Manage files and directories

REST API reference

NetApp
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Table of Contents

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Overview

This API is used to read a file, write to a file, retrieve a list of files and directories, and retrieve or modify certain properties of files and directories. The path field is used to specify the path to the directory or file to be acted on. The path field requires using "%2E" to represent "." and "%2F" to represent "/" for the path provided.

File data

Read and write data from/to a named file. To read a file, the Accept request HTTP header must be specified as multipart/form-data, and a value for the `length` query property, which represents the number of bytes to be read, must be specified. The API will fail if the length of data being read/written exceeds 1 MB. This API should only be used on normal files or streams associated with files. The results for other file types, such as LUNs is undefined.

The following APIs are used to read or write data to a file:

&ndash; GET /api/storage/volumes/{volume.uuid}/files/{path}?byte_offset=0&amp;length=40 -H "Accept: multipart/form-data"

&ndash; POST /api/storage/volumes/{volume.uuid}/files/{path} -H "Content-Type: multipart/form-data" --form "file=the data to be written to the new file"

&ndash; PATCH /api/storage/volumes/{volume.uuid}/files/{path}?byte_offset=10 -H "Content-Type: multipart/form-data" --form "file=the new data to be written or overwritten to the existing file starting at byte_offset"

Listing directories and files

A list of files and directories and their properties can be retrieved for a specified path.

The following APIs are used to view a list of files and directories:

&ndash; GET /api/storage/volumes/{volume.uuid}/files

&ndash; GET /api/storage/volumes/{volume.uuid}/files/{path}

&ndash; GET /api/storage/volumes/{volume.uuid}/files/{path}?fields=*

File information

The metadata and detailed information about a single directory or file can be retrieved by setting the `return_metadata` query property to `true`. The information returned includes type, creation_time, modified_time, changed_time, accessed_time, unix_permissions, ownder_id, group_id, size, hard_links_count, inode_number, is_empty, bytes_used, inode_generation, is_vm_aligned, is_junction, is_snapshot, and links.

The following API is used to view the properties of a single file or directory:

&ndash; GET /api/storage/volumes/{volume.uuid}/files/{path}?return_metadata=true

QoS

QoS policies and settings enforce Service Level Objectives (SLO) on a file. A pre-created QoS policy can be used by specifying the `qos.name` or `qos.uuid` properties.

The following APIs are used to assign a QoS policy to a file:

&ndash; PATCH /api/storage/volumes/{volume.uuid}/files/{path} -d '{ "qos_policy.name" : "policy" }'

&ndash; PATCH /api/storage/volumes/{volume.uuid}/files/{path} -d '{ "qos_policy.uuid" : "b89bc5dd-94a3-11e8-a7a3-0050568edf84" }'

Symlinks

The following APIs are used to create a symlink and read the contents of a symlink:

&ndash; POST /api/storage/volumes/{volume.uuid}/files/{path} -d '{ "target" : "directory2/file1" }'

&ndash; GET /api/storage/volumes/{volume.uuid}/files/{path}?return_metadata=true&amp;fields=target

Examples

Writing to a new file

```
# The API:
POST /api/storage/volumes/{volume.uuid}/files/{path}

# The call:
curl -X POST "https://<mgmt-ip>/api/storage/volumes/54c06ce2-5430-11ea-
90f9-005056a73aff/files/aNewFile" -H "Content-Type: multipart/form-data"
--form "file=the data to be written to the new file"
```

Writing to an existing file

```
# The API:
PATCH /api/storage/volumes/{volume.uuid}/files/{path}

# The call:
curl -X PATCH "https://<mgmt-ip>/api/storage/volumes/54c06ce2-5430-11ea-
90f9-005056a73aff/files/aNewFile?byte_offset=39" -H "Content-Type:
multipart/form-data" --form "file=*here is a little more data"
```

Reading a file

```
# The API:
GET /api/storage/volumes/{volume.uuid}/files/{path}

# The call:
curl -X GET "https://<mgmt-ip>/api/storage/volumes/54c06ce2-5430-11ea-
90f9-005056a73aff/files/aNewFile?byte_offset=0&length=100" -H "Accept:
multipart/form-data"

# Response for file data:
--ec51b3541741ade7
Content-Disposition: form-data; name="bytes_read"
Content-Type: text/plain
66
--ec51b3541741ade7
Content-Disposition: form-data; filename="aNewFile"
Content-Type: application/octet-stream
the data to be written to the new file*here is a little more data
--ec51b3541741ade7--
```

Creating a stream on a file

```
# The API:
POST /api/storage/volumes/{volume.uuid}/files/{path}?overwrite=true

# The call:
curl -X POST "https://<mgmt-ip>/api/storage/volumes/54c06ce2-5430-11ea-
90f9-005056a73aff/files/aNewFile?overwrite=true&byte_offset=-
1&stream_name=someStream" -H "Content-Type: multipart/form-data" --form
"file=the data to be written to the new file"
```

Retrieving the list of files in a directory

```
# The API:
GET /api/storage/volumes/{volume.uuid}/files/{path}

# The call:
curl -X GET "https://<mgmt-ip>/api/storage/volumes/cb6b1b39-8d21-11e9-
b926-05056aca658/files/d1%2Fd2%2Fd3"

# Response for file records:
{
"records": [
  {
    "path": "d1/d2/d3",
    "name": ".",
    "type": "directory",
    "_links": {
      "self": {
        "href": "/api/storage/volumes/cb6b1b39-8d21-11e9-b926-
005056aca658/files/d1%2Fd2%2Fd3%2F%2E"
      },
      "metadata": {
        "href": "/api/storage/volumes/e8274d79-3bba-11ea-b780-
005056a7d72a/files/d1%2Fd2%2Fd3%2F%2E?return_metadata=true"
      }
    }
  },
  {
    "path": "d1/d2/d3",
    "name": "..",
    "type": "directory",
    "_links": {
      "self": {
        "href": "/api/storage/volumes/cb6b1b39-8d21-11e9-b926-
005056aca658/files/d1%2Fd2%2Fd3%2F%2E%2E"
      },
      "metadata": {
        "href": "/api/storage/volumes/e8274d79-3bba-11ea-b780-
005056a7d72a/files/d1%2Fd2%2Fd3%2F%2E%2E?return_metadata=true"
      }
    }
  },
  {
    "path": "d1/d2/d3",
    "name": "f1",
    "type": "file",
    "_links": {
      "metadata": {
        "href": "/api/storage/volumes/e8274d79-3bba-11ea-b780-
005056a7d72a/files/d1%2Fd2%2Fd3%2File1?return_metadata=true"
      }
    }
  },
  {
    "path": "d1/d2/d3",
    "name": "d5",
    "type": "directory",
    "_links": {
      "self": {
        "href": "/api/storage/volumes/cb6b1b39-8d21-11e9-b926-
005056aca658/files/d1%2Fd2%2Fd3%2Fd5"
      },
      "metadata": {
        "href": "/api/storage/volumes/e8274d79-3bba-11ea-b780-
005056a7d72a/files/d1%2Fd2%2Fd3%2Fd5?return_metadata=true"
      }
    }
  }
],
"num_records": 4,
"_links": {
  "self": {
    "href": "/api/storage/volumes/cb6b1b39-8d21-11e9-b926-
005056aca658/files/d1%2Fd2%2Fd3"
  }
}
}
```

Retrieving a list of files based on file type

You can filter the list of files you retrieve based on multiple file types by including a query parameter in the following format type="file\|symlink"

```
# The API:
GET /api/storage/volumes/{volume.uuid}/files/{path}

# The call:
curl -X GET "https://<mgmt-ip>/api/storage/volumes/cb6b1b39-8d21-11e9-
b926-05056aca658/files/d1%2Fd2%2Fd3?type=file&#124;directory"

# Response for file records:
{
"records": [
  {
    "path": "d1/d2/d3",
    "name": ".",
    "type": "directory",
    "_links": {
      "self": {
        "href": "/api/storage/volumes/cb6b1b39-8d21-11e9-b926-
005056aca658/files/d1%2Fd2%2Fd3%2F%2E"
      },
      "metadata": {
        "href": "/api/storage/volumes/e8274d79-3bba-11ea-b780-
005056a7d72a/files/d1%2Fd2%2Fd3%2F%2E?return_metadata=true"
```

```
      }
    }
  },
  {
    "path": "d1/d2/d3",
    "name": "..",
    "type": "directory",
    "_links": {
      "self": {
        "href": "/api/storage/volumes/cb6b1b39-8d21-11e9-b926-
005056aca658/files/d1%2Fd2%2Fd3%2F%2E%2E"
      },
      "metadata": {
        "href": "/api/storage/volumes/e8274d79-3bba-11ea-b780-
005056a7d72a/files/d1%2Fd2%2Fd3%2F%2E%2E?return_metadata=true"
      }
    }
  },
  {
    "path": "d1/d2/d3",
    "name": "f1",
    "type": "file",
    "_links": {
      "metadata": {
        "href": "/api/storage/volumes/e8274d79-3bba-11ea-b780-
005056a7d72a/files/d1%2Fd2%2Fd3%2File1?return_metadata=true"
      }
    }
  },
  {
    "path": "d1/d2/d3",
    "name": "d5",
    "type": "directory",
    "_links": {
      "self": {
        "href": "/api/storage/volumes/cb6b1b39-8d21-11e9-b926-
005056aca658/files/d1%2Fd2%2Fd3%2Fd5"
      },
      "metadata": {
        "href": "/api/storage/volumes/e8274d79-3bba-11ea-b780-
005056a7d72a/files/d1%2Fd2%2Fd3%2Fd5?return_metadata=true"
      }
    }
  }
],
"num_records": 4,
"_links": {
  "self": {
    "href": "/api/storage/volumes/cb6b1b39-8d21-11e9-b926-
005056aca658/files/d1%2Fd2%2Fd3"
  }
}
}
```

Retrieving the properties of a directory or a file

```
# The API:
GET /api/storage/volumes/{volume.uuid}/files/{path}?return_metadata=true

# The call:
curl -X GET "https://<mgmt-ip>/api/storage/volumes/cb6b1b39-8d21-11e9-
b926-05056aca658/files/d1%2Fd2%2Fd3%2Ff1?return_metadata=true"

# Response for file properties:
{
"records": [
  {
    "path": "d1/d2/d3/f1",
    "name": "",
    "type": "file",
    "creation_time": "2019-06-12T21:27:28-04:00",
    "modified_time": "2019-06-12T21:27:28-04:00",
    "changed_time": "2019-06-12T21:27:28-04:00",
    "accessed_time": "2019-06-12T21:27:28-04:00",
    "unix_permissions": 644,
    "owner_id": 54738,
    "group_id": 30,
    "size": 200,
    "hard_links_count": 1,
    "inode_number": 1233,
    "bytes_used": 4096,
    "inode_generation": 214488325,
    "is_vm_aligned": false,
    "is_junction": false,
    "is_snapshot": false
  }
],
"num_records": 1,
"_links": {
  "self": {
    "href": "/api/storage/volumes/da8bb06c-823e-11e9-b790-
005056acdcb0/files/d1%2Fd2%2Fd3%2Ff1?return_metadata=true"
  }
}
}
```

Creating a symlink to a relative path

You can use the POST request to create a symlink.

```
# The API:
POST /api/storage/volumes/{volume.uuid}/files/{path}

# The call:
curl -X POST "https://<mgmt-ip>/api/storage/volumes/cb6b1b39-8d21-11e9-
b926-05056aca658/files/symlink1"  -H 'accept: application/hal+json' -d '{
"target" : "d1/f1"}'

# The response:
{}
```

Retrieving the target of a symlink

You can use the GET request to view the target of a symlink.

```
# The API:
GET /api/storage/volumes/{volume.uuid}/files/{path}

# The call:
curl -X GET "https://<mgmt-ip>/api/storage/volumes/cb6b1b39-8d21-11e9-
b926-05056aca658/files/symlink1?return_metadata=true&fields=target"

# The response:
{
"records": [
  {
    "path": "symlink1",
    "target": "d1/f1"
  }
],
"num_records": 1,
"_links": {
  "self": {
    "href": "/api/storage/volumes/54c06ce2-5430-11ea-90f9-
005056a73aff/files/symlink1?return_metadata=true&fields=target"
  }
}
}
```

Retrieving all information for a directory

```
# The API:
GET /api/storage/volumes/{volume.uuid}/files/{path}
```

```
# The call:
curl -X GET "https://<mgmt-ip>/api/storage/volumes/1ef5d1b2-f9d7-11e9-
8043-00505682f860/files/d1?return_metadata=true&fields=**"

# Response for all fields of the directory:
{
"records": [
  {
    "svm": {
      "uuid": "58a996a2-f9d5-11e9-8043-00505682f860",
      "_links": {
        "self": {
          "href": "/api/svm/svms/58a996a2-f9d5-11e9-8043-00505682f860"
        }
      }
    },
    "volume": {
        "uuid": "1ef5d1b2-f9d7-11e9-8043-00505682f860",
        "_links": {
          "self": {
            "href": "/api/storage/volumes/1ef5d1b2-f9d7-11e9-8043-
00505682f860"
          }
      }
    },
    "path": "d1",
    "type": "directory",
    "creation_time": "2019-10-28T23:04:13+00:00",
    "modified_time": "2019-10-28T23:10:30+00:00",
    "changed_time": "2019-10-28T23:10:30+00:00",
    "accessed_time": "2019-10-28T23:10:38+00:00",
    "unix_permissions": 755,
    "owner_id": 1002,
    "group_id": 65533,
    "size": 4096,
    "hard_links_count": 5,
    "inode_number": 96,
    "is_empty": false,
    "bytes_used": 4096,
    "inode_generation": 214514951,
    "is_vm_aligned": false,
    "is_junction": false,
    "is_snapshot": false,
    "qos_policy": {
      "name": "pg1",
      "uuid": "00725264-688f-11ea-8f10-005056a7b8ac"
    }
],
"num_records": 1,
"_links": {
  "self": {
    "href": "/api/storage/volumes/1ef5d1b2-f9d7-11e9-8043-
00505682f860/files/d1?return_metadata=true&fields=**"
  }
}
}
```

Assigning a QoS policy to a file

You can use the PATCH request to assign a QoS policy to a file.

```
# The API:
PATCH /api/storage/volumes/{volume.uuid}/files/{path}

# The call:
curl -X PATCH "https://<mgmt-ip>/api/storage/volumes/cb6b1b39-8d21-11e9-
b926-05056aca658/files/directory1%2Ffile1" -d '{ "qos_policy.name" :
"policy"}'

# The response:
{}
```

Retrieves a list of files and directories for a given directory of a volume

GET `/storage/volumes/{volume.uuid}/files/{path}`

Retrieves a list of files and directories for a given directory of a volume.

Parameters

Name	Type	In	Required	Description
volume.uuid	string	path	True	Volume UUID
path	string	path	True	Relative path of a directory in the volume.
changed_time	string	query	False	Filter by changed_time

Name	Type	In	Required	Description
is_junction	boolean	query	False	Filter by is_junction
inode_number	integer	query	False	Filter by inode_number
size	integer	query	False	Filter by size
path	string	query	False	Filter by path
is_vm_aligned	boolean	query	False	Filter by is_vm_aligned
accessed_time	string	query	False	Filter by accessed_time
modified_time	string	query	False	Filter by modified_time
owner_id	integer	query	False	Filter by owner_id
inode_generation	integer	query	False	Filter by inode_generation
group_id	integer	query	False	Filter by group_id
creation_time	string	query	False	Filter by creation_time
is_empty	boolean	query	False	Filter by is_empty
name	string	query	False	Filter by name
bytes_used	integer	query	False	Filter by bytes_used
unix_permissions	integer	query	False	Filter by unix_permissions
hard_links_count	integer	query	False	Filter by hard_links_count
type	string	query	False	Filter by type
volume.name	string	query	False	Filter by volume.name

Name	Type	In	Required	Description
volume.uuid	string	query	False	Filter by volume.uuid
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	_links	
num_records	integer	Number of records.
records	array[file_info]	

Example response

```
{
  "_links": {
    "next": {
      "href": "/api/resourcelink"
    },
    "self": {
      "href": "/api/resourcelink"
    }
  },
  "records": [
    {
      "_links": {
        "self": {
          "href": "/api/resourcelink"
        }
      },
      "accessed_time": "2019-06-12 11:00:16 -0400",
      "bytes_used": 4096,
      "changed_time": "2019-06-12 11:00:16 -0400",
      "creation_time": "2019-06-12 11:00:16 -0400",
      "group_id": 30,
      "hard_links_count": 1,
      "inode_generation": 214753547,
      "inode_number": 1695,
      "is_empty": "",
      "is_junction": "",
      "is_vm_aligned": "",
      "modified_time": "2019-06-12 11:00:16 -0400",
      "name": "test_file",
      "owner_id": 54738,
      "path": "d1/d2/d3",
      "size": 200,
      "type": "file",
      "unix_permissions": 493,
      "volume": {
        "_links": {
          "self": {
            "href": "/api/resourcelink"
          }
        },
        "name": "volume1",
        "uuid": "028baa66-41bd-11e9-81d5-00a0986138f7"
      }
    }
  ]
}
```

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	

volume

Name	Type	Description
_links	_links	
name	string	The name of the volume.
uuid	string	Unique identifier for the volume. This corresponds to the instance-uuid that is exposed in the CLI and ONTAPI. It does not change due to a volume move. • example: 028baa66-41bd-11e9-81d5-00a0986138f7

file_info

Information about a single file.

Name	Type	Description
_links	_links	
accessed_time	string	Last access time of the file in date-time format.
bytes_used	integer	The actual number of bytes used on disk by this file.

Name	Type	Description
changed_time	string	Last time data or attributes changed on the file in date-time format.
creation_time	string	Creation time of the file in date-time format.
group_id	integer	The integer ID of the group of the file owner.
hard_links_count	integer	The number of hard links to the file.
inode_generation	integer	Inode generation number.
inode_number	integer	The file inode number.
is_empty	boolean	Specifies whether or not a directory is empty. A directory is considered empty if it only contains entries for "." and "..". This element is present if the file is a directory. In some special error cases, such as when the volume goes offline or when the directory is moved while retrieving this info, this field might not get set.
is_junction	boolean	Returns "true" if the directory is a junction.
is_vm_aligned	boolean	Returns true if the file is vm-aligned. A vm-aligned file is a file that is initially padded with zero-filled data so that its actual data starts at an offset other then zero. This is done in a VM environment so that read/write operations to this file are aligned to WAFL's 4k block boundary. The amount by which the start offset is adjusted depends on the vm-align setting of the hosting volume.
modified_time	string	Last data modification time of the file in date-time format.

Name	Type	Description
name	string	Name of the file.
owner_id	integer	The integer ID of the file owner.
path	string	Path of the file.
size	integer	The size of the file, in bytes.
type	string	Type of the file.
unix_permissions	integer	UNIX permissions to be viewed as an octal number. It consists of 4 digits derived by adding up bits 4 (read), 2 (write) and 1 (execute). The first digit selects the set user ID(4), set group ID (2) and sticky (1) attributes. The second digit selects permission for the owner of the file; the third selects permissions for other users in the same group; the fourth for other users not in the group.
volume	volume	

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.

Write to an existing file with the supplied data

PATCH `/storage/volumes/{volume.uuid}/files/{path}`

Writes to an existing file with the supplied data or modifies the QoS policy of a file.

Learn more

- DOC /storage/volumes/{volume.uuid}/files/{path}

Parameters

Name	Type	In	Required	Description
volume.uuid	string	path	True	Volume UUID
path	string	path	True	Relative path of a file in the volume. The path field requires using "%2E" to represent "." and "%2F" to represent "/" for the path provided.
byte_offset	integer	query	False	How many bytes into the file to begin writing. Use -1 to append (default).
overwrite	bool	query	False	If false, and the file exists, the write will fail. Default is false.
stream_name	string	query	False	Name of stream associated with the file to write data to.
data	string	formData	False	Data to write to the file.

Request Body

Name	Type	Description
name	string	Name of the file.

Name	Type	Description
qos_policy	qos_policy	The QoS policy for the file. Both traditional and adaptive QoS policies are supported. If both `qos_policy.uuid` and `qos_policy.name` properties are specified in the same request, they must refer to the same QoS policy. To remove the file from a QoS policy, set the property `qos_policy.name` in a PATCH request to an empty string "" or "none". ⓘ Files which are in use as a LUN cannot be assigned to a QoS policy, instead use PATCH on /storage/luns to assign a QoS policy for such files. Note that a QoS policy can be set on a file, or a file’s volume, but not on both.
size	integer	The size of the file, in bytes.
target	string	The relative or absolute path contained in a symlink, in the form <some>/<path>.</path></some>
unix_permissions	integer	UNIX permissions to be viewed as an octal number. It consists of 4 digits derived by adding up bits 4 (read), 2 (write), and 1 (execute). The first digit selects the set user ID(4), set group ID (2), and sticky (1) attributes. The second digit selects permissions for the owner of the file; the third selects permissions for other users in the same group; the fourth selects permissions for other users not in the group.

Example request

```
{
  "is_empty": "",
  "is_junction": "",
  "is_snapshot": "",
  "is_vm_aligned": "",
  "name": "test_file",
  "qos_policy": {
    "_links": {
      "self": {
        "href": "/api/resourcelink"
      }
    },
    "name": "qos1",
    "uuid": "1cd8a442-86d1-11e0-ae1c-123478563412"
  },
  "size": 200,
  "target": "some_directory/some_other_directory/some_file",
  "unix_permissions": 493
}
```

Response

```
Status: 200, Ok
```

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
metadata	href	
self	href	

_links

Name	Type	Description
self	href	

qos_policy

The QoS policy for the file. Both traditional and adaptive QoS policies are supported. If both `qos_policy.uuid` and `qos_policy.name` properties are specified in the same request, they must refer to the same QoS policy. To remove the file from a QoS policy, set the property `qos_policy.name` in a PATCH request to an empty string "" or "none".

ⓘ Files which are in use as a LUN cannot be assigned to a QoS policy, instead use PATCH on /storage/luns to assign a QoS policy for such files.

Note that a QoS policy can be set on a file, or a file's volume, but not on both.

Name	Type	Description
_links	_links	
name	string	The name of the QoS policy. To remove the file from a QoS policy, set this property to an empty string "" or set it to "none" in a PATCH request.
uuid	string	The unique identifier of the QoS policy. Valid in PATCH.

volume

Name	Type	Description
_links	_links	

Name	Type	Description
name	string	The name of the volume.
uuid	string	Unique identifier for the volume. This corresponds to the instance-uuid that is exposed in the CLI and ONTAPI. It does not change due to a volume move. - example: 028baa66-41bd-11e9-81d5-00a0986138f7

file_info

Information about a single file.

Name	Type	Description
name	string	Name of the file.
qos_policy	qos_policy	The QoS policy for the file. Both traditional and adaptive QoS policies are supported. If both `qos_policy.uuid` and `qos_policy.name` properties are specified in the same request, they must refer to the same QoS policy. To remove the file from a QoS policy, set the property `qos_policy.name` in a PATCH request to an empty string "" or "none". ⓘ Files which are in use as a LUN cannot be assigned to a QoS policy, instead use PATCH on /storage/luns to assign a QoS policy for such files. Note that a QoS policy can be set on a file, or a file’s volume, but not on both.
size	integer	The size of the file, in bytes.

Name	Type	Description
target	string	The relative or absolute path contained in a symlink, in the form <some>/<path>.</path></some>
unix_permissions	integer	UNIX permissions to be viewed as an octal number. It consists of 4 digits derived by adding up bits 4 (read), 2 (write), and 1 (execute). The first digit selects the set user ID(4), set group ID (2), and sticky (1) attributes. The second digit selects permissions for the owner of the file; the third selects permissions for other users in the same group; the fourth selects permissions for other users not in the group.

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.

Create a new file with the supplied data

POST `/storage/volumes/{volume.uuid}/files/{path}`

Creates a new file with the supplied data, creates a new directory or creates a new symlink.

Learn more

- DOC /storage/volumes/{volume.uuid}/files/{path}

Parameters

Name	Type	In	Required	Description
volume.uuid	string	path	True	Volume UUID
path	string	path	True	Relative path of a new file, directory or symlink. The path field requires using "%2E" to represent "." and "%2F" to represent "/" for the path provided.
byte_offset	integer	query	False	How many bytes into the file to begin writing. Use -1 to append (default).
overwrite	bool	query	False	If false, and the file exists, the write will fail. Default is false.
stream_name	string	query	False	Name of stream associated with the file to write data to.
data	string	formData	False	Data to write to the file.

Request Body

Name	Type	Description
name	string	Name of the file.
path	string	Path of the file.
target	string	The relative or absolute path contained in a symlink, in the form <some>/<path>.</path></some>
type	string	Type of the file.

Name	Type	Description
unix_permissions	integer	UNIX permissions to be viewed as an octal number. It consists of 4 digits derived by adding up bits 4 (read), 2 (write), and 1 (execute). The first digit selects the set user ID(4), set group ID (2), and sticky (1) attributes. The second digit selects permissions for the owner of the file; the third selects permissions for other users in the same group; the fourth selects permissions for other users not in the group.

Example request

```
{
  "is_empty": "",
  "is_junction": "",
  "is_snapshot": "",
  "is_vm_aligned": "",
  "name": "test_file",
  "path": "d1/d2/d3",
  "target": "some_directory/some_other_directory/some_file",
  "type": "file",
  "unix_permissions": 493
}
```

Response

```
Status: 201, Created
```

Error

```
Status: Default
```

ONTAP Error Response Codes

Error Code	Description
917505	The SVM does not exist.

Error Code	Description
917525	The volume in the symlink path does not exist in the SVM.
917698	The volume in the symlink path is not mounted in the namespace.
6488064	This command is not supported.
6488065	The volume in the symlink path is invalid.
6488066	Mounting the unjunctioned volume in the symlink path failed.
6488069	Internal file error.
8257536	This operation is not supported for the system volume specified in the symlink path.
8257541	Failed to compute the SVM identification from this content.
8257542	This operation is not supported for the administrative SVM.
9437549	This operation is not allowed on SVMs with Infinite Volume.
13172837	This operation is not permitted because the SVM is locked for a migrate operation.

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
metadata	href	
self	href	

_links

Name	Type	Description
self	href	

qos_policy

The QoS policy for the file. Both traditional and adaptive QoS policies are supported. If both `qos_policy.uuid` and `qos_policy.name` properties are specified in the same request, they must refer to the same QoS policy. To remove the file from a QoS policy, set the property `qos_policy.name` in a PATCH request to an empty string "" or "none".

ⓘ Files which are in use as a LUN cannot be assigned to a QoS policy, instead use PATCH on /storage/luns to assign a QoS policy for such files.

Note that a QoS policy can be set on a file, or a file's volume, but not on both.

Name	Type	Description
_links	_links	
name	string	The name of the QoS policy. To remove the file from a QoS policy, set this property to an empty string "" or set it to "none" in a PATCH request.
uuid	string	The unique identifier of the QoS policy. Valid in PATCH.

volume

Name	Type	Description
_links	_links	

Name	Type	Description
name	string	The name of the volume.
uuid	string	Unique identifier for the volume. This corresponds to the instance-uuid that is exposed in the CLI and ONTAPI. It does not change due to a volume move. • example: 028baa66-41bd-11e9-81d5-00a0986138f7

file_info

Information about a single file.

Name	Type	Description
name	string	Name of the file.
path	string	Path of the file.
target	string	The relative or absolute path contained in a symlink, in the form <some>/<path>.</path></some>
type	string	Type of the file.
unix_permissions	integer	UNIX permissions to be viewed as an octal number. It consists of 4 digits derived by adding up bits 4 (read), 2 (write), and 1 (execute). The first digit selects the set user ID(4), set group ID (2), and sticky (1) attributes. The second digit selects permissions for the owner of the file; the third selects permissions for other users in the same group; the fourth selects permissions for other users not in the group.

error_arguments

Name	Type	Description
code	string	Argument code

Name	Type	Description
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.

Retrieves historical performance metrics for a volume

GET `/storage/volumes/{volume.uuid}/metrics`

Retrieves historical performance metrics for a volume.

Parameters

Name	Type	In	Required	Description
status	string	query	False	Filter by status
duration	string	query	False	Filter by duration
iops.write	integer	query	False	Filter by iops.write
iops.read	integer	query	False	Filter by iops.read
iops.other	integer	query	False	Filter by iops.other
iops.total	integer	query	False	Filter by iops.total
timestamp	string	query	False	Filter by timestamp
latency.write	integer	query	False	Filter by latency.write
latency.read	integer	query	False	Filter by latency.read

Name	Type	In	Required	Description
latency.other	integer	query	False	Filter by latency.other
latency.total	integer	query	False	Filter by latency.total
cloud.iops.write	integer	query	False	Filter by cloud.iops.write
cloud.iops.read	integer	query	False	Filter by cloud.iops.read
cloud.iops.other	integer	query	False	Filter by cloud.iops.other
cloud.iops.total	integer	query	False	Filter by cloud.iops.total
cloud.duration	string	query	False	Filter by cloud.duration
cloud.timestamp	string	query	False	Filter by cloud.timestamp
cloud.latency.write	integer	query	False	Filter by cloud.latency.write
cloud.latency.read	integer	query	False	Filter by cloud.latency.read
cloud.latency.other	integer	query	False	Filter by cloud.latency.other
cloud.latency.total	integer	query	False	Filter by cloud.latency.total
cloud.status	string	query	False	Filter by cloud.status
throughput.write	integer	query	False	Filter by throughput.write
throughput.read	integer	query	False	Filter by throughput.read
throughput.other	integer	query	False	Filter by throughput.other

Name	Type	In	Required	Description
throughput.total	integer	query	False	Filter by throughput.total
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: 15
fields	array[string]	query	False	Specify the fields to return.
max_records	integer	query	False	Limit the number of records returned.
order_by	array[string]	query	False	Order results by specified fields and optional [asc
desc] direction. Default direction is 'asc' for ascending.	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	volume.uuid	string	path	True
Unique identifier of the volume.	interval	string	query	False

Response

```
Status: 200, Ok
```

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

Example response

```
{
  "_links": {
    "next": {
      "href": "/api/resourcelink"
    },
    "self": {
      "href": "/api/resourcelink"
    }
  },
  "records": [
    {
      "_links": {
        "self": {
          "href": "/api/resourcelink"
        }
      },
      "duration": "PT15S",
      "iops": {
        "read": 200,
        "total": 1000,
        "write": 100
      },
      "latency": {
        "read": 200,
        "total": 1000,
        "write": 100
      },
      "status": "ok",
      "throughput": {
        "read": 200,
        "total": 1000,
        "write": 100
      },
      "timestamp": "2017-01-25 11:20:13 UTC"
    }
  ]
}
```

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	

iops

The rate of I/O operations observed at the storage object.

Name	Type	Description
other	integer	Performance metric for other I/O operations. Other I/O operations can be metadata operations, such as directory lookups and so on.
read	integer	Performance metric for read I/O operations.
total	integer	Performance metric aggregated over all types of I/O operations.
write	integer	Peformance metric for write I/O operations.

latency

The round trip latency in microseconds observed at the storage object.

Name	Type	Description
other	integer	Performance metric for other I/O operations. Other I/O operations can be metadata operations, such as directory lookups and so on.
read	integer	Performance metric for read I/O operations.
total	integer	Performance metric aggregated over all types of I/O operations.
write	integer	Peformance metric for write I/O operations.

throughput

The rate of throughput bytes per second observed at the storage object.

Name	Type	Description
other	integer	Performance metric for other I/O operations. Other I/O operations can be metadata operations, such as directory lookups and so on.
read	integer	Performance metric for read I/O operations.
total	integer	Performance metric aggregated over all types of I/O operations.
write	integer	Peformance metric for write I/O operations.

records

Performance numbers, such as IOPS latency and throughput.

Name	Type	Description
_links	_links	

Name	Type	Description
duration	string	The duration over which this sample is calculated. The time durations are represented in the ISO-8601 standard format. Samples can be calculated over the following durations:
iops	iops	The rate of I/O operations observed at the storage object.
latency	latency	The round trip latency in microseconds observed at the storage object.
status	string	Errors associated with the sample. For example, if the aggregation of data over multiple nodes fails, then any partial errors might return "ok" on success or "error" on an internal uncategorized failure. Whenever a sample collection is missed but done at a later time, it is back filled to the previous 15 second timestamp and tagged with "backfilled_data". "Inconsistent_ delta_time" is encountered when the time between two collections is not the same for all nodes. Therefore, the aggregated value might be over or under inflated. "Negative_delta" is returned when an expected monotonically increasing value has decreased in value. "Inconsistent_old_data" is returned when one or more nodes do not have the latest data.
throughput	throughput	The rate of throughput bytes per second observed at the storage object.
timestamp	string	The timestamp of the performance data.

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.

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