



Manage Snapshot copy policies and schedules

ONTAP 9.15.1 REST API reference

NetApp
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Manage Snapshot copy policies and schedules

Storage snapshot-policies snapshot_policy.uuid schedules endpoint overview

Overview

In ONTAP, scheduled Snapshot copy creation works based on the schedules associated with Snapshot copy policies. ONTAP provides six cluster-wide schedules: "5min", "8hour", "hourly", "daily", "weekly" and "monthly". A Snapshot copy policy is created using at least one of these schedules and up to 5 schedules can be associated with a Snapshot copy policy. A Snapshot copy policy can be linked to a storage object and based on the schedule in the policy, Snapshot copies are created on the object at that interval. Each schedule in a Snapshot copy policy has a Snapshot copy name prefix attached to it. Every Snapshot copy created using this policy has this prefix in its name. There is also a retention count associated with every schedule. This count indicates the maximum number of Snapshot copies that can exist for a given schedule. Once the Snapshot copy count reaches the retention count, on the next create operation, the oldest Snapshot copy is deleted. A retention period can be associated with every schedule. During Snapshot copy creation, this period is set as SnapLock expiry time on Snapshot copy locking enabled volumes.

A schedule can be added, modified or deleted from a Snapshot copy policy.

Snapshot copy policy schedule APIs

The following APIs are used to perform operations related to Snapshot copy policy schedules:

– POST /api/storage/snapshot-policies/{snapshot_policy.uuid}/schedules/

– GET /api/storage/snapshot-policies/{snapshot_policy.uuid}/schedules/

– GET /api/storage/snapshot-policies/{snapshot_policy.uuid}/schedules/{schedule.uuid}

– PATCH /api/storage/snapshot-policies/{snapshot_policy.uuid}/schedules/{schedule.uuid}

– DELETE /api/storage/snapshot-policies/{snapshot_policy.uuid}/schedules/{schedule.uuid}

Examples

Adding schedule to a Snapshot copy policy

The POST operation is used to create a schedule for a Snapshot copy policy with the specified attributes.

```

# The API:
/api/storage/snapshot-policies/{snapshot_policy.uuid}/schedules/

# The call:
curl -X POST "https://<mgmt-ip>/api/storage/snapshot-policies/32a0841a-818e-11e9-b4f4-005056bbab9c/schedules" -H "accept: application/hal+json" -d '{"schedule.uuid": "7c985d80-818a-11e9-b4f4-005056bbab9c", "count": "5", "prefix": "new_hourly" }'

# The response:
HTTP/1.1 201 Created
Date: Wed, 29 May 2019 22:41:33 GMT
Server: libzapid-httpd
X-Content-Type-Options: nosniff
Cache-Control: no-cache,no-store,must-revalidate
Location: /api/storage/snapshot-policies/32a0841a-818e-11e9-b4f4-005056bbab9c/schedules
Content-Length: 271
Content-Type: application/json
{
  "num_records": 1,
  "records": [
    {
      "snapshot_policy": {
        "uuid": "32a0841a-818e-11e9-b4f4-005056bbab9c"
      },
      "schedule": {
        "uuid": "7c985d80-818a-11e9-b4f4-005056bbab9c"
      },
      "count": 5,
      "prefix": "new_monthly"
    }
  ]
}

```

Retrieving Snapshot copy policy schedules

The GET operation is used to retrieve Snapshot copy policy schedules.

```

# The API:
/api/storage/snapshot-policies/{snapshot_policy.uuid}/schedules/

# The call:
curl -X GET "https://<mgmt-ip>/api/storage/snapshot-policies/32a0841a-818e-11e9-b4f4-005056bbab9c/schedules" -H "accept: application/hal+json"

```

```
# The response:
HTTP/1.1 200 OK
Date: Wed, 29 May 2019 22:49:58 GMT
Server: libzapid-httpd
X-Content-Type-Options: nosniff
Cache-Control: no-cache,no-store,must-revalidate
Content-Length: 898
Content-Type: application/json
{
  "records": [
    {
      "snapshot_policy": {
        "uuid": "32a0841a-818e-11e9-b4f4-005056bbab9c"
      },
      "schedule": {
        "uuid": "63d017dc-818a-11e9-b4f4-005056bbab9c",
        "name": "5min"
      }
    },
    {
      "snapshot_policy": {
        "uuid": "32a0841a-818e-11e9-b4f4-005056bbab9c"
      },
      "schedule": {
        "uuid": "64a5c5da-818a-11e9-b4f4-005056bbab9c",
        "name": "8hour"
      }
    },
    {
      "snapshot_policy": {
        "uuid": "32a0841a-818e-11e9-b4f4-005056bbab9c"
      },
      "schedule": {
        "uuid": "63e21a3e-818a-11e9-b4f4-005056bbab9c",
        "name": "daily"
      }
    },
    {
      "snapshot_policy": {
        "uuid": "32a0841a-818e-11e9-b4f4-005056bbab9c"
      },
      "schedule": {
        "uuid": "7c985d80-818a-11e9-b4f4-005056bbab9c",
        "name": "monthly"
      }
    }
  ]
}
```

```
    }  
  ],  
  "num_records": 4  
}
```

Retrieving the attributes of a specific Snapshot copy policy schedule

The GET operation is used to retrieve the attributes of a specific Snapshot copy policy schedule.

```
# The API:  
/api/storage/snapshot-  
policies/{snapshot_policy.uuid}/schedules/{schedule.uuid}  
  
# The call:  
curl -X GET "https://<mgmt-ip>/api/storage/snapshot-policies/32a0841a-  
818e-11e9-b4f4-005056bbab9c/schedules/7c985d80-818a-11e9-b4f4-  
005056bbab9c" -H "accept: application/hal+json"  
  
# The response:  
HTTP/1.1 200 OK  
Date: Wed, 29 May 2019 22:54:06 GMT  
Server: libzapid-httpd  
X-Content-Type-Options: nosniff  
Cache-Control: no-cache,no-store,must-revalidate  
Content-Length: 238  
Content-Type: application/json  
{  
  "snapshot_policy": {  
    "uuid": "32a0841a-818e-11e9-b4f4-005056bbab9c"  
  },  
  "schedule": {  
    "uuid": "7c985d80-818a-11e9-b4f4-005056bbab9c",  
    "name": "monthly"  
  },  
  "count": 5,  
  "prefix": "new_monthly",  
  "snapmirror_label": "-",  
  "retention_period": "PT20M"  
}
```

Updating a Snapshot copy policy schedule

The PATCH operation is used to update the specific attributes of a Snapshot copy policy.

```
# The API:
/api/storage/snapshot-
policies/{snapshot_policy.uuid}/schedules/{schedule.uuid}

# The call:
curl -X PATCH "https://<mgmt-ip>/api/storage/snapshot-policies/32a0841a-
818e-11e9-b4f4-005056bbab9c/schedules/7c985d80-818a-11e9-b4f4-
005056bbab9c" -d '{"count": "10" }' -H "accept: application/hal+json"

# The response:
HTTP/1.1 200 OK
Date: Wed, 29 May 2019 23:08:00 GMT
Server: libzapid-httpd
X-Content-Type-Options: nosniff
Cache-Control: no-cache,no-store,must-revalidate
Content-Length: 3
Content-Type: application/json
```

Deleting a Snapshot copy policy

The DELETE operation is used to delete a Snapshot copy policy.

```
# The API:
/api/storage/snapshot-
policies/{snapshot_policy.uuid}/schedules/{schedule.uuid}

# The call:
curl -X DELETE "https://<mgmt-ip>/api/storage/snapshot-policies/32a0841a-
818e-11e9-b4f4-005056bbab9c/schedules/7c985d80-818a-11e9-b4f4-
005056bbab9c" -H "accept: application/hal+json"

# The response:
HTTP/1.1 200 OK
Date: Wed, 29 May 2019 23:12:32 GMT
Server: libzapid-httpd
X-Content-Type-Options: nosniff
Cache-Control: no-cache,no-store,must-revalidate
Content-Length: 3
Content-Type: application/json
```

Retrieve Snapshot copy policy schedules

GET /storage/snapshot-policies/{snapshot_policy.uuid}/schedules

Introduced In: 9.8

Retrieves a collection of Snapshot copy policy schedules.

Related ONTAP commands

- `snapshot policy show`

Learn more

- [DOC /storage/snapshot-policies/{snapshot_policy.uuid}/schedules](#)

Parameters

Name	Type	In	Required	Description
snapshot_policy.uuid	string	path	True	Snapshot copy policy UUID
retention_period	string	query	False	Filter by retention_period <ul style="list-style-type: none">• Introduced in: 9.12
schedule.uuid	string	query	False	Filter by schedule.uuid
schedule.name	string	query	False	Filter by schedule.name
snapmirror_label	string	query	False	Filter by snapmirror_label
snapshot_policy.name	string	query	False	Filter by snapshot_policy.name
prefix	string	query	False	Filter by prefix
count	integer	query	False	Filter by count
fields	array[string]	query	False	Specify the fields to return.
max_records	integer	query	False	Limit the number of records returned.

Name	Type	In	Required	Description
return_records	boolean	query	False	The default is true for GET calls. When set to false, only the number of records is returned. <ul style="list-style-type: none"> • Default value: 1
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. <ul style="list-style-type: none"> • Default value: 1 • Max value: 120 • Min value: 0
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[snapshot_policy_schedule]	

Example response

```
{
  "_links": {
    "next": {
      "href": "/api/resourcelink"
    },
    "self": {
      "href": "/api/resourcelink"
    }
  },
  "num_records": 1,
  "records": [
    {
      "_links": {
        "self": {
          "href": "/api/resourcelink"
        }
      },
      "prefix": "string",
      "retention_period": "string",
      "schedule": {
        "_links": {
          "self": {
            "href": "/api/resourcelink"
          }
        },
        "name": "weekly",
        "uuid": "1cd8a442-86d1-11e0-ae1c-123478563412"
      },
      "snapmirror_label": "string",
      "snapshot_policy": {
        "_links": {
          "self": {
            "href": "/api/resourcelink"
          }
        },
        "name": "default",
        "uuid": "1cd8a442-86d1-11e0-ae1c-123478563412"
      }
    }
  ]
}
```

Error

Status: Default, Error

Name	Type	Description
error	returned_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	

schedule

Name	Type	Description
_links	_links	
name	string	Job schedule name
uuid	string	Job schedule UUID

snapshot_policy

This is a reference to the Snapshot copy policy.

Name	Type	Description
_links	_links	
name	string	
uuid	string	

snapshot_policy_schedule

The Snapshot copy policy schedule object is associated with a Snapshot copy policy and it defines the interval at which Snapshot copies are created and deleted.

Name	Type	Description
_links	_links	

Name	Type	Description
count	integer	The number of Snapshot copies to maintain for this schedule.
prefix	string	The prefix to use while creating Snapshot copies at regular intervals.
retention_period	string	The retention period of Snapshot copies for this schedule.
schedule	schedule	
snapmirror_label	string	Label for SnapMirror operations
snapshot_policy	snapshot_policy	This is a reference to the Snapshot copy policy.

error_arguments

Name	Type	Description
code	string	Argument code
message	string	Message argument

returned_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.

Add a schedule to a Snapshot copy policy

POST /storage/snapshot-policies/{snapshot_policy.uuid}/schedules

Introduced In: 9.8

Adds a schedule to a Snapshot copy policy.

Required properties

- `schedule.uuid` or `schedule.name` - Schedule at which Snapshot copies are captured on the volume.
- `count` - Number of Snapshot copies to maintain for this schedule.

Recommended optional properties

- `prefix` - Prefix to use when creating Snapshot copies at regular intervals.

Default property values

If not specified in POST, the following default property values are assigned:

- `prefix` - Value of `schedule.name`

Related ONTAP commands

- `snapshot policy add-schedule`

Learn more

- [DOC /storage/snapshot-policies/{snapshot_policy.uuid}/schedules](#)

Parameters

Name	Type	In	Required	Description
<code>snapshot_policy.uuid</code>	string	path	True	Snapshot copy policy UUID
<code>return_records</code>	boolean	query	False	The default is false. If set to true, the records are returned. <ul style="list-style-type: none">• Default value:

Request Body

Name	Type	Description
<code>_links</code>	_links	
<code>count</code>	integer	The number of Snapshot copies to maintain for this schedule.
<code>prefix</code>	string	The prefix to use while creating Snapshot copies at regular intervals.

Name	Type	Description
retention_period	string	The retention period of Snapshot copies for this schedule.
schedule	schedule	
snapmirror_label	string	Label for SnapMirror operations
snapshot_policy	snapshot_policy	This is a reference to the Snapshot copy policy.

Example request

```
{
  "_links": {
    "self": {
      "href": "/api/resourcelink"
    }
  },
  "prefix": "string",
  "retention_period": "string",
  "schedule": {
    "_links": {
      "self": {
        "href": "/api/resourcelink"
      }
    },
    "name": "weekly",
    "uuid": "1cd8a442-86d1-11e0-ae1c-123478563412"
  },
  "snapmirror_label": "string",
  "snapshot_policy": {
    "_links": {
      "self": {
        "href": "/api/resourcelink"
      }
    },
    "name": "default",
    "uuid": "1cd8a442-86d1-11e0-ae1c-123478563412"
  }
}
```

Response

Status: 201, Created

Headers

Name	Description	Type
Location	Useful for tracking the resource location	string

Error

Status: Default

ONTAP Error Response Codes

Error Code	Description
1638407	When adding schedule to a Snapshot copy policy, the count for that schedule must be specified.
1638410	Specified schedule already exists in snapshot policy.
1638413	Schedule not found.
1638451	This operation would result in total Snapshot copy count for the policy to exceed maximum supported count.
1638508	Another schedule has the same prefix within this policy.
1638510	Duplicate prefix.
1638528	This operation is not supported in a mixed-version cluster.
1638531	This operation is not supported because specified policy is owned by the cluster admin.
918253	Incorrect format for the retention period, duration must be in the ISO-8601 format.

Name	Type	Description
error	returned_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	

schedule

Name	Type	Description
_links	_links	
name	string	Job schedule name
uuid	string	Job schedule UUID

snapshot_policy

This is a reference to the Snapshot copy policy.

Name	Type	Description
_links	_links	
name	string	
uuid	string	

snapshot_policy_schedule

The Snapshot copy policy schedule object is associated with a Snapshot copy policy and it defines the interval at which Snapshot copies are created and deleted.

Name	Type	Description
_links	_links	
count	integer	The number of Snapshot copies to maintain for this schedule.
prefix	string	The prefix to use while creating Snapshot copies at regular intervals.

Name	Type	Description
retention_period	string	The retention period of Snapshot copies for this schedule.
schedule	schedule	
snapmirror_label	string	Label for SnapMirror operations
snapshot_policy	snapshot_policy	This is a reference to the Snapshot copy policy.

error_arguments

Name	Type	Description
code	string	Argument code
message	string	Message argument

returned_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 from a Snapshot copy policy

```
DELETE /storage/snapshot-policies/{snapshot_policy.uuid}/schedules/{schedule.uuid}
```

Introduced In: 9.8

Deletes a schedule from a Snapshot copy policy

Related ONTAP commands

- `snapshot policy remove-schedule`

Learn more

- [DOC /storage/snapshot-policies/{snapshot_policy.uuid}/schedules](#)

Parameters

Name	Type	In	Required	Description
snapshot_policy.uuid	string	path	True	Snapshot copy policy UUID
schedule.uuid	string	path	True	Snapshot copy policy schedule UUID

Response

Status: 200, Ok

Error

Status: Default

ONTAP Error Response Code

Error Code	Description
1638411	At least minimum number of schedule must be specified for the policy.
1638412	Schedule does not exist in Snapshot policy.

Name	Type	Description
error	returned_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

returned_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 Snapshot copy policy schedule details

GET /storage/snapshot-policies/{snapshot_policy.uuid}/schedules/{schedule.uuid}

Introduced In: 9.8

Retrieves details of a specific Snapshot copy policy schedule.

Related ONTAP commands

- `snapshot policy show`

Learn more

- [DOC /storage/snapshot-policies/{snapshot_policy.uuid}/schedules](#)

Parameters

Name	Type	In	Required	Description
snapshot_policy.uuid	string	path	True	Snapshot copy policy UUID
schedule.uuid	string	path	True	Snapshot copy policy schedule ID
fields	array[string]	query	False	Specify the fields to return.

Response

Status: 200, Ok

Name	Type	Description
_links	_links	
count	integer	The number of Snapshot copies to maintain for this schedule.
prefix	string	The prefix to use while creating Snapshot copies at regular intervals.
retention_period	string	The retention period of Snapshot copies for this schedule.
schedule	schedule	

Name	Type	Description
snapmirror_label	string	Label for SnapMirror operations
snapshot_policy	snapshot_policy	This is a reference to the Snapshot copy policy.

Example response

```
{
  "_links": {
    "self": {
      "href": "/api/resourcelink"
    }
  },
  "prefix": "string",
  "retention_period": "string",
  "schedule": {
    "_links": {
      "self": {
        "href": "/api/resourcelink"
      }
    },
    "name": "weekly",
    "uuid": "1cd8a442-86d1-11e0-ae1c-123478563412"
  },
  "snapmirror_label": "string",
  "snapshot_policy": {
    "_links": {
      "self": {
        "href": "/api/resourcelink"
      }
    },
    "name": "default",
    "uuid": "1cd8a442-86d1-11e0-ae1c-123478563412"
  }
}
```

Error

Status: Default, Error

Name	Type	Description
error	returned_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	

schedule

Name	Type	Description
_links	_links	
name	string	Job schedule name
uuid	string	Job schedule UUID

snapshot_policy

This is a reference to the Snapshot copy policy.

Name	Type	Description
_links	_links	
name	string	
uuid	string	

error_arguments

Name	Type	Description
code	string	Argument code
message	string	Message argument

returned_error

Name	Type	Description
arguments	array[error_arguments]	Message arguments
code	string	Error code

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

Update a Snapshot copy policy schedule

PATCH `/storage/snapshot-policies/{snapshot_policy.uuid}/schedules/{schedule.uuid}`

Introduced In: 9.8

Updates a Snapshot copy policy schedule

Related ONTAP commands

- `snapshot policy modify-schedule`

Learn more

- [DOC /storage/snapshot-policies/{snapshot_policy.uuid}/schedules](#)

Parameters

Name	Type	In	Required	Description
snapshot_policy.uuid	string	path	True	Snapshot copy policy UUID
schedule.uuid	string	path	True	Snapshot copy policy schedule UUID

Request Body

Name	Type	Description
<code>_links</code>	_links	
count	integer	The number of Snapshot copies to maintain for this schedule.
prefix	string	The prefix to use while creating Snapshot copies at regular intervals.

Name	Type	Description
retention_period	string	The retention period of Snapshot copies for this schedule.
schedule	schedule	
snapmirror_label	string	Label for SnapMirror operations
snapshot_policy	snapshot_policy	This is a reference to the Snapshot copy policy.

Example request

```
{
  "_links": {
    "self": {
      "href": "/api/resourcelink"
    }
  },
  "prefix": "string",
  "retention_period": "string",
  "schedule": {
    "_links": {
      "self": {
        "href": "/api/resourcelink"
      }
    }
  },
  "name": "weekly",
  "uuid": "1cd8a442-86d1-11e0-ae1c-123478563412"
},
"snapmirror_label": "string",
"snapshot_policy": {
  "_links": {
    "self": {
      "href": "/api/resourcelink"
    }
  }
},
"name": "default",
"uuid": "1cd8a442-86d1-11e0-ae1c-123478563412"
}
```

Response

Status: 200, Ok

Error

Status: Default

ONTAP Error Response Code

Error Code	Description
1638451	This operation would result in total Snapshot copy count for the policy to exceed maximum supported count.
918253	Incorrect format for the retention period, duration must be in the ISO-8601 format.

Name	Type	Description
error	returned_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	

schedule

Name	Type	Description
_links	_links	
name	string	Job schedule name
uuid	string	Job schedule UUID

snapshot_policy

This is a reference to the Snapshot copy policy.

Name	Type	Description
_links	_links	
name	string	
uuid	string	

snapshot_policy_schedule

The Snapshot copy policy schedule object is associated with a Snapshot copy policy and it defines the interval at which Snapshot copies are created and deleted.

Name	Type	Description
_links	_links	
count	integer	The number of Snapshot copies to maintain for this schedule.
prefix	string	The prefix to use while creating Snapshot copies at regular intervals.

Name	Type	Description
retention_period	string	The retention period of Snapshot copies for this schedule.
schedule	schedule	
snapmirror_label	string	Label for SnapMirror operations
snapshot_policy	snapshot_policy	This is a reference to the Snapshot copy policy.

error_arguments

Name	Type	Description
code	string	Argument code
message	string	Message argument

returned_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.

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