

- E-Series storage system (both controllers must be present)
 - SANtricity OS (11.71 or greater)
 - iSCSI interfaces

Note: The Remote Target Volumes feature is only available on iSCSI supported submodel IDs.
- Remote storage system / device
 - iSCSI capable interfaces
- Both E-Series controllers must be able to communicate with the remote storage through one or more iSCSI connections

Preparation for production imports

A test or "dry run" import should be performed before production imports to verify proper storage and fabric configuration.

There are many variables that can impact the import operation and how long it takes to complete. To ensure a production import is successful and to get an estimate on how long it will take to complete, it is recommended to first perform multiple smaller "test" imports. These imports can be used to ensure all connections are working as expected and the import operation is completing in an appropriate amount of time. Adjustments can then be made to achieve the desired results before the production import is initiated.

Set up Remote Storage Volumes

Configure Remote storage device and E-Series array

Initial setup is required to enable the E-Series system to connect to the remote storage through the supported iSCSI protocol.

Before you begin

Before proceeding to the SANtricity System Manager to configure the Remote Storage Volumes feature, the following pre-requisites must be met:

1. Manually establish a cabled connection between the E-Series system and the remote storage system such that the two systems can be configured to communicate via iSCSI.
2. Configure the iSCSI ports such that the E-Series system and the remote storage system can communicate successfully with each other.
3. Obtain the IQN of the E-Series system.
4. Make the E-Series system visible to the remote storage system. If the remote storage system is an E-Series system, then create a host using the IQN of the destination E-Series system as the connection information for the host port.
5. If the remote storage device is in use by a host/application:
 - Stop I/O to the remote storage device
 - Unmap/unmount the remote storage device
6. Map the remote storage device to the host defined for the E-Series storage system
7. Obtain the LUN number of the device used for the mapping.

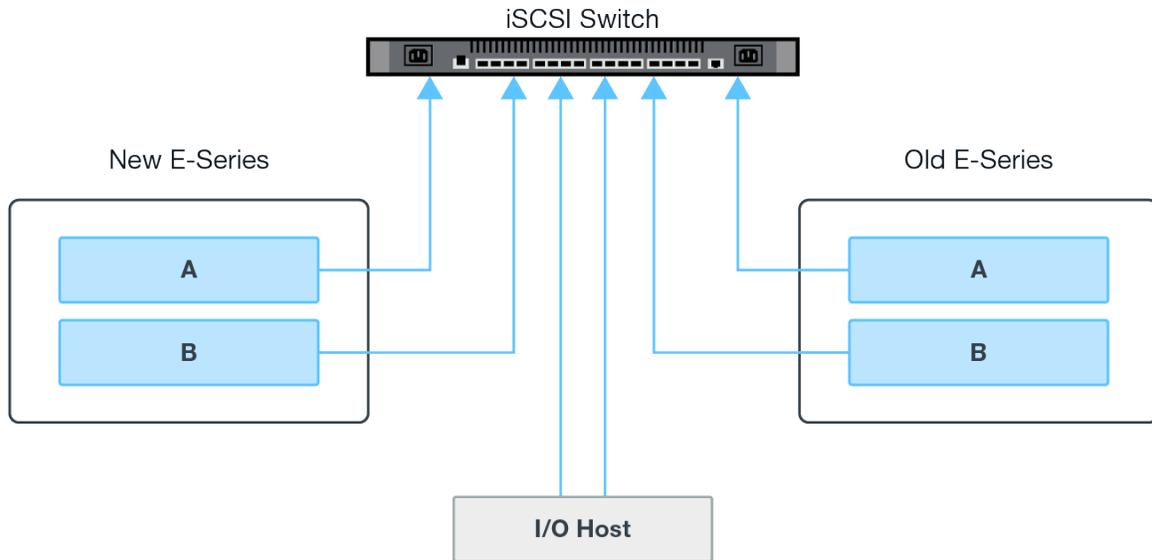
Note: It is recommended that the remote source volume is backed up before starting the import process.

Cable the storage arrays

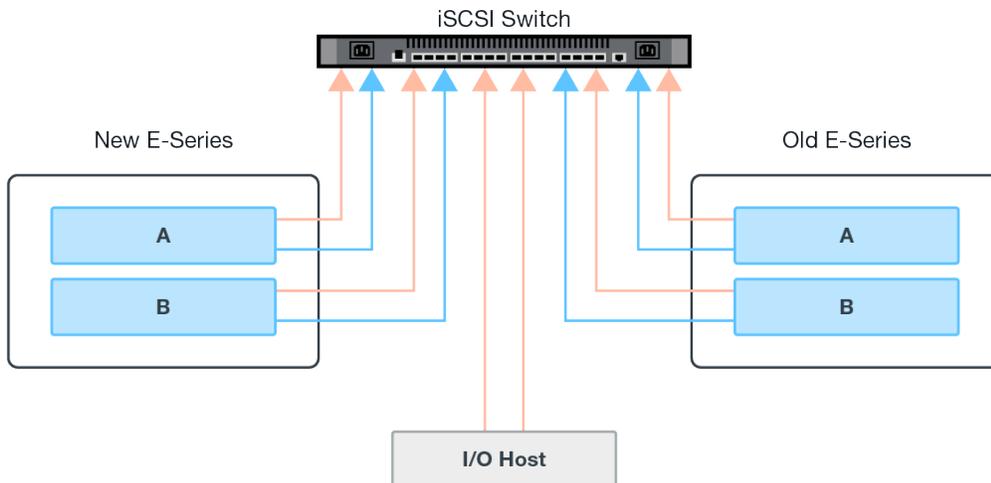
As part of the setup process, the storage arrays and IO host must be cabled to the iSCSI-compatible interface.

The following diagrams provide examples of how to cable the systems such that they perform Remote Storage Volume operations over an iSCSI connection.

Fabric Connection - Use Case 1



Fabric Connection - Use Case 2



Configure the iSCSI ports

You must configure the iSCSI ports to ensure communication between the target (local E-Series storage array) and source (remote storage array) arrays.

The iSCSI ports can be configured multiple ways based on your subnet. The following are a few examples on how to configure the iSCSI ports for use with the Remote Storage Volumes feature.

Table 1: A ports and B ports use different subnets

Source A	Source B	Target A	Target B
10.10.1.100/22	10.10.2.100/22	10.10.1.101/22	10.10.2.101/22

Table 2: A ports and B ports use the same subnet

Source A	Source B	Target A	Target B
10.10.0.100/16	10.10.0.100/16	10.10.0.101/16	10.10.0.101/16

Use Remote Storage Volumes

Import remote storage

The import of the remote storage device is performed through the Import Remote Storage wizard under the SANtricity System Manager. The Remote Storage Import feature allows data from a remote storage device to be moved to the local E-Series array.

About this task

A remote storage volume device can be started using the Import Remote Storage wizard in SANtricity System Manager. The wizard prompts you for the IP address(es) and the iSCSI IQN of the remote storage system as well as the LUN number for the remote storage device. This information is then sent to the controller firmware to initiate the import.

Steps

1. From the SANtricity System Manager, click **Storage**.
The Storage screen is displayed.
2. Click **Remote Storage**.
The Remote Storage screen is displayed.
3. Click **Import Remote Storage**.
The Import Storage dialog is displayed.
4. Under the **Name** field, enter the name for the remote storage device.
5. Under the **iSCSI Qualified Name (IQN)** field, enter the IQN for the remote storage device.
6. Under the **IP Address** field, enter the IP address for the remote storage device.
7. Under the **Port** field, enter the port number for the remote storage device.
Note: By default, the port number is configured to 3260.
8. If needed, click **+Add another IP address** to include an additional IP address for the remote storage device.
9. Click **Next**.
The Select Remote Volume screen is displayed.
10. Under the **LUN** field, select the desired source LUN for the remote storage device.
11. Click **Next**.
The Configure Target dialog is displayed.
12. Select the desired destination for the remote volume.
13. If needed, change the import priority for the remote volume under the **Import Priority** field.
14. Under the Confirm Target Volume Selection dialog box, type **Continue** and click **Continue**.
15. Click **Next**.
The Review dialog box is displayed.
16. From the Review screen, verify the specified remote storage device, target, and import settings are accurate.
17. Click **Finish** to complete the creation of the remote storage.
An Import Remote Storage dialog stating the remote storage import has been initiated is displayed.
18. If needed, click **Yes** under the Import Remote Storage dialog to create another remote storage import.
19. Click **No** to exit the Import Remote Storage dialog.

View import progress

You can view the status of each remote storage import from the result list section of the Remote Storage screen of the SANtricity System Manager.

About this task

The status of each remote storage import is viewable from the result list section of the Remote Storage screen of SANtricity System Manager. Various actions can be performed on each import based on its status.

Step

From the Remote Storage screen of the SANtricity System Manager, click on **View Operations**. The Operations in Progress screen is displayed.

Change import priority

For remote storage imports with a status of Pending or In progress, you can change the import priority directly from the SANtricity System Manager.

About this task

Import priority can be changed directly from the Operations in Progress window on imports that have either an in-progress or pending status using the following steps.

Steps

1. Under the result list section of the Operations in Progress screen, click **Change Priority** under the Actions column for the corresponding remote storage import with a status of Pending or In progress.
The Change Import Priority dialog is displayed.
2. Under the Import Priority field, select one of the following priority options:
 - Lowest
 - Low
 - Medium (Default)
 - High
 - Highest
3. Click **OK**.
The selected priority is applied to the remote storage import.

Stop remote storage import

For remote storage imports with a status of Pending or In progress, you can stop an import directly from the SANtricity System Manager.

About this task

An import can be stopped directly from the Operations In Progress window on imports that have either an in-progress or pending status using the following steps.

Note: This operation halts the copying of data from the remote storage device but the relationship between the import pair is still intact.

Steps

1. Under the result list section of the Operations in Progress screen, click **Stop** in the Actions menu.
The Stop Remote Storage Import dialog is displayed.
2. Under the Type stop field, enter **Stop** in the provided field.

3. Click **Stop.**

The Remote Storage Import process is stopped.

Resume import

For remote storage imports with a status of failed or stopped, you can resume the remote storage import from the SANtricity System Manager.

About this task

An import can be resumed directly from the Operation In Progress window on imports that have either a Failed or Stopped status using the following steps.

Note: The resume operation only resumes an existing import and does not restart the import from the beginning of the process. If the import needs to be restarted from the beginning, it must be disconnected and then re-created through the Import Remote Storage wizard.

Steps

1. Under the result list section of the Operations in Progress screen, click **Resume** in the Actions column for the corresponding remote storage import with a status of Failed or Stopped. The Resume Remote Storage Import dialog is displayed.
2. Under the Import Priority field, select one of the following import priority options:
 - Lowest
 - Low
 - Medium (Default)
 - High
 - Highest
3. Click **OK**.
The selected priority is applied to the remote storage import.

Disconnect remote storage operation

For remote storage imports with a status of completed, stopped, or failed, you can disconnect the volume on the destination E-Series system from the remote storage device through the SANtricity System Manager.

Steps

1. Under the result list section of the Operations in Progress screen, click **Disconnect** in the Actions column for the corresponding remote storage import with a status of completed, failed, or stopped. The Disconnect Remote Storage Import Operation dialog is displayed.
2. Enter **Disconnect** in the provided field.
3. Click **Disconnect**.
Communication for the selected remote storage import is disconnected.

Modify remote storage connection settings

You can modify the connection settings for any configured Remote Storage import through the View/Edit Settings option under the Remote Storage screen of the SANtricity System Manager.

About this task

Changes made to connection properties will affect any in-progress imports. To avoid disruptions, only make changes to connection properties when no in-progress imports exist.

Steps

1. From the Remote Storage screen of the SANtricity System Manager, select the desired Remote Storage object under the result list section.
2. Click **View/Edit Settings**.
The Remote Storage Settings screen is displayed.
3. Click the **Connection Properties** tab.
The configured IP address and port settings for the remote storage import are displayed.
4. To add a new connection for the remote storage object, click **Add**.
The Add iSCSI Connection window is displayed.
5. Enter the new IP address and port information in the fields provided.
6. Click **Add**.
The new connection is added to the remote storage object IP connections table.
7. To modify an existing IP address and port settings for the configured remote storage object, click **Edit** next to the corresponding line item.
8. Enter the revised IP address and/or port information under the provided fields.
9. To remove an existing connection for the remote storage object, select the desired connection under the result list section of the Connection tab and click **Delete**.
The Confirm Delete iSCSI Connection window is displayed.
10. Enter **Delete** under the provided field and click **Delete**.
The connection is removed from the remote storage object IP connections table.
11. Click **Save**.
The modified connection settings are applied to the remote storage object.

Remove remote storage object

You can remove any configured Remote Storage object through the SANtricity System Manager.

About this task

The remove operation is only allowed whenever no imports are associated with the Remote Storage object.

Steps

1. From the Remote Storage screen of the SANtricity System Manager, select the desired Remote Storage object under the result list section.
2. Click **Remove**.
The Confirm Remove Remote Storage Connection dialog is displayed.
3. Under the Type remove field, enter **Remove** in the provided field.
4. Click **Remove**.
The selected Remote Storage object is removed.

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