NetApp

Manage FC network interfaces

ONTAP 9.7 REST API reference

NetApp
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Network FC interfaces endpoint overview

Overview

Fibre Channel (FC) interfaces are the logical endpoints for FC network connections to an SVM. An FC interface provides FC access to storage within the interface SVM using either Fibre Channel Protocol or NVMe over FC (NVMe/FC).

The Fibre Channel interface REST API allows you to create, delete, update, and discover FC interfaces, and obtain status information for FC interfaces.

An FC interface is created on an FC port which is located on a cluster node. The FC port must be specified to identify the location of the interface for a POST or PATCH request that relocates an interface. You can identify the port by supplying either the node and port names or the port UUID.

Examples

Creating an FC interface using the port node and name to identify the location

This example uses the `return_records` query parameter to retrieve the newly created FC interface in the POST response.

```
# The API:
POST /api/network/fc/interfaces

# The call:
curl -X POST 'https://<mgmt-
ip>/api/network/fc/interfaces?return_records=true' -H 'accept:
application/hal+json' -d '{ "svm": { "name": "svm1" }, "name": "lif1",
"location": { "port": { "name": "0a", "node": { "name": "node1" } } },
"data_protocol": "fcp" }'

# The response:
{
"num_records": 1,
"records": [
  {
    "svm": {
      "uuid": "cf300f5c-db83-11e8-bd46-005056bba0e0",
      "name": "svm1",
      "_links": {
        "self": {
          "href": "/api/svm/svms/cf300f5c-db83-11e8-bd46-005056bba0e0"
        }
      }
    }
```

```
      },
      "uuid": "f6045b92-dec7-11e8-a733-005056bba0e0",
      "name": "lif1",
      "location": {
        "node": {
          "uuid": "bafe9b9f-db81-11e8-bd46-005056bba0e0",
          "name": "node1",
          "_links": {
            "self": {
              "href": "/api/cluster/nodes/bafe9b9f-db81-11e8-bd46-
005056bba0e0"
            }
          }
        },
        "port": {
          "uuid": "300c1ae3-db82-11e8-bd46-005056bba0e0",
          "name": "0a",
          "node": {
            "name": "node1"
          },
          "_links": {
            "self": {
              "href": "/api/network/fc/ports/300c1ae3-db82-11e8-bd46-
005056bba0e0"
            }
          }
        }
      },
      "enabled": true,
      "state": "down",
      "data_protocol": "fcp",
      "wwpn": "20:04:00:50:56:bb:a0:e0",
      "wwnn": "20:00:00:50:56:bb:a0:e0",
      "port_address": "9da2cb1",
      "_links": {
        "self": {
          "href": "/api/network/fc/interfaces/f6045b92-dec7-11e8-a733-
005056bba0e0"
        }
      }
    }
  }
]
}
```

Creating an FC interface using the port UUID to identify the location

This example uses the `return_records` query parameter to retrieve the newly created FC interface in the POST response.

```
# The API:
POST /api/network/fc/interfaces

# The call:
curl -X POST 'https://<mgmt-
ip>/api/network/fc/interfaces?return_records=true' -H 'accept:
application/hal+json' -d '{ "svm": { "name": "svm3" }, "name": "lif2",
"location": { "port": { "uuid": "24bb636a-db83-11e8-9a49-005056bb1ec6" }
}, "data_protocol": "fc_nvme" }'

# The response:
{
"num_records": 1,
"records": [
  {
    "svm": {
      "uuid": "a5060466-dbab-11e8-bd46-005056bba0e0",
      "name": "svm3",
      "_links": {
        "self": {
          "href": "/api/svm/svms/a5060466-dbab-11e8-bd46-005056bba0e0"
        }
      }
    },
    "uuid": "cdeb5591-dec9-11e8-a733-005056bba0e0",
    "name": "lif2",
    "location": {
      "node": {
        "uuid": "e85aa147-db83-11e8-9a48-005056bb1ec6",
        "name": "node3",
        "_links": {
          "self": {
            "href": "/api/cluster/nodes/e85aa147-db83-11e8-9a48-
005056bb1ec6"
          }
        }
      },
      "port": {
        "uuid": "24bb636a-db83-11e8-9a49-005056bb1ec6",
        "name": "1b",
        "node": {
```

```
            "name": "node3"
          },
          "_links": {
            "self": {
              "href": "/api/network/fc/ports/24bb636a-db83-11e8-9a49-
005056bb1ec6"
            }
          }
        }
      },
      "enabled": true,
      "state": "down",
      "data_protocol": "fc_nvme",
      "wwpn": "20:05:00:50:56:bb:a0:e0",
      "wwnn": "20:02:00:50:56:bb:a0:e0",
      "port_address": "612e202b",
      "_links": {
        "self": {
          "href": "/api/network/fc/interfaces/cdeb5591-dec9-11e8-a733-
005056bba0e0"
        }
      }
    }
  ]
}
```

Retrieving all properties for all FC interfaces

This example uses the `fields` query parameter to retrieve all properties.

```
# The API:
GET /api/network/fc/interfaces

# The call:
curl -X GET 'https://<mgmt-ip>/api/network/fc/interfaces?fields=*' -H
'accept: application/hal+json'

# The response:
{
"records": [
  {
    "svm": {
      "uuid": "a5060466-dbab-11e8-bd46-005056bba0e0",
      "name": "svm3",
```

```json
      "_links": {
        "self": {
          "href": "/api/svm/svms/a5060466-dbab-11e8-bd46-005056bba0e0"
        }
      }
    },
    "uuid": "cdeb5591-dec9-11e8-a733-005056bba0e0",
    "name": "lif2",
    "location": {
      "node": {
        "uuid": "e85aa147-db83-11e8-9a48-005056bb1ec6",
        "name": "node3",
        "_links": {
          "self": {
            "href": "/api/cluster/nodes/e85aa147-db83-11e8-9a48-
005056bb1ec6"
          }
        }
      },
      "port": {
        "uuid": "24bb636a-db83-11e8-9a49-005056bb1ec6",
        "name": "1b",
        "node": {
          "name": "node3"
        },
        "_links": {
          "self": {
            "href": "/api/network/fc/ports/24bb636a-db83-11e8-9a49-
005056bb1ec6"
          }
        }
      }
    },
    "enabled": true,
    "state": "down",
    "data_protocol": "fc_nvme",
    "wwpn": "20:05:00:50:56:bb:a0:e0",
    "wwnn": "20:02:00:50:56:bb:a0:e0",
    "port_address": "612e202b",
    "_links": {
      "self": {
        "href": "/api/network/fc/interfaces/cdeb5591-dec9-11e8-a733-
005056bba0e0"
      }
    }
  },
```

```
    {
      "svm": {
        "uuid": "cf300f5c-db83-11e8-bd46-005056bba0e0",
        "name": "svm1",
        "_links": {
          "self": {
            "href": "/api/svm/svms/cf300f5c-db83-11e8-bd46-005056bba0e0"
          }
        }
      },
      "uuid": "f6045b92-dec7-11e8-a733-005056bba0e0",
      "name": "lif1",
      "location": {
        "node": {
          "uuid": "bafe9b9f-db81-11e8-bd46-005056bba0e0",
          "name": "node1",
          "_links": {
            "self": {
              "href": "/api/cluster/nodes/bafe9b9f-db81-11e8-bd46-
005056bba0e0"
            }
          }
        },
        "port": {
          "uuid": "300c1ae3-db82-11e8-bd46-005056bba0e0",
          "name": "0a",
          "node": {
            "name": "node1"
          },
          "_links": {
            "self": {
              "href": "/api/network/fc/ports/300c1ae3-db82-11e8-bd46-
005056bba0e0"
            }
          }
        }
      },
      "enabled": true,
      "state": "down",
      "data_protocol": "fcp",
      "wwpn": "20:04:00:50:56:bb:a0:e0",
      "wwnn": "20:00:00:50:56:bb:a0:e0",
      "port_address": "9da2cb1",
      "_links": {
        "self": {
          "href": "/api/network/fc/interfaces/f6045b92-dec7-11e8-a733-
```

```
  005056bba0e0"
        }
      }
    }
  ],
  "num_records": 2,
  "_links": {
    "self": {
      "href": "/api/network/fc/interfaces?fields=*"
    }
  }
}
```

Retrieving a list of selected FC interfaces

This example uses property query parameters to retrieve FC interfaces configured for the FC Protocol that are set to *up*.

```
# The API:
GET /api/network/fc/interfaces

# The call:
curl -X GET 'https://<mgmt-
ip>/api/network/fc/interfaces?data_protocol=fcp&state=up' -H 'accept:
application/hal+json'

# The response:
{
"records": [
  {
    "svm": {
      "uuid": "cf300f5c-db83-11e8-bd46-005056bba0e0",
      "name": "svm1",
      "_links": {
        "self": {
          "href": "/api/svm/svms/cf300f5c-db83-11e8-bd46-005056bba0e0"
        }
      }
    },
    "uuid": "f6045b92-dec7-11e8-a733-005056bba0e0",
    "name": "lif1",
    "state": "up",
    "data_protocol": "fcp",
    "_links": {
      "self": {
        "href": "/api/network/fc/interfaces/f6045b92-dec7-11e8-a733-
005056bba0e0"
      }
    }
  }
],
"num_records": 1,
"_links": {
  "self": {
    "href": "/api/network/fc/interfaces?data_protocol=fcp&state=up"
  }
}
}
```

Retrieving a specific FC interface

```
# The API:
GET /api/network/fc/interfaces/{uuid}

# The call:
curl -X GET 'https://<mgmt-ip>/api/network/fc/interfaces/cdeb5591-dec9-
11e8-a733-005056bba0e0' -H 'accept: application/hal+json'

# The response:
{
"svm": {
  "uuid": "a5060466-dbab-11e8-bd46-005056bba0e0",
  "name": "svm3",
  "_links": {
    "self": {
      "href": "/api/svm/svms/a5060466-dbab-11e8-bd46-005056bba0e0"
    }
  }
},
"uuid": "cdeb5591-dec9-11e8-a733-005056bba0e0",
"name": "lif2",
"location": {
  "node": {
    "uuid": "e85aa147-db83-11e8-9a48-005056bb1ec6",
    "name": "node3",
    "_links": {
      "self": {
        "href": "/api/cluster/nodes/e85aa147-db83-11e8-9a48-005056bb1ec6"
      }
    }
  },
  "port": {
    "uuid": "24bb636a-db83-11e8-9a49-005056bb1ec6",
    "name": "1b",
    "node": {
      "name": "node3"
    },
    "_links": {
      "self": {
        "href": "/api/network/fc/ports/24bb636a-db83-11e8-9a49-
005056bb1ec6"
      }
    }
  }
},
```

```
  "enabled": true,
  "state": "down",
  "data_protocol": "fc_nvme",
  "wwpn": "20:05:00:50:56:bb:a0:e0",
  "wwnn": "20:02:00:50:56:bb:a0:e0",
  "port_address": "612e202b",
  "_links": {
    "self": {
      "href": "/api/network/fc/interfaces/cdeb5591-dec9-11e8-a733-
005056bba0e0"
    }
  }
}
```

Disabling an FC interface

When updating certain properties or deleting an FC interface, the interface must first be disabled using the following:

```
# The API:
PATCH /api/network/fc/interfaces/{uuid}

# The call:
curl -X PATCH 'https://<mgmt-ip>/api/network/fc/interfaces/f6045b92-dec7-
11e8-a733-005056bba0e0' -H 'accept: application/hal+json' -d '{ "enabled":
false }'
```

Moving an FC interface to a new node and port

To move an FC interface to another node or port, the destination FC port must be specified in a PATCH request. Either the port UUID or node and port names can be used to identify the port.

Note that only FC interfaces configured for the FC Protocol can be moved. FC interfaces configured for NVMe/FC cannot be moved. The interface must also be set to the disabled state before being moved.

```
# The API:
PATCH /api/network/fc/interfaces/{uuid}

# The call:
curl -X PATCH 'https://<mgmt-ip>/api/network/fc/interfaces/f6045b92-dec7-
11e8-a733-005056bba0e0' -H 'accept: application/hal+json' -d '{
"location": { "port": { "uuid": "a1dc7aa5-db83-11e8-9ef7-005056bbbbcc" } }
}'
```

Deleting an FC interface

The FC interface must be disabled before being deleted.

```
# The API:
DELETE /api/network/fc/interfaces/{uuid}

# The call:
curl -X DELETE 'https://<mgmt-ip>/api/network/fc/interfaces/f6045b92-dec7-
11e8-a733-005056bba0e0' -H 'accept: application/hal+json'
```

Retrieve FC interfaces

GET `/network/fc/interfaces`

Retrieves FC interfaces.

Related ONTAP commands

- `network interface show`
- `vserver fcp interface show`

Learn more

- DOC /network/fc/interfaces

Parameters

Name	Type	In	Required	Description
location.port.name	string	query	False	Filter by location.port.name

Name	Type	In	Required	Description
location.port.node.name	string	query	False	Filter by location.port.node.name
location.port.uuid	string	query	False	Filter by location.port.uuid
location.node.uuid	string	query	False	Filter by location.node.uuid
location.node.name	string	query	False	Filter by location.node.name
enabled	boolean	query	False	Filter by enabled
uuid	string	query	False	Filter by uuid
wwnn	string	query	False	Filter by wwnn
port_address	string	query	False	Filter by port_address
svm.uuid	string	query	False	Filter by svm.uuid
svm.name	string	query	False	Filter by svm.name
wwpn	string	query	False	Filter by wwpn
state	string	query	False	Filter by state
comment	string	query	False	Filter by comment
data_protocol	string	query	False	Filter by data_protocol
name	string	query	False	Filter by name
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.
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	_links	
num_records	integer	Number of records.
records	array[fc_interface]	

Example response

```json
{
  "_links": {
    "next": {
      "href": "/api/resourcelink"
    },
    "self": {
      "href": "/api/resourcelink"
    }
  },
  "records": {
    "_links": {
      "self": {
        "href": "/api/resourcelink"
      }
    },
    "comment": "string",
    "data_protocol": "fcp",
    "location": {
      "node": {
        "_links": {
          "self": {
            "href": "/api/resourcelink"
          }
        },
        "name": "node1",
        "uuid": "1cd8a442-86d1-11e0-ae1c-123478563412"
      },
      "port": {
        "_links": {
          "self": {
            "href": "/api/resourcelink"
          }
        },
        "name": "0a",
        "node": {
          "name": "node1"
        },
        "uuid": "1cd8a442-86d1-11e0-ae1c-123478563412"
      }
    },
    "name": "lif1",
    "port_address": "5060F",
    "state": "up",
    "svm": {
```

```
      "_links": {
        "self": {
          "href": "/api/resourcelink"
        }
      },
      "name": "svm1",
      "uuid": "02c9e252-41be-11e9-81d5-00a0986138f7"
    },
    "uuid": "1cd8a442-86d1-11e0-ae1c-123478563412",
    "wwnn": "20:00:00:50:56:b4:13:01",
    "wwpn": "20:00:00:50:56:b4:13:a8"
  }
}
```

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	href	
self	href	

_links

Name	Type	Description
self	href	

node

Name	Type	Description
_links	_links	
name	string	
uuid	string	

node

The node on which the FC port is located.

Name	Type	Description
name	string	The name of the node on which the FC port is located.

fc_port_reference

An FC port is the physical port of an FC adapter on a cluster node that can be connected to an FC network.

Name	Type	Description
_links	_links	
name	string	The name of the FC port.
node	node	The node on which the FC port is located.

Name	Type	Description
uuid	string	The unique identifier of the FC port.

location

The location of the FC interface is defined by the location of its port. An FC port is identified by its UUID, or a combination of its node name and port name. Either the UUID or the node name and port name are required for POST. To move an interface, supply either the UUID or the node name and port name in a PATCH.

Name	Type	Description
node	node	
port	fc_port_reference	An FC port is the physical port of an FC adapter on a cluster node that can be connected to an FC network.

svm

Name	Type	Description
_links	_links	
name	string	The name of the SVM.
uuid	string	The unique identifier of the SVM.

fc_interface

A Fibre Channel (FC) interface is the logical endpoint for FC network connections to an SVM. An FC interface provides FC access to storage within the interface SVM using either Fibre Channel Protocol or NVMe over Fibre Channel (NVMe/FC).

An FC interface is created on an FC port which is located on a cluster node. The FC port must be specified to identify the location of the interface for a POST or PATCH operation that relocates an interface. You can identify the port by supplying either the node and port names or the port UUID.

Name	Type	Description
_links	_links	
comment	string	A user configurable comment. Optional in POST; valid in PATCH. To clear a prior comment, set the property to an empty string in PATCH.

Name	Type	Description
data_protocol	string	The data protocol for which the FC interface is configured. Required in POST.
enabled	boolean	The administrative state of the FC interface. The FC interface can be disabled to block all FC communication with the SVM through this interface. Optional in POST and PATCH; defaults to *true* (enabled) in POST.
location	location	The location of the FC interface is defined by the location of its port. An FC port is identified by its UUID, or a combination of its node name and port name. Either the UUID or the node name and port name are required for POST. To move an interface, supply either the UUID or the node name and port name in a PATCH.
name	string	The name of the FC interface. Required in POST; optional in PATCH.
port_address	string	The port address of the FC interface. Each FC port in an FC switched fabric has its own unique FC port address for routing purposes. The FC port address is assigned by a switch in the fabric when that port logs in to the fabric. This property refers to the address given by a switch to the FC interface when the SVM performs a port login (PLOGI). This is useful for obtaining statistics and diagnostic information from FC switches. This is a hexadecimal encoded numeric value.

Name	Type	Description
state	string	The current operational state of the FC interface. The state is set to *down* if the interface is not enabled. If the node hosting the port is down or unavailable, no state value is returned.
svm	svm	
uuid	string	The unique identifier of the FC interface. Required in the URL.
wwnn	string	The world wide node name (WWNN) of the FC interface SVM. The WWNN is generated by ONTAP when Fibre Channel Protocol or the NVMe service is created for the FC interface SVM. • example: 20:00:00:50:56:b4:13:01 • readOnly: 1
wwpn	string	The world wide port name (WWPN) of the FC interface. The WWPN is generated by ONTAP when the FC interface is created. • example: 20:00:00:50:56:b4:13:a8 • readOnly: 1

error_arguments

Name	Type	Description
code	string	Argument code
message	string	Message argument

error

Name	Type	Description
arguments	array[error_arguments]	Message arguments

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

Create an FC interface

POST `/network/fc/interfaces`

Creates an FC interface.

Required properties

- `svm.uuid` or `svm.name` - Existing SVM in which to create the FC interface.
- `name` - Name of the FC interface.
- `location.port.uuid` or both `location.port.name` and `location.port.node.name` - FC port on which to create the FC interface.
- `data_protocol` - Data protocol for the FC interface.

Default property values

If not specified in POST, the following default property values are assigned.

- `enabled` - *true*

Related ONTAP commands

- `network interface create`

Learn more

- DOC /network/fc/interfaces

Parameters

Name	Type	In	Required	Description
return_records	boolean	query	False	The default is false. If set to true, the records are returned.

Request Body

Name	Type	Description
_links	_links	
comment	string	A user configurable comment. Optional in POST; valid in PATCH. To clear a prior comment, set the property to an empty string in PATCH.
data_protocol	string	The data protocol for which the FC interface is configured. Required in POST.
enabled	boolean	The administrative state of the FC interface. The FC interface can be disabled to block all FC communication with the SVM through this interface. Optional in POST and PATCH; defaults to *true* (enabled) in POST.
location	location	The location of the FC interface is defined by the location of its port. An FC port is identified by its UUID, or a combination of its node name and port name. Either the UUID or the node name and port name are required for POST. To move an interface, supply either the UUID or the node name and port name in a PATCH.
name	string	The name of the FC interface. Required in POST; optional in PATCH.

Name	Type	Description
port_address	string	The port address of the FC interface. Each FC port in an FC switched fabric has its own unique FC port address for routing purposes. The FC port address is assigned by a switch in the fabric when that port logs in to the fabric. This property refers to the address given by a switch to the FC interface when the SVM performs a port login (PLOGI). This is useful for obtaining statistics and diagnostic information from FC switches. This is a hexadecimal encoded numeric value.
state	string	The current operational state of the FC interface. The state is set to *down* if the interface is not enabled. If the node hosting the port is down or unavailable, no state value is returned.
svm	svm	
uuid	string	The unique identifier of the FC interface. Required in the URL.
wwnn	string	The world wide node name (WWNN) of the FC interface SVM. The WWNN is generated by ONTAP when Fibre Channel Protocol or the NVMe service is created for the FC interface SVM. • example: 20:00:00:50:56:b4:13:01 • readOnly: 1

Name	Type	Description
wwpn	string	The world wide port name (WWPN) of the FC interface. The WWPN is generated by ONTAP when the FC interface is created. • example: 20:00:00:50:56:b4:13:a8 • readOnly: 1

Example request

```json
{
  "_links": {
    "self": {
      "href": "/api/resourcelink"
    }
  },
  "comment": "string",
  "data_protocol": "fcp",
  "location": {
    "node": {
      "_links": {
        "self": {
          "href": "/api/resourcelink"
        }
      },
      "name": "node1",
      "uuid": "1cd8a442-86d1-11e0-ae1c-123478563412"
    },
    "port": {
      "_links": {
        "self": {
          "href": "/api/resourcelink"
        }
      },
      "name": "0a",
      "node": {
        "name": "node1"
      },
      "uuid": "1cd8a442-86d1-11e0-ae1c-123478563412"
    }
  },
  "name": "lif1",
  "port_address": "5060F",
  "state": "up",
  "svm": {
    "_links": {
      "self": {
        "href": "/api/resourcelink"
      }
    },
    "name": "svm1",
    "uuid": "02c9e252-41be-11e9-81d5-00a0986138f7"
  },
  "uuid": "1cd8a442-86d1-11e0-ae1c-123478563412",
```

```
    "wwnn": "20:00:00:50:56:b4:13:01",
    "wwpn": "20:00:00:50:56:b4:13:a8"
  }
```

Response

```
Status: 201, Created
```

Name	Type	Description
_links	_links	
num_records	integer	Number of records.
records	array[fc_interface]	

Example response

```
{
  "_links": {
    "next": {
      "href": "/api/resourcelink"
    },
    "self": {
      "href": "/api/resourcelink"
    }
  },
  "records": {
    "_links": {
      "self": {
        "href": "/api/resourcelink"
      }
    },
    "comment": "string",
    "data_protocol": "fcp",
    "location": {
      "node": {
        "_links": {
          "self": {
            "href": "/api/resourcelink"
          }
        },
        "name": "node1",
        "uuid": "1cd8a442-86d1-11e0-ae1c-123478563412"
      },
      "port": {
        "_links": {
          "self": {
            "href": "/api/resourcelink"
          }
        },
        "name": "0a",
        "node": {
          "name": "node1"
        },
        "uuid": "1cd8a442-86d1-11e0-ae1c-123478563412"
      }
    },
    "name": "lif1",
    "port_address": "5060F",
    "state": "up",
    "svm": {
```

```
      "_links": {
        "self": {
          "href": "/api/resourcelink"
        }
      },
      "name": "svm1",
      "uuid": "02c9e252-41be-11e9-81d5-00a0986138f7"
    },
    "uuid": "1cd8a442-86d1-11e0-ae1c-123478563412",
    "wwnn": "20:00:00:50:56:b4:13:01",
    "wwpn": "20:00:00:50:56:b4:13:a8"
  }
}
```

Error

```
Status: Default
```

ONTAP Error Response Codes

Error Code	Description
1966140	An interface with the same name already exists.
1966217	The specified port is not valid on the node provided.
2621462	The supplied SVM does not exist.
2621706	The specified `svm.uuid` and `svm.name` do not refer to the same SVM.
2621707	No SVM was specified. Either `svm.name` or `svm.uuid` must be supplied.
5373966	A Fibre Channel interface with the *fcp* protocol cannot be created in an SVM that is configured for NVMe.
5374102	The specified Fibre Channel interface cannot be created because the Fibre Channel adapter is down. Bring the adapter up and try again.
5374871	The Fibre Channel port identified by the specified UUID does not refer to the same port as that identified by the specified node name and/or port name.
5374872	If either `location.port.node.name` or `location.port.name` is supplied, both properties must be supplied.

Error Code	Description
5374873	The Fibre Channel port must be specified using either `location.port.uuid` or `location.port.node.name` and `location.port.name`.
72089652	An NVMe service must be created before creating a Fibre Channel interface using the NVMe over FC data protocol.
72089672	The specified Fibre Channel port does not support the NVMe over FC data protocol.
72089900	A Fibre Channel interface with the *fc_nvme* protocol cannot be created in an SVM that is configured for a SAN protocol.

Name	Type	Description
error	error	

Example error

```
{
  "error": {
    "arguments": {
      "code": "string",
      "message": "string"
    },
    "code": "4",
    "message": "entry doesn't exist",
    "target": "uuid"
  }
}
```

Definitions

See Definitions

href

Name	Type	Description
href	string	

_links

Name	Type	Description
self	href	

node

Name	Type	Description
_links	_links	
name	string	
uuid	string	

node

The node on which the FC port is located.

Name	Type	Description
name	string	The name of the node on which the FC port is located.

fc_port_reference

An FC port is the physical port of an FC adapter on a cluster node that can be connected to an FC network.

Name	Type	Description
_links	_links	
name	string	The name of the FC port.
node	node	The node on which the FC port is located.
uuid	string	The unique identifier of the FC port.

location

The location of the FC interface is defined by the location of its port. An FC port is identified by its UUID,

or a combination of its node name and port name. Either the UUID or the node name and port name are required for POST. To move an interface, supply either the UUID or the node name and port name in a PATCH.

Name	Type	Description
node	node	
port	fc_port_reference	An FC port is the physical port of an FC adapter on a cluster node that can be connected to an FC network.

svm

Name	Type	Description
_links	_links	
name	string	The name of the SVM.
uuid	string	The unique identifier of the SVM.

fc_interface

A Fibre Channel (FC) interface is the logical endpoint for FC network connections to an SVM. An FC interface provides FC access to storage within the interface SVM using either Fibre Channel Protocol or NVMe over Fibre Channel (NVMe/FC).

An FC interface is created on an FC port which is located on a cluster node. The FC port must be specified to identify the location of the interface for a POST or PATCH operation that relocates an interface. You can identify the port by supplying either the node and port names or the port UUID.

Name	Type	Description
_links	_links	
comment	string	A user configurable comment. Optional in POST; valid in PATCH. To clear a prior comment, set the property to an empty string in PATCH.
data_protocol	string	The data protocol for which the FC interface is configured. Required in POST.

Name	Type	Description
enabled	boolean	The administrative state of the FC interface. The FC interface can be disabled to block all FC communication with the SVM through this interface. Optional in POST and PATCH; defaults to *true* (enabled) in POST.
location	location	The location of the FC interface is defined by the location of its port. An FC port is identified by its UUID, or a combination of its node name and port name. Either the UUID or the node name and port name are required for POST. To move an interface, supply either the UUID or the node name and port name in a PATCH.
name	string	The name of the FC interface. Required in POST; optional in PATCH.
port_address	string	The port address of the FC interface. Each FC port in an FC switched fabric has its own unique FC port address for routing purposes. The FC port address is assigned by a switch in the fabric when that port logs in to the fabric. This property refers to the address given by a switch to the FC interface when the SVM performs a port login (PLOGI). This is useful for obtaining statistics and diagnostic information from FC switches. This is a hexadecimal encoded numeric value.
state	string	The current operational state of the FC interface. The state is set to *down* if the interface is not enabled. If the node hosting the port is down or unavailable, no state value is returned.

Name	Type	Description
svm	svm	
uuid	string	The unique identifier of the FC interface. Required in the URL.
wwnn	string	The world wide node name (WWNN) of the FC interface SVM. The WWNN is generated by ONTAP when Fibre Channel Protocol or the NVMe service is created for the FC interface SVM. • example: 20:00:00:50:56:b4:13:01 • readOnly: 1
wwpn	string	The world wide port name (WWPN) of the FC interface. The WWPN is generated by ONTAP when the FC interface is created. • example: 20:00:00:50:56:b4:13:a8 • readOnly: 1

_links

Name	Type	Description
next	href	
self	href	

error_arguments

Name	Type	Description
code	string	Argument code
message	string	Message argument

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.

Delete an FC interface

DELETE /network/fc/interfaces/{uuid}

Deletes an FC interface.

Related ONTAP commands

- `network interface delete`

Learn more

- DOC /network/fc/interfaces

Parameters

Name	Type	In	Required	Description
uuid	string	path	True	

Response

```
Status: 200, Ok
```

Error

```
Status: Default
```

ONTAP Error Response Codes

Error Code	Description
53280992	The FC interface could not be deleted because it is enabled.

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

error_arguments

Name	Type	Description
code	string	Argument code
message	string	Message argument

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 an FC interface

GET `/network/fc/interfaces/{uuid}`

Retrieves an FC interface.

Related ONTAP commands

- `network interface show`
- `vserver fcp interface show`

Learn more

- DOC /network/fc/interfaces

Parameters

Name	Type	In	Required	Description
uuid	string	path	True	The unique identifier for the FC interface.
fields	array[string]	query	False	Specify the fields to return.

Response

```
Status: 200, Ok
```

Name	Type	Description
_links	_links	
comment	string	A user configurable comment. Optional in POST; valid in PATCH. To clear a prior comment, set the property to an empty string in PATCH.
data_protocol	string	The data protocol for which the FC interface is configured. Required in POST.
enabled	boolean	The administrative state of the FC interface. The FC interface can be disabled to block all FC communication with the SVM through this interface. Optional in POST and PATCH; defaults to *true* (enabled) in POST.

Name	Type	Description
location	location	The location of the FC interface is defined by the location of its port. An FC port is identified by its UUID, or a combination of its node name and port name. Either the UUID or the node name and port name are required for POST. To move an interface, supply either the UUID or the node name and port name in a PATCH.
name	string	The name of the FC interface. Required in POST; optional in PATCH.
port_address	string	The port address of the FC interface. Each FC port in an FC switched fabric has its own unique FC port address for routing purposes. The FC port address is assigned by a switch in the fabric when that port logs in to the fabric. This property refers to the address given by a switch to the FC interface when the SVM performs a port login (PLOGI). This is useful for obtaining statistics and diagnostic information from FC switches. This is a hexadecimal encoded numeric value.
state	string	The current operational state of the FC interface. The state is set to *down* if the interface is not enabled. If the node hosting the port is down or unavailable, no state value is returned.
svm	svm	
uuid	string	The unique identifier of the FC interface. Required in the URL.

Name	Type	Description
wwnn	string	The world wide node name (WWNN) of the FC interface SVM. The WWNN is generated by ONTAP when Fibre Channel Protocol or the NVMe service is created for the FC interface SVM. • example: 20:00:00:50:56:b4:13:01 • readOnly: 1
wwpn	string	The world wide port name (WWPN) of the FC interface. The WWPN is generated by ONTAP when the FC interface is created. • example: 20:00:00:50:56:b4:13:a8 • readOnly: 1

Example response

```json
{
  "_links": {
    "self": {
      "href": "/api/resourcelink"
    }
  },
  "comment": "string",
  "data_protocol": "fcp",
  "location": {
    "node": {
      "_links": {
        "self": {
          "href": "/api/resourcelink"
        }
      },
      "name": "node1",
      "uuid": "1cd8a442-86d1-11e0-ae1c-123478563412"
    },
    "port": {
      "_links": {
        "self": {
          "href": "/api/resourcelink"
        }
      },
      "name": "0a",
      "node": {
        "name": "node1"
      },
      "uuid": "1cd8a442-86d1-11e0-ae1c-123478563412"
    }
  },
  "name": "lif1",
  "port_address": "5060F",
  "state": "up",
  "svm": {
    "_links": {
      "self": {
        "href": "/api/resourcelink"
      }
    },
    "name": "svm1",
    "uuid": "02c9e252-41be-11e9-81d5-00a0986138f7"
  },
  "uuid": "1cd8a442-86d1-11e0-ae1c-123478563412",
```

```
      "wwnn": "20:00:00:50:56:b4:13:01",
      "wwpn": "20:00:00:50:56:b4:13:a8"
    }
```

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
self	href	

node

Name	Type	Description
_links	_links	
name	string	
uuid	string	

node

The node on which the FC port is located.

Name	Type	Description
name	string	The name of the node on which the FC port is located.

fc_port_reference

An FC port is the physical port of an FC adapter on a cluster node that can be connected to an FC network.

Name	Type	Description
_links	_links	
name	string	The name of the FC port.
node	node	The node on which the FC port is located.
uuid	string	The unique identifier of the FC port.

location

The location of the FC interface is defined by the location of its port. An FC port is identified by its UUID,

or a combination of its node name and port name. Either the UUID or the node name and port name are required for POST. To move an interface, supply either the UUID or the node name and port name in a PATCH.

Name	Type	Description
node	node	
port	fc_port_reference	An FC port is the physical port of an FC adapter on a cluster node that can be connected to an FC network.

svm

Name	Type	Description
_links	_links	
name	string	The name of the SVM.
uuid	string	The unique identifier of the SVM.

error_arguments

Name	Type	Description
code	string	Argument code
message	string	Message argument

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.

Update an FC interface

PATCH /network/fc/interfaces/{uuid}

Updates an FC interface.

Related ONTAP commands

- `network interface modify`

Learn more

- DOC /network/fc/interfaces

Parameters

Name	Type	In	Required	Description
uuid	string	path	True	The unique identifier for the FC interface.

Request Body

Name	Type	Description
_links	_links	
comment	string	A user configurable comment. Optional in POST; valid in PATCH. To clear a prior comment, set the property to an empty string in PATCH.
data_protocol	string	The data protocol for which the FC interface is configured. Required in POST.
enabled	boolean	The administrative state of the FC interface. The FC interface can be disabled to block all FC communication with the SVM through this interface. Optional in POST and PATCH; defaults to *true* (enabled) in POST.
location	location	The location of the FC interface is defined by the location of its port. An FC port is identified by its UUID, or a combination of its node name and port name. Either the UUID or the node name and port name are required for POST. To move an interface, supply either the UUID or the node name and port name in a PATCH.

Name	Type	Description
name	string	The name of the FC interface. Required in POST; optional in PATCH.
port_address	string	The port address of the FC interface. Each FC port in an FC switched fabric has its own unique FC port address for routing purposes. The FC port address is assigned by a switch in the fabric when that port logs in to the fabric. This property refers to the address given by a switch to the FC interface when the SVM performs a port login (PLOGI). This is useful for obtaining statistics and diagnostic information from FC switches. This is a hexadecimal encoded numeric value.
state	string	The current operational state of the FC interface. The state is set to _down_ if the interface is not enabled. If the node hosting the port is down or unavailable, no state value is returned.
svm	svm	
uuid	string	The unique identifier of the FC interface. Required in the URL.
wwnn	string	The world wide node name (WWNN) of the FC interface SVM. The WWNN is generated by ONTAP when Fibre Channel Protocol or the NVMe service is created for the FC interface SVM. • example: 20:00:00:50:56:b4:13:01 • readOnly: 1

Name	Type	Description
wwpn	string	The world wide port name (WWPN) of the FC interface. The WWPN is generated by ONTAP when the FC interface is created. • example: 20:00:00:50:56:b4:13:a8 • readOnly: 1

Example request

```json
{
  "_links": {
    "self": {
      "href": "/api/resourcelink"
    }
  },
  "comment": "string",
  "data_protocol": "fcp",
  "location": {
    "node": {
      "_links": {
        "self": {
          "href": "/api/resourcelink"
        }
      },
      "name": "node1",
      "uuid": "1cd8a442-86d1-11e0-ae1c-123478563412"
    },
    "port": {
      "_links": {
        "self": {
          "href": "/api/resourcelink"
        }
      },
      "name": "0a",
      "node": {
        "name": "node1"
      },
      "uuid": "1cd8a442-86d1-11e0-ae1c-123478563412"
    }
  },
  "name": "lif1",
  "port_address": "5060F",
  "state": "up",
  "svm": {
    "_links": {
      "self": {
        "href": "/api/resourcelink"
      }
    },
    "name": "svm1",
    "uuid": "02c9e252-41be-11e9-81d5-00a0986138f7"
  },
  "uuid": "1cd8a442-86d1-11e0-ae1c-123478563412",
```

```
    "wwnn": "20:00:00:50:56:b4:13:01",
    "wwpn": "20:00:00:50:56:b4:13:a8"
  }
```

Response

```
Status: 200, Ok
```

Error

```
Status: Default
```

ONTAP Error Response Codes

Error Code	Description
1966140	An interface with the same name already exists.
1966217	The specified port is not valid on the node provided.
1966238	The node or port of an active SAN data interface cannot be changed.
1966702	The destination node is not healthy.
5374579	The SAN Kernel Agent on the node is unavailable.
5374870	A partial failure occurred; renaming the interface failed. Correct the error and resubmit the request.
5374871	The Fibre Channel port identified by the specified UUID does not refer to the same port as that identified by the specified node name and/or port name.
5374872	If either `location.port.node.name` or `location.port.name` is supplied, both properties must be supplied.
72089674	You cannot move a Fibre Channel interface configured for the NVMe over FC data protocol.

Name	Type	Description
error	error	

Example error

```
{
  "error": {
    "arguments": {
      "code": "string",
      "message": "string"
    },
    "code": "4",
    "message": "entry doesn't exist",
    "target": "uuid"
  }
}
```

Definitions

See Definitions

href

Name	Type	Description
href	string	

_links

Name	Type	Description
self	href	

node

Name	Type	Description
_links	_links	
name	string	
uuid	string	

node

The node on which the FC port is located.

Name	Type	Description
name	string	The name of the node on which the FC port is located.

fc_port_reference

An FC port is the physical port of an FC adapter on a cluster node that can be connected to an FC network.

Name	Type	Description
_links	_links	
name	string	The name of the FC port.
node	node	The node on which the FC port is located.
uuid	string	The unique identifier of the FC port.

location

The location of the FC interface is defined by the location of its port. An FC port is identified by its UUID,

or a combination of its node name and port name. Either the UUID or the node name and port name are required for POST. To move an interface, supply either the UUID or the node name and port name in a PATCH.

Name	Type	Description
node	node	
port	fc_port_reference	An FC port is the physical port of an FC adapter on a cluster node that can be connected to an FC network.

svm

Name	Type	Description
_links	_links	
name	string	The name of the SVM.
uuid	string	The unique identifier of the SVM.

fc_interface

A Fibre Channel (FC) interface is the logical endpoint for FC network connections to an SVM. An FC interface provides FC access to storage within the interface SVM using either Fibre Channel Protocol or NVMe over Fibre Channel (NVMe/FC).

An FC interface is created on an FC port which is located on a cluster node. The FC port must be specified to identify the location of the interface for a POST or PATCH operation that relocates an interface. You can identify the port by supplying either the node and port names or the port UUID.

Name	Type	Description
_links	_links	
comment	string	A user configurable comment. Optional in POST; valid in PATCH. To clear a prior comment, set the property to an empty string in PATCH.
data_protocol	string	The data protocol for which the FC interface is configured. Required in POST.

Name	Type	Description
enabled	boolean	The administrative state of the FC interface. The FC interface can be disabled to block all FC communication with the SVM through this interface. Optional in POST and PATCH; defaults to *true* (enabled) in POST.
location	location	The location of the FC interface is defined by the location of its port. An FC port is identified by its UUID, or a combination of its node name and port name. Either the UUID or the node name and port name are required for POST. To move an interface, supply either the UUID or the node name and port name in a PATCH.
name	string	The name of the FC interface. Required in POST; optional in PATCH.
port_address	string	The port address of the FC interface. Each FC port in an FC switched fabric has its own unique FC port address for routing purposes. The FC port address is assigned by a switch in the fabric when that port logs in to the fabric. This property refers to the address given by a switch to the FC interface when the SVM performs a port login (PLOGI).

This is useful for obtaining statistics and diagnostic information from FC switches.

This is a hexadecimal encoded numeric value. |
| state | string | The current operational state of the FC interface. The state is set to *down* if the interface is not enabled.

If the node hosting the port is down or unavailable, no state value is returned. |

Name	Type	Description
svm	svm	
uuid	string	The unique identifier of the FC interface. Required in the URL.
wwnn	string	The world wide node name (WWNN) of the FC interface SVM. The WWNN is generated by ONTAP when Fibre Channel Protocol or the NVMe service is created for the FC interface SVM. • example: 20:00:00:50:56:b4:13:01 • readOnly: 1
wwpn	string	The world wide port name (WWPN) of the FC interface. The WWPN is generated by ONTAP when the FC interface is created. • example: 20:00:00:50:56:b4:13:a8 • readOnly: 1

error_arguments

Name	Type	Description
code	string	Argument code
message	string	Message argument

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.