Installation and setup using the ONTAP CLI

ONTAP 9

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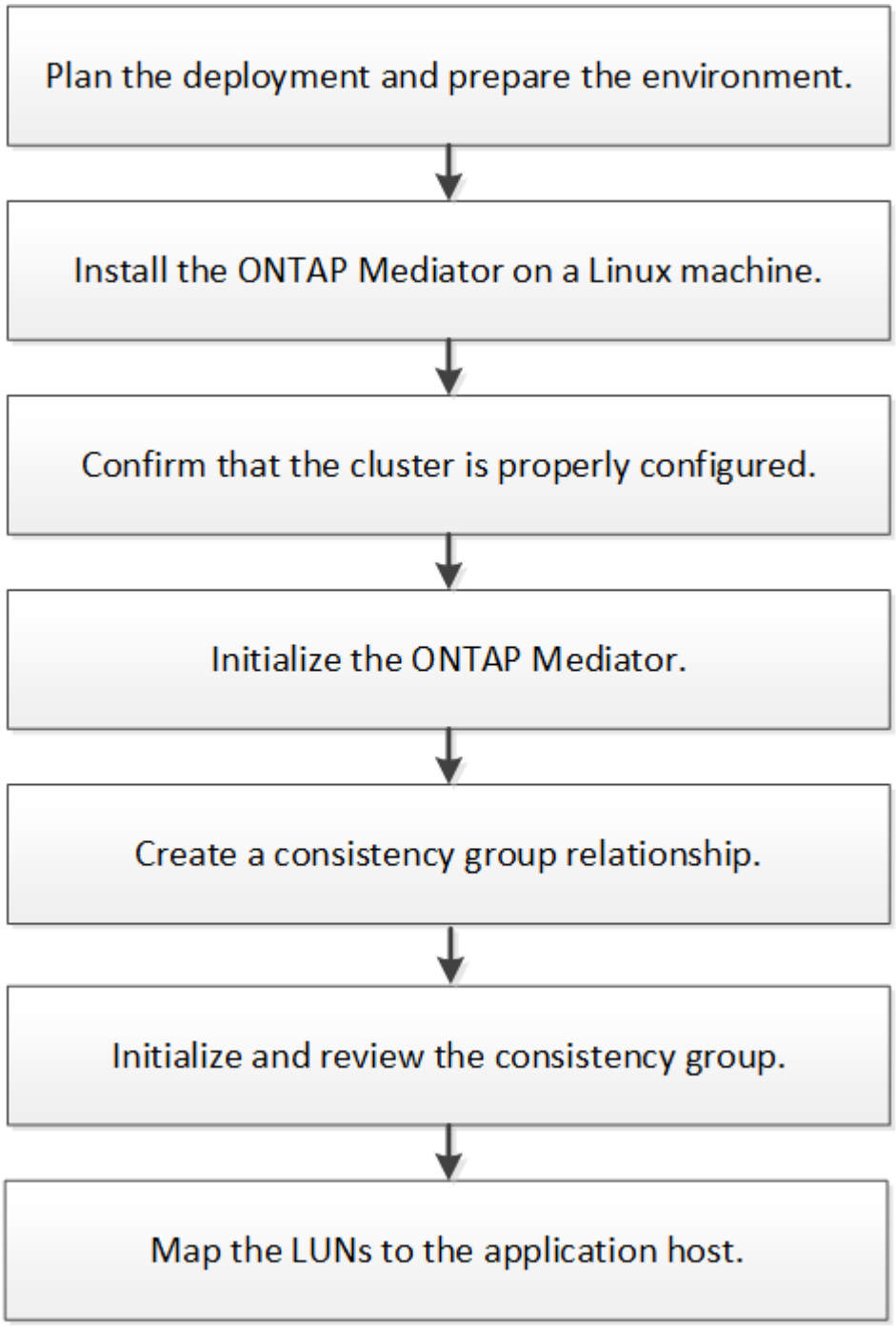
Installation and setup using the ONTAP CLI

High level deployment workflow

You can use the following workflow to install and implement the SnapMirror Business Continuity solution.



Install the ONTAP Mediator

You must install the ONTAP Mediator, which includes accepting the licensing agreement,

before you can configure and use the SnapMirror Business Continuity solution.

Before you begin

The following software is required:

- ONTAP Mediator 1.2 or later
- One of the following Linux distributions:

Mediator version	Supported Linux versions
1.3	Red Hat Enterprise Linux: 7.6, 7.7, 7.8, 7.9, 8.0, 8.1, 8.2, 8.3, 8.4 CentOS: 7.6, 7.7, 7.8, 7.9
1.2	Red Hat Enterprise Linux: 7.6, 7.7, 7.8, 8.0, 8.1 CentOS: 7.6, 7.7, 7.8

About this task

You should install the ONTAP Mediator at an external site that is physically separated from the two ONTAP clusters.

For complete installation instructions, see Installing or upgrading the ONTAP Mediator service

Steps

1. Sign into the Linux system that will host the ONTAP Mediator.
2. Download the mediator installation package from the ONTAP Mediator page.

   ONTAP Mediator download page.

3. Install the ONTAP Mediator and respond to all prompts as required:

   ```
   ./ontap-mediator_1.3
   ```

4. Optionally replace the self-signed SSL and certificate authority (CA) with the third party validated SSL Certificate and CA. The certificate you install must not be expired. Copy the contents of the ca.crt file from the ONTAP Mediator directory:

   ```
   /opt/netapp/lib/ontap_mediator/ontap_mediator/server_config
   ```

5. At the ONTAP CLI, install the certificate on both the local and peer cluster:

   ```
   security certificate install -type server-ca -vserver cserverName
   ```

Confirm the ONTAP cluster configuration

You should make sure that your source and destination clusters are configured properly.

About this task

Proceed through each of the following steps. For each step, you should confirm that the specific configuration has been performed. Use the link included after each step to get more information as needed.

Steps

1. Confirm that a cluster peering relationship exists between the clusters.

   > The default IPspace is required by SM-BC for cluster peer relationships. Custom IPspace is not supported.

   Configure peer relationships

2. Confirm that the Storage VMs are created on each cluster.

   Creating an SVM

3. Confirm that a peer relationship exists between the Storage VMs on each cluster.

   Creating an SVM peering relationship

4. Confirm that the volumes exist for your LUNs.

   Creating a volume

5. Confirm that at least one SAN LIF is created on each node in the cluster.

   Considerations for LIFs in a cluster SAN environment

   Creating a LIF

6. Confirm that the necessary LUNs are created and mapped to igroup, which is used to map LUNs to the initiator on the application host.

   Create LUNs and map igroups

7. Rescan the application host to discover any new LUNs.

Initialize the ONTAP Mediator

You must initialize Mediator on one of your cluster peers before SM-BC can perform planned and automatic unplanned failover operations.

About this task

You can initialize Mediator from either cluster. When you issue the `mediator add` command on one cluster, Mediator is automatically added on the other cluster.

Steps

1. Initialize Mediator on one of the clusters:

   ```
   snapmirror mediator add -mediator-address IP_Address -peer-cluster
   cluster_name -username user_name
   ```

   Example

```
cluster1::> snapmirror mediator add -mediator-address 192.168.10.1 -peer
-cluster cluster2 -username mediatoradmin
Notice: Enter the mediator password.

Enter the password: ******
Enter the password again: ******
```

2. Check the status of the Mediator configuration:

   `snapmirror mediator show`

```
Mediator Address Peer Cluster     Connection Status Quorum Status
---------------- ---------------- ----------------- -------------
192.168.10.1     cluster-2        connected         true
```

   `-quorum-status` indicates whether the SnapMirror consistency group relationships are synchronized with Mediator.

Create a consistency group relationship

You must create a SM-BC consistency group which also establishes the synchronous consistency group relationship.

> This workflow applies to users in ONTAP 9.8 and 9.9. If using these ONTAP CLI commands beginning with ONTAP 9.10.1, they will still work to create a consistency group, however, it is recommended that you manage consistency groups with System Manager or the ONTAP REST API.

Before you begin

The following prerequisites and restrictions apply:

- You must be a cluster or storage VM administrator
- You must have a SnapMirror Synchronous license
- The destination volumes must be type DP
- The primary and the secondary storage VM must be in a peered relationship
- All constituent volumes in a consistency group must be in a single Storage VM
- You cannot establish SM-BC consistency group relationships across ASA clusters and non-ASA clusters
- The name of the consistency group must be unique

About this task

You must create the consistency group relationship from the destination cluster. You can map up to 12 constituents using the `cg-item-mappings` parameter on the `snapmirror create` command.

Steps

1. Create a consistency group and constituent relationship. This example creates two consistency groups: cg_src with constituent volumes vol1 and vol2, and cg_dist with constituent volumes vol1_dr and vol2_dr.

   ```
   destination::> snapmirror create -source-path vs1_src:/cg/cg_src -destination
   -path vs1_dst:/cg/cg_dst -cg-item-mappings
   vol_src1:@vol_dst1,vol_src2:@vol_dst2 -policy AutomatedFailOver
   ```

Initialize a consistency group

After creating a consistency group, you must initialize it.

> This workflow applies to users in ONTAP 9.8 and 9.9. If using these ONTAP CLI commands beginning with ONTAP 9.10.1, they will still work to initialize a consistency group, however, is recommended that you manage consistency groups with System Manager or the ONTAP REST API.

Before you begin

You must be a cluster or storage VM administrator.

About this task

You initialize the consistency group from the destination cluster.

Steps

1. Sign in to the ONTAP CLI at the destination cluster and initialize the consistency group:

   ```
   destination::>snapmirror initialize -destination-path vs1_dst:/cg/cg_dst
   ```

2. Confirm that the initialization operation completed successfully. The status should be `InSync`.

   ```
   snapmirror show
   ```

Mapping LUNs to the application hosts

You must create an igroup on each cluster so you can map LUNs to the initiator on the application host.

About this task

You should perform this configuration on both the source and destination clusters.

Steps

1. Create an igroup on each cluster:

   ```
   lun igroup create -igroup name -protocol fcp|iscsi -ostype os -initiator
   initiator_name
   ```

   Example

```
lun igroup create -igroup ig1 -protocol iscsi -ostype linux -initiator
-initiator iqn.2001-04.com.example:abc123
```

2. Map LUNs to the igroup:

   `lun map -path path_name -igroup igroup_name`

   Example:

   ```
   lun map -path /vol/src1/11 -group ig1
   ```

3. Verify the LUNs are mapped:

   `lun show`

4. On the application host, discover the new LUNs.

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