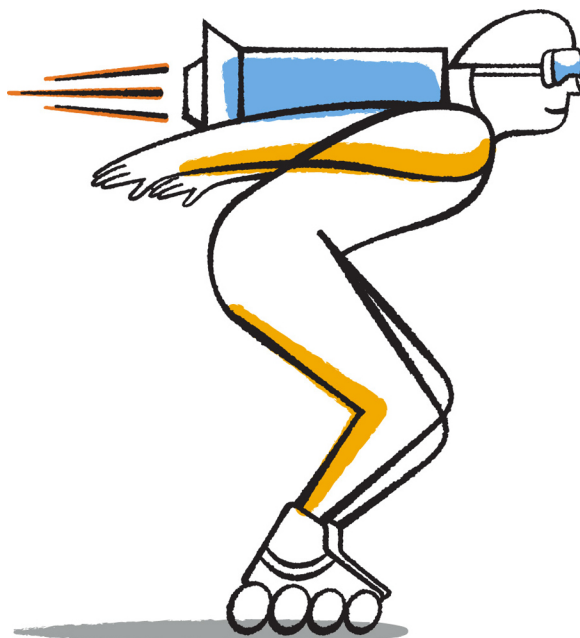




## Clustered Data ONTAP<sup>®</sup> 8.2

### SnapMirror<sup>®</sup> Intercluster Configuration Express Guide



NetApp, Inc.  
495 East Java Drive  
Sunnyvale, CA 94089  
U.S.

Telephone: +1 (408) 822-6000  
Fax: +1 (408) 822-4501  
Support telephone: +1 (888) 463-8277  
Web: [www.netapp.com](http://www.netapp.com)  
Feedback: [doccomments@netapp.com](mailto:doccomments@netapp.com)

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## Deciding whether to use this guide

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This guide describes how to quickly configure and monitor SnapMirror relationships between volumes in different Data ONTAP clusters. You should use this guide if you want to configure and monitor SnapMirror relationships for 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.

This guide is written with the following assumptions:

- You have clustered Data ONTAP 8.2.x running on the source and destination clusters.
- You are a cluster administrator.
- You are using FlexVol volumes and not an Infinite Volume.
- You are using OnCommand System Manager 3.0 or later for the tasks.

If you want to write a script that creates multiple SnapMirror relationships, you might want to use the set of commands provided by Data ONTAP for configuring and managing SnapMirror relationships. See the *Data ONTAP Data Protection Express Guide* or the *Clustered Data ONTAP Commands: Manual Page Reference* for more information about the SnapMirror commands.

If these assumptions are not correct for your situation, or if you want more conceptual background information, you should see the following documentation instead, available from the NetApp Support Site:

- *Clustered Data ONTAP Data Protection Guide*
- *Clustered Data ONTAP Logical Storage Management Guide*
- *SnapMirror Configuration and Best Practices Guide for Data ONTAP 8.1 Operating in Cluster-Mode (TR-4015)*

### Related information

*Documentation on the NetApp Support Site: [support.netapp.com](http://support.netapp.com)*

*Technical Report: [SnapMirror Configuration and Best Practices Guide for Clustered Data ONTAP: media.netapp.com/documents/tr-4015.pdf](http://media.netapp.com/documents/tr-4015.pdf)*

## SnapMirror intercluster configuration workflow

---

You can configure and monitor SnapMirror relationships between volumes residing on different clusters (intercluster) for disaster recovery. To configure SnapMirror relationships between intercluster volumes, you must create the SnapMirror relationship, which includes creating a destination volume, selecting an update schedule and mirror policy, and initializing the relationship.

**Create the SnapMirror relationship:**

- Create a destination volume.
- Selected an updated schedule.
- Select the mirror policy.
- Initialize the SnapMirror relationship.



Monitor the SnapMirror relationship.

## Creating SnapMirror relationships

---

You can create a SnapMirror relationship between volumes on different clusters for disaster recovery. You must create a new destination volume for creating a SnapMirror relationship.

### Before you begin

- The source and destination clusters must be peered.
- The source and destination Vservers must be peered and the peer relationship must be in the peered state.  
For details, see the *Data ONTAP Cluster and Vserver Peering Express Guide*.  
For verifying the peer relationship state, see [Monitoring the status of SnapMirror data transfers](#) on page 10.
- You must have the administrator user name and password for the source and destination clusters.
- The source and destination clusters must be added to System Manager.
- The SnapMirror license must be enabled on both the source and the destination clusters.
- All storage must be configured and set up appropriately to meet the needs of your environment regarding user access, authentication, and client access.

### Steps

1. From the System Manager home page, double-click the appropriate cluster.
2. Expand the **Vservers** hierarchy in the left navigation pane.
3. Select the source Vserver from the left navigation pane that contains the volume you want to protect, and then select **Storage > Volumes**.
4. In the **Details** tab, select the volume you want to protect, and then click **Protect by > Mirror**.  
The Create Mirror Relationship window is displayed.
5. In the Destination Volume section, specify the following details:
  - a. Select the cluster.
  - b. Select the Vserver.
  - c. Click **New Volume**.
  - d. Enter the volume name.
  - e. Select the aggregate for the new volume.

System Manager creates the destination volume with type **DP** and a capacity greater than the capacity of the source volume.

### Example

The following example shows the Create Mirror Relationship window that is launched from the source Vserver.

**Create Mirror Relationship**

Provide asynchronous disaster recovery. Data protection mirror relationships enable you to periodically create and transfer Snapshot copies of data on the source volume to the destination volume; and retain those Snapshot copies.  
[Tell me more about mirror](#)

**Source Volume**

Cluster: cluster02  
 Vserver: vserver0201  
 Volume: vol05src ( Used space 416 KB )

**Destination Volume**

Cluster: cluster03 [Create Peer](#)  
 Vserver: vserver0301  
 Volume: ☒ New Volume ☐ Select Volume  
 Volume name: vol05dest Aggregate: aggr1  
 599.98 GB available (of 956.18 GB)

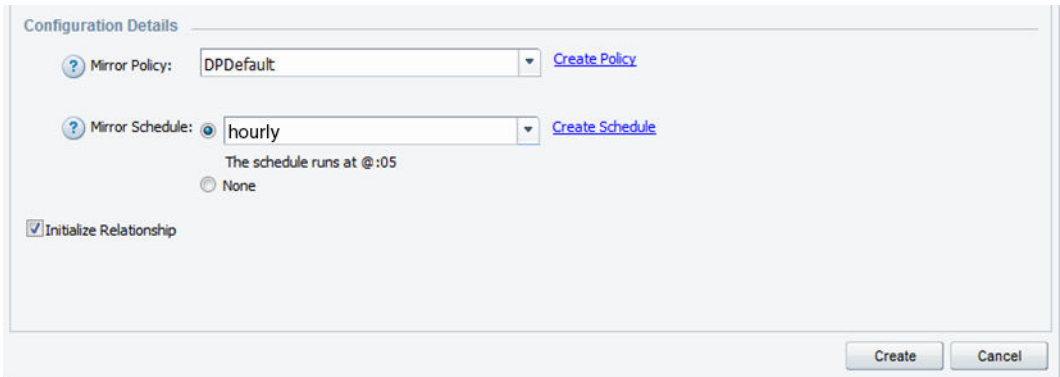
**6.** In the Configuration Details section, specify the following details:

- Retain the default policy **DPDefault** as the mirror policy.
- Select the mirror schedule as **hourly**.
- Ensure that the **Initialize Relationship** check box is selected.

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

### Example

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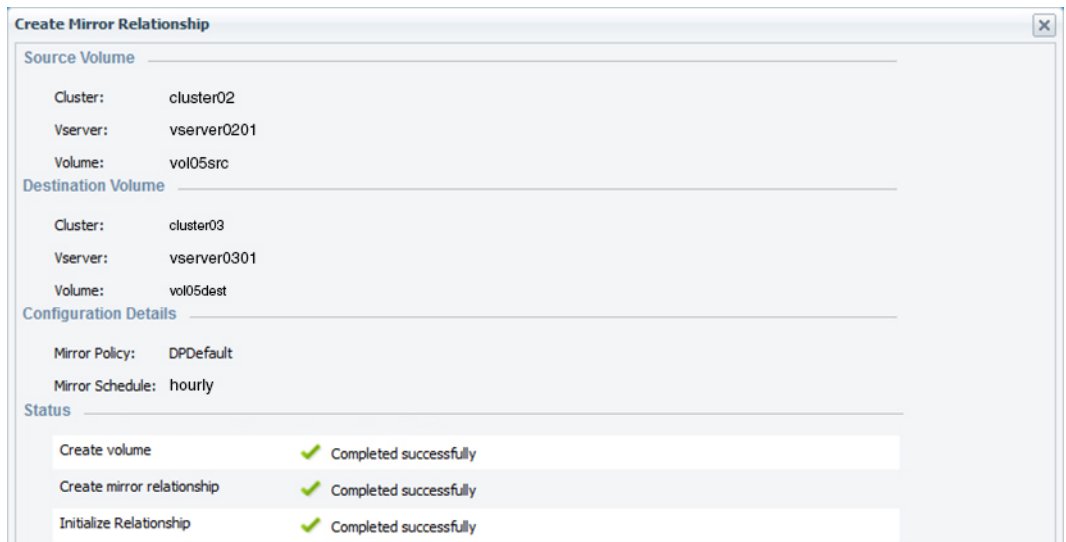
The Configuration Details dialog box shows the following settings:

- Mirror Policy:** DPDefault (with a [Create Policy](#) link)
- Mirror Schedule:** hourly (with a [Create Schedule](#) link). Below this, it states "The schedule runs at @:05" and has a **None** radio button option.
- Initialize Relationship:** ☒ (checked)

Buttons at the bottom right: **Create** and **Cancel**.

### 7. Click **Create**.

The wizard creates the relationship with the default **DPPolicy** mirror policy and the **hourly** schedule, and then it initializes the relationship by starting a baseline transfer of data from the source volume to the destination volume. The Status section shows the status of each job.



The Create Mirror Relationship dialog box displays the following information:

- Source Volume**
  - Cluster: cluster02
  - Vserver: vserver0201
  - Volume: vol05src
- Destination Volume**
  - Cluster: cluster03
  - Vserver: vserver0301
  - Volume: vol05dest
- Configuration Details**
  - Mirror Policy: DPDefault
  - Mirror Schedule: hourly
- Status**

Create volume	✓	Completed successfully
Create mirror relationship	✓	Completed successfully
Initialize Relationship	✓	Completed successfully

### 8. Select the volume from the Volumes list and click **Data protection**.

### 9. In the **Data protection** tab, verify that the SnapMirror relationship you created is listed and the relationship state is **Snapshot mirrored**.



Volumes

CreateEditDelete

StatusSnapshot Copies0\_ResizeStorage EfficiencyMoveProtect byRefresh

Name	Aggregate	Status	Thin Provisioned	% Used	Available Space	Total Space	Storage Efficiency
vol05arc	aggr1	online	No	5	18.84 MB	20 MB	Enabled
vs3_vol_test_data_protection	aggr1	online	Yes	5	972.55 MB	1 GB	Enabled

## Monitoring the status of SnapMirror data transfers

You should periodically monitor the status of SnapMirror relationships, including the status of the cluster peer and Vserver peer relationships, to ensure that the SnapMirror data transfers are occurring per the specified schedule.

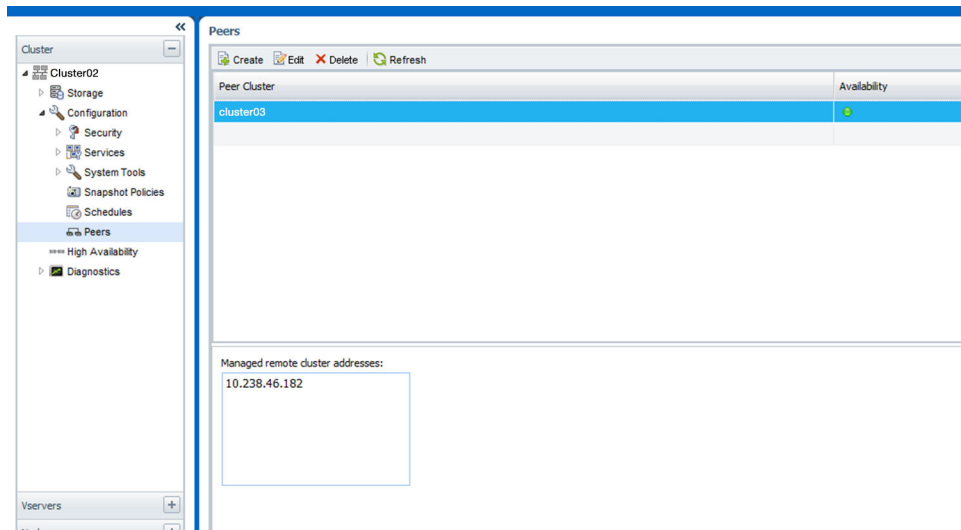
### About this task

You can perform this task either from the source or destination cluster.

### Steps

1. From the System Manager home page, double-click the appropriate cluster.
2. Expand the **Cluster** hierarchy in the left navigation pane.
3. Click **Configuration > Peers**, and then verify that the peer cluster is available.

### Example



4. Expand the **Vservers** hierarchy in the left navigation pane.
5. Select the source Vserver from the “Vservers window,” and then verify that the peer relationship with the destination Vserver is in the peered state.

**Cluster02**

Create Edit Delete Start Stop Manage Refresh

Name	Status	Allowed Protocols
vserver0201	running	NFS, CIFS, iSCSI
vserver0202	running	NFS, CIFS, iSCSI
vserver0203	running	NFS, CIFS, FC/FCoE, iSCSI
vshare	running	NFS, CIFS, iSCSI

**Details**

Protocols: **NFS** CIFS iSCSI  
 Name service switch: file, nis, ldap  
 Name mapping switch: file, ldap  
 Snapshot policy: default  
 NIS domain: -NA-  
 LDAP client: -NA-  
 Language: C.UTF-8  
 Allowed Volume Type: FlexVol Volume

**Peer Vservers**

Name	Cluster	Status	Applications
vserver0301	Cluster03	peered	snapmirror

6. Click **Protection**, and then verify the status of the SnapMirror relationships in the Details section.


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





- The Is Healthy field must display **Yes**.  
For most SnapMirror data transfer failures, the Is Healthy field displays **No**. In some failure cases, however, the Is Healthy field continues to display **Yes**. You must check the transfer errors in the Details section to be certain that no SnapMirror data transfer failure occurred.
- The Relationship State field must either display **Uninitialized** or **Snapmirrored**.
- The Lag Time must be no more than two times the transfer schedule.  
For example, if the SnapMirror relationship is assigned a transfer schedule of **hourly**, the transfer occurs once every day at 05 minutes past the hour. The lag time should be no more than 2 hours since the last transfer.



**Example**

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### Protection

 If you have upgraded from Data ONTAP 8.1.x to 8.2, you must upgrade the SnapMirror relationships through the CLI to view the relationships.

Create  Edit  Delete  Operations  Refresh

Source Vserver	Source Volume	Destination Volume	Is Healthy	Relationship State	Transfer Status	Type	Lag Time
vserver0201	vol05src	vol05dest	 Yes	Snapmirrored	Idle	Mirror	0 day(s) 0 hr(s) 33 min(s)
vserver0201	vol06src	vol06dest	 Yes	Snapmirrored	Idle	Mirror	0 day(s) 56 min(s)

Source Location:

Destination Location:

Source Cluster:

Destination Cluster:

Transfer Schedule:

Data Transfer Rate:

Lag Time:

vserver0201:vol05src

vserver0301:vol05dest

Cluster02

Cluster03


Hourly

Unlimited

0 day(s) 0 hr(s) 33 min(s)

Is Healthy:

Relationship State:

 Yes

Snapmirrored

Transfer Status:

Current Transfer Type:

Current Transfer Error:

Last Transfer Type:

Latest Snapshot Timestamp:

Latest Snapshot Copy:

Idle

None

None

Initialize

08/29/2013 12:43:43

snapmirror.1576e897-0e123478563412\_2147484

## Where to find additional information

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There are additional documents to help you learn more about data protection and other related subjects.

All of the following documentation is available from the NetApp Support Site:

***Technical Report 4015: SnapMirror Configuration and Best Practices Guide for Clustered Data ONTAP 8.2***

Provides information and best practices related to configuring replication in clustered Data ONTAP.

***OnCommand System Manager Help***

Describes how to use OnCommand System Manager to complete typical tasks. Available both from within the product and as a PDF download.

***Clustered Data ONTAP Data Protection Guide***

Describes how to manage your backup and recover data on clustered systems.

***Clustered Data ONTAP Logical Storage Management Guide***

Describes how to efficiently manage your logical storage resources on systems running clustered Data ONTAP, using volumes, FlexClone volumes, files and LUNs, FlexCache volumes, deduplication, compression, qtrees, and quotas.

***Clustered Data ONTAP Network Management Guide***

Describes how to connect your cluster to your Ethernet networks and how to manage logical interfaces (LIFs).

***Clustered Data ONTAP System Administration Guide for Cluster Administrators***

Describes general system administration for NetApp systems running clustered Data ONTAP.

**Related information**

*[Documentation on the NetApp Support Site: support.netapp.com](http://support.netapp.com)*

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