



metrocluster configuration-settings commands

ONTAP 9.9.1 commands

NetApp
February 12, 2024

Table of Contents

- metrocluster configuration-settings commands 1
 - metrocluster configuration-settings show-status 1
 - metrocluster configuration-settings calibration measure 3
 - metrocluster configuration-settings calibration show 4
 - metrocluster configuration-settings connection check 6
 - metrocluster configuration-settings connection connect 7
 - metrocluster configuration-settings connection disconnect 11
 - metrocluster configuration-settings connection show 13
 - metrocluster configuration-settings dr-group create 19
 - metrocluster configuration-settings dr-group delete 20
 - metrocluster configuration-settings dr-group show 22
 - metrocluster configuration-settings interface create 24
 - metrocluster configuration-settings interface delete 28
 - metrocluster configuration-settings interface show 30
 - metrocluster configuration-settings mediator add 33
 - metrocluster configuration-settings mediator remove 34
 - metrocluster configuration-settings mediator show 34

metrocluster configuration-settings commands

metrocluster configuration-settings show-status

Display the configuration settings status for a MetroCluster setup

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

Description

The `metrocluster configuration-settings show-status` command displays the configuration settings status for nodes in a MetroCluster setup. If a DR group has not been created, then status for nodes in the local cluster only are displayed.

Parameters

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

If you specify the `-fields <fieldname>,...` parameter, the command displays only the fields that you specify.

| [-instance] }

If this parameter is specified, the command displays detailed information about all entries.

[-cluster-uuid <UUID>] - Cluster UUID

If this parameter is specified, the command displays detailed information about all nodes in the cluster matching the specified cluster-uuid.

[-cluster <Cluster name>] - Cluster Name

If this parameter is specified, the command displays detailed information about all the nodes in the specified cluster.

[-node <text>] - Node Name

If this parameter is specified, the command displays information for the matching nodes.

[-configuration-status <text>] - Configuration Settings Status

If this parameter is specified, the command displays detailed information about all nodes with the specified configuration status.

[-config-error-info <text>] - Configuration Error Information

If this parameter is specified, the command displays detailed information about all nodes with the specified configuration error information.

Examples

The following example shows the display of MetroCluster setup status:

```
Nodes do not have a valid platform-specific personality value (equivalent
to HAOSC parameter on non-Apollo platforms) for a MetroCluster setup.
```

```
clusA::> metrocluster configuration-settings show-status
```

Cluster	Node	Configuration Settings
Status		

clusA	A1	not a MetroCluster setup
	A2	not a MetroCluster setup

2 entries were displayed.

MetroCluster setup uses FC links rather than IP

```
xref:{relative_path}clusA::> metrocluster configuration-settings show-status
```

Cluster	Node	Configuration Settings
Status		

clusA	A1	not applicable for FC and
SAS		
	A2	not applicable for FC and

SAS

2 entries were displayed.

Output of the command when MetroCluster setup uses IP links and before
`"metrocluster configuration-settings dr-group create"` command is run:

```
clusA::> metrocluster configuration-settings show-status
```

Cluster	Node	Configuration Settings
Status		

clusA	A1	ready for DR group create
	A2	ready for DR group create

2 entries were displayed.

Output of the command after `"metrocluster configuration-settings dr-group
create"` command is run:

```
clusA::> metrocluster configuration-settings show-status
```

Cluster	Node	Configuration Settings
Status		

clusA	A1	ready for interface create
	A2	ready for interface create
clusB	B1	ready for interface create
	B2	ready for interface create

4 entries were displayed.

Output of the command after `"metrocluster configuration-settings
interface create"` command is run for every node:

```
clusA::> metrocluster configuration-settings show-status
```

Cluster	Node	Configuration Settings
Status		

clusA	A1	ready for next interface
create	A2	ready for connection connect
clusB	B1	ready for connection connect
	B2	ready for connection connect

4 entries were displayed.

Output of the command after ` "metrocluster configuration-settings connection connect" ` command is run:

```
usA::> metrocluster configuration-settings show-status
```

Cluster	Node	Configuration Settings
Status		

clusA	A1	completed
	A2	completed
clusB	B1	completed
	B2	completed

4 entries were displayed.

Output of the command after ` "metrocluster configuration-settings connection connect" ` command is run and there are connection errors:

```
clusA::> metrocluster configuration-settings show-status
```

Cluster	Node	Configuration Settings
Status		

clusA	A1	connection error
	A2	completed
clusB	B1	connection error
	B2	completed

4 entries were displayed.

metrocluster configuration-settings calibration measure

Measure latency and bandwidth values

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

Description

The `metrocluster configuration-settings calibration measure` command measures the bandwidth and latency between local and remote nodes in a MetroCluster over IP configuration.

This command should not be run when the MetroCluster configuration is under a heavy load. Bandwidth measurements will attempt to fully saturate network connections to the remote cluster and may disrupt the quality of service.

Examples

The following example shows the output for the calibration measure command in MetroCluster over IP configurations:

```
clusA::*> metrocluster configuration-settings calibration measure
Warning: This operation will attempt to fully saturate the network
connection to
    the remote cluster for measuring bandwidth. This may disrupt
        performance and should not be run when MetroCluster is under
heavy
    load. Do you want to continue? {y|n}: y
    Measuring latency and bandwidth between node "A1" (10.140.113.214) and
node "B1" (10.140.113.26) over port "e0f".
    Measuring latency and bandwidth between node "A1" (10.140.113.215) and
node "B1" (10.140.113.27) over port "e0g".
    Measuring latency and bandwidth between node "A2" (10.140.113.216) and
node "B2" (10.140.113.25) over port "e0f".
    Measuring latency and bandwidth between node "A2" (10.140.113.217) and
node "B2" (10.140.113.28) over port "e0g".
    Measurements complete. Use the "metrocluster configuration-settings
calibration show" command to display the results.
```

metrocluster configuration-settings calibration show

Display the calibration measurements for local nodes in MetroCluster over IP configuration

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

Description

The `metrocluster configuration-settings calibration show` command shows the bandwidth and latency between local and remote nodes in a MetroCluster over IP configuration.

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.

[-calibration-id <integer>] - Calibration ID

This field specifies Calibration ID.

[-subnet <IP Address>] - IP Subnet

This field specifies subnet.

[-node-uuid <UUID>] - Node UUID

This field specifies UUID of the node.

[-home-port {<netport>|<ifgrp>}] - Home Port

This field specifies name of the port used to measure latency and bandwidth.

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

This field specifies name of the node.

[-collection-time <MM/DD/YYYY HH:MM:SS>] - Collection Time of Sample

This field specifies collection time of sample.

[-source-address <IP Address>] - Source Network Address

This field specifies IP address of the port on the node.

[-destination-address <IP Address>] - Destination Network Address

This field specifies IP address of the port on the partner node.

[-latency <double>] - Latency in ms

This field specifies latency in ms.

[-bandwidth <double>] - Bandwidth in Mb/s

This field specifies bandwidth in Mb/s.

Examples

The following example shows the output for the `calibration show` command in MetroCluster over IP configurations:

```
clusA::*> metrocluster configuration-settings calibration show
```

ID	Subnet	Node	Port	Home (ms)	Latency (Mb/s)	Bandwidth	Collection Time
1	172.21.96.0	A1		e0f	0.341	764	8/6/2019
				e0g	0.311	629	8/6/2019
		A2		e0f	0.307	1265	8/6/2019
				e0g	0.307	1063	8/6/2019

4 entries were displayed.

metrocluster configuration-settings connection check

Check the network connections between partner nodes

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

Description

The `metrocluster configuration-settings connection check` command checks the settings of a MetroCluster over IP configuration.

This command is used for MetroCluster configurations that are connected through IP links.

Examples

The following example shows the output for the check command in MetroCluster over IP configurations:


```
clusA::*> metrocluster configuration-settings connection check
[Job 68] Job succeeded: Connect is successful.

Begin connection check.
Start checking the partner cluster.
    Check partner cluster: PASS.
Start checking the configuration settings.
    Check configuration settings: PASS.
Start ping the network endpoints from cluster "clusA".
    Ping network endpoints: PASS.
Start ping the network endpoints from cluster "clusB".
    Ping network endpoints: PASS.
Start checking the network MTU sizes from cluster "clusA".
    Check network MTU sizes: PASS.
Start checking the network MTU sizes from cluster "clusB".
    Check network MTU sizes: PASS.
Start checking the network subnets from cluster "clusA".
    Check network subnets: PASS.
Start checking the network subnets from cluster "clusB".
    Check network subnets: PASS.
Start checking the storage daemons on cluster "clusA".
    Check storage daemons: PASS.
Start checking the storage daemons on cluster "clusB".
    Check storage daemons: PASS.
End of connection check.
```

metrocluster configuration-settings connection connect

Configure the network connections between partner nodes

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

Description

The `metrocluster configuration-settings connection connect` command configures the connections that mirror NV logs and access remote storage between partner nodes in a MetroCluster setup.

This command is used for MetroCluster setups that are connected through IP links. MetroCluster setups that are connected through FC links will configure the FC connections automatically.

The `metrocluster configuration-settings` commands are run in the following order to set up MetroCluster:

- `metrocluster configuration-settings dr-group create` ,
- `metrocluster configuration-settings interface create` ,
- `metrocluster configuration-settings connection connect` .

Before this command is run

- The DR groups must have been configured. Run the `metrocluster configuration-settings dr-group show` command to verify that every node is partnered in a DR group.
- The network logical interfaces must have been configured on every node. Use the `metrocluster configuration-settings interface show` command to verify that every node has network logical interfaces configured to mirror NV logs and access remote storage.

After this command completes successfully, every node will:

- Have NV log mirroring configured and mirroring disabled. NV log mirroring will be enabled by the `metrocluster configure` command.
- Have access to remote storage. Use the `storage disk show -pool Pool1` command to view the remote disks that are hosted on DR partner nodes.

The DR groups and network logical interfaces that were configured by the `metrocluster configuration-settings` commands cannot be deleted after the connections have been configured. The `metrocluster configuration-settings connection disconnect` command must be run to remove the connections before the DR groups and network logical interfaces can be deleted.

Parameters

Examples

The following example shows configuration of connections in a MetroCluster over IP setup:

```
clusA::> metrocluster configuration-settings connection connect
[Job 269] Job succeeded: Connect is successful.
clusA::> metrocluster configuration-settings connection show
```

DR	Source	Destination
Group Cluster Node	Network Address	Network Address Partner Type Config
State		
1	clusA A1	
	Home Port: e0f	
	10.140.113.214	10.140.113.216 HA Partner
completed		
	Home Port: e0f	
	10.140.113.214	10.140.113.218 DR Partner
completed		
	Home Port: e0f	
	10.140.113.214	10.140.113.249 DR Auxiliary
completed		
	Home Port: e0g	
	10.140.113.215	10.140.113.217 HA Partner

completed	Home Port: e0g	10.140.113.215	10.140.113.248	DR Partner
completed	Home Port: e0g	10.140.113.215	10.140.113.25	DR Auxiliary
completed	A2			
	Home Port: e0f	10.140.113.216	10.140.113.214	HA Partner
completed	Home Port: e0f	10.140.113.216	10.140.113.249	DR Partner
completed	Home Port: e0f	10.140.113.216	10.140.113.218	DR Auxiliary
completed	Home Port: e0g	10.140.113.217	10.140.113.215	HA Partner
completed	Home Port: e0g	10.140.113.217	10.140.113.25	DR Partner
completed	Home Port: e0g	10.140.113.217	10.140.113.248	DR Auxiliary
completed	clusB B2			
	Home Port: e0f	10.140.113.249	10.140.113.218	HA Partner
completed	Home Port: e0f	10.140.113.249	10.140.113.216	DR Partner
completed	Home Port: e0f	10.140.113.249	10.140.113.214	DR Auxiliary
completed	Home Port: e0g	10.140.113.25	10.140.113.248	HA Partner
completed	Home Port: e0g	10.140.113.25	10.140.113.217	DR Partner
completed	Home Port: e0g	10.140.113.25	10.140.113.215	DR Auxiliary
completed	B1			

```

        Home Port: e0f
        10.140.113.218  10.140.113.249  HA Partner
completed

        Home Port: e0f
        10.140.113.218  10.140.113.214  DR Partner
completed

        Home Port: e0f
        10.140.113.218  10.140.113.216  DR Auxiliary
completed

        Home Port: e0g
        10.140.113.248  10.140.113.25   HA Partner
completed

        Home Port: e0g
        10.140.113.248  10.140.113.215  DR Partner
completed

        Home Port: e0g
        10.140.113.248  10.140.113.217  DR Auxiliary
completed
24 entries were displayed.
clusA::> metrocluster configuration-settings show-status
Cluster          Node          Configuration Settings
Status
-----
clusA
          A1          completed
          A2          completed
clusB
          B1          completed
          B2          completed
4 entries were displayed.

```

Related Links

- [metrocluster configuration-settings dr-group create](#)
- [metrocluster configuration-settings interface create](#)
- [metrocluster configuration-settings dr-group show](#)
- [metrocluster configuration-settings interface show](#)
- [metrocluster configure](#)
- [storage disk show](#)
- [metrocluster configuration-settings connection disconnect](#)

metrocluster configuration-settings connection disconnect

Tear down the network connections between partner nodes

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

Description

The `metrocluster configuration-settings connection disconnect` command removes the connections between nodes in a DR group that are used to mirror NV logs and access remote storage.

This command cannot be run if a node in the DR group has remote disks assigned to the node. The assigned ownership of remote disks can be removed by running the [storage disk removeowner](#) command.

The `metrocluster configuration-settings` commands are run in the following order to remove MetroCluster over IP configuration:

- `metrocluster configuration-settings connection disconnect` ,
- [metrocluster configuration-settings interface delete](#) ,
- [metrocluster configuration-settings dr-group delete](#) .

Parameters

-dr-group-id <integer> - DR Group ID

This parameter identifies the DR group to be disconnected.

Examples

The following example illustrates removal of connections in a four-node MetroCluster setup:

```
clusA::> metrocluster configuration-settings connection disconnect -dr
-group-id 1
[Job 270] Job succeeded: Disconnect is successful.

clusA::> metrocluster configuration-settings show-status
Cluster          Node          Configuration Settings
Status
-----
clusA
          A1          ready for connection connect
          A2          ready for connection connect
clusB
          B1          ready for connection connect
          B2          ready for connection connect
4 entries were displayed.
clusA::> metrocluster configuration-settings connection show
DR          Source          Destination
```

Group	Cluster	Node	Network Address	Network Address	Partner	Type	Config
State							
-----	-----	-----	-----	-----	-----	-----	-----

1	clusA	A1	Home Port: e0f				
			10.140.113.214	10.140.113.216	HA	Partner	
disconnected							
			Home Port: e0f				
			10.140.113.214	10.140.113.218	DR	Partner	
disconnected							
			Home Port: e0f				
			10.140.113.214	10.140.113.249	DR	Auxiliary	
disconnected							
			Home Port: e0g				
			10.140.113.215	10.140.113.217	HA	Partner	
disconnected							
			Home Port: e0g				
			10.140.113.215	10.140.113.248	DR	Partner	
disconnected							
			Home Port: e0g				
			10.140.113.215	10.140.113.25	DR	Auxiliary	
disconnected							
		A2	Home Port: e0f				
			10.140.113.216	10.140.113.214	HA	Partner	
disconnected							
			Home Port: e0f				
			10.140.113.216	10.140.113.249	DR	Partner	
disconnected							
			Home Port: e0f				
			10.140.113.216	10.140.113.218	DR	Auxiliary	
disconnected							
			Home Port: e0g				
			10.140.113.217	10.140.113.215	HA	Partner	
disconnected							
			Home Port: e0g				
			10.140.113.217	10.140.113.25	DR	Partner	
disconnected							
			Home Port: e0g				
			10.140.113.217	10.140.113.248	DR	Auxiliary	
disconnected							
	clusB	B2	Home Port: e0f				
			10.140.113.249	10.140.113.218	HA	Partner	
disconnected							

```

disconnected      Home Port: e0f
                  10.140.113.249  10.140.113.216  DR Partner

disconnected      Home Port: e0f
                  10.140.113.249  10.140.113.214  DR Auxiliary

disconnected      Home Port: e0g
                  10.140.113.25   10.140.113.248  HA Partner

disconnected      Home Port: e0g
                  10.140.113.25   10.140.113.217  DR Partner

disconnected      Home Port: e0g
                  10.140.113.25   10.140.113.215  DR Auxiliary

disconnected      B1
                  Home Port: e0f
                  10.140.113.218  10.140.113.249  HA Partner

disconnected      Home Port: e0f
                  10.140.113.218  10.140.113.214  DR Partner

disconnected      Home Port: e0f
                  10.140.113.218  10.140.113.216  DR Auxiliary

disconnected      Home Port: e0g
                  10.140.113.248  10.140.113.25   HA Partner

disconnected      Home Port: e0g
                  10.140.113.248  10.140.113.215  DR Partner

disconnected      Home Port: e0g
                  10.140.113.248  10.140.113.217  DR Auxiliary

24 entries were displayed.

```

Related Links

- [storage disk removeowner](#)
- [metrocluster configuration-settings interface delete](#)
- [metrocluster configuration-settings dr-group delete](#)

metrocluster configuration-settings connection show

Display the connections between partner nodes in a MetroCluster setup

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

Description

The `metrocluster configuration-settings connection show` command displays the connection configuration information between the nodes in a MetroCluster setup.

Parameters

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

If you specify the `-fields <fieldname>,...` parameter, the command displays only the fields that you specify.

| [-instance] }

If this parameter is specified, the command displays detailed information about all entries.

[-dr-group-id <integer>] - DR Group ID

If this parameter is specified, the command displays information for the matching DR group.

[-cluster-uuid <UUID>] - Cluster UUID

If this parameter is specified, the command displays information for the matching cluster specified by uuid.

[-cluster <Cluster name>] - Cluster Name

If this parameter is specified, the command displays information for the matching cluster.

[-node-uuid <UUID>] - Node UUID

If this parameter is specified, the command displays information for the matching node specified by uuid.

[-node <text>] - Node Name

If this parameter is specified, the command displays information for the matching nodes.

[-home-port {<netport>|<ifgrp>}] - Home Port

If this parameter is specified, the command displays information for the matching home-port.

[-relationship-type <Roles of MetroCluster Nodes>] - Relationship Role Type

If this parameter is specified, the command displays information for the matching relationship-type.

[-source-address <IP Address>] - Source Network Address

If this parameter is specified, the command displays information for the matching source address.

[-destination-address <IP Address>] - Destination Network Address

If this parameter is specified, the command displays information for the matching destination address.

[-partner-cluster-uuid <UUID>] - Partner Cluster UUID

If this parameter is specified, the command displays information for the matching partner-cluster-uuid.

[-partner-node-uuid <UUID>] - Partner Node UUID

If this parameter is specified, the command displays information for the matching partner-node-uuid.

[-partner-node <text>] - Partner Node Name

If this parameter is specified, the command displays information for the matching partner-node.

[-partner-type <text>] - Partner Relationship Type

If this parameter is specified, the command displays information for the matching partner-type.

[-config-state <text>] - Configuration State

If this parameter is specified, the command displays information for the matching config-state.

[-config-error-info <text>] - Configuration Error Information

If this parameter is specified, the command displays information for the matching config-error-info.

Examples

The following example shows the output of `metrocluster configuration-settings connection connect` command:

```
Output of the command before the connections are established using the
xref:{relative_path}metrocluster-configuration-settings-connection-
connect.html[metrocluster configuration-settings connection connect]
command:
clusA::> metrocluster configuration-settings connection show
DR                               Source           Destination
Group Cluster Node   Network Address Network Address Partner Type Config
State
-----
1      clusA A1
      Home Port: e0f
      10.140.113.214  10.140.113.216  HA Partner
disconnected
      Home Port: e0f
      10.140.113.214  10.140.113.218  DR Partner
disconnected
      Home Port: e0f
      10.140.113.214  10.140.113.249  DR Auxiliary
disconnected
      Home Port: e0g
      10.140.113.215  10.140.113.217  HA Partner
disconnected
      Home Port: e0g
      10.140.113.215  10.140.113.248  DR Partner
disconnected
      Home Port: e0g
      10.140.113.215  10.140.113.25   DR Auxiliary
disconnected
      A2
      Home Port: e0f
```

	10.140.113.216	10.140.113.214	HA Partner
disconnected	Home Port: e0f		
	10.140.113.216	10.140.113.249	DR Partner
disconnected	Home Port: e0f		
	10.140.113.216	10.140.113.218	DR Auxiliary
disconnected	Home Port: e0g		
	10.140.113.217	10.140.113.215	HA Partner
disconnected	Home Port: e0g		
	10.140.113.217	10.140.113.25	DR Partner
disconnected	Home Port: e0g		
	10.140.113.217	10.140.113.248	DR Auxiliary
disconnected			
clusB B2	Home Port: e0f		
	10.140.113.249	10.140.113.218	HA Partner
disconnected	Home Port: e0f		
	10.140.113.249	10.140.113.216	DR Partner
disconnected	Home Port: e0f		
	10.140.113.249	10.140.113.214	DR Auxiliary
disconnected	Home Port: e0g		
	10.140.113.25	10.140.113.248	HA Partner
disconnected	Home Port: e0g		
	10.140.113.25	10.140.113.217	DR Partner
disconnected	Home Port: e0g		
	10.140.113.25	10.140.113.215	DR Auxiliary
disconnected			
B1	Home Port: e0f		
	10.140.113.218	10.140.113.249	HA Partner
disconnected	Home Port: e0f		
	10.140.113.218	10.140.113.214	DR Partner
disconnected	Home Port: e0f		
	10.140.113.218	10.140.113.216	DR Auxiliary
disconnected			

```

Home Port: e0g
10.140.113.248 10.140.113.25 HA Partner
disconnected

Home Port: e0g
10.140.113.248 10.140.113.215 DR Partner
disconnected

Home Port: e0g
10.140.113.248 10.140.113.217 DR Auxiliary
disconnected
24 entries were displayed.
Output of the command after the connections are established using the
xref:{relative_path}metrocluster-configuration-settings-connection-
connect.html[metrocluster configuration-settings connection connect]
command:
clusA::> metrocluster configuration-settings connection show
DR Source Destination
Group Cluster Node Network Address Network Address Partner Type Config
State
-----
1 clusA A1
Home Port: e0f
10.140.113.214 10.140.113.216 HA Partner
completed

Home Port: e0f
10.140.113.214 10.140.113.218 DR Partner
completed

Home Port: e0f
10.140.113.214 10.140.113.249 DR Auxiliary
completed

Home Port: e0g
10.140.113.215 10.140.113.217 HA Partner
completed

Home Port: e0g
10.140.113.215 10.140.113.248 DR Partner
completed

Home Port: e0g
10.140.113.215 10.140.113.25 DR Auxiliary
completed

A2
Home Port: e0f
10.140.113.216 10.140.113.214 HA Partner
completed

Home Port: e0f
10.140.113.216 10.140.113.249 DR Partner
completed

```

completed	Home Port: e0f 10.140.113.216	10.140.113.218	DR Auxiliary
completed	Home Port: e0g 10.140.113.217	10.140.113.215	HA Partner
completed	Home Port: e0g 10.140.113.217	10.140.113.25	DR Partner
completed	Home Port: e0g 10.140.113.217	10.140.113.248	DR Auxiliary
clusB B2			
completed	Home Port: e0f 10.140.113.249	10.140.113.218	HA Partner
completed	Home Port: e0f 10.140.113.249	10.140.113.216	DR Partner
completed	Home Port: e0f 10.140.113.249	10.140.113.214	DR Auxiliary
completed	Home Port: e0g 10.140.113.25	10.140.113.248	HA Partner
completed	Home Port: e0g 10.140.113.25	10.140.113.217	DR Partner
completed	Home Port: e0g 10.140.113.25	10.140.113.215	DR Auxiliary
	B1		
completed	Home Port: e0f 10.140.113.218	10.140.113.249	HA Partner
completed	Home Port: e0f 10.140.113.218	10.140.113.214	DR Partner
completed	Home Port: e0f 10.140.113.218	10.140.113.216	DR Auxiliary
completed	Home Port: e0g 10.140.113.248	10.140.113.25	HA Partner
completed	Home Port: e0g 10.140.113.248	10.140.113.215	DR Partner

```
completed
                                Home Port: e0g
                                10.140.113.248  10.140.113.217  DR Auxiliary
completed
24 entries were displayed.
```

Related Links

- [metrocluster configuration-settings connection connect](#)

metrocluster configuration-settings dr-group create

Create a DR group in a MetroCluster over IP setup

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

Description

The `metrocluster configuration-settings dr-group create` command partners the nodes that will comprise a DR group in a MetroCluster setup.

This command is used for MetroCluster setups that are connected through IP links. MetroCluster setups that are connected through FC links will configure DR groups automatically and do not require the `metrocluster configuration-settings` commands.

The `metrocluster configuration-settings` commands are run in the following order to set up MetroCluster:

- `metrocluster configuration-settings dr-group create`,
- [metrocluster configuration-settings interface create](#),
- [metrocluster configuration-settings connection connect](#).

Before running this command, cluster peering must be configured between the local and partner clusters. Run the [cluster peer show](#) command to verify that peering is available between the local and partner clusters.

This command configures a local node and a remote node as DR partner nodes. The command also configures the HA partner of the local node and the HA partner of the remote node as the other DR partner nodes in the DR group.

Parameters

-partner-cluster <Cluster name> - Partner Cluster Name

Use this parameter to specify the name of the partner cluster.

-local-node {<nodename>|local} - Local Node Name

Use this parameter to specify the name of a node in the local cluster.

-remote-node <text> - Remote Node Name

Use this parameter to specify the name of a node in the partner cluster that is to be the DR partner of the

specified local node.

Examples

The following example shows the creation of the MetroCluster DR group:

```
clusA::> metrocluster configuration-settings dr-group create -partner
-cluster clusB -local-node A1 -remote-node B1
[Job 268] Job succeeded: DR Group Create is successful.

clusA::> metrocluster configuration-settings dr-group show
DR Group ID Cluster                               Node                               DR Partner Node
-----
1          clusA
                               A1                               B1
                               A2                               B2
          clusB
                               B2                               A2
                               B1                               A1

4 entries were displayed.
clusA::> metrocluster configuration-settings show-status
Cluster                               Node                               Configuration Settings
Status
-----
clusA
                               A1                               ready for interface create
                               A2                               ready for interface create
clusB
                               B1                               ready for interface create
                               B2                               ready for interface create

4 entries were displayed.
```

Related Links

- [metrocluster configuration-settings interface create](#)
- [metrocluster configuration-settings connection connect](#)
- [cluster peer show](#)

metrocluster configuration-settings dr-group delete

Delete a DR group in a MetroCluster over IP setup

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

Description

The `metrocluster configuration-settings dr-group delete` command deletes a DR group and its node partnerships that were configured using the [metrocluster configuration-settings dr-group create](#) command.

This command cannot be run if the [metrocluster configuration-settings interface create](#) command has configured a network logical interface on a network port provisioned for MetroCluster. The [metrocluster configuration-settings interface delete](#) command must then be run to delete the network logical interfaces on every node in the DR group.

The `metrocluster configuration-settings` commands are run in the following order to remove the MetroCluster over IP configuration:

- [metrocluster configuration-settings connection disconnect](#) ,
- [metrocluster configuration-settings interface delete](#) ,
- `metrocluster configuration-settings dr-group delete` .

Parameters

-dr-group-id <integer> - Dr group Id

This parameter identifies the DR group to be deleted.

Examples

The following example shows the deletion of the MetroCluster DR group:

```
clusA::> metrocluster configuration-settings dr-group delete -dr-group-id
1

Warning: This command deletes the existing DR group relationship. Are you
sure
        you want to proceed ? {y|n}: y
[Job 279] Job succeeded: DR Group Delete is successful.

clusA::> metrocluster configuration-settings dr-group show
No DR groups exist.

clusA::> metrocluster configuration-settings show-status
Cluster          Node          Configuration Settings
Status
-----
clusA
          A1          ready for DR group create
          A2          ready for DR group create
clusB
          B1          ready for DR group create
          B2          ready for DR group create

4 entries were displayed.
```

Related Links

- [metrocluster configuration-settings dr-group create](#)
- [metrocluster configuration-settings interface create](#)
- [metrocluster configuration-settings interface delete](#)
- [metrocluster configuration-settings connection disconnect](#)

metrocluster configuration-settings dr-group show

Display the DR groups in a MetroCluster over IP setup

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

Description

The `metrocluster configuration-settings dr-group show` command displays the DR groups and their nodes in the MetroCluster over IP setup.

Parameters

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

If you specify the `-fields <fieldname>,...` parameter, the command displays only the fields that you specify.

| [-instance] }

If this parameter is specified, the command displays detailed information about all entries.

[-dr-group-id <integer>] - DR Group ID

If this parameter is specified, the command displays information for the matching DR group.

[-cluster-uuid <UUID>] - Cluster UUID

If this parameter is specified, the command displays information for the matching cluster uuid.

[-cluster <Cluster name>] - Cluster Name

If this parameter is specified, the command displays information for the specified cluster.

[-node-uuid <UUID>] - Node UUID

If this parameter is specified, the command displays information for the matching nodes uuid.

[-node <text>] - Node Name

If this parameter is specified, the command displays information for the matching nodes.

[-dr-partner-node-uuid <UUID>] - DR Partner Node UUID

If this parameter is specified, the command displays information for the matching DR partner node uuid.

[-dr-partner-node <text>] - DR Partner Node Name

If this parameter is specified, the command displays information for the matching DR partner nodes.

Examples

The following example illustrates the display of DR group configuration in a four-node MetroCluster setup:

```
clusA::> metrocluster configuration-settings dr-group show
DR Group ID Cluster                               Node                               DR Partner Node
-----
1            clusA
              A1                               B1
              A2                               B2
              clusB
              B2                               A2
              B1                               A1
4 entries were displayed.
```

metrocluster configuration-settings interface create

Create a MetroCluster interface

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

Description

The `metrocluster configuration-settings interface create` command configures the network logical interfaces that will be used on a node in a MetroCluster setup to mirror NV logs and access remote storage.

This command is used for MetroCluster setups that are connected through IP links. MetroCluster setups that are connected through FC links do not require the user to provision network logical interfaces to mirror NV logs and access remote storage.

The `metrocluster configuration-settings` commands are run in the following order to set up MetroCluster:

- [metrocluster configuration-settings dr-group create](#) ,
- `metrocluster configuration-settings interface create` ,
- [metrocluster configuration-settings connection connect](#) .

Before running this command , the node's DR group must be configured using the [metrocluster configuration-settings dr-group create](#) command. Run the [metrocluster configuration-settings dr-group show](#) command to verify that the node's DR group has been configured.

Parameters

-cluster-name <Cluster name> - Cluster Name

Use this parameter to specify the name of the local or partner cluster.

-home-node <text> - Home Node

Use this parameter to specify the home node in the cluster which hosts the interface.

-home-port {<netport>|<ifgrp>} - Home Port

Use this parameter to specify the home port provisioned for MetroCluster.

-address <IP Address> - Network Address

Use this parameter to specify the network address to be assigned to the home port.

-netmask <Contiguous IP Mask> - Netmask

Use this parameter to specify the network mask to be assigned to the interface.

[-gateway <IP Address>] - Gateway

Use this parameter to specify the gateway to be assigned for the routed network.

[-vlan-id <integer>] - Virtual LAN ID

Use this parameter to specify the VLAN id.

Examples

This example shows configuring logical interface on MetroCluster IP capable port:

```
clusA::> metrocluster configuration-settings interface create -cluster
-name clusA -home-node A1 -home-port e0f -address 10.140.113.214 -netmask
255.255.192.0
```

```
[Job 281] Job succeeded: Interface Create is successful.
```

```
clusA::> metrocluster configuration-settings interface show
```

```
DR
```

```
Config
```

```
Group Cluster Node      Network Address Netmask          Gateway
```

```
State
```

```
-----
-----
1      clusA A1
           Home Port: e0f
                        10.140.113.214  255.255.192.0  -
```

```
completed
```

```
Output after configuring all the interfaces:
```

```
clusA::> metrocluster configuration-settings interface show
```

```
DR
```

```
Config
```

```
Group Cluster Node      Network Address Netmask          Gateway
```

```
State
```

```
-----
-----
1      clusA A1
           Home Port: e0f
                        10.140.113.214  255.255.192.0  -
completed
           Home Port: e0g
                        10.140.113.215  255.255.192.0  -
completed
           A2
           Home Port: e0f
                        10.140.113.216  255.255.192.0  -
completed
           Home Port: e0g
                        10.140.113.217  255.255.192.0  -
completed
           clusB B2
           Home Port: e0f
                        10.140.113.249  255.255.192.0  -
completed
```

```

Home Port: e0g
10.140.113.25 255.255.192.0 -
completed

B1
Home Port: e0f
10.140.113.218 255.255.192.0 -
completed

Home Port: e0g
10.140.113.248 255.255.192.0 -
completed
8 entries were displayed.

```

```
clusA::> metrocluster configuration-settings show-status
```

Cluster	Node	Configuration Settings
clusA	A1	ready for connection connect
	A2	ready for connection connect
clusB	B1	ready for connection connect
	B2	ready for connection connect

4 entries were displayed.

```
clusA::> metrocluster configuration-settings connection show
```

DR	Source	Destination
Group Cluster Node	Network Address	Network Address Partner Type Config
1 clusA A1	Home Port: e0f 10.140.113.214	10.140.113.216 HA Partner
disconnected	Home Port: e0f 10.140.113.214	10.140.113.218 DR Partner
disconnected	Home Port: e0f 10.140.113.214	10.140.113.249 DR Auxiliary
disconnected	Home Port: e0g 10.140.113.215	10.140.113.217 HA Partner
disconnected	Home Port: e0g 10.140.113.215	10.140.113.248 DR Partner

disconnected	Home Port: e0g	10.140.113.215	10.140.113.25	DR Auxiliary
disconnected	A2			
	Home Port: e0f	10.140.113.216	10.140.113.214	HA Partner
disconnected	Home Port: e0f	10.140.113.216	10.140.113.249	DR Partner
disconnected	Home Port: e0f	10.140.113.216	10.140.113.218	DR Auxiliary
disconnected	Home Port: e0g	10.140.113.217	10.140.113.215	HA Partner
disconnected	Home Port: e0g	10.140.113.217	10.140.113.25	DR Partner
disconnected	Home Port: e0g	10.140.113.217	10.140.113.248	DR Auxiliary
disconnected	clusB B2			
	Home Port: e0f	10.140.113.249	10.140.113.218	HA Partner
disconnected	Home Port: e0f	10.140.113.249	10.140.113.216	DR Partner
disconnected	Home Port: e0f	10.140.113.249	10.140.113.214	DR Auxiliary
disconnected	Home Port: e0g	10.140.113.25	10.140.113.248	HA Partner
disconnected	Home Port: e0g	10.140.113.25	10.140.113.217	DR Partner
disconnected	Home Port: e0g	10.140.113.25	10.140.113.215	DR Auxiliary
disconnected	B1			
	Home Port: e0f	10.140.113.218	10.140.113.249	HA Partner
disconnected				

```

disconnected      Home Port: e0f
                  10.140.113.218  10.140.113.214  DR Partner
disconnected      Home Port: e0f
                  10.140.113.218  10.140.113.216  DR Auxiliary
disconnected      Home Port: e0g
                  10.140.113.248  10.140.113.25   HA Partner
disconnected      Home Port: e0g
                  10.140.113.248  10.140.113.215  DR Partner
disconnected      Home Port: e0g
                  10.140.113.248  10.140.113.217  DR Auxiliary
disconnected
24 entries were displayed.

```

Related Links

- [metrocluster configuration-settings dr-group create](#)
- [metrocluster configuration-settings connection connect](#)
- [metrocluster configuration-settings dr-group show](#)

metrocluster configuration-settings interface delete

Delete a MetroCluster interface

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

Description

The `metrocluster configuration-settings interface delete` command deletes the network logical interface that was configured on a network port provisioned for MetroCluster.

This command cannot be run if the [metrocluster configuration-settings connection connect](#) command has set up the connections between the nodes in a DR group. The [metrocluster configuration-settings connection disconnect](#) command must then be run to remove the connections.

The `metrocluster configuration-settings` commands are run in the following order to remove the MetroCluster over IP configuration:

- [metrocluster configuration-settings connection disconnect](#) ,
- `metrocluster configuration-settings interface delete` ,
- [metrocluster configuration-settings dr-group delete](#) .

Parameters

-cluster-name <Cluster name> - Cluster Name

Use this parameter to specify the name of the local or partner cluster.

-home-node <text> - Home Node

Use this parameter to specify the home node in the cluster which hosts the interface.

-home-port {<netport>|<ifgrp>} - Home Port

Use this parameter to specify the home port provisioned for MetroCluster.

Examples

The following example shows the deletion of interface in a MetroCluster setup:

```
clusA::> metrocluster configuration-settings interface delete -cluster
-name clusA -home-node A1 -home-port e0f
[Job 271] Job succeeded: Interface Delete is successful.
```

```
clusA::> metrocluster configuration-settings interface show
```

DR

Config

Group	Cluster	Node	Network Address	Netmask	Gateway
-------	---------	------	-----------------	---------	---------

State

-----	-----	-----	-----	-----	-----

1	clusA	A1			
---	-------	----	--	--	--

Home Port: e0g

10.140.113.215	255.255.192.0	-
----------------	---------------	---

completed

A2

Home Port: e0f

10.140.113.216	255.255.192.0	-
----------------	---------------	---

completed

Home Port: e0g

10.140.113.217	255.255.192.0	-
----------------	---------------	---

completed

	clusB	B2			
--	-------	----	--	--	--

Home Port: e0f

10.140.113.249	255.255.192.0	-
----------------	---------------	---

completed

Home Port: e0g

10.140.113.25	255.255.192.0	-
---------------	---------------	---

completed

B1

Home Port: e0f

10.140.113.218	255.255.192.0	-
----------------	---------------	---

completed

Home Port: e0g
10.140.113.248 255.255.192.0 -

completed

7 entries were displayed.

```
clusA::> metrocluster configuration-settings show-status
```

Cluster	Node	Configuration Settings
Status		

clusA		
	A1	ready for next interface
create		
	A2	ready for connection connect
clusB		
	B1	ready for connection connect
	B2	ready for connection connect

4 entries were displayed.

Output of the command after deleting all the interfaces:

```
clusA::> metrocluster configuration-settings interface show
```

No interfaces exist.

```
clusA::> metrocluster configuration-settings show-status
```

Cluster	Node	Configuration Settings
Status		

clusA		
	A1	ready for interface create
	A2	ready for interface create
clusB		
	B1	ready for interface create
	B2	ready for interface create

4 entries were displayed.

Related Links

- [metrocluster configuration-settings connection connect](#)
- [metrocluster configuration-settings connection disconnect](#)
- [metrocluster configuration-settings dr-group delete](#)

metrocluster configuration-settings interface show

Display the network logical interfaces provisioned for MetroCluster

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

Description

The `metrocluster configuration-settings interface show` command displays the network logical interfaces that were provisioned for MetroCluster.

Parameters

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

If you specify the `-fields <fieldname>,...` parameter, the command displays only the fields that you specify.

| [-instance] }

If this parameter is specified, the command displays detailed information about all entries.

[-dr-group-id <integer>] - DR Group ID

If this parameter is specified, the command displays information for the matching DR group.

[-cluster-uuid <UUID>] - Cluster UUID

If this parameter is specified, the command displays information for the matching cluster specified by uuid.

[-cluster <Cluster name>] - Cluster Name

If this parameter is specified, the command displays information for the matching cluster..

[-node-uuid <UUID>] - Node UUID

If this parameter is specified, the command displays information for the matching nodes uuid.

[-node <text>] - Node Name

If this parameter is specified, the command displays information for the matching nodes.

[-home-port {<netport>|<ifgrp>}] - Home Port

If this parameter is specified, all interfaces with home-port set to this value are displayed.

[-address <IP Address>] - Network Address

If this parameter is specified, the command displays information for the matching network address.

[-netmask <Contiguous IP Mask>] - Netmask

If this parameter is specified, all interfaces with netmask set to this value are displayed.

[-gateway <IP Address>] - Gateway

If this parameter is specified, all interfaces with gateway set to this value are displayed.

[-config-state <text>] - Configuration State

If this parameter is specified, all interfaces with this field set to the specified value are displayed.

[-config-error-info <text>] - Configuration Error Information

If this parameter is specified, all interfaces with this field set to the specified value are displayed.

[-vlan-id <integer>] - Virtual LAN ID

If this parameter is specified, all interfaces with vlan-id set to this value are displayed.

Examples

The following example illustrates display of logical interfaces configured in a four-node MetroCluster setup:

```
clusA::> metrocluster configuration-settings interface show
DR
Config
Group Cluster Node      Network Address Netmask      Gateway
State
-----
-----
1      clusA A1
      Home Port: e0f
      10.140.113.214  255.255.192.0  -
completed
      Home Port: e0g
      10.140.113.215  255.255.192.0  -
completed
      A2
      Home Port: e0f
      10.140.113.216  255.255.192.0  -
completed
      Home Port: e0g
      10.140.113.217  255.255.192.0  -
completed
      clusB B2
      Home Port: e0f
      10.140.113.249  255.255.192.0  -
completed
      Home Port: e0g
      10.140.113.25   255.255.192.0  -
completed
      B1
      Home Port: e0f
      10.140.113.218  255.255.192.0  -
completed
      Home Port: e0g
      10.140.113.248  255.255.192.0  -
completed
8 entries were displayed.
```

metrocluster configuration-settings mediator add

Configure the network connections between the Mediator and MetroCluster nodes

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

Description

The `metrocluster configuration-settings mediator add` command configures the connection between the mediator and all the nodes in a MetroCluster configuration.

Before this command is run MetroCluster should be configured on all the clusters.

Mediator username and password are required to successfully add the mediator.

After this command completes successfully, every node will:

- Have a connection with the mediator.
- The mediator disks will be assigned to the nodes in the MetroCluster configuration.
- AUSO will be enabled.

Parameters

-mediator-address <IP Address> - Mediator IP Address

Specifies the IP address of the mediator to which the nodes in the MetroCluster configuration will be connected.

Examples

The following example connects the nodes to the mediator in a MetroCluster configuration over IP setup:

```
clusA::> metrocluster configuration-settings mediator add -mediator
-address 10.234.133.115
    Adding mediator and enabling Automatic Unplanned Switchover. It
might take a few minutes to complete.
    Please enter the username for the mediator: mediatoradmin
    Please enter the password for the mediator:
    Confirm the mediator password:
    Creating mediator mailboxes...
    Setting up connections to mediator from all nodes in the
clusters...
    Setting mediator mailbox from all nodes in the cluster...
    Enabling Automatic Unplanned Switchover for all nodes in the
cluster...
    Successfully added mediator.
```

metrocluster configuration-settings mediator remove

Tear down connections between the Mediator and MetroCluster nodes

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

Description

The `metrocluster configuration-settings mediator remove` command removes the connection between the mediator and all the nodes in a MetroCluster configuration.

Mediator username and password are required to successfully remove the mediator.

Parameters

`[-dr-group-id <integer>]` - DR Group Id (privilege: advanced)

Specifies the Disaster Recovery Group Identifier for which the mediator connections need to be removed.

Examples

The following example removes the connections between the nodes and the mediator in a MetroCluster configuration over IP setup:

```
clusA::> metrocluster configuration-settings mediator remove
Removing the mediator and disabling Automatic Unplanned Switchover.
It may take a few minutes to complete.
Please enter the username for the mediator: mediatoradmin
Please enter the password for the mediator:
Confirm the mediator password:
Disabling Automatic Unplanned Switchover for all nodes in the
cluster...
Removing mediator mailboxes...
Performing final cleanup...
Successfully removed the mediator.
```

metrocluster configuration-settings mediator show

Display the nodes connected to the mediator

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

Description

The `metrocluster configuration-settings mediator show` command displays the connection status of the nodes with the Mediator in a MetroCluster configuration.

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.

[-mediator-address <IP Address>] - Mediator IP Address

Specifies the IP address of the mediator to which the nodes in the MetroCluster configuration are connected.

[-port <integer>] - Mediator port number

Specifies the port of the mediator to which the nodes in the MetroCluster configuration are connected.

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

Specifies the nodes in the MetroCluster configuration which are connected to the mediator.

[-reachable {true|false}] - Connection Status of the Mediator

Specifies the connection status of the nodes with the mediator in the MetroCluster configuration.

[-configured {true|false}] - Mediator Configuration Status

Specifies the configuration status of the nodes with the mediator in the MetroCluster configuration.

Examples

The following example shows the mediator connection status in a MetroCluster configuration over IP setup:

```
cluster1_node_01::*> metrocluster configuration-settings mediator show
Mediator IP      Port      Node      Configuration
Connection
Status
-----
10.234.217.168  31784    cluster1_node_01    true      true
                  cluster1_node_02    true      true
                  cluster2_node_01    true      true
                  cluster2_node_02    true      true
```

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.