



## **Manage shelves**

### **ONTAP 9.7 REST API reference**

NetApp  
May 08, 2024

This PDF was generated from [https://docs.netapp.com/us-en/ontap-restapi-97/ontap/storage\\_shelves\\_endpoint\\_overview.html](https://docs.netapp.com/us-en/ontap-restapi-97/ontap/storage_shelves_endpoint_overview.html) on May 08, 2024. Always check docs.netapp.com for the latest.

# Table of Contents

- Manage shelves ..... 1
  - Storage shelves endpoint overview ..... 1
  - Retrieve shelves ..... 10
  - Retrieve a shelf ..... 21

# Manage shelves

## Storage shelves endpoint overview

### Retrieving storage shelf information

The storage shelf GET API retrieves all of the shelves in the cluster.

### Examples

#### 1) Retrieve a list of shelves from the cluster

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

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

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

# The response:
{
  "records": [
    {
      "uid": "3109174803597886800",
      "_links": {
        "self": {
          "href": "/api/storage/shelves/3109174803597886800"
        }
      }
    },
    {
      "uid": "9237728366621690448",
      "_links": {
        "self": {
          "href": "/api/storage/shelves/9237728366621690448"
        }
      }
    },
    {
      "uid": "9946762738829886800",
      "_links": {
```

```

    "self": {
      "href": "/api/storage/shelves/9946762738829886800"
    }
  },
  {
    "uid": "10318311901725526608",
    "_links": {
      "self": {
        "href": "/api/storage/shelves/10318311901725526608"
      }
    }
  },
  {
    "uid": "13477584846688355664",
    "_links": {
      "self": {
        "href": "/api/storage/shelves/13477584846688355664"
      }
    }
  }
],
"num_records": 5,
"_links": {
  "self": {
    "href": "/api/storage/shelves/"
  }
}
}

```

## 2) Retrieve a specific shelf from the cluster

The following example shows the response of the requested shelf. If there is no shelf with the requested uid, an error is returned.

```

# The API:
/api/storage/shelves/{uid}

# The call:
curl -X GET "https://<mgmt-ip>/api/storage/shelves/3109174803597886800" -H
"accept: application/hal+json"

# The response:

```

```

{
  "uid": "3109174803597886800",
  "name": "6.10",
  "id": "10",
  "serial_number": "SHU0954292N0HAH",
  "model": "DS4246",
  "module_type": "iom6",
  "internal": false,
  "state": "ok",
  "connection_type": "sas",
  "disk_count": 24,
  "paths": [
    {
      "name": "0e",
      "node": {
        "uuid": "0530d6c1-8c6d-11e8-907f-00a0985a72ee",
        "name": "node-1",
        "_links": {
          "self": {
            "href": "/api/cluster/nodes/0530d6c1-8c6d-11e8-907f-00a0985a72ee"
          }
        }
      },
      "_links": {
        "self": {
          "href": "/api/storage/ports/0530d6c1-8c6d-11e8-907f-00a0985a72ee/0e"
        }
      }
    },
    {
      "name": "0g",
      "node": {
        "uuid": "0530d6c1-8c6d-11e8-907f-00a0985a72ee",
        "name": "node-1",
        "_links": {
          "self": {
            "href": "/api/cluster/nodes/0530d6c1-8c6d-11e8-907f-00a0985a72ee"
          }
        }
      },
      "_links": {
        "self": {
          "href": "/api/storage/ports/0530d6c1-8c6d-11e8-907f-

```

```
00a0985a72ee/0g"
    }
  }
],
"bays": [
  {
    "id": 0,
    "has_disk": true,
    "type": "single_disk",
    "state": "ok"
  },
  {
    "id": 1,
    "has_disk": true,
    "type": "single_disk",
    "state": "ok"
  },
  {
    "id": 2,
    "has_disk": true,
    "type": "single_disk",
    "state": "ok"
  },
  {
    "id": 3,
    "has_disk": true,
    "type": "single_disk",
    "state": "ok"
  },
  {
    "id": 4,
    "has_disk": true,
    "type": "single_disk",
    "state": "ok"
  },
  {
    "id": 5,
    "has_disk": true,
    "type": "single_disk",
    "state": "ok"
  },
  {
    "id": 6,
    "has_disk": true,
    "type": "single_disk",
```

```
    "state": "ok"
  },
  {
    "id": 7,
    "has_disk": true,
    "type": "single_disk",
    "state": "ok"
  },
  {
    "id": 8,
    "has_disk": true,
    "type": "single_disk",
    "state": "ok"
  },
  {
    "id": 9,
    "has_disk": true,
    "type": "single_disk",
    "state": "ok"
  },
  {
    "id": 10,
    "has_disk": true,
    "type": "single_disk",
    "state": "ok"
  },
  {
    "id": 11,
    "has_disk": true,
    "type": "single_disk",
    "state": "ok"
  },
  {
    "id": 12,
    "has_disk": true,
    "type": "single_disk",
    "state": "ok"
  },
  {
    "id": 13,
    "has_disk": true,
    "type": "single_disk",
    "state": "ok"
  },
  {
    "id": 14,
```

```
    "has_disk": true,
    "type": "single_disk",
    "state": "ok"
  },
  {
    "id": 15,
    "has_disk": true,
    "type": "single_disk",
    "state": "ok"
  },
  {
    "id": 16,
    "has_disk": true,
    "type": "single_disk",
    "state": "ok"
  },
  {
    "id": 17,
    "has_disk": true,
    "type": "single_disk",
    "state": "ok"
  },
  {
    "id": 18,
    "has_disk": true,
    "type": "single_disk",
    "state": "ok"
  },
  {
    "id": 19,
    "has_disk": true,
    "type": "single_disk",
    "state": "ok"
  },
  {
    "id": 20,
    "has_disk": true,
    "type": "single_disk",
    "state": "ok"
  },
  {
    "id": 21,
    "has_disk": true,
    "type": "single_disk",
    "state": "ok"
  },
  },
```



```

{
  "id": 22,
  "has_disk": true,
  "type": "single_disk",
  "state": "ok"
},
{
  "id": 23,
  "has_disk": true,
  "type": "single_disk",
  "state": "ok"
}
],
"frus": [
  {
    "type": "module",
    "id": 0,
    "state": "ok",
    "part_number": "111-00690+B2",
    "serial_number": "8001900099",
    "firmware_version": "0191"
  },
  {
    "type": "module",
    "id": 1,
    "state": "ok",
    "part_number": "111-00190+B0",
    "serial_number": "7903785183",
    "firmware_version": "0191"
  },
  {
    "type": "psu",
    "id": 1,
    "state": "ok",
    "part_number": "0082562-12",
    "serial_number": "PMW82562007513E",
    "firmware_version": "0311"
  },
  {
    "type": "psu",
    "id": 2,
    "state": "ok",
    "part_number": "0082562-12",
    "serial_number": "PMW825620075138",
    "firmware_version": "0311"
  },
],

```

```

{
  "type": "psu",
  "id": 3,
  "state": "ok",
  "part_number": "0082562-12",
  "serial_number": "PMW8256200750BA",
  "firmware_version": "0311"
},
{
  "type": "psu",
  "id": 4,
  "state": "ok",
  "part_number": "0082562-12",
  "serial_number": "PMW8256200750A2",
  "firmware_version": "0311"
}
],
"ports": [
  {
    "id": 0,
    "module_id": "a",
    "designator": "square",
    "state": "connected",
    "internal": false,
    "wwn": "500A098000C9EDBF",
    "cable": {
      "identifier": "5001086000702488-500a098000c9edbf",
      "part_number": "112-00430+A0",
      "length": "2m",
      "serial_number": "APF16510229807"
    },
    "remote": {
      "wwn": "5001086000702488",
      "phy": "08"
    }
  },
  {
    "id": 1,
    "module_id": "a",
    "designator": "circle",
    "state": "connected",
    "internal": false,
    "wwn": "500A098000C9EDBF",
    "cable": {
      "identifier": "500a098000d5c4bf-500a098000c9edbf",
      "part_number": "112-00176+A0",

```

```

    "length": "0.5-1.0m",
    "serial_number": "APF133917610YT"
  },
  "remote": {
    "wwn": "500A098000D5C4BF",
    "phy": "00"
  }
},
{
  "id": 2,
  "module_id": "b",
  "designator": "square",
  "state": "connected",
  "internal": false,
  "wwn": "500A098004F208BF",
  "cable": {
    "identifier": "5001086000702648-500a098004f208bf",
    "part_number": "112-00430+A0",
    "length": "2m",
    "serial_number": "APF16510229540"
  },
  "remote": {
    "wwn": "5001086000702648",
    "phy": "08"
  }
},
{
  "id": 3,
  "module_id": "b",
  "designator": "circle",
  "state": "connected",
  "internal": false,
  "wwn": "500A098004F208BF",
  "cable": {
    "identifier": "500a0980062ba33f-500a098004f208bf",
    "part_number": "112-00176+20",
    "length": "0.5-1.0m",
    "serial_number": "832210017"
  },
  "remote": {
    "wwn": "500A0980062BA33F",
    "phy": "00"
  }
}
],
"_links": {

```

```
"self": {
  "href": "/api/storage/shelves/3109174803597886800"
}
}
```

## Retrieve shelves

GET /storage/shelves

Retrieves a collection of shelves.

### Related ONTAP commands

- `storage shelf show`
- `storage shelf port show`
- `storage shelf drawer show`

### Learn more

- [DOC /storage/shelves](#)

### Parameters

| Name                  | Type    | In    | Required | Description                     |
|-----------------------|---------|-------|----------|---------------------------------|
| uid                   | string  | query | False    | Filter by uid                   |
| connection_type       | string  | query | False    | Filter by connection_type       |
| drawers.id            | integer | query | False    | Filter by drawers.id            |
| drawers.serial_number | string  | query | False    | Filter by drawers.serial_number |
| drawers.part_number   | string  | query | False    | Filter by drawers.part_number   |
| drawers.error         | string  | query | False    | Filter by drawers.error         |

| Name                  | Type    | In    | Required | Description                     |
|-----------------------|---------|-------|----------|---------------------------------|
| drawers.closed        | boolean | query | False    | Filter by drawers.closed        |
| drawers.state         | string  | query | False    | Filter by drawers.state         |
| drawers.disk_count    | integer | query | False    | Filter by drawers.disk_count    |
| module_type           | string  | query | False    | Filter by module_type           |
| bays.state            | string  | query | False    | Filter by bays.state            |
| bays.has_disk         | boolean | query | False    | Filter by bays.has_disk         |
| bays.type             | string  | query | False    | Filter by bays.type             |
| bays.id               | integer | query | False    | Filter by bays.id               |
| model                 | string  | query | False    | Filter by model                 |
| serial_number         | string  | query | False    | Filter by serial_number         |
| state                 | string  | query | False    | Filter by state                 |
| disk_count            | integer | query | False    | Filter by disk_count            |
| frus.state            | string  | query | False    | Filter by frus.state            |
| frus.part_number      | string  | query | False    | Filter by frus.part_number      |
| frus.firmware_version | string  | query | False    | Filter by frus.firmware_version |
| frus.type             | string  | query | False    | Filter by frus.type             |
| frus.serial_number    | string  | query | False    | Filter by frus.serial_number    |
| frus.id               | integer | query | False    | Filter by frus.id               |

| Name                      | Type    | In    | Required | Description                         |
|---------------------------|---------|-------|----------|-------------------------------------|
| ports.module_id           | string  | query | False    | Filter by ports.module_id           |
| ports.wwn                 | string  | query | False    | Filter by ports.wwn                 |
| ports.cable.identifier    | string  | query | False    | Filter by ports.cable.identifier    |
| ports.cable.length        | string  | query | False    | Filter by ports.cable.length        |
| ports.cable.part_number   | string  | query | False    | Filter by ports.cable.part_number   |
| ports.cable.serial_number | string  | query | False    | Filter by ports.cable.serial_number |
| ports.state               | string  | query | False    | Filter by ports.state               |
| ports.remote.phy          | string  | query | False    | Filter by ports.remote.phy          |
| ports.remote.wwn          | string  | query | False    | Filter by ports.remote.wwn          |
| ports.remote.port         | string  | query | False    | Filter by ports.remote.port         |
| ports.remote.mac_address  | string  | query | False    | Filter by ports.remote.mac_address  |
| ports.remote.chassis      | string  | query | False    | Filter by ports.remote.chassis      |
| ports.mac_address         | string  | query | False    | Filter by ports.mac_address         |
| ports.internal            | boolean | query | False    | Filter by ports.internal            |
| ports.designator          | string  | query | False    | Filter by ports.designator          |

| Name            | Type          | In    | Required | Description  |
|-----------------|---------------|-------|----------|--|
| ports.id        | integer       | query | False    | Filter by ports.id   |
| internal        | boolean       | query | False    | Filter by internal   |
| name            | string        | query | False    | Filter by name   |
| paths.name      | string        | query | False    | Filter by paths.name   |
| paths.node.uuid | string        | query | False    | Filter by paths.node.uuid  |
| paths.node.name | string        | query | False    | Filter by paths.node.name  |
| id              | string        | query | False    | Filter by id   |
| fields          | array[string] | query | False    | Specify the fields to return.  |
| 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.  |
| 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. |
| 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="#">shelf</a> ] |                   |



## Example response

```
{
  "_links": {
    "next": {
      "href": "/api/resourcelink"
    },
    "self": {
      "href": "/api/resourcelink"
    }
  },
  "records": {
    "bays": {
      "id": 0,
      "state": "ok",
      "type": "single_disk"
    },
    "connection_type": "sas",
    "disk_count": 12,
    "drawers": {
      "disk_count": 12,
      "part_number": "111-03071",
      "serial_number": "021604008263",
      "state": "ok"
    },
    "frus": {
      "firmware_version": "0191",
      "part_number": "111-00690+A2",
      "serial_number": 8000166294,
      "state": "error",
      "type": "module"
    },
    "id": 1,
    "model": "DS2246",
    "module_type": "iom6",
    "name": 1.1,
    "paths": {
      "_links": {
        "self": {
          "href": "/api/resourcelink"
        }
      },
      "name": "2a",
      "node": {
        "_links": {
          "self": {
```

```

        "href": "/api/resourcelink"
      }
    },
    "name": "node1",
    "uuid": "1cd8a442-86d1-11e0-ae1c-123478563412"
  }
},
"ports": {
  "cable": {
    "identifier": "500a0980000b6c3f-50000d1703544b80",
    "length": "2m",
    "part_number": "112-00431+A0",
    "serial_number": 616930439
  },
  "designator": "square",
  "id": 0,
  "module_id": "a",
  "remote": {
    "phy": 12,
    "wnn": "50000D1703544B80"
  },
  "state": "connected",
  "wnn": "500A0980000B6C3F"
},
"serial_number": "SHFMS1514000895",
"state": "ok",
"uid": 7777841915827391056
}
}

```

## 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> |             |

bays

| Name     | Type    | Description |
|----------|---------|-------------|
| has_disk | boolean |             |
| id       | integer |             |
| state    | string  |             |
| type     | string  |             |

drawers

| Name          | Type    | Description |
|---------------|---------|-------------|
| closed        | boolean |             |
| disk_count    | integer |             |
| error         | string  |             |
| id            | integer |             |
| part_number   | string  |             |
| serial_number | string  |             |
| state         | string  |             |

frus

| Name             | Type    | Description |
|------------------|---------|-------------|
| firmware_version | string  |             |
| id               | integer |             |
| part_number      | string  |             |
| serial_number    | string  |             |
| state            | string  |             |

| Name | Type   | Description |
|------|--------|-------------|
| type | string |             |

\_links

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

node

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

paths

Storage port

| Name   | Type                   | Description |
|--------|------------------------|-------------|
| _links | <a href="#">_links</a> |             |
| name   | string                 |             |
| node   | <a href="#">node</a>   |             |

cable

| Name          | Type   | Description |
|---------------|--------|-------------|
| identifier    | string |             |
| length        | string |             |
| part_number   | string |             |
| serial_number | string |             |

remote

| Name        | Type   | Description |
|-------------|--------|-------------|
| chassis     | string |             |
| mac_address | string |             |
| phy         | string |             |
| port        | string |             |
| wwn         | string |             |

ports

| Name        | Type                   | Description |
|-------------|------------------------|-------------|
| cable       | <a href="#">cable</a>  |             |
| designator  | string                 |             |
| id          | integer                |             |
| internal    | boolean                |             |
| mac_address | string                 |             |
| module_id   | string                 |             |
| remote      | <a href="#">remote</a> |             |
| state       | string                 |             |
| wwn         | string                 |             |

#### shelf

| Name            | Type                             | Description |
|-----------------|----------------------------------|-------------|
| bays            | array[ <a href="#">bays</a> ]    |             |
| connection_type | string                           |             |
| disk_count      | integer                          |             |
| drawers         | array[ <a href="#">drawers</a> ] |             |
| frus            | array[ <a href="#">frus</a> ]    |             |
| id              | string                           |             |
| internal        | boolean                          |             |
| model           | string                           |             |
| module_type     | string                           |             |
| name            | string                           |             |
| paths           | array[ <a href="#">paths</a> ]   |             |
| ports           | array[ <a href="#">ports</a> ]   |             |
| serial_number   | string                           |             |
| state           | string                           |             |
| uid             | 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                                  |
| message   | string                                   | Error message                               |
| target    | string                                   | The target parameter that caused the error. |

## Retrieve a shelf

GET /storage/shelves/{uid}

Retrieves a specific shelf.

### Related ONTAP commands

- `storage shelf show`
- `storage shelf port show`
- `storage shelf drawer show`

### Learn more

- [DOC /storage/shelves](#)

### Parameters

| Name   | Type          | In    | Required | Description                   |
|--------|---------------|-------|----------|-------------------------------|
| uid    | string        | path  | True     | Shelf UID                     |
| fields | array[string] | query | False    | Specify the fields to return. |

### Response

Status: 200, Ok

| Name | Type                          | Description |
|------|-------------------------------|-------------|
| bays | array[ <a href="#">bays</a> ] |             |

| Name            | Type           | Description |
|-----------------|----------------|-------------|
| connection_type | string         |             |
| disk_count      | integer        |             |
| drawers         | array[drawers] |             |
| frus            | array[frus]    |             |
| id              | string         |             |
| internal        | boolean        |             |
| model           | string         |             |
| module_type     | string         |             |
| name            | string         |             |
| paths           | array[paths]   |             |
| ports           | array[ports]   |             |
| serial_number   | string         |             |
| state           | string         |             |
| uid             | string         |             |



## Example response

```
{
  "bays": {
    "id": 0,
    "state": "ok",
    "type": "single_disk"
  },
  "connection_type": "sas",
  "disk_count": 12,
  "drawers": {
    "disk_count": 12,
    "part_number": "111-03071",
    "serial_number": "021604008263",
    "state": "ok"
  },
  "frus": {
    "firmware_version": "0191",
    "part_number": "111-00690+A2",
    "serial_number": 8000166294,
    "state": "error",
    "type": "module"
  },
  "id": 1,
  "model": "DS2246",
  "module_type": "iom6",
  "name": 1.1,
  "paths": {
    "_links": {
      "self": {
        "href": "/api/resourcelink"
      }
    },
    "name": "2a",
    "node": {
      "_links": {
        "self": {
          "href": "/api/resourcelink"
        }
      },
      "name": "node1",
      "uuid": "1cd8a442-86d1-11e0-ae1c-123478563412"
    }
  },
  "ports": {
    "cable": {
```

```

    "identifier": "500a0980000b6c3f-50000d1703544b80",
    "length": "2m",
    "part_number": "112-00431+A0",
    "serial_number": 616930439
  },
  "designator": "square",
  "id": 0,
  "module_id": "a",
  "remote": {
    "phy": 12,
    "wnn": "50000D1703544B80"
  },
  "state": "connected",
  "wnn": "500A0980000B6C3F"
},
"serial_number": "SHFMS1514000895",
"state": "ok",
"uid": 7777841915827391056
}

```

## 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

bays

| Name     | Type    | Description |
|----------|---------|-------------|
| has_disk | boolean |             |
| id       | integer |             |
| state    | string  |             |
| type     | string  |             |

drawers

| Name          | Type    | Description |
|---------------|---------|-------------|
| closed        | boolean |             |
| disk_count    | integer |             |
| error         | string  |             |
| id            | integer |             |
| part_number   | string  |             |
| serial_number | string  |             |
| state         | string  |             |

frus

| Name             | Type    | Description |
|------------------|---------|-------------|
| firmware_version | string  |             |
| id               | integer |             |
| part_number      | string  |             |
| serial_number    | string  |             |
| state            | string  |             |
| type             | string  |             |

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                 |             |

## paths

### Storage port

| Name   | Type                   | Description |
|--------|------------------------|-------------|
| _links | <a href="#">_links</a> |             |
| name   | string                 |             |
| node   | <a href="#">node</a>   |             |

## cable

| Name          | Type   | Description |
|---------------|--------|-------------|
| identifier    | string |             |
| length        | string |             |
| part_number   | string |             |
| serial_number | string |             |

## remote

| Name        | Type   | Description |
|-------------|--------|-------------|
| chassis     | string |             |
| mac_address | string |             |
| phy         | string |             |
| port        | string |             |
| wwn         | string |             |

## ports

| Name        | Type                  | Description |
|-------------|-----------------------|-------------|
| cable       | <a href="#">cable</a> |             |
| designator  | string                |             |
| id          | integer               |             |
| internal    | boolean               |             |
| mac_address | string                |             |

| Name      | Type                   | Description |
|-----------|------------------------|-------------|
| module_id | string                 |             |
| remote    | <a href="#">remote</a> |             |
| state     | string                 |             |
| wwn       | 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                                  |
| 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.