



Manage LUN attributes

ONTAP 9.11.1 REST API reference

NetApp
April 02, 2024

Table of Contents

- Manage LUN attributes 1
 - Storage luns lun.uuid attributes endpoint overview 1
 - Retrieve LUN attributes 5
 - Add an attribute to a LUN 10
 - Delete a LUN attribute 15
 - Retrieve a LUN attribute 17
 - Update a LUN attribute value 20
 - Retrieve historical performance metrics for a LUN 24

Manage LUN attributes

Storage luns lun.uuid attributes endpoint overview

Overview

LUN attributes are caller-defined name/value pairs optionally stored with a LUN. Attributes are available to persist small amounts of application-specific metadata. They are in no way interpreted by ONTAP.

Attribute names and values must be at least one byte and no more than 4091 bytes in length. The sum of the name and value lengths must be no more than 4092 bytes.

The LUN attributes REST API allows you to create, update, delete, and discover attributes for a LUN. The LUN REST API also allows you to set attributes when a LUN is first created.

Examples

Retrieving all attributes from a LUN

This example uses the LUN attribute REST endpoint with the `fields` query parameter to request the names and values.

```

# The API:
GET /api/storage/luns/{lun.uuid}/attributes

# The call:
curl -X GET 'https://<mgmt-ip>/api/storage/luns/4bc204df-ecd8-4f35-8207-
d0ccb4db3a90/attributes?fields=*' -H 'Accept: application/hal+json'

# The response:
{
  "records": [
    {
      "name": "name1",
      "value": "value1",
      "_links": {
        "self": {
          "href": "/api/storage/luns/4bc204df-ecd8-4f35-8207-
d0ccb4db3a90/attributes/name1"
        }
      }
    },
    {
      "name": "name2",
      "value": "value2",
      "_links": {
        "self": {
          "href": "/api/storage/luns/4bc204df-ecd8-4f35-8207-
d0ccb4db3a90/attributes/name2"
        }
      }
    }
  ],
  "num_records": 2,
  "_links": {
    "self": {
      "href": "/api/storage/luns/4bc204df-ecd8-4f35-8207-
d0ccb4db3a90/attributes"
    }
  }
}

```

This example uses the LUN REST endpoint with the `fields` query parameter to request the attributes properties.

```

# The API:
GET /api/storage/luns/{uuid}

# The call:
curl -X GET 'https://<mgmt-ip>/api/storage/luns/4bc204df-ecd8-4f35-8207-
d0ccb4db3a90?fields=attributes' -H 'Accept: application/hal+json'

# The response:
{
  "uuid": "4bc204df-ecd8-4f35-8207-d0ccb4db3a90",
  "name": "/vol/vol1/lun1",
  "attributes": [
    {
      "name": "name1",
      "value": "name1",
      "_links": {
        "self": {
          "href": "/api/storage/luns/4bc204df-ecd8-4f35-8207-
d0ccb4db3a90/attributes/name1"
        }
      }
    },
    {
      "name": "name2",
      "value": "value2",
      "_links": {
        "self": {
          "href": "/api/storage/luns/4bc204df-ecd8-4f35-8207-
d0ccb4db3a90/attributes/name2"
        }
      }
    }
  ],
  "_links": {
    "self": {
      "href": "/api/storage/luns/4bc204df-ecd8-4f35-8207-d0ccb4db3a90"
    }
  }
}

```

Adding an attribute to a LUN

```
# The API:
POST /api/storage/luns/{lun.uuid}/attributes

# The call:
curl -X POST 'https://<mgmt-ip>/api/storage/luns/4bc204df-ecd8-4f35-8207-
d0ccb4db3a90/attributes?return_records=true' -H 'Accept:
application/hal+json' -d '{ "name": "name1", "value": "value1" }'

# The response:
{
  "num_records": 1,
  "records": [
    {
      "name": "name1",
      "value": "value1",
      "_links": {
        "self": {
          "href": "/api/storage/luns/4bc204df-ecd8-4f35-8207-
d0ccb4db3a90/attributes/name1"
        }
      }
    }
  ]
}
```

Modifying an attribute value for a LUN

```
# The API
PATCH /api/storage/luns/{lun.uuid}/attributes/{name}

# The call:
curl -X PATCH 'https://<mgmt-ip>/api/storage/luns/4bc204df-ecd8-4f35-8207-
d0ccb4db3a90/attributes/name1' -H 'Accept: application/hal+json' -d '{
"value": "newValue" }'
```

Deleting an attribute from a LUN

```
# The API:
DELETE /api/storage/luns/{lun.uuid}/attributes/{name}

# The call:
curl -X DELETE 'https://<mgmt-ip>/api/storage/luns/4bc204df-ecd8-4f35-8207-d0ccb4db3a90/attributes/name1' -H 'Accept: application/hal+json'
```

Retrieve LUN attributes

GET /storage/luns/{lun.uuid}/attributes

Introduced In: 9.10

Retrieves LUN attributes.

Learn more

- [DOC /storage/luns/{lun.uuid}/attributes](#)

Parameters

Name	Type	In	Required	Description
value	string	query	False	Filter by value <ul style="list-style-type: none">• maxLength: 4091• minLength: 1
name	string	query	False	Filter by name <ul style="list-style-type: none">• maxLength: 4091• minLength: 1
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. <ul style="list-style-type: none"> • Default value: 1
return_timeout	integer	query	False	The number of seconds to allow the call to execute before returning. When iterating over a collection, the default is 15 seconds. ONTAP returns earlier if either max records or the end of the collection is reached. <ul style="list-style-type: none"> • Default value: 1 • Max value: 120 • Min value: 0
order_by	array[string]	query	False	Order results by specified fields and optional [asc

Response

Status: 200, Ok

Name	Type	Description
_links	_links	
num_records	integer	The number of records in the response.
records	array[lun_attribute]	

Example response

```
{
  "_links": {
    "next": {
      "href": "/api/resourcelink"
    },
    "self": {
      "href": "/api/resourcelink"
    }
  },
  "num_records": 1,
  "records": {
    "_links": {
      "self": {
        "href": "/api/resourcelink"
      }
    },
    "lun": {
      "_links": {
        "self": {
          "href": "/api/resourcelink"
        }
      },
      "uuid": "4ea7a442-86d1-11e0-ae1c-123478563412"
    },
    "name": "name1",
    "value": "value1"
  }
}
```

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	

lun

The LUN for which the attribute is set.

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

lun_attribute

A name/value pair optionally stored with the LUN. Attributes are available to callers to persist small amounts of application-specific metadata. They are in no way interpreted by ONTAP.

Attribute names and values must be at least one byte and no more than 4091 bytes in length. The sum of the name and value lengths must be no more than 4092 bytes.

Name	Type	Description
_links	_links	
lun	lun	The LUN for which the attribute is set.
name	string	The attribute name. Required in POST.
value	string	The attribute value. Required in POST; valid in PATCH.

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.

Add an attribute to a LUN

POST /storage/luns/{lun.uuid}/attributes

Introduced In: 9.10

Adds an attribute to a LUN.

Required properties

- `name` - The name of the attribute to add.
- `value` - The value of the attribute to add.

Learn more

- [DOC /storage/luns/{lun.uuid}/attributes](#)

Parameters

Name	Type	In	Required	Description
return_records	boolean	query	False	The default is false. If set to true, the records are returned. <ul style="list-style-type: none"> • Default value:

Request Body

Name	Type	Description
_links	_links	
lun	lun	The LUN for which the attribute is set.
name	string	The attribute name. Required in POST.
value	string	The attribute value. Required in POST; valid in PATCH.

Example request

```
{
  "_links": {
    "self": {
      "href": "/api/resourcelink"
    }
  },
  "lun": {
    "_links": {
      "self": {
        "href": "/api/resourcelink"
      }
    },
    "uuid": "4ea7a442-86d1-11e0-ae1c-123478563412"
  },
  "name": "name1",
  "value": "value1"
}
```

Response

Status: 201, Created

Name	Type	Description
<code>_links</code>	<code>_links</code>	
<code>num_records</code>	integer	The number of records in the response.
<code>records</code>	array[lun_attribute]	

Example response

```
{
  "_links": {
    "next": {
      "href": "/api/resourcelink"
    },
    "self": {
      "href": "/api/resourcelink"
    }
  },
  "num_records": 1,
  "records": {
    "_links": {
      "self": {
        "href": "/api/resourcelink"
      }
    },
    "lun": {
      "_links": {
        "self": {
          "href": "/api/resourcelink"
        }
      },
      "uuid": "4ea7a442-86d1-11e0-ae1c-123478563412"
    },
    "name": "name1",
    "value": "value1"
  }
}
```

Error

Status: Default

ONTAP Error Response Codes

Error Code	Description
5374875	The specified LUN was not found.
5374928	An incomplete attribute name/value pair was supplied.
5374929	The combined sizes of an attribute name and value are too large.
5374930	The attribute already exists for the LUN.

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	

lun

The LUN for which the attribute is set.

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

lun_attribute

A name/value pair optionally stored with the LUN. Attributes are available to callers to persist small amounts of application-specific metadata. They are in no way interpreted by ONTAP.

Attribute names and values must be at least one byte and no more than 4091 bytes in length. The sum of the name and value lengths must be no more than 4092 bytes.

Name	Type	Description
_links	_links	
lun	lun	The LUN for which the attribute is set.
name	string	The attribute name. Required in POST.
value	string	The attribute value. Required in POST; valid in PATCH.

_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
message	string	Error message
target	string	The target parameter that caused the error.

Delete a LUN attribute

```
DELETE /storage/luns/{lun.uuid}/attributes/{name}
```

Introduced In: 9.10

Deletes a LUN attribute.

Learn more

- [DOC /storage/luns/{lun.uuid}/attributes](#)

Response

```
Status: 200, Ok
```

Error

```
Status: Default
```

ONTAP Error Response Codes

Error Code	Description
5374875	The specified LUN was not found.
5374931	The specified attribute was not found.

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 a LUN attribute

GET /storage/luns/{lun.uuid}/attributes/{name}

Introduced In: 9.10

Retrieves a LUN attribute.

Learn more

- [DOC /storage/luns/{lun.uuid}/attributes](#)

Parameters

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

Response

Status: 200, Ok

Name	Type	Description
_links	_links	
lun	lun	The LUN for which the attribute is set.
name	string	The attribute name. Required in POST.
value	string	The attribute value. Required in POST; valid in PATCH.

Example response

```
{
  "_links": {
    "self": {
      "href": "/api/resourcelink"
    }
  },
  "lun": {
    "_links": {
      "self": {
        "href": "/api/resourcelink"
      }
    },
    "uuid": "4ea7a442-86d1-11e0-ae1c-123478563412"
  },
  "name": "name1",
  "value": "value1"
}
```

Error

Status: Default

ONTAP Error Response Codes

Error Code	Description
5374875	The specified LUN was not found.
5374931	The specified attribute was not found.

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	

lun

The LUN for which the attribute is set.

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

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 a LUN attribute value

```
PATCH /storage/luns/{lun.uuid}/attributes/{name}
```

Introduced In: 9.10

Updates a LUN attribute value.

Learn more

- [DOC /storage/luns/{lun.uuid}/attributes](#)

Request Body

Name	Type	Description
<code>_links</code>	<code>_links</code>	
<code>lun</code>	<code>lun</code>	The LUN for which the attribute is set.
<code>name</code>	<code>string</code>	The attribute name. Required in POST.
<code>value</code>	<code>string</code>	The attribute value. Required in POST; valid in PATCH.

Example request

```
{
  "_links": {
    "self": {
      "href": "/api/resourcelink"
    }
  },
  "lun": {
    "_links": {
      "self": {
        "href": "/api/resourcelink"
      }
    },
    "uuid": "4ea7a442-86d1-11e0-ae1c-123478563412"
  },
  "name": "name1",
  "value": "value1"
}
```

Response

Status: 200, Ok

Error

Status: Default

ONTAP Error Response Codes

Error Code	Description
5374875	The specified LUN was not found.
5374929	The combined sizes of an attribute name and value are too large.
5374931	The specified attribute was not found.

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	

lun

The LUN for which the attribute is set.

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

lun_attribute

A name/value pair optionally stored with the LUN. Attributes are available to callers to persist small amounts of application-specific metadata. They are in no way interpreted by ONTAP.

Attribute names and values must be at least one byte and no more than 4091 bytes in length. The sum of the name and value lengths must be no more than 4092 bytes.

Name	Type	Description
_links	_links	
lun	lun	The LUN for which the attribute is set.
name	string	The attribute name. Required in POST.
value	string	The attribute value. Required in POST; valid in PATCH.

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.

Retrieve historical performance metrics for a LUN

GET `/storage/luns/{uuid}/metrics`

Introduced In: 9.7

Retrieves historical performance metrics for a LUN.

Parameters

Name	Type	In	Required	Description
uuid	string	path	True	Unique identifier of the LUN.

Name	Type	In	Required	Description
interval	string	query	False	<p>The time range for the data. Examples can be 1h, 1d, 1m, 1w, 1y. The period for each time range is as follows:</p> <ul style="list-style-type: none"> • 1h: Metrics over the most recent hour sampled over 15 seconds. • 1d: Metrics over the most recent day sampled over 5 minutes. • 1w: Metrics over the most recent week sampled over 30 minutes. • 1m: Metrics over the most recent month sampled over 2 hours. • 1y: Metrics over the most recent year sampled over a day. • Default value: 1 • enum: ["1h", "1d", "1w", "1m", "1y"]
duration	string	query	False	Filter by duration
throughput.other	integer	query	False	Filter by throughput.other
throughput.read	integer	query	False	Filter by throughput.read
throughput.write	integer	query	False	Filter by throughput.write
throughput.total	integer	query	False	Filter by throughput.total

Name	Type	In	Required	Description
timestamp	string	query	False	Filter by timestamp
status	string	query	False	Filter by status
iops.other	integer	query	False	Filter by iops.other
iops.read	integer	query	False	Filter by iops.read
iops.write	integer	query	False	Filter by iops.write
iops.total	integer	query	False	Filter by iops.total
latency.other	integer	query	False	Filter by latency.other
latency.read	integer	query	False	Filter by latency.read
latency.write	integer	query	False	Filter by latency.write
latency.total	integer	query	False	Filter by latency.total
return_timeout	integer	query	False	<p>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.</p> <ul style="list-style-type: none"> • Default value: 1 • Max value: 120 • Min value: 0
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
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

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": "2017-01-25T11:20:13Z",
    "uuid": "1cd8a442-86d1-11e0-ae1c-123478563412"
  }
}
```

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	Performance 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	Performance 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	Performance 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.
uuid	string	The unique identifier of the LUN.

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.

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.