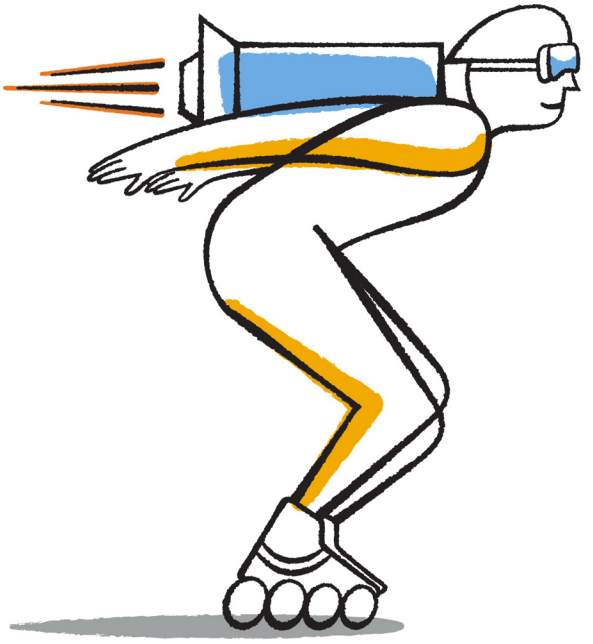
Clustered Data ONTAP® 8.3

Volume Disaster Recovery Preparation Express Guide



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Part number: 215-09376_A0
November 2014

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Deciding whether to use this guide

This guide describes how to quickly protect a source volume on a peered Data ONTAP cluster in preparation for disaster recovery. You should use this guide if you want to configure and monitor SnapMirror relationships between peered clusters for volume disaster recovery and do not need a lot of conceptual background for the tasks.

SnapMirror provides scheduled asynchronous, block-level data protection. SnapMirror replicates Snapshot copies and can replicate NAS or SAN volumes on which deduplication, data compression, or both are run, including volumes containing qtrees and LUNs. SnapMirror configuration information is stored in a database that Data ONTAP replicates to all the nodes in the cluster.

You should use this guide if you want to create SnapMirror relationships for volume-level disaster recovery in the following way:

- You are working with clusters running Data ONTAP 8.3 or later.
- You are a cluster administrator.
- You are using FlexVol volumes and not an Infinite Volume.
- You have configured an authenticated peer relationship between two clusters.
  Clustered Data ONTAP 8.3 Cluster Peering Express Guide
- You have enabled the SnapMirror license on both the source and the destination clusters.
- You want to use best practices, not explore every available option.
- You do not want to read a lot of conceptual background.
- You want to use OnCommand System Manager, not the command-line interface or an automated scripting tool.

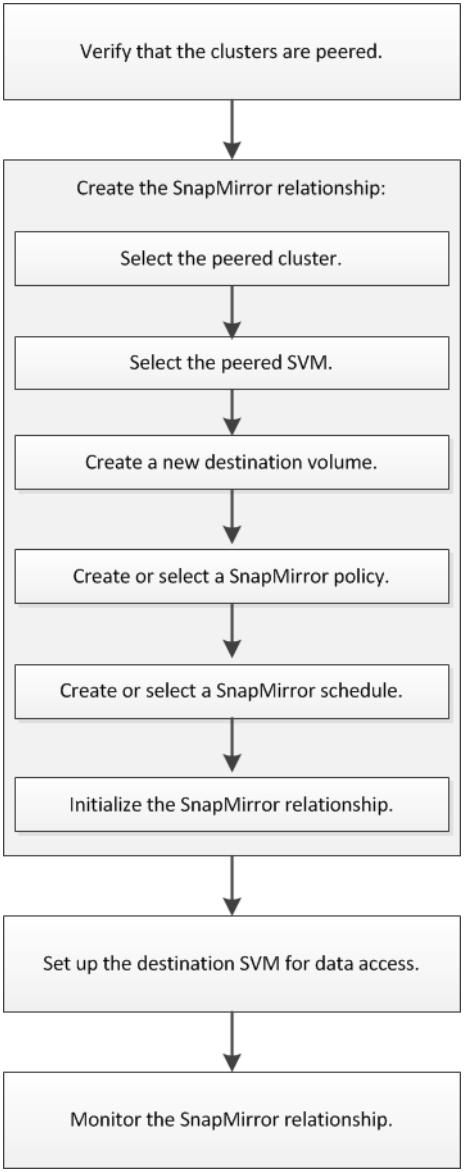
If these assumptions are not correct for your situation, or if you want more conceptual background information, you should see the following resources:

- *Clustered Data ONTAP 8.3 Data Protection Guide*
- *NetApp Technical Report 4015: SnapMirror Configuration and Best Practices Guide for Clustered Data ONTAP*
- *Clustered Data ONTAP 8.3 Logical Storage Management Guide*
- *NetApp Documentation: OnCommand Workflow Automation (current releases)*
  OnCommand Workflow Automation enables you to run prepackaged workflows that automate management tasks such as the workflows described in Express Guides.
- *Clustered Data ONTAP 8.3 Commands: Manual Page Reference*

Provides the set of commands for configuring and managing SnapMirror relationships. You might want to use the SnapMirror commands to write a script that creates multiple SnapMirror relationships.

Volume disaster recovery preparation workflow

Preparing volumes for disaster recovery involves verifying the cluster peer relationship, creating the SnapMirror relationship between volumes residing on peered clusters, setting up the destination SVM for data access, and monitoring the SnapMirror relationship periodically.



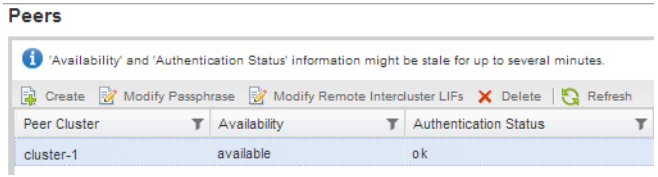
Verifying the cluster peer relationship

Before you set up a volume for disaster recovery, you must verify that the source and destination clusters are peered and are communicating with each other through the peer relationship.

Steps

1. Enter the URL **`https://IP-address-of-cluster-management-LIF`** in a web browser and log in to System Manager using your cluster administrator credential.
2. Expand the **Cluster** hierarchy in the left navigation pane.
3. Click **Configuration > Peers** to ensure that the peered cluster is authenticated and available.

   The destination cluster is cluster-1 and the source cluster is cluster-2.



Creating the SnapMirror relationship

You must create a SnapMirror relationship between the source volume on one cluster and the destination volume on the peered cluster for replicating data for disaster recovery.

Before you begin

- You must have the cluster administrator user name and password for the destination cluster.
- The destination aggregate must have available space.
- Both the clusters must be configured and set up appropriately to meet the requirements of your environment for user access, authentication, and client access.

About this task

You must perform this task from the **source** cluster.

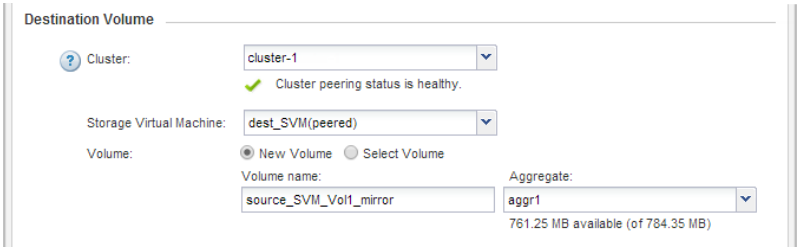
Steps

1. Expand the **Storage Virtual Machines** hierarchy in the left navigation pane.
2. Select the source SVM that contains the volume you want to protect, and then select **Storage > Volumes**.
3. Select the volume you want to protect from the Volumes list, and then click **Protect by > Mirror**.

   The Create Mirror Relationship window is displayed.
4. In the **Destination Volume** section, select the peered cluster.
5. Specify the SVM for the destination volume:

If the SVM is...	Then...
Peered	Select the peered SVM from the list.
Not peered	**a.** Select the SVM. **b.** Click **Authenticate**. **c.** Enter the cluster administrator's credentials of the peered cluster, and then click **Create**.

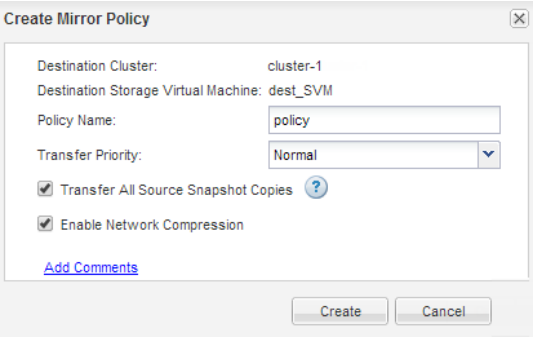
6. Create a new destination volume:
   a. Select the **New Volume** option.
   b. Use the default volume name or enter a new volume name.
   c. Select the destination aggregate.



7. In the **Configuration Details** section, specify the SnapMirror policy:

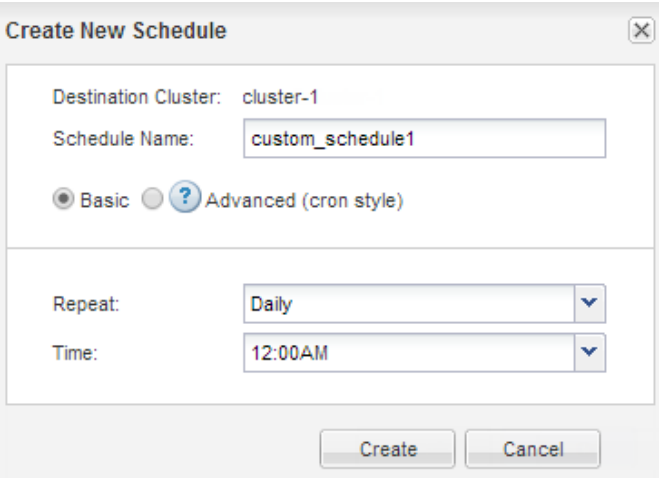
If you want to...	Then...
Assign an existing policy	Select a SnapMirror policy from the list.

If you want to...	Then...
Create a new policy	**a.** Click **Create Policy**. **b.** In the Create Mirror Policy window, specify a policy name and set the schedule transfer priority. Normal priority transfers are scheduled before low-priority transfers. By default, the priority is set to Normal. **c.** Select the **Transfer All Source Snapshot Copies** check box to include the "all_source_snapshots" rule to the mirror policy, which will enable you to back up all the Snapshot copies from the source volume. **d.** Select the **Enable Network Compression** check box to compress the data that is being transferred. **e.** Click **Create**.



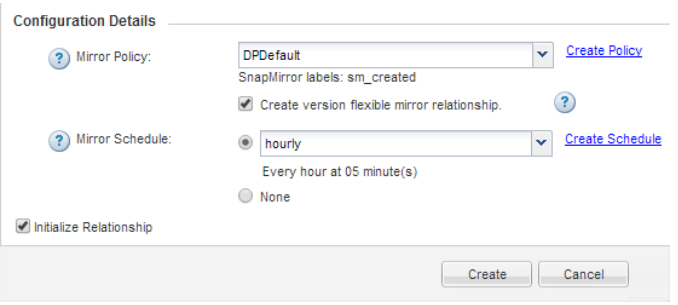
8. Specify the SnapMirror schedule:

If you want to...	Then...
Assign an existing schedule	From the list of schedules, select an existing schedule.
Create a new schedule	**a.** Click **Create Schedule**. **b.** In the Create New Schedule window, choose one of the following options: • **Basic** to specify recurring days and recurring schedule details • **Advanced** to specify the advanced cron options in months, days, week days (if applicable), hours, and minutes **c.** Click **Create**.



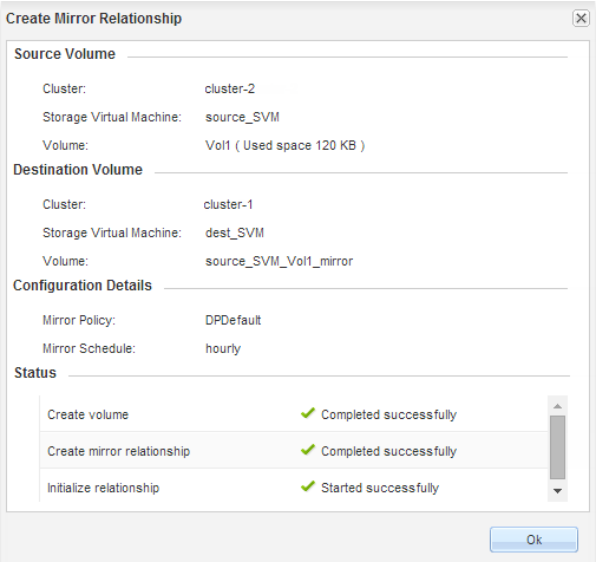
9. Ensure that the **Initialize Relationship** check box is selected and then click **Create**.

   Initializing the SnapMirror relationship ensures that the destination volume has a baseline to start protecting the source volume.



   The wizard creates the relationship with the default **`DPPolicy`** mirror policy and the **`hourly`** schedule. The relationship is initialized by starting a baseline transfer of data from the source volume to the destination volume.

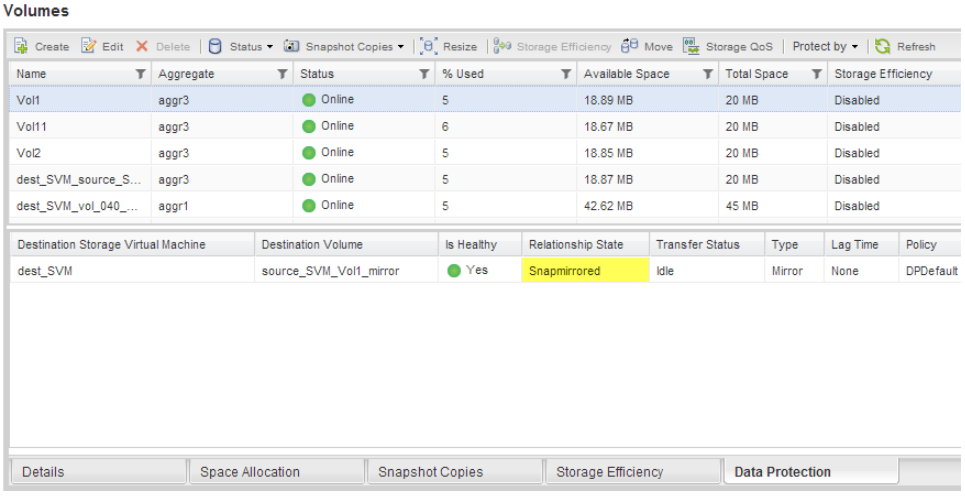
   The initialization operation might take some time. The Status section shows the status of each job.



10. Verify the relationship status of the SnapMirror relationship:

a. Select the volume from the Volumes list, and then click **Data Protection**.

b. In the **Data Protection** tab, verify that the SnapMirror relationship you created is listed and the relationship state is **`Snapmirrored`**.



After you finish

You must make a note of the source volume settings such as thin provisioning, deduplication, compression, and autogrow. You can use this information when you break the SnapMirror relationship and verify the destination volume settings.

Setting up the destination SVM for data access

You can minimize data access disruption when activating the destination volume by setting up required configurations such as LIFs, CIFS shares, and export policies for the NAS environment, and LIFs and initiator groups for the SAN environment on the SVM containing the destination volume.

About this task

You must perform this task on the **destination** cluster for the SVM containing the destination volume.

Choices

- NAS environment:
  1. Create NAS LIFs.
  2. Create CIFS shares with the same share names that were used on the source.
  3. Create appropriate NFS export policies.
  4. Create appropriate quota rules.
- SAN environment:
  1. Create SAN LIFs.
  2. Optional: Configure portsets.
  3. Configure initiator groups.
  4. For FC, zone the FC switches to enable the SAN clients to access the LIFs.

After you finish

If any changes were made on the SVM containing the source volume, you must replicate the changes manually on the SVM containing the destination volume.

Related information

NetApp Documentation: Clustered Data ONTAP Express Guides

Monitoring the status of SnapMirror data transfers

You should periodically monitor the status of the SnapMirror relationships to ensure that the SnapMirror data transfers are occurring as per the specified schedule.

About this task

You must perform this task from the **destination** cluster.

Steps

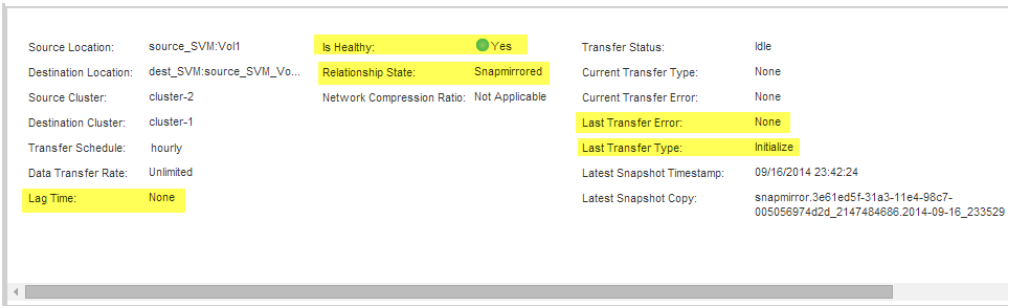
1. Expand the **Storage Virtual Machines** hierarchy in the left navigation pane.
2. Select the Storage Virtual Machine (SVM) that contains the destination volume, and then click **Protection**.
3. Select the SnapMirror relationship between the source and the destination volumes, and then verify the status in the **Details** bottom tab.

   The Details tab displays the health status of the SnapMirror relationship and shows the transfer errors and lag time.

   - The Is Healthy field must display **`Yes`**.
     For most SnapMirror data transfer failures, the field displays **`No`**. In some failure cases, however, the field continues to display **`Yes`**. You must check the transfer errors in the Details section to ensure that no data transfer failure occurred.
   - The Relationship State field must display **`Snapmirrored`**.
   - The Lag Time must be no more than the transfer schedule interval.
     For example, if the transfer schedule is hourly, then the lag time must not be more than an hour.

   You should troubleshoot any issues in the SnapMirror relationships.

   NetApp Technical Report 4015: SnapMirror Configuration and Best Practices Guide for Clustered Data ONTAP


Source Location: source_SVM:Vol1
Destination Location: dest_SVM:source_SVM_Vo...
Source Cluster: cluster-2
Destination Cluster: cluster-1
Transfer Schedule: hourly
Data Transfer Rate: Unlimited
Lag Time: None
Is Healthy: Yes
Relationship State: Snapmirrored
Network Compression Ratio: Not Applicable
Transfer Status: Idle
Current Transfer Type: None
Current Transfer Error: None
Last Transfer Error: None
Last Transfer Type: Initialize
Latest Snapshot Timestamp: 09/16/2014 23:42:24
Latest Snapshot Copy: snapmirror.3e61ed5f-31a3-11e4-98c7-005056974d2d_2147484686.2014-09-16_233529

Where to find additional information

Additional documentation is available to help you activate the destination volume to test the disaster recovery setup or when a disaster occurs. You can also learn more about how to reactivate the source volume after the disaster.

Express guide

- *Clustered Data ONTAP 8.3 Volume Disaster Recovery Express Guide*
  Describes how to quickly activate a destination volume after a disaster and then reactivate the source volume in clustered Data ONTAP 8.3.

Comprehensive guides

- *Clustered Data ONTAP 8.3 Data Protection Guide*
  Provides detailed conceptual and CLI-based task information about disaster recovery by using SnapMirror technology.
- *OnCommand Unified Manager 6.1 Administration Guide*
  Provides information about performing OnCommand Unified Manager tasks using the web UI and information about troubleshooting, as well as providing in-depth conceptual information.

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