■ NetApp

cluster peer commands

ONTAP 9.3 commands

NetApp August 29, 2024

This PDF was generated from https://docs.netapp.com/us-en/ontap-cli-93/cluster-peer-create.html on August 29, 2024. Always check docs.netapp.com for the latest.

Table of Contents

luster peer commands	1
cluster peer create	1
cluster peer delete	. 10
cluster peer modify-local-name	. 10
cluster peer modify	. 11
cluster peer ping	. 15
cluster peer show	. 17
cluster peer connection show.	. 24
cluster peer health show	. 26
cluster peer offer cancel	. 29
cluster peer offer modify	. 29
cluster peer offer show	. 30
cluster peer policy modify	. 31
cluster peer policy show	. 32

cluster peer commands

cluster peer create

Create a new cluster peer relationship

Availability: This command is available to *cluster* administrators at the *admin* privilege level.

Description

The cluster peer create command establishes a peer relationship between two clusters. Cluster peering enables independent clusters to coordinate and exchange data.

Before creating a new cluster peer relationship, make sure that both clusters are individually healthy and that there are no other peer relationships between the two clusters that might interfere with the new relationship.

You can create a cluster peer relationship using the IPv4 or IPv6 protocol. You may not use both protocols within a single relationship.

Use the cluster show and cluster peer show commands on each cluster to display health, peering eligibility, and peering information about the two clusters.

Parameters

[-peer-addrs <Remote InetAddress>,...] - Remote Intercluster Addresses

Use this parameter to specify the names or IP addresses of the logical interfaces used for intercluster communication. Separate the addresses with commas.

The addresses you provide here are associated with the remote cluster until you modify or delete the relationship, regardless of whether the addresses are valid. Make sure to provide addresses which you know will remain available on the remote cluster. You can use the hostnames of the remote cluster's intercluster addresses, the IP addresses of the remote cluster's intercluster LIFs or both.

[-username <text>] - Remote User Name

Use this optional parameter to specify a username that runs a reciprocal cluster peer create command on the peered cluster. If you choose not to use the reciprocal creation option, by not supplying a username for reciprocal creation, you must run cluster peer create again on the remote cluster to complete the peering relationship.

If you specify the username for the remote cluster, you will be prompted to enter the associated remote password. These credentials are not stored, they are used only during creation to authenticate with the remote cluster and to enable the remote cluster to authorize the peering request. The provided username's profile must have access to the console application in the remote cluster.

Use the security login role show and security login show commands on each cluster to find user names and their privilege levels.

[-no-authentication <true>] - Do Not Use Authentication

Use this optional parameter when omitting the -username parameter to indicate that you will create an unauthenticated peering relationship.

[-timeout <integer>] - Operation Timeout (seconds) (privilege: advanced)

Use this optional parameter to specify a timeout value for peer communications. Specify the value in seconds. The default timeout value is 60 seconds.

[-address-family {ipv4|ipv6}] - Address Family of Relationship

Use this optional parameter to specify the address family of the cluster peer relationship. The default is based on existing relationships, existing local intercluster LIFs belonging to a particular address-family, and the addresses supplied to the cluster peer create command.

[-offer-expiration $\{MM/DD/YYYY HH:MM:SS \mid \{1...7\} days \mid \{1...168\} hours\}$] - Passphrase Match Deadline

Specifying cluster peer create normally creates an offer to establish authentication with a cluster that is a potential cluster peer to this cluster. Such offers expire unless they are accepted within some definite time. Use this optional parameter to specify the date and time at which this offer should expire, the time after which the offer will no longer be accepted.

[-rpc-connect-timeout <integer>] - Timeout for RPC Connect (seconds) (privilege: advanced)

Use this optional parameter to specify a timeout value for the RPC connect during peer communications. Specify the value in seconds. The default timeout value is 10 seconds.

[-update-ping-timeout <integer>] - Timeout for Update Pings (seconds) (privilege: advanced)

Use this optional parameter to specify a timeout value for pings while updating remote cluster information. Specify the value in seconds. The default timeout value is 5 seconds. This parameter applies only to cluster peer relationships using the IPv4 protocol.

[-ipspace <IPspace>] - IPspace for the Relationship

Use this optional parameter to specify the IPspace within which the cluster peering relationship is to operate. The default is to use the 'Default' IPspace.

[-local-name <Cluster name>] - Peer Cluster Local Name

Use this optional parameter to specify a unique local name to identify the remote cluster that is being peered. The local name must conform to the same rules as a cluster name. The default value is the remote cluster name.

[-generate-passphrase <true>] - Use System-Generated passphrase

Use this optional parameter alone to create cluster peer offer for the unidentified clusters or use it along with <code>-peer-addrs</code> option to automatically generate the passphrase for the cluster peer operation with the peer cluster.

[-initial-allowed-vserver-peers <Vserver Name>,...] - Vservers allowed for auto peering

Use this optional parameter to specify the list of Vservers for which reciprocal Vserver peering with peer cluster should be enabled. Upon the time of successful peering, Vserver peer permission entries will be created for the peer cluster for the specified list of Vservers.

Examples

This example creates a peer relationship between cluster1 and cluster2. This reciprocal create executes the create command on both the local cluster and the remote cluster. The cluster peer create command can use the hostnames of cluster2's intercluster addresses, the IP addresses of cluster2's intercluster LIFs, or both. Note that the admin user's password was typed at the prompt, but was not displayed.

cluster1::> cluster peer create -peer-addrs cluster2-d2,10.98.234.246 -username admin Remote Password: cluster1::> cluster peer show -instance Peer Cluster Name: cluster2 Remote Intercluster Addresses: cluster2-d2, 10.98.234.246 Availability of the Remote Cluster: Available Remote Cluster Name: cluster2 Active IP Addresses: 10.98.234.246, 10.98.234.243 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 Guidance for When Encryption Should Be Used: never

This example shows coordinated peer creation. The cluster peer create command was issued locally on each cluster. This does not require you to provide the username and password for the remote cluster. There is a password prompt, but if you are logged in as the admin user, you may simply press enter.

cluster1::> cluster peer create -peer-addrs cluster2-d2, 10.98.234.246 -no -authentication Remote Password: NOTICE: Addition of the local cluster information to the remote cluster has failed with the following error: not authorized for that command. You may need to repeat this command on the remote cluster. cluster1::> cluster peer show Peer Cluster Name Cluster Serial Number Availability Authentication -----1-80-123456 cluster2 Available absent

This example shows a reciprocal cluster peer create over IPv6 addresses, that establishes a cluster peer relationship with an IPv6 address family.

```
cluster1::> cluster peer create -peer-addrs
FD20:8B1E:B255:C222:6A17:0BBD:E92C:4523 -username admin
Remote Password:
cluster1::> cluster peer show -instance
Address Family of Relationship: ipv6
                          Peer Cluster Name: cluster2
              Remote Intercluster Addresses:
FD20:8B1E:B255:C222:6A17:0BBD:E92C:4523
         Availability of the Remote Cluster: Available
                        Remote Cluster Name: cluster2
                        Active IP Addresses:
FD20:8B1E:B255:C222:6A17:0BBD:E92C:4523
                      Cluster Serial Number: 1-80-123456
             Address Family of Relationship: ipv6
       Authentication Status Administrative: no-authentication
          Authentication Status Operational: absent
                           Last Update Time: 02/05 21:05:41
               IPspace for the Relationship: Default
Guidance for When Encryption Should Be Used: never
```

This example shows creation of an authenticated peering relationship. It is an example of using the coordinated method to create a cluster peer relationship. The cluster peer create command is issued locally on each cluster. Before executing this pair of commands, a passphrase to be used with the commands is chosen and given at the prompts. The passphrase can be any text; it is prompted for twice on each cluster, and all four copies of the passphrase must agree. The passphrase does not echo on the screen. The

passphrase must be longer than the minimum length as specified by the cluster peer policy on both clusters.

```
cluster1::> cluster peer create -peer-addrs cluster2-d2, 10.98.234.246
Enter the passphrase:
Enter the passphrase again:
Notice: Now use the same passphrase in the "cluster peer create" command
in the
      other cluster.
cluster1::> cluster peer show
Peer Cluster Name Cluster Serial Number Availability
Authentication
cluster2
                                      Unavailable pending
cluster2::> cluster peer create -peer-addrs cluster1-d2
Enter the passphrase:
Enter the passphrase again:
cluster2::> cluster peer show
Peer Cluster Name Cluster Serial Number Availability
Authentication
______
_____
cluster1
                    1-80-654321
                                     Available ok
```

This example creates a peer relationship between cluster1 and cluster2. This reciprocal create executes the create command on both the local cluster and the remote cluster. The cluster peer create command can use the hostnames of cluster2's intercluster addresses, the IP addresses of cluster2's intercluster LIFs or both. Note that the admin user's password was typed at the prompt, but was not displayed. The <code>-local-name</code> parameter is specified to create a local name used to identify the peer cluster in cases where the name of the peer cluster is not unique or not descriptive.

cluster1::> create -peer-addrs 10.98.191.193 -username admin -local-name locallyUniqueName cluster1::> cluster peer show Peer Cluster Name Cluster Serial Number Availability Authentication ______ locallyUniqueName 1-80-000011 Available absent cluster1::> cluster peer show -instance Peer Cluster Name: locallyUniqueName Remote Intercluster Addresses: 10.98.191.193 Availability of the Remote Cluster: Available Remote Cluster Name: cluster2 Active IP Addresses: 10.98.191.193 Cluster Serial Number: 1-80-000011 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 Guidance for when Encryption Should Be Used: never

The following example create a peer relationship between cluster1 and cluster2 using system-generated passphrases:

cluster1::> cluster peer create -peer-addrs 10.98.191.193 -generate -passphrase Passphrase: UCa+61RVICXeL/gq1WrK7ShR Peer Cluster Name: cluster2 Initial Allowed Vserver Peers: -Expiration Time: 6/7/2017 09:16:10 +5:30 Intercluster LIF IP: 10.140.106.185 Warning: make a note of the passphrase - it cannot be displayed again. cluster1::> cluster peer show Peer Cluster Name Cluster Serial Number Availability Authentication _____ cluster2 Unavailable pending cluster2::> cluster peer create -peer-addrs 10.140.106.185 Enter the passphrase: Clusters cluster1 and cluster2 are peered. cluster2::> cluster peer show Peer Cluster Name Cluster Serial Number Availability Authentication ___________ _____ 1-80-654321 Available ok cluster1

The following example creates a cluster peer offer from cluster1 for an anonymous cluster using system-generated passphrase with offer expiration period of two days and the cluster2 uses the offer from cluster2 with the system-generated passphrase:

cluster1::> cluster peer create -generate-passphrase -offer-expiration 2days Passphrase: UCa+61RVICXeL/gq1WrK7ShR Peer Cluster Name: Clus 7ShR (temporary generated) Initial Allowed Vserver Peers: -Expiration Time: 6/9/2017 08:16:10 +5:30 Intercluster LIF IP: 10.140.106.185 Warning: make a note of the passphrase - it cannot be displayed again. cluster1::> cluster peer show Peer Cluster Name Cluster Serial Number Availability Authentication _____ Clus 7ShR Unidentified pending cluster2::> cluster peer create -peer-addrs 10.140.106.185 Enter the passphrase: Clusters cluster1 and cluster2 are peered. cluster2::> cluster peer show Peer Cluster Name Cluster Serial Number Availability Authentication 1-80-654321 Available ok cluster1

Cluster "cluster1" creates an offer with initial-allowed-vserver-peers option set to Vservers "vs1" and "vs2". And the peer cluster "cluster2" uses the offer and creates peer relationship with cluster1, upon the successful peer relationship establishment, Vserver peer permission entries are created for the Vservers "vs1" and "vs2" in cluster "cluster1" for the peer cluster "cluster2". The following example describes the usage of initial-allowed-vserver-peers option in the cluster peer creation workflow:

cluster1::> cluster peer create -generate-passphrase -initial-allowed -vserver-peers vs1, vs2 Passphrase: UCa+61RVICXeL/gq1WrK7ShR Peer Cluster Name: Clus 7ShR (temporary generated) Initial Allowed Vserver Peers: vs1, vs2 Expiration Time: 6/7/2017 09:16:10 +5:30 Intercluster LIF IP: 10.140.106.185 Warning: make a note of the passphrase - it cannot be displayed again. cluster1::> cluster peer show Peer Cluster Name Cluster Serial Number Availability Authentication _____ Unidentified pending Clus 7ShR cluster2::> cluster peer create -peer-addrs 10.140.106.185 Enter the passphrase: Clusters cluster1 and cluster2 are peered. cluster2::> cluster peer show Peer Cluster Name Cluster Serial Number Availability Authentication cluster1 1-80-654321 Available ok cluster1::> vserver peer permission show Peer Cluster Vserver Applications cluster2 snapmirror vs1 vs2 snapmirror 2 entries were displayed.

Related Links

- · cluster show
- cluster peer show
- · security login role show
- · security login show

cluster peer delete

Delete a cluster peer relationship

Availability: This command is available to *cluster* administrators at the *admin* privilege level.

Description

The cluster peer delete command removes a peering relationship. It removes the relationship records, state data, and all associated jobs.

Before removing the relationship, the command verifies that no resources depend on the relationship. For example, if any SnapMirror relationships exist, the command denies the request to delete the peering relationship. You must remove all dependencies for the deletion to succeed. The cluster peer delete command removes only the local instance of the peer relationship. An administrator in the peer cluster must use the cluster peer delete command there as well to completely remove the relationship.

Parameters

-cluster <text> - Peer Cluster Name

Use this parameter to specify the peering relationship to delete by specifying the name of the peered cluster.

Examples

This example shows a failed deletion due to a SnapMirror dependency.

cluster peer modify-local-name

Modify the local name for a cluster peer

Availability: This command is available to *cluster* administrators at the *admin* privilege level.

Description

The cluster peer modify-local-name command modifies the local name for a remote cluster. The new local name must be unique among all the local names for the remote clusters with which this cluster is peered.

Parameters

-name <text> - Cluster Peer Name

Use this parameter to specify the existing local name for a peer cluster.

-new-name <Cluster name> - Cluster Peer Local Name

Use this parameter to specify the new local name of the peer cluster. The new local name must conform to the same rules as a cluster name.

Examples

cluster2::> cluster peer modify-local-name -name cluster1 -new-name
cluster1A

cluster peer modify

Modify cluster peer relationships

Availability: This command is available to *cluster* administrators at the *admin* privilege level.

Description

The cluster peer modify command modifies the attributes of a peering relationship. When you modify a peer relationship and specify -peer-addrs, all of the remote addresses must respond, must be intercluster addresses, and must belong to the remote cluster that is being modified; or the modification request is denied.

Parameters

-cluster <text> - Peer Cluster Name

Use this parameter to specify the peering relationship to modify by specifying the name of the peered cluster.

[-peer-addrs <Remote InetAddress>,...] - Remote Intercluster Addresses

Use this parameter to specify the names or IP addresses of the logical interfaces used for intercluster communication. Separate the addresses with commas. The list of addresses you provide replaces the existing list of addresses.

[-address-family {ipv4|ipv6}] - Address Family of Relationship

Use this parameter to specify the address family of the names specified with the peer-addrs parameter.

[-timeout <integer>] - Operation Timeout (seconds) (privilege: advanced)

Use this parameter to specify a timeout value for peer communications. Specify the value in seconds.

[-auth-status-admin {no-authentication|revoked|use-authentication}] - Authentication Status Administrative

Use this parameter to adjust the authentication in use for the peer relationship. The defined values for this field are as follows.

- no-authentication The cluster peer relationship uses no authentication.
- use-authentication The cluster peer relationship is to be authenticated. After you use this value, you
 will be prompted for a passphrase to be used in determining a new authentication key, just as in the
 authenticated cluster peer create command or you can use the option generate-passphrase to
 automatically generate the passphrase.

• revoked - The cluster peer relationship is no longer to be trusted. Peering communication with this cluster peer is suspended until the two clusters set their <code>auth-status-admin</code> attributes either both to <code>no-authentication</code> or both to <code>use-authentication</code>.

Changes should be reflected on both clusters involved in a peering relationship.

[-rpc-connect-timeout <integer>] - Timeout for RPC Connect (seconds) (privilege: advanced)

Use this optional parameter to specify a timeout value for the RPC connect during peer communications. Specify the value in seconds.

[-update-ping-timeout <integer>] - Timeout for Update Pings (seconds) (privilege: advanced)

Use this optional parameter to specify a timeout value for pings while updating remote cluster information. Specify the value in seconds. This parameter applies only to cluster peer relationships using the IPv4 protocol.

[-ipspace <IPspace>] - IPspace for the Relationship

Use this optional parameter to specify that cluster peering communication for this remote cluster is to be done using local intercluster LIFs that are on ports in the named IPspace.

[-generate-passphrase <true>] - Use System-Generated passphrase

Use this optional parameter along with <code>-auth-status-admin</code> option's <code>use-authentication</code> to automatically generate the passphrase which can be used for cluster peer operation.

Examples

This example modifies the peering relationship to use a new IP address in the remote cluster for intercluster communications and revoke authentication.

View existing cluster peer configuration using following command:

```
cluster1::> cluster peer show -instance
Peer Cluster Name: cluster2
              Remote Intercluster Addresses: cluster2-d2, 10.98.234.246
         Availability of the Remote Cluster: Available
                        Remote Cluster Name: cluster2
                        Active IP Addresses: 10.98.234.246, 10.98.234.243
                      Cluster Serial Number: 1-80-123456
                       Remote Cluster Nodes: cluster2-01, cluster2-02
                      Remote Cluster Health: true
                    Unreachable Local Nodes: -
             Address Family of Relationship: ipv4
       Authentication Status Administrative: use-authentication
          Authentication Status Operational: ok
                           Last Update Time: 02/05 21:05:41
               IPspace for the Relationship: Default
Guidance for when Encryption Should Be Used: as-possible
```

Modify the cluster peer configuration using following command:

```
cluster1::> cluster peer modify -cluster cluster2 -peer-addrs cluster2-
d2,10.98.234.264 -auth-status-admin revoked
Warning: This will discard the authentication key.

Warning: You are removing authentication from the peering relationship with
    cluster "cluster2". Use the "cluster peer modify" command on cluster "cluster2" with the "-auth-status-admin no-authentication" parameter to complete authentication removal from the peering relationship.

Do you want to continue?{y|n}:y
```

The following example modifies the peering relationship to use authentication with <code>-generate-passphrase</code> option.

```
cluster1::> cluster peer modify -cluster cluster2
 -auth-status-admin use-authentication -generate-passphrase
Notice: Use the below system-generated passphrase in the "cluster peer
modify"
command in the other cluster.
Passphrase: UCa+61RVICXeL/gq1WrK7ShR
       Expiration Time: 6/7/2017 09:16:10 +5:30
       Peer Cluster Name: cluster2
Warning: make a note of the passphrase - it cannot be displayed again.
Until then, the operational authentication state of the relationship
remains as "pending".
cluster1::> cluster peer offer show
Allowed
Peer Cluster Name Authentication Creation
                                                     Expiration
Vserver Peers
_______
-----
                   ok-and-offer 6/7/2017 08:16:10 6/7/2017 09:16:10
cluster2
Modify cluster peer relationship in cluster2 with use-authentication
option and use the auto-generated passphrase.
cluster2::> cluster peer modify -cluster cluster2 -auth-status-admin use-
authentication
Notice: Use a auto-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:
```

Related Links

· cluster peer create

cluster peer ping

Initiate intercluster connectivity test

Availability: This command is available to *cluster* administrators at the *admin* privilege level.

Description

The cluster peer ping command displays the status of the network mesh used by the peering relationship. The command checks the network connection to each remote IP address known by the cluster. This includes all intercluster addresses. It is possible for a known address to be not present during the ping. These addresses are not checked, but the absence is temporary.

The most useful parameters for diagnosing problems are <code>-count</code> and <code>-packet-size</code>. Use the <code>-count</code> and <code>-packet-size</code> parameters to diagnose problems similarly to how you use them with the standard ping utility.

To display network connection status within a cluster, use the network ping command.

Parameters

{ [-fields <fieldname>,...]

If you specify the -fields <fieldname>, ... parameter, the command output also includes the specified field or fields. You can use '-fields?' to display the fields to specify.

|[-instance]}

If you specify the -instance parameter, the command displays detailed information about all fields.

[-originating-node {<nodename>|local}] - Node that Initiates Ping

Use this parameter to send the ping from the node you specify.

[-destination-cluster <Cluster name>] - Cluster to Ping

Use this parameter to specify the peer cluster you wish to ping.

[-destination-node <Peer Node Name>] - Node to Ping in Destination Cluster

Use this parameter to specify a specific node in the destination cluster to ping.

[-ip-address <IP Address>] - Active IP Address

Use this parameter to specify the active IP address you wish to ping.

[-count <integer>] - Ping Count

Use this parameter to specify the number of requests to be sent to the destination.

[-status

{unknown_node|internal_error|unreachable|session_reachable|interface_reachable}] Status of Ping Operation

Use this parameter to display only ping results that have the status you specify.

[-timeout <integer>] - Ping Timeout in Seconds

Use this parameter to specify a timeout value in seconds for the ping operation.

[-packet-size <integer>] - Size of Packet

Use this parameter to specify the number of data bytes to be sent in the ping packet.

[-ttl <integer>] - Time to Live/ Number of Hops

Use this parameter to specify the maximum number of network hops a packet may make before it is considered a failure.

[-response-time <double>] - Response Time (ms)

Use this parameter to display only nodes that have the response time (in milliseconds) that you specify. This parameter is most useful when specified with a range of values, such as >500

Examples

This example shows a ping of cluster1 and cluster2 from cluster2. All nodes are reachable.

```
cluster2::> cluster peer ping
         Destination Cluster: cluster2
Node: node1
Destination Node IP Address Count TTL RTT(ms) Status
_____ ____
______
          10.98.228.230125510.98.228.2341255
node1
                                0.209 interface reachable
node2
                         1 255 0.42 interface reachable
Node: node2
               Destination Cluster: cluster2
Destination Node IP Address Count TTL RTT(ms) Status
______ ____
_____
           10.98.228.230 1 255 0.358 interface reachable
node1
          10.98.228.234 1 255 0.17 interface reachable
node2
Node: node1
                   Destination Cluster: cluster1
Destination Node IP Address Count TTL RTT(ms) Status
_____ ____
node3
           10.98.229.22 1 255
                                0.336 interface reachable
node4
          10.98.229.29
                         1 255 0.354 interface reachable
Node: node2 Destination Cluster: cluster1
Destination Node IP Address Count TTL RTT (ms) Status
           node3
node4
6 entries were displayed.
```

Related Links

network ping

cluster peer show

Display peer cluster information

Availability: This command is available to *cluster* administrators at the *admin* privilege level.

Description

The cluster peer show command displays information about the peering relationships between the current cluster and other clusters. Cluster peering enables independent clusters to coordinate and exchange data.

Parameters

{ [-fields <fieldname>,...]

If you specify the <code>-fields</code> <fieldname>, ... parameter, the command output also includes the specified field or fields. You can use '-fields?' to display the fields to specify.

|[-instance]}

If you specify the -instance parameter, the command displays detailed information about all fields.

[-cluster <text>] - Peer Cluster Name

Selects the peered clusters that match this parameter value.

[-cluster-uuid <UUID>] - Cluster UUID (privilege: advanced)

Selects the peered clusters that match this parameter value.

[-peer-addrs <Remote InetAddress>,...] - Remote Intercluster Addresses

Selects the peered clusters that match this parameter value (remote-host name or IP address).

[-availability <availability>] - Availability of the Remote Cluster

Selects the peered clusters that match this parameter value. This parameter can have four different values:

- Available The peer cluster availability status will be Available only if all the nodes in the local cluster
 are able to contact all the nodes in the remote cluster.
- Partial The peer cluster availability status will be <code>Partial</code> only if some nodes in the local cluster are not able to contact some or all nodes in the peer cluster.
- Unavailable The peer cluster availability status will be <code>Unavailable</code> only if all the nodes in the local cluster are not able to contact any node in the peer cluster.
- Pending The peer cluster availability status will be Pending while the system is creating in-memory health data.
- Unidentified The peer cluster availability status will be Unidentified if the cluster peer offer is created for an anonymous cluster and is unused. When the offer is used, then the availability will get changed to any of the above mentioned status.

Note: If one or more nodes in the local cluster are offline or unreachable, then those nodes are not used to determine the availability status for the remote nodes.

[-rcluster <text>] - Remote Cluster Name

Selects the peered clusters that match this parameter value.

[-ip-addrs <Remote InetAddress>,...] - Active IP Addresses

Selects the peered clusters that match this parameter value.

[-serialnumber <Cluster Serial Number>] - Cluster Serial Number

Selects the peered clusters that match this parameter value.

[-remote-cluster-nodes <text>,...] - Remote Cluster Nodes

Selects the peered clusters that match this parameter value.

[-remote-cluster-health {true|false}] - Remote Cluster Health

Selects the peered clusters that match this parameter value.

- true This means that there is cluster quorum in the peer cluster.
- false This means that there is no cluster quorum in the peer cluster.

[-unreachable-local-nodes <text>,...] - Unreachable Local Nodes

Selects the peered clusters that match this parameter value.

[-timeout <integer>] - Operation Timeout (seconds) (privilege: advanced)

Selects the peered clusters that match this parameter value.

[-address-family {ipv4|ipv6}] - Address Family of Relationship

Selects the peered clusters that have a relationship established using this protocol.

[-auth-status-admin {no-authentication|revoked|use-authentication}] - Authentication Status Administrative

Selects the peered clusters that match this parameter value, which must be chosen from the following values.

- no-authentication The cluster peer relationship uses no authentication.
- use-authentication The cluster peer relationship is authenticated.
- revoked The cluster peer relationship is revoked until agreement can be reached.

[-auth-status-operational {ok|absent|pending|expired|revoked|declined|refused|ok-and-offer|absent-but-offer|revoked-but-offer|key-mismatch|intent-mismatch|incapable}] - Authentication Status Operational

Selects the peered clusters that match this parameter value, which must be one of the following values.

- ok The clusters both use authentication and they have agreed on an authentication key.
- absent The clusters agree not to use authentication.
- pending This cluster has made an outstanding offer to authenticate with the other cluster, but agreement has not yet been reached.
- expired This cluster's offer to authenticate with the other cluster expired before agreement was reached.
- revoked This cluster has revoked any prior authentication agreement.

- declined The other cluster has revoked the authentication agreement and is declining to communicate with this cluster.
- refused The other cluster actively refuses the communication attempts, perhaps because its part of the peering relationship has been deleted.
- ok-and-offer The clusters agree on an authentication key and are using it. In addition, this cluster has made an outstanding offer to re-authenticate with the other cluster.
- absent-but-offer The clusters currently agree that neither side requires authentication of the other, but this cluster has made an outstanding offer to authenticate.
- revoked-but-offer This cluster has revoked any authentication agreement, but it has made an outstanding offer to authenticate.
- intent-mismatch The two clusters disagree on whether authentication is required.
- key-mismatch The two clusters both believe that they are authenticated, but one of the shared secrets has become corrupted.
- incapable The other cluster is no longer running a version of Data ONTAP that supports authenticated cluster peering.

[-rpc-connect-timeout <integer>] - Timeout for RPC Connect (privilege: advanced)

Selects the peered clusters that match this parameter value.

[-update-ping-timeout <integer>] - Timeout for Update Pings (privilege: advanced)

Selects the peered clusters that match this parameter value.

[-last-updated <MM/DD/YYYY HH:MM:SS>] - Last Update Time

Selects the peered clusters that match this parameter value.

[-ipspace <IPspace>] - IPspace for the Relationship

Selects the peered clusters whose relationships are to cross the named local IPspace. The default value is the IPspace name "Default". In relationships created before ONTAP 8.3.1, the initial value is "-" and is not updated to "Default" until an action is taken on a cluster peer relationship, such as creating, modifying, or deleting a relationship.

Examples

This example shows the output of the cluster peer show command when all nodes in the local cluster are able to contact all nodes in the remote peer cluster. Additionally, the peer relationship is authenticated and operating correctly.

```
Cluster1::> cluster peer show -instance

Peer Cluster Name: cluster2

Remote Intercluster Addresses: cluster2-d2, 10.98.234.246

Availability of the Remote Cluster: Available

Remote Cluster Name: cluster2

Active IP Addresses: 10.98.234.246, 10.98.234.243

Cluster Serial Number: 1-80-123456

Remote Cluster Nodes: cluster2-01, cluster2-02

Remote Cluster Health: true

Unreachable Local Nodes: -

Address Family of Relationship: ipv4

Authentication Status Administrative: use-authentication

Authentication Status Operational: ok

Last Update Time: 02/05 21:05:41

IPspace for the Relationship: Default
```

This example shows the output of the cluster peer show command when some nodes in the local cluster are not able to contact some or all of the nodes in the remote peer cluster.

```
cluster1::> cluster peer show -instance

Peer Cluster Name: cluster2

Remote Intercluster Addresses: cluster2-d2, 10.98.234.246

Availability of the Remote Cluster: Partial

Remote Cluster Name: cluster2

Active IP Addresses: 10.98.234.246, 10.98.234.243

Cluster Serial Number: 1-80-123456

Remote Cluster Nodes: cluster2-01, cluster2-02

Remote Cluster Health: false

Unreachable Local Nodes: -

Address Family of Relationship: ipv4

Authentication Status Administrative: use-authentication

Authentication Status Operational: ok

Last Update Time: 02/05 21:05:41

IPspace for the Relationship: Default
```

This example shows the output of the cluster peer show command when some nodes in the local cluster cannot be contacted from the node where the command is executed, but all the other nodes including node on which command is executed are able to contact all nodes in the remote peer cluster.

Detailed information for this scenario is shown below.

```
cluster1::> cluster peer show -instance
Peer Cluster Name: cluster2
Remote Intercluster Addresses: cluster2-d2, 10.98.234.246
Availability of the Remote Cluster: Available
Remote Cluster Name: cluster2
Active IP Addresses: 10.98.234.246, 10.98.234.243
Cluster Serial Number: 1-80-123456
Remote Cluster Nodes: cluster2-01, cluster2-02
Remote Cluster Health: true
Unreachable Local Nodes: cluster1-01
Address Family of Relationship: ipv4
Authentication Status Administrative: use-authentication
Authentication Status Operational: ok
Last Update Time: 02/05 21:05:41
IPspace for the Relationship: Default
```

This example shows the output of the cluster peer show command when some nodes in the local cluster cannot be contacted from the node where the command is executed, and the node on which command is executed is also not able to contact the remote peer cluster.

```
cluster1::> cluster peer show -instance
Peer Cluster Name: cluster2
    Remote Intercluster Addresses: cluster2-d2, 10.98.234.246
Availability of the Remote Cluster: Unavailable
    Remote Cluster Name: cluster2
    Active IP Addresses: 10.98.234.246, 10.98.234.243
    Cluster Serial Number: 1-80-123456
    Remote Cluster Nodes: cluster2-01, cluster2-02
    Remote Cluster Health: -
    Unreachable Local Nodes: cluster1-01
Address Family of Relationship: ipv4
Authentication Status Administrative: use-authentication
Authentication Status Operational: ok
    Last Update Time: 02/05 21:05:41
IPspace for the Relationship: Default
```

This example shows the output of the cluster peer show command when all the nodes in the local cluster are not able to contact any nodes in the remote peer cluster.

```
cluster1::> cluster peer show -instance

Peer Cluster Name: cluster2

Remote Intercluster Addresses: cluster2-d2, 10.98.234.246

Availability of the Remote Cluster: Unavailable

Remote Cluster Name: cluster2

Active IP Addresses: 10.98.234.246, 10.98.234.243

Cluster Serial Number: 1-80-123456

Remote Cluster Nodes: cluster2-01, cluster2-02

Remote Cluster Health: -

Unreachable Local Nodes: -

Address Family of Relationship: ipv4

Authentication Status Administrative: use-authentication

Authentication Status Operational: ok

Last Update Time: 02/05 21:05:41

IPspace for the Relationship: Default
```

This example shows the output of the cluster peer show command while the system is creating inmemory health data.

Detailed information for this scenario is shown below.

```
cluster1::> cluster peer show -instance
Peer Cluster Name: cluster2
    Remote Intercluster Addresses: cluster2-d2, 10.98.234.246
Availability of the Remote Cluster: Pending
    Remote Cluster Name: cluster2
    Active IP Addresses: 10.98.234.246, 10.98.234.243
    Cluster Serial Number: 1-80-123456
    Remote Cluster Nodes: -
    Remote Cluster Health: -
    Unreachable Local Nodes: -
    Address Family of Relationship: ipv4
Authentication Status Administrative: use-authentication
    Authentication Status Operational: ok
    Last Update Time: 02/05 21:05:41
    IPspace for the Relationship: Default
```

This example shows the output of the cluster peer show command for the offer created for an anonymous cluster:

```
cluster1::> cluster peer show
Peer Cluster Name Cluster Serial Number Availability
Authentication
______
Clus 4gHR
                                            Unidentified pending
Detailed information for this scenario is shown below.
cluster1::> cluster peer show -instance
Peer Cluster Name: Clus 4gHR
           Remote Intercluster Addresses: -
      Availability of the Remote Cluster: Unidentified
                    Remote Cluster Name: Clus 4gHR
                    Active IP Addresses: 10.98.234.246, 10.98.234.243
                  Cluster Serial Number: -
                   Remote Cluster Nodes: -
                  Remote Cluster Health: -
                Unreachable Local Nodes: -
          Address Family of Relationship: ipv4
    Authentication Status Administrative: use-authentication
       Authentication Status Operational: ok
                       Last Update Time: 02/05 21:05:41
            IPspace for the Relationship: Default
```

cluster peer connection show

Show current peering connections for a cluster

Availability: This command is available to *cluster* administrators at the *admin* privilege level.

Description

The cluster peer connection show command displays information about the current TCP connections and how they are supporting the set of peering relationships.

Parameters

{ [-fields <fieldname>,...]

If you specify the <code>-fields</code> <code><fieldname></code>, ... parameter, the command output also includes the specified field or fields. You can use '-fields?' to display the fields to specify.

|[-instance]}

If you specify the -instance parameter, the command displays detailed information about all fields.

[-cluster-name <text>] - Remote Cluster

Selects the connections associated with the named peered cluster.

[-node {<nodename>|local}] - Node

Selects the connections hosted by the given node.

[-connection-type {mgmt-client|mgmt-server|data}] - Cluster Peering Connection Type

Selects the connections of the named type. This parameter can have one of three different values:

- Mgmt-client Management-plane client connections, created so that this node may make managementplane requests of other nodes.
- Mgmt-server Management-plane server connections, over which this node services requests made by other nodes' mgmt-client connections.
- Data Connections made between data-planes of different nodes.

[-index <integer>] - Index of Connection

Selects the connections with the given index value.

[-cluster-uuid <UUID>] - Cluster UUID (privilege: advanced)

Selects the connections to the cluster with the given cluster UUID.

[-auth-status-admin {no-authentication|revoked|use-authentication}] - Authentication Status Administrative

Selects connections to the peered clusters whose intended authentication matches this parameter value.

[-auth-status-operational {ok|absent|pending|expired|revoked|declined|refused|ok-and-offer|absent-but-offer|revoked-but-offer|key-mismatch|intent-mismatch|incapable}] - Authentication Status Operational

Selects connections to the peered clusters whose authentication state matches this parameter value.

[-authenticated {true|false}] - Authenticated

Selects connections that have been authenticated, or not, according to this parameter value.

[-port <integer>] - Network Port

Selects the connections that match this parameter value.

[-idle <[<integer>h] [<integer>m] [<integer>s]>] - Idle Time

Selects the connections whose idle times match this parameter value.

[-address <IP Address>] - Remote Network Address

Selects the connections that have this parameter value as the remote network address.

Examples

This example shows the output of the cluster peer connection show command.

Cluster Node Address	Connection Type	Auth	Encry	ot Idle	Remote
luster2	Authenticatio	on: ok			
node1	data	true	true	6s	
10.10.10.100	1-4-	.	.	7 -	
10.10.10.100	data	true	true	7s	
10.10.10.100	data	true	true	20s	
10.10.10.100	data	true	true	11s	
10.10.10.100	data	true	+ 2110	7s	
10.10.10.100	data	crue	crue	75	
10.10.10.100	data	true	true	7s	
	data	true	true	11s	
10.10.10.200	dat.a	true	true	11s	
10.10.10.200					
10.10.10.200	data	true	true	48s	
	data	true	true	48s	
10.10.10.200	data	true	true	37s	
10.10.10.200					
10.10.10.200	data	true	true	37s	
12 entries were disp	olayed.				

cluster peer health show

Check peer cluster health

Availability: This command is available to *cluster* administrators at the *admin* privilege level.

Description

The cluster peer health show command displays information about the health of the nodes in peer clusters from the perspective of the nodes in the local cluster. The command obtains health information by performing connectivity and status probes of each peer cluster's nodes from each node in the local cluster.

To enable quick access to remote cluster health information, remote cluster health status is periodically

checked and cached. These cached results enable users and system features to quickly assess the availability of remote resources. By default, this command accesses cached results. Use the <code>-bypass-cachetrue</code> option to force a current, non-cached check of remote cluster health.

Parameters

{ [-fields <fieldname>,...]

If you specify the -fields <fieldname>, ... parameter, the command output also includes the specified field or fields. You can use '-fields?' to display the fields to specify.

| [-instance] }

If you specify the -instance parameter, the command displays detailed information about all fields.

[-originating-node {<nodename>|local}] - Local Node

Selects the node that matches this parameter value.

[-destination-cluster <Cluster name>] - Peer Cluster

Selects the cluster that matches this parameter value.

[-destination-node <Peer Node Name>] - Peer Node

Selects the node that matches this parameter value.

[-destination-cluster-uuid <UUID>] - Peer UUID

Selects the cluster that matches this parameter value.

[-data-ping

{unknown_node|internal_error|unreachable|session_reachable|interface_reachable}] - Status of Data Ping Operation

Selects the nodes that match this parameter value.

[-icmp-ping

{unknown_node|internal_error|unreachable|session_reachable|interface_reachable}] Status of ICMP Ping Operation

Selects the nodes that match this parameter value.

[-node-health {true|false}] - RDB Health of the Node

Selects the nodes that match this parameter value (true means healthy).

[-cluster-health {true|false}] - Cluster Health

Selects the nodes that match this parameter value (true means healthy).

[-availability {true|false}] - Communication Indicator

Selects the nodes that match this parameter value (true means communicating).

[-bypass-cache {true|false}] - Bypass Cache and Determine Health

Bypasses cached results to determine current cluster health (true means bypass the cache). Cached results may not be current, but they are displayed more quickly.

[-last-updated <MM/DD/YYYY HH:MM:SS>] - Last Update Time

Selects the nodes that match this parameter value.

Examples

The following example shows typical output for this command in a cluster of two nodes that has a peer cluster of two nodes.

```
cluster1::> cluster peer health show
          Cluster-Name
                                    Node-Name
                       RDB-Health Cluster-Health
            Ping-Status
Availability
node1
          cluster2
                                    node3
            Data: interface reachable
            ICMP: interface reachable true
                                           true
                                                            true
                                    node4
            Data: interface reachable
            ICMP: interface reachable true
                                           true
                                                            true
node2
          cluster2
                                    node3
            Data: interface reachable
            ICMP: interface reachable true
                                             true
                                                            true
                                    node4
            Data: interface reachable
            ICMP: interface reachable true true
                                                             true
4 entries were displayed.
```

The following example shows detailed health information for node3 in cluster2 from the perspective of node1 in cluster1.

cluster peer offer cancel

Cancel the outstanding offer to authenticate with a peer cluster

Availability: This command is available to *cluster* administrators at the *admin* privilege level.

Description

The cluster peer offer cancel command cancels an outstanding offer to authenticate with a potentially peered cluster. After the command completes, the given cluster can no longer establish authentication using the given authentication offer.

Parameters

-cluster <text> - Peer Cluster Name

Use this parameter to specify which offer should be cancelled, by specifying the name of the cluster to which the offer is extended.

Examples

The following example cancels the authentication offer to cluster2.

cluster1::> cluster peer offer cancel -cluster cluster2

cluster peer offer modify

Modify an outstanding offer to authenticate with a peer cluster

Availability: This command is available to *cluster* administrators at the *admin* privilege level.

Description

The cluster peer offer modify command modifies the outstanding offer to authenticate with a potentially peered cluster. Every authentication offer has an expiration time, after which the offer will no longer be honored. This command is used to change that expiration time. To cancel the offer outright, use the cluster peer offer cancel command instead.

Parameters

-cluster <text> - Peer Cluster Name

Use this parameter to specify the offer to be modified by indicating the name of the cluster to which it has been extended.

[-offer-expiration $\{MM/DD/YYYY \ HH:MM:SS \mid \{1...7\} \ days \mid \{1...168\} \ hours\}]$ - Authentication Offer Expiration Time

Use this parameter to specify the new expiration time for the offer.

[-initial-allowed-vserver-peers <Vserver Name>,...] - Vservers Initially Allowed for Peering

Use this optional parameter to specify the list of Vservers for which reciprocal Vserver peering with peer cluster should be enabled.

Examples

This example modifies the expiration time for the authentication offer to push it out by an hour.

```
cluster1::> cluster peer offer show
Peer Cluster Name
                     Authentication Creation
                                                       Expiration
                      absent but offer
cluster2
                                     7/23/2013 14:45:47 7/23/2013
15:45:47
cluster1::> cluster peer offer modify -cluster cluster2 -offer-expiration
"7/23/2013 16:45:47"
cluster1::> cluster peer offer show
Peer Cluster Name Authentication Creation
                                                       Expiration
______
cluster2
                      absent but offer
                                     7/23/2013 14:45:47 7/23/2013
16:45:47
```

Related Links

· cluster peer offer cancel

cluster peer offer show

Display outstanding offers to authenticate with a peer cluster

Availability: This command is available to *cluster* administrators at the *admin* privilege level.

Description

The cluster peer offer show command displays information about authentication offers still pending with potential peer clusters. By default, the command displays information about all unexpired offers made by the local cluster.

To display detailed information about a specific offer, run the command with the -cluster parameter.

Parameters

{ [-fields <fieldname>,...]

If you specify the -fields <fieldname>, ... parameter, the command output also includes the specified field or fields. You can use '-fields?' to display the fields to specify.

|[-instance]}

If you specify the -instance parameter, the command displays detailed information about all fields.

[-cluster <text>] - Peer Cluster Name

Selects the offer that matches this parameter value.

[-auth-status-operational {ok|absent|pending|expired|revoked|declined|refused|ok-and-offer|absent-but-offer|revoked-but-offer|key-mismatch|intent-mismatch|incapable}] - Authentication Status Operational

Selects the offers that match this parameter value.

[-offer-creation <MM/DD/YYYY HH:MM:SS>] - Authentication Offer Creation Time

Selects the offers that match this parameter value.

```
[-offer-expiration \{MM/DD/YYYY \ HH:MM:SS \mid \{1...7\} \ days \mid \{1...168\} \ hours\}] - Authentication Offer Expiration Time
```

Selects the offers that match this parameter value.

[-initial-allowed-vserver-peers <Vserver Name>,...] - Vservers Initially Allowed for Peering Selects the offers that match this parameter value.

[-offer-creator <text>] - Authentication Offer Creator

Selects the offers that match this parameter value.

Examples

The following example displays information about the outstanding authentication offers:

cluster peer policy modify

Modify the policy configuration for the cluster peering service

Availability: This command is available to *cluster* administrators at the *admin* privilege level.

Description

The cluster peer policy modify command modifies the prevailing policy settings. One setting governs whether unauthenticated cluster peer relationships can exist. The other setting specifies a minimum length for passphrases.

Parameters

[-is-unauthenticated-access-permitted {true|false}] - Is Unauthenticated Cluster Peer Access Permitted

Use this parameter to specify whether unauthenticated peering relationships are allowed to exist. Setting the parameter value to true allows such relationships to exist. Setting the value to true allows such relationships to exist. Setting the value to true prevents both the creation of unauthenticated peering relationships as well as the modification of existing peering relationships to be unauthenticated. Setting the value to true is not possible if the cluster currently is in any unauthenticated relationships.

[-passphrase-minlength <integer>] - Passphrase Length Minimum

Use this parameter to specify a minimum length for passphrases as given to the cluster peer create or cluster peer modify commands in the future. The default value for this parameter is 8.

Examples

This example modifies the peering policy to disallow unauthenticated intercluster communications.

```
cluster1::> cluster peer policy show
Is Unauthenticated Cluster Peer Communication Permitted: true

Minimum Length for a Passphrase: 8

cluster1::> cluster peer policy modify -is-unauthenticated-access
-permitted false

cluster1::> cluster peer policy show
Is Unauthenticated Cluster Peer Communication Permitted: false

Minimum Length for a Passphrase: 8
```

Related Links

- · cluster peer create
- cluster peer modify

cluster peer policy show

Display the policy configuration for the cluster peering service

Availability: This command is available to *cluster* administrators at the *admin* privilege level.

Description

The cluster peer policy show command displays the prevailing cluster peer authentication policy. There are two policies at present: one to control whether any cluster peer relationships can be unauthenticated, and one to control the minimum length for a passphrase. If the policy is set to preclude unauthenticated peering relationships, then unauthenticated relationships cannot be created inadvertently. Passphrases of less than the minimum length may not be used. By default, this minimum length is set to 8, so passphrases must be 8 characters long or longer.

Examples

This example shows the cluster peer policy when unauthenticated relationships may not be created inadvertently.

Copyright information

Copyright © 2024 NetApp, Inc. All Rights Reserved. Printed in the U.S. No part of this document covered by copyright may be reproduced in any form or by any means—graphic, electronic, or mechanical, including photocopying, recording, taping, or storage in an electronic retrieval system—without prior written permission of the copyright owner.

Software derived from copyrighted NetApp material is subject to the following license and disclaimer:

THIS SOFTWARE IS PROVIDED BY NETAPP "AS IS" AND WITHOUT ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, WHICH ARE HEREBY DISCLAIMED. IN NO EVENT SHALL NETAPP BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

NetApp reserves the right to change any products described herein at any time, and without notice. NetApp assumes no responsibility or liability arising from the use of products described herein, except as expressly agreed to in writing by NetApp. The use or purchase of this product does not convey a license under any patent rights, trademark rights, or any other intellectual property rights of NetApp.

The product described in this manual may be protected by one or more U.S. patents, foreign patents, or pending applications.

LIMITED RIGHTS LEGEND: Use, duplication, or disclosure by the government is subject to restrictions as set forth in subparagraph (b)(3) of the Rights in Technical Data -Noncommercial Items at DFARS 252.227-7013 (FEB 2014) and FAR 52.227-19 (DEC 2007).

Data contained herein pertains to a commercial product and/or commercial service (as defined in FAR 2.101) and is proprietary to NetApp, Inc. All NetApp technical data and computer software provided under this Agreement is commercial in nature and developed solely at private expense. The U.S. Government has a non-exclusive, non-transferrable, nonsublicensable, worldwide, limited irrevocable license to use the Data only in connection with and in support of the U.S. Government contract under which the Data was delivered. Except as provided herein, the Data may not be used, disclosed, reproduced, modified, performed, or displayed without the prior written approval of NetApp, Inc. United States Government license rights for the Department of Defense are limited to those rights identified in DFARS clause 252.227-7015(b) (FEB 2014).

Trademark information

NETAPP, the NETAPP logo, and the marks listed at http://www.netapp.com/TM are trademarks of NetApp, Inc. Other company and product names may be trademarks of their respective owners.