



# **View and manage MetroCluster configurations**

ONTAP 9.14.1 REST API reference

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# View and manage MetroCluster configurations

## Cluster MetroCluster endpoint overview

### Overview

You can use this API to create, perform operations, and retrieve relevant information pertaining to MetroCluster. The GET operation fetches MetroCluster status and configuration parameters for the local and partner cluster. The PATCH operation executes a switchover, heal or switchback operation. The POST request can be used to setup a MetroCluster.

### Creating a MetroCluster

A new MetroCluster can be set up by issuing a POST to `/cluster/metrocluster`. Parameters are provided in the body of the POST request.

#### Fields used for setting up a MetroCluster configuration

The fields used for MetroCluster APIs are either required or optional and are described as follows:

#### Required configuration fields

These fields are always required for any POST `/cluster/metrocluster` request.

- `partner_cluster.name` - Specifies the partner cluster name to which cluster peering has been established.
- `dr_pairs` - Specifies local and DR partner node pairs. Each pair uniquely identifies a DR group.

#### Optional configuration fields

This field is used to set up additional components in a MetroCluster configuration.

- `mediator.*` - Specifies mediator parameters. If Mediator Assisted Unplanned Switchover (MAUSO) functionality is required, then a mediator should be configured.
- `mccip_ports` - Specifies relevant layer 3 network configuration information for each port. These include port name, node name, IP address, gateway, and netmask. If `mccip_ports` is not provided, then the API automatically generates IP addresses for the ports and creates a layer 2 network configuration.

#### Polling the setup job

After a successful POST `/cluster/metrocluster` is issued, an HTTP status code of 202 (Accepted) is returned along with a job UUID and a link in the body of the response. The setup job continues asynchronously and can be monitored by using the job UUID and the `/cluster/jobs` API. The "message" field in the response of the GET `/cluster/jobs/{uuid}` request shows the current step in the job, and the "state" field shows the overall state of the job.

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### Examples

## Setting up a 4-node MetroCluster

This example shows the POST body when setting up a 4-node MetroCluster along with a mediator. It is required that cluster peering be established between two clusters, in this example, site "mcc\_siteA" and "mcc\_siteB" before issuing the POST request. Nodes "node-a" and "node-b" are HA partners and part of the local cluster "mcc\_siteA", whereas nodes "node-c" and "node-d" are HA partners in the partner cluster "mcc\_siteB". Specifying a single DR pairing of "node-a" and "node-c" is sufficient to identify a DR group -- "node-a" and "node-c" will be designated primary DR partners ("node-b" and "node-d" too). "node-d" will then be designated auxiliary partner of "node-a". Once the MetroCluster configuration has been completed, and since mediator parameters have been provided, the mediator will be setup and MAUSO enabled.

```
# API
/api/cluster/metrocluster
```

### POST body included from file

```
mcc_post_body.txt:
{
  "partner_cluster" : {
    "name": "mcc_siteB"
  },
  "dr_pairs" : [
    {
      "node" : {
        "name" : "node-a"
      },
      "partner" : {
        "name" : "node-c"
      }
    }
  ],
  "mediator" : {
    "ip_address" : "1.2.3.4",
    "user" : "mcc_mediator",
    "password" : "openMediator"
  }
}
curl -X POST https://<mgmt-ip>/api/cluster/metrocluster -d
"@mcc_post_body.txt"
```

## Inline POST body

```
curl -X POST https://<mgmt-ip>/api/cluster/metrocluster -d
'{"partner_cluster" : {"name": "mcc_siteB" }, "dr_pairs" : [{"node" :
{"name" : "node-a" }, "partner" : {"name" : "node-c" }]}, "mediator" :
{"ip_address" : "1.2.3.4", "user" : "mcc_mediator" , "password" :
"openMediator" }{'
```

## POST Response

```
HTTP/1.1 202 Accepted
Date: Thu, 09 Jan 2020 20:38:05 GMT
Server: libzapid-httpd
X-Content-Type-Options: nosniff
Cache-Control: no-cache,no-store,must-revalidate
Location: /api/cluster/metrocluster
Content-Length: 189
Content-Type: application/hal+json
{
  "job": {
    "uuid": "f23abddb-331f-11ea-acd3-005056a708b2",
    "_links": {
      "self": {
        "href": "/api/cluster/jobs/f23abddb-331f-11ea-acd3-005056a708b2"
      }
    }
  }
}
```

## Monitoring the job progress

Use the link provided in the response to the POST request to fetch information for the setup job.

### Request

```
curl -X GET https://<mgmt-ip>/api/cluster/jobs/f23abddb-331f-11ea-acd3-
005056a708b2
```

### Job status response

The following is an example of the job status response returned by the running MetroCluster setup job:

```
HTTP/1.1 200 OK
Date: Thu, 09 Jan 2020 20:40:20 GMT
Server: libzapid-httpd
X-Content-Type-Options: nosniff
Cache-Control: no-cache,no-store,must-revalidate
Content-Length: 373
Content-Type: application/hal+json
{
  "uuid": "f23abdb-331f-11ea-acd3-005056a708b2",
  "description": "POST /api/cluster/metrocluster",
  "state": "running",
  "message": "Checking remote storage pool",
  "code": 2432844,
  "start_time": "2020-01-09T15:38:08-05:00",
  "_links": {
    "self": {
      "href": "/api/cluster/jobs/f23abdb-331f-11ea-acd3-005056a708b2"
    }
  }
}
```

### Completion message

This is the final update message from the setup job indicating completion.

```
{
  "uuid": "f23abdb-331f-11ea-acd3-005056a708b2",
  "description": "POST /api/cluster/metrocluster",
  "state": "running",
  "message": "MetroCluster setup is complete",
  "code": 2432849,
  "start_time": "2020-01-09T15:38:08-05:00",
  "_links": {
    "self": {
      "href": "/api/cluster/jobs/f23abdb-331f-11ea-acd3-005056a708b2"
    }
  }
}
```

### Final status of a successful MetroCluster setup workflow

When the setup job completes, the 'end\_time' field is populated, and the 'state' and 'message' fields report the final status.

```
HTTP/1.1 200 OK
Date: Thu, 09 Jan 2020 20:43:54 GMT
Server: libzapid-httpd
X-Content-Type-Options: nosniff
Cache-Control: no-cache,no-store,must-revalidate
Content-Length: 360
Content-Type: application/hal+json
{
  "uuid": "f23abddb-331f-11ea-acd3-005056a708b2",
  "description": "POST /api/cluster/metrocluster",
  "state": "success",
  "message": "success",
  "code": 0,
  "start_time": "2020-01-09T15:38:08-05:00",
  "end_time": "2020-01-09T15:43:50-05:00",
  "_links": {
    "self": {
      "href": "/api/cluster/jobs/f23abddb-331f-11ea-acd3-005056a708b2"
    }
  }
}
```

## Retrieving the MetroCluster configuration after completion of the POST request

### Request

```
curl -X GET https://<mgmt-ip>/api/cluster/metrocluster
```

### Response

```
HTTP/1.1 200 OK
Date: Thu, 09 Jan 2020 20:49:40 GMT
Server: libzapid-httpd
X-Content-Type-Options: nosniff
Cache-Control: no-cache,no-store,must-revalidate
Content-Length: 849
Content-Type: application/hal+json
{
  "local": {
    "configuration_state": "configured",
    "periodic_check_enabled": true,
    "mode": "normal",
    "partner_cluster_reachable": true,
    "cluster": {
      "name": "mcc_siteA",
      "uuid": "4294c4f2-30e2-11ea-8cac-005056a708b2",
      "_links": {
        "self": {
          "href": "/api/cluster"
        }
      }
    }
  },
  "remote": {
    "configuration_state": "configured",
    "periodic_check_enabled": true,
    "mode": "normal",
    "cluster": {
      "name": "mcc_siteB",
      "uuid": "4207c6a5-30e2-11ea-be25-005056a7dc84",
      "_links": {
        "self": {
          "href": "/api/cluster/peers/4207c6a5-30e2-11ea-be25-005056a7dc84/cluster"
        }
      }
    }
  },
  "configuration_type": "ip_fabric",
  "_links": {
    "self": {
      "href": "/api/cluster/metrocluster"
    }
  }
}
```



## Retrieving information about the nodes in a MetroCluster configuration

### Request

```
curl -X GET https://<mgmt-ip>/api/cluster/metrocluster/nodes
```

### Response

```
HTTP/1.1 200 OK
Date: Fri, 10 Jan 2020 02:26:20 GMT
Server: libzapid-httpd
X-Content-Type-Options: nosniff
Cache-Control: no-cache,no-store,must-revalidate
Content-Type: application/hal+json
Transfer-Encoding: chunked
{
  "records": [
    {
      "dr_group_id": 1,
      "cluster": {
        "name": "mcc_siteA",
        "uuid": "4294c4f2-30e2-11ea-8cac-005056a708b2",
        "_links": {
          "self": {
            "href": "/api/cluster"
          }
        }
      },
      "node": {
        "name": "node-a",
        "uuid": "1e6b0137-30dd-11ea-82ba-005056a7c78a",
        "_links": {
          "self": {
            "href": "/api/cluster/nodes/1e6b0137-30dd-11ea-82ba-005056a7c78a"
          }
        }
      },
      "_links": {
        "self": {
          "href": "/api/cluster/metrocluster/nodes/1e6b0137-30dd-11ea-82ba-005056a7c78a"
        }
      }
    },
  ],
}
```

```

{
  "dr_group_id": 1,
  "cluster": {
    "name": "mcc_siteA",
    "uuid": "4294c4f2-30e2-11ea-8cac-005056a708b2",
    "_links": {
      "self": {
        "href": "/api/cluster"
      }
    }
  },
  "node": {
    "name": "node-b",
    "uuid": "1e57ba22-30dd-11ea-8b19-005056a708b2",
    "_links": {
      "self": {
        "href": "/api/cluster/nodes/1e57ba22-30dd-11ea-8b19-005056a708b2"
      }
    }
  },
  "_links": {
    "self": {
      "href": "/api/cluster/metrocluster/nodes/1e57ba22-30dd-11ea-8b19-005056a708b2"
    }
  }
},
{
  "dr_group_id": 1,
  "cluster": {
    "name": "mcc_siteB",
    "uuid": "4207c6a5-30e2-11ea-be25-005056a7dc84",
    "_links": {
      "self": {
        "href": "/api/cluster/peers/4207c6a5-30e2-11ea-be25-005056a7dc84/cluster"
      }
    }
  },
  "node": {
    "name": "node-c",
    "uuid": "1e563efc-30dd-11ea-a9d3-005056a71573",
    "_links": {
      "self": {
        "href": "/api/cluster/nodes/1e563efc-30dd-11ea-a9d3-

```

```

005056a71573"
    }
  }
},
"_links": {
  "self": {
    "href": "/api/cluster/metrocluster/nodes/1e563efc-30dd-11ea-a9d3-
005056a71573"
  }
}
},
{
  "dr_group_id": 1,
  "cluster": {
    "name": "mcc_siteB",
    "uuid": "4207c6a5-30e2-11ea-be25-005056a7dc84",
    "_links": {
      "self": {
        "href": "/api/cluster/peers/4207c6a5-30e2-11ea-be25-
005056a7dc84/cluster"
      }
    }
  },
  "node": {
    "name": "node-d",
    "uuid": "1e400aa4-30dd-11ea-aded-005056a7dc84",
    "_links": {
      "self": {
        "href": "/api/cluster/nodes/1e400aa4-30dd-11ea-aded-
005056a7dc84"
      }
    }
  },
  "_links": {
    "self": {
      "href": "/api/cluster/metrocluster/nodes/1e400aa4-30dd-11ea-aded-
005056a7dc84"
    }
  }
}
],
"num_records": 4,
"_links": {
  "self": {
    "href": "/api/cluster/metrocluster/nodes"
  }
}

```

```
}  
}
```

## Retrieving MetroCluster status and configuration information

```
GET https://<mgmt-ip>/api/cluster/metrocluster  
{  
  "local": {  
    "configuration_state": "configured",  
    "periodic_check_enabled": true,  
    "mode": "normal",  
    "cluster": {  
      "name": "cluster1",  
      "uuid": "bbc00ca3-8d81-11e9-b5a9-005056826931",  
      "_links": {  
        "self": {  
          "href": "/api/cluster"  
        }  
      }  
    }  
  },  
  "remote": {  
    "configuration_state": "configured",  
    "periodic_check_enabled": true,  
    "mode": "normal",  
    "cluster": {  
      "name": "cluster3",  
      "uuid": "ce2cf803-8d81-11e9-87db-00505682cecf",  
      "_links": {  
        "self": {  
          "href": "/api/cluster/peers/ce2cf803-8d81-11e9-87db-  
00505682cecf/cluster"  
        }  
      }  
    }  
  },  
  "_links": {  
    "self": {  
      "href": "/api/cluster/metrocluster"  
    }  
  }  
}
```

## Initiating a switchover, heal or switchback command using PATCH

PATCH is used to initiate a variety of operations by specifying one of the following values in the "action" parameter:

- `switchover` - Initiates an Unplanned Switchover (USO).
- `negotiated_switchover` - Indicates that an Negotiated switchover (NSO) is to be performed.
- `negotiated_switchover_simulate` - Provides validation in preparation for NSO but does not perform the operation.
- `switchback` - Indicates that a switchback is to be performed.
- `switchback_simulate` - Provides validation for switchback but does not commit the operation.
- `heal_aggregates` - Indicates that the aggregates phase of the heal operation is to be performed.
- `heal_root_aggregates` - Indicates that the root aggregates phase of the heal operation is to be performed.

### PATCH Switchover example

```
PATCH https://<mgmt-ip>/api/cluster/metrocluster?action=switchover
{
  "job": {
    "uuid": "70e54274-57ee-11e9-aa33-005056820b99",
    "_links": {
      "self": {
        "href": "/api/cluster/jobs/70e54274-57ee-11e9-aa33-
005056820b99"
      }
    }
  }
}
```

This returns a job UUID. A subsequent GET for this job should return the following:

```
GET https://<mgmt-ip>/api/cluster/jobs/70e54274-57ee-11e9-aa33-005056820b99
{
  "uuid": "70e54274-57ee-11e9-aa33-005056820b99",
  "description": "MetroCluster Switchover Job",
  "state": "success",
  "message": "Complete: Switchover is successful.",
  "code": 0,
  "start_time": "2019-04-05T15:02:02-07:00",
  "end_time": "2019-04-05T15:02:30-07:00",
  "_links": {
    "self": {
      "href": "/api/cluster/jobs/70e54274-57ee-11e9-aa33-005056820b99"
    }
  }
}
```

#### **PATCH Switchback example:**

```
PATCH https://<mgmt-ip>/api/cluster/metrocluster?action=switchback
{
  "job": {
    "uuid": "a62714cc-57ec-11e9-aa33-005056820b99",
    "_links": {
      "self": {
        "href": "/api/cluster/jobs/a62714cc-57ec-11e9-aa33-005056820b99"
      }
    }
  }
}
```

This returns a job UUID with a link to the job. A subsequent GET for this job UUID can be used to retrieve the completion status of the operation:

```

GET https://<mgmt-ip>/api/cluster/jobs/a62714cc-57ec-11e9-aa33-
005056820b99
{
  "uuid": "a62714cc-57ec-11e9-aa33-005056820b99",
  "description": "MetroCluster Switchback Job",
  "state": "success",
  "message": "Complete: Switchback is successful.",
  "code": 0,
  "start_time": "2019-04-05T14:49:12-07:00",
  "end_time": "2019-04-05T14:50:12-07:00",
  "_links": {
    "self": {
      "href": "/api/cluster/jobs/a62714cc-57ec-11e9-aa33-005056820b99"
    }
  }
}

```

## Retrieve MetroCluster status and configuration details

GET /cluster/metrocluster

Introduced In: 9.8

Retrieves MetroCluster status and configuration details.

**Related ONTAP commands** `* metrocluster show * metrocluster node show`

### Parameters

Name	Type	In	Required	Description
fields	array[string]	query	False	Specify the fields to return.

### Response

Status: 200, Ok

Name	Type	Description
_links	<a href="#">self_link</a>	
configuration_type	string	Displays the MetroCluster configuration type.

Name	Type	Description
dr_pairs	array[ <a href="#">dr_pairs</a> ]	DR Pairs to create as part of a MetroCluster configure.
local	<a href="#">local</a>	
mccip_ports	array[ <a href="#">mccip_ports</a> ]	List of Port specifications.
mediator	<a href="#">mediator</a>	Mediator information
partner_cluster	<a href="#">partner_cluster</a>	Partner cluster information.
remote	<a href="#">remote</a>	



## Example response

```
{
  "_links": {
    "self": {
      "href": "/api/resourcelink"
    }
  },
  "configuration_type": "invalid",
  "dr_pairs": {
    "node": {
      "_links": {
        "self": {
          "href": "/api/resourcelink"
        }
      },
      "name": "node1",
      "uuid": "1cd8a442-86d1-11e0-ae1c-123478563412"
    },
    "partner": {
      "_links": {
        "self": {
          "href": "/api/resourcelink"
        }
      },
      "name": "node1",
      "uuid": "1cd8a442-86d1-11e0-ae1c-123478563412"
    }
  },
  "local": {
    "automatic_uso_failure_domain": "dr_group",
    "cluster": {
      "_links": {
        "self": {
          "href": "/api/resourcelink"
        }
      },
      "name": "cluster1",
      "uuid": "1cd8a442-86d1-11e0-ae1c-123478563412"
    },
    "configuration_state": "configuration_error",
    "mode": "normal"
  },
  "mccip_ports": {
    "l3_config": {
      "ipv4_interface": {
```

```

        "address": "10.10.10.7",
        "gateway": "10.1.1.1",
        "netmask": "24"
    }
},
"name": "elb",
"node": {
    "_links": {
        "self": {
            "href": "/api/resourcelink"
        }
    },
    "name": "node1",
    "uuid": "1cd8a442-86d1-11e0-ae1c-123478563412"
},
"vlan_id": 200
},
"mediator": {
    "dr_group": {
        "id": 0
    },
    "ip_address": "10.10.10.7",
    "password": "mypassword",
    "peer_cluster": {
        "_links": {
            "self": {
                "href": "/api/resourcelink"
            }
        },
        "name": "cluster2",
        "uuid": "ebe27c49-1adf-4496-8335-ab862aebebf2"
    },
    "peer_mediator_connectivity": "connected",
    "port": 31784,
    "reachable": 1,
    "user": "myusername",
    "uuid": "string"
},
"partner_cluster": {
    "_links": {
        "self": {
            "href": "/api/resourcelink"
        }
    },
    "name": "cluster1",
    "uuid": "1cd8a442-86d1-11e0-ae1c-123478563412"
}

```

```

},
"remote": {
  "automatic_uso_failure_domain": "dr_group",
  "cluster": {
    "_links": {
      "self": {
        "href": "/api/resourcelink"
      }
    },
    "name": "cluster1",
    "uuid": "1cd8a442-86d1-11e0-ae1c-123478563412"
  },
  "configuration_state": "configuration_error",
  "mode": "normal"
}
}

```

## Error

Status: Default

### ONTAP Error Response Codes

Error Code	Description
2425734	An internal error occurred. Wait a few minutes, and try the operation again. For further assistance, contact technical support.

Also see the table of common errors in the [Response body](#) overview section of this documentation.

Name	Type	Description
error	<a href="#">returned_error</a>	

## Example error

```
{
  "error": {
    "arguments": {
      "code": "string",
      "message": "string"
    },
    "code": "4",
    "message": "entry doesn't exist",
    "target": "uuid"
  }
}
```

## Definitions

## See Definitions

href

Name	Type	Description
href	string	

self\_link

Name	Type	Description
self	<a href="#">href</a>	

\_links

Name	Type	Description
self	<a href="#">href</a>	

node

Local node of the DR Group.

Name	Type	Description
_links	<a href="#">_links</a>	
name	string	
uuid	string	

partner

Partner node of the DR Group.

Name	Type	Description
_links	<a href="#">_links</a>	
name	string	
uuid	string	

dr\_pairs

Name	Type	Description
node	<a href="#">node</a>	Local node of the DR Group.
partner	<a href="#">partner</a>	Partner node of the DR Group.

cluster

Name	Type	Description
_links	<a href="#">_links</a>	
name	string	
uuid	string	

#### local

Name	Type	Description
automatic_uso_failure_domain	string	This parameter specifies the configuration of automatic switchover. The valid values for the parameter are ':' cluster':' triggers an unplanned switchover if all nodes in a DR cluster are down. dr_group':' triggers an unplanned switchover if both nodes of a DR group are down. disabled':' automatic switchover is disabled. If the cluster is not reachable due to errors, the parameter value will be set to not_reachable. This value is read only. If the cluster configuration is unknown, the parameter value will be set to unknown and the value is read only.
cluster	<a href="#">cluster</a>	
configuration_state	string	Indicates the state of the local cluster configuration.
mode	string	Specifies the mode of operation of the local cluster.
partner_cluster_reachable	boolean	Specifies whether the partner cluster is reachable from the local cluster.
periodic_check_enabled	boolean	Indicates whether or not a periodic check is enabled on the local cluster.

#### ipv4\_interface

Object to setup an interface along with its default router.

Name	Type	Description
address	string	IPv4 or IPv6 address
gateway	string	The IPv4 or IPv6 address of the default router.
netmask	string	Input as netmask length (16) or IPv4 mask (255.255.0.0). For IPv6, the default value is 64 with a valid range of 1 to 127. Output is always netmask length.

### l3\_config

Name	Type	Description
ipv4_interface	<a href="#">ipv4_interface</a>	Object to setup an interface along with its default router.

### node

#### Node information

Name	Type	Description
_links	<a href="#">_links</a>	
name	string	
uuid	string	

### mccip\_ports

Port configuration specification. l3\_config information is only needed when configuring a MetroCluster IP for use in a layer 3 network.

Name	Type	Description
l3_config	<a href="#">l3_config</a>	
name	string	Port name
node	<a href="#">node</a>	Node information
uuid	string	Port UUID
vlan_id	integer	VLAN ID

### dr\_group

DR group reference.

Name	Type	Description
id	integer	DR Group ID

peer\_cluster

The peer cluster that the mediator service is used for.

Name	Type	Description
_links	<a href="#">_links</a>	
name	string	
uuid	string	

mediator

Mediator information

Name	Type	Description
ca_certificate	string	CA certificate for ONTAP Mediator. This is optional if the certificate is already installed. <ul style="list-style-type: none"><li>• x-ntap-createOnly: true</li><li>• Introduced in: 9.8</li><li>• x-nullable: true</li></ul>
dr_group	<a href="#">dr_group</a>	DR group reference.
ip_address	string	The IP address of the mediator.
password	string	The password used to connect to the REST server on the mediator.
peer_cluster	<a href="#">peer_cluster</a>	The peer cluster that the mediator service is used for.
peer_mediator_connectivity	string	Indicates the mediator connectivity status of the peer cluster. Possible values are connected, unreachable, unknown.
port	integer	The REST server's port number on the mediator.



Name	Type	Description
reachable	boolean	Indicates the connectivity status of the mediator.
user	string	The username used to connect to the REST server on the mediator.
uuid	string	The unique identifier for the mediator service.

#### partner\_cluster

Partner cluster information.

Name	Type	Description
_links	<a href="#">_links</a>	
name	string	
uuid	string	

#### remote

Name	Type	Description
automatic_uso_failure_domain	string	This parameter specifies the configuration of automatic switchover. The valid values for the parameter are ':' cluster':' triggers an unplanned switchover if all nodes in a DR cluster are down. dr_group':' triggers an unplanned switchover if both nodes of a DR group are down. disabled':' automatic switchover is disabled. If the cluster is not reachable due to errors, the parameter value will be set to not_reachable. This value is read only. If the cluster configuration is unknown, the parameter value will be set to unknown and the value is read only.
cluster	<a href="#">cluster</a>	
configuration_state	string	Indicates the state of the remote cluster configuration.

Name	Type	Description
mode	string	Specifies the mode of operation of the remote cluster.
periodic_check_enabled	boolean	Indicates whether or not a periodic check is enabled on the remote cluster.

#### error\_arguments

Name	Type	Description
code	string	Argument code
message	string	Message argument

#### returned\_error

Name	Type	Description
arguments	array[ <a href="#">error_arguments</a> ]	Message arguments
code	string	Error code
message	string	Error message
target	string	The target parameter that caused the error.

## Initiate a switchover, heal, or switchback operation

PATCH /cluster/metrocluster

**Introduced In:** 9.8

Initiates a switchover, heal or switchback operation.

**Related ONTAP commands** \*metrocluster switchover \*metrocluster switchback \*metrocluster heal

### Parameters

Name	Type	In	Required	Description
action	string	query	False	<p>Action to perform on the MetroCluster.</p> <ul style="list-style-type: none"> <li>enum: ["switchover", "negotiated_switchover", "negotiated_switchover_simulate", "switchback", "switchback_simulate", "heal_aggregates", "heal_root_aggregates"]</li> </ul>
return_timeout	integer	query	False	<p>The number of seconds to allow the call to execute before returning. When doing a POST, PATCH, or DELETE operation on a single record, the default is 0 seconds. This means that if an asynchronous operation is started, the server immediately returns HTTP code 202 (Accepted) along with a link to the job. If a non-zero value is specified for POST, PATCH, or DELETE operations, ONTAP waits that length of time to see if the job completes so it can return something other than 202.</p> <ul style="list-style-type: none"> <li>Default value: 1</li> <li>Max value: 120</li> <li>Min value: 0</li> </ul>

## Request Body

Name	Type	Description
_links	<a href="#">self_link</a>	
configuration_type	string	Displays the MetroCluster configuration type.
dr_pairs	array[ <a href="#">dr_pairs</a> ]	DR Pairs to create as part of a MetroCluster configure.
local	<a href="#">local</a>	
mccip_ports	array[ <a href="#">mccip_ports</a> ]	List of Port specifications.
mediator	<a href="#">mediator</a>	Mediator information
partner_cluster	<a href="#">partner_cluster</a>	Partner cluster information.
remote	<a href="#">remote</a>	

## Example request

```
{
  "_links": {
    "self": {
      "href": "/api/resourcelink"
    }
  },
  "configuration_type": "invalid",
  "dr_pairs": {
    "node": {
      "_links": {
        "self": {
          "href": "/api/resourcelink"
        }
      },
      "name": "node1",
      "uuid": "1cd8a442-86d1-11e0-ae1c-123478563412"
    },
    "partner": {
      "_links": {
        "self": {
          "href": "/api/resourcelink"
        }
      },
      "name": "node1",
      "uuid": "1cd8a442-86d1-11e0-ae1c-123478563412"
    }
  },
  "local": {
    "automatic_uso_failure_domain": "dr_group",
    "cluster": {
      "_links": {
        "self": {
          "href": "/api/resourcelink"
        }
      },
      "name": "cluster1",
      "uuid": "1cd8a442-86d1-11e0-ae1c-123478563412"
    },
    "configuration_state": "configuration_error",
    "mode": "normal"
  },
  "mccip_ports": {
    "l3_config": {
      "ipv4_interface": {
```

```

        "address": "10.10.10.7",
        "gateway": "10.1.1.1",
        "netmask": "24"
    }
},
"name": "elb",
"node": {
    "_links": {
        "self": {
            "href": "/api/resourcelink"
        }
    },
    "name": "node1",
    "uuid": "1cd8a442-86d1-11e0-ae1c-123478563412"
},
"vlan_id": 200
},
"mediator": {
    "dr_group": {
        "id": 0
    },
    "ip_address": "10.10.10.7",
    "password": "mypassword",
    "peer_cluster": {
        "_links": {
            "self": {
                "href": "/api/resourcelink"
            }
        },
        "name": "cluster2",
        "uuid": "ebe27c49-1adf-4496-8335-ab862aebef2"
    },
    "peer_mediator_connectivity": "connected",
    "port": 31784,
    "reachable": 1,
    "user": "myusername",
    "uuid": "string"
},
"partner_cluster": {
    "_links": {
        "self": {
            "href": "/api/resourcelink"
        }
    },
    "name": "cluster1",
    "uuid": "1cd8a442-86d1-11e0-ae1c-123478563412"
}

```

```

},
"remote": {
  "automatic_uso_failure_domain": "dr_group",
  "cluster": {
    "_links": {
      "self": {
        "href": "/api/resourcelink"
      }
    },
    "name": "cluster1",
    "uuid": "1cd8a442-86d1-11e0-ae1c-123478563412"
  },
  "configuration_state": "configuration_error",
  "mode": "normal"
}
}

```

## Response

Status: 200, Ok

Name	Type	Description
job	<a href="#">job_link</a>	

## Example response

```

{
  "job": {
    "_links": {
      "self": {
        "href": "/api/resourcelink"
      }
    },
    "uuid": "string"
  }
}

```

## Response

Status: 202, Accepted

## Error

Status: Default

### ONTAP Error Response Codes

Error Code	Description
2424873	Failed to validate the node and cluster components before the "action" operation.
2425138	Switchover cannot be performed in the current DR mode. Run "metrocluster show" to view the DR mode of the local cluster, and run "switchover" only in one of the following situations: 1. The DR mode of the local cluster is "normal". 2. The DR mode of the local cluster is "partial-switchover".
2425333	Heal DR data aggregates cannot be performed in the current DR mode. Run "metrocluster show" and "metrocluster node show" to view the DR mode of the local cluster and the DR mode of the local nodes respectively, and run "heal aggregates" only in one of the following situations: 1. The DR mode of the local cluster is "switchover", and the DR mode of all local nodes is "switchover completed". 2. The DR mode of at least one local node is "heal aggrs failed".
2425335	Heal DR root aggregates cannot be performed in the current DR mode. Run "metrocluster node show" to view the DR mode of the local nodes, and run "heal root-aggregates" only in one of the following situations: 1. The DR mode of all local nodes is "heal aggrs completed". 2. The DR mode of at least one local node is "heal roots failed".
2425734	An internal error occurred. Wait a few minutes, and try the operation again. For further assistance, contact technical support.
2427558	This MetroCluster operation cannot be run because another "action" operation is currently in progress. Run "metrocluster operation history show -job-id id -instance" to view the status of the currently running operation.

Also see the table of common errors in the [Response body](#) overview section of this documentation.

Name	Type	Description
error	<a href="#">returned_error</a>	



## Example error

```
{
  "error": {
    "arguments": {
      "code": "string",
      "message": "string"
    },
    "code": "4",
    "message": "entry doesn't exist",
    "target": "uuid"
  }
}
```

## Definitions

## See Definitions

href

Name	Type	Description
href	string	

self\_link

Name	Type	Description
self	<a href="#">href</a>	

\_links

Name	Type	Description
self	<a href="#">href</a>	

node

Local node of the DR Group.

Name	Type	Description
_links	<a href="#">_links</a>	
name	string	
uuid	string	

partner

Partner node of the DR Group.

Name	Type	Description
_links	<a href="#">_links</a>	
name	string	
uuid	string	

dr\_pairs

Name	Type	Description
node	<a href="#">node</a>	Local node of the DR Group.
partner	<a href="#">partner</a>	Partner node of the DR Group.

cluster

Name	Type	Description
_links	<a href="#">_links</a>	
name	string	
uuid	string	

#### local

Name	Type	Description
automatic_uso_failure_domain	string	This parameter specifies the configuration of automatic switchover. The valid values for the parameter are ':' cluster':' triggers an unplanned switchover if all nodes in a DR cluster are down. dr_group':' triggers an unplanned switchover if both nodes of a DR group are down. disabled':' automatic switchover is disabled. If the cluster is not reachable due to errors, the parameter value will be set to not_reachable. This value is read only. If the cluster configuration is unknown, the parameter value will be set to unknown and the value is read only.
cluster	<a href="#">cluster</a>	
configuration_state	string	Indicates the state of the local cluster configuration.
mode	string	Specifies the mode of operation of the local cluster.
partner_cluster_reachable	boolean	Specifies whether the partner cluster is reachable from the local cluster.
periodic_check_enabled	boolean	Indicates whether or not a periodic check is enabled on the local cluster.

#### ipv4\_interface

Object to setup an interface along with its default router.

Name	Type	Description
address	string	IPv4 or IPv6 address
gateway	string	The IPv4 or IPv6 address of the default router.
netmask	string	Input as netmask length (16) or IPv4 mask (255.255.0.0). For IPv6, the default value is 64 with a valid range of 1 to 127. Output is always netmask length.

### l3\_config

Name	Type	Description
ipv4_interface	<a href="#">ipv4_interface</a>	Object to setup an interface along with its default router.

### node

#### Node information

Name	Type	Description
_links	<a href="#">_links</a>	
name	string	
uuid	string	

### mccip\_ports

Port configuration specification. l3\_config information is only needed when configuring a MetroCluster IP for use in a layer 3 network.

Name	Type	Description
l3_config	<a href="#">l3_config</a>	
name	string	Port name
node	<a href="#">node</a>	Node information
uuid	string	Port UUID
vlan_id	integer	VLAN ID

### dr\_group

DR group reference.

Name	Type	Description
id	integer	DR Group ID

peer\_cluster

The peer cluster that the mediator service is used for.

Name	Type	Description
_links	<a href="#">_links</a>	
name	string	
uuid	string	

mediator

Mediator information

Name	Type	Description
ca_certificate	string	CA certificate for ONTAP Mediator. This is optional if the certificate is already installed. <ul style="list-style-type: none"><li>• x-ntap-createOnly: true</li><li>• Introduced in: 9.8</li><li>• x-nullable: true</li></ul>
dr_group	<a href="#">dr_group</a>	DR group reference.
ip_address	string	The IP address of the mediator.
password	string	The password used to connect to the REST server on the mediator.
peer_cluster	<a href="#">peer_cluster</a>	The peer cluster that the mediator service is used for.
peer_mediator_connectivity	string	Indicates the mediator connectivity status of the peer cluster. Possible values are connected, unreachable, unknown.
port	integer	The REST server's port number on the mediator.

Name	Type	Description
reachable	boolean	Indicates the connectivity status of the mediator.
user	string	The username used to connect to the REST server on the mediator.
uuid	string	The unique identifier for the mediator service.

#### partner\_cluster

Partner cluster information.

Name	Type	Description
_links	<a href="#">_links</a>	
name	string	
uuid	string	

#### remote

Name	Type	Description
automatic_uso_failure_domain	string	This parameter specifies the configuration of automatic switchover. The valid values for the parameter are ':' cluster':' triggers an unplanned switchover if all nodes in a DR cluster are down. dr_group':' triggers an unplanned switchover if both nodes of a DR group are down. disabled':' automatic switchover is disabled. If the cluster is not reachable due to errors, the parameter value will be set to not_reachable. This value is read only. If the cluster configuration is unknown, the parameter value will be set to unknown and the value is read only.
cluster	<a href="#">cluster</a>	
configuration_state	string	Indicates the state of the remote cluster configuration.

Name	Type	Description
mode	string	Specifies the mode of operation of the remote cluster.
periodic_check_enabled	boolean	Indicates whether or not a periodic check is enabled on the remote cluster.

#### metrocluster

Holds MetroCluster status and configuration parameters for the local and remote clusters. REST: `/api/cluster/metrocluster`

Name	Type	Description
<a href="#">_links</a>	<a href="#">self_link</a>	
configuration_type	string	Displays the MetroCluster configuration type.
dr_pairs	array[ <a href="#">dr_pairs</a> ]	DR Pairs to create as part of a MetroCluster configure.
local	<a href="#">local</a>	
mccip_ports	array[ <a href="#">mccip_ports</a> ]	List of Port specifications.
mediator	<a href="#">mediator</a>	Mediator information
partner_cluster	<a href="#">partner_cluster</a>	Partner cluster information.
remote	<a href="#">remote</a>	

#### job\_link

Name	Type	Description
<a href="#">_links</a>	<a href="#">_links</a>	
uuid	string	The UUID of the asynchronous job that is triggered by a POST, PATCH, or DELETE operation.

#### error\_arguments

Name	Type	Description
code	string	Argument code

Name	Type	Description
message	string	Message argument

returned\_error

Name	Type	Description
arguments	array[ <a href="#">error_arguments</a> ]	Message arguments
code	string	Error code
message	string	Error message
target	string	The target parameter that caused the error.

## Set up a MetroCluster configuration

POST /cluster/metrocluster

**Introduced In:** 9.8

Sets up a MetroCluster.

### Required properties

- `partner_cluster.name`
- `dr_pairs`

### Recommended optional properties

- `mediator.*`
- `mccip_ports`

### Learn more

- [DOC /cluster/metrocluster](#)

### Related ONTAP commands

- `metrocluster configuration-settings dr-group create`
- `metrocluster configuration-settings interface create`
- `metrocluster configuration-settings connection connect`
- `metrocluster configuration-settings mediator add`



- storage aggregate create
- storage aggregate mirror
- metrocluster configure

## Parameters

Name	Type	In	Required	Description
return_timeout	integer	query	False	<p>The number of seconds to allow the call to execute before returning. When doing a POST, PATCH, or DELETE operation on a single record, the default is 0 seconds. This means that if an asynchronous operation is started, the server immediately returns HTTP code 202 (Accepted) along with a link to the job. If a non-zero value is specified for POST, PATCH, or DELETE operations, ONTAP waits that length of time to see if the job completes so it can return something other than 202.</p> <ul style="list-style-type: none"> <li>• Default value: 1</li> <li>• Max value: 120</li> <li>• Min value: 0</li> </ul>

## Request Body

Name	Type	Description
_links	<a href="#">self_link</a>	
configuration_type	string	Displays the MetroCluster configuration type.

Name	Type	Description
dr_pairs	array[ <a href="#">dr_pairs</a> ]	DR Pairs to create as part of a MetroCluster configure.
local	<a href="#">local</a>	
mccip_ports	array[ <a href="#">mccip_ports</a> ]	List of Port specifications.
mediator	<a href="#">mediator</a>	Mediator information
partner_cluster	<a href="#">partner_cluster</a>	Partner cluster information.
remote	<a href="#">remote</a>	

## Example request

```
{
  "_links": {
    "self": {
      "href": "/api/resourcelink"
    }
  },
  "configuration_type": "invalid",
  "dr_pairs": {
    "node": {
      "_links": {
        "self": {
          "href": "/api/resourcelink"
        }
      },
      "name": "node1",
      "uuid": "1cd8a442-86d1-11e0-ae1c-123478563412"
    },
    "partner": {
      "_links": {
        "self": {
          "href": "/api/resourcelink"
        }
      },
      "name": "node1",
      "uuid": "1cd8a442-86d1-11e0-ae1c-123478563412"
    }
  },
  "local": {
    "automatic_uso_failure_domain": "dr_group",
    "cluster": {
      "_links": {
        "self": {
          "href": "/api/resourcelink"
        }
      },
      "name": "cluster1",
      "uuid": "1cd8a442-86d1-11e0-ae1c-123478563412"
    },
    "configuration_state": "configuration_error",
    "mode": "normal"
  },
  "mccip_ports": {
    "l3_config": {
      "ipv4_interface": {
```

```

        "address": "10.10.10.7",
        "gateway": "10.1.1.1",
        "netmask": "24"
    }
},
"name": "elb",
"node": {
    "_links": {
        "self": {
            "href": "/api/resourcelink"
        }
    },
    "name": "node1",
    "uuid": "1cd8a442-86d1-11e0-ae1c-123478563412"
},
"vlan_id": 200
},
"mediator": {
    "dr_group": {
        "id": 0
    },
    "ip_address": "10.10.10.7",
    "password": "mypassword",
    "peer_cluster": {
        "_links": {
            "self": {
                "href": "/api/resourcelink"
            }
        },
        "name": "cluster2",
        "uuid": "ebe27c49-1adf-4496-8335-ab862aebef2"
    },
    "peer_mediator_connectivity": "connected",
    "port": 31784,
    "reachable": 1,
    "user": "myusername",
    "uuid": "string"
},
"partner_cluster": {
    "_links": {
        "self": {
            "href": "/api/resourcelink"
        }
    },
    "name": "cluster1",
    "uuid": "1cd8a442-86d1-11e0-ae1c-123478563412"
}

```

```

},
"remote": {
  "automatic_uso_failure_domain": "dr_group",
  "cluster": {
    "_links": {
      "self": {
        "href": "/api/resourcelink"
      }
    },
    "name": "cluster1",
    "uuid": "1cd8a442-86d1-11e0-ae1c-123478563412"
  },
  "configuration_state": "configuration_error",
  "mode": "normal"
}
}

```

## Response

Status: 202, Accepted

Name	Type	Description
job	<a href="#">job_link</a>	

## Example response

```

{
  "job": {
    "_links": {
      "self": {
        "href": "/api/resourcelink"
      }
    },
    "uuid": "string"
  }
}

```

## Headers

Name	Description	Type
Location	Useful for tracking the resource location	string

## Response

Status: 201, Created

## Error

Status: Default

### ONTAP Error Response Codes

Error Code	Description
2425734	An internal error occurred. Wait a few minutes, and try the operation again. For further assistance, contact technical support.
2432832	Required environment variables are not set.
2432833	Operation is already running.
2432834	MetroCluster is already configured.
2432835	Operation not supported.
2432836	There are not enough disks in Pool1. Wait a few minutes, and try the operation again. For further assistance, contact technical support.
2432839	Required parameters not set.
2432840	Configuring DR Groups
2432841	Generating IP addresses
2432843	Running Aggregate Recommender
2432844	Checking remote storage pool
2432845	Mirroring aggregates
2432846	Configuring MetroCluster and DR mirroring
2432848	Setting up MetroCluster
2432849	MetroCluster setup is complete
2432851	Minimum number of required data aggregates for MetroCluster configuration are still not mirrored. Wait a few minutes, and try the operation again. For further assistance, contact technical support.

Also see the table of common errors in the [Response body](#) overview section of this documentation.

Name	Type	Description
error	<a href="#">returned_error</a>	

### Example error

```
{
  "error": {
    "arguments": {
      "code": "string",
      "message": "string"
    },
    "code": "4",
    "message": "entry doesn't exist",
    "target": "uuid"
  }
}
```

### Definitions

## See Definitions

href

Name	Type	Description
href	string	

self\_link

Name	Type	Description
self	<a href="#">href</a>	

\_links

Name	Type	Description
self	<a href="#">href</a>	

node

Local node of the DR Group.

Name	Type	Description
_links	<a href="#">_links</a>	
name	string	
uuid	string	

partner

Partner node of the DR Group.

Name	Type	Description
_links	<a href="#">_links</a>	
name	string	
uuid	string	

dr\_pairs

Name	Type	Description
node	<a href="#">node</a>	Local node of the DR Group.
partner	<a href="#">partner</a>	Partner node of the DR Group.

cluster



Name	Type	Description
_links	<a href="#">_links</a>	
name	string	
uuid	string	

#### local

Name	Type	Description
automatic_uso_failure_domain	string	This parameter specifies the configuration of automatic switchover. The valid values for the parameter are ':' cluster':' triggers an unplanned switchover if all nodes in a DR cluster are down. dr_group':' triggers an unplanned switchover if both nodes of a DR group are down. disabled':' automatic switchover is disabled. If the cluster is not reachable due to errors, the parameter value will be set to not_reachable. This value is read only. If the cluster configuration is unknown, the parameter value will be set to unknown and the value is read only.
cluster	<a href="#">cluster</a>	
configuration_state	string	Indicates the state of the local cluster configuration.
mode	string	Specifies the mode of operation of the local cluster.
partner_cluster_reachable	boolean	Specifies whether the partner cluster is reachable from the local cluster.
periodic_check_enabled	boolean	Indicates whether or not a periodic check is enabled on the local cluster.

#### ipv4\_interface

Object to setup an interface along with its default router.

Name	Type	Description
address	string	IPv4 or IPv6 address
gateway	string	The IPv4 or IPv6 address of the default router.
netmask	string	Input as netmask length (16) or IPv4 mask (255.255.0.0). For IPv6, the default value is 64 with a valid range of 1 to 127. Output is always netmask length.

### l3\_config

Name	Type	Description
ipv4_interface	<a href="#">ipv4_interface</a>	Object to setup an interface along with its default router.

### node

#### Node information

Name	Type	Description
_links	<a href="#">_links</a>	
name	string	
uuid	string	

### mccip\_ports

Port configuration specification. l3\_config information is only needed when configuring a MetroCluster IP for use in a layer 3 network.

Name	Type	Description
l3_config	<a href="#">l3_config</a>	
name	string	Port name
node	<a href="#">node</a>	Node information
uuid	string	Port UUID
vlan_id	integer	VLAN ID

### dr\_group

DR group reference.

Name	Type	Description
id	integer	DR Group ID

peer\_cluster

The peer cluster that the mediator service is used for.

Name	Type	Description
_links	<a href="#">_links</a>	
name	string	
uuid	string	

mediator

Mediator information

Name	Type	Description
ca_certificate	string	CA certificate for ONTAP Mediator. This is optional if the certificate is already installed. <ul style="list-style-type: none"><li>• x-ntap-createOnly: true</li><li>• Introduced in: 9.8</li><li>• x-nullable: true</li></ul>
dr_group	<a href="#">dr_group</a>	DR group reference.
ip_address	string	The IP address of the mediator.
password	string	The password used to connect to the REST server on the mediator.
peer_cluster	<a href="#">peer_cluster</a>	The peer cluster that the mediator service is used for.
peer_mediator_connectivity	string	Indicates the mediator connectivity status of the peer cluster. Possible values are connected, unreachable, unknown.
port	integer	The REST server's port number on the mediator.

Name	Type	Description
reachable	boolean	Indicates the connectivity status of the mediator.
user	string	The username used to connect to the REST server on the mediator.
uuid	string	The unique identifier for the mediator service.

#### partner\_cluster

Partner cluster information.

Name	Type	Description
_links	<a href="#">_links</a>	
name	string	
uuid	string	

#### remote

Name	Type	Description
automatic_uso_failure_domain	string	This parameter specifies the configuration of automatic switchover. The valid values for the parameter are ':' cluster':' triggers an unplanned switchover if all nodes in a DR cluster are down. dr_group':' triggers an unplanned switchover if both nodes of a DR group are down. disabled':' automatic switchover is disabled. If the cluster is not reachable due to errors, the parameter value will be set to not_reachable. This value is read only. If the cluster configuration is unknown, the parameter value will be set to unknown and the value is read only.
cluster	<a href="#">cluster</a>	
configuration_state	string	Indicates the state of the remote cluster configuration.

Name	Type	Description
mode	string	Specifies the mode of operation of the remote cluster.
periodic_check_enabled	boolean	Indicates whether or not a periodic check is enabled on the remote cluster.

#### metrocluster

Holds MetroCluster status and configuration parameters for the local and remote clusters. REST: `/api/cluster/metrocluster`

Name	Type	Description
<a href="#">_links</a>	<a href="#">self_link</a>	
configuration_type	string	Displays the MetroCluster configuration type.
dr_pairs	array[ <a href="#">dr_pairs</a> ]	DR Pairs to create as part of a MetroCluster configure.
local	<a href="#">local</a>	
mccip_ports	array[ <a href="#">mccip_ports</a> ]	List of Port specifications.
mediator	<a href="#">mediator</a>	Mediator information
partner_cluster	<a href="#">partner_cluster</a>	Partner cluster information.
remote	<a href="#">remote</a>	

#### job\_link

Name	Type	Description
<a href="#">_links</a>	<a href="#">_links</a>	
uuid	string	The UUID of the asynchronous job that is triggered by a POST, PATCH, or DELETE operation.

#### error\_arguments

Name	Type	Description
code	string	Argument code

Name	Type	Description
message	string	Message argument

returned\_error

Name	Type	Description
arguments	array[ <a href="#">error_arguments</a> ]	Message arguments
code	string	Error code
message	string	Error message
target	string	The target parameter that caused the error.

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