



# **metrocluster interconnect commands**

## **ONTAP 9.9.1 commands**

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# metrocluster interconnect commands

## metrocluster interconnect adapter modify

Modify MetroCluster interconnect adapter settings

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

### Description

The `metrocluster interconnect adapter modify` command enables you to modify settings of the MetroCluster interconnect adapter.

### Parameters

**-node {<nodename>|local} - Node Name (privilege: advanced)**

This parameter specifies the node name.

**-is-ood-enabled {true|false} - Is Out-of-Order Delivery Enabled? (privilege: advanced)**

This parameter specifies the out-of-order delivery setting on the adapter.

### Examples

The following example enables out-of-order delivery for the port 'fcvi\_device\_0' on the node 'clusA-01':

```
clusA::*> metrocluster interconnect adapter modify -node clusA-01 -adapter  
-port-name fcvi_device_0 -is-ood-enabled true
```

## metrocluster interconnect adapter show

Display MetroCluster interconnect adapter information

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

### Description

The `metrocluster interconnect adapter show` command displays interconnect adapter information for the nodes in a MetroCluster configuration.

This command displays the following details about the local node and the HA partner node:

- Node: This field specifies the name of the node in the cluster.
- Adapter Name: This field specifies the name of the interconnect adapter.
- Adapter Type: This field specifies the type of the interconnect adapter.
- Link Status: This field specifies the physical link status of the interconnect adapter.
- Is OOD Enabled: This field specifies the out-of-order delivery status of the interconnect adapter.

- IP Address: This field specifies the IP address assigned to the interconnect adapter.
- Port Number: This field specifies the port number of the interconnect adapter.

## 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.

**| [-connectivity ]**

Displays the connectivity information from all the interconnect adapters to the connected nodes.

**| [-switch ]**

Displays details of switches connected to all the interconnect adapters.

**| [-connectivity-hidden ] (privilege: advanced)**

Displays additional connectivity information (IP address, Area ID, Port ID) from all the interconnect adapters to the connected nodes.

**| [-instance ] }**

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

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

Displays information only about the interconnect adapters that are hosted by the specified node.

**[-adapter <text>] - Adapter**

Displays information only about the interconnect adapters that match the specified name.

**[-port-name <text>] - Port Name**

Displays information only about the interconnect adapters that host the specified port name.

**[-type <text>] - Adapter Type**

Displays information only about the interconnect adapters that match the specified adapter type.

**[-physical-status <text>] - Physical Status**

Displays information only about the interconnect adapters that match the specified physical status.

**[-wwn <text>] - Adapter Port World Wide Name**

Displays information only about the interconnect adapters that match the specified world wide name.

**[-address <text>] - IP Address**

Displays information only about the interconnect adapters that match the specified IP address.

**[-firmware-version <text>] - Firmware Version**

Displays information only about the interconnect adapters that match the specified firmware version.

**[-link-speed <text>] - Link Speed**

Displays information only about the interconnect adapters that match the specified link speed.

**[-link-speed-neg-type <text>] - Link Speed Negotiation Type**

Displays information only about the interconnect adapters that match the specified negotiated link speed type.

**[-switch-name <text>] - Switch Name**

Displays information only about the interconnect adapters that are connected to the specified switch.

**[-switch-model <text>] - Switch Model**

Displays information only about the interconnect adapters that are connected to the switch with the specified model.

**[-switch-wwn <text>] - Switch WWName**

Displays information only about the interconnect adapters that are connected to the switch with the specified world wide name.

**[-switch-vendor <text>] - Switch Vendor**

Displays information only about the interconnect adapters that are connected to the switch with the specified vendor.

**[-switch-status <text>] - Switch Status**

Displays information only about the interconnect adapters that are connected to the switch with the specified operational status.

**[-switch-port-number <text>] - Switch Port Number**

Displays information only about the interconnect adapters that are connected to the switch with the specified port number.

**[-switch-port-wwpn <text>] - Switch Port WWPName**

Displays information only about the interconnect adapters that are connected to the switch with the specified word wide port name.

**[-remote-adapter-name-list <text>,...] - Remote Adapter Name List**

Displays information only about the interconnect adapters that are connected to the specified remote adapters.

**[-remote-adapter-wwn-list <text>,...] - Remote Adapter WWName List**

Displays information only about the interconnect adapters that are connected to the remote adapters with the specified world wide names.

**[-remote-adapter-address-list <text>,...] - Remote Adapter IP Address List**

Displays information only about the interconnect adapters that are connected to the remote adapters with the specified IP addresses.

**[-remote-adapter-port-id-list <Hex Integer>,...] - Remote Adapter Port ID List**

Displays information only about the interconnect adapters that are connected to the remote adapters with the specified port IDs.

**[-remote-adapter-domain-id-list <integer>,...] - Remote Adapter Domain ID List**

Displays information only about the interconnect adapters that are connected to the remote adapters with the specified domain IDs.

**[`-remote-adapter-area-id-list <integer>,...`] - Remote Adapter Area ID List**

Displays information only about the interconnect adapters that are connected to the remote adapters with the specified Area IDs.

**[`-remote-partner-system-id-list <integer>,...`] - Remote Partner System ID List**

Displays information only about the interconnect adapters that are connected to the remote nodes with the specified System IDs.

**[`-remote-partner-name-list {<nodename>|local}`] - Remote Partner Name List**

Displays information only about the interconnect adapters that are connected to the specified remote nodes.

**[`-is-ood-enabled {true|false}`] - Is Out-of-Order Delivery Enabled?**

Displays information only about the interconnect adapters that match the specified out-of-order delivery setting.

## Examples

The following example shows the output of the command during normal operation (neither cluster is in switchover state):

```
clusA::> metrocluster interconnect adapter show
```

	Node	Adapter	Type	Link Status	Is OOD Enabled?	IP Address	Port
Number							
	clusA-01	cxgb3_0	iWARP	Up	false	10.0.1.1	c0a
	clusA-01	cxgb3_0	iWARP	Down	false	10.0.2.1	c0b
	clusA-01	fcvi_device_0	FC-VI	Up	false	1.0.0.1	1a
	clusA-01	fcvi_device_1	FC-VI	Up	false	2.0.0.3	1b
	clusA-02	cxgb3_0	iWARP	Up	false	10.0.1.2	c0a
	clusA-02	cxgb3_0	iWARP	Down	false	10.0.2.2	c0b
	clusA-02	fcvi_device_0	FC-VI	Up	false	1.0.1.1	1a
	clusA-02	fcvi_device_1	FC-VI	Up	false	2.0.1.3	1b

The following example shows the output of the command after MetroCluster switchover is performed:

```
clusA::> metrocluster interconnect adapter show
```

	Node	Adapter	Type	Link Status	Is OOD Enabled?	IP Address	Port
Number							
	clusA-01	cxgb3_0	iWARP	Up	false	10.0.1.1	c0a
	clusA-01	cxgb3_0	iWARP	Down	false	10.0.2.1	c0b
	clusA-01	fcvi_device_0	FC-VI	Down	false	1.0.0.1	1a
	clusA-01	fcvi_device_1	FC-VI	Down	false	2.0.0.3	1b
	clusA-02	cxgb3_0	iWARP	Up	false	10.0.1.2	c0a
	clusA-02	cxgb3_0	iWARP	Down	false	10.0.2.2	c0b
	clusA-02	fcvi_device_0	FC-VI	Down	false	1.0.1.1	1a
	clusA-02	fcvi_device_1	FC-VI	Down	false	2.0.1.3	1b

The following example shows the output of the command with connectivity field during normal operation (neither cluster is in switchover state):

```
clusA::> metrocluster interconnect adapter show -connectivity -node local  
-type FC-VI
```

```
Adapter Name: fcvi_device_0
```

```
WWName: 21:00:00:24:ff:32:01:68
```

```
PortNo: 1a
```

```
Remote Adapters:
```

Adapter Name	Partner Node Name	World Wide Name	PortId
fcvi_device_0	clusA-01	21:00:00:24:ff:32:01:80	65536
fcvi_device_0	clusB-01	21:00:00:24:ff:32:01:54	131072
fcvi_device_0	clusB-02	21:00:00:24:ff:32:01:60	131328

```
Adapter Name: fcvi_device_1
```

```
WWName: 21:00:00:24:ff:32:01:69
```

```
PortNo: 1b
```

```
Remote Adapters:
```

Adapter Name	Partner Node Name	World Wide Name	PortId
fcvi_device_1	clusA-01	21:00:00:24:ff:32:01:81	196608
fcvi_device_1	clusB-01	21:00:00:24:ff:32:01:55	262144
fcvi_device_1	clusB-02	21:00:00:24:ff:32:01:61	262400

The following example shows the output of the command with connectivity field after MetroCluster switchover is performed.

```
clusA::> metrocluster interconnect adapter show -connectivity -node local
-type FC-VI
Adapter Name: fcvi_device_0
                WWName: 21:00:00:24:ff:32:01:68
                PortNo: 1a

Remote Adapters:
Adapter Name Partner Node Name World Wide Name      PortId
-----
fcvi_device_0
clusA-01      21:00:00:24:ff:32:01:80  65536
Adapter Name: fcvi_device_1
                WWName: 21:00:00:24:ff:32:01:69
                PortNo: 1b

Remote Adapters:
Adapter Name Partner Node Name World Wide Name      PortId
-----
fcvi_device_1
clusA-01      21:00:00:24:ff:32:01:81  196608
```

## metrocluster interconnect mirror show

Display MetroCluster interconnect mirror information

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

### Description

The `metrocluster interconnect mirror show` command displays NVRAM mirror information for the nodes configured in a MetroCluster.

This command displays the following details about the local node and the HA partner node:

- Node: This field specifies the name of the node in the cluster.
- Partner Name: This field specifies the name of the partner node.
- Partner Type: This field specifies the type of the partner.
- Mirror Admin Status: This field specifies the administrative status of the NVRAM mirror between partner nodes.
- Mirror Oper Status: This field specifies the operational status of the NVRAM mirror between partner nodes.
- Adapter: This field specifies the name of the interconnect adapter used for NVRAM mirroring.
- Type: This field specifies the type of the interconnect adapter used for NVRAM mirroring.
- Status: This field specifies the physical status of the interconnect adapter used for NVRAM mirroring.



## 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.

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

If this parameter is specified, mirror details of the specified node are displayed.

**[-partner-type {HA|DR|AUX}] - Partner Type**

If this parameter is specified, mirror details of the specified partner type are displayed.

**[-adapter <text>] - Adapter**

If this parameter is specified, mirror details of the specified adapter are displayed.

**[-type <text>] - Adapter Type**

If this parameter is specified, mirror details of the specified adapter type are displayed.

**[-status <text>] - Status**

If this parameter is specified, mirror details of the adapter with the specified status are displayed.

**[-mirror-oper-status {unknown|online|offline}] - Mirror Operational Status**

If this parameter is specified, only mirror details with the specified operational status are displayed.

**[-partner-name <text>] - Partner Name**

If this parameter is specified, mirror details of the specified partner are displayed.

**[-mirror-admin-status {enabled|disabled}] - Mirror Administrative Status**

If this parameter is specified, only mirror details with the specified administrative status are displayed.

## Examples

The following example shows the output of the command during normal operation (neither cluster is in switchover state):

```
clusA::> metrocluster interconnect mirror show
```

			Mirror	Mirror				
		Partner	Admin	Oper				
Node	Partner	Name	Type	Status	Status	Adapter	Type	Status
----	-----	-----	-----	-----	-----	-----	-----	-----
clusA-01								
	clusA-02		HA	enabled	online			
						cxgb3_0	iWARP	Up
						cxgb3_0	iWARP	Up
	clusB-01		DR	enabled	online			
						fcvi_device_0		
							FC-VI	Up
						fcvi_device_1		
							FC-VI	Up
clusA-02								
	clusA-01		HA	enabled	online			
						cxgb3_0	iWARP	Up
						cxgb3_0	iWARP	Up
	clusB-02		DR	enabled	online			
						fcvi_device_0		
							FC-VI	Up
						fcvi_device_1		
							FC-VI	Up

The following example shows the output of the command after MetroCluster switchover is performed:

```
clusA::> metrocluster interconnect mirror show
```

			Mirror	Mirror				
		Partner	Admin	Oper				
Node	Partner	Name	Type	Status	Status	Adapter	Type	Status
----	-----	-----	-----	-----	-----	-----	-----	-----
clusA-01								
	clusA-02		HA	enabled	online			
						cxgb3_0	iWARP	Up
						cxgb3_0	iWARP	Up
	clusB-01		DR	disabled	offline			
						fcvi_device_0		
							FC-VI	Up
						fcvi_device_1		
							FC-VI	Up
clusA-02								
	clusA-01		HA	enabled	online			
						cxgb3_0	iWARP	Up
						cxgb3_0	iWARP	Up
	clusB-02		DR	disabled	offline			
						fcvi_device_0		
							FC-VI	Up
						fcvi_device_1		
							FC-VI	Up

## metrocluster interconnect mirror multipath show

Display multipath information

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

### Description

The `metrocluster interconnect mirror multipath show` command displays the NVRAM mirror multipath policy for the nodes configured in a MetroCluster.

This command displays the following details about the local node and the HA partner node:

- **Node:** This field specifies the name of the node in the cluster.
- **Multipath Policy:** This field specifies the multipath policy used for NVRAM mirroring.

## 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.

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

If this parameter is specified, mirror details of the specified node are displayed.

**[-multipath-policy {no-mp|static-map|dynamic-map|round-robin}] - Multipath Policy**

If this parameter is specified, nodes with the specified multipath policy are displayed.

## Examples

The following example shows the output of the command:

```
clusA::> metrocluster interconnect mirror multipath show
Node           Multipath Policy
-----
clusA-1        static-map
clusA-2        static-map
```

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