



# **Manage cluster schedules**

## **ONTAP 9.8 REST API reference**

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# Manage cluster schedules

## Cluster schedules endpoint overview

### Overview

You can use the `/cluster/schedules` API to view, create, and modify job schedules in a cluster.

### Retrieving a job schedule

You can retrieve job schedules by issuing a GET request to `/cluster/schedules`. It is also possible to retrieve a specific schedule when qualified by its UUID to `/cluster/schedules/{uuid}`. You can apply queries on fields to retrieve all schedules that match the combined query.

### Example

```
# The API:
/api/cluster/schedules/

# The call:
curl -X GET 'https://<mgmt-ip>/api/cluster/schedules?type=interval'

# The response:
{
  "records": [
    {
      "uuid": "08ceae53-0158-11e9-a82c-005056bb4301",
      "name": "RepositoryBalanceMonitorJobSchedule",
      "type": "interval",
      "interval": "PT10M",
      "_links": {
        "self": {
          "href": "/api/cluster/schedules/08ceae53-0158-11e9-a82c-005056bb4301"
        }
      }
    },
    {
      "uuid": "0941e980-0158-11e9-a82c-005056bb4301",
      "name": "Balanced Placement Model Cache Update",
      "type": "interval",
      "interval": "PT7M30S",
      "_links": {
        "self": {
          "href": "/api/cluster/schedules/0941e980-0158-11e9-a82c-005056bb4301"
        }
      }
    }
  ]
}
```

```

    }
  },
  {
    "uuid": "0944b975-0158-11e9-a82c-005056bb4301",
    "name": "Auto Balance Aggregate Scheduler",
    "type": "interval",
    "interval": "PT1H",
    "_links": {
      "self": {
        "href": "/api/cluster/schedules/0944b975-0158-11e9-a82c-005056bb4301"
      }
    }
  },
  {
    "uuid": "0c65f1fb-0158-11e9-a82c-005056bb4301",
    "name": "Application Templates ASUP Dump",
    "type": "interval",
    "interval": "P1D",
    "_links": {
      "self": {
        "href": "/api/cluster/schedules/0c65f1fb-0158-11e9-a82c-005056bb4301"
      }
    }
  }
],
"num_records": 4,
"_links": {
  "self": {
    "href": "/api/cluster/schedules?type=interval"
  }
}
}

```

```
# The API:
/api/cluster/schedules/{uuid}

# The call:
curl -X GET 'https://<mgmt-ip>/api/cluster/schedules/25312bd8-0158-11e9-a82c-005056bb4301'

# The response:
{
  "uuid": "25312bd8-0158-11e9-a82c-005056bb4301",
  "name": "monthly",
  "cluster": {
    "name": "rodan-tsundere",
    "uuid": "f3f9bbfa-0157-11e9-a82c-005056bb4301"
  },
  "type": "cron",
  "cron": {
    "minutes": [
      20
    ],
    "hours": [
      0
    ],
    "days": [
      1
    ]
  },
  "_links": {
    "self": {
      "href": "/api/cluster/schedules/25312bd8-0158-11e9-a82c-005056bb4301"
    }
  }
}
```

## Creating a job schedule

You can create a job schedule by issuing a POST request to `/cluster/schedules` to a node in the cluster. For a successful request, the POST request returns a status code of 201. Job schedules can be of either type "cron" or type "interval". A cron schedule is run at specific minutes within the hour, or hours of the day, days of the week, days of the month, or months of the year. An interval schedule runs repeatedly at fixed intervals.

### Required fields

- **name** - Name of the job schedule You are required to provide a "minutes" field for a cron schedule. An "interval" field is required for an interval schedule. Do not provide both a "cron" field and an "interval" field.

The schedule UUID is created by the system.

### Cron schedule fields

- cron.minutes - Minutes within the hour (0 through 59)
- cron.hours - Hours of the day (0 through 23)
- cron.weekdays - Weekdays (0 through 6, where 0 is Sunday and 6 is Saturday.)
- cron.days - Days of the month (1 through 31)
- cron.months - Months of the year (1 through 12)

### Interval schedule field

- interval - Length of time in ISO 8601 duration format.

### Examples

#### Create an interval schedule with a 1-week interval

```
# The API:
/api/cluster/schedules
one_week_interval.txt:
{
  "name": "test_interval_1",
  "interval": "P1W"
}

# The call:
curl -X POST "https://<mgmt-ip>/api/cluster/schedules" -d
"@one_week_interval.txt"

# The response of a successful POST is empty.
```

#### Create a cron schedule that runs daily at 12:05

```
# The API:
/api/cluster/schedules
daily_noon_job.txt:
{
  "name": "test_cron_1",
  "cron":
  {
    "minutes": [ 5 ],
    "hours": [ 12 ]
  }
}

# The call:
curl -X POST "https://<mgmt-ip>/api/cluster/schedules" -d
"@daily_noon_job.txt"

# The response of a successful POST is empty.
```

### Optional fields

By default, the schedule is owned by the local cluster. In a MetroCluster configuration, you can specify the partner cluster if the local cluster is in the switchover state.

- `cluster.name` - Name of the cluster owning the schedule.
- `cluster.uuid` - UUID of the cluster owning the schedule.

### Records field

You can create multiple schedules in one request by providing an array of named records with schedule entries. Each entry must follow the required and optional fields listed above.

---

## Updating a job schedule

The following fields of an existing schedule can be modified:

- `cron.minutes`
- `cron.hours`
- `cron.weekdays`
- `cron.days`
- `cron.months`
- `interval` Note that you cannot modify the name, cluster, and type of schedule. Also, you cannot modify a cron field of an interval schedule, or the interval field of a cron schedule. You can apply queries on fields to modify all schedules that match the combined query.

## Examples

### Modify an interval schedule with a 2-day and 5-minute interval

```
# The API:
/api/cluster/schedules/{uuid}
every_two_days_five_minutes.txt:
{
  "interval": "P2DT5M"
}

# The call:
curl -X PATCH "https://<mgmt-ip>/api/cluster/schedules/{uuid}" -d
"@every_two_days_five_minutes.txt"

# The response of a successful PATCH is empty.
```

### Modify a cron schedule to run Mondays at 2

```
# The API:
/api/cluster/schedules/{uuid}
monday_at_two.txt:
{
  "cron":
  {
    "hours": [ 2 ],
    "weekdays": [ 1 ]
  }
}

# The call:
curl -X PATCH "https://<mgmt-ip>/api/cluster/schedules/{uuid}" -d
"@monday_at_two.txt"

# The response of a successful PATCH is empty.
```

---

## Deleting a job schedule

You can delete job schedules based on their UUID. You can apply queries on fields to delete all schedules that match the combined query.

### Example



```
# The API:
/api/cluster/schedules/{uuid}

# The call:
curl -X DELETE "https://<mgmt-ip>/api/cluster/schedules/{uuid}"

# The response of a successful DELETE of one schedule is empty.
```

```
# The API:
/api/cluster/schedules/

# The call:
curl -X DELETE "https://<mgmt-ip>/api/cluster/schedules/?name=test*"

# The response of a successful DELETE indicates the number of schedules
affected:
{
  "num_records": 2,
  "_links": {
    "self": {
      "href": "/api/cluster/schedules?name=test*"
    }
  }
}
```

---

## MetroCluster configurations

In a MetroCluster configuration, user-created schedules owned by the local cluster are replicated to the partner cluster. Likewise, user-created schedules owned by the partner cluster are replicated to the local cluster. The owning cluster for a particular schedule is shown in the "cluster.name" and "cluster.uuid" fields. Normally, only schedules owned by the local cluster can be created, modified, and deleted on the local cluster. However, when a MetroCluster configuration is in switchover, the cluster in switchover state can create, modify, and delete schedules owned by the partner cluster.

## Retrieve schedules

GET /cluster/schedules

**Introduced In:** 9.6

Retrieves a schedule.

## Parameters

Name	Type	In	Required	Description
name	string	query	False	Filter by name
interval	string	query	False	Filter by interval
uuid	string	query	False	Filter by uuid
cluster.uuid	string	query	False	Filter by cluster.uuid
cluster.name	string	query	False	Filter by cluster.name
cron.months	integer	query	False	Filter by cron.months
cron.days	integer	query	False	Filter by cron.days
cron.minutes	integer	query	False	Filter by cron.minutes
cron.weekdays	integer	query	False	Filter by cron.weekdays
cron.hours	integer	query	False	Filter by cron.hours
type	string	query	False	Filter by type
fields	array[string]	query	False	Specify the fields to return.
max_records	integer	query	False	Limit the number of records returned.
return_records	boolean	query	False	The default is true for GET calls. When set to false, only the number of records is returned.  • Default value: 1

Name	Type	In	Required	Description
return_timeout	integer	query	False	<p>The number of seconds to allow the call to execute before returning. When iterating over a collection, the default is 15 seconds. ONTAP returns earlier if either max records or the end of the collection is reached.</p> <ul style="list-style-type: none"> <li>• Default value: 1</li> <li>• Max value: 120</li> <li>• Min value: 0</li> </ul>
order_by	array[string]	query	False	Order results by specified fields and optional [asc

## Response

Status: 200, Ok

Name	Type	Description
_links	<a href="#">_links</a>	
num_records	integer	Number of records
records	array[ <a href="#">schedule</a> ]	

## Example response

```
{
  "_links": {
    "next": {
      "href": "/api/resourcelink"
    },
    "self": {
      "href": "/api/resourcelink"
    }
  },
  "num_records": "1",
  "records": {
    "_links": {
      "self": {
        "href": "/api/resourcelink"
      }
    },
    "cluster": {
      "name": "cluster1",
      "uuid": "1cd8a442-86d1-11e0-ae1c-123478563412"
    },
    "cron": {
      "days": {
      },
      "hours": {
      },
      "minutes": {
      },
      "months": {
      },
      "weekdays": {
      }
    },
    "interval": "P1DT2H3M4S",
    "type": "cron",
    "uuid": "4ea7a442-86d1-11e0-ae1c-123478563412"
  }
}
```

## Error

Status: Default

## ONTAP Error Response Codes

Error Code	Description
459760	The schedule specified is not a valid schedule.

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

\_links

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

\_links

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

cluster

The cluster that owns the schedule. Defaults to the local cluster.

Name	Type	Description
name	string	Cluster name
uuid	string	Cluster UUID

cron

Details for schedules of type cron.

Name	Type	Description
days	array[integer]	The days of the month the schedule runs. Leave empty for all.
hours	array[integer]	The hours of the day the schedule runs. Leave empty for all.
minutes	array[integer]	The minutes the schedule runs. Required on POST for a cron schedule.

Name	Type	Description
months	array[integer]	The months of the year the schedule runs. Leave empty for all.
weekdays	array[integer]	The weekdays the schedule runs. Leave empty for all.

schedule

Complete schedule information

Name	Type	Description
_links	<a href="#">_links</a>	
cluster	<a href="#">cluster</a>	The cluster that owns the schedule. Defaults to the local cluster.
cron	<a href="#">cron</a>	Details for schedules of type cron.
interval	string	An ISO-8601 duration formatted string.
name	string	Schedule name. Required in the URL or POST body.
type	string	Schedule type
uuid	string	Job schedule UUID

error\_arguments

Name	Type	Description
code	string	Argument code
message	string	Message argument

error

Name	Type	Description
arguments	array[ <a href="#">error_arguments</a> ]	Message arguments

Name	Type	Description
code	string	Error code
message	string	Error message
target	string	The target parameter that caused the error.

## Create a schedule

POST `/cluster/schedules`

**Introduced In:** 9.6

Creates a schedule.

### Required Fields

- name - Name of the job schedule. You must provide a minutes field for a cron schedule and an interval field for an interval schedule. Do not provide both a cron field and an interval field.

### Parameters

Name	Type	In	Required	Description
return_records	boolean	query	False	The default is false. If set to true, the records are returned.  • Default value:

### Request Body

Name	Type	Description
_links	<a href="#">_links</a>	
cluster	<a href="#">cluster</a>	The cluster that owns the schedule. Defaults to the local cluster.
cron	<a href="#">cron</a>	Details for schedules of type cron.
interval	string	An ISO-8601 duration formatted string.



Name	Type	Description
name	string	Schedule name. Required in the URL or POST body.
type	string	Schedule type
uuid	string	Job schedule UUID

### Example request

```
{
  "_links": {
    "self": {
      "href": "/api/resourcelink"
    }
  },
  "cluster": {
    "name": "cluster1",
    "uuid": "1cd8a442-86d1-11e0-ae1c-123478563412"
  },
  "cron": {
    "days": {
    },
    "hours": {
    },
    "minutes": {
    },
    "months": {
    },
    "weekdays": {
    }
  },
  "interval": "P1DT2H3M4S",
  "type": "cron",
  "uuid": "4ea7a442-86d1-11e0-ae1c-123478563412"
}
```

### Response

Status: 201, Created

## Error

Status: Default

### ONTAP Error Response Codes

Error Code	Description
458788	The schedule specified is not a valid schedule.
459760	The schedule specified is not a valid schedule.
459763	Schedule cannot be created locally using the remote cluster name as the owner.
459764	Cannot create a schedule with the same name as an existing schedule from the MetroCluster partner cluster but of a different schedule type.
460783	As this is a MetroCluster configuration and the local cluster is waiting for switchback, changes to non-system schedules are not allowed.
460784	An error occurred creating the remote cluster version of this schedule.

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

\_links

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

cluster

The cluster that owns the schedule. Defaults to the local cluster.

Name	Type	Description
name	string	Cluster name
uuid	string	Cluster UUID

cron

Details for schedules of type cron.

Name	Type	Description
days	array[integer]	The days of the month the schedule runs. Leave empty for all.
hours	array[integer]	The hours of the day the schedule runs. Leave empty for all.
minutes	array[integer]	The minutes the schedule runs. Required on POST for a cron schedule.
months	array[integer]	The months of the year the schedule runs. Leave empty for all.
weekdays	array[integer]	The weekdays the schedule runs. Leave empty for all.

schedule

### Complete schedule information

Name	Type	Description
_links	<a href="#">_links</a>	
cluster	<a href="#">cluster</a>	The cluster that owns the schedule. Defaults to the local cluster.
cron	<a href="#">cron</a>	Details for schedules of type cron.
interval	string	An ISO-8601 duration formatted string.
name	string	Schedule name. Required in the URL or POST body.
type	string	Schedule type
uuid	string	Job schedule UUID

### error\_arguments

Name	Type	Description
code	string	Argument code
message	string	Message argument

### 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.

## Delete a schedule

DELETE /cluster/schedules/{uuid}

**Introduced In:** 9.6

Deletes a schedule.

## Parameters

Name	Type	In	Required	Description
uuid	string	path	True	Schedule UUID

## Response

Status: 200, Ok

## Error

Status: Default

### ONTAP Error Response Codes

Error Code	Description
459758	Cannot delete a job schedule that is in use. Remove all references to the schedule, and then try to delete again.
459761	Schedule cannot be deleted on this cluster because it is replicated from the remote cluster.
459762	The schedule cannot be deleted because it is a system-level schedule.

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

## Example error

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

## Definitions

### See Definitions

#### error\_arguments

Name	Type	Description
code	string	Argument code
message	string	Message argument

#### 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.

## Retrieve a schedule

GET /cluster/schedules/{uuid}

Introduced In: 9.6

Retrieves a schedule.

## Parameters

Name	Type	In	Required	Description
uuid	string	path	True	Schedule UUID
fields	array[string]	query	False	Specify the fields to return.

## Response

Status: 200, Ok

Name	Type	Description
_links	<a href="#">_links</a>	
cluster	<a href="#">cluster</a>	The cluster that owns the schedule. Defaults to the local cluster.
cron	<a href="#">cron</a>	Details for schedules of type cron.
interval	string	An ISO-8601 duration formatted string.
name	string	Schedule name. Required in the URL or POST body.
type	string	Schedule type
uuid	string	Job schedule UUID

## Example response

```
{
  "_links": {
    "self": {
      "href": "/api/resourcelink"
    }
  },
  "cluster": {
    "name": "cluster1",
    "uuid": "1cd8a442-86d1-11e0-ae1c-123478563412"
  },
  "cron": {
    "days": {
    },
    "hours": {
    },
    "minutes": {
    },
    "months": {
    },
    "weekdays": {
    }
  },
  "interval": "P1DT2H3M4S",
  "type": "cron",
  "uuid": "4ea7a442-86d1-11e0-ae1c-123478563412"
}
```

## Error

Status: Default, Error

Name	Type	Description
error	error	



### 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	

\_links

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

cluster

The cluster that owns the schedule. Defaults to the local cluster.

Name	Type	Description
name	string	Cluster name
uuid	string	Cluster UUID

cron

Details for schedules of type cron.

Name	Type	Description
days	array[integer]	The days of the month the schedule runs. Leave empty for all.
hours	array[integer]	The hours of the day the schedule runs. Leave empty for all.
minutes	array[integer]	The minutes the schedule runs. Required on POST for a cron schedule.
months	array[integer]	The months of the year the schedule runs. Leave empty for all.
weekdays	array[integer]	The weekdays the schedule runs. Leave empty for all.

error\_arguments

Name	Type	Description
code	string	Argument code
message	string	Message argument

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.

## Update a schedule

PATCH `/cluster/schedules/{uuid}`

**Introduced In:** 9.6

Updates a schedule. Note that you cannot modify a cron field of an interval schedule, or the interval field of a cron schedule.

### Parameters

Name	Type	In	Required	Description
uuid	string	path	True	Schedule UUID

### Request Body

Name	Type	Description
<a href="#">_links</a>	<a href="#">_links</a>	
cluster	<a href="#">cluster</a>	The cluster that owns the schedule. Defaults to the local cluster.
cron	<a href="#">cron</a>	Details for schedules of type cron.
interval	string	An ISO-8601 duration formatted string.

Name	Type	Description
name	string	Schedule name. Required in the URL or POST body.
type	string	Schedule type
uuid	string	Job schedule UUID

### Example request

```
{
  "_links": {
    "self": {
      "href": "/api/resourcelink"
    }
  },
  "cluster": {
    "name": "cluster1",
    "uuid": "1cd8a442-86d1-11e0-ae1c-123478563412"
  },
  "cron": {
    "days": {
    },
    "hours": {
    },
    "minutes": {
    },
    "months": {
    },
    "weekdays": {
    }
  },
  "interval": "P1DT2H3M4S",
  "type": "cron",
  "uuid": "4ea7a442-86d1-11e0-ae1c-123478563412"
}
```

### Response

Status: 200, Ok

## Error

Status: Default

### ONTAP Error Response Codes

Error Code	Description
458788	The schedule specified is not a valid schedule.
459760	The schedule specified is not a valid schedule.
459761	Schedule cannot be modified on this cluster because it is replicated from the remote cluster.
460783	As this is a MetroCluster configuration and the local cluster is waiting for switchback, changes to non-system schedules are not allowed.

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

\_links

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

cluster

The cluster that owns the schedule. Defaults to the local cluster.

Name	Type	Description
name	string	Cluster name
uuid	string	Cluster UUID

cron

Details for schedules of type cron.

Name	Type	Description
days	array[integer]	The days of the month the schedule runs. Leave empty for all.
hours	array[integer]	The hours of the day the schedule runs. Leave empty for all.
minutes	array[integer]	The minutes the schedule runs. Required on POST for a cron schedule.
months	array[integer]	The months of the year the schedule runs. Leave empty for all.
weekdays	array[integer]	The weekdays the schedule runs. Leave empty for all.

schedule

### Complete schedule information

Name	Type	Description
_links	<a href="#">_links</a>	
cluster	<a href="#">cluster</a>	The cluster that owns the schedule. Defaults to the local cluster.
cron	<a href="#">cron</a>	Details for schedules of type cron.
interval	string	An ISO-8601 duration formatted string.
name	string	Schedule name. Required in the URL or POST body.
type	string	Schedule type
uuid	string	Job schedule UUID

### error\_arguments

Name	Type	Description
code	string	Argument code
message	string	Message argument

### 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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