Configure peer relationships (ONTAP 9.3 and later)

ONTAP 9

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Create a cluster peer relationship (ONTAP 9.3 and later)

You can use the `cluster peer create` command to create a peer relationship between a local and remote cluster. After the peer relationship has been created, you can run `cluster peer create` on the remote cluster to authenticate it to the local cluster.

What you'll need

- You must have created intercluster LIFs on every node in the clusters that are being peered.
- The clusters must be running ONTAP 9.3 or later.

Steps

1. On the destination cluster, create a peer relationship with the source cluster:

   `cluster peer create -generate-passphrase -offer-expiration` *`MM/DD/YYYY HH:MM:SS`*`|1…7days|1…168hours -peer-addrs` *`peer_LIF_IPs`* `-initial-allowed-vserver -peers` *`svm_name`*`,..|* -ipspace` *`ipspace`*

   If you specify both `-generate-passphrase` and `-peer-addrs`, only the cluster whose intercluster LIFs are specified in `-peer-addrs` can use the generated password.

   You can ignore the `-ipspace` option if you are not using a custom IPspace. For complete command syntax, see the man page.

   If you are creating the peering relationship in ONTAP 9.6 or later and you do not want cross-cluster peering communications to be encrypted, you must use the `-encryption-protocol-proposed none` option to disable encryption.

   The following example creates a cluster peer relationship with an unspecified remote cluster, and pre-authorizes peer relationships with SVMs `vs1` and `vs2` on the local cluster:

   ```
   cluster02::> cluster peer create -generate-passphrase -offer-expiration
   2days -initial-allowed-vserver-peers vs1,vs2

                       Passphrase: UCa+6lRVICXeL/gq1WrK7ShR
                 Expiration Time: 6/7/2017 08:16:10 EST
     Initial Allowed Vserver Peers: vs1,vs2
               Intercluster LIF IP: 192.140.112.101
                 Peer Cluster Name: Clus_7ShR (temporary generated)

   Warning: make a note of the passphrase - it cannot be displayed again.
   ```

   The following example creates a cluster peer relationship with the remote cluster at intercluster LIF IP addresses 192.140.112.103 and 192.140.112.104, and pre-authorizes a peer relationship with any SVM on the local cluster:

```
cluster02::> cluster peer create -generate-passphrase -peer-addrs
192.140.112.103,192.140.112.104 -offer-expiration 2days -initial-allowed
-vserver-peers *

                    Passphrase: UCa+6lRVICXeL/gq1WrK7ShR
              Expiration Time: 6/7/2017 08:16:10 EST
  Initial Allowed Vserver Peers: vs1,vs2
            Intercluster LIF IP: 192.140.112.101,192.140.112.102
              Peer Cluster Name: Clus_7ShR (temporary generated)

Warning: make a note of the passphrase - it cannot be displayed again.
```

The following example creates a cluster peer relationship with an unspecified remote cluster, and pre-authorizes peer relationships with SVMs`vs1` and `vs2` on the local cluster:

```
cluster02::> cluster peer create -generate-passphrase -offer-expiration
2days -initial-allowed-vserver-peers vs1,vs2

                    Passphrase: UCa+6lRVICXeL/gq1WrK7ShR
              Expiration Time: 6/7/2017 08:16:10 EST
  Initial Allowed Vserver Peers: vs1,vs2
            Intercluster LIF IP: 192.140.112.101
              Peer Cluster Name: Clus_7ShR (temporary generated)

Warning: make a note of the passphrase - it cannot be displayed again.
```

2. On source cluster, authenticate the source cluster to the destination cluster:

   `cluster peer create -peer-addrs` *`peer_LIF_IPs`* `-ipspace ipspace`

   For complete command syntax, see the man page.

   The following example authenticates the local cluster to the remote cluster at intercluster LIF IP addresses 192.140.112.101 and 192.140.112.102:

```
cluster01::> cluster peer create -peer-addrs
192.140.112.101,192.140.112.102

Notice: Use a generated passphrase or choose a passphrase of 8 or more
characters.
        To ensure the authenticity of the peering relationship, use a
phrase or sequence of characters that would be hard to guess.

Enter the passphrase:
Confirm the passphrase:

Clusters cluster02 and cluster01 are peered.
```

Enter the passphrase for the peer relationship when prompted.

3. Verify that the cluster peer relationship was created:

   `cluster peer show -instance`

```
cluster01::> cluster peer show -instance

                                Peer Cluster Name: cluster02
                    Remote Intercluster Addresses: 192.140.112.101,
192.140.112.102
              Availability of the Remote Cluster: Available
                             Remote Cluster Name: cluster2
                             Active IP Addresses: 192.140.112.101,
192.140.112.102
                            Cluster Serial Number: 1-80-123456
                    Address Family of Relationship: ipv4
            Authentication Status Administrative: no-authentication
               Authentication Status Operational: absent
                               Last Update Time: 02/05 21:05:41
                     IPspace for the Relationship: Default
```

4. Check the connectivity and status of the nodes in the peer relationship:

   `cluster peer health show`

```
cluster01::> cluster peer health show
Node       cluster-Name                Node-Name
             Ping-Status               RDB-Health Cluster-Health  Avail…
---------- --------------------------- ---------  ---------------
--------
cluster01-01
           cluster02                   cluster02-01
             Data: interface_reachable
             ICMP: interface_reachable true       true            true
                                       cluster02-02
             Data: interface_reachable
             ICMP: interface_reachable true       true            true
cluster01-02
           cluster02                   cluster02-01
             Data: interface_reachable
             ICMP: interface_reachable true       true            true
                                       cluster02-02
             Data: interface_reachable
             ICMP: interface_reachable true       true            true
```

Other ways to do this in ONTAP

To perform these tasks with…	See this content…
The redesigned System Manager (available with ONTAP 9.7 and later)	Prepare for mirroring and vaulting
System Manager Classic (available with ONTAP 9.7 and earlier)	Volume disaster recovery preparation overview

Create an intercluster SVM peer relationship (ONTAP 9.3 and later)

You can use the `vserver peer create` command to create a peer relationship between SVMs on local and remote clusters.

What you'll need

- The source and destination clusters must be peered.
- The clusters must be running ONTAP 9.3.
- You must have "pre-authorized" peer relationships for the SVMs on the remote cluster.

  For more information, see Creating a cluster peer relationship (ONTAP 9.3 and later).

About this task

Previous releases of ONTAP let you authorize a peer relationship for only one SVM at a time. You needed to

run the `vserver peer accept` command each time you authorized a pending SVM peer relationship.

Beginning with ONTAP 9.3, you can "pre-authorize" peer relationships for multiple SVMs by listing the SVMs in the `-initial-allowed-vserver` option when you create a cluster peer relationship. For more information, see Creating a cluster peer relationship (ONTAP 9.3 and later).

Steps

1. On the data protection destination cluster, display the SVMs that are pre-authorized for peering:

   `vserver peer permission show`

   ```
   cluster02::> vserver peer permission show
   Peer Cluster         Vserver               Applications
   -------------------  --------------------  --------------------
   cluster02            vs1,vs2               snapmirror
   ```

2. On the data protection source cluster, create a peer relationship to a pre-authorized SVM on the data protection destination cluster:

   `vserver peer create -vserver` *`local_SVM`* `-peer-vserver` *`remote_SVM`*

   For complete command syntax, see the man page.

   The following example creates a peer relationship between the local SVM `pvs1` and the pre-authorized remote SVM `vs1`:

   ```
   cluster01::> vserver peer create -vserver pvs1 -peer-vserver vs1
   ```

3. Verify the SVM peer relationship:

   `vserver peer show`

   ```
   cluster01::> vserver peer show
               Peer        Peer                           Peering
   Remote
   Vserver     Vserver     State        Peer Cluster      Applications
   Vserver
   ----------- ----------- ------------ ----------------- --------------
   ---------
   pvs1        vs1         peered       cluster02         snapmirror
   vs1
   ```

Add an intercluster SVM peer relationship (ONTAP 9.3 and later)

If you create an SVM after configuring a cluster peer relationship, you will need to add a peer relationship for the SVM manually. You can use the `vserver peer create` command to create a peer relationship between SVMs. After the peer relationship has been created, you can run `vserver peer accept` on the remote cluster to authorize the peer relationship.

What you'll need

The source and destination clusters must be peered.

About this task

You can create a peer relationships between SVMs in the same cluster for local data backup. For more information, see the `vserver peer create` man page.

Administrators occasionally use the `vserver peer reject` command to reject a proposed SVM peer relationship. If the relationship between SVMs is in the `rejected` state, you must delete the relationship before you can create a new one. For more information, see the `vserver peer delete` man page.

Steps

1. On the data protection source cluster, create a peer relationship with an SVM on the data protection destination cluster:

   `vserver peer create -vserver` *`local_SVM`* `-peer-vserver` *`remote_SVM`* `-applications snapmirror|file-copy|lun-copy -peer-cluster` *`remote_cluster`*

   The following example creates a peer relationship between the local SVM`pvs1` and the remote SVM`vs1`

   ```
   cluster01::> vserver peer create -vserver pvs1 -peer-vserver vs1
   -applications snapmirror -peer-cluster cluster02
   ```

   If the local and remote SVMs have the same names, you must use a *local name* to create the SVM peer relationship:

   ```
   cluster01::> vserver peer create -vserver vs1 -peer-vserver
   vs1 -applications snapmirror -peer-cluster cluster01
   -local-name cluster1vs1LocallyUniqueName
   ```

2. On the data protection source cluster, verify that the peer relationship has been initiated:

   `vserver peer show-all`

   For complete command syntax, see the man page.

   The following example shows that the peer relationship between SVM`pvs1` and SVM`vs1` has been initiated:

```
cluster01::> vserver peer show-all
                    Peer              Peer                           Peering
Vserver             Vserver           State       Peer Cluster
Applications
-----------         -----------       ----------  --------------
------------
pvs1                vs1               initiated   Cluster02
snapmirror
```

3. On the data protection destination cluster, display the pending SVM peer relationship:

   `vserver peer show`

   For complete command syntax, see the man page.

   The following example lists the pending peer relationships for `cluster02`:

```
cluster02::> vserver peer show

                    Peer               Peer
Vserver             Vserver            State
-----------         -----------        ------------
vs1                 pvs1               pending
```

4. On the data protection destination cluster, authorize the pending peer relationship:

   `vserver peer accept -vserver` *`local_SVM`* `-peer-vserver` *`remote_SVM`*

   For complete command syntax, see the man page.

   The following example authorizes the peer relationship between the local SVM `vs1` and the remote SVM `pvs1`:

```
cluster02::> vserver peer accept -vserver vs1 -peer-vserver pvs1
```

5. Verify the SVM peer relationship:

   `vserver peer show`

```
cluster01::> vserver peer show
            Peer        Peer                           Peering
Remote
Vserver     Vserver     State        Peer Cluster      Applications
Vserver
----------- ----------- ------------ ----------------- --------------
---------
pvs1        vs1         peered       cluster02         snapmirror
vs1
```

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