



Manage cluster schedules

ONTAP 9.6 REST API reference

NetApp
April 02, 2024

Table of Contents

- Manage cluster schedules 1
 - Cluster schedules endpoint overview 1
 - Overview 1
 - Retrieve schedules 6
 - Create a schedule 13
 - Delete a schedule 17
 - Retrieve a schedule 19
 - Update a schedule 24

Manage cluster schedules

Cluster schedules endpoint overview

Overview

The `/cluster/schedules` API is used to view, create, and modify job schedules in a cluster.

Retrieving a job schedule

Job schedules can be retrieved 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}`. Queries on fields can be applied 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-tsunidere",
    "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

A job schedule is created 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. You must 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

Example

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

# The call:
curl -X POST "https://<mgmt-ip>/api/cluster/schedules" -d body

# The response of a successful POST is empty.
Example body to create an interval schedule with a 1-week interval:
{
  "name": "test_interval_1",
  "interval": "P1W"
}
Example body to create a cron schedule that runs daily at 12:05 :
{
  "name": "test_cron_1",
  "cron":
  {
    "minutes": [ 5 ],
    "hours": [ 12 ]
  }
}
```

Optional fields

By default, the schedule is owned by the local cluster. In a MetroCluster configuration, the partner cluster can be specified 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

Multiple schedules can be created 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: The name, cluster, and type of schedule cannot be modified. Also, you cannot modify a cron field of an interval schedule, or the interval field of a cron schedule. Queries on fields can be applied to modify all schedules that match the combined query.

Example

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

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

# The response of a successful PATCH is empty.
Example body to modify an interval schedule with a 2-day and 5-minute
interval:
{
  "interval": "P2DT5M"
}
Example body to modify a cron schedule to run Mondays at 2:
{
  "cron":
  {
    "hours": [ 2 ],
    "weekdays": [ 1 ]
  }
}
```

Deleting a job schedule

Job schedules can be deleted based on their UUID. Queries on fields can be applied 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

Retrieves a schedule.

Learn more

- [DOC /cluster/schedules](#)

Parameters

Name	Type	In	Required	Description
cron.hours	integer	query	False	Filter by cron.hours
cron.months	integer	query	False	Filter by cron.months
cron.minutes	integer	query	False	Filter by cron.minutes
cron.weekdays	integer	query	False	Filter by cron.weekdays
cron.days	integer	query	False	Filter by cron.days
cluster.name	string	query	False	Filter by cluster.name
cluster.uuid	string	query	False	Filter by cluster.uuid
interval	string	query	False	Filter by interval
uuid	string	query	False	Filter by uuid
type	string	query	False	Filter by type
name	string	query	False	Filter by name
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.

Name	Type	In	Required	Description
return_timeout	integer	query	False	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.
order_by	array[string]	query	False	Order results by specified fields and optional [asc

Response

Status: 200, Ok

Name	Type	Description
_links	_links	
num_records	integer	Number of records
records	array[schedule]	

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	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
next	href	
self	href	

_links

Name	Type	Description
self	href	

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	_links	
cluster	cluster	The cluster that owns the schedule. Defaults to the local cluster.
cron	cron	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[error_arguments]	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`

Create a schedule.

Required Fields

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

Learn more

- [DOC /cluster/schedules](#)

Request Body

Name	Type	Description
<code>_links</code>	<code>_links</code>	
cluster	<code>cluster</code>	The cluster that owns the schedule. Defaults to the local cluster.
cron	<code>cron</code>	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 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
459760	The schedule specified is not a valid schedule.

Error Code	Description
458788	The schedule specified is not a valid schedule.
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.
459763	Schedule cannot be created locally using the remote cluster name as the owner.
460784	An error occurred creating the remote cluster version of this schedule.

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	href	

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	_links	
cluster	cluster	The cluster that owns the schedule. Defaults to the local cluster.
cron	cron	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[error_arguments]	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}

Deletes a schedule.

Learn more

- [DOC /cluster/schedules](#)

Parameters

Name	Type	In	Required	Description
uuid	string	path	True	

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	error	

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[error_arguments]	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}

Retrieves a schedule.

Learn more

- [DOC /cluster/schedules](#)

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	_links	
cluster	cluster	The cluster that owns the schedule. Defaults to the local cluster.
cron	cron	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	href	

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[error_arguments]	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}`

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

Learn more

- [DOC /cluster/schedules](#)

Parameters

Name	Type	In	Required	Description
uuid	string	path	True	Schedule UUID

Request Body

Name	Type	Description
<code>_links</code>	_links	
cluster	cluster	The cluster that owns the schedule. Defaults to the local cluster.
cron	cron	Details for schedules of type cron.

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

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	href	

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	_links	
cluster	cluster	The cluster that owns the schedule. Defaults to the local cluster.
cron	cron	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[error_arguments]	Message arguments
code	string	Error code
message	string	Error message
target	string	The target parameter that caused the error.

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.