NetApp

Manage Ethernet switches

ONTAP 9.14.1 REST API reference

NetApp
April 02, 2024

Table of Contents

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/hal+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": "cshm1!"
    },
    "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": "cshm1!"
      },
      "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": "cshm1!"
```

```
      },
      "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": "cshm1!"
      },
      "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/hal+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": "cshm1!"
},
"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/hal+json" -H "Content-Type:
application/hal+json" -d '{"snmp": {"version": "snmpv2c", "user":
"cshm1!"}}'

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

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/hal+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": "cshm1!"}}'

# 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/hal+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
discovered	boolean	query	False	Filter by discovered
serial_number	string	query	False	Filter by serial_number
version	string	query	False	Filter by version
model	string	query	False	Filter by model
network	string	query	False	Filter by network
name	string	query	False	Filter by name
snmp.user	string	query	False	Filter by snmp.user
snmp.version	string	query	False	Filter by snmp.version
monitoring.monitored	boolean	query	False	Filter by monitoring.monitored
monitoring.enabled	boolean	query	False	Filter by monitoring.enabled
monitoring.reason	string	query	False	Filter by monitoring.reason
address	string	query	False	Filter by address
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. • 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	collection_links	
num_records	integer	Number of Records
records	array[switch]	

Example response

```json
{
  "_links": {
    "next": {
      "href": "/api/resourcelink"
    },
    "self": {
      "href": "/api/resourcelink"
    }
  },
  "num_records": 1,
  "records": {
    "_links": {
      "self": {
        "href": "/api/resourcelink"
      }
    },
    "monitoring": {
      "reason": "none"
    },
    "network": "cluster",
    "serial_number": "string",
    "snmp": {
      "version": "snmpv1"
    },
    "version": "string"
  }
}
```

Error

```
Status: Default, Error
```

Name	Type	Description
error	returned_error	

Example error

```json
{
  "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	href	
self	href	

self_link

Name	Type	Description
self	href	

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	self_link	
address	string	IP Address.

Name	Type	Description
discovered	boolean	Discovered By ONTAP CDP/LLDP • readOnly: 1 • Introduced in: 9.8 • x-nullable: true
model	string	Model Number.
monitoring	monitoring	
name	string	Name.
network	string	Switch Network.
serial_number	string	Serial Number.
snmp	snmp	
version	string	Software Version.

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.

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	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. • Default value: 1 • Max value: 120 • Min value: 0
return_records	boolean	query	False	The default is false. If set to true, the records are returned. • Default value:

Request Body

Name	Type	Description
_links	self_link	
address	string	IP Address.

Name	Type	Description
discovered	boolean	Discovered By ONTAP CDP/LLDP • readOnly: 1 • Introduced in: 9.8 • x-nullable: true
model	string	Model Number.
monitoring	monitoring	
name	string	Name.
network	string	Switch Network.
serial_number	string	Serial Number.
snmp	snmp	
version	string	Software Version.

Example request

```
{
  "_links": {
    "self": {
      "href": "/api/resourcelink"
    }
  },
  "monitoring": {
    "reason": "none"
  },
  "network": "cluster",
  "serial_number": "string",
  "snmp": {
    "version": "snmpv1"
  },
  "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

Response

```
Status: 201, Created
```

Error

```
Status: Default
```

ONTAP Error Response Codes

Error Code	Description
5636149	"{snmp.user}" must be a valid SNMPv3 user belonging to remote switch with IP address "{address}" and must also be configured in ONTAP.
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.

Error Code	Description
12517379	SNMP validation request timed out. Verify that the "snmp.user" parameter is valid.
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}.

Also see the table of common errors in the Response body overview section of this documentation.

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	

self_link

Name	Type	Description
self	href	

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	self_link	
address	string	IP Address.
discovered	boolean	Discovered By ONTAP CDP/LLDP • readOnly: 1 • Introduced in: 9.8 • x-nullable: true

Name	Type	Description
model	string	Model Number.
monitoring	monitoring	
name	string	Name.
network	string	Switch Network.
serial_number	string	Serial Number.
snmp	snmp	
version	string	Software Version.

_links

Name	Type	Description
self	href	

job_link

Name	Type	Description
_links	_links	
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

returned_error

Name	Type	Description
arguments	array[error_arguments]	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	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 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	self_link	
address	string	IP Address.
discovered	boolean	Discovered By ONTAP CDP/LLDP • readOnly: 1 • Introduced in: 9.8 • x-nullable: true
model	string	Model Number.
monitoring	monitoring	
name	string	Name.
network	string	Switch Network.
serial_number	string	Serial Number.
snmp	snmp	

Name	Type	Description
version	string	Software Version.

Example response

```json
{
  "_links": {
    "self": {
      "href": "/api/resourcelink"
    }
  },
  "monitoring": {
    "reason": "none"
  },
  "network": "cluster",
  "serial_number": "string",
  "snmp": {
    "version": "snmpv1"
  },
  "version": "string"
}
```

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	

self_link

Name	Type	Description
self	href	

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

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 an Ethernet switch

PATCH /network/ethernet/switches/{name}

Introduced In: 9.8

Updates the switch state.

Related ONTAP commands

- `system switch ethernet modify`

Learn more

- DOC /network/ethernet/switches

Parameters

Name	Type	In	Required	Description
name	string	path	True	Switch Name

Name	Type	In	Required	Description
return_timeout	integer	query	False	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. • Default value: 1 • Max value: 120 • Min value: 0

Request Body

Name	Type	Description
_links	self_link	
address	string	IP Address.
discovered	boolean	Discovered By ONTAP CDP/LLDP • readOnly: 1 • Introduced in: 9.8 • x-nullable: true
model	string	Model Number.

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

Example request

```
{
  "_links": {
    "self": {
      "href": "/api/resourcelink"
    }
  },
  "monitoring": {
    "reason": "none"
  },
  "network": "cluster",
  "serial_number": "string",
  "snmp": {
    "version": "snmpv1"
  },
  "version": "string"
}
```

Response

```
Status: 200, Ok
```

Name	Type	Description
job	job_link	

Example response

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

Response

```
Status: 202, Accepted
```

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.

Also see the table of common errors in the Response body overview section of this documentation.

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	

self_link

Name	Type	Description
self	href	

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	self_link	
address	string	IP Address.
discovered	boolean	Discovered By ONTAP CDP/LLDP • readOnly: 1 • Introduced in: 9.8 • x-nullable: true

Name	Type	Description
model	string	Model Number.
monitoring	monitoring	
name	string	Name.
network	string	Switch Network.
serial_number	string	Serial Number.
snmp	snmp	
version	string	Software Version.

_links

Name	Type	Description
self	href	

job_link

Name	Type	Description
_links	_links	
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

returned_error

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

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