



# **Manage Snapshot copy policies and schedules**

ONTAP 9.12.1 REST API reference

NetApp  
February 13, 2024

This PDF was generated from [https://docs.netapp.com/us-en/ontap-restapi-9121/ontap/storage\\_snapshot-policies\\_snapshot\\_policy.uuid\\_schedules\\_endpoint\\_overview.html](https://docs.netapp.com/us-en/ontap-restapi-9121/ontap/storage_snapshot-policies_snapshot_policy.uuid_schedules_endpoint_overview.html) on February 13, 2024. Always check docs.netapp.com for the latest.

# Table of Contents

- Manage Snapshot copy policies and schedules ..... 1
  - Storage snapshot-policies snapshot\_policy.uuid schedules endpoint overview ..... 1
  - Retrieve Snapshot copy policy schedules ..... 5
  - Add a schedule to a Snapshot copy policy ..... 11
  - Delete a schedule from a Snapshot copy policy ..... 17
  - Retrieve Snapshot copy policy schedule details ..... 19
  - Update a Snapshot copy policy schedule ..... 24

# 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:

&ndash; POST /api/storage/snapshot-policies/{snapshot\_policy.uuid}/schedules/

&ndash; GET /api/storage/snapshot-policies/{snapshot\_policy.uuid}/schedules/

&ndash; GET /api/storage/snapshot-policies/{snapshot\_policy.uuid}/schedules/{schedule.uuid}

&ndash; PATCH /api/storage/snapshot-policies/{snapshot\_policy.uuid}/schedules/{schedule.uuid}

&ndash; 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
count	integer	query	False	Filter by count
snapshot_policy.name	string	query	False	Filter by snapshot_policy.name
snapmirror_label	string	query	False	Filter by snapmirror_label
prefix	string	query	False	Filter by prefix
schedule.name	string	query	False	Filter by schedule.name
schedule.uuid	string	query	False	Filter by schedule.uuid
retention_period	string	query	False	Filter by retention_period <ul style="list-style-type: none"><li>• Introduced in: 9.12</li></ul>
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.  • 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.  • 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	<a href="#">_links</a>	
num_records	integer	Number of records
records	array[ <a href="#">snapshot_policy_schedule</a> ]	

## Example response

```
{
  "_links": {
    "next": {
      "href": "/api/resourcelink"
    },
    "self": {
      "href": "/api/resourcelink"
    }
  },
  "num_records": 1,
  "records": {
    "_links": {
      "self": {
        "href": "/api/resourcelink"
      }
    },
    "prefix": "string",
    "schedule": {
      "_links": {
        "self": {
          "href": "/api/resourcelink"
        }
      },
      "name": "weekly",
      "uuid": "1cd8a442-86d1-11e0-ae1c-123478563412"
    },
    "snapshot_policy": {
      "_links": {
        "self": {
          "href": "/api/resourcelink"
        }
      },
      "name": "default",
      "uuid": "1cd8a442-86d1-11e0-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
next	<a href="#">href</a>	
self	<a href="#">href</a>	

\_links

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

schedule

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

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	<a href="#">schedule</a>	
snapmirror_label	string	Label for SnapMirror operations
snapshot_policy	<a href="#">snapshot_policy</a>	This is a reference to the Snapshot copy policy.

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.

## 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.  • Default value:

## Request Body

Name	Type	Description
<code>_links</code>	<a href="#">_links</a>	
<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	<a href="#">schedule</a>	
snapmirror_label	string	Label for SnapMirror operations
snapshot_policy	<a href="#">snapshot_policy</a>	This is a reference to the Snapshot copy policy.

### Example request

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

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>	

schedule

Name	Type	Description
_links	<a href="#">_links</a>	
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	<a href="#">_links</a>	
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	<a href="#">_links</a>	
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	<a href="#">schedule</a>	
snapmirror_label	string	Label for SnapMirror operations
snapshot_policy	<a href="#">snapshot_policy</a>	This is a reference to the Snapshot copy policy.

#### 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 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
1638412	Schedule does not exist in Snapshot policy.

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 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	<a href="#">_links</a>	
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	<a href="#">schedule</a>	
snapmirror_label	string	Label for SnapMirror operations
snapshot_policy	<a href="#">snapshot_policy</a>	This is a reference to the Snapshot copy policy.

## Example response

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

## Error

Status: Default, Error

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>	

schedule

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

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

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
_links	<a href="#">_links</a>	
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	<a href="#">schedule</a>	
snapmirror_label	string	Label for SnapMirror operations
snapshot_policy	<a href="#">snapshot_policy</a>	This is a reference to the Snapshot copy policy.

### Example request

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

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>	

schedule

Name	Type	Description
_links	<a href="#">_links</a>	
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	<a href="#">_links</a>	
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	<a href="#">_links</a>	
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	<a href="#">schedule</a>	
snapmirror_label	string	Label for SnapMirror operations
snapshot_policy	<a href="#">snapshot_policy</a>	This is a reference to the Snapshot copy policy.

#### 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.

## 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.