



# **Manage storage switches**

## **ONTAP 9.9.1 REST API reference**

NetApp  
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# Manage storage switches

## Storage switches endpoint overview

### Retrieving storage switch information

The storage switch GET API retrieves all of the switches in the cluster.

### Examples

#### 1) Retrieves a list of storage switches from the cluster

The following example shows the response with a list of storage switches in the cluster:

```
# The API:
/api/storage/switches

# The call:
curl -X GET "https://<mgmt-ip>/api/storage/switches" -H "accept:
application/hal+json"

# The response:
{
  "records": [
    {
      "name": "Brocade_10.226.57.206",
      "_links": {
        "self": {
          "href": "/api/storage/switches/Brocade_10.226.57.206"
        }
      }
    },
    {
      "name": "Brocade_10.226.57.207",
      "_links": {
        "self": {
          "href": "/api/storage/switches/Brocade_10.226.57.207"
        }
      }
    },
    {
      "name": "Brocade_10.226.57.208",
      "_links": {
```

```

        "self": {
            "href": "/api/storage/switches/Brocade_10.226.57.208"
        }
    },
    {
        "name": "Brocade_10.226.57.209",
        "_links": {
            "self": {
                "href": "/api/storage/switches/Brocade_10.226.57.209"
            }
        }
    }
],
"num_records": 4,
"_links": {
    "self": {
        "href": "/api/storage/switches/"
    }
}
}

```

## 2) Retrieves a specific storage switch from the cluster

The following example shows the response of the requested storage switch. If there is no storage switch with the requested name, an error is returned.

```

# The API:
/api/storage/switches/{name}

# The call:
curl -X GET "https://<mgmt-ip>/api/storage/switches/Brocade_10.226.57.206"
-H "accept: application/hal+json"

# The response:
{
    "name": "Brocade_10.226.57.206",
    "domain_id": 5,
    "switch_fabric_name": "100050eb1a238892",
    "fw_version": "v7.2.1c1",
    "ip_address": "10.226.57.206",
    "is_director_class": false,
    "local": false,

```

```
"monitoring_enabled": true,
"model": "Brocade6510",
"role": "subordinate",
"state": "ok",
"symbolic_name": "rtp-fc01-41kk11",
"vendor": "brocade",
"wwn": "100050eb1a1ef7d7",
"power_supply_units": [
  {
    "name": "Power Supply #1",
    "state": "ok"
  },
  {
    "name": "Power Supply #2",
    "state": "ok"
  }
],
"temperature_sensors": [
  {
    "name": "SLOT #0: TEMP #1",
    "reading": 52,
    "state": "ok"
  }
],
"ports": [
  {
    "name": "FC port 0/0",
    "mode": "f_port",
    "wwn": "200050eb1a1ef7d7",
    "enabled": true,
    "state": "online",
    "speed": 16,
    "sfp": {
      "type": "small_form_factor",
      "transmitter_type": "short_wave_laser",
      "serial_number": "HAA2140310058E5"
    }
  },
  {
    "name": "FC port 0/1",
    "mode": "f_port",
    "wwn": "200050eb1a1ef2d7",
    "enabled": true,
    "state": "online",
    "speed": 16,
    "sfp": {
```

```

    "type": "small_form_factor",
    "transmitter_type": "short_wave_laser",
    "serial_number": "HAA2140310058E5"
  }
},
{
  "name": "FC port 0/2",
  "mode": "f_port",
  "wwn": "200050eb1a1ef7d0",
  "enabled": true,
  "state": "online",
  "speed": 16,
  "sfp": {
    "type": "small_form_factor",
    "transmitter_type": "short_wave_laser",
    "serial_number": "HAA2140310058E5"
  }
},
{
  "name": "FC port 0/3",
  "mode": "f_port",
  "wwn": "200050eb1a1ef7d7",
  "enabled": true,
  "state": "online",
  "speed": 16,
  "sfp": {
    "type": "small_form_factor",
    "transmitter_type": "short_wave_laser",
    "serial_number": "HAA2140310058E5"
  }
},
{
  "name": "FC port 0/4",
  "mode": "f_port",
  "wwn": "200050eb1a1ef2d7",
  "enabled": true,
  "state": "online",
  "speed": 16,
  "sfp": {
    "type": "small_form_factor",
    "transmitter_type": "short_wave_laser",
    "serial_number": "HAA2140310058E5"
  }
},
{
  "name": "FC port 0/5",

```

```

    "mode": "f_port",
    "wwn": "200050eb1a1ef7d0",
    "enabled": true,
    "state": "online",
    "speed": 16,
    "sfp": {
      "type": "small_form_factor",
      "transmitter_type": "short_wave_laser",
      "serial_number": "HAA2140310058E5"
    }
  },
  ],
  "connections": [
    {
      "source_port": {
        "name": "FC port 0/0",
        "wwn": "200050eb1a236efd",
        "mode": "f_port"
      },
      "peer_port": {
        "wwn": "2100000e1e30ac5f",
        "connection": "sti8020mcc-http-006:fcvi_device_1",
        "type": "fcvi_adapter",
        "unique_id": "38993dc0-4ea1-11eb-9331-00a0985bd455"
      }
    },
    {
      "source_port": {
        "name": "FC port 0/1",
        "wwn": "200150eb1a236efd",
        "mode": "f_port"
      },
      "peer_port": {
        "wwn": "210000024ff72c0c9",
        "connection": "sti8020mcc-http-006:2b",
        "type": "fcv_adapter",
        "unique_id": "38993dc0-4ea1-11eb-9331-00a0985bd455"
      }
    },
    {
      "source_port": {
        "name": "FC port 0/2",
        "wwn": "200250eb1a236efd",
        "mode": "f_port"
      },
      "peer_port": {

```

```

    "wwn": "21000024ff72c0cb",
    "connection": "sti8020mcc-htp-006:2d",
    "type": "fcg_adapter",
    "unique_id": "38993dc0-4ea1-11eb-9331-00a0985bd455"
  }
},
"fans": [
  {
    "name": "FAN #1",
    "speed": 7336,
    "state": "ok"
  },
  {
    "name": "FAN #2",
    "speed": 7336,
    "state": "ok"
  }
],
"paths": [
  {
    "adapter": {
      "name": "2a",
      "wwn": "21000024ff6c4bc0",
      "type": "fcg_initiator"
    },
    "port": {
      "name": "FC port 0/4",
      "speed": 8
    },
    "node": {
      "name": "sti8020mcc-htp-005",
      "uuid": "382cb083-4416-11eb-ad1d-00a0985bd455",
      "_links": {
        "self": {
          "href": "/api/cluster/nodes/382cb083-4416-11eb-ad1d-00a0985bd455"
        }
      }
    },
    "_links": {
      "self": {
        "href": "/api/storage/ports/382cb083-4416-11eb-ad1d-00a0985bd455/2a"
      }
    }
  }
]

```



```

},
{
  "adapter": {
    "name": "2c",
    "wwn": "21000024ff6c4bc2",
    "type": "fc_initiator"
  },
  "port": {
    "name": "FC port 0/5",
    "speed": 8
  },
  "node": {
    "name": "sti8020mcc-htp-005",
    "uuid": "382cb083-4416-11eb-ad1d-00a0985bd455",
    "_links": {
      "self": {
        "href": "/api/cluster/nodes/382cb083-4416-11eb-ad1d-00a0985bd455"
      }
    }
  },
  "_links": {
    "self": {
      "href": "/api/storage/ports/382cb083-4416-11eb-ad1d-00a0985bd455/2c"
    }
  }
},
{
  "adapter": {
    "name": "fcvi_device_0",
    "wwn": "2100000e1e09d5d2",
    "type": "fc_vi"
  },
  "port": {
    "name": "FC port 0/3",
    "speed": 16
  },
  "node": {
    "name": "sti8020mcc-htp-005",
    "uuid": "382cb083-4416-11eb-ad1d-00a0985bd455",
    "_links": {
      "self": {
        "href": "/api/cluster/nodes/382cb083-4416-11eb-ad1d-00a0985bd455"
      }
    }
  }
}

```

```

    }
  },
  {
    "adapter": {
      "name": "2a",
      "wwn": "21000024ff72c0c8",
      "type": "fc_initiator"
    },
    "port": {
      "name": "FC port 0/1",
      "speed": 8
    },
    "node": {
      "name": "sti8020mcc-htp-006",
      "uuid": "364fbba8-4416-11eb-8e72-00a098431045",
      "_links": {
        "self": {
          "href": "/api/cluster/nodes/364fbba8-4416-11eb-8e72-00a098431045"
        }
      }
    },
    "_links": {
      "self": {
        "href": "/api/storage/ports/364fbba8-4416-11eb-8e72-00a098431045/2a"
      }
    }
  },
  {
    "adapter": {
      "name": "2c",
      "wwn": "21000024ff72c0ca",
      "type": "fc_initiator"
    },
    "port": {
      "name": "FC port 0/2",
      "speed": 8
    },
    "node": {
      "name": "sti8020mcc-htp-006",
      "uuid": "364fbba8-4416-11eb-8e72-00a098431045",
      "_links": {
        "self": {
          "href": "/api/cluster/nodes/364fbba8-4416-11eb-8e72-

```

```

00a098431045"
    }
  }
},
"_links": {
  "self": {
    "href": "/api/storage/ports/364fbba8-4416-11eb-8e72-
00a098431045/2c"
  }
}
}
],
"_links": {
  "self": {
    "href": "/api/storage/switches/Brocade_10.226.57.206"
  }
}
}
}

```

## Retrieve storage switches

GET /storage/switches

**Introduced In:** 9.9

Retrieves a collection of storage switches.

### Related ONTAP commands

- `storage switch show`

### Learn more

- [DOC /storage/switches](#)

### Parameters

Name	Type	In	Required	Description
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="#">storage_switch</a> ]	

## Example response

```
{
  "_links": {
    "next": {
      "href": "/api/resourcelink"
    },
    "self": {
      "href": "/api/resourcelink"
    }
  },
  "records": {
    "connections": {
      "peer_port": {
        "type": "unknown"
      }
    },
    "errors": {
      "severity": "unknown",
      "type": "switch_unreachable"
    },
    "fans": {
      "state": "ok"
    },
    "monitored_blades": {
    },
    "paths": {
      "adapter": {
        "type": "unknown"
      },
      "node": {
        "_links": {
          "self": {
            "href": "/api/resourcelink"
          }
        },
        "name": "node1",
        "uuid": "1cd8a442-86d1-11e0-ae1c-123478563412"
      }
    },
    "ports": {
      "mode": "unknown",
      "sfp": {
        "transmitter_type": "unknown",
        "type": "unknown"
      }
    },
  },
}
```

```

    "state": "error"
  },
  "power_supply_units": {
    "state": "ok"
  },
  "role": "unknown",
  "state": "ok",
  "temperature_sensors": {
    "state": "error"
  },
  "vendor": "unknown",
  "vsans": {
    "state": "ok"
  },
  "zones": {
  }
}

```

## 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>	

peer\_port

Name	Type	Description
connection	string	Storage switch peer port host and name
type	string	Storage switch peer type
unique_id	string	Storage switch peer unique ID
wwn	string	Storage switch peer port world wide name

source\_port

Name	Type	Description
mode	string	Storage switch port operating mode
name	string	Storage switch port name
wwn	string	Storage switch peer port world wide name

connections

Name	Type	Description
peer_port	<a href="#">peer_port</a>	
source_port	<a href="#">source_port</a>	

component



Name	Type	Description
id	integer	Error component ID
name	string	Error component name

reason

Name	Type	Description
code	string	
message	string	

errors

Name	Type	Description
component	<a href="#">component</a>	
reason	<a href="#">reason</a>	
severity	string	Error component severity
type	string	Error component type

fans

Name	Type	Description
name	string	Storage switch fan name
speed	integer	Storage switch fan speed
state	string	Storage switch fan state

adapter

Name	Type	Description
name	string	Node adapter name
type	string	Node adapter type
wwn	string	Node adapter world wide name

\_links

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

node

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

port

Name	Type	Description
name	string	Storage switch port name
speed	integer	Storage switch port speed, in Gbps

paths

Name	Type	Description
adapter	<a href="#">adapter</a>	
node	<a href="#">node</a>	
port	<a href="#">port</a>	

sfp

Name	Type	Description
serial_number	string	Storage switch port SFP serial number
transmitter_type	string	Storage switch port SFP transmitter type
type	string	Storage switch port SFP type

ports

Name	Type	Description
enabled	boolean	Indicates whether the storage switch port is enabled.

Name	Type	Description
mode	string	Storage switch port mode
name	string	Storage switch port name
sfp	<a href="#">sfp</a>	
speed	integer	Storage switch port speed, in Gbps
state	string	Storage switch port state
wwn	string	Storage switch port world wide name

#### power\_supply\_units

Name	Type	Description
name	string	Power supply unit name
state	string	Power supply unit state

#### temperature\_sensors

Name	Type	Description
name	string	Temperature sensor name
reading	integer	Temperature sensor reading, in degrees celsius.
state	string	Temperature sensor state

#### vsans

Name	Type	Description
id	integer	Storage switch VSAN ID
iod	boolean	Indicates whether in-order delivery is set for a zone.
load_balancing_types	string	Storage switch VSAN load balancing type

Name	Type	Description
name	string	Storage switch VSAN name
state	string	Storage switch VSAN Port state

#### port

Name	Type	Description
id	string	Storage switch zone port ID
name	string	Storage switch zone port

#### zones

Name	Type	Description
id	integer	Storage switch zone ID
name	string	Storage switch zone name
port	<a href="#">port</a>	
wwn	string	Storage switch zone world wide name

#### storage\_switch

The Storage switch object describes the storage switch properties, features and cabling.

Name	Type	Description
connections	array[ <a href="#">connections</a> ]	
director_class	boolean	
domain_id	integer	Domain ID
errors	array[ <a href="#">errors</a> ]	
fabric_name	string	Storage switch fabric name
fans	array[ <a href="#">fans</a> ]	
firmware_version	string	Storage switch firmware version
ip_address	string	IP Address

Name	Type	Description
local	boolean	Indicates whether the storage switch is directly connected to the reporting cluster.
model	string	Storage switch model.
monitored_blades	array[integer]	Indicates the blades that are being monitored for a director-class switch.
monitoring_enabled	boolean	Indicates whether monitoring is enabled for the storage switch.
name	string	Storage switch name
paths	array[paths]	
ports	array[ports]	
power_supply_units	array[power_supply_units]	
role	string	Storage switch role in fabric.
state	string	Storage switch state
symbolic_name	string	Storage switch symbolic name
temperature_sensors	array[temperature_sensors]	
vendor	string	Storage switch vendor
vsans	array[vsans]	
wwn	string	Storage switch world wide name
zones	array[zones]	

#### 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 a specific storage switch

GET `/storage/switches/{name}`

**Introduced In:** 9.9

Retrieves a specific storage switch.

### Related ONTAP commands

- `storage switch show`

### Learn more

- [DOC /storage/switches](#)

### Parameters

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

### Response

Status: 200, Ok

Name	Type	Description
connections	array[ <a href="#">connections</a> ]	
director_class	boolean	
domain_id	integer	Domain ID

Name	Type	Description
errors	array[ <a href="#">errors</a> ]	
fabric_name	string	Storage switch fabric name
fans	array[ <a href="#">fans</a> ]	
firmware_version	string	Storage switch firmware version
ip_address	string	IP Address
local	boolean	Indicates whether the storage switch is directly connected to the reporting cluster.
model	string	Storage switch model.
monitored_blades	array[integer]	Indicates the blades that are being monitored for a director-class switch.
monitoring_enabled	boolean	Indicates whether monitoring is enabled for the storage switch.
name	string	Storage switch name
paths	array[ <a href="#">paths</a> ]	
ports	array[ <a href="#">ports</a> ]	
power_supply_units	array[ <a href="#">power_supply_units</a> ]	
role	string	Storage switch role in fabric.
state	string	Storage switch state
symbolic_name	string	Storage switch symbolic name
temperature_sensors	array[ <a href="#">temperature_sensors</a> ]	
vendor	string	Storage switch vendor
vsans	array[ <a href="#">vsans</a> ]	
wwn	string	Storage switch world wide name
zones	array[ <a href="#">zones</a> ]	

## Example response

```
{
  "connections": {
    "peer_port": {
      "type": "unknown"
    }
  },
  "errors": {
    "severity": "unknown",
    "type": "switch_unreachable"
  },
  "fans": {
    "state": "ok"
  },
  "monitored_blades": {
  },
  "paths": {
    "adapter": {
      "type": "unknown"
    },
    "node": {
      "_links": {
        "self": {
          "href": "/api/resourcelink"
        }
      },
      "name": "node1",
      "uuid": "1cd8a442-86d1-11e0-ae1c-123478563412"
    }
  },
  "ports": {
    "mode": "unknown",
    "sfp": {
      "transmitter_type": "unknown",
      "type": "unknown"
    },
    "state": "error"
  },
  "power_supply_units": {
    "state": "ok"
  },
  "role": "unknown",
  "state": "ok",
  "temperature_sensors": {
    "state": "error"
  }
}
```



```

    },
    "vendor": "unknown",
    "vsans": {
      "state": "ok"
    },
    "zones": {
    }
  }
}

```

## 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

### peer\_port

Name	Type	Description
connection	string	Storage switch peer port host and name
type	string	Storage switch peer type
unique_id	string	Storage switch peer unique ID
wwn	string	Storage switch peer port world wide name

### source\_port

Name	Type	Description
mode	string	Storage switch port operating mode
name	string	Storage switch port name
wwn	string	Storage switch peer port world wide name

### connections

Name	Type	Description
peer_port	<a href="#">peer_port</a>	
source_port	<a href="#">source_port</a>	

### component

Name	Type	Description
id	integer	Error component ID
name	string	Error component name

### reason

Name	Type	Description
code	string	

Name	Type	Description
message	string	

#### errors

Name	Type	Description
component	<a href="#">component</a>	
reason	<a href="#">reason</a>	
severity	string	Error component severity
type	string	Error component type

#### fans

Name	Type	Description
name	string	Storage switch fan name
speed	integer	Storage switch fan speed
state	string	Storage switch fan state

#### adapter

Name	Type	Description
name	string	Node adapter name
type	string	Node adapter type
wwn	string	Node adapter world wide name

#### href

Name	Type	Description
href	string	

#### \_links

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

#### node

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

#### port

Name	Type	Description
name	string	Storage switch port name
speed	integer	Storage switch port speed, in Gbps

#### paths

Name	Type	Description
adapter	<a href="#">adapter</a>	
node	<a href="#">node</a>	
port	<a href="#">port</a>	

#### sfp

Name	Type	Description
serial_number	string	Storage switch port SFP serial number
transmitter_type	string	Storage switch port SFP transmitter type
type	string	Storage switch port SFP type

#### ports

Name	Type	Description
enabled	boolean	Indicates whether the storage switch port is enabled.
mode	string	Storage switch port mode
name	string	Storage switch port name
sfp	<a href="#">sfp</a>	

Name	Type	Description
speed	integer	Storage switch port speed, in Gbps
state	string	Storage switch port state
wwn	string	Storage switch port world wide name

#### power\_supply\_units

Name	Type	Description
name	string	Power supply unit name
state	string	Power supply unit state

#### temperature\_sensors

Name	Type	Description
name	string	Temperature sensor name
reading	integer	Temperature sensor reading, in degrees celsius.
state	string	Temperature sensor state

#### vsans

Name	Type	Description
id	integer	Storage switch VSAN ID
iod	boolean	Indicates whether in-order delivery is set for a zone.
load_balancing_types	string	Storage switch VSAN load balancing type
name	string	Storage switch VSAN name
state	string	Storage switch VSAN Port state

#### port

Name	Type	Description
id	string	Storage switch zone port ID
name	string	Storage switch zone port

#### zones

Name	Type	Description
id	integer	Storage switch zone ID
name	string	Storage switch zone name
port	<a href="#">port</a>	
wwn	string	Storage switch zone world wide name

#### 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.

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