



# Manage Ethernet switches

## ONTAP 9.13.1 REST API reference

NetApp  
August 29, 2024

# Table of Contents

- Manage Ethernet switches ..... 1
  - Network Ethernet switches endpoint overview ..... 1
  - Retrieve Ethernet switches attached to a chassis ..... 6
  - Create an Ethernet switch ..... 13
  - Delete an Ethernet switch ..... 20
  - Retrieve Ethernet switch details ..... 22
  - Update an Ethernet switch ..... 26

# Manage Ethernet switches

## Network Ethernet switches endpoint overview

### Overview

This API can be used to get information about the Ethernet switches used for cluster and/or storage networks. This API supports GET, PATCH, POST, and DELETE calls. The GET operation returns a list of discovered switches with status and configuration information. PATCH is used to modify the state of the switch. POST is used to add new switches. DELETE is used to remove existing switches.

### Examples

#### Retrieving the ethernet switches for a cluster

The following example retrieves the ONTAP switches from the cluster. Note that if the *fields=\** parameter is not specified, the fields *snmp.version*, *snmp.user*, *version*, *monitoring.enabled*, and *monitoring.reason* are not returned. Filters can be added on the fields to limit the results.

```
# The API:
GET network/ethernet/switches

# The call:
curl -X GET "https://<mgmt-ip>/api/network/ethernet/switches?fields=*" -H
"accept: application/json" -H "Content-Type: application/hal+json"

# The response:
{
  "records": [
    {
      "name": "RTP-CS01-510R11 (FOC22092K12)",
      "address": "172.26.207.77",
      "discovered": true,
      "model": "NX3232C",
      "monitoring": {
        "enabled": true,
        "monitored": true,
        "reason": "None"
      },
      "network": "cluster",
      "serial_number": "Unknown",
      "snmp": {
        "version": "snmpv2c",
        "user": "cshml!"
      },
      "version": "Cisco Nexus Operating System (NX-OS) Software, Version
9.2(3)",
```

```

    "_links": {
      "self": {
        "href": "/api/network/ethernet/switches/RTP-CS01-510R11%28FOC22092K12%29"
      }
    }
  },
  {
    "name": "RTP-CS01-510R12 (FOC22373C3P)",
    "address": "172.26.207.82",
    "discovered": true,
    "model": "NX3232C",
    "monitoring": {
      "enabled": true,
      "monitored": true,
      "reason": "None"
    },
    "network": "cluster",
    "serial_number": "FOC22373C3P",
    "snmp": {
      "version": "snmpv2c",
      "user": "cshml!"
    },
    "version": "Cisco Nexus Operating System (NX-OS) Software, Version 9.2(3)",
    "_links": {
      "self": {
        "href": "/api/network/ethernet/switches/RTP-CS01-510R12%28FOC22373C3P%29"
      }
    }
  },
  {
    "name": "RTP-SS01-510R10 (FOC22170DFR)",
    "address": "172.26.207.65",
    "discovered": true,
    "model": "NX3232C",
    "monitoring": {
      "enabled": true,
      "monitored": true,
      "reason": "None"
    },
    "network": "storage",
    "serial_number": "FOC22170DFR",
    "snmp": {
      "version": "snmpv2c",
      "user": "cshml!"
    }
  }
}

```

```

    },
    "version": "Cisco Nexus Operating System (NX-OS) Software, Version
9.3(3)",
    "_links": {
      "self": {
        "href": "/api/network/ethernet/switches/RTP-SS01-
510R10%28FOC22170DFR%29"
      }
    }
  },
  {
    "name": "RTP-SS02-510R10(FOC22131U6T)",
    "address": "172.26.207.66",
    "discovered": true,
    "model": "NX3232C",
    "monitoring": {
      "enabled": true,
      "monitored": true,
      "reason": "None"
    },
    "network": "storage",
    "serial_number": "FOC22131U6T",
    "snmp": {
      "version": "snmpv2c",
      "user": "cshml!"
    },
    "version": "Cisco Nexus Operating System (NX-OS) Software, Version
9.3(3)",
    "_links": {
      "self": {
        "href": "/api/network/ethernet/switches/RTP-SS02-
510R10%28FOC22131U6T%29"
      }
    }
  },
],
"num_records": 4,
"_links": {
  "self": {
    "href": "/api/network/ethernet/switches?fields=*"
  }
}
}
}

```

## Retrieving an ethernet switch for a cluster

The following example retrieves a single switch by name.

```
# The API:
GET /network/ethernet/switches/{name}

# The call:
curl -X GET "https://<mgmt-ip>/api/network/ethernet/switches/RTP-SS02-510R10(FOC22131U6T)?fields=*" -H "accept: application/json" -H "Content-Type: application/hal+json"

# The response:
{
  "name": "RTP-SS02-510R10 (FOC22131U6T)",
  "address": "172.26.207.66",
  "discovered": true,
  "model": "NX3232C",
  "monitoring": {
    "enabled": true,
    "monitored": true,
    "reason": "None"
  },
  "network": "storage",
  "serial_number": "FOC22131U6T",
  "snmp": {
    "version": "snmpv2c",
    "user": "cshml!"
  },
  "version": "Cisco Nexus Operating System (NX-OS) Software, Version 9.3(3)",
  "_links": {
    "self": {
      "href": "/api/network/ethernet/switches/RTP-SS02-510R10(FOC22131U6T)"
    }
  }
}
```

---

## Configuring a switch

The following example configures SNMP credential and version on a switch.

```
# The API:
PATCH /network/ethernet/switches/{name}

# The call:
curl -X PATCH "https://<mgmt-ip>/api/network/ethernet/switches/sconqa-
corduroyl-03" -H "accept: application/json" -H "Content-Type:
application/hal+json" -d '{"snmp": {"version": "snmpv2c", "user":
"cshml!"}}'
```

---

## Adding a switch

The following example adds a switch.

```
# The API:
POST /network/ethernet/switches

# The call:
curl -X POST "https://<mgmt-ip>/api/network/ethernet/switches" -H "accept:
application/json" -H "Content-Type: application/hal+json" -d '{"name":
"RTP-SS02-510R10(FOC22131U6T)", "address": "172.26.207.66", "model":
"NX3232C", "monitoring": {"enabled": "true"}, "network": "storage",
"snmp": {"version": "snmpv2c", "user": "cshml!"}}'

# The response:
{
"job": {
  "uuid": "f84fbb3c-589c-11ec-b181-d039ea48a7dc",
  "_links": {
    "self": {
      "href": "/api/cluster/jobs/f84fbb3c-589c-11ec-b181-d039ea48a7dc"
    }
  }
}
}
```

---

## Deleting a switch

The following example deletes a switch.

```
# The API:
DELETE /network/ethernet/switches/{name}

# The call:
curl -X DELETE "https://<mgmt-ip>/api/network/ethernet/switches/sconqa-
corduroyl-03" -H "accept: application/json" -H "Content-Type:
application/hal+json"

# The response:
{
}
```

---

## Retrieve Ethernet switches attached to a chassis

GET /network/ethernet/switches



**Introduced In:** 9.8

Retrieves the ethernet switches attached to the chassis.

## Related ONTAP commands

- `system switch ethernet show`

## Learn more

- [DOC /network/ethernet/switches](#)

## Parameters

Name	Type	In	Required	Description
name	string	query	False	Filter by name
network	string	query	False	Filter by network
version	string	query	False	Filter by version
discovered	boolean	query	False	Filter by discovered
monitoring.reason	string	query	False	Filter by monitoring.reason
monitoring.monitored	boolean	query	False	Filter by monitoring.monitored ed
monitoring.enabled	boolean	query	False	Filter by monitoring.enabled
model	string	query	False	Filter by model
serial_number	string	query	False	Filter by serial_number
address	string	query	False	Filter by address
snmp.user	string	query	False	Filter by snmp.user
snmp.version	string	query	False	Filter by snmp.version
fields	array[string]	query	False	Specify the fields to return.

Name	Type	In	Required	Description
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. <ul style="list-style-type: none"> <li>• Default value: 1</li> </ul>
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"> <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="#">collection_links</a>	
num_records	integer	Number of Records
records	array[ <a href="#">switch</a> ]	

## Example response

```
{
  "_links": {
    "next": {
      "href": "/api/resourcelink"
    },
    "self": {
      "href": "/api/resourcelink"
    }
  },
  "num_records": 1,
  "records": [
    {
      "_links": {
        "self": {
          "href": "/api/resourcelink"
        }
      },
      "address": "string",
      "model": "string",
      "monitoring": {
        "reason": "string"
      },
      "name": "string",
      "network": "string",
      "serial_number": "string",
      "snmp": {
        "user": "string",
        "version": "string"
      },
      "version": "string"
    }
  ]
}
```

## 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	

collection\_links

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

self\_link

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

monitoring

Name	Type	Description
enabled	boolean	Enable Health Monitoring.
monitored	boolean	Is Monitored.
reason	string	Reason For Not Monitoring.

snmp

Name	Type	Description
user	string	Community String or SNMPv3 Username.
version	string	SNMP Version.

switch

Ethernet Switch REST API

Name	Type	Description
_links	<a href="#">self_link</a>	
address	string	IP Address.

Name	Type	Description
discovered	boolean	Discovered By ONTAP CDP/LLDP <ul style="list-style-type: none"> <li>• readOnly: 1</li> <li>• Introduced in: 9.8</li> <li>• x-nullable: true</li> </ul>
model	string	Model Number.
monitoring	<a href="#">monitoring</a>	
name	string	Name.
network	string	Switch Network.
serial_number	string	Serial Number.
snmp	<a href="#">snmp</a>	
version	string	Software Version.

#### 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.

# Create an Ethernet switch

POST /network/ethernet/switches

**Introduced In:** 9.11

Creates an ethernet switch.

## Required properties

- `name` - Name of the switch to create.
- `address` - Switch IP address.
- `model` - Switch model number.
- `monitoring.enabled` - Whether the switch should be monitored by CSHM.
- `network`
  - *cluster* for cluster or shared switches.
  - *storage* for storage switches.
  - *management* for management switches.
- `snmp.version` - SNMP version.
- `snmp.user` - SNMP user.

## Related ONTAP commands

- `system switch ethernet create`

## Learn more

- [DOC /network/ethernet/switches](#)

## Parameters

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

## Request Body

Name	Type	Description
_links	<a href="#">self_link</a>	
address	string	IP Address.



Name	Type	Description
discovered	boolean	Discovered By ONTAP CDP/LLDP <ul style="list-style-type: none"> <li>• readOnly: 1</li> <li>• Introduced in: 9.8</li> <li>• x-nullable: true</li> </ul>
model	string	Model Number.
monitoring	<a href="#">monitoring</a>	
name	string	Name.
network	string	Switch Network.
serial_number	string	Serial Number.
snmp	<a href="#">snmp</a>	
version	string	Software Version.

### Example request

```
{
  "_links": {
    "self": {
      "href": "/api/resourcelink"
    }
  },
  "address": "string",
  "model": "string",
  "monitoring": {
    "reason": "string"
  },
  "name": "string",
  "network": "string",
  "serial_number": "string",
  "snmp": {
    "user": "string",
    "version": "string"
  },
  "version": "string"
}
```

## Response

Status: 202, Accepted

Name	Type	Description
job	job_link	

## Example response

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

## Headers

Name	Description	Type
Location	Useful for tracking the resource location	string

## Error

Status: Default

## ONTAP Error Response Codes

Error Code	Description
12517376	Model number validation failed. Specify correct model number and try the command again.
12517377	IP address "{address}" is not reachable. Verify that the address is valid or check the network path.
12517379	SNMP validation request timed out. Verify that the "snmp.user" parameter is valid.

Error Code	Description
12517381	SNMP validation request timed out. Verify that the "snmp.user" parameter is valid (i.e., the SNMPv3 user exists in ONTAP and on the remote switch). If the "snmp.user" parameter is valid, verify that the SNMPv3 user's credentials are the same both in ONTAP as well as in the remote switch. If a custom engine-id was provided for the SNMPv3 user, ensure it is the same as that of the remote switch.
12517383	Switch type "{network}" is not valid for specified switch model "{model}".
12517384	SHM is already monitoring a switch with IP address "{address}".
12517385	Model "{model}" is unknown. Use "OTHER" if the switch model is not one of the following: {models}.

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	

self\_link

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

monitoring

Name	Type	Description
enabled	boolean	Enable Health Monitoring.
monitored	boolean	Is Monitored.
reason	string	Reason For Not Monitoring.

snmp

Name	Type	Description
user	string	Community String or SNMPv3 Username.
version	string	SNMP Version.

switch

Ethernet Switch REST API

Name	Type	Description
_links	<a href="#">self_link</a>	
address	string	IP Address.
discovered	boolean	Discovered By ONTAP CDP/LLDP <ul style="list-style-type: none"><li>• readOnly: 1</li><li>• Introduced in: 9.8</li><li>• x-nullable: true</li></ul>

Name	Type	Description
model	string	Model Number.
monitoring	<a href="#">monitoring</a>	
name	string	Name.
network	string	Switch Network.
serial_number	string	Serial Number.
snmp	<a href="#">snmp</a>	
version	string	Software Version.

#### \_links

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

#### job\_link

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

#### error\_arguments

Name	Type	Description
code	string	Argument code
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

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

## Delete an Ethernet switch

DELETE /network/ethernet/switches/{name}

**Introduced In:** 9.11

Deletes an Ethernet switch.

### Related ONTAP commands

- `system switch ethernet delete`

### Learn more

- [DOC /network/ethernet/switches](#)

### Parameters

Name	Type	In	Required	Description
name	string	path	True	Switch Name.

### Response

Status: 200, Ok

### 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

#### 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 Ethernet switch details

GET /network/ethernet/switches/{name}

Introduced In: 9.8

Retrieves the details of an Ethernet switch.

## Related ONTAP commands

- `system switch ethernet show`

## Learn more

- [DOC /network/ethernet/switches](#)

## Parameters

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

## Response

Status: 200, Ok

Name	Type	Description
_links	<a href="#">self_link</a>	
address	string	IP Address.
discovered	boolean	Discovered By ONTAP CDP/LLDP <ul style="list-style-type: none"><li>• readOnly: 1</li><li>• Introduced in: 9.8</li><li>• x-nullable: true</li></ul>
model	string	Model Number.
monitoring	<a href="#">monitoring</a>	
name	string	Name.



Name	Type	Description
network	string	Switch Network.
serial_number	string	Serial Number.
snmp	snmp	
version	string	Software Version.

### Example response

```

{
  "_links": {
    "self": {
      "href": "/api/resourcelink"
    }
  },
  "address": "string",
  "model": "string",
  "monitoring": {
    "reason": "string"
  },
  "name": "string",
  "network": "string",
  "serial_number": "string",
  "snmp": {
    "user": "string",
    "version": "string"
  },
  "version": "string"
}

```

### 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	

self\_link

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

monitoring

Name	Type	Description
enabled	boolean	Enable Health Monitoring.
monitored	boolean	Is Monitored.
reason	string	Reason For Not Monitoring.

snmp

Name	Type	Description
user	string	Community String or SNMPv3 Username.
version	string	SNMP Version.

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 an Ethernet switch

PATCH /network/ethernet/switches/{name}

**Introduced In:** 9.8

Update Ethernet Switch REST API

### Parameters

Name	Type	In	Required	Description
name	string	path	True	Switch Name

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

## Request Body

Name	Type	Description
_links	<a href="#">self_link</a>	
address	string	IP Address.
discovered	boolean	<p>Discovered By ONTAP CDP/LLDP</p> <ul style="list-style-type: none"> <li>• readOnly: 1</li> <li>• Introduced in: 9.8</li> <li>• x-nullable: true</li> </ul>
model	string	Model Number.

Name	Type	Description
monitoring	<a href="#">monitoring</a>	
name	string	Name.
network	string	Switch Network.
serial_number	string	Serial Number.
snmp	<a href="#">snmp</a>	
version	string	Software Version.

### Example request

```
{
  "_links": {
    "self": {
      "href": "/api/resourcelink"
    }
  },
  "address": "string",
  "model": "string",
  "monitoring": {
    "reason": "string"
  },
  "name": "string",
  "network": "string",
  "serial_number": "string",
  "snmp": {
    "user": "string",
    "version": "string"
  },
  "version": "string"
}
```

### Response

Status: 202, Accepted

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

## Example response

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

## Error

Status: Default

### ONTAP Error Response Codes

Error Code	Description
12517378	Settings updated, but the IP address "{address}" is not reachable. Verify that the address is valid or check the network path.
12517380	Settings updated, but the SNMP validation request timed out. Verify that the "snmp.user" parameter is valid.
12517382	Settings updated, but the SNMP validation request timed out. Verify that the "snmp.user" parameter is valid (i.e., the SNMPv3 user exists in ONTAP and on the remote switch). If the "snmp.user" parameter is valid, verify that the SNMPv3 user's credentials are the same both in ONTAP as well as in the remote switch. If a custom engine-id was provided for the SNMPv3 user, ensure it is the same as that of the remote switch.

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	

self\_link

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

monitoring

Name	Type	Description
enabled	boolean	Enable Health Monitoring.
monitored	boolean	Is Monitored.
reason	string	Reason For Not Monitoring.

snmp

Name	Type	Description
user	string	Community String or SNMPv3 Username.
version	string	SNMP Version.

switch

Ethernet Switch REST API

Name	Type	Description
_links	<a href="#">self_link</a>	
address	string	IP Address.
discovered	boolean	Discovered By ONTAP CDP/LLDP <ul style="list-style-type: none"><li>• readOnly: 1</li><li>• Introduced in: 9.8</li><li>• x-nullable: true</li></ul>

Name	Type	Description
model	string	Model Number.
monitoring	<a href="#">monitoring</a>	
name	string	Name.
network	string	Switch Network.
serial_number	string	Serial Number.
snmp	<a href="#">snmp</a>	
version	string	Software Version.

#### \_links

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

#### job\_link

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

#### error\_arguments

Name	Type	Description
code	string	Argument code
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

<b>Name</b>	<b>Type</b>	<b>Description</b>
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.