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<th>Date</th>
<th>Revision</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>November 2020</td>
<td>1.0</td>
<td>Initial Release</td>
</tr>
</tbody>
</table>
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Email: support@wdc.com

Website: https://portal.wdc.com/Support/s/

UK Import Representation Contact

Western Digital UK Limited Hamilton House, Regent Park, Kingston Road Leatherhead, Surrey KT22 7PL, GB, United Kingdom

Telephone: +44 1372 366000
Overview

The Open Composable API is a REST-based application programming interface (API) that is accessible on Western Digital’s OpenFlex line of composable architecture devices. The API can be used to perform management functions on compatible fabric devices.

This document provides details related to the use and available features of the API. It includes a reference section that provides specifications and useful information about each resource available in the API.

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1.1 Accessing the API

The API is accessible on every fabric device connected to the fabric network. The simplest way to access the API is to find the IP address of the management port on the rear of the Chassis Device that contains all of the other devices. This is set to DHCP by default. Navigating to that IP address from a browser with /Query/ added to the end of the IP address will return top level status information.

The IP addresses/API targets listed in this response body will help in navigating the resources available on this device, as well as provide links and contextual information related to other devices connected on the fabric.

1.2 Common Information Model

The Open Composable API follows the industry standard conventions from the Common Information Model (CIM) provided by the Distributed Management Task Force (DMTF). The resource naming conventions and resource attributes follow the CIM model for managed elements. The Open Composable API simplifies the CIM model by "flattening" or "compressing" in 3 ways.

Collections

A collection refers to the collection of physical or logical resources that are rolled into resource groups as a "plural" of the resource type:

- GET /Volumes/ returns the list of Volume Resources
- GET /Volumes/{id} returns the specific Volume instance

Services

Services are rolled into the Resources themselves. For example, CIM requires an element called a StorageService to create a new storage volume. The Open Composable API collapses this notion into the resource itself, so that creating a new volume only requires telling the "resource type" (volumes in this case) to create a new volume. Any other manipulation of an existing resource is done directly to the resource. Some examples:

- POST /Volumes/ (params); Create a new Volume Resource
- PUT /Volumes/{id}?params; Modify an existing Volume Resource
- DELETE /Volumes/{id}; Delete an existing Volume Resource

Associations

Associations are provided "inherently" with each resource. This means retrieving a particular resource may also give "navigation links" to other associated resources. This eliminates the need to traverse Association Classes in the CIM Model by providing readily available URIs to Collections and Instances of other resources that are related to this Resource.

- A Ports resource contains a link to either an Adapter or Controller resource
- Adapter and Controller resources contain a link to a Ports resource

1.3 Supported Network Protocols
The Open Composable API follows a strict interpretation of the Representational State Transfer (REST) architectural style put forth by the IETF and the Hypertext Transport Protocol (HTTP) specifications. This requires all API "actions or verbs" be rendered only with HTTP Methods that work directly with the resources. This API supports the HTTP methods of GET, POST, PUT, DELETE, HEAD, and OPTIONS. This dictates that all Uniform Resource Identifiers (URIs) must be formed as "nouns" or "resources" upon which the methods are applied. No actions or verbs shall be rendered in the URI patterns.

1.4 HTTP Conditionals and CORS

The Open Composable API uses HTTP Conditionals to provide concurrency capabilities among multiple web clients. This optimistic concurrency uses the Entity Tag (ETag) header to provide a resource hash value (32 hexadecimal characters) of the current state of the resource and stores this in the header of that resource. The result of this hashing process is to produce a small character string to query in order to determine if the resource body has changed or not. This ETag value can be used to lower the network traffic when used with HTTP GET requests, because instead of returning the whole response body and comparing it to the existing one, it just compares the hash response, and it is also used to properly modify or delete a specific resource such that concurrency among web clients is established. The next two subsections describe the API support for GET and PUT/DELETE usage of conditionals.

HTTP GET Conditional

A web client may use the ETag value returned from a GET response to use in the next GET request to the same resource. However, it is not a requirement. And not all resources provide ETags. This is usually the case for resources that change on their own often (e.g., the System Clock, Performance, or other time-based or automatically changing resources). If the web client chooses to use an ETag for a GET request, the "If-None-Match" conditional is used. The web client will understand from the "304 Not Modified" response that the resource or list of resources has not changed since the last time it retrieved the information.

Using Conditional GET significantly reduces network traffic by eliminating unneeded transfer of data if it has not changed over time. This works well with web clients that need to "poll" for status frequently. This means that GET responses are either fully verbose or fully silent if the web client uses the ETag with "If-None-Match" conditional request header.

HTTP PUT & DELETE Conditional

Another form of HTTP conditional allows web clients to take advantage of the HTTP Conditional PUT and DELETE processes. This includes an ETag returned in most GET Request response headers. When used with the HTTP PUT or DELETE method, the web client can determine if the resource has changed since the last GET response before a PUT (modify) or DELETE is requested. This is called "optimistic concurrency". It is the opposite of implementing explicit locking mechanisms to handle multiple web clients ("pessimistic concurrency").

The web client will receive an ETag as part of the GET response header which can be used to pass the "If-Match" conditional to the web service to determine if the resource has changed just before the PUT or DELETE Request.

If the "If-Match" conditional is not sent along with the PUT or DELETE request, the API will return a "428 Precondition Required" to prompt the web client to use the API's HTTP conditional capabilities. This prevents accidental or rogue changes and deletions and makes sure there is an orderly process when two or more web clients work on the same resource at or near the same time.
HTTP Cross-Origin Resource Sharing (CORS)

The Open Composable API supports Cross-Origin Resource Sharing (CORS) operations. This is typically needed for web clients that connect to one particular web service which then tells the web client to connect to a different web service, usually in the executing Javascript, for example. The connection focus goes from "same-origin" or "same authority" to a "cross-origin" or different authority. Web clients that support this capability are required to send an OPTIONS method to the remote web service location (cross-origin) with the "Origin" header filled in with the local web service IP address or hostname with the scheme prefix (http or https) to determine if the remote web server will allow a connection from the web client while the focus is still on the local web server. If the remote web service disallows the connection, the OPTIONS response will return a "preflight connection failure" back to the web client indicating no further communication is allowed. If the remote web server allows the connection, it will return headers in the OPTIONS response to indicate what kind of connection, methods, etc., are allowed to the remote web server. The web client can then execute the original HTTP method to the remote web server to complete the transaction. Most modern web browsers support CORS.

1.5 HTTPS/SSL/TLS Connections

The Open Composable API provides the user the ability to upload their own self-generated SSL/TLS Certificate and Key Pairs. These are required if the user wishes to take advantage of the HTTPS capabilities of the OpenFlex Storage Devices.

The Open Composable API does provide its own self-signed Certificate and Key Pair, which is just enough to allow a browser to ask the user to proceed with the self-signed but unsecured connection. The user will need to do the following in order to successfully create secure connections between the browser and devices.

1. Create a user-generated Root Authority Certificate and Private Key pair
   • There are several SSL generators available, e.g., OpenSSL

2. Create a user-generated Leaf Certificate and Key Pair signed by the Root CA Key (from Step 1 (page 4))
   • The Leaf (or Device) Certificate/Key Pair must have the IP and/or DNS name as part of the Certificate that is within the user's network environment

3. Upload the Leaf Certificate and Key Pair to the Device via the OpenFlex API (see POST Files/TLSCertandKey)
   • The successful upload will automatically restart the API service for the HTTPS listener to use the new Certificate

1.6 RESTful API

This API is based on the true REST architectural style meaning that all actions/verbs will be handled exclusively by the existing HTTP Methods (GET, POST, PUT, DELETE, HEAD, OPTIONS) along with all URI patterns containing only fully qualified collections of resources and resource instantiations (nouns only, no action verbs permitted in the URI).

1.6.1 Discovery
The Open Composable API uses a generic doorbell type of URI that queries a particular host and port to determine what kind of device or component is available as a resource. There is also a mechanism to have a device do a discovery of all other participating devices to generate a dynamic system list of devices that can be managed through a single device as a single-point-of-management.

- /Query/ - Returns a summary of the Collection of Devices at this location (IP Address)
- /System/Query/ - Returns all the "Summary Query" responses from all discovered Collection of Devices across multiple systems

1.7 curl

Curl is a free, open-source command line tool and library for transferring data using various network protocols. It can be used to access the Open Composable API to request resource information, modify attributes, and create or delete resources using HTTP methods. Example curl commands are provided throughout this API reference; the following are the most commonly used commands and options. For more information on curl usage and syntax, visit https://curl.haxx.se/.

Commonly Used Command Options

- `-i` Requests HTTP response headers to be included in the output
- `-u user:password` Specifies the user name and password for server authentication
- `-X method` Specifies a custom request method to use when communicating with the HTTP server. Options are GET, POST, PUT, DELETE, HEAD, and OPTIONS
- `-H header` Specifies an extra header to include in the request, such as Content-Type, If-Match, etc.
- `-d data` Specifies the body data for a POST or PUT request
- `-F fieldname=@filename` Specifies a file to upload by emulating the submission of a filled-in form
- `-k` Allows for HTTPS requests

**GET**

A GET request is the first step in interacting with a resource. The GET curl command provides authentication credentials and the URL of the resource:

```
curl -i -u authentication -X GET resourceURL
```

The response header will include an ETag, which is used in subsequent PUT or DELETE requests to modify or delete the resource.

**PUT**

A PUT request modifies the resource. The PUT curl command provides authentication credentials, headers (such as Content-Type and If-Match), request body data, and the URL of the resource:

```
curl -i -u authentication -H header -X PUT -d 'data' resourceURL
```

The If-Match conditional in the PUT command requires the ETag from the GET response header in order to modify the resource.

**POST**

A POST request to a collection creates a resource within that collection. The POST curl command provides authentication credentials, headers (such as Content-Type), request body data, and the URL of the resource:
1.8 Downloading Firmware from the Support Portal

**Note:** The product must be registered in order to download firmware updates.

**Step 1:** Open a web browser and go to: [https://portal.wdc.com/Support/s/](https://portal.wdc.com/Support/s/).

The **Western Digital Enterprise Support Center** will appear.

**Step 2:** Log in to the **Western Digital Enterprise Support Center** using a valid email address and password:

Sign in to
SUPPORT PORTAL

![Login form]

Several support options will appear on the page.

**Step 3:** Click the **Downloads** option:

![Downloads icon]

The Western Digital downloads page will appear.

**Step 4:** From the **Identify Product** section, select the **Product, OS / Type**, and **Release Version**:
1. Overview

1.8 Downloading Firmware from the Support Portal

Step 5: From the Select Files for Download section, expand the Firmware option and select the checkbox for the appropriate firmware file(s):

2. Select Files for Download

Available Downloads:

- Documentation
- Firmware

<table>
<thead>
<tr>
<th>File Name</th>
<th>Size</th>
<th>Released</th>
</tr>
</thead>
<tbody>
<tr>
<td>Firmware_File</td>
<td>1.96MB</td>
<td>11 Oct 2018</td>
</tr>
<tr>
<td>Firmware_File</td>
<td>843.7KB</td>
<td>22 Oct 2018</td>
</tr>
</tbody>
</table>

Note: Filenames will vary, depending on the options chosen in the Identify Product section.

Step 6: In the Review & Download Files section, review the selected files to ensure that all intended files are included in the list.
Step 7: If needed, remove an unwanted file by clicking its red X.
Step 8: Select the appropriate archive file format by clicking either Zip or Tar.
Step 9: Click the Download Files button to download the selected files.
Step 10: If needed, unzip/extract the file to the desired location.

1.9 Enclosure Firmware Update

This section provides instructions for updating enclosure firmware on the OpenFlex Data24 using the OCAPI.

Before you begin:

- The following cURL commands must be run from a Linux host.
- The variable portions of the commands are enclosed in angle-brackets (i.e. <filename>) and should be replaced by information specific to the user’s system.
- The top level /Storage/Devices/{id}/ resource in this example is one of the two IOMs.

Step 1: Follow the instructions in Downloading Firmware from the Support Portal (page 6) to download the firmware file to an appropriate location on the host.

Step 2: From a command line, issue a POST request to the /Storage/Devices/{id}/OperatingSystem/ resource to upload the firmware file:

```bash
curl -v -i -X POST -u <username>:<password> -F FirmwareFile=@<filepath>/<filename> http://10.20.30.40/Storage/Devices/0123456789/OperatingSystem/
```

A successful upload will result in a 201 response.

Step 3: Issue a GET request to the top level /Storage/Devices/{id}/ resource and note the Etag returned in the header:

```bash
```

HTTP/1.1 200 OK
Content-Type: application/json
Etag: 783e532540dc63e4978604a2f3e0353
Date: Thu, 24 Sep 2020 21:28:38 GMT
1. Overview

1.9 Enclosure Firmware Update

Step 4: Using the Etag from the GET request, issue a PUT request to the same resource, passing the key/value pair of "FirmwareUpdate":true to update the firmware:

```
```

A successful PUT request will result in a 202 response:

```
HTTP/1.1 202 Accepted
Content-Type: application/json
Date: Thu, 24 Sep 2020 21:53:41 GMT
Content-Length: 166
```

Step 5: To verify a successful update, issue a GET request to the listed FirmwareUpdate jobs resource:

```
```

If the update was successful, the GET response body will show a completed status:

```
{
    "ID": "FirmwareUpdate",
    "PercentComplete": 100,
    ...
}
```

Step 6: Using the Etag again, issue another PUT request, passing the key/value pair of "FirmwareActivate":true to activate the firmware:

```
```

A successful PUT request will result in a 202 response:

```
HTTP/1.1 202 Accepted
Content-Type: application/json
Date: Thu, 24 Sep 2020 22:04:07 GMT
Content-Length: 166
```

Step 7: To verify a successful activation, issue a GET request to the listed FirmwareActivate jobs resource:

```
```

If the activation was successful, the GET response body will show a completed status:

```
{
```
1.10 Remote Debug

The OpenFlex Data24 supports remote debugging. If this service is needed, please contact Western Digital Datacenter Platforms technical support by email, or by submitting a service ticket through the support portal. A support professional will guide you through the process of unlocking your platform's SSH service to allow for remote servicing. Please be prepared to provide the part number (P/N) and serial number (S/N) of your OpenFlex Data24.

Email:
support@wdc.com

Website:
https://portal.wdc.com/Support/s/

1.11 API Resources and Physical Components

The Open Composable API uses "resources" to represent both logical and physical aspects of the OpenFlex Data24. The following is a description of the resources that allow management of physical components.

New API Resources

The Open Composable API introduces two new resources for the OpenFlex Data24, which correspond to physical components inside the enclosure.

The /Storage/Devices/{id}/Controllers/ collection represents the two IO Modules (IOMs):

- Controller 1 = IO Module A
- Controller 2 = IO Module B

The /Storage/Devices/{id}/CoolingDevices/ collection represents the five System Fans:

- Cooling Device 1 = System Fan A
- Cooling Device 2 = System Fan B
- Cooling Device 3 = System Fan C
- Cooling Device 4 = System Fan D
- Cooling Device 5 = System Fan E

Resources For Other Physical Components

The /Storage/Devices/{id}/Adapters/ collection represents the six add-in-cards (AICs), three inside each IO Module (IOM):
Open Composable API Reference

1. Overview

1.12 State Name and ID Definitions

The /Storage/Devices/{id}/Ports/ collection represents the eight IO ports at the rear of the OpenFlex Data24. Each IO Module (IOM) contains one RJ45 management port and three QSFP28 ports for its internal add-in-cards (AICs). The last key of the key/value pairs in the /Storage/Devices/{id}/Ports/ resource is either "Controllers" or "Adapters", indicating which type of port it is:

- Controller = IO Module port (RJ45)
- Adapter = AIC port (QSFP28)

The following table provides definitions to the values stored in resources to represent the operational state of the queried resource.

Table 1: State Names and ID Descriptions

<table>
<thead>
<tr>
<th>ID</th>
<th>ID Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>&quot;Unknown&quot;</td>
</tr>
<tr>
<td>1</td>
<td>&quot;Not available&quot;</td>
</tr>
<tr>
<td>2</td>
<td>&quot;Servicing&quot;</td>
</tr>
<tr>
<td>3</td>
<td>&quot;Starting&quot;</td>
</tr>
<tr>
<td>4</td>
<td>&quot;Stopping&quot;</td>
</tr>
<tr>
<td>5</td>
<td>&quot;Stopped&quot;</td>
</tr>
<tr>
<td>6</td>
<td>&quot;Aborted&quot;</td>
</tr>
<tr>
<td>7</td>
<td>&quot;Dormant&quot;</td>
</tr>
<tr>
<td>8</td>
<td>&quot;Completed&quot;</td>
</tr>
<tr>
<td>9</td>
<td>&quot;Migrating&quot;</td>
</tr>
<tr>
<td>10</td>
<td>&quot;Emigrating&quot;</td>
</tr>
<tr>
<td>11</td>
<td>&quot;Immigrating&quot;</td>
</tr>
<tr>
<td>12</td>
<td>&quot;Snapshotting&quot;</td>
</tr>
<tr>
<td>13</td>
<td>&quot;Shutting down&quot;</td>
</tr>
<tr>
<td>14</td>
<td>&quot;In test&quot;</td>
</tr>
<tr>
<td>15</td>
<td>&quot;Transitioning&quot;</td>
</tr>
<tr>
<td>16</td>
<td>&quot;In service&quot;</td>
</tr>
<tr>
<td>32768</td>
<td>&quot;DMTF reserved&quot;</td>
</tr>
<tr>
<td>65536</td>
<td>&quot;Vendor reserved&quot;</td>
</tr>
<tr>
<td>65537</td>
<td>&quot;Inoperative&quot;</td>
</tr>
</tbody>
</table>
1. Overview

1.13 Health Name and ID Definitions

The following table provides definitions to the values stored in resources to represent health status of the resource.

Table 2: Health Name and ID Definitions

<table>
<thead>
<tr>
<th>ID</th>
<th>ID Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>&quot;Unknown&quot;</td>
</tr>
<tr>
<td>5</td>
<td>&quot;OK&quot;</td>
</tr>
<tr>
<td>10</td>
<td>&quot;Degraded/Warning&quot;</td>
</tr>
<tr>
<td>15</td>
<td>&quot;Minor failure&quot;</td>
</tr>
<tr>
<td>20</td>
<td>&quot;Major failure&quot;</td>
</tr>
<tr>
<td>25</td>
<td>&quot;Critical failure&quot;</td>
</tr>
<tr>
<td>30</td>
<td>&quot;Non-recoverable error&quot;</td>
</tr>
<tr>
<td>32768</td>
<td>&quot;DMTF reserved&quot;</td>
</tr>
<tr>
<td>65535</td>
<td>&quot;Vendor specific&quot;</td>
</tr>
<tr>
<td>65536</td>
<td>&quot;Not installed&quot;</td>
</tr>
<tr>
<td>65537</td>
<td>&quot;Not available&quot;</td>
</tr>
<tr>
<td>65538</td>
<td>&quot;No access allowed&quot;</td>
</tr>
<tr>
<td>65539</td>
<td>&quot;Slot disabled&quot;</td>
</tr>
</tbody>
</table>

1.14 Network Type Name and ID Definitions

The following table provides details and definition to the values presented in response bodies of fabric devices that contain network capabilities.

Table 3: Network Type Name and ID Definitions

<table>
<thead>
<tr>
<th>ID</th>
<th>Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>&quot;LAN&quot;</td>
</tr>
<tr>
<td>1</td>
<td>&quot;WLAN&quot;</td>
</tr>
<tr>
<td>2</td>
<td>&quot;WAN&quot;</td>
</tr>
<tr>
<td>3</td>
<td>&quot;MAN&quot;</td>
</tr>
</tbody>
</table>
1.15 /Query/

The /Query/ resource (Doorbell) returns the device type and perhaps its higher level system membership and/or any other device(s) managed by this device via proxy, if any.

**HTTP Methods:**  
![GET](image)

**Table 4: Attributes**

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Possible Values</th>
<th>Description</th>
<th>Type</th>
<th>Mandatory or Optional</th>
<th>User Configurable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self</td>
<td>Free-Form URI Format 256 Chars</td>
<td>Describes the fully qualified URI link</td>
<td>String</td>
<td>✔️</td>
<td>✗</td>
</tr>
<tr>
<td>SystemQuery</td>
<td>Free-Form URI Format with IP plus <em>/System/Query</em></td>
<td>Link to ask this Device to discover other devices</td>
<td>String</td>
<td>✔️</td>
<td>✗</td>
</tr>
<tr>
<td>InformationStructure</td>
<td>See /Query/InformationStructure/ (page 16)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Devices.Self</td>
<td>Free-Form URI Format 256 Chars</td>
<td>Describes the fully qualified URI link</td>
<td>String</td>
<td>✔️</td>
<td>✗</td>
</tr>
<tr>
<td>Devices.Members</td>
<td>One or more / Devices bodies</td>
<td>Collection of Device Summaries</td>
<td>String</td>
<td>✗</td>
<td>✗</td>
</tr>
</tbody>
</table>

**GET /Query/**

**Example GET curl Command**

```
curl http://10.20.30.40/Query/
```

**Note:** User authentication is not required, since the GET /Query/ is the "doorbell" to initiate first contact with the Device. The JSON response includes URI links to go further into the Device, which will require user authentication.

**Example GET Response Body**

```json
{}
```
"Self": "http://10.20.30.40/Query/",
"InformationStructure": { 
  "AuthenticationType": { 
    "ID": 0,
    "Name": "Basic"
  },
  "ClientFilter": ".*",
  "HTTPPort": 80,
  "HTTPSPort": 443,
  "LogLevel": "debug",
  "MaximumThreads": 5,
  "Name": "OpenFlex API",
  "OwningOrganization": "WDC",
  "Status": "Released",
  "StructureDescription": "REST-based API for Device Management. Use HTTP OPTIONS with header "{"Documentation": "Schema\"} to get resource schema information based on URI. Use HTTP OPTIONS with header "{"Documentation": "Info\"} to get general information based on URI. ",
  "URI": "/Query/",
  "TimeoutMultiplier": 1,
  "Version": "1.2.0-233"
},
"Devices": { 
  "Members": [ 
    { 
      "SystemType": { 
        "ID": 2,
        "Name": "Storage"
      },
      "Name": "0123456789-ioma",
      "ID": "0123456789",
      "OperatingSystem": { 
        "Name": "Vendor Firmware",
        "OSType": { 
          "ID": 59,
          "Name": "Dedicated"
        },
        "Version": "0.1.0"
      },
      "SerialNumber": "USALP02120Q00022",
      "Model": "OpenFlex Data24",
      "Capabilities": { 
        "Members": [ 
          { 
            "ID": 3,
            "Name": "Storage",
            "CapabilityDescription": "This device is a storage provider."
          },
          { 
            "ID": 15,
            "Name": "Block Server",
          }]
    }
  ]
}
"CapabilityDescription": "This device provides block storage."
},
{
"ID": 28,
"Name": "Management Controller",
"CapabilityDescription": "This device provides specialized hardware dedicated to systems management."
},
{
"ID": 29,
"Name": "Chassis Manager",
"CapabilityDescription": "This is an aggregation point for management and may rely on subordinate management controllers for the management of constituent parts."
},
{
"ID": 31,
"Name": "Storage Device Enclosure",
"CapabilityDescription": "This device is a storage-based enclosure type."
},
{
"ID": 47201,
"Name": "Flash Media Device",
"CapabilityDescription": "This device provides flash-based storage volumes."
}
},
"Status": {
"State": {
"ID": 16,
"Name": "In service"
},
"Health": [
{
"ID": 25,
"Name": "Critical failure"
}],
"Details": ["None"
],
"IPAddresses": {
"Members": [
{
"IPAddress": "10.20.30.40"
}]
}
}
Table 5: GET Response Codes

<table>
<thead>
<tr>
<th>Response Code</th>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>200</td>
<td>OK</td>
<td>OK and Device information in the response body + ETag Header</td>
</tr>
<tr>
<td>304</td>
<td>Not Modified</td>
<td>If-None-Match Etag value matched, therefore no Response Body will be returned</td>
</tr>
<tr>
<td>401</td>
<td>Unauthorized</td>
<td>Unauthorized; credential entry failed or missing</td>
</tr>
<tr>
<td>404</td>
<td>Not Found</td>
<td>Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource</td>
</tr>
<tr>
<td>429</td>
<td>Too Many Requests</td>
<td>Indicates API service is busy, client should try again later</td>
</tr>
<tr>
<td>500</td>
<td>Internal Server Error</td>
<td>System could not process the request</td>
</tr>
</tbody>
</table>

1.15.1 /Query/InformationStructure/

The /Query/InformationStructure/ resource provides detailed information about the API.

HTTP Methods: GET PUT

Table 6: Attributes

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Possible Values</th>
<th>Description</th>
<th>Type</th>
<th>Mandatory or Optional</th>
<th>User Configurable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self</td>
<td>Free-Form URI Format 256 Chars</td>
<td>Describes the fully qualified URI link, used to display or modify the InformationStructure</td>
<td>String</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>AuthenticationType.ID</td>
<td>0 = Basic; 1 = Digest</td>
<td>The current authentication type ID</td>
<td>Number</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>AuthenticationType.Name</td>
<td>Basic or Digest</td>
<td>The current authentication type Name</td>
<td>String</td>
<td>✓</td>
<td>×</td>
</tr>
<tr>
<td>HTTPPort</td>
<td>80, or 1024 - 65535 range</td>
<td>Port number for HTTP listener; default = 80</td>
<td>Number</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>HTTPSPort</td>
<td>443, or 1024 - 65535 range</td>
<td>Port number for HTTPS listener; default = 443</td>
<td>Number</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>
### Attribute | Possible Values | Description | Type | Mandatory or Optional | User Configurable
--- | --- | --- | --- | --- | ---
LogLevel | "debug" | "info" | "warn" | "error" | The log level setting for writing into /var/log/vstore.log | String | ☒ | ☒
MaximumThreads | Default: 5 | Throttles the total number of web client connections. Returns a 429 Too Many Requests if maximum number reached. Try again. | Number | ☒ | ☒
Name | Free-Form 64 Chars | The API name | String | ☒ | ☒
OwningOrganization | Free-Form 64 Chars | The API Schema Owner | String | ☒ | ☒
Status | Free-Form 64 Chars | The API Schema Version Release Status | String | ☒ | ☒
StructureDescription | Free-Form 256 Chars | The API Schema Description | String | ☒ | ☒
URI | Free-Form URI Format | The API Schema URI starting point | String | ☒ | ☒
TimeoutMultiplier | 1 - n (default: 1) | The timeout multiplier value to increase the API timeout values | Number | ☒ | ☒

### GET `/Query/InformationStructure/`

#### Table 7: GET Request Headers

<table>
<thead>
<tr>
<th>Header</th>
<th>Mandatory or Optional</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Authorization</td>
<td>Mandatory</td>
<td>The request requires either Basic or Digest authorization</td>
</tr>
</tbody>
</table>
1. Overview

1.15 /Query/

<table>
<thead>
<tr>
<th>Header</th>
<th>Mandatory or Optional</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>If-None-Match</td>
<td>Optional</td>
<td>The request is conditionally processed only if the current ETag for the resource does not match the ETag passed in this header</td>
</tr>
</tbody>
</table>

Example GET curl Command


Example GET Response Body

```json
{
  "AuthenticationType": {
    "ID": 0,
    "Name": "Basic"
  },
  "HTTPPort": 80,
  "HTTPSPort": 443,
  "LogLevel": "debug",
  "MaximumThreads": 5,
  "Name": "OpenFlex API",
  "OwningOrganization": "WDC",
  "Status": "Released",
  "StructureDescription": "REST-based API for Device Management. Use HTTP OPTIONS with header \{"Documentation": \"Schema\"\} to get resource schema information based on URI. Use HTTP OPTIONS with header \{"Documentation": \"Info\"\} to get general information based on URI.",
  "URI": "/Query/",
  "TimeoutMultiplier": 1,
  "Version": "0.9.11"
}
```

Table 8: GET Response Codes

<table>
<thead>
<tr>
<th>Response Code</th>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>200</td>
<td>OK</td>
<td>OK and Device information in the response body + ETag Header</td>
</tr>
<tr>
<td>304</td>
<td>Not Modified</td>
<td>If-None-Match Etag value matched, therefore no Response Body will be returned</td>
</tr>
<tr>
<td>401</td>
<td>Unauthorized</td>
<td>Unauthorized; credential entry failed or missing</td>
</tr>
<tr>
<td>404</td>
<td>Not Found</td>
<td>Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource</td>
</tr>
<tr>
<td>429</td>
<td>Too Many Requests</td>
<td>Indicates API service is busy, client should try again later</td>
</tr>
<tr>
<td>500</td>
<td>Internal Server Error</td>
<td>System could not process the request</td>
</tr>
</tbody>
</table>

PUT /Query/InformationStructure/
Table 9: PUT Request Headers

<table>
<thead>
<tr>
<th>Header</th>
<th>Mandatory or Optional</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Authorization</td>
<td>Mandatory</td>
<td>The request requires either Basic or Digest authorization</td>
</tr>
<tr>
<td>If-Match</td>
<td>Mandatory</td>
<td>The request is conditionally processed only if the current ETag for the resource does not match the ETag passed in this header</td>
</tr>
</tbody>
</table>

Example PUT curl Command

curl -i -u admin:admin -H "Content-Type: application/json" -H "If-Match: 3677651d2011428f32120a029b015e81" -X PUT --data '{"LogLevel":"info"}'
http://10.20.30.40/Query/InformationStructure/

Note: The If-Match conditional in the PUT command requires the ETag from the GET Response Header.

Example PUT Request Body

```json
{
    "HTTPPort": number,
    "HTTPSPort": number,
    "AuthenticationType": { "ID" : 0 | 1 },
    "ClientFilter": "REGEX values",
    "MaximumThreads": number,
    "RestartAPI": true,
    "LogLevel": "debug"|"info"|"warn"|"error",
    "TimeoutMultiplier": 1 - n (default: 1)
}
```

Table 10: PUT Response Codes

<table>
<thead>
<tr>
<th>Response Code</th>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>200</td>
<td>OK</td>
<td>OK &amp; Volume information in the response body + ETag Header</td>
</tr>
<tr>
<td>301</td>
<td>Moved Permanently</td>
<td>URI Address has moved to a new location if the Port Number(s) are changed; provides new URI in &quot;Location&quot; header in the response</td>
</tr>
<tr>
<td>400</td>
<td>Bad Request</td>
<td>Bad Request (typically a faulty parameter)</td>
</tr>
<tr>
<td>401</td>
<td>Unauthorized</td>
<td>Unauthorized; credential entry failed or missing</td>
</tr>
<tr>
<td>412</td>
<td>Precondition Failed</td>
<td>Indicates the &quot;If-Match&quot; Ettag check failed</td>
</tr>
<tr>
<td>428</td>
<td>Precondition Required</td>
<td>Indicates the need for an &quot;If-Match&quot; conditional with an Etag value in the Request Header</td>
</tr>
<tr>
<td>429</td>
<td>Too Many Requests</td>
<td>Indicates API service is Busy, client should try again later</td>
</tr>
<tr>
<td>500</td>
<td>Internal Server Error</td>
<td>System could not process the request</td>
</tr>
</tbody>
</table>
1.6 /System/Query/

The /System/Query/ resource returns the dynamically-discovered list of device Query Doorbell responses in a single response body, to provide a single-point-of-management entry point.

HTTP Methods: GET

Table 11: Attributes

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Possible Values</th>
<th>Description</th>
<th>Type</th>
<th>Mandatory or Optional</th>
<th>User Configurable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self</td>
<td>Free-Form URI Format 256 Chars</td>
<td>Describes the fully qualified URI link.</td>
<td>String</td>
<td>Mandatory</td>
<td>No</td>
</tr>
<tr>
<td>Members</td>
<td>One or more discovered / Query bodies.</td>
<td>Collection of discovered / Query doorbell resources.</td>
<td>String Array</td>
<td>Optional</td>
<td>No</td>
</tr>
</tbody>
</table>

GET /System/Query/

Table 12: GET Request Headers

<table>
<thead>
<tr>
<th>Header</th>
<th>Mandatory or Optional</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Authorization</td>
<td>Mandatory</td>
<td>The request requires either Basic or Digest authorization</td>
</tr>
<tr>
<td>If-None-Match</td>
<td>Optional</td>
<td>The request is conditionally processed only if the current ETag for the resource does not match the ETag passed in this header</td>
</tr>
</tbody>
</table>

Example GET curl Command


Example GET Response Body

```json
{
    "Members": [
        {
            "InformationStructure": {
                "AuthenticationType": {
                    "ID": 0,
                    "Name": "Basic"
                },
                "ClientFilter": ".*",
                "HTTPPort": 80,
                "HTTPSPort": 443,
                "LogLevel": "info",
            }
        }
    ]
}
```
"MaximumThreads": 5,
"Name": "OpenFlex API",
"OwningOrganization": "WDC",
"Status": "Released",
"StructureDescription": "REST-based API for Device Management. Use HTTP OPTIONS with header {"Documentation": "Schema"} to get resource schema information based on URI. Use HTTP OPTIONS with header {"Documentation": "Info"} to get general information based on URI. ",
"URI": "/Query/",
"TimeoutMultiplier": 1,
"Version": "1.1.0-65"
},
"Devices": [
   "Members": [
     {"Self": "http://10.202.239.212:80/Compute/Devices/00000000-0000-0000-0000-0CC47A6BB00C/",
      "SystemType": {"ID": 1,
                     "Name": "Compute"},
      "Name": "cos-thebe",
      "ID": "00000000-0000-0000-0000-0CC47A6BB00C",
      "OperatingSystem": {
        "Name": "Linux",
        "OSType": {"ID": 36,
                    "Name": "Linux"},
        "Version": "18.04 LTS (Bionic Beaver) 4.15.0-20-generic"
      },
      "Model": "SSG-5028R-E1CR12L-CE010",
      "Manufacturer": "Supermicro",
      "Capabilities": [
        {"ID": 14,
         "Name": "Management",
         "CapabilityDescription": "This device provides software system management capabilities."
        },
        {"ID": 16,
         "Name": "File Server",
         "CapabilityDescription": "This device is a file server."
        },
        {"ID": 39,
         "Name": "Server",
         "CapabilityDescription": "This device is a compute server."
        }
      ]
    }
  ]
},
"Status": {
"State": { 
  "ID": 16, 
  "Name": "In service"
}, 
"Health": [ 
  { 
    "ID": 5, 
    "Name": "OK"
  }
], 
"Details": [ 
  "None"
] 
}, 
"IPAddresses": { 
  "Members": [ 
    { 
      "IPAddress": "127.0.0.1"
    }, 
    { 
      "IPAddress": "::1"
    }, 
    { 
      "IPAddress": "10.202.239.212"
    }, 
    { 
      "IPAddress": "fe80::ec4:7aff:fe6b:b00c"
    }, 
    { 
      "IPAddress": "192.168.0.27"
    }, 
    { 
      "IPAddress": "fdff:cfad:91f3:6060::28"
    }, 
    { 
      "IPAddress": "fe80::ee0d:9aff:fe83:215e"
    }
  ] 
}, 
"Devices": { 
  "Members": [ 
    { 
      "SystemType": { 
        "ID": 0, 
        "Name": "Unknown"
      }, 
      "Name": "Unknown",
      "ID": "10.202.239.203:80",
      "OperatingSystem": { 
        "Self": ",",
        "Name": ",",
        "OSType": { 
          "ID": 0, 
          "Name": "Unknown"
        }
      }
    }
  ]
}
1. Overview

1.16 /System/Query/

```json
{
   "ID": 0,
   "Name": "Unknown"
},
   "Version": "Unknown"
},
   "SerialNumber": "Unknown",
   "Model": "Unknown",
   "Manufacturer": "Unknown",
   "Capabilities": {
      "Members": [
      {
         "ID": 1,
         "Name": "Unknown",
         "CapabilityDescription": "Unknown"
      }
      ]
   },
   "Status": {
      "State": {
         "ID": 0,
         "Name": "Unknown"
      },
      "Health": [
      {
         "ID": 0,
         "Name": "Unknown"
      }
      ],
      "Details": [
      ]
   },
   "IPAddresses": {
      "Members": [
      {
         "IPAddress": "10.202.239.203:80"
      }
      ]
   },
   "Sanitize": {},
   "Format": {
      "BlockSize": {},
      "SecureErase": {}
   }
}
```
Table 13: GET Response Codes

<table>
<thead>
<tr>
<th>Response Code</th>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>200</td>
<td>OK</td>
<td>OK and Device information in the response body + ETag Header</td>
</tr>
<tr>
<td>304</td>
<td>Not Modified</td>
<td>If-None-Match Etag value matched, therefore no Response Body will be returned</td>
</tr>
<tr>
<td>401</td>
<td>Unauthorized</td>
<td>Unauthorized; credential entry failed or missing</td>
</tr>
<tr>
<td>404</td>
<td>Not Found</td>
<td>Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource</td>
</tr>
<tr>
<td>429</td>
<td>Too Many Requests</td>
<td>Indicates API service is busy, client should try again later</td>
</tr>
<tr>
<td>500</td>
<td>Internal Server Error</td>
<td>System could not process the request</td>
</tr>
</tbody>
</table>

1.16.1 /System/Query/ Modifiers

GET requests made to the /System/Query/ resource can be modified to alter the response. The following table lists the possible modifiers and describes how these modifiers affect the request.

Table 14: Query Modifiers

<table>
<thead>
<tr>
<th>Modifier</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Netmask = {ip_address/cidr}</td>
<td>Modifies the IP address and CIDR code range for the sweep/scan process that discovers OCAPI compatible devices on the network. The default sweep only targets the system IP address' subnet</td>
</tr>
<tr>
<td>DiscoveryTimeout = {1-n}</td>
<td>The timeout value in seconds for the discovery scan/sweep process; The default is 5 seconds.</td>
</tr>
<tr>
<td>QueryTimeout = {1-n}</td>
<td>The timeout value in seconds for the query process; default = 20 seconds</td>
</tr>
<tr>
<td>Threads = {1-n}</td>
<td>The number of parallel /Query requests based on the number of IP Address/CIDR to send to the network (multi-threaded unicast)</td>
</tr>
</tbody>
</table>
Storage Device API Reference

In This Chapter:
- /Storage/Devices/{id}/ ........................................... 26
- /Storage/Devices/{id}/Controllers/ ............. 34
- /Storage/Devices/{id}/Adapters/ ................. 38
- /Storage/Devices/{id}/Ports/ ....................... 43
- /Storage/Devices/{id}/
  PowerSupplies/ ............................................. 49
- /Storage/Devices/{id}/
  CoolingDevices/ ............................................ 52
- /Storage/Devices/{id}/Sensors/ ................. 56
- /Storage/Devices/{id}/Media/ ................. 61
- /Storage/Devices/{id}/
  OperatingSystem/ ........................................ 66
- /Storage/Devices/{id}/Accounts/ ............... 68
- /Storage/Devices/{id}/Location/ ............... 75
- /Storage/Devices/{id}/SystemClock/ .... 80
- /Storage/Devices/{id}/Support/ ............... 85
- /Storage/Devices/{id}/Jobs/ ..................... 86
- /Storage/Devices/{id}/Files/ .................. 91
## 2.1 /Storage/Devices/{id}/

**HTTP Methods:**

- [GET](#)
- [PUT](#)

### Table 15: Attributes

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Possible Values</th>
<th>Description</th>
<th>Type</th>
<th>Mandatory or Optional</th>
<th>User Configurable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self</td>
<td>Free-Form URI Format 256 Chars</td>
<td>Describes the fully qualified URI link</td>
<td>URI</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>SystemType.ID</td>
<td>2</td>
<td>The domain type number indicating the type of Device Resource. ID corresponds to Name</td>
<td>Number</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>SystemType.Name</td>
<td>&quot;Storage&quot;</td>
<td>The domain type string indicating the type of Device Resource. Name corresponds to ID</td>
<td>String</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Name</td>
<td>Free-Form 48 Chars</td>
<td>The user-defined Friendly Name for this Resource</td>
<td>String</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>ID</td>
<td>Free-Form 256 Chars</td>
<td>The resource identifier that is unique in space and time</td>
<td>String</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>OperatingSystem.Self</td>
<td>Free-Form URI 256 Chars</td>
<td>Describes the fully qualified URI link</td>
<td>URI</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>OperatingSystem.Name</td>
<td>Free-Form 128 Chars</td>
<td>The Operating System or Firmware Name</td>
<td>String</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>OperatingSystem.OSType.ID</td>
<td>59</td>
<td>Indicates dedicated software. ID corresponds to Name</td>
<td>Number</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>OperatingSystem.OSType.Name</td>
<td>Dedicated</td>
<td>Indicates dedicated software value. Name corresponds to ID</td>
<td>String</td>
<td>✔</td>
<td>✔</td>
</tr>
</tbody>
</table>
### Attributes

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Possible Values</th>
<th>Description</th>
<th>Type</th>
<th>Mandatory or Optional</th>
<th>User Configurable</th>
</tr>
</thead>
<tbody>
<tr>
<td>OperatingSystem.Version</td>
<td>Free-Form 128 Chars</td>
<td>The Operating System or Firmware Version</td>
<td>String</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>SerialNumber</td>
<td>Free-Form 64 Chars</td>
<td>The serial number for this Resource</td>
<td>String</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Model</td>
<td>Free-Form 64 Chars</td>
<td>The model name or number for this Resource</td>
<td>String</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Capabilities.Members[].ID</td>
<td>3, 15, 28, 40, 47201</td>
<td>The capabilities information value map(s) regarding the Resource. ID corresponds to Name: Storage, Block Server, Management Controller, Blade, Flash Media Device</td>
<td>Number</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Capabilities.Members[].Name</td>
<td>&quot;CapabilityID&quot;, &quot;ID&quot;, &quot;Name&quot;</td>
<td>The capabilities information value(s) regarding the Resource. Name corresponds to ID</td>
<td>String</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Capabilities.Members[].CapabilityDescription</td>
<td>Free-Form 64 Characters</td>
<td>Entry describing the capability</td>
<td>String</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Status.State.ID</td>
<td>See State Name and ID Definitions (page 11)</td>
<td>The current state value map of this Resource. ID corresponds to Name</td>
<td>Number</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Status.State.Name</td>
<td>See State Name and ID Definitions (page 11)</td>
<td>The current state value of this Resource. Name corresponds to ID</td>
<td>String</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Status.Health[].ID</td>
<td>See Health Name and ID Definitions (page 12)</td>
<td>The current health value map of this Resource. There can be 1 or more Id entries. ID corresponds to Name</td>
<td>Number (1..*)</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>
## 2. Storage Device API Reference

### 2.1 /Storage/Devices/{id}/

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Possible Values</th>
<th>Description</th>
<th>Type</th>
<th>Mandatory or Optional</th>
<th>User Configurable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Status.Health[].Name</td>
<td>See Health Name and ID Definitions (<a href="#">page 12</a>)</td>
<td>The current health value of this Resource. There can be 1 or more Name entries. Name corresponds to ID</td>
<td>String (1..*)</td>
<td>✓</td>
<td>✔</td>
</tr>
<tr>
<td>Status.Details[]</td>
<td>Free-Form 32 Characters per Array entry. If no entry, then “None”.</td>
<td>The current Health Details of the Device</td>
<td>String Array</td>
<td>✓</td>
<td>✔</td>
</tr>
<tr>
<td>IPAddresses.Members[].IPA IPv4pattern</td>
<td></td>
<td>The IP Address list for this Resource</td>
<td>String</td>
<td>✓</td>
<td>✔</td>
</tr>
<tr>
<td>PowerState.ID</td>
<td>0, 2, 4, 6 Note: 0 &amp; 6 are not user-configurable</td>
<td>The current power state of the Device. ID corresponds to Name</td>
<td>Number</td>
<td>✓</td>
<td>✔</td>
</tr>
<tr>
<td>PowerState.Name</td>
<td>&quot;Unknown&quot;, &quot;On&quot;, &quot;Sleep&quot;, &quot;Off&quot; Note: Selecting &quot;Off&quot; returns an error since this Device does not support Shutdown.</td>
<td>The current power state value of the Device. Name corresponds to ID</td>
<td>String</td>
<td>✓</td>
<td>✔</td>
</tr>
<tr>
<td>TotalCapacity</td>
<td>Integer Bytes</td>
<td>The total number of raw bytes for this device</td>
<td>Number</td>
<td>✓</td>
<td>✔</td>
</tr>
<tr>
<td>IndicatorLED.ID</td>
<td>4, 2</td>
<td>The current state value map of the Indicator LED for this Resource. ID corresponds to Name</td>
<td>Number</td>
<td>✓</td>
<td>✔</td>
</tr>
<tr>
<td>Attribute</td>
<td>Possible Values</td>
<td>Description</td>
<td>Type</td>
<td>Mandatory or Optional</td>
<td>User Configurable</td>
</tr>
<tr>
<td>----------------------------</td>
<td>-----------------</td>
<td>-----------------------------------------------------------------------------</td>
<td>--------</td>
<td>-----------------------</td>
<td>-------------------</td>
</tr>
<tr>
<td>IndicatorLED.Name</td>
<td>&quot;Off&quot;, &quot;Lit&quot;</td>
<td>The current state value of the Indicator LED for this Resource. Name corresponds to ID</td>
<td>String</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Location.Self</td>
<td>Free-Form URI</td>
<td>Fully qualified link to the Location resource</td>
<td>String</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Accounts.Self</td>
<td>Free-Form URI</td>
<td>Fully qualified link to the Accounts resource</td>
<td>String</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Adapters.Self</td>
<td>Free-Form URI</td>
<td>Fully qualified link to the Adapters resource</td>
<td>String</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Controllers.Self</td>
<td>Free-Form URI</td>
<td>Fully qualified link to the Controllers resource</td>
<td>String</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>CoolingDevices.Self</td>
<td>Free-Form URI</td>
<td>Fully qualified link to the CoolingDevices resource</td>
<td>String</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Files.Self</td>
<td>Free-Form URI</td>
<td>Fully qualified link to the Files resource</td>
<td>String</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Jobs.Self</td>
<td>Free-Form URI</td>
<td>Fully qualified link to the Jobs resource</td>
<td>String</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Media.Self</td>
<td>Free-Form URI</td>
<td>Fully qualified link to the Media resource</td>
<td>String</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Ports.Self</td>
<td>Free-Form URI</td>
<td>Fully qualified link to the Ports resource</td>
<td>String</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>PowerSupplies.Self</td>
<td>Free-Form URI</td>
<td>Fully qualified link to the PowerSupplies resource</td>
<td>String</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Sensors.Self</td>
<td>Free-Form URI</td>
<td>Fully qualified link to Sensors resource</td>
<td>String</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Support.Self</td>
<td>Free-Form URI</td>
<td>Fully qualified link to the Support resource</td>
<td>String</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Attribute</td>
<td>Possible Values</td>
<td>Description</td>
<td>Type</td>
<td>Mandatory or Optional</td>
<td>User Configurable</td>
</tr>
<tr>
<td>-----------------------</td>
<td>-----------------</td>
<td>--------------------------------------------------</td>
<td>--------</td>
<td>-----------------------</td>
<td>-------------------</td>
</tr>
<tr>
<td>SystemClock.Self</td>
<td>Free-Form URI</td>
<td>Fully qualified link to the SystemClock resource</td>
<td>String</td>
<td>☑️</td>
<td>☑️</td>
</tr>
</tbody>
</table>

**GET /Storage/Devices/{id}/**

**Table 16: GET Request Headers**

<table>
<thead>
<tr>
<th>Header</th>
<th>Mandatory or Optional</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Authorization</td>
<td>Mandatory</td>
<td>The request requires either Basic or Digest authorization</td>
</tr>
<tr>
<td>If-None-Match</td>
<td>Optional</td>
<td>The request is conditionally processed only if the current ETag for the resource does not match the ETag passed in this header</td>
</tr>
</tbody>
</table>

**Example GET curl Command**

```
```

**Example GET Response Body**

```json
{
  "SystemType": {
    "ID": 2,
    "Name": "Storage"
  },
  "Name": "0123456789-iomb",
  "ID": "0123456789",
  "OperatingSystem": {
    "Name": "Vendor Firmware",
    "OSType": {
      "ID": 59,
      "Name": "Dedicated"
    },
    "Version": "0.1.0"
  },
  "SerialNumber": "ABCDEFGHIJKLMNOP",
  "Model": "OpenFlex Data24",
  "Capabilities": {
    "Members": [
      {
        "ID": 3,
        "Name": "Storage",
        "CapabilityDescription": "This device is a storage provider."
      },
      {
        "ID": 15,
        "Name": "Block Server",
```
"CapabilityDescription": "This device provides block storage."
},
{
"ID": 28,
"Name": "Management Controller",
"CapabilityDescription": "This device provides specialized hardware dedicated to systems management."
},
{
"ID": 29,
"Name": "Chassis Manager",
"CapabilityDescription": "This device provides specialized hardware dedicated to systems management."
},
{
"ID": 31,
"Name": "Storage Device Enclosure",
"CapabilityDescription": "This device is a storage-based enclosure type."
},
{
"ID": 47201,
"Name": "Flash Media Device",
"CapabilityDescription": "This device provides flash-based storage volumes."
}
"Status": {
"State": {
"ID": 16,
"Name": "In service"
},
"Health": {
"ID": 25,
"Name": "Critical failure"
},
"Details": [{
"None"
}],
"IPAddresses": {
"Members": [
{"IPAddress": "10.20.30.40"}
]
},
"PowerState": {
"ID": 2,
"Name": "On"
},
"TotalCapacity": 80655875629056,
"IndicatorLED": {
"ID": 4,
"Name": "Off"}
2. Storage Device API Reference

2.1 /Storage/Devices/{id}/

Table 17: GET Response Codes

<table>
<thead>
<tr>
<th>Response Code</th>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>200</td>
<td>OK</td>
<td>OK and Device information in the response body + ETag Header</td>
</tr>
<tr>
<td>304</td>
<td>Not Modified</td>
<td>If-None-Match Etag value matched, therefore no Response Body will be returned</td>
</tr>
<tr>
<td>401</td>
<td>Unauthorized</td>
<td>Unauthorized; credential entry failed or missing</td>
</tr>
<tr>
<td>404</td>
<td>Not Found</td>
<td>Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource</td>
</tr>
</tbody>
</table>
### PUT `/Storage/Devices/{id}/`

**Table 18: PUT Request Headers**

<table>
<thead>
<tr>
<th>Header</th>
<th>Mandatory or Optional</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Authorization</td>
<td>Mandatory</td>
<td>The request requires either Basic or Digest authorization</td>
</tr>
<tr>
<td>If-Match</td>
<td>Mandatory</td>
<td>The request is conditionally processed only if the current ETag matches the ETag passed in this header</td>
</tr>
</tbody>
</table>

**Table 19: PUT Data Options**

<table>
<thead>
<tr>
<th>Syntax</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot;IndicatorLED&quot;: { &quot;ID&quot;: 4</td>
<td>2)</td>
</tr>
<tr>
<td>&quot;Name&quot;: &quot;new_name&quot;</td>
<td>Specify a new name</td>
</tr>
<tr>
<td>&quot;Description&quot;: &quot;desc&quot;</td>
<td>Modify the description; required to be sent by itself (no other attributes should be sent with this change)</td>
</tr>
<tr>
<td>&quot;Reboot&quot;: true</td>
<td>true = Reboot the Resource (WriteOnly)</td>
</tr>
<tr>
<td>&quot;FactoryReset&quot;: true</td>
<td>true = Return Device to factory settings</td>
</tr>
<tr>
<td>&quot;PowerState&quot;: { &quot;ID&quot;: 2</td>
<td>4)</td>
</tr>
</tbody>
</table>

**Example PUT curl Command**

```
curl -i -u admin:admin -H "Content-Type: application/json" -H "If-Match: 3677651d2011428f32120a029b015e80" -X PUT --data '{"Name": "new_name"}' http://10.20.30.40/Storage/Devices/0123456789/
```

**Note:** The `If-Match` conditional in the PUT command requires the ETag from the GET Response Header.

**Table 20: PUT Response Codes**

<table>
<thead>
<tr>
<th>Response Code</th>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>200</td>
<td>OK</td>
<td>OK and Account information in the response body + ETag Header</td>
</tr>
<tr>
<td>400</td>
<td>Bad Request</td>
<td>Bad Request (typically a faulty parameter)</td>
</tr>
<tr>
<td>401</td>
<td>Unauthorized</td>
<td>Unauthorized; credential entry failed or missing</td>
</tr>
</tbody>
</table>
### 2. Storage Device API Reference

#### 2.2 /Storage/Devices/{id}/Controllers/

The /Storage/Devices/{id}/Controllers/ resource is a collection of two controllers, each corresponding to an IO Module (IOM) of the OpenFlex Data24. Controller 1 represents IOM A, and controller 2 represents IOM B.

#### HTTP Methods:

- **GET**
- **PUT**

### Table 21: Collection Attributes

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Possible Values</th>
<th>Description</th>
<th>Type</th>
<th>Mandatory or Optional</th>
<th>User Configurable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self</td>
<td>Free-Form URI Format 256 Chars</td>
<td>Describes the fully qualified URI link</td>
<td>URI String</td>
<td>✔</td>
<td>☒</td>
</tr>
<tr>
<td>Members</td>
<td>Resource Collection (0 - n entries)</td>
<td>The array of resource instances. See Table 22: Instance Attributes (page 34)</td>
<td>String Array</td>
<td>✔</td>
<td>☒</td>
</tr>
</tbody>
</table>

### Table 22: Instance Attributes

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Possible Values</th>
<th>Description</th>
<th>Type</th>
<th>Mandatory or Optional</th>
<th>User Configurable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self</td>
<td>Free-Form URI Format 256 Chars</td>
<td>Describes the fully qualified URI link</td>
<td>URI String</td>
<td>Mandatory</td>
<td>No</td>
</tr>
<tr>
<td>ID</td>
<td>Free-Form 256 Chars</td>
<td>The resource identifier that is unique in space and time</td>
<td>String</td>
<td>Mandatory</td>
<td>No</td>
</tr>
</tbody>
</table>
## Attribute | Possible Values | Description | Type | Mandatory or Optional | User Configurable |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>Free-Form 256 Chars</td>
<td>The user-defined Friendly Name for this Resource</td>
<td>String</td>
<td>Mandatory</td>
<td>Yes</td>
</tr>
<tr>
<td>Status.State.ID</td>
<td>See State Name and ID Definitions (page 11)</td>
<td>The current state value map of this Resource. ID corresponds to Name</td>
<td>Number</td>
<td>Mandatory</td>
<td>No</td>
</tr>
<tr>
<td>Status.State.Name</td>
<td>See State Name and ID Definitions (page 11)</td>
<td>The current state value of this Resource. ID corresponds to Name</td>
<td>String</td>
<td>Mandatory</td>
<td>No</td>
</tr>
<tr>
<td>Status.Health[].ID</td>
<td>See Health Name and ID Definitions (page 12)</td>
<td>The current health value map of this Resource. There can be 1 or more ID entries. ID corresponds to Name</td>
<td>Number (1..*)</td>
<td>Mandatory</td>
<td>No</td>
</tr>
<tr>
<td>Status.Health[].Name</td>
<td>See Health Name and ID Definitions (page 12)</td>
<td>The current health value of this Resource. There can be 1 or more Name entries. Name corresponds to ID</td>
<td>String (1..*)</td>
<td>Mandatory</td>
<td>No</td>
</tr>
<tr>
<td>Rebootable</td>
<td>true, false</td>
<td>Indicates if the Controller is currently in a state that allows a reboot</td>
<td>Boolean</td>
<td>Mandatory</td>
<td>No</td>
</tr>
<tr>
<td>HostName</td>
<td>User-defined host name used as a Network Name assigned to the IP Address for this Controller's &quot;Port&quot; assignment</td>
<td>Host name used as a Network Name assigned to the IP Address for this Controller's &quot;Port&quot; assignment. Default value is the Device ID + Controller short name, e.g, ioma or iomb.</td>
<td>String</td>
<td>Mandatory</td>
<td>Yes</td>
</tr>
<tr>
<td>Ports</td>
<td>Free-Form URI with query string to &quot;this&quot; Controller's Ports instance(s)</td>
<td>Fully qualified link to the associated Ports Resource</td>
<td>String</td>
<td>Mandatory</td>
<td>No</td>
</tr>
</tbody>
</table>
GET /Storage/Devices/{id}/Controllers/ and /Storage/Devices/{id}/Controllers/{id}/

Table 23: GET Request Headers

<table>
<thead>
<tr>
<th>Header</th>
<th>Mandatory or Optional</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Authorization</td>
<td>Mandatory</td>
<td>The request requires either Basic or Digest authorization</td>
</tr>
<tr>
<td>If-None-Match</td>
<td>Optional</td>
<td>The request is conditionally processed only if the current ETag for the resource does not match the ETag passed in this header</td>
</tr>
</tbody>
</table>

Example GET curl Command (Collection)


Example GET Response Body (Collection)

```json
{
    "Members": [
        {
            "ID": "1",
            "Name": "IO MODULE A",
            "Status": {
                "State": {
                    "ID": 16,
                    "Name": "In service"
                },
                "Health": [
                    {
                        "ID": 5,
                        "Name": "OK"
                    }
                ]
            },
            "Rebootable": true,
            "HostName": "0123456789-ioma",
            "Ports": "http://10.20.30.40:80/Storage/Devices/0123456789/Ports/?controllerid=1"
        },
        {
            "ID": "2",
            "Name": "IO MODULE B",
            "Status": {
                "State": {
                    "ID": 16,
                    "Name": "In service"
                },
                "Health": [
                    {
                        "ID": 5,
                        "Name": "OK"
                    }
                ]
            }
        }
    ]
}
```
Example GET curl Command (Single Resource)


Example GET Response Body (Single Resource)

```
{
    "Self": "http://10.20.30.40/Storage/Devices/0123456789/Controllers/1/",
    "ID": "1",
    "Name": "IO MODULE A",
    "Status": {
        "State": {
            "ID": 16,
            "Name": "In service"
        },
        "Health": [
            {
                "ID": 5,
                "Name": "OK"
            }
        ]
    },
    "Rebootable": true,
    "HostName": "0123456789-ioma",
    "Ports": "http://10.20.30.40:80/Storage/Devices/0123456789/Ports/?controllerid=1"
}
```

Table 24: GET Response Codes

<table>
<thead>
<tr>
<th>Response Code</th>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>200</td>
<td>OK</td>
<td>OK &amp; Controller information in the response body + ETag Header</td>
</tr>
<tr>
<td>304</td>
<td>Not Modified</td>
<td>If-None-Match ETag value matched, therefore no Response Body will be returned</td>
</tr>
<tr>
<td>401</td>
<td>Unauthorized</td>
<td>Unauthorized; credential entry failed or missing</td>
</tr>
<tr>
<td>404</td>
<td>Not Found</td>
<td>Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource</td>
</tr>
<tr>
<td>429</td>
<td>Too Many Requests</td>
<td>Indicates API service is busy, client should try again later</td>
</tr>
<tr>
<td>500</td>
<td>Internal Server Error</td>
<td>System could not process the request</td>
</tr>
</tbody>
</table>
PUT /Storage/Devices/{id}/Controllers/{id}/

Table 25: PUT Request Headers

<table>
<thead>
<tr>
<th>Header</th>
<th>Mandatory or Optional</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Authorization</td>
<td>Mandatory</td>
<td>The request requires either Basic or Digest authorization</td>
</tr>
<tr>
<td>If-Match</td>
<td>Mandatory</td>
<td>The request is conditionally processed only if the current ETag for the resource matches the ETag passed in this header</td>
</tr>
</tbody>
</table>

Example PUT curl Command

```
curl -i -u admin:admin -H "Content-Type: application/json" -H "If-Match: 3677651d2011428f32120a029b015e80" -X PUT --data '{"Name": "new_name"}' http://10.20.30.40/Storage/Devices/0123456789/Controllers/1/
```

Note: The If-Match conditional in the PUT command requires the ETag from the GET Response Header.

Table 26: PUT Response Codes

<table>
<thead>
<tr>
<th>Response Code</th>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>200</td>
<td>OK</td>
<td>OK and Account information in the response body + ETag Header</td>
</tr>
<tr>
<td>400</td>
<td>Bad Request</td>
<td>Bad Request (typically a faulty parameter)</td>
</tr>
<tr>
<td>401</td>
<td>Unauthorized</td>
<td>Unauthorized; credential entry failed or missing</td>
</tr>
<tr>
<td>404</td>
<td>Not Found</td>
<td>The resource doesn’t exist</td>
</tr>
<tr>
<td>409</td>
<td>Conflict</td>
<td>A new parameter value already exists (e.g., Name)</td>
</tr>
<tr>
<td>412</td>
<td>Precondition Failed</td>
<td>Indicates the “If-Match” Etag check failed</td>
</tr>
<tr>
<td>428</td>
<td>Precondition Required</td>
<td>Indicates the need for an “If-Match” conditional with an Etag value in the Request Header</td>
</tr>
<tr>
<td>429</td>
<td>Too Many Requests</td>
<td>Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource indicates API service is busy, client should try again later</td>
</tr>
<tr>
<td>500</td>
<td>Internal Server Error</td>
<td>System could not process the request</td>
</tr>
</tbody>
</table>

2.3 /Storage/Devices/{id}/Adapters/

The /Storage/Devices/{id}/Adapters/ resource is a collection of six adapters, each corresponding to an add-in-card (AIC) inside an IO Module (IOM) of the OpenFlex Data24. Adapters 1-3 represent the AICs inside IOM A; adapters 4-6 represent the AICs inside IOM B.
### HTTP Methods:

- **GET**
- **PUT**

#### Table 27: Collection Attributes

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Possible Values</th>
<th>Description</th>
<th>Type</th>
<th>Mandatory or Optional</th>
<th>User Configurable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self</td>
<td>Free-Form URI Format 256 Chars</td>
<td>Describes the fully qualified URI link</td>
<td>URI String</td>
<td>☑️</td>
<td>☒️</td>
</tr>
<tr>
<td>Members</td>
<td>Resource Collection (0 - n entries)</td>
<td>The array of resource instances. See Table 28: Instance Attributes (page 39)</td>
<td>String Array</td>
<td>☒️</td>
<td>☒️</td>
</tr>
</tbody>
</table>

#### Table 28: Instance Attributes

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Possible Values</th>
<th>Description</th>
<th>Type</th>
<th>Mandatory or Optional</th>
<th>User Configurable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self</td>
<td>Free-Form URI Format 256 Chars</td>
<td>Describes the fully qualified URI link</td>
<td>URI String</td>
<td>Mandatory</td>
<td>No</td>
</tr>
<tr>
<td>ID</td>
<td>Free-Form 256 Chars</td>
<td>The resource identifier that is unique in space and time</td>
<td>String</td>
<td>Mandatory</td>
<td>No</td>
</tr>
<tr>
<td>Name</td>
<td>Free-Form 256 Chars</td>
<td>Adapter name that indicates which Controller (IOM) and the Adapter &quot;add-in-card&quot; (AIC) position/ slot within the Controller enclosure</td>
<td>String</td>
<td>Mandatory</td>
<td>No</td>
</tr>
<tr>
<td>Status.State.ID</td>
<td>See State Name and ID Definitions (page 11)</td>
<td>The current state value map of this Resource. ID corresponds to Name</td>
<td>Number</td>
<td>Mandatory</td>
<td>No</td>
</tr>
<tr>
<td>Status.State.Name</td>
<td>See State Name and ID Definitions (page 11)</td>
<td>The current state value of this Resource. ID corresponds to Name</td>
<td>String</td>
<td>Mandatory</td>
<td>No</td>
</tr>
<tr>
<td>Status.Health[].ID</td>
<td>See Health Name and ID Definitions (page 12)</td>
<td>The current health value map of this Resource. There can be 1 or more Identities. ID corresponds to Name</td>
<td>Number (1..*)</td>
<td>Mandatory</td>
<td>No</td>
</tr>
</tbody>
</table>
### Attribute

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Possible Values</th>
<th>Description</th>
<th>Type</th>
<th>Mandatory or Optional</th>
<th>User Configurable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Status.Health[].Name</td>
<td>See Health Name and ID Definitions (page 12)</td>
<td>The current health value of this Resource. There can be 1 or more Name entries. Name corresponds to ID</td>
<td>String</td>
<td>Mandatory</td>
<td>No</td>
</tr>
<tr>
<td>Ports</td>
<td>Free-Form URI with query string to &quot;this&quot; Adapter's Ports instance(s)</td>
<td>Fully qualified link to the associated Ports Resource</td>
<td>String</td>
<td>Mandatory</td>
<td>No</td>
</tr>
</tbody>
</table>

### GET /Storage/Devices/{id}/Adapters/ and /Storage/Devices/{id}/Adapters/{id}/

#### Table 29: GET Request Headers

<table>
<thead>
<tr>
<th>Header</th>
<th>Mandatory or Optional</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Authorization</td>
<td>Mandatory</td>
<td>The request requires either Basic or Digest authorization</td>
</tr>
<tr>
<td>If-None-Match</td>
<td>Optional</td>
<td>The request is conditionally processed only if the current ETag for the resource does not match the ETag passed in this header</td>
</tr>
</tbody>
</table>

### Example GET curl Command (Collection)

```bash
```

### Example GET Response Body (Collection)

```json
{
    "Members": [
        {
            "ID": "1",
            "Name": "IOM-A-AIC-A",
            "Status": {
                "State": {
                    "ID": 16,
                    "Name": "In service"
                },
                "Health": [
                    {
                        "ID": 5,
                        "Name": "OK"
                    }
                ],
            }
        }
    ]
}
```


```json
{
  "ID": "2",
  "Name": "IOM-A-AIC-B",
  "Status": {
    "State": {
      "ID": 16,
      "Name": "In service"
    },
    "Health": [
      {
        "ID": 5,
        "Name": "OK"
      }
    ]
  },
},
{
  "ID": "3",
  "Name": "IOM-A-AIC-C",
  "Status": {
    "State": {
      "ID": 16,
      "Name": "In service"
    },
    "Health": [
      {
        "ID": 5,
        "Name": "OK"
      }
    ]
  },
},
{
  "ID": "4",
  "Name": "IOM-B-AIC-A",
  "Status": {
    "State": {
      "ID": 16,
      "Name": "In service"
    },
    "Health": [
      {
        "ID": 5,
        "Name": "OK"
      }
    ]
  },
}
```
Example GET curl Command (Single Resource)

curl -i -u admin:admin -X GET http://10.20.30.40/Storage/Devices/0123456789/Adapters/1/

Example GET Response Body (Single Resource)

{
    "ID": "1",
    "Name": "IOM-A-AIC-A",
    "Status": {
        "State": {
            "ID": 16,
            "Name": "In service"
        },
        "Health": [
            {
                "ID": 5,
                "Name": "OK"
            }
        ]
    },
}
Table 30: GET Response Codes

<table>
<thead>
<tr>
<th>Response Code</th>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>200</td>
<td>OK</td>
<td>OK and Device information in the response body + ETag Header</td>
</tr>
<tr>
<td>304</td>
<td>Not Modified</td>
<td>If-None-Match Etag value matched, therefore no Response Body will be returned</td>
</tr>
<tr>
<td>401</td>
<td>Unauthorized</td>
<td>Unauthorized; credential entry failed or missing</td>
</tr>
<tr>
<td>404</td>
<td>Not Found</td>
<td>Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource</td>
</tr>
<tr>
<td>429</td>
<td>Too Many Requests</td>
<td>Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource indicates API service is busy, client should try again later</td>
</tr>
<tr>
<td>500</td>
<td>Internal Server Error</td>
<td></td>
</tr>
</tbody>
</table>

2.4 /Storage/Devices/{id}/Ports/

The /Storage/Devices/{id}/Ports/ resource is a collection of eight ports, each corresponding to a port on the rear of an IO Module (IOM) of the OpenFlex Data24. Each IO Module (IOM) contains three SAS ports for its internal add-in-cards (AICs) and one Ethernet management port.

HTTP Methods:  

Table 31: Collection Attributes

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Possible Values</th>
<th>Description</th>
<th>Type</th>
<th>Mandatory or Optional</th>
<th>User Configurable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self</td>
<td>Free-Form URI Format 256 Chars</td>
<td>Describes the fully qualified URI link</td>
<td>URI String</td>
<td>Mandatory</td>
<td>No</td>
</tr>
<tr>
<td>Members</td>
<td>Resource Collection (0 - n entries)</td>
<td>The array of resource instances. See Table 32: Instance Attributes (page 43)</td>
<td>String Array</td>
<td>Optional</td>
<td>No</td>
</tr>
</tbody>
</table>
### Table 32: Instance Attributes

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Possible Values</th>
<th>Description</th>
<th>Type</th>
<th>Mandatory or Optional</th>
<th>User Configurable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self</td>
<td>Free-Form URI Format 256 Chars</td>
<td>Describes the fully qualified URI link</td>
<td>URI</td>
<td>Mandatory</td>
<td>No</td>
</tr>
<tr>
<td>ID</td>
<td>Free-Form 256 Chars</td>
<td>The resource identifier that is unique in space and time</td>
<td>String</td>
<td>Mandatory</td>
<td>No</td>
</tr>
<tr>
<td>Status.State.ID</td>
<td>See State Name and ID Definitions (page 11)</td>
<td>The current state value map of this Resource. ID corresponds to Name</td>
<td>Number</td>
<td>Mandatory</td>
<td>No</td>
</tr>
<tr>
<td>Status.State.Name</td>
<td>See State Name and ID Definitions (page 11)</td>
<td>The current state value of this Resource. Name corresponds to ID</td>
<td>String</td>
<td>Mandatory</td>
<td>No</td>
</tr>
<tr>
<td>Status.Health[].ID</td>
<td>See Health Name and ID Definitions (page 12)</td>
<td>The current health value map of this Resource. There can be 1 or more ID entries. ID corresponds to Name</td>
<td>Number (1..*)</td>
<td>Mandatory</td>
<td>No</td>
</tr>
<tr>
<td>Status.Health[].Name</td>
<td>See Health Name and ID Definitions (page 12)</td>
<td>The current health value of this Resource. There can be 1 or more Name entries. Name corresponds to ID</td>
<td>String (1..*)</td>
<td>Mandatory</td>
<td>No</td>
</tr>
<tr>
<td>AddressOrigin.ID</td>
<td>0, 1, 2, 3, 4, 5, 6, 7, 10, 65536</td>
<td>Information value map as to where the address is supplied. ID corresponds to Name</td>
<td>Number</td>
<td>Mandatory</td>
<td>Yes</td>
</tr>
<tr>
<td>AddressOrigin.Name</td>
<td>&quot;UNKNOWN&quot;, &quot;OTHER&quot;, &quot;NOT APPLICABLE&quot;, &quot;STATIC&quot;, &quot;DHCP&quot;, &quot;BOOTP&quot;, &quot;IPv4 Link Local&quot;, &quot;DHCPv6&quot;, &quot;Link Local&quot;,</td>
<td>Information value as to where the address is supplied. Name corresponds to ID</td>
<td>String</td>
<td>Mandatory</td>
<td>Yes</td>
</tr>
</tbody>
</table>
## 2. Storage Device API Reference

### 2.4 /Storage/Devices/{id}/Ports/

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Possible Values</th>
<th>Description</th>
<th>Type</th>
<th>Mandatory or Optional</th>
<th>User Configurable</th>
</tr>
</thead>
<tbody>
<tr>
<td>IPv4Address</td>
<td>“DHCPv4”, IPv4 4-Octet pattern + CIDR mask</td>
<td>The Network IP Address for this Device; IPv4 type</td>
<td>String</td>
<td>Mandatory</td>
<td>Yes</td>
</tr>
<tr>
<td>IPv4Gateway</td>
<td>IPv4 4-Octet pattern</td>
<td>The Network IP Gateway address setting</td>
<td>String</td>
<td>Optional</td>
<td>Yes</td>
</tr>
<tr>
<td>MACAddress</td>
<td>6-hex digit HW address</td>
<td>The Network IP Gateway address setting</td>
<td>String</td>
<td>Mandatory</td>
<td>No</td>
</tr>
<tr>
<td>NetworkType.ID</td>
<td>See Network Type Name and ID Definitions (page 12)</td>
<td>The network type value map. ID corresponds to Name</td>
<td>Number</td>
<td>Mandatory</td>
<td>No</td>
</tr>
<tr>
<td>NetworkType.Name</td>
<td>See Network Type Name and ID Definitions (page 12)</td>
<td>The network type value. Name corresponds to ID</td>
<td>String</td>
<td>Mandatory</td>
<td>No</td>
</tr>
<tr>
<td>MTUBytes</td>
<td>Range: 1500 - 5000 (management port default: 1500, data port default: 2200)</td>
<td>The current Maximum Transfer Bytes value (Max: 5000)</td>
<td>Number</td>
<td>Mandatory</td>
<td>Yes</td>
</tr>
<tr>
<td>Adapters</td>
<td>Free-Form URI Format 256 Chars</td>
<td>Link to get the Adapter information hosting this Port</td>
<td>String</td>
<td>Mandatory</td>
<td>No</td>
</tr>
<tr>
<td>Controllers</td>
<td>Free-Form URI Format 256 Chars</td>
<td>Link to get the Controller information hosting this Port</td>
<td>String</td>
<td>Mandatory</td>
<td>No</td>
</tr>
</tbody>
</table>

### GET /Storage/Devices/{id}/Ports/ and /Storage/Devices/{id}/Ports/{id}/

Table 33: GET Request Headers

<table>
<thead>
<tr>
<th>Header</th>
<th>Mandatory or Optional</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Authorization</td>
<td>Mandatory</td>
<td>The request requires either Basic or Digest authorization</td>
</tr>
<tr>
<td>Header</td>
<td>Mandatory or Optional</td>
<td>Description</td>
</tr>
<tr>
<td>-------------------</td>
<td>-----------------------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>If-None-Match</td>
<td>Optional</td>
<td>The request is conditionally processed only if the current ETag for the resource does not match the ETag passed in this header</td>
</tr>
</tbody>
</table>

Example GET curl Command (Collection)
```
```

Example GET Response Body (Collection)
```
{
  "Members": [
    {
      "Self": "http://10.20.30.40:80/Storage/Devices/0123456789/Ports/70_b3_d5_76_88_fd_192_168_0_51_24/",
      "ID": "70_b3_d5_76_88_fd_192_168_0_51_24",
      "Status": {
        "State": {
          "ID": 16,
          "Name": "In service"
        },
        "Health": [
          {
            "ID": 5,
            "Name": "OK"
          }
        ]
      },
      "AddressOrigin": {
        "ID": 65536,
        "Name": "DHCPv4"
      },
      "IPv4Address": "192.168.0.51/24",
      "IPv4Gateway": "192.168.0.1",
      "MACAddress": "70:b3:d5:76:88:fd",
      "NetworkType": {
        "ID": 8,
        "Name": "IPv4 Network"
      },
      "MTUBytes": 2200,
      "Adapters": "http://10.20.30.40:80/Storage/Devices/0123456789/Adapters/?portid=70_b3_d5_76_88_fd_192_168_0_51_24"
    },
    ...
  ]
}
```

Example GET curl Command (Single-Resource)
```
curl -i -u admin:admin -X GET http://10.20.30.40/Storage/Devices/0123456789/Ports/70_b3_d5_76_88_fd_192_168_0_51_24/
```

Example GET Response Body (Single-Resource)
Table 34: GET Response Codes

<table>
<thead>
<tr>
<th>Response Code</th>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>200</td>
<td>OK</td>
<td>OK and Device information in the response body + ETag Header</td>
</tr>
<tr>
<td>304</td>
<td>Not Modified</td>
<td>If-None-Match Etag value matched, therefore no Response Body will be returned</td>
</tr>
<tr>
<td>401</td>
<td>Unauthorized</td>
<td>Unauthorized; credential entry failed or missing</td>
</tr>
<tr>
<td>404</td>
<td>Not Found</td>
<td>Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource</td>
</tr>
<tr>
<td>429</td>
<td>Too Many Requests</td>
<td>Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource indicates API service is busy, client should try again later</td>
</tr>
<tr>
<td>500</td>
<td>Internal Server Error</td>
<td>System could not process the request</td>
</tr>
</tbody>
</table>

PUT /Storage/Devices/{id}/Ports/
### Table 35: PUT Request Headers

<table>
<thead>
<tr>
<th>Header</th>
<th>Mandatory or Optional</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Authorization</td>
<td>Mandatory</td>
<td>The request requires either Basic or Digest authorization</td>
</tr>
<tr>
<td>If-Match</td>
<td>Mandatory</td>
<td>The request is conditionally processed only if the current ETag for the resource matches the ETag passed in this header</td>
</tr>
</tbody>
</table>

### Table 36: PUT Data Options

<table>
<thead>
<tr>
<th>Syntax</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot;AddressOrigin&quot;: {&quot;ID&quot;:number}</td>
<td>Address Origin - where the IP Address comes from. Origin Type ID (65536</td>
</tr>
<tr>
<td>&quot;IPv4Address&quot;: &quot;ipv4_address/cidr&quot;</td>
<td>IPv4 Address and CIDR mask value</td>
</tr>
<tr>
<td>&quot;IPv4Gateway&quot;: &quot;ipv4_gateway&quot;</td>
<td>IPv4 Gateway Address</td>
</tr>
<tr>
<td>&quot;MTUBytes&quot;: 1500</td>
<td>Maximum Transfer Unit in bytes (range: 1500 - 5000)</td>
</tr>
</tbody>
</table>

### Example PUT curl Command

```bash
curl -i -u admin:admin -H "Content-Type: application/json" -H "If-Match: 3677651d2011428f32120a029b015e80" -X PUT --data '{"AddressOrigin": {"ID": 65536}}' http://10.20.30.40/Storage/Devices/0123456789/Ports/70_b3_d5_76_88_fd_192_168_0_51_24/
```

Note: The If-Match conditional in the PUT command requires the ETag from the GET Response Header.

### Table 37: PUT Response Codes

<table>
<thead>
<tr>
<th>Response Code</th>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>200</td>
<td>OK</td>
<td>OK and Account information in the response body + ETag Header</td>
</tr>
<tr>
<td>400</td>
<td>Bad Request</td>
<td>Bad Request (typically a faulty parameter)</td>
</tr>
<tr>
<td>401</td>
<td>Unauthorized</td>
<td>Unauthorized; credential entry failed or missing</td>
</tr>
<tr>
<td>404</td>
<td>Not Found</td>
<td>The resource doesn’t exist</td>
</tr>
<tr>
<td>409</td>
<td>Conflict</td>
<td>A new parameter value already exists (e.g., Name)</td>
</tr>
<tr>
<td>412</td>
<td>Precondition Failed</td>
<td>Indicates the “If-Match” Etag check failed</td>
</tr>
<tr>
<td>428</td>
<td>Precondition Required</td>
<td>Indicates the need for an “If-Match” conditional with an Etag value in the Request Header</td>
</tr>
<tr>
<td>429</td>
<td>Too Many Requests</td>
<td>Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource indicates API service is busy, client should try again later</td>
</tr>
</tbody>
</table>
### 2.5 /Storage/Devices/{id}/PowerSupplies/

**HTTP Methods:**  
GET

#### Table 38: Collection Attributes

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Possible Values</th>
<th>Description</th>
<th>Type</th>
<th>Mandatory or Optional</th>
<th>User Configurable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self</td>
<td>Free-Form URI Format 256 Chars</td>
<td>Describes the fully qualified URI link</td>
<td>URI</td>
<td>Mandatory</td>
<td>No</td>
</tr>
<tr>
<td>Members</td>
<td>Resource Collection (0 - n entries)</td>
<td>The array of resource instances. See Table 39: Instance Attributes (page 49)</td>
<td>Array</td>
<td>Mandatory</td>
<td>No</td>
</tr>
</tbody>
</table>

#### Table 39: Instance Attributes

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Possible Values</th>
<th>Description</th>
<th>Type</th>
<th>Mandatory or Optional</th>
<th>User Configurable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self</td>
<td>Free-Form URI Format 256 Chars</td>
<td>Describes the fully qualified URI link</td>
<td>URI</td>
<td>✓</td>
<td>☒</td>
</tr>
<tr>
<td>ID</td>
<td>Free-Form 256 Chars</td>
<td>The resource identifier that is unique in space and time</td>
<td>String</td>
<td>✓</td>
<td>☒</td>
</tr>
<tr>
<td>Name</td>
<td>Free-Form 256 Chars</td>
<td>The user-defined Friendly Name for this Resource.</td>
<td>String</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Status.State.ID</td>
<td>See State Name and ID Definitions (page 11)</td>
<td>The current state value map of this Resource. ID corresponds to Name</td>
<td>Number</td>
<td>✓</td>
<td>☒</td>
</tr>
<tr>
<td>Status.State.Name</td>
<td>See State Name and ID Definitions (page 11)</td>
<td>The current state value of this Resource. Name corresponds to ID</td>
<td>String</td>
<td>✓</td>
<td>☒</td>
</tr>
</tbody>
</table>
## Attribute Reference

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Possible Values</th>
<th>Description</th>
<th>Type</th>
<th>Mandatory or Optional</th>
<th>User Configurable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Status.Health[].ID</td>
<td>See Health Name and ID Definitions (page 12)</td>
<td>The current health value map of this Resource. There can be 1 or more Id entries. ID corresponds to Name</td>
<td>Number (1..*)</td>
<td>✓</td>
<td>🔴</td>
</tr>
<tr>
<td>Status.Health[].Name</td>
<td>See Health Name and ID Definitions (page 12)</td>
<td>The current health value of this Resource. There can be 1 or more Name entries. Name corresponds to ID</td>
<td>String (1..*)</td>
<td>✓</td>
<td>🔴</td>
</tr>
<tr>
<td>PartNumber</td>
<td>Free-Form 256 Chars</td>
<td>The Part Number for this Power Supply</td>
<td>String</td>
<td>✓</td>
<td>🔴</td>
</tr>
<tr>
<td>SerialNumber</td>
<td>Free-Form 256 Chars</td>
<td>The Serial Number for this Power Supply</td>
<td>String</td>
<td>✓</td>
<td>🔴</td>
</tr>
</tbody>
</table>

### GET /Storage/Devices/{id}/PowerSupplies/ and /Storage/Devices/{id}/PowerSupplies/{id}/

**Table 40: GET Request Headers**

<table>
<thead>
<tr>
<th>Header</th>
<th>Mandatory or Optional</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Authorization</td>
<td>Mandatory</td>
<td>The request requires either Basic or Digest authorization</td>
</tr>
<tr>
<td>If-None-Match</td>
<td>Optional</td>
<td>The request is conditionally processed only if the current ETag for the resource does not match the ETag passed in this header</td>
</tr>
</tbody>
</table>

**Example GET curl Command (Collection)**

```bash
```

**Example GET Response Body (Collection)**

```json
{
  "Members": [
    {
      "Self": "http://10.20.30.40:80/Storage/Devices/0123456789/PowerSupplies/1/",
      "ID": "1",
```
"Name": "POWER SUPPLY A",
"Status": {
   "State": {
      "ID": 16,
      "Name": "In service"
   },
   "Health": [
      {
         "ID": 5,
         "Name": "OK"
      }
   ],
   "PartNumber": "DPS-2000AB-2 D",
   "SerialNumber": "JEUD2016000063"
},
{
   "ID": "2",
   "Name": "POWER SUPPLY B",
   "Status": {
      "State": {
         "ID": 16,
         "Name": "In service"
      },
      "Health": [
         {
            "ID": 5,
            "Name": "OK"
         }
      ],
      "PartNumber": "DPS-2000AB-2 D",
      "SerialNumber": "JEUD2016000057"
   }
}

Example GET curl Command (Single Resource)


Example GET Response Body (Single Resource)

{
   "Self": "http://10.20.30.40:80/Storage/Devices/0123456789/PowerSupplies/1/",
   "ID": "1",
   "Name": "POWER SUPPLY A",
   "Status": {
      "State": {
         "ID": 16,
         "Name": "In service"
      },
      "Health": [
         {
            "ID": 5,
            "Name": "OK"
         }
      ]
   }
}
2.6 `/Storage/Devices/{id}/CoolingDevices/`

The `/Storage/Devices/{id}/CoolingDevices/` resource is a collection of five cooling devices, each corresponding to a System Fan inside the OpenFlex Data24. Cooling device 1 represents system fan A, cooling device 2 represents system fan B, and so on.

**HTTP Methods:**

- GET

### Table 41: GET Response Codes

<table>
<thead>
<tr>
<th>Response Code</th>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>200</td>
<td>OK</td>
<td>OK and Device information in the response body + ETag Header</td>
</tr>
<tr>
<td>304</td>
<td>Not Modified</td>
<td>If-None-Match Etag value matched, therefore no Response Body will be returned</td>
</tr>
<tr>
<td>401</td>
<td>Unauthorized</td>
<td>Unauthorized; credential entry failed or missing</td>
</tr>
<tr>
<td>404</td>
<td>Not Found</td>
<td>Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource</td>
</tr>
<tr>
<td>500</td>
<td>Internal Server Error</td>
<td>System could not process the request</td>
</tr>
</tbody>
</table>

### Table 42: Collection Attributes

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Possible Values</th>
<th>Description</th>
<th>Type</th>
<th>Mandatory or Optional</th>
<th>User Configurable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self</td>
<td>Free-Form URI</td>
<td>Describes the fully qualified URI link</td>
<td>URI</td>
<td>Mandatory</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>Format 256 Chars</td>
<td></td>
<td>String</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Members</td>
<td>Resource Collection (0 - n entries)</td>
<td>The array of resource instances. See Table 43: Instance Attributes (page 52)</td>
<td>String Array</td>
<td>Mandatory</td>
<td>No</td>
</tr>
</tbody>
</table>

### Table 43: Instance Attributes

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Possible Values</th>
<th>Description</th>
<th>Type</th>
<th>Mandatory or Optional</th>
<th>User Configurable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self</td>
<td>Free-Form URI</td>
<td>Describes the fully qualified URI link</td>
<td>URI</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td>Format 256 Chars</td>
<td></td>
<td>String</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Attribute | Possible Values | Description | Type | Mandatory or Optional | User Configurable
---|---|---|---|---|---
ID | Free-Form 256 Chars | The resource identifier that is unique in space and time. | String | ✓ | ✗
Name | Free-Form 256 Chars | The user-defined Friendly Name for this Resource. | String | ✓ | ✓
Status.State.ID | See State Name and ID Definitions (page 11) | The current state value map of this Resource. ID corresponds to Name | Number | ✓ | ✗
Status.State.Name | See State Name and ID Definitions (page 11) | The current state value of this Resource. Name corresponds to ID | String | ✓ | ✗
Status.Health[].ID | See Health Name and ID Definitions (page 12) | The current health value map of this Resource. There can be 1 or more Id entries. ID corresponds to Name | Number (1..*) | ✓ | ✗
Status.Health[].Name | See Health Name and ID Definitions (page 12) | The current health value of this Resource. There can be 1 or more Name entries. Name corresponds to ID | String (1..*) | ✓ | ✗

GET /Storage/Devices/{id}/CoolingDevices/ and /Storage/Devices/{id}/CoolingDevices/{id}/

**Table 44: GET Request Headers**

<table>
<thead>
<tr>
<th>Header</th>
<th>Mandatory or Optional</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Authorization</td>
<td>Mandatory</td>
<td>The request requires either Basic or Digest authorization</td>
</tr>
<tr>
<td>Header</td>
<td>Mandatory or Optional</td>
<td>Description</td>
</tr>
<tr>
<td>--------------</td>
<td>----------------------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>If-None-Match</td>
<td>Optional</td>
<td>The request is conditionally processed only if the current ETag for the resource does not match the ETag passed in this header</td>
</tr>
</tbody>
</table>

Example GET curl Command (Collection)

```
```

Example GET Response Body (Collection)

```json
{
    "Members": [
        {
            "ID": "1",
            "Name": "COOLING FRU A",
            "Status": {
                "State": {
                    "ID": 16,
                    "Name": "In service"
                },
                "Health": [
                    {
                        "ID": 5,
                        "Name": "OK"
                    }
                ]
            }
        },
        {
            "ID": "2",
            "Name": "COOLING FRU B",
            "Status": {
                "State": {
                    "ID": 16,
                    "Name": "In service"
                },
                "Health": [
                    {
                        "ID": 5,
                        "Name": "OK"
                    }
                ]
            }
        },
        {
            "ID": "3",
            "Name": "COOLING FRU C",
            "Status": {
                "State": {
```
Example GET curl Command (Single Resource)


Example GET Response Body (Single Resource)

{
  "ID": 16,
  "Name": "In service"
}"Health": [
  {
    "ID": 5,
    "Name": "OK"
  }
]
  "ID": "4",
  "Name": "COOLING FRU D",
  "Status": {
    "State": {
      "ID": 16,
      "Name": "In service"
    },
    "Health": [
      {
        "ID": 5,
        "Name": "OK"
      }
    ]
  }
  "ID": "5",
  "Name": "COOLING FRU E",
  "Status": {
    "State": {
      "ID": 16,
      "Name": "In service"
    },
    "Health": [
      {
        "ID": 5,
        "Name": "OK"
      }
    ]
  }
]
"ID": "1",
"Name": "COOLING FRU A",
"Status": {
    "State": {
        "ID": 16,
        "Name": "In service"
    },
    "Health": [
        {
            "ID": 5,
            "Name": "OK"
        }
    ]
}

Table 45: GET Response Codes

<table>
<thead>
<tr>
<th>Response Code</th>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>200</td>
<td>OK</td>
<td>OK and Device information in the response body + ETag Header</td>
</tr>
<tr>
<td>304</td>
<td>Not Modified</td>
<td>If-None-Match Etag value matched, therefore no Response Body will be returned</td>
</tr>
<tr>
<td>401</td>
<td>Unauthorized</td>
<td>Unauthorized; credential entry failed or missing</td>
</tr>
<tr>
<td>404</td>
<td>Not Found</td>
<td>Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource</td>
</tr>
<tr>
<td>500</td>
<td>Internal Server Error</td>
<td></td>
</tr>
</tbody>
</table>

2.7 /Storage/Devices/{id}/Sensors/

HTTP Methods:  

GET

Table 46: Collection Attributes

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Possible Values</th>
<th>Description</th>
<th>Type</th>
<th>Mandatory or Optional</th>
<th>User Configurable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self</td>
<td>Free-Form URI Format 256 Chars</td>
<td>Describes the fully qualified URI link</td>
<td>URI String</td>
<td>Mandatory</td>
<td>No</td>
</tr>
<tr>
<td>Members</td>
<td>Resource Collection (0 - n entries)</td>
<td>The array of resource instances. See Table 47: Instance Attributes (page 56)</td>
<td>String Array</td>
<td>Mandatory</td>
<td>No</td>
</tr>
</tbody>
</table>
### Table 47: Instance Attributes

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Possible Values</th>
<th>Description</th>
<th>Type</th>
<th>Mandatory or Optional</th>
<th>User Configurable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self</td>
<td>Free-Form URI Format 256 Chars</td>
<td>Describes the fully qualified URI link</td>
<td>URI String</td>
<td>✔</td>
<td>☒</td>
</tr>
<tr>
<td>ID</td>
<td>Free-Form 256 Chars</td>
<td>The resource identifier that is unique in space and time</td>
<td>String</td>
<td>✔</td>
<td>☒</td>
</tr>
<tr>
<td>Name</td>
<td>Free-Form 256 Chars</td>
<td>The user-defined Friendly Name for this Resource.</td>
<td>String</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Status.State.ID</td>
<td>See State Name and ID Definitions (page 11)</td>
<td>The current state value map of this Resource. ID corresponds to Name</td>
<td>Number</td>
<td>✔</td>
<td>☒</td>
</tr>
<tr>
<td>Status.State.Name</td>
<td>See State Name and ID Definitions (page 11)</td>
<td>The current state value of this Resource. Name corresponds to ID</td>
<td>String</td>
<td>✔</td>
<td>☒</td>
</tr>
<tr>
<td>Status.Health[].ID</td>
<td>See Health Name and ID Definitions (page 12)</td>
<td>The current health value map of this Resource. There can be 1 or more Id entries. ID corresponds to Name</td>
<td>Number (1..*)</td>
<td>✔</td>
<td>☒</td>
</tr>
<tr>
<td>Status.Health[].Name</td>
<td>See Health Name and ID Definitions (page 12)</td>
<td>The current health value of this Resource. There can be 1 or more Name entries. Name corresponds to ID</td>
<td>String (1..*)</td>
<td>✔</td>
<td>☒</td>
</tr>
<tr>
<td>SensorType.ID</td>
<td>2, 4, 5</td>
<td>The sensor type value map. ID corresponds to Name</td>
<td>Number</td>
<td>✔</td>
<td>☒</td>
</tr>
<tr>
<td>SensorType.Name</td>
<td>&quot;Temperature&quot;, &quot;Current&quot;, &quot;Voltage&quot;</td>
<td>The sensor type value. Name corresponds to ID</td>
<td>String</td>
<td>✔</td>
<td>☒</td>
</tr>
<tr>
<td>CurrentReading</td>
<td>Signed Integer</td>
<td>The current reading value for the sensor</td>
<td>Number</td>
<td>✔</td>
<td>☒</td>
</tr>
</tbody>
</table>
### Attribute | Possible Values | Description | Type | Mandatory or Optional | User Configurable |
--- | --- | --- | --- | --- | --- |
BaseUnits.ID | 2, 3 | The base units value map for the sensor current reading. ID corresponds to Name | Number | ✓ | ✗ |
BaseUnits.Name | "Degrees C", "Degrees F" | The base units value for the sensor current reading. Name corresponds to ID | String | ✓ | ✗ |
RateUnits.ID | 0 | The rate units value map for the sensor current reading. ID corresponds to Name | Number | ✓ | ✗ |
RateUnits.Name | "None" | The rate units value for the sensor current reading. Name corresponds to ID | String | ✓ | ✗ |
UnitModifier | Signed Integer | The unit modifier for the sensor current reading | Number | ✓ | ✗ |
Media | Free-Form URI Format 256 Chars | In the case of a Sensor for a Media resource, the Media link association is presented | URI | ✓ | ✗ |

### GET /Storage/Devices/{id}/Sensors/ and /Storage/Devices/{id}/Sensors/{id}/

**Table 48:** GET Request Headers

<table>
<thead>
<tr>
<th>Header</th>
<th>Mandatory or Optional</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Authorization</td>
<td>Mandatory</td>
<td>The request requires either Basic or Digest authorization</td>
</tr>
<tr>
<td>If-None-Match</td>
<td>Optional</td>
<td>The request is conditionally processed only if the current ETag for the resource does not match the ETag passed in this header</td>
</tr>
</tbody>
</table>

**Example GET curl Command (Collection)**

```bash
```

**Example GET Response Body (Collection)**

```json
{
```
"Members": [
    {
        "ID": "TEMP_DRIVE_01_2_1",
        "Name": "TEMP DRIVE 01",
        "Status": {
            "State": {
                "ID": 16,
                "Name": "In service"
            },
            "Health": [
                {
                    "ID": 5,
                    "Name": "OK"
                }
            ]
        },
        "SensorType": {
            "ID": 2,
            "Name": "Temperature"
        },
        "CurrentReading": 29,
        "BaseUnits": {
            "ID": 2,
            "Name": "Degrees C"
        },
        "RateUnits": {
            "ID": 0,
            "Name": "None"
        },
        "UnitModifier": 0,
        "Media": "http://10.20.30.40:80/Storage/Devices/0123456789/Media/?sensorid=TEMP_DRIVE_01_2_1"
    },
    {
        "ID": "TEMP_DRIVE_02_2_2",
        "Name": "TEMP DRIVE 02",
        "Status": {
            "State": {
                "ID": 16,
                "Name": "In service"
            },
            "Health": [
                {
                    "ID": 5,
                    "Name": "OK"
                }
            ]
        },
        "SensorType": {
            "ID": 2,
            "Name": "Temperature"
        },
        "CurrentReading": 29,
        "BaseUnits": {
            "ID": 2,
            "Name": "Degrees C"
        },
        "RateUnits": {
            "ID": 0,
            "Name": "None"
        },
        "UnitModifier": 0,
        "Media": "http://10.20.30.40:80/Storage/Devices/0123456789/Media/?sensorid=TEMP_DRIVE_02_2_2"
    }
]
Example GET curl Command (Single Resource)


Example GET Response Body (Single Resource)

```json
{
    "ID": "TEMP_DRIVE_01_2_1",
    "Name": "TEMP DRIVE 01",
    "Status": {
        "State": {
            "ID": 16,
            "Name": "In service"
        },
        "Health": [
            {
                "ID": 5,
                "Name": "OK"
            }
        ]
    },
    "SensorType": {
        "ID": 2,
        "Name": "Temperature"
    },
    "CurrentReading": 30,
    "BaseUnits": {
        "ID": 2,
        "Name": "Degrees C"
    },
    "RateUnits": {
        "ID": 0,
        "Name": "None"
    },
    "UnitModifier": 0,
    "Media": "http://10.20.30.40:80/Storage/Devices/0123456789/Media/?sensorid=TEMP_DRIVE_01_2_1"
}
```
### Table 49: GET Response Codes

<table>
<thead>
<tr>
<th>Response Code</th>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>200</td>
<td>OK</td>
<td>OK and Device information in the response body + ETag Header</td>
</tr>
<tr>
<td>304</td>
<td>Not Modified</td>
<td>If-None-Match Etag value matched, therefore no Response Body will be returned</td>
</tr>
<tr>
<td>401</td>
<td>Unauthorized</td>
<td>Unauthorized; credential entry failed or missing</td>
</tr>
<tr>
<td>404</td>
<td>Not Found</td>
<td>Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource</td>
</tr>
<tr>
<td>429</td>
<td>Too Many Requests</td>
<td>Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource indicates API service is busy, client should try again later</td>
</tr>
<tr>
<td>500</td>
<td>Internal Server Error</td>
<td>System could not process the request</td>
</tr>
</tbody>
</table>

### 2.8 /Storage/Devices/{id}/Media/

**HTTP Methods:**

- GET
- PUT

### Table 50: Collection Attributes

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Possible Values</th>
<th>Description</th>
<th>Type</th>
<th>Mandatory or Optional</th>
<th>User Configurable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self</td>
<td>Free-Form</td>
<td>Describes the fully qualified URI link</td>
<td>URI</td>
<td>✓</td>
<td>×</td>
</tr>
<tr>
<td></td>
<td>URI Format</td>
<td></td>
<td>String</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>256 Chars</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Members</td>
<td>Resource</td>
<td>The array of resource instances. See Table 51: Instance Attributes (page 61)</td>
<td>String Array</td>
<td>×</td>
<td>×</td>
</tr>
<tr>
<td></td>
<td>Collection (0-n entries)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Table 51: Instance Attributes

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Possible Values</th>
<th>Description</th>
<th>Type</th>
<th>Mandatory or Optional</th>
<th>User Configurable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self</td>
<td>Free-Form</td>
<td>Describes the fully qualified URI link</td>
<td>URI</td>
<td>Mandatory</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>URI Format</td>
<td></td>
<td>String</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>256 Chars</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ID</td>
<td>Free-Form</td>
<td>The resource identifier that is unique in space and time</td>
<td>String</td>
<td>Mandatory</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>256 Chars</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Attribute</td>
<td>Possible Values</td>
<td>Description</td>
<td>Type</td>
<td>Mandatory or Optional</td>
<td>User Configurable</td>
</tr>
<tr>
<td>-----------------</td>
<td>-----------------</td>
<td>-----------------------------------------------------------------------------</td>
<td>---------</td>
<td>-----------------------</td>
<td>-------------------</td>
</tr>
<tr>
<td>Name</td>
<td>Free-Form 256 Chars</td>
<td>The user-defined Friendly Name for this Resource.</td>
<td>String</td>
<td>Mandatory</td>
<td>Yes</td>
</tr>
<tr>
<td>PowerState.ID</td>
<td>2, 6</td>
<td>Displays the current power state of the Media instance. Also, used to change the power state of the resource. ID corresponds to Name.</td>
<td>Number</td>
<td>Mandatory</td>
<td>Yes</td>
</tr>
<tr>
<td>PowerState.Name</td>
<td>&quot;On&quot;, &quot;Off&quot;</td>
<td>Displays the current power state of the Media instance. Name corresponds to ID.</td>
<td>String</td>
<td>Mandatory</td>
<td>No</td>
</tr>
<tr>
<td>Status.State.ID</td>
<td>See State Name and ID Definitions (page 11)</td>
<td>The current state value map of this Resource. ID corresponds to Name</td>
<td>Number</td>
<td>Mandatory</td>
<td>No</td>
</tr>
<tr>
<td>Status.State.Name</td>
<td>See State Name and ID Definitions (page 11)</td>
<td>The current state value of this Resource. ID corresponds to Name</td>
<td>String</td>
<td>Mandatory</td>
<td>No</td>
</tr>
<tr>
<td>Status.Health[].ID</td>
<td>See Health Name and ID Definitions (page 12)</td>
<td>The current health value map of this Resource. There can be 1 or more ID entries. ID corresponds to Name</td>
<td>Number (1..*)</td>
<td>Mandatory</td>
<td>No</td>
</tr>
<tr>
<td>Status.Health[].Name</td>
<td>See Health Name and ID Definitions (page 12)</td>
<td>The current health value of this Resource. There can be 1 or more Name entries. Name corresponds to ID</td>
<td>String (1..*)</td>
<td>Mandatory</td>
<td>No</td>
</tr>
<tr>
<td>Capacity</td>
<td>Integer value in &quot;bytes&quot;</td>
<td>Displays total capacity of the Media instance in bytes</td>
<td>Number</td>
<td>Mandatory</td>
<td>No</td>
</tr>
<tr>
<td>Manufacturer</td>
<td>Free-Form 64 Chars</td>
<td>The vendor name for this Resource</td>
<td>String</td>
<td>Mandatory</td>
<td>No</td>
</tr>
<tr>
<td>Protocol.ID</td>
<td>65537</td>
<td>The Media instance protocol type. ID corresponds to Name</td>
<td>Number</td>
<td>Mandatory</td>
<td>No</td>
</tr>
<tr>
<td>Protocol.Name</td>
<td>&quot;NVMe&quot;</td>
<td>The Media instance protocol type. Name corresponds to ID</td>
<td>String</td>
<td>Mandatory</td>
<td>No</td>
</tr>
<tr>
<td>Attribute</td>
<td>Possible Values</td>
<td>Description</td>
<td>Type</td>
<td>Mandatory or Optional</td>
<td>User Configurable</td>
</tr>
<tr>
<td>-------------</td>
<td>----------------</td>
<td>--------------------------------------------------</td>
<td>----------</td>
<td>-----------------------</td>
<td>-------------------</td>
</tr>
<tr>
<td>Sensors</td>
<td>Free-Form URI Format 256 Chars with query string for this Media instance</td>
<td>Sensor link association for this Media instance</td>
<td>URI String</td>
<td>Mandatory</td>
<td>No</td>
</tr>
</tbody>
</table>

GET `/Storage/Devices/{id}/Media/` and `/Storage/Devices/{id}/Media/{id}/`

Table 52: GET Request Headers

<table>
<thead>
<tr>
<th>Header</th>
<th>Mandatory or Optional</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Authorization</td>
<td>Mandatory</td>
<td>The request requires either Basic or Digest authorization</td>
</tr>
<tr>
<td>If-None-Match</td>
<td>Optional</td>
<td>The request is conditionally processed only if the current ETag for the resource does not match the ETag passed in this header</td>
</tr>
</tbody>
</table>

Example GET curl Command (Collection)


Example GET Response Body (Collection)

```json
{
  "Members": [
    {
      "Self": "http://10.20.30.40:80/Storage/Devices/0123456789/Media/1/",
      "ID": "1",
      "Name": "DEVICE 1",
      "PowerState": {
        "ID": 2,
        "Name": "On"
      },
      "Status": {
        "State": {
          "ID": 16,
          "Name": "In service"
        },
        "Health": [
          {
            "ID": 5,
            "Name": "OK"
          }
        ]
      },
      "Capacity": 3840755982336,
      "Manufacturer": "WestDigi",
      "Protocol": {
        "ID": 65537,
```
"Name": "NVMe"
},
},
{
"ID": "2",
"Name": "DEVICE 2",
"PowerState": {
  "ID": 2,
  "Name": "On"
},
"Status": {
  "State": {
    "ID": 16,
    "Name": "In service"
  },
  "Health": [
    {
      "ID": 5,
      "Name": "OK"
    }
  ]
},
"Capacity": 3840755982336,
"Manufacturer": "WestDigi",
"Protocol": {
  "ID": 65537,
  "Name": "NVMe"
},
},
{
...
}
]}

Example GET curl Command (Single Resource)

```
curl -i -u admin:admin -X GET http://10.20.30.40/Storage/Devices/0123456789/Media/1/
```

Example GET Response Body (Single Resource)

```json
{
  "Self": "http://10.20.30.40:80/Storage/Devices/0123456789/Media/1/",
  "ID": "1",
  "Name": "DEVICE 1",
  "PowerState": {
    "ID": 2,
    "Name": "On"
  },
  "Status": {
    "State": {
      "ID": 16,
      "Name": "In service"
    }
  }
}
"Health": [
  {
    "ID": 5,
    "Name": "OK"
  }
]

"Capacity": 3840755982336,
"Manufacturer": "WestDigi",
"Protocol": {
  "ID": 65537,
  "Name": "NVMe"
},


<table>
<thead>
<tr>
<th>Table 53: GET Response Codes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Response Code</strong></td>
</tr>
<tr>
<td>-------------------</td>
</tr>
<tr>
<td>200</td>
</tr>
<tr>
<td>304</td>
</tr>
<tr>
<td>401</td>
</tr>
<tr>
<td>404</td>
</tr>
<tr>
<td>500</td>
</tr>
</tbody>
</table>

**PUT /Storage/Devices/{id}/Media/{id}/**

<table>
<thead>
<tr>
<th>Table 54: PUT Request Headers</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Header</strong></td>
</tr>
<tr>
<td>-------------</td>
</tr>
<tr>
<td>Authorization</td>
</tr>
<tr>
<td>If-Match</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Table 55: PUT Data Options</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Syntax</strong></td>
</tr>
<tr>
<td>&quot;Name&quot;: &quot;new_name&quot;</td>
</tr>
<tr>
<td>&quot;PowerState&quot;: {&quot;ID&quot;: 2</td>
</tr>
</tbody>
</table>

**Example PUT curl Command**
Note: The If-Match conditional in the PUT command requires the ETag from the GET Response Header.

Table 56: PUT Response Codes

<table>
<thead>
<tr>
<th>Response Code</th>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>200</td>
<td>OK</td>
<td>OK and Account information in the response body + ETag Header</td>
</tr>
<tr>
<td>400</td>
<td>Bad Request</td>
<td>Bad Request (typically a faulty parameter)</td>
</tr>
<tr>
<td>401</td>
<td>Unauthorized</td>
<td>Unauthorized; credential entry failed or missing</td>
</tr>
<tr>
<td>404</td>
<td>Not Found</td>
<td>The resource doesn’t exist</td>
</tr>
<tr>
<td>409</td>
<td>Conflict</td>
<td>A new parameter value already exists (e.g., Name)</td>
</tr>
<tr>
<td>412</td>
<td>Precondition Failed</td>
<td>Indicates the “If-Match” Etag check failed</td>
</tr>
<tr>
<td>428</td>
<td>Precondition Required</td>
<td>Indicates the need for an “If-Match” conditional with an Etag value in the Request Header</td>
</tr>
<tr>
<td>429</td>
<td>Too Many Requests</td>
<td>Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource indicates API service is busy, client should try again later</td>
</tr>
<tr>
<td>500</td>
<td>Internal Server Error</td>
<td>System could not process the request</td>
</tr>
</tbody>
</table>

2.9 /Storage/Devices/{id}/OperatingSystem/

HTTP Methods: **GET**  **POST**

Table 57: Attributes

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Possible Values</th>
<th>Description</th>
<th>Type</th>
<th>Mandatory or Optional</th>
<th>User Configurable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self</td>
<td>Free-Form URI Format 256 Chars</td>
<td>Describes the fully qualified URI link</td>
<td>String</td>
<td>☑</td>
<td>☑</td>
</tr>
<tr>
<td>Name</td>
<td>Free-Form 128 Chars</td>
<td>The Operating System or Firmware name</td>
<td>String</td>
<td>☑</td>
<td>☑</td>
</tr>
<tr>
<td>OSType.ID</td>
<td>Depends on Operating System Type</td>
<td>The Operating System Type value map. ID corresponds to Name</td>
<td>Number</td>
<td>☑</td>
<td>☑</td>
</tr>
</tbody>
</table>
### Open Composable API Reference

#### 2. Storage Device API Reference

#### 2.9 /Storage/Devices/{id}/OperatingSystem/

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Possible Values</th>
<th>Description</th>
<th>Type</th>
<th>Mandatory or Optional</th>
<th>User Configurable</th>
</tr>
</thead>
<tbody>
<tr>
<td>OSType.Name</td>
<td>Depends on Operating System Type</td>
<td>The Operating System Type value. Name corresponds to ID</td>
<td>String</td>
<td>✓</td>
<td>✗</td>
</tr>
<tr>
<td>Version</td>
<td>Free-Form 128 Chars</td>
<td>The Operating System or Firmware Version</td>
<td>String</td>
<td>✓</td>
<td>✗</td>
</tr>
</tbody>
</table>

**GET /Storage/Devices/{id}/OperatingSystem/**

**Table 58: GET Request Headers**

<table>
<thead>
<tr>
<th>Header</th>
<th>Mandatory or Optional</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Authorization</td>
<td>Mandatory</td>
<td>The request requires either Basic or Digest authorization</td>
</tr>
<tr>
<td>If-None-Match</td>
<td>Optional</td>
<td>The request is conditionally processed only if the current ETag for the resource does not match the ETag passed in this header</td>
</tr>
</tbody>
</table>

**Example GET curl Command**

```
```

**Example GET Response Body**

```
{
    "Name": "Vendor Firmware",
    "OSType": {
        "ID": 59,
        "Name": "Dedicated"
    },
    "Version": "0.1.0"
}
```

**Table 59: GET Response Codes**

<table>
<thead>
<tr>
<th>Response Code</th>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>200</td>
<td>OK</td>
<td>OK and Device information in the response body + ETag Header</td>
</tr>
<tr>
<td>304</td>
<td>Not Modified</td>
<td>If-None-Match Etag value matched, therefore no Response Body will be returned</td>
</tr>
<tr>
<td>401</td>
<td>Unauthorized</td>
<td>Unauthorized; credential entry failed or missing</td>
</tr>
<tr>
<td>404</td>
<td>Not Found</td>
<td>Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource</td>
</tr>
</tbody>
</table>
### 2.10 /Storage/Devices/{id}/Accounts/

#### POST /Storage/Devices/{id}/Accounts/

**Table 60: POST Request Headers**

<table>
<thead>
<tr>
<th>Header</th>
<th>Mandatory or Optional</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Authorization</td>
<td>Mandatory</td>
<td>The request requires either Basic or Digest authorization</td>
</tr>
<tr>
<td>If-Match</td>
<td>Mandatory</td>
<td>The request is conditionally processed only if the current ETag for the resource matches the ETag passed in this header</td>
</tr>
</tbody>
</table>

**Example POST curl Command**

```bash
```

**Table 61: POST Response Codes**

<table>
<thead>
<tr>
<th>Response Code</th>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>201</td>
<td>Created</td>
<td>Created &amp; Account information in the response body + ETag Header + new URI in Location Header</td>
</tr>
<tr>
<td>400</td>
<td>Bad Request</td>
<td>Bad Request (typically a faulty parameter)</td>
</tr>
<tr>
<td>401</td>
<td>Unauthorized</td>
<td>Unauthorized; credential entry failed or missing</td>
</tr>
<tr>
<td>409</td>
<td>Conflict</td>
<td>A new parameter value already exists (e.g., Name)</td>
</tr>
<tr>
<td>429</td>
<td>Too Many Requests</td>
<td>Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource indicates API service is busy, client should try again later</td>
</tr>
<tr>
<td>500</td>
<td>Internal Server Error</td>
<td>System could not process the request</td>
</tr>
</tbody>
</table>

### 2.10 /Storage/Devices/{id}/Accounts/

**HTTP Methods:**

- **GET**
- **PUT**
- **POST**
- **DELETE**
### Table 62: Collection Attributes

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Possible Values</th>
<th>Description</th>
<th>Type</th>
<th>Mandatory or Optional</th>
<th>User Configurable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self</td>
<td>Free-Form URI Format 256 Chars</td>
<td>Describes the fully qualified URI link</td>
<td>URI String</td>
<td>Mandatory</td>
<td>No</td>
</tr>
<tr>
<td>PasswordValidations.Members[].Description</td>
<td>Free-Form Chars</td>
<td>User-defined description of the associated regular expression entry in &quot;Pattern&quot;. Description corresponds to Pattern.</td>
<td>String</td>
<td>Mandatory</td>
<td>Yes</td>
</tr>
</tbody>
</table>
| PasswordValidations.Members[].Pattern | Regex Format Pattern - see default patterns | User-defined regular expression pattern for the Password entry to comply. Defaults include the following requirements:  
- 8 or more characters (^\S\{8,32\}$)  
- 1 or more lower case characters ([a-z]*)  
- 1 or more upper case characters ([A-Z]*)  
- 1 or more special chars ([!#$%'()*+,-./:;=?@\[\]^\{_|\~]  
- 1 or more numbers ([0-9])  
Pattern corresponds to Description. | String        | Mandatory             | Yes               |
| Members                           | Resource Collection (0 - n entries)  | The array of resource instances. See Table 63: Instance Attributes (page 69) | String Array  | Optional              | No                |

### Table 63: Instance Attributes

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Possible Values</th>
<th>Description</th>
<th>Type</th>
<th>Mandatory or Optional</th>
<th>User Configurable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self</td>
<td>Free-Form URI Format 256 Chars</td>
<td>Describes the fully qualified URI link</td>
<td>URI String</td>
<td>✓</td>
<td>✗</td>
</tr>
<tr>
<td>ID</td>
<td>Free-Form 64 Chars</td>
<td>The Identifier this particular Account</td>
<td>String</td>
<td>✓</td>
<td>✗</td>
</tr>
</tbody>
</table>
### Attribute | Possible Values | Description | Type | Mandatory or Optional | User Configurable
--- | --- | --- | --- | --- | ---
BasicAuthentication.UserPasswordSHA1Checksum | Free-Form 128 Characters | The basic authentication checksum | String | ✓ | ✓
DigestAuthentication.UserPasswordMD5Checksum | Free-Form 128 Characters | The digest authentication checksum | String | ✓ | ✓
DigestAuthentication.Realm | Free-Form 128 Characters | The digest authentication realm | String | ✓ | ✓
JWTAuthentication.UserPasswordMD5Checksum | Free-Form 128 Chars | The JSON Web Token (JWT) authentication checksum | String | ✓ | ✓
Role.ID | 0, 1 | The Role type value for this Account. ID corresponds to Name | Number | ✓ | ✓
Role.Name | "Admin", "ReadOnly" | The Role type string for this Account. Name corresponds to ID | String | ✓ | ✓
UserId | Free-Form 64 Chars | The user identifier for this Account | String | ✓ | ✓

### GET /Storage/Devices/{id}/Accounts/ and /Storage/Devices/{id}/Accounts/{id}/

**Table 64: GET Request Headers**

<table>
<thead>
<tr>
<th>Header</th>
<th>Mandatory or Optional</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Authorization</td>
<td>Mandatory</td>
<td>The request requires either Basic or Digest authorization</td>
</tr>
<tr>
<td>If-None-Match</td>
<td>Optional</td>
<td>The request is conditionally processed only if the current ETag for the resource does not match the ETag passed in this header</td>
</tr>
</tbody>
</table>

**Example GET curl Command (Collection)**

```bash
```

**Example GET Response Body (Collection)**

```json
{
  "PasswordValidations": {
    "Members": [
      
    ]
}```
"Description": "8 or more characters, but not more than 32",
"Pattern": "^[\S]{8,32}$" },

"Description": "one lower case letter required",
"Pattern": "[a-z]"
},

"Description": "one upper case letter required",
"Pattern": "[A-Z]"
},

"Description": "one special character required",
"Pattern": "[!#$%'()*+,-./:;=?@\[\]\]^_{|}~"]
},

"Description": "one number required",
"Pattern": "[0-9]"
]
}

"Members": [
{
"ID": "admin",
"BasicAuthentication": {
  "UserPasswordSHA1Checksum": "{SHA}0DPiKuNIrrVmD8IUCw1hQxNq2c="
},
"DigestAuthentication": {
  "UserPasswordMD5Checksum": "97ebad852d0dabfd6b71ae26fff61fa3",
  "Realm": "Western Digital Corporation"
},
"JWTAuthentication": {
  "UserPasswordMD5Checksum": "b80648545a30e0999892b517127c0e17"
},
"Role": {
  "ID": 0,
  "Name": "Admin"
},
"UserID": "admin"
}
]}

Example GET curl Command (Single Resource)


Example GET Response Body (Single Resouce)

{
  "ID": "admin",
  "BasicAuthentication": {
    "UserPasswordSHA1Checksum": "{SHA}0DPiKuNIrrVmD8IUCw1hQxNq2c="
  },
  "DigestAuthentication": {
    "UserPasswordMD5Checksum": "97ebad852d0dabfd6b71ae26fff61fa3",
    "Realm": "Western Digital Corporation"
  },
  "JWTAuthentication": {
    "UserPasswordMD5Checksum": "b80648545a30e0999892b517127c0e17"
  },
  "Role": {
    "ID": 0,
    "Name": "Admin"
  },
  "UserID": "admin"
}
"Realm": "Western Digital Corporation",
"JWTAuthentication": {
    "UserPasswordMD5Checksum": "b80648545a30e0999892b517127c0e17"
},
"Role": {
    "ID": 0,
    "Name": "Admin"
},
"UserID": "admin"

Table 65: GET Response Codes

<table>
<thead>
<tr>
<th>Response Code</th>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>200</td>
<td>OK</td>
<td>OK and Device information in the response body + ETag Header</td>
</tr>
<tr>
<td>304</td>
<td>Not Modified</td>
<td>If-None-Match Etag value matched, therefore no Response Body will be returned</td>
</tr>
<tr>
<td>401</td>
<td>Unauthorized</td>
<td>Unauthorized; credential entry failed or missing</td>
</tr>
<tr>
<td>404</td>
<td>Not Found</td>
<td>Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource</td>
</tr>
<tr>
<td>429</td>
<td>Too Many Requests</td>
<td>Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource indicates API service is busy, client should try again later</td>
</tr>
<tr>
<td>500</td>
<td>Internal Server Error</td>
<td>System could not process the request</td>
</tr>
</tbody>
</table>

PUT /Storage/Devices/{id}/Accounts/{id}/

Table 66: PUT Request Headers

<table>
<thead>
<tr>
<th>Header</th>
<th>Mandatory or Optional</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Authorization</td>
<td>Mandatory</td>
<td>The request requires either Basic or Digest authorization</td>
</tr>
<tr>
<td>If-Match</td>
<td>Mandatory</td>
<td>The request is conditionally processed only if the current ETag for the resource matches the ETag passed in this header</td>
</tr>
</tbody>
</table>

Table 67: PUT Data Options

<table>
<thead>
<tr>
<th>Syntax</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot;UserID&quot;: &quot;userid&quot;</td>
<td>User ID is required as a fail-safe that the client verifies this is the correct account to change</td>
</tr>
<tr>
<td>&quot;BasicAuthentication&quot;: {</td>
<td>Basic Authentication structure (when the API service is started with Basic Auth - default) and passphrase</td>
</tr>
<tr>
<td>&quot;UserPassword&quot;: &quot;new_password&quot; }</td>
<td></td>
</tr>
</tbody>
</table>
2. Storage Device API Reference

2.10 /Storage/Devices/{id}/Accounts/

<table>
<thead>
<tr>
<th>Syntax</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot;DigestAuthentication&quot;: {&quot;UserPassword&quot;:&quot;new_password&quot;}</td>
<td>Digest Authentication structure (when the API service is started with Digest Auth) and passphrase</td>
</tr>
<tr>
<td>&quot;JWTAuthentication&quot;: {&quot;UserPassword&quot;:&quot;new_password&quot;}</td>
<td>JSON Web Token Authentication structure (when the API service is started with JWT Auth) and passphrase</td>
</tr>
<tr>
<td>&quot;Role&quot;: {&quot;ID&quot;: 0</td>
<td>1}</td>
</tr>
</tbody>
</table>

Example PUT curl Command

```
```

Note: The If-Match conditional in the PUT command requires the ETag from the GET Response Header.

Table 68: PUT Response Codes

<table>
<thead>
<tr>
<th>Response Code</th>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>200</td>
<td>OK</td>
<td>OK and Account information in the response body + ETag Header</td>
</tr>
<tr>
<td>400</td>
<td>Bad Request</td>
<td>Bad Request (typically a faulty parameter</td>
</tr>
<tr>
<td>401</td>
<td>Unauthorized</td>
<td>Unauthorized; credential entry failed or missing</td>
</tr>
<tr>
<td>404</td>
<td>Not Found</td>
<td>The resource doesn’t exist</td>
</tr>
<tr>
<td>409</td>
<td>Conflict</td>
<td>A new parameter value already exists (e.g., Name)</td>
</tr>
<tr>
<td>412</td>
<td>Precondition Failed</td>
<td>Indicates the “If-Match” Etag check failed</td>
</tr>
<tr>
<td>428</td>
<td>Precondition Required</td>
<td>Indicates the need for an “If-Match” conditional with an Etag value in the Request Header</td>
</tr>
<tr>
<td>500</td>
<td>Internal Server Error</td>
<td>System could not process the request</td>
</tr>
</tbody>
</table>

POST /Storage/Devices/{id}/Accounts/

Note: POST requests should be sent to the collection object of the resource being created. To make a POST request to the collection of this object, remove the {ID} value at the end of the address.

Table 69: POST Request Headers

<table>
<thead>
<tr>
<th>Header</th>
<th>Mandatory or Optional</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Authorization</td>
<td>Mandatory</td>
<td>The request requires either Basic or Digest authorization</td>
</tr>
</tbody>
</table>
## 2. Storage Device API Reference

### 2.10 /Storage/Devices/{id}/Accounts/

#### Table 70: POST Response Codes

<table>
<thead>
<tr>
<th>Response Code</th>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>201</td>
<td>Created</td>
<td>Created &amp; Account information in the response body + ETag Header + new URI in Location Header</td>
</tr>
<tr>
<td>400</td>
<td>Bad Request</td>
<td>Bad Request (typically a faulty parameter)</td>
</tr>
<tr>
<td>401</td>
<td>Unauthorized</td>
<td>Unauthorized; credential entry failed or missing</td>
</tr>
<tr>
<td>409</td>
<td>Conflict</td>
<td>A new parameter value already exists (e.g., Name)</td>
</tr>
<tr>
<td>429</td>
<td>Too Many Requests</td>
<td>Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource indicates API service is busy, client should try again later</td>
</tr>
<tr>
<td>500</td>
<td>Internal Server Error</td>
<td>System could not process the request</td>
</tr>
</tbody>
</table>

#### DELETE /Storage/Devices/{id}/Accounts/{id}/

#### Table 71: DELETE Request Headers

<table>
<thead>
<tr>
<th>Header</th>
<th>Mandatory or Optional</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>If-Match</td>
<td>Mandatory</td>
<td>The request is conditionally processed only if the current ETag for the resource matches the ETag passed in this header</td>
</tr>
<tr>
<td>Authorization</td>
<td>Mandatory</td>
<td>The request requires either Basic or Digest authorization</td>
</tr>
</tbody>
</table>

#### Example DELETE curl Command

```bash
```

**Note:** The **If-Match** conditional in the DELETE command requires the **ETag** from the GET Response Header.
Note: The last remaining "Admin" role account cannot be deleted to prevent loss of communication with the Device.

Table 72: DELETE Response Codes

<table>
<thead>
<tr>
<th>Response Code</th>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>204</td>
<td>No Content</td>
<td>Delete successful, no content in the response body</td>
</tr>
<tr>
<td>401</td>
<td>Unauthorized</td>
<td>Unauthorized; credential entry failed or missing</td>
</tr>
<tr>
<td>404</td>
<td>Not Found</td>
<td>The Resource doesn't exist</td>
</tr>
<tr>
<td>409</td>
<td>Conflict</td>
<td>In the case of only one account, that last one cannot be deleted</td>
</tr>
<tr>
<td>412</td>
<td>Precondition Failed</td>
<td>Indicates the “If-Match” Etag check failed</td>
</tr>
<tr>
<td>428</td>
<td>Precondition Required</td>
<td>Indicates the need for an “If-Match” conditional with an Etag value in the Request Header</td>
</tr>
<tr>
<td>429</td>
<td>Too Many Requests</td>
<td>Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource indicates API service is busy, client should try again later</td>
</tr>
<tr>
<td>500</td>
<td>Internal Server Error</td>
<td>System could not process the request</td>
</tr>
</tbody>
</table>

2.11 /Storage/Devices/{id}/Location/

HTTP Methods:

- GET
- PUT
- DELETE

Table 73: Attributes

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Possible Values</th>
<th>Description</th>
<th>Type</th>
<th>Mandatory or Optional</th>
<th>User Configurable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self</td>
<td>Free-Form URI Format 256 Chars</td>
<td>Describes the fully qualified URI link</td>
<td>String</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Country</td>
<td>Free-Form 64 Chars</td>
<td>The Country name where this Device is located</td>
<td>String</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Territory</td>
<td>Free-Form 64 Chars</td>
<td>The Territory name where this Device is located</td>
<td>String</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>State</td>
<td>Free-Form 64 Chars</td>
<td>The State name where this Device is located</td>
<td>String</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Attribute</td>
<td>Possible Values</td>
<td>Description</td>
<td>Type</td>
<td>Mandatory or Optional</td>
<td>User Configurable</td>
</tr>
<tr>
<td>-----------</td>
<td>----------------</td>
<td>-------------</td>
<td>------</td>
<td>-----------------------</td>
<td>-------------------</td>
</tr>
<tr>
<td>City</td>
<td>Free-Form 64 Chars</td>
<td>The City name where this Device is located</td>
<td>String</td>
<td>✗</td>
<td>✗</td>
</tr>
<tr>
<td>Address1</td>
<td>Free-Form 64 Chars</td>
<td>The first Address information where this Device is located</td>
<td>String</td>
<td>✗</td>
<td>✗</td>
</tr>
<tr>
<td>Address2</td>
<td>Free-Form 64 Chars</td>
<td>The second Address information where this Device is located as needed</td>
<td>String</td>
<td>✗</td>
<td>✗</td>
</tr>
<tr>
<td>Address3</td>
<td>Free-Form 64 Chars</td>
<td>The third Address information where this Device is located as needed</td>
<td>String</td>
<td>✗</td>
<td>✗</td>
</tr>
<tr>
<td>PostalCode</td>
<td>Free-Form 32 Chars</td>
<td>The Postal or Zip Code name where this Device is located</td>
<td>String</td>
<td>✗</td>
<td>✗</td>
</tr>
<tr>
<td>SiteName</td>
<td>Free-Form 32 Chars</td>
<td>The friendly Site Name</td>
<td>String</td>
<td>✗</td>
<td>✗</td>
</tr>
<tr>
<td>Building</td>
<td>Free-Form 32 Chars</td>
<td>The Building name or number where this Device is located</td>
<td>String</td>
<td>✗</td>
<td>✗</td>
</tr>
<tr>
<td>Room</td>
<td>Free-Form 32 Chars</td>
<td>The Room name or number in the Building where this Device is located</td>
<td>String</td>
<td>✗</td>
<td>✗</td>
</tr>
<tr>
<td>Pod</td>
<td>Free-Form 32 Chars</td>
<td>The Pod name or number in the Room this Device is located as needed</td>
<td>String</td>
<td>✗</td>
<td>✗</td>
</tr>
<tr>
<td>Row</td>
<td>Free-Form 32 Chars</td>
<td>The Row name or number in the Room or Pod this Device is located</td>
<td>String</td>
<td>✗</td>
<td>✗</td>
</tr>
<tr>
<td>Rack</td>
<td>Free-Form 32 Chars</td>
<td>The Rack name or number in the Row this Device is located</td>
<td>String</td>
<td>✗</td>
<td>✗</td>
</tr>
</tbody>
</table>
## Attribute Possible Values Description Type Mandatory or Optional User Configurable

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Possible Values</th>
<th>Description</th>
<th>Type</th>
<th>Mandatory or Optional</th>
<th>User Configurable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shelf</td>
<td>Free-Form 32 Chars</td>
<td>The Shelf name or number of the Rack this Device is located</td>
<td>String</td>
<td>✗</td>
<td>✓</td>
</tr>
<tr>
<td>Device</td>
<td>Free-Form 32 Chars</td>
<td>The Device name or number of the Rack this Device is located</td>
<td>String</td>
<td>✗</td>
<td>✓</td>
</tr>
<tr>
<td>Item</td>
<td>Free-Form 32 Chars</td>
<td>The Item name indicating the Shelf units or dimension for this Device</td>
<td>String</td>
<td>✗</td>
<td>✓</td>
</tr>
<tr>
<td>GPSCoords</td>
<td>Decimal Latitude, Decimal Longitude Format</td>
<td>The GPS coordinates of the location of this Device</td>
<td>String</td>
<td>✗</td>
<td>✓</td>
</tr>
<tr>
<td>OtherLocationInfo</td>
<td>Free-Form 64 Chars</td>
<td>A place-holder for other location information</td>
<td>String</td>
<td>✗</td>
<td>✓</td>
</tr>
</tbody>
</table>

### GET /Storage/Devices/{id}/Location/

**Table 74: GET Request Headers**

<table>
<thead>
<tr>
<th>Header</th>
<th>Mandatory or Optional</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Authorization</td>
<td>Mandatory</td>
<td>The request requires either Basic or Digest authorization</td>
</tr>
<tr>
<td>If-None-Match</td>
<td>Optional</td>
<td>The request is conditionally processed only if the current ETag for the resource does not match the ETag passed in this header</td>
</tr>
</tbody>
</table>

**Example GET curl Command**

```bash
curl -i -u admin:admin -X GET http://10.20.30.40/Storage/Devices/0123456789/Location/
```

**Example GET Response Body**

```
{
    "Self": "http://10.20.30.40/Storage/Devices/0123456789/Location/",
    "Country": "USA",
    "Territory": "",
    "State": "Colorado",
    "City": "Colorado Springs",
    "Address1": "9950 Federal Drive",
    "Address2": "Suite 100",
    "Address3": "",
    "PostalCode": "80921",
```
"SiteName": "WD COS DataCenter 1",
"Building": "100",
"Room": "1",
"Pod": "p2",
"Rack": "r02",
"Shelf": "30",
"Device": "5",
"Item": "Rack Units",
"GPSCoords": "38.9838684,-104.8040493",
"OtherLocationInfo": "This is other info"
}

Table 75: GET Response Codes

<table>
<thead>
<tr>
<th>Response Code</th>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>200</td>
<td>OK</td>
<td>OK and Device information in the response body + ETag Header</td>
</tr>
<tr>
<td>304</td>
<td>Not Modified</td>
<td>If-None-Match Etag value matched, therefore no Response Body will be returned</td>
</tr>
<tr>
<td>401</td>
<td>Unauthorized</td>
<td>Unauthorized; credential entry failed or missing</td>
</tr>
<tr>
<td>404</td>
<td>Not Found</td>
<td>Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource</td>
</tr>
<tr>
<td>429</td>
<td>Too Many Requests</td>
<td>Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource indicates API service is busy, client should try again later</td>
</tr>
<tr>
<td>500</td>
<td>Internal Server Error</td>
<td>System could not process the request</td>
</tr>
</tbody>
</table>

PUT /Storage/Devices/{id}/Location/

Table 76: PUT Request Headers

<table>
<thead>
<tr>
<th>Header</th>
<th>Mandatory or Optional</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Authorization</td>
<td>Mandatory</td>
<td>The request requires either Basic or Digest authorization</td>
</tr>
<tr>
<td>If-Match</td>
<td>Mandatory</td>
<td>The request is conditionally processed only if the current ETag for the resource matches the ETag passed in this header</td>
</tr>
</tbody>
</table>

Table 77: PUT Data Options

<table>
<thead>
<tr>
<th>Syntax</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot;Country&quot;: &quot;new_country&quot;</td>
<td>Change the Country</td>
</tr>
<tr>
<td>&quot;Territory&quot;: &quot;new_territory&quot;</td>
<td>Change the Territory</td>
</tr>
<tr>
<td>&quot;State&quot;: &quot;new_state&quot;</td>
<td>Change the State</td>
</tr>
<tr>
<td>&quot;City&quot;: &quot;new_city&quot;</td>
<td>Change the City</td>
</tr>
</tbody>
</table>
### Syntax

<table>
<thead>
<tr>
<th>Syntax</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot;Address1&quot;: &quot;new_addr1&quot;</td>
<td>Change the Address 1</td>
</tr>
<tr>
<td>&quot;Address2&quot;: &quot;new_addr2&quot;</td>
<td>Change the Address 2</td>
</tr>
<tr>
<td>&quot;Address3&quot;: &quot;new_addr3&quot;</td>
<td>Change the Address 3</td>
</tr>
<tr>
<td>&quot;PostalCode&quot;: &quot;new_zip&quot;</td>
<td>Change the Postal Code</td>
</tr>
<tr>
<td>&quot;SiteName&quot;: &quot;new_name&quot;</td>
<td>Change the Site Name</td>
</tr>
<tr>
<td>&quot;Building&quot;: &quot;new_bldg&quot;</td>
<td>Change the Building number or name</td>
</tr>
<tr>
<td>&quot;Room&quot;: &quot;new_room&quot;</td>
<td>Change the Room number or name</td>
</tr>
<tr>
<td>&quot;Pod&quot;: &quot;new_pod&quot;</td>
<td>Change the Pod number or name</td>
</tr>
<tr>
<td>&quot;Rack&quot;: &quot;new_row&quot;</td>
<td>Change the Row number or name</td>
</tr>
<tr>
<td>&quot;Shelf&quot;: &quot;new_shelf&quot;</td>
<td>Change the Shelf number or name</td>
</tr>
<tr>
<td>&quot;Device&quot;: &quot;new_device&quot;</td>
<td>Change the Device number or name</td>
</tr>
<tr>
<td>&quot;Item&quot;: &quot;new_item&quot;</td>
<td>Change the Item</td>
</tr>
<tr>
<td>&quot;GPSCoords&quot;: &quot;new_coords&quot;</td>
<td>Change the GPS coordinates</td>
</tr>
<tr>
<td>&quot;OtherLocationInfo&quot;: &quot;new_info&quot;</td>
<td>Change the other location information</td>
</tr>
</tbody>
</table>

### Example PUT curl Command

```bash
```

**Note:** The `If-Match` conditional in the PUT command requires the ETag from the GET Response Header.

### Table 78: PUT Response Codes

<table>
<thead>
<tr>
<th>Response Code</th>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>200</td>
<td>OK</td>
<td>OK and Account information in the response body + ETag Header</td>
</tr>
<tr>
<td>400</td>
<td>Bad Request</td>
<td>Bad Request (typically a faulty parameter)</td>
</tr>
<tr>
<td>401</td>
<td>Unauthorized</td>
<td>Unauthorized; credential entry failed or missing</td>
</tr>
<tr>
<td>404</td>
<td>Not Found</td>
<td>The resource doesn’t exist</td>
</tr>
<tr>
<td>409</td>
<td>Conflict</td>
<td>A new parameter value already exists (e.g., Name)</td>
</tr>
<tr>
<td>412</td>
<td>Precondition Failed</td>
<td>Indicates the &quot;If-Match&quot; Etag check failed</td>
</tr>
<tr>
<td>428</td>
<td>Precondition Required</td>
<td>Indicates the need for an &quot;If-Match&quot; conditional with an Etag value in the Request Header</td>
</tr>
<tr>
<td>Response Code</td>
<td>Name</td>
<td>Definition</td>
</tr>
<tr>
<td>---------------</td>
<td>--------------------</td>
<td>-------------------------------------------------</td>
</tr>
<tr>
<td>500</td>
<td>Internal Server Error</td>
<td>System could not process the request</td>
</tr>
</tbody>
</table>

**DELETE /Storage/Devices/{id}/Location/**

**Table 79: DELETE Request Headers**

<table>
<thead>
<tr>
<th>Header</th>
<th>Mandatory or Optional</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>If-Match</td>
<td>Mandatory</td>
<td>The request is conditionally processed only if the current ETag for the resource matches the ETag passed in this header</td>
</tr>
<tr>
<td>Authorization</td>
<td>Mandatory</td>
<td>The request requires either Basic or Digest authorization</td>
</tr>
</tbody>
</table>

**Example DELETE curl Command**

```
curl -i -u admin:admin -H "If-Match: 3677651d2011428f32120a029b015e81" -X DELETE http://10.20.30.40/Storage/Devices/0123456789/Location/  
```

**Note:** The If-Match conditional in the DELETE command requires the ETag from the GET Response Header.

**Table 80: DELETE Response Codes**

<table>
<thead>
<tr>
<th>Response Code</th>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>204</td>
<td>No Content</td>
<td>Delete successful, no content in the response body</td>
</tr>
<tr>
<td>401</td>
<td>Unauthorized</td>
<td>Unauthorized; credential entry failed or missing</td>
</tr>
<tr>
<td>404</td>
<td>Not Found</td>
<td>The Resource doesn’t exist</td>
</tr>
<tr>
<td>409</td>
<td>Conflict</td>
<td>In the case of only one account, that last one cannot be deleted</td>
</tr>
<tr>
<td>412</td>
<td>Precondition Failed</td>
<td>Indicates the “If-Match” Etag check failed</td>
</tr>
<tr>
<td>428</td>
<td>Precondition Required</td>
<td>Indicates the need for an “If-Match” conditional with an Etag value in the Request Header</td>
</tr>
<tr>
<td>500</td>
<td>Internal Server Error</td>
<td>System could not process the request</td>
</tr>
</tbody>
</table>

---

**2.12 /Storage/Devices/{id}/SystemClock/**

**HTTP Methods:**

- [GET](#)
- [PUT](#)

---

*Western Digital.*
<table>
<thead>
<tr>
<th>Attribute</th>
<th>Possible Values</th>
<th>Description</th>
<th>Type</th>
<th>Mandatory or Optional</th>
<th>User Configurable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self</td>
<td>Free-Form URI Format 256 Chars</td>
<td>Describes the fully qualified URI link</td>
<td>String</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Date</td>
<td>M* date format (dd-mm-yyyy)</td>
<td>Provides current Day with leading zeros, Month abbreviation, and 4-digit Year. This is displayed only when the NTP service is enabled and providing the current date and time.</td>
<td>String</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Time</td>
<td>24-hour time</td>
<td>Provides current time in 24-hour format. This is displayed only when the NTP service is enabled and providing the current date and time.</td>
<td>String</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>TimeZone</td>
<td>Time Zone Local: UTC</td>
<td>Provides current timezone locale value. This is displayed only when the NTP service is enabled and providing the current date and time.</td>
<td>String</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>TimeZoneSetting</td>
<td>UTC</td>
<td>Provides current timezone value setting; based on UTC. This is displayed only when the NTP service is enabled and providing the current date and time.</td>
<td>String</td>
<td>✓</td>
<td>✗</td>
</tr>
<tr>
<td>Attribute</td>
<td>Possible Values</td>
<td>Description</td>
<td>Type</td>
<td>Mandatory or Optional</td>
<td>User Configurable</td>
</tr>
<tr>
<td>----------------------</td>
<td>----------------------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>------------</td>
<td>-----------------------</td>
<td>-------------------</td>
</tr>
<tr>
<td>DST</td>
<td>&quot;Unknown&quot;, &quot;Enabled&quot;, &quot;Disabled&quot;</td>
<td>Provides current daylight saving time setting. This is displayed only when the NTP service is enabled and providing the current date and time.</td>
<td>String</td>
<td>[X]</td>
<td>[X]</td>
</tr>
<tr>
<td>NTP.Enabled</td>
<td>true, false</td>
<td>The current NTP service setting. Use this to enable or disable the use of the external NTP service.</td>
<td>Boolean</td>
<td>[X]</td>
<td>[X]</td>
</tr>
<tr>
<td>NTP.Entity.ID</td>
<td>0, 1</td>
<td>The current NTP entity setting to determine the network path the NTP service is acquired. ID corresponds to Name.</td>
<td>Number</td>
<td>[X]</td>
<td>[X]</td>
</tr>
<tr>
<td>NTP.Entity.Name</td>
<td>&quot;Unknown&quot;, &quot;Management&quot;</td>
<td>The current NTP entity setting indicating the network path the NTP service is acquired. Name corresponds to ID.</td>
<td>String</td>
<td>[X]</td>
<td>[X]</td>
</tr>
<tr>
<td>NTP.Servers[]</td>
<td>Array of URI Strings</td>
<td>Array of NTP server URIs that provide the time service</td>
<td>String (0..*)</td>
<td>[X]</td>
<td>[X]</td>
</tr>
<tr>
<td>Uptime.Duration</td>
<td></td>
<td>The current uptime value in ISO 8601 format</td>
<td>String</td>
<td>[X]</td>
<td>[X]</td>
</tr>
<tr>
<td>Uptime.Days</td>
<td>0-n</td>
<td>The current uptime Days since boot</td>
<td>Number</td>
<td>[X]</td>
<td>[X]</td>
</tr>
<tr>
<td>Uptime.Hours</td>
<td>0-23</td>
<td>The current uptime Hours since boot</td>
<td>Number</td>
<td>[X]</td>
<td>[X]</td>
</tr>
<tr>
<td>Uptime.Minutes</td>
<td>0-59</td>
<td>The current uptime Minutes since boot</td>
<td>Number</td>
<td>[X]</td>
<td>[X]</td>
</tr>
<tr>
<td>Uptime.Seconds</td>
<td>0-59</td>
<td>The current uptime Seconds since boot</td>
<td>Number</td>
<td>[X]</td>
<td>[X]</td>
</tr>
</tbody>
</table>
GET `/Storage/Devices/{id}/SystemClock/`

**Table 82: GET Request Headers**

<table>
<thead>
<tr>
<th>Header</th>
<th>Mandatory or Optional</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Authorization</td>
<td>Mandatory</td>
<td>The request requires either Basic or Digest authorization</td>
</tr>
<tr>
<td>If-None-Match</td>
<td>Optional</td>
<td>The request is conditionally processed only if the current ETag for the resource does not match the ETag passed in this header</td>
</tr>
</tbody>
</table>

**Example GET curl Command**

```bash
```

**Example GET Response Body**

```json
{
  "Date": "31-Aug-2020",
  "Time": "16:47:14",
  "TimeZone": "(UTC0.00) UTC",
  "TimeZoneSetting": "UTC",
  "DST": "Unknown",
  "NTP": {
    "Enabled": true,
    "Entity": {
      "ID": 1,
      "Name": "Management"
    },
    "Servers": [
      "0.pool.ntp.org",
      "1.pool.ntp.org",
      "2.pool.ntp.org",
      "3.pool.ntp.org"
    ],
    "Uptime": {
      "Duration": "P5DT18H46M40S",
      "Days": 5,
      "Hours": 18,
      "Minutes": 46,
      "Seconds": 40
    }
  }
}
```

**Table 83: GET Response Codes**

<table>
<thead>
<tr>
<th>Response Code</th>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>200</td>
<td>OK</td>
<td>OK and Device information in the response body + ETag Header</td>
</tr>
<tr>
<td>304</td>
<td>Not Modified</td>
<td>If-None-Match Etag value matched, therefore no Response Body will be returned</td>
</tr>
</tbody>
</table>
### PUT `/Storage/Devices/{id}/SystemClock/`

#### Table 84: PUT Request Headers

<table>
<thead>
<tr>
<th>Header</th>
<th>Mandatory or Optional</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Authorization</td>
<td>Mandatory</td>
<td>The request requires either Basic or Digest authorization</td>
</tr>
<tr>
<td>If-Match</td>
<td>Mandatory</td>
<td>The request is conditionally processed only if the current ETag for the resource matches the ETag passed in this header</td>
</tr>
</tbody>
</table>

#### Table 85: PUT Data Options

<table>
<thead>
<tr>
<th>Syntax</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot;Date&quot;: &quot;new_date&quot;</td>
<td>Change the date</td>
</tr>
<tr>
<td>&quot;Time&quot;: &quot;new_time&quot;</td>
<td>Change the time</td>
</tr>
<tr>
<td>&quot;TimeZone&quot;: &quot;new_timezone&quot;</td>
<td>Change the time zone</td>
</tr>
<tr>
<td>&quot;DST&quot;: &quot;Enabled</td>
<td>Disabled&quot;</td>
</tr>
</tbody>
</table>

**Example PUT curl Command**

```bash
```

**Note:** The `If-Match` conditional in the PUT command requires the ETag from the GET Response Header.

#### Table 86: PUT Response Codes

<table>
<thead>
<tr>
<th>Response Code</th>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>200</td>
<td>OK</td>
<td>OK and Account information in the response body + ETag Header</td>
</tr>
<tr>
<td>400</td>
<td>Bad Request</td>
<td>Bad Request (typically a faulty parameter)</td>
</tr>
</tbody>
</table>
### Table 87: Attributes

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Possible Values</th>
<th>Description</th>
<th>Type</th>
<th>Mandatory or Optional</th>
<th>User Configurable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self</td>
<td>Free-Form URI Format 256 Chars</td>
<td>Describes the fully qualified URI link</td>
<td>String</td>
<td>✓</td>
<td>☒</td>
</tr>
<tr>
<td>RemoteDebug</td>
<td>true, false</td>
<td>Setting to enable or disable this feature (if set to true, response is a key in text/plain media; if set to false, no response body is sent)</td>
<td>Boolean</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>

### GET /Storage/Devices/{id}/Support/

**Table 88: GET Request Headers**

<table>
<thead>
<tr>
<th>Header</th>
<th>Mandatory or Optional</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Authorization</td>
<td>Mandatory</td>
<td>The request requires either Basic or Digest authorization</td>
</tr>
<tr>
<td>If-None-Match</td>
<td>Optional</td>
<td>The request is conditionally processed only if the current ETag for the resource does not match the ETag passed in this header</td>
</tr>
</tbody>
</table>

**Example GET curl Command**

```bash
```

Example GET Response Body

```
{
  "RemoteDebug": true
}
```

### Table 89: GET Response Codes

<table>
<thead>
<tr>
<th>Response Code</th>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>200</td>
<td>OK</td>
<td>OK and Device information in the response body + ETag Header</td>
</tr>
<tr>
<td>304</td>
<td>Not Modified</td>
<td>If-None-Match Etag value matched, therefore no Response Body will be returned</td>
</tr>
<tr>
<td>401</td>
<td>Unauthorized</td>
<td>Unauthorized; credential entry failed or missing</td>
</tr>
<tr>
<td>404</td>
<td>Not Found</td>
<td>Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource</td>
</tr>
<tr>
<td>429</td>
<td>Too Many Requests</td>
<td>Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource indicates API service is busy, client should try again later</td>
</tr>
<tr>
<td>500</td>
<td>Internal Server Error</td>
<td>System could not process the request</td>
</tr>
</tbody>
</table>

**Toggling the RemoteDebug Attribute**

The following example GET requests use a query string to set the `RemoteDebug` attribute to the value on the right side of the `=`. The use of a GET request to set the attribute value enables the user to toggle the support setting without the need of a special web client that can send a PUT request, which would be the normal method for modifying a resource.

To set the `RemoteDebug` attribute to `true`, issue the following command:

```
```

To set the `RemoteDebug` attribute to `false`, issue the following command:

```
```

### 2.14 /Storage/Devices/{id}/Jobs/

**HTTP Methods:**

- [GET](#)
- [DELETE](#)
### Table 90: Collection Attributes

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Possible Values</th>
<th>Description</th>
<th>Type</th>
<th>Mandatory</th>
<th>User Configurable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self</td>
<td>Free-Form URI Format 256 Chars</td>
<td>Describes the fully qualified URI link</td>
<td>URI String</td>
<td>✔️</td>
<td>☑️</td>
</tr>
<tr>
<td>Members</td>
<td>Resource Collection (0 - n entries)</td>
<td>The array of resource instances. See Table 91: Instance Attributes (page 87)</td>
<td>String Array</td>
<td>☑️</td>
<td>☑️</td>
</tr>
</tbody>
</table>

### Table 91: Instance Attributes

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Possible Values</th>
<th>Description</th>
<th>Type</th>
<th>Mandatory</th>
<th>User Configurable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self</td>
<td>Free-Form URI Format 256 Chars</td>
<td>Describes the fully qualified URI link</td>
<td>URI String</td>
<td>✔️</td>
<td>No</td>
</tr>
<tr>
<td>ID</td>
<td>&quot;FirmwareUpdate&quot;, &quot;FactoryReset&quot;, &quot;Reboot&quot;, &quot;FirmwareActivate&quot;</td>
<td>The Name of this particular Job.</td>
<td>String</td>
<td>✔️</td>
<td>No</td>
</tr>
<tr>
<td>PercentComplete</td>
<td>0 -100</td>
<td>The percent complete status of the Job</td>
<td>Number</td>
<td>✔️</td>
<td>No</td>
</tr>
<tr>
<td>Status.State.ID</td>
<td>See State Name and ID Definitions (page 11)</td>
<td>The current state value map of this Resource. ID corresponds to Name</td>
<td>Number</td>
<td>✔️</td>
<td>No</td>
</tr>
<tr>
<td>Status.State.Name</td>
<td>See State Name and ID Definitions (page 11)</td>
<td>The current state value of this Resource. Name corresponds to ID</td>
<td>String</td>
<td>✔️</td>
<td>No</td>
</tr>
<tr>
<td>Status.Health[].ID</td>
<td>See Health Name and ID Definitions (page 12)</td>
<td>The current health value map of this Resource. There can be 1 or more Id entries. ID corresponds to Name</td>
<td>Number (1..*)</td>
<td>✔️</td>
<td>No</td>
</tr>
</tbody>
</table>
Table 92: GET Request Headers

<table>
<thead>
<tr>
<th>Header</th>
<th>Mandatory or Optional</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Authorization</td>
<td>Mandatory</td>
<td>The request requires either Basic or Digest authorization</td>
</tr>
<tr>
<td>If-None-Match</td>
<td>Optional</td>
<td>The request is conditionally processed only if the current ETag for the resource does not match the ETag passed in this header</td>
</tr>
</tbody>
</table>

Example GET curl Command (Collection)


Example GET Response Body (Collection)

```json
{
    "ID": "FirmwareActivate",
    "PercentComplete": 100,
    "Status": {
        "State": {
            "ID": 8,
            "Name": "Completed"
        },
        "Health": [
            {
                "ID": 5,
                "Name": "OK"
            }
        ],
        "Details": [
            "Completed."
        ]
    }
}
```
Example GET curl Command (Single Resource)


Example GET Response Body (Single Resource)

{
    "ID": "FirmwareUpdate",
    "PercentComplete": 100,
    "Status": {
        "State": {
            "ID": 65541,
            "Name": "Activate with reboot needed"
        },
        "Health": [
            {
                "ID": 25,
                "Name": "Critical failure"
            }
        ],
        "Details": [
            "Completed.",
            "ERROR: Timeout waiting for EMI"
        ]
    }
},
{
    "ID": "Reboot",
    "PercentComplete": 100,
    "Status": {
        "State": {
            "ID": 8,
            "Name": "Completed"
        },
        "Health": [
            {
                "ID": 5,
                "Name": "OK"
            }
        ]
    }
}
The Open Composable API Reference

Section 2. Storage Device API Reference

2.14 /Storage/Devices/{id}/Jobs/

Table 93: GET Response Codes

<table>
<thead>
<tr>
<th>Response Code</th>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>200</td>
<td>OK</td>
<td>OK and Device information in the response body + ETag Header</td>
</tr>
<tr>
<td>304</td>
<td>Not Modified</td>
<td>If-None-Match Etag value matched, therefore no Response Body will be returned</td>
</tr>
<tr>
<td>401</td>
<td>Unauthorized</td>
<td>Unauthorized; credential entry failed or missing</td>
</tr>
<tr>
<td>404</td>
<td>Not Found</td>
<td>Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource</td>
</tr>
<tr>
<td>429</td>
<td>Too Many Requests</td>
<td>Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource indicates API service is busy, client should try again later</td>
</tr>
<tr>
<td>500</td>
<td>Internal Server Error</td>
<td>System could not process the request</td>
</tr>
</tbody>
</table>

DELETE /Storage/Devices/{id}/Jobs/{id}/

Table 94: DELETE Request Headers

<table>
<thead>
<tr>
<th>Header</th>
<th>Mandatory or Optional</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Authorization</td>
<td>Mandatory</td>
<td>The request requires either Basic or Digest authorization</td>
</tr>
<tr>
<td>If-Match</td>
<td>Mandatory</td>
<td>The request is conditionally processed only if the current ETag for the resource matches the ETag passed in this header</td>
</tr>
</tbody>
</table>

Example DELETE curl Command

```
```

Note: The If-Match conditional in the DELETE command requires the ETag from the GET Response Header.
Note: Jobs cannot be deleted when in-progress (i.e. when PercentComplete is less than 100%).

Table 95: DELETE Response Codes

<table>
<thead>
<tr>
<th>Response Code</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>204</td>
<td>No Content</td>
</tr>
<tr>
<td>401</td>
<td>Unauthorized</td>
</tr>
<tr>
<td>404</td>
<td>Not Found</td>
</tr>
<tr>
<td>409</td>
<td>Conflict</td>
</tr>
<tr>
<td>412</td>
<td>Precondition Failed</td>
</tr>
<tr>
<td>428</td>
<td>Precondition Required</td>
</tr>
<tr>
<td>500</td>
<td>Internal Server Error</td>
</tr>
</tbody>
</table>

2.15 /Storage/Devices/{id}/Files/

HTTP Methods:  

Table 96: Collection Attributes

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Possible Values</th>
<th>Description</th>
<th>Type</th>
<th>Mandatory or Optional</th>
<th>User Configurable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self</td>
<td>Free-Form URI Format 256 Chars</td>
<td>Describes the fully qualified URI link</td>
<td>URI</td>
<td>Mandatory</td>
<td>No</td>
</tr>
<tr>
<td>Members</td>
<td>Resource Collection (0 - n entries)</td>
<td>The array of resource instances. See Table 97: Instance Attributes (page 92)</td>
<td>String Array</td>
<td>Optional</td>
<td>No</td>
</tr>
<tr>
<td>TLSCertAndKey</td>
<td>&quot;cert.pem&quot; and &quot;key.pem&quot;</td>
<td>This resource is used with a POST to upload the user-defined TLS Certificate and Key to the Device in order to provide secure</td>
<td>PEM files</td>
<td>Mandatory</td>
<td>Yes</td>
</tr>
</tbody>
</table>
SSL connections. It is required that both CERT and KEY files are uploaded in the same POST method call.

Table 97: Instance Attributes

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Possible Values</th>
<th>Description</th>
<th>Type</th>
<th>Mandatory or Optional</th>
<th>User Configurable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self</td>
<td>Free-Form URI Format 256 Chars</td>
<td>Describes the fully qualified URI link</td>
<td>URI String</td>
<td>✓</td>
<td>✗</td>
</tr>
<tr>
<td>ID</td>
<td>Free-Form 256 Chars</td>
<td>The resource identifier</td>
<td>String</td>
<td>✓</td>
<td>✗</td>
</tr>
<tr>
<td>Description</td>
<td>Free-Form Chars</td>
<td>Provides the description of file associated with the ID</td>
<td>String</td>
<td>✓</td>
<td>✗</td>
</tr>
</tbody>
</table>

Table 98: Available File Types

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>auditlog</td>
<td>Returns the current audit log entries as text to the requestor</td>
<td>Text/Plain</td>
</tr>
<tr>
<td>customerlog</td>
<td>Returns the customer-facing log</td>
<td>Text/Plain</td>
</tr>
<tr>
<td>telemetry</td>
<td>Returns a downloaded compressed bundle file called &quot;telemetry.tgz&quot; to the requester</td>
<td>Compressed file bundle of several system files</td>
</tr>
<tr>
<td>cert_pem</td>
<td>Returns the current SSL certificate entry as text to the requestor</td>
<td>Text/Plain</td>
</tr>
<tr>
<td>key_pem</td>
<td>SSL key GET not allowed for security of the key</td>
<td>SSL Cert File</td>
</tr>
</tbody>
</table>

GET /Storage/Devices/{id}/Files/ and /Storage/Devices/{id}/Files/{id}/
Table 99: GET Request Headers

<table>
<thead>
<tr>
<th>Header</th>
<th>Mandatory or Optional</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Authorization</td>
<td>Mandatory</td>
<td>The request requires either Basic or Digest authorization</td>
</tr>
<tr>
<td>If-None-Match</td>
<td>Optional</td>
<td>The request is conditionally processed only if the current ETag for the resource does not match the ETag passed in this header</td>
</tr>
</tbody>
</table>

Example GET curl Command (Collection)


Example GET Response Body (Collection)

```json
{
    "Members": [
        {
            "ID": "auditlog",
            "Description": "Audit log"
        },
        {
            "ID": "customerlog",
            "Description": "Customer log"
        },
        {
            "ID": "buildinfo",
            "Description": "Build info"
        },
        {
            "ID": "telemetry",
            "Description": "Telemetry"
        },
        {
            "ID": "cert_pem",
            "Description": "cert.pem"
        },
        {
            "ID": "key_pem",
            "Description": "key.pem"
        }
    ]
}
```

Example GET curl Command (Single Resource)

93

**Example GET Response Body (Single Resource)**

<table>
<thead>
<tr>
<th>index</th>
<th>client</th>
<th>type</th>
<th>action</th>
<th>user</th>
<th>path</th>
<th>input</th>
</tr>
</thead>
</table>

**Table 100: GET Response Codes**

<table>
<thead>
<tr>
<th>Response Code</th>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>200</td>
<td>OK</td>
<td>OK and Device information in the response body + ETag Header</td>
</tr>
<tr>
<td>304</td>
<td>Not Modified</td>
<td>If-None-Match Etag value matched, therefore no Response Body will be returned</td>
</tr>
<tr>
<td>401</td>
<td>Unauthorized</td>
<td>Unauthorized; credential entry failed or missing</td>
</tr>
<tr>
<td>404</td>
<td>Not Found</td>
<td>Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource</td>
</tr>
</tbody>
</table>
## Response Codes

<table>
<thead>
<tr>
<th>Response Code</th>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>429</td>
<td>Too Many Requests</td>
<td>Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource indicates API service is busy, client should try again later</td>
</tr>
<tr>
<td>500</td>
<td>Internal Server Error</td>
<td>System could not process the request</td>
</tr>
</tbody>
</table>

### POST `/Storage/Devices/{id}/Files/`

#### Table 101: POST Request Headers

<table>
<thead>
<tr>
<th>Header</th>
<th>Mandatory or Optional</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Authorization</td>
<td>Mandatory</td>
<td>The request requires either Basic or Digest authorization</td>
</tr>
<tr>
<td>Content-Type: multipart/form-data</td>
<td>Mandatory</td>
<td>The FW image file is of content type &quot;multipart/form-data&quot;</td>
</tr>
</tbody>
</table>

#### Example POST curl Command

```bash
curl -i -u admin:admin -X POST -H "Content-Type: multipart/form-data" -F "cert.pem=@cert.pem" -F "key.pem=@key.pem" http://10.20.30.40/Storage/Devices/0123456789/Files/TLSCertAndKey/
```

**Note:** Both the Certificate and Key files must be sent in the same POST operation, otherwise, the method will be rejected.

#### Table 102: POST Response Codes

<table>
<thead>
<tr>
<th>Response Code</th>
<th>Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>201</td>
<td>Created</td>
<td>Created &amp; Account information in the response body + ETag Header + new URI in Location Header</td>
</tr>
<tr>
<td>400</td>
<td>Bad Request</td>
<td>Bad Request (typically a faulty parameter)</td>
</tr>
<tr>
<td>401</td>
<td>Unauthorized</td>
<td>Unauthorized; credential entry failed or missing</td>
</tr>
<tr>
<td>404</td>
<td>Not Found</td>
<td>Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource</td>
</tr>
<tr>
<td>429</td>
<td>Too Many Requests</td>
<td>Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource indicates API service is busy, client should try again later</td>
</tr>
<tr>
<td>500</td>
<td>Internal Server Error</td>
<td>System could not process the request</td>
</tr>
</tbody>
</table>