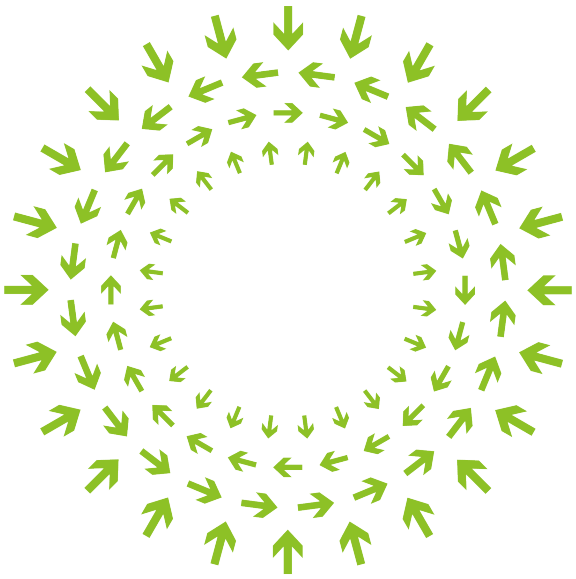

OPEN
Compute Project

Open Composable API

Initial Draft – Version 1.0

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3 Revision

This table tracks the revision history of this specification.

Date	Version	Status	Authors	Change(s)
24 Jun 2019	1.0	Initial Draft	Jeff Nicholson - Western Digital	Initial version

			Mark Miquelon – Western Digital	

4 Scope

This document defines the technical specifications for the Open Composable API. The OC API was developed to enable composition of virtual systems from disaggregated hardware. Composable infrastructure is a category of datacenter infrastructure that seeks to disaggregate compute, storage, networking, and memory fabric resources into shared resource pools that can be available for on-demand allocation (i.e., "composable"). Composability occurs at the software level, disaggregation occurs at the hardware level

Why is composable infrastructure needed?

Multiple factors are causing significant issues with today's IT operations. Some of these are:

- Exponential growth in volume and value of data
- Increasing diversity of workflows and demands on infrastructure
- Business requirements to increase speed and agility, delivering faster time -to-value for their customers

What are the benefits of a composable infrastructure?

- Greater productivity, agility and faster time-to-market
- Improved utilization and faster provisioning
- Higher availability and performance

What are the attributes of an Open Composable Infrastructure?

Open

- Open in both API and form factor - any customer, vendor or partner may exploit the power of Fabric Attached Devices
- Entire ecosystem of composable entities are composed and orchestrated using a common API framework

Scalable

- Independent performance and capacity scaling from rack-level to multi-rack
- Federated composability from single-site to multi-site to eliminate unmanageable complexity

Disaggregated

- Separation of storage and compute for independent scaling to maximize efficiency and agility
- Disaggregation provides the leanest possible attachment of storage, memory, and compute to the network

Extensible

- Flash and disk can be independently scaled over the same fabric using the same APIs
- Future-proof/future-ready for yet-to-come composable entities – e.g., memory, accelerators

What is the Open Composable API?

- New open composability API designed for data center composability
- Scalable Resource-Oriented Architecture
- Disaggregated Element Model
- Element-to-Element communication to enable self-organizing virtual systems

Why is the Open Composable API different?

The Open Composable API is designed for an environment where key data center resources are peer elements that cooperate to achieve a desired business objective.

Open Composability API Tenets

- No Physical Systems, only Virtual Systems
- Each Device provides a resource that is offered over the network
- No established hierarchy, CPU doesn't "own" the GPU, Memory, or Storage
- All Devices offer control path composability via the **Open Composable API** (OC-API)
- All Devices are peers on the network and communicate with each other (discovery, etc.)

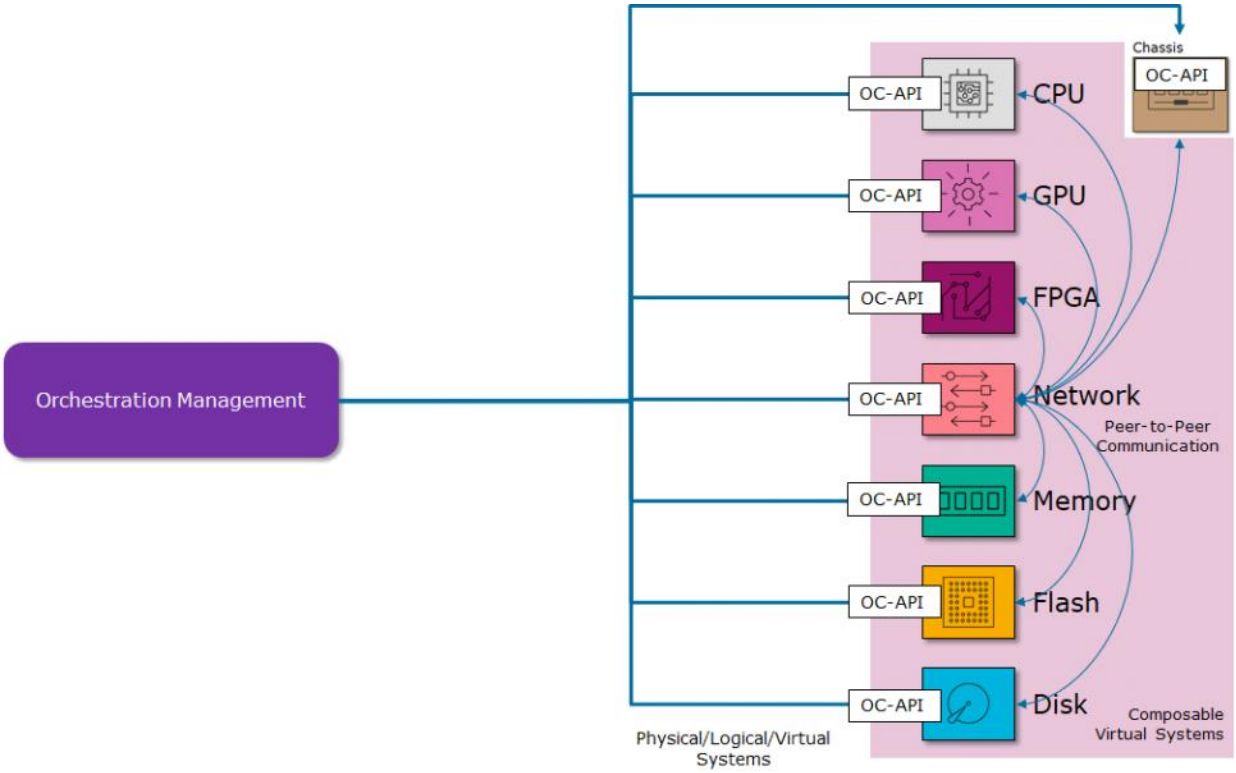


Figure 1 - Open Composable API Logical View

5 Overview

The Open Composable API is intended to enable composition or orchestration of disaggregated hardware elements. An element that is disaggregated and yet virtualizable is said to be a Composable Fabric Device. Examples include storage (flash or disk based), compute (CPU, GPU, FPGA), fabric (network), memory (volatile and non-volatile), and power.

Composable Fabric Devices are attached to a Fabric. This specification does not specify any particular fabric, but examples include Ethernet, Infiniband, and Fibre Channel. Multiple fabrics may be present in a composed system (i.e. memory and data on independent fabrics).

Composable Fabric Devices are provisioned to enable sharing of their resource. Examples include CPU cores, time-based or function-based slices of FPGA or GPU, and Namespaces of a storage device.

Composable Fabric Devices should provide a single type of resource rather than a higher level of integration of multiple resource types or functions. A Composable Fabric Device should be the expert in its device type. For example, a Storage Device does not need to provide data protection services. Data protection can be provided above the device level as a feature of the composed system.

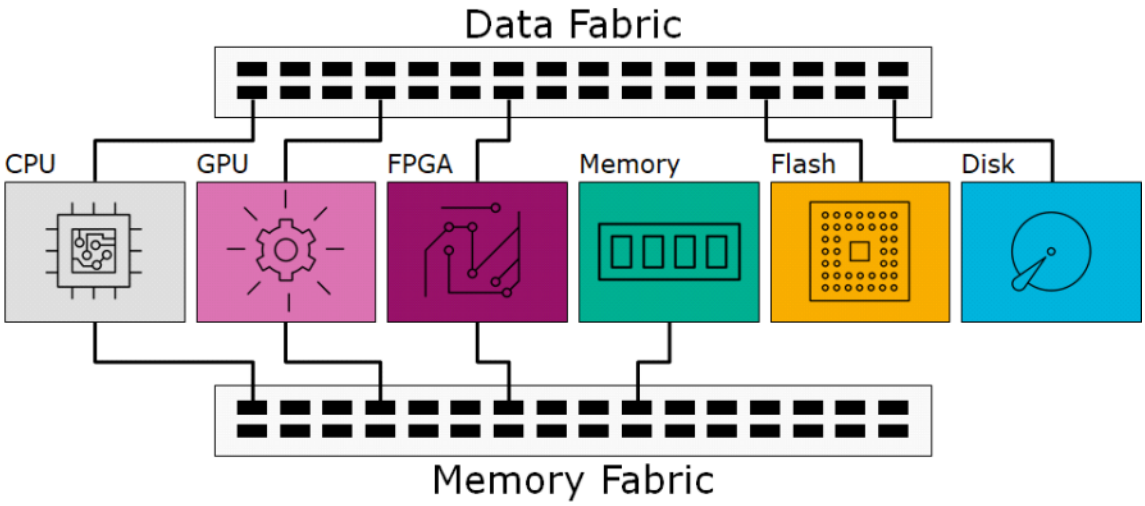


Figure 2 - Open Composable Architecture

6 Applicable Industry Standards

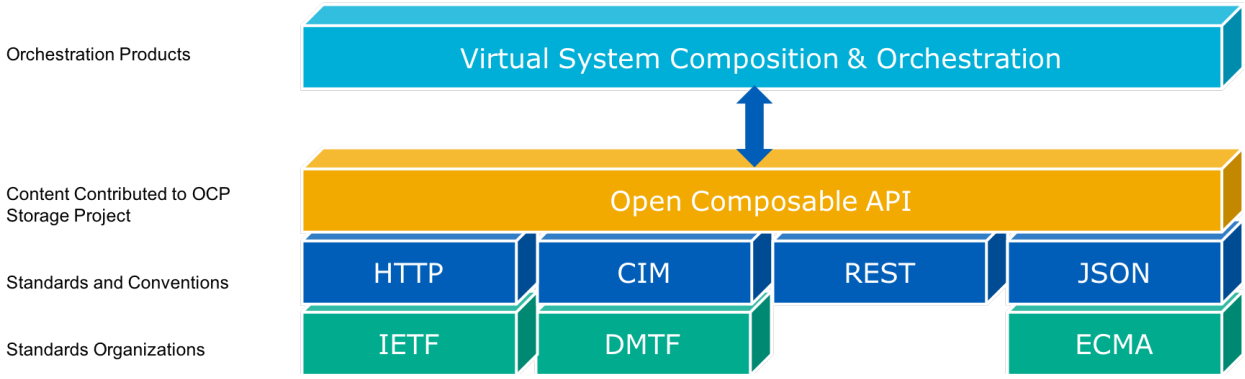


Figure 3 - Open Composable API Foundation

6.1 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 body (dmtf.org). 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

Collections are rolled into the Resources 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 provide creating a new 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 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.

Some examples:

- Media contains links to Storage Pools
- Storage Pools contain links to Media that makes up the Pool; contains links to Volumes exported by the Pool
- Volumes contain links to Storage Pools that make up the Volume; contains the links to Storage Endpoints exposing the Volume
- Storage Endpoints contain links to attached Volumes; contains links to Paths to remote/consuming Hosts
- Paths contain links to Storage Endpoints; contains links to Host Endpoints

6.2 JSON Data Format Model

The Open Composable API uses the standard Javascript Object Notation (JSON) to describe the CIM-based elements and their CIM and/or Vendor-Unique-based attributes. The API responses are in a well-formed JSON format as well as request body entries to create or modify a resource. The JSON data format intrinsically determines the data type simply by indicating the “value” within a pair of double-quotations for string types and non-quoted numerical values for number types. No other format descriptions are needed to keep the API as simple as possible.

6.3 HTTP Protocol

The Open Composable API follows 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 or within the JSON request body.

6.3.1 HTTP Conditionals & CORS

The Open Composable API uses HTTP Conditionals to provide concurrency capabilities among multiple web-based clients. This “optimistic concurrency” uses the “ETag Header” (entity tag) to provide a resource hash value (32 hexadecimal characters) of the current state of the resource. This ETag value can be used to lower the network traffic when used with HTTP GET requests, and 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 API 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 API location which then tells the web client to connect to a different API location, 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 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 API location (cross-origin) with the "Origin" header filled in with the local web client IP address or hostname with the scheme prefix (http or https) to determine of the remote API location will allow a connection from the web client while the focus is still on the original API location. If the remote API location 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 API location allows the connection, it will return headers in the OPTIONS response to indicate what kind of connection, methods, etc., are allowed to the remote API location. The web client can then execute the original HTTP method to the remote API location to complete the transaction. Most modern web browsers support CORS

6.3.2 HTTP Authentication

The Open Composable API uses the standard HTTP authentication methods for allowing access to the device resources. These methods include both the Basic and Digest types of authentication capabilities.

Basic Authentication

The Basic Authentication process starts with the API returning a 401 Unauthorized to the requesting web-based client. The web-based client must include the "Authorization" header with a 64bit encoded string of the user credentials with the original request. If the credentials match the expected authorization hand-shake, the API will honor the web-client request. It is typical for the web client to send the Authorization header along with each request to continue future communication, e.g., browser that log into a web service and then upon success access, continues to provide the Authorization header in subsequent requests.

Digest Authentication

The Digest Authentication process is similar to the Basic Authentication process except that uses encryption for the user credentials independently of whether or not TLS is used at the transport layer.

For more details, please see the respective IETF details on implementing these access methods.

7 Resource-Oriented Architecture

The Open Composable API implements "Resource-Oriented Architecture" (ROA) which dictates the API to have the following attributes:

- Addressability - Resources have explicit URIs for direct addressing
- Stateless - Resources do not require previous or next state processing; all operations are atomic.
- Linkability - Resources can be reached via "Self" links from other associated Resources; provides navigation among related Resources
- Uniform Interface - Resources respond to supported HTTP Methods

The figure below is a comparison between SOA and ROA architectures. The main difference is that the ROA devices do not require a proxy-based "server manager" to management the device resources. The fabric devices can compose themselves.

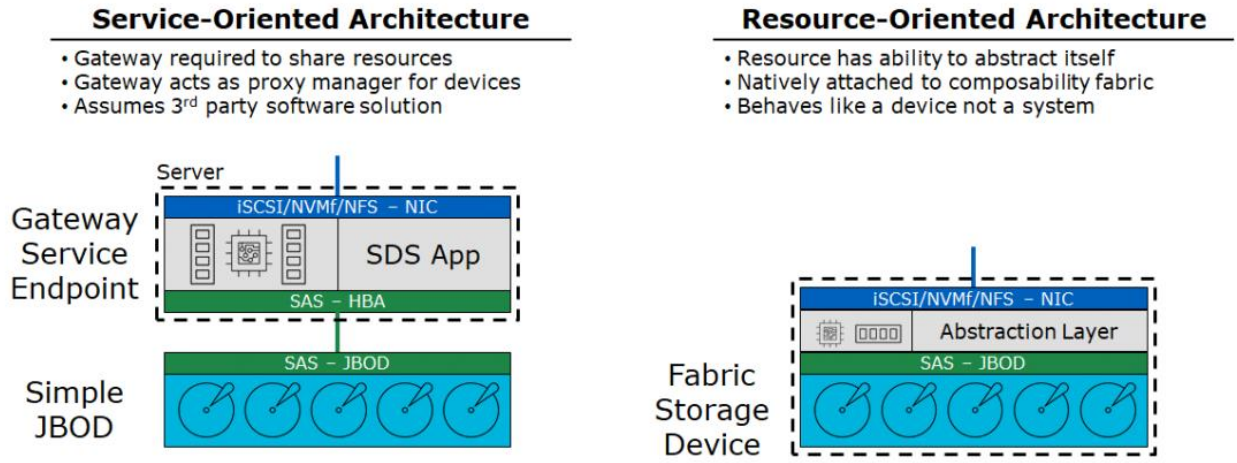


Figure 4 - Service vs. Resource Oriented Architectures

8 Modeling Fabric Device Resources

The Open Composable API architecture requires the control path composability scheme to be “resource-oriented”. Any device and its components are all considered resources. For example, a device is a resource as well as its power supply. The control of the device and the power supply have separate resource addressing so that a client can access any component resource directly.

There are physical resources, logical resources, and virtual resources. The physical resources typical already exist and cannot be created or deleted. However, logical and virtual resources typically can be created, modified, and deleted.

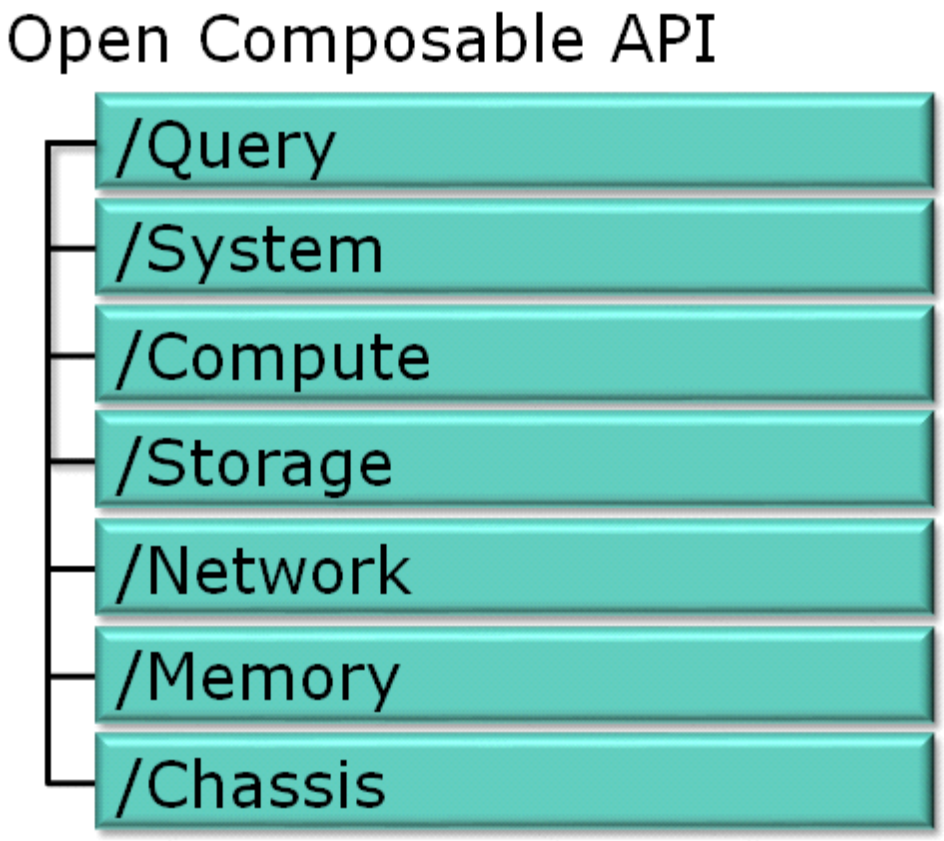


Figure 5 - Open Composable API Architecture

8.1 System Composites

The System Composite modeling includes the aggregation of Fabric Device Resources. Each Composite is made up of one or more types of Device Resources that provide specific capabilities of storage, compute, network, and memory. The Composites can be created with several instances of Device Resources in order to provide certain specific capabilities tailored for certain types of applications. The Device Resource aggregation to create a System Composite is represented in the figure below.

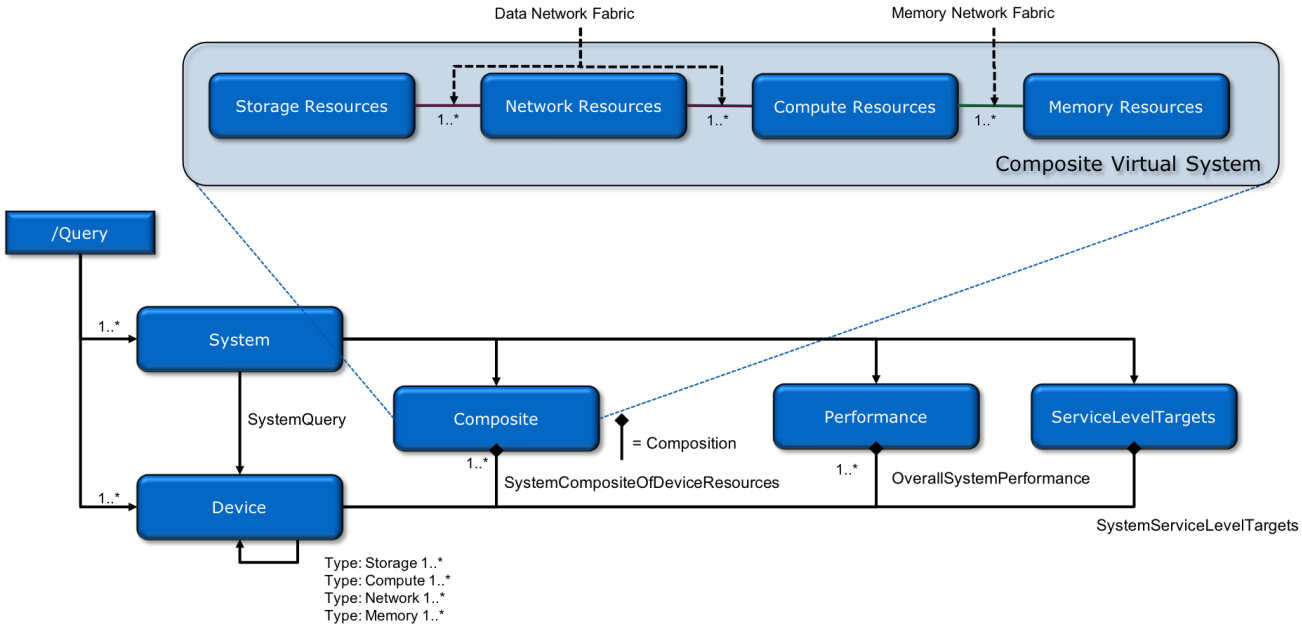


Figure 6 - System Composite Resource - Virtual Model

8.2 Storage Resources

The Storage Device modeling includes both physical and logical/virtual resources. The physical resource model includes the overall Storage Device that may contain a collection of Controllers, Power Supplies and Fans, and the Storage Media. A Chassis Device may provide the slot, power, and cooling resources separately if the Storage Device is separate from the enclosure services. These physical resources are represented in the figure below.

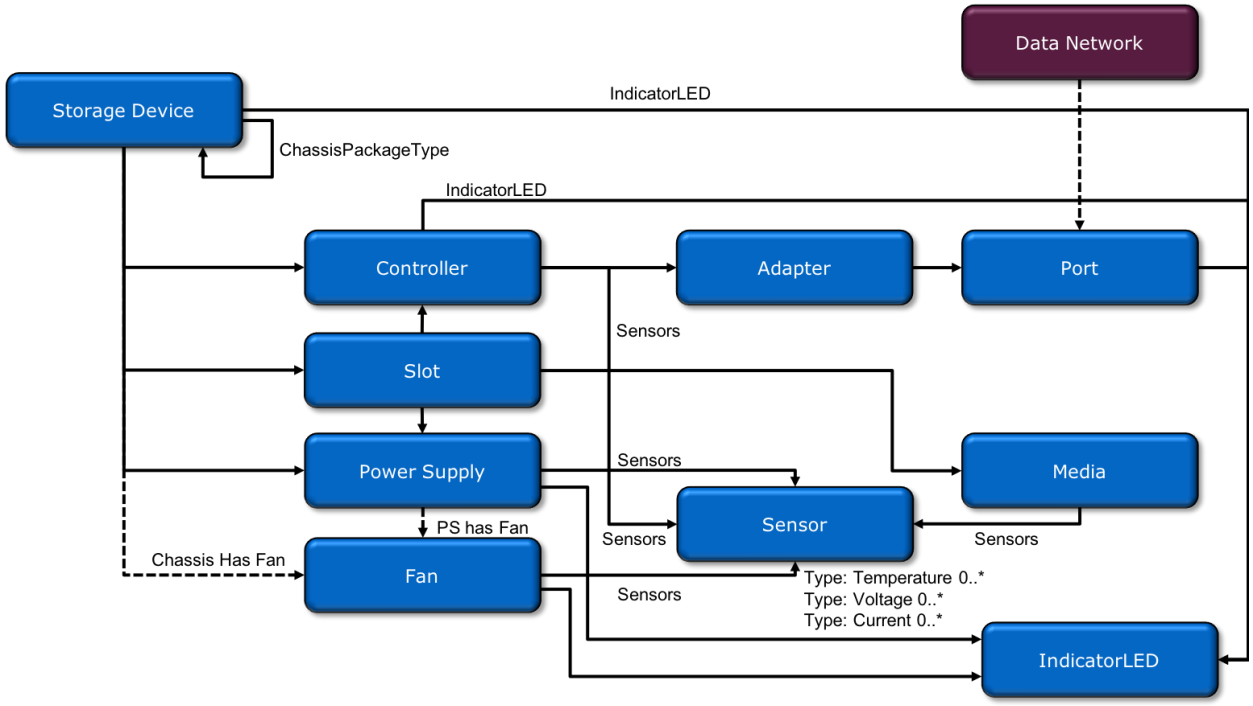


Figure 7 - Storage Resource - Physical Model

The logical and virtual resources model includes those resources that are logical or virtual in nature. These include Storage Pools, Storage Volumes, Local and Remote Endpoints, the Logical Path between Storage Volumes, and the Consuming Hosts. These are modeled in the figure below.

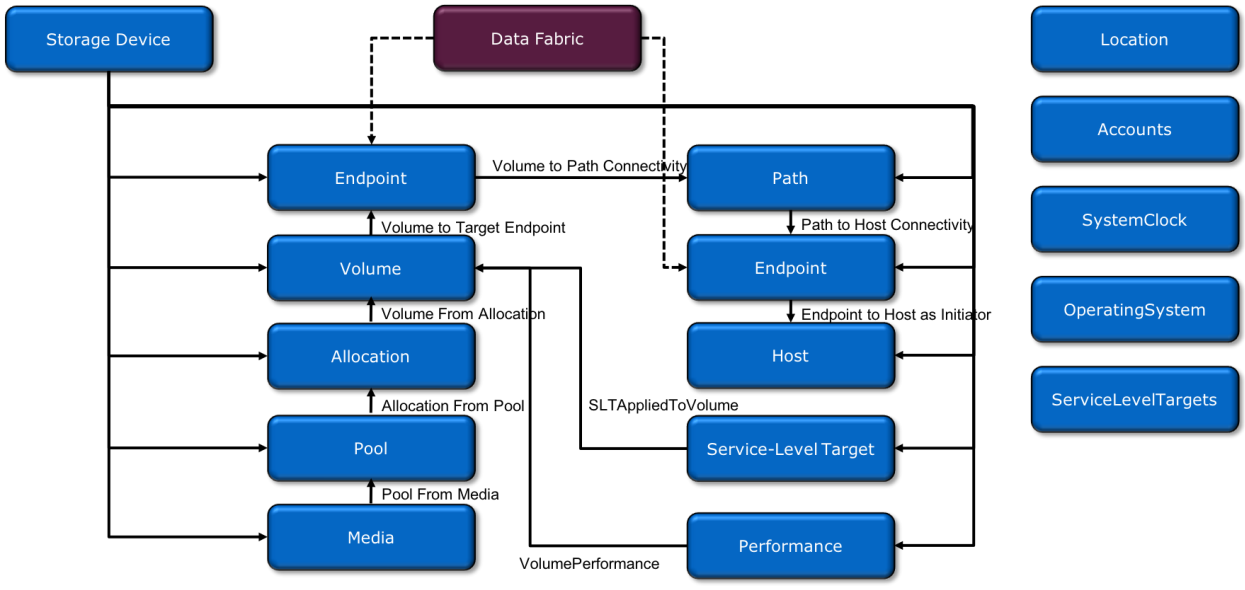


Figure 8 - Storage Resource - Logical/Virtual Model

8.3 Compute Resources

The Compute Device modeling includes both physical and logical/virtual resources. The physical resource model includes the overall Compute Device that contains a collection of, Processors, Power Supplies and Fans, and the attached Storage Media (Storage and/or Memory). A Chassis Device may provide the power and cooling resources separately if the Compute Device is separate from the enclosure services. These physical resources are represented in the figure below.

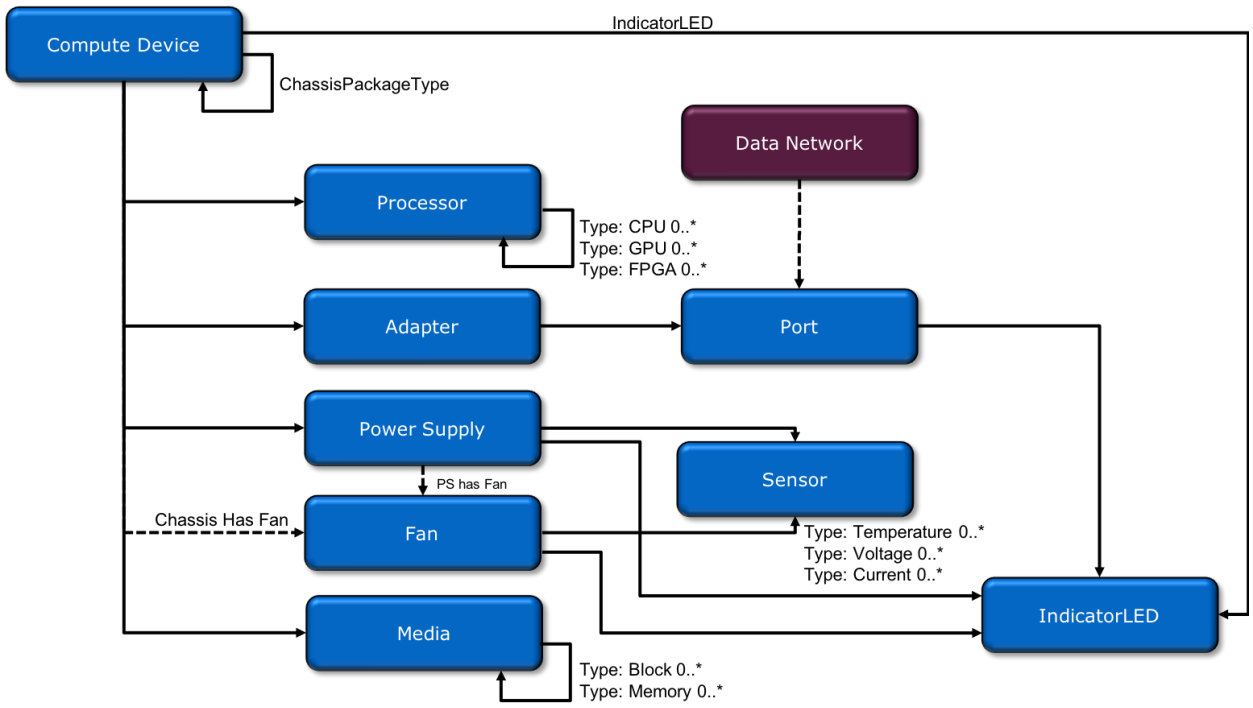


Figure 9 - Compute Resource - Physical Model

The logical and virtual resources model includes those resources that are logical or virtual in nature. These include Storage Pools, Storage Volumes, Storage Endpoints, File System, and Performance. These are modeled in the figure below.

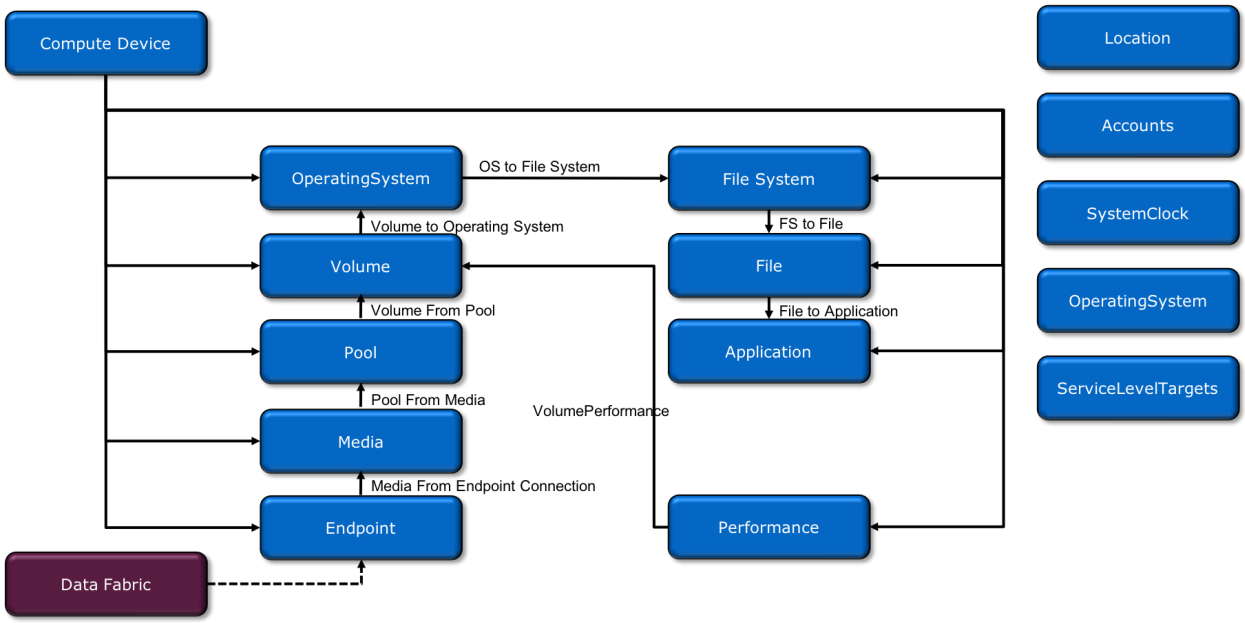


Figure 10 - Compute Resource - Logical/Virtual Model

8.4 Network Resources

The Network Device modeling includes both physical and logical/virtual resources. The physical resource model includes the overall Network Device that contains a collection of Ports, Power Supplies and Fans, and the attached Storage Media (Storage and/or Memory). A Chassis Device may provide the power and cooling resources separately if the Network Device is separate from the enclosure services. These physical resources are represented in the figure below.

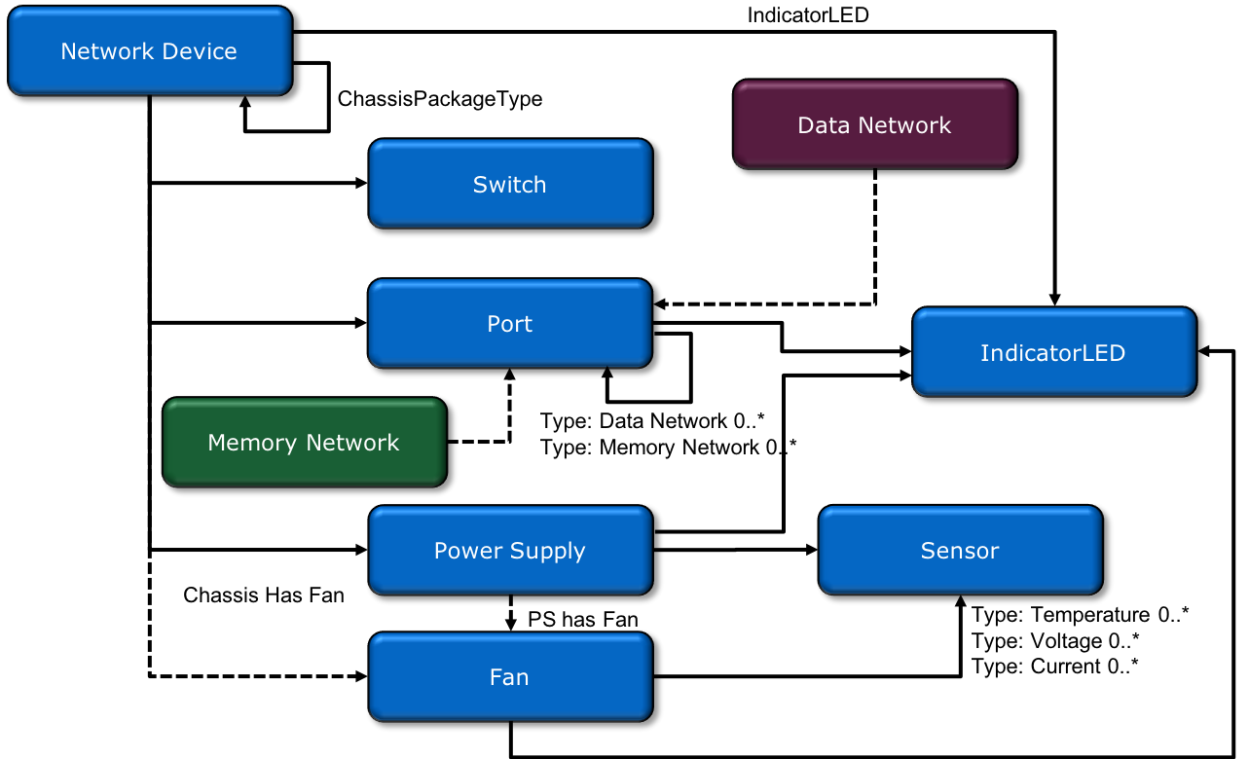


Figure 11 - Network Resource - Physical Model

The logical and virtual resources model includes those resources that are logical or virtual in nature. These include VLANs, Endpoints, and Performance. These are modeled in the figure below.

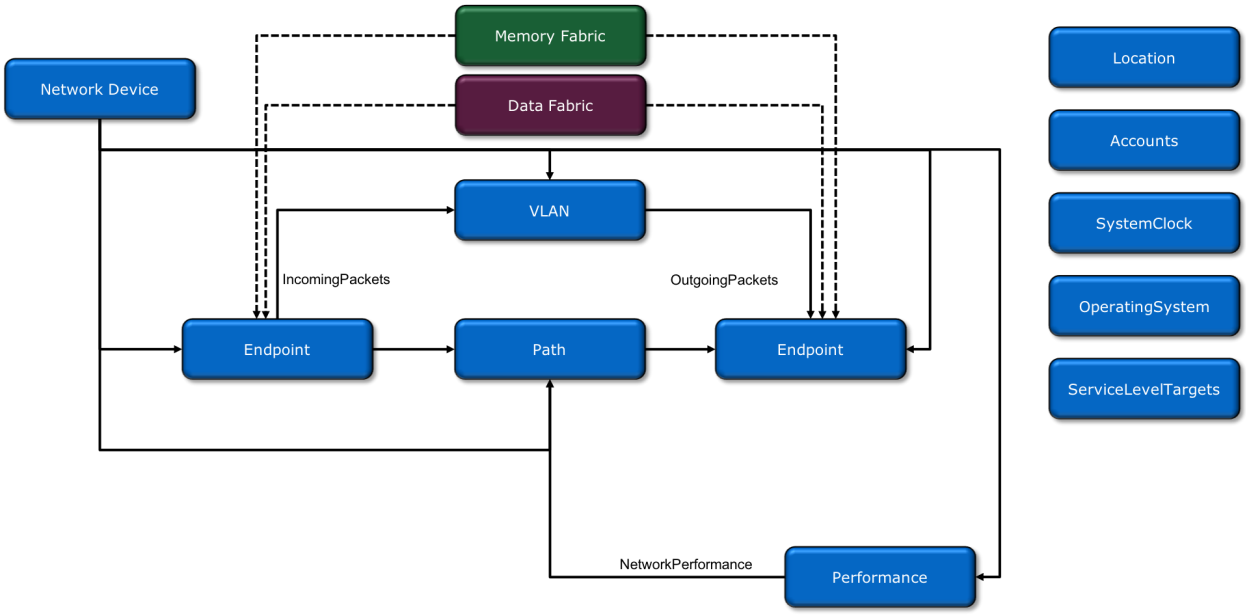


Figure 12 - Network Resource - Logical/Virtual Model

8.5 Memory Resources

The Memory Device modeling includes both physical and logical/virtual resources. The physical resource model includes the overall Memory Device that contains a collection of Chips, Power Supplies, Fans, and Ports. A Chassis Device may provide the power and cooling resources separately if the Memory Device is separate from the enclosure services. These physical resources are represented in the figure below.

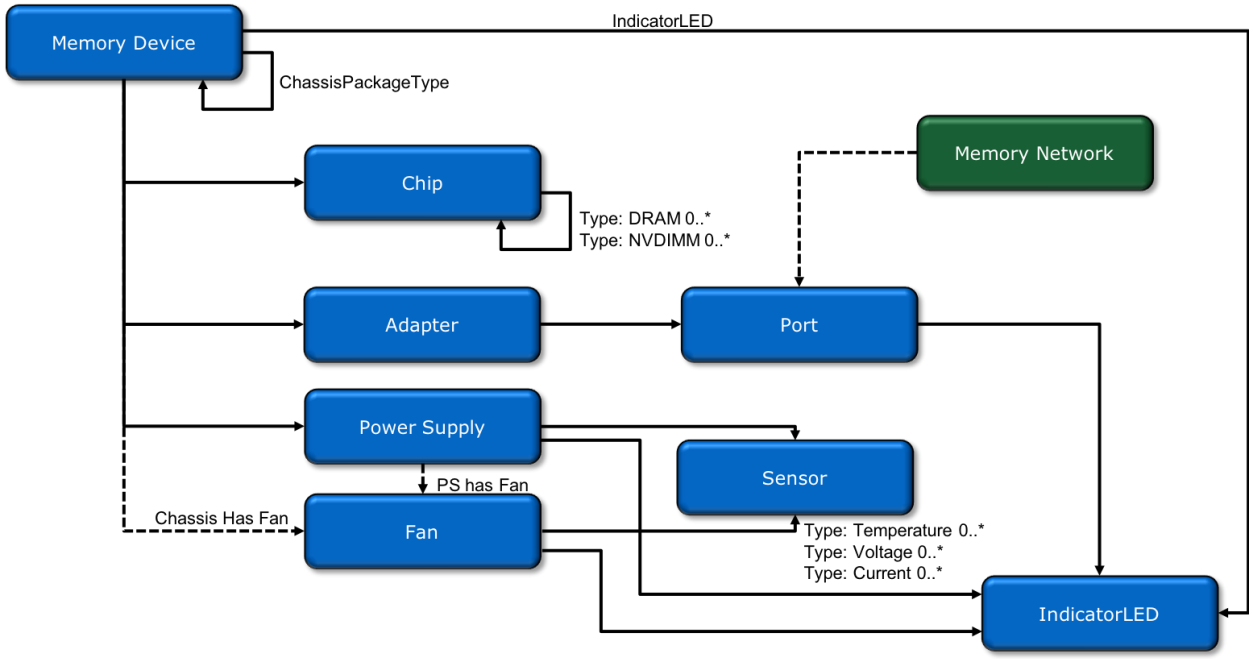


Figure 13 - Memory Resource - Physical Model

The logical and virtual resources model include those resources that are logical or virtual in nature. These include Endpoints, Memory Modules, and Performance. These are modeled in the figure below.

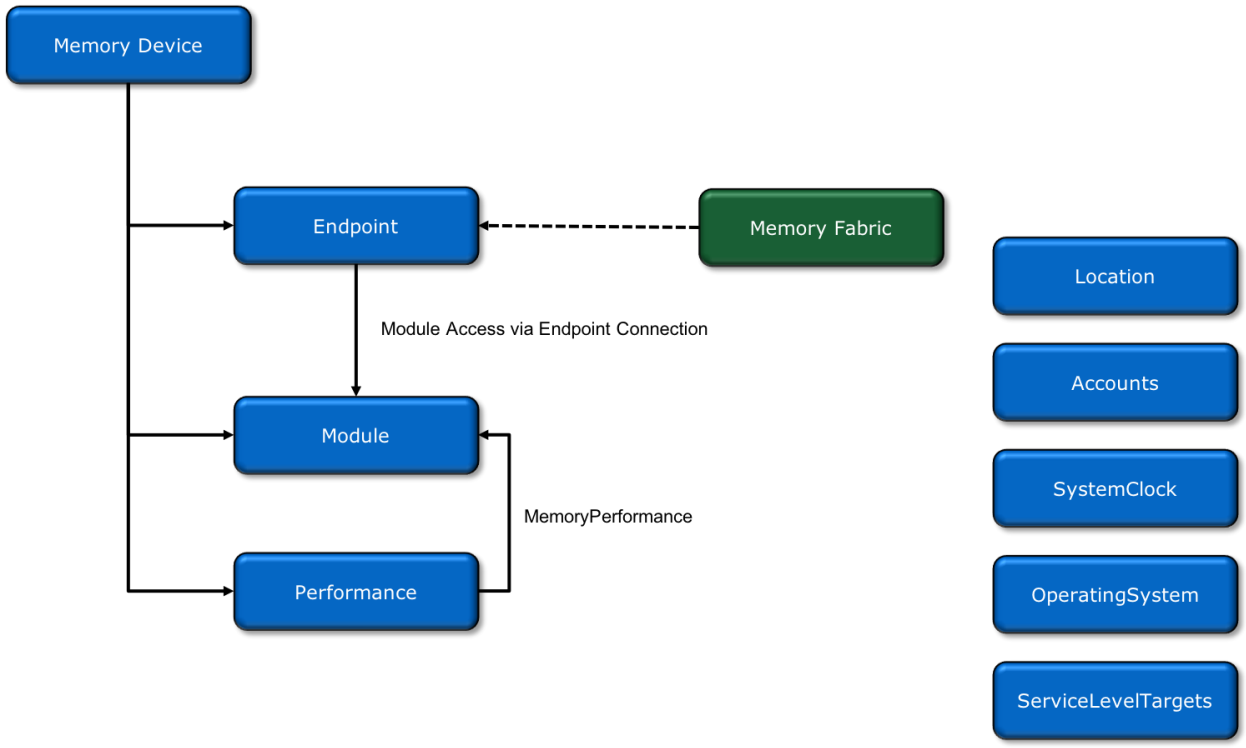


Figure 14 - Memory Resource - Logical/Virtual Model

8.6 Chassis Resources

The Chassis Device modeling includes both physical and logical resources. The physical resource model includes the overall Chassis Device that contains a collection of Power Supplies, Fans, Sensors, Ports, and Slots. The Slots resource may allow visibility into other Device Types that are connected within the Slot. These physical resources are represented in the figure below.

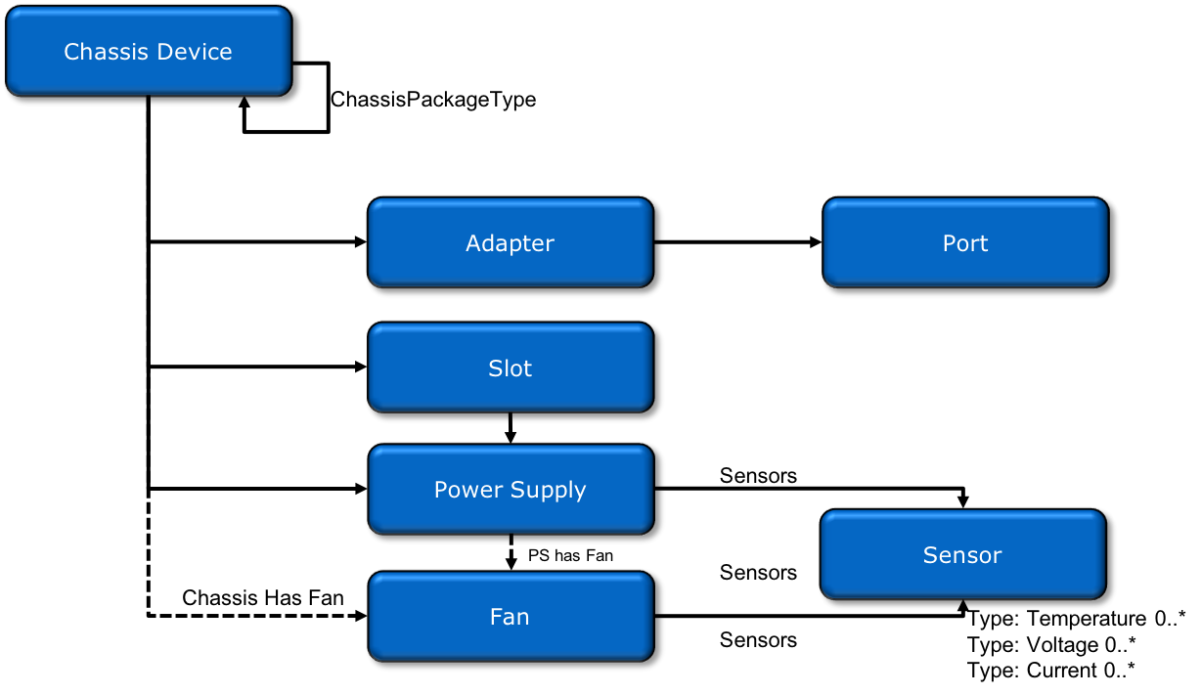


Figure 15 - Chassis Resource - Physical Model

The logical and virtual resources model include those resources that are logical or virtual in nature. These include Accounts, Location, Device OS, System Clock, and Jobs. These are modeled in the figure below.

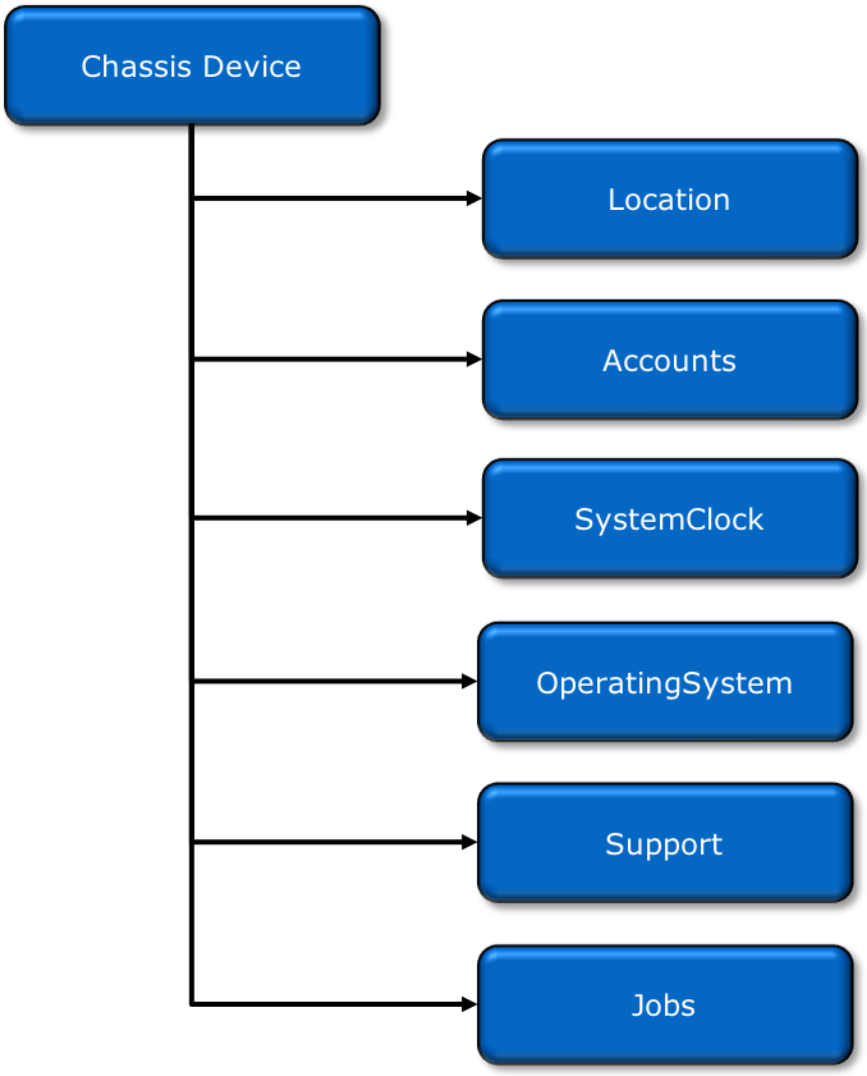


Figure 16 - Chassis Resource - Logical/Virtual Model

9 REST-Based 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 or in the JSON request body.

URI Patterns

Uniform Resource Identifiers (URI) are built with the following pattern:

scheme, host, domain, resources, resourceID,

Example:

http://ip:port/domain/resources/resourceID[/resource/resourceID]...

Where *scheme* can be http or https; *domain* can be “storage”, “compute”, “network”, 'memory", or “system”; *resources* can be “devices” “volumes”, “hosts”, “switches”, “servers”, etc.; and *resourceID* can be an index, GUID, UUID, or any type of identifier for the instance of a resource that is unique to at least the local device.

Real world example of a particular storage device:

http://localhost:8080/Storage/Devices/12345

All entries are plural-based so that a URI without an ending GUID or other resource identifier would return the collection or list of a particular element.

E.g., http://ip:port/Storage/Devices/12345/Volumes would return a list of volumes instead of a particular one.

URI representations of physical components and devices must include the fully qualified URI path.

Examples:

Physical Components

http://ip:port/Storage/Devices/id/Adapters/id is the address of a specific adapter in a specific storage device.

Logical/Virtual Components

http://ip:port/Storage/Devices/id/Volumes/id is the same as **http://ip:port/Storage/Volumes/id**. In other words, logical/virtual resources may be addressed without indicating the physical location of the resource since it is addressed uniquely in space and time, typically with GUID or UUID. Multiple addresses to the same resource is allowed as shown in the example.

Resource URIs

There are several “composable domains” that can be used to describe and manipulate devices. For composed systems, these domains are “compute”, “network”, “storage”, and "memory". These typically describe control at the device or component level. The “system” domain entry is used to aggregate the other domains into an all-encompassing control layer to help describe the usage and connectivity of the devices and components as a physical or virtual system. The system-level composability typically allows aggregation lists of all participating devices and also any user-defined groupings of the devices and components that make up the system or sub-systems.

- /Storage/Devices – Storage-based device collection URI
- /Compute/Devices – Compute-based device collection URI
- /Network/Devices – Network-based device collection URI
- /Memory/Devices – Memory-based device collection URI

Discovery Resources

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 an Open Composable-based Devices to discover of all other participating Open Composable-based Devices to generate a dynamic system list of Devices that can be composed through a single Open Composable-based Device as a single-point-of-control.

The base URI format is as follows:

- /Query – Doorbell URI
- /System/Query – System-based device query aggregation URI
    - Contains all the discovered Query responses for all participating Devices within the System

9.1 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 an Open Composable-based Device do a discovery of all other participating Open Composable-based Devices to generate a dynamic Collection of Devices that can be composed through a single Open Composable-based Device as a single-point-of-control.

URI Pattern	Description
/Query/	Returns Summary of the Collection of Devices accessible at this location (IP Address)
/System/Query/	Returns all the "Summary Query" responses from all discovered Collection of Devices across multiple device types

9.1.1 Query

Description

The Query resource (Doorbell) returns the device type and perhaps its higher level system membership and/or any other devices or devices this device may be managing via proxy, if any.

Allowable Methods

URI	Allowable Methods
/Query/	GET, HEAD, OPTIONS

GET /Query/ - Retrieve the Query Doorbell information

URI:	/Query/	Description
Method	GET	Returns the query information along with the “links” for further management navigation into this Device
Request Header		
Query Parameters		
Response	200 OK 304 Not Modified 404 Not Found	OK & Support resource information in the response body If-None-Match Etag value matched, therefore no Response Body will be returned Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource

HEAD /Query/ - Ping the Query Doorbell

URI:	/Query/	Description
Method	HEAD	Pings the Query resource
Request Header		
Query Parameters		
Response	200 OK 404 Not Found	OK with no response body + Header "Server: OpenFlex API" to help determine that the IP address response to the doorbell request Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource

OPTIONS /Query/ - Determine Allowable Methods for the Query resource

URI:	**/Query/**	**Description**
Method	OPTIONS	Get the allowable HTTP Methods list for this resource
Request Header	(None) Documentation (Optional) Documentation (Optional) If-None-Match (Optional)	Returns the full resource schema as Content-Type application/json Info - Returns documentation information in the form of plain text Schema - Returns the schema information in "pretty" JSON text as plain text Etag - The request is conditionally processed only if the current ETag for the resource does not match the ETag passed in this header
Query Parameters		
Response	200 OK 304 Not Modified 404 Not Found	OK & the “Allow” list of methods in the response header. The response body provides the JSON Schema for this resource If-None-Match Etag value matched, therefore no Response Body will be returned Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource

Methods Not Allowed on **/Query/**

URI:	**/Query/**	**Description**
Method	POST, PUT, DELETE	Methods that are not allowed
Request Header		
Query Parameters		
Response	405 Method Not Allowed	Method not allowed for this Resource

Resource Attributes

Attribute	Type	Requirement	User Configurable	Possible Values	Description	Model Correspondence
Self	String	Mandatory	No	Free-Form URI Format 256 Chars	Describes the fully qualified URI link	{ IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking }
SystemQuery	String	Mandatory	No	Free-Form URI Format with IP plus "/System/Query"	Link to ask this Device to discover other devices	{ IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking }
InformationStructure.Self	String	Mandatory	No	Free-Form URI Format 256 Chars	Link to use to display or modify the InformationStructure	{ IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking }
InformationStructure.Name	String	Mandatory	No	Free-Form 64 Chars	The API name	{ DMTF | CIM | Interop.SchemaInformationStructure.Name }
InformationStructure.HttpPort	Number	Mandatory	Yes	80, or 1024 - 65535 range	Port number for HTTP listener; default = 80	
InformationStructure.HttpsPort	Number	Mandatory	Yes	443, or 1024 - 65535 range	Port number for HTTPS listener; default = 443	
InformationStructure.ID	String	Mandatory	No	Free-Form 256 Chars	The query identifier represents the main device ID	{ DMTF | CIM | LogicalElement.DeviceID }
InformationStrucuture.AuthenticationType.ID	Number	Mandatory	Yes	0 = Basic; 1 = Digest	The current	

					authentication type ID	
InformationStrucuture.AuthenticationType.Name	String	Mandatory	No	Basic or Digest	The current authentication type Name	
InformationStructure.StructureDescription	String	Mandatory	No	Free-Form 256 Chars	The API Schema Description	{ DMTF | CIM | Interop.SchemaInformationStructure.Description }
InformationStructure.OwningOrganization	String	Mandatory	No	Free-Form 64 Chars	The API Schema Owner	{ DMTF | CIM | Interop.SchemaInformationStructure.OwningOrganization }
InformationStructure.Status	String	Mandatory	No	Free-Form 64 Chars	The API Schema Version Release Status	{ DMTF | CIM | Interop.SchemaInformationStructure.Status }
InformationStructure.URI	String	Mandatory	No	Free-Form URI Format	The API Schema URI starting point	{ DMTF | CIM | Interop.SchemaInformationStructure.URI }
InformationStructure.Version	String	Mandatory	No	Major.Minor.Release Format	The API Schema Version Number	{ DMTF | CIM | Interop.SchemaInformationStructure.Version }
InformationStructure.ClientFilter	String	Optional	Yes	Default: All Clients if empty; REGEX of IP Address ranges with "|" delimiter	Creates a "white list filter" of allowed Clients based on REGEX pattern of IP Addresses. Multiple entries with "|" delimiter.	

InformationStructure.MaximumThreads	Number	Optional	Yes	Default: 5	Throttles the total number of web client connections. Returns a 429 Too Many Requests if maximum number reached. Try again.	
Devices.Self	String	Mandatory	No	Free-Form URI Format 256 Chars	Describes the fully qualified URI link	{ IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking }
Devices.Members	String Array	Optional	No	One or more /Devices bodies	Collection of Device Summaries	

EXAMPLES

GET Query Example

Request

Method	URI	Query String	Request Header	Request Body
GET	/Query/			

Response

Precondition	Response Code	Response Header	Response Body
Resource Id does not exist	404 Not Found		

Success	200 OK	Content-Type: application/json	{
			"Self": "http://10.20.30.40:80/Query/",
			"SystemQuery": "http://10.20.30.40:80/System/Query/",
			"InformationStructure": {

		ETag: {etag}	"Self": "http://10.20.30.40:80/Query/InformationStructure/", "AuthenticationType": { "ID": 0, "Name": "Basic" }, "Name": "OpenFlex API", "HTTPPort": 80, "HTTPSPort": 443, "ID": "0123456789", "StructureDescription": "REST-based API for Device or System Management. Use HTTP OPTIONS to get resource schema information based on URI.", "OwningOrganization": "WDC", "Status": "Preliminary", "URI": "/Query/", "Version": "0.9.11" }, "Devices": { "Self": "http://10.20.30.40:80/Devices/", "Members": [{ "Self": "http://10.20.30.40:80/Storage/Devices/0123456789/", "SystemType": { "ID": 2, "Name": "Storage" }, "Name": "opnflx3-5", "Description": "", "ID": "0123456789", "OperatingSystem": { "Self": "http://10.20.30.40:80/Storage/Devices/0123456789/OperatingSystem/", "Name": "Vendor Firmware", "OSType": { "ID": 59, "Name": "Dedicated" }, "Version": "0.0.0-942" }, "SerialNumber": "SN0123456789", "Model": "OpenFlex F3000", "Manufacturer": "WDC", "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": 40,
                                        "Name": "Blade",
                                        "CapabilityDescription": "This device is
                                        a blade device."
                                    }]
                                },
                                "Status": {
                                    "State": {
                                        "ID": 16,
                                        "Name": "In service"
                                    },
                                    "Health": [{
                                        "ID": 0,
                                        "Name": "Unknown"
                                    }],
                                    "Details": ["None"]
                                },
                                "IPAddresses": {
                                    "Members": [{
                                        "IPAddress": "10.20.30.40"
                                    }, {
                                        "IPAddress": "192.168.0.40"
                                    }]
                                }
                            }]
                        }
                }
```

9.1.2 Information Structure

Description

The Device-level methods and attributes return information about the Information Structure and do certain operations.

Allowable Methods

URI	Allowable Methods
/Query/InformationStructure/	GET, PUT, HEAD, OPTIONS

GET /Query/InformationStructure/ - Retrieve the Information Structure information

URI:	/Query/InformationStructure/	Description
Method	GET	Returns the Information Structure
Request Header	Authorization (Mandatory) If-None-Match (Optional)	The request requires either Basic or Digest authorization The request is conditionally processed only if the current ETag for the resource does not match the ETag passed in this header
Query Parameters		
Response	200 OK 304 Not Modified 401 Unauthorized 404 Not Found 429 Too Many Requests	OK & Support resource information in the response body If-None-Match Etag value matched, therefore no Response Body will be returned Unauthorized; credential entry failed or missing 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

PUT /Query/InformationStructure/ - Modify specific certain Information Structure attributes

URI:	/Query/InformationStructure/	Description
Method	PUT	Modify an attribute of the Information Structure
Request Header	Authorization (Mandatory) If-Match (Mandatory)	The request requires either Basic or Digest authorization

		The request is conditionally processed only if the current ETag for the resource matches the ETag passed in this header
Query Parameters		

Request Body	{
	"HTTPPort": number,
	"HTTPSPort": number,
	"AuthenticationType": {
	"ID" : 0 | 1 },
	"ClientFilter" : REGEX,
	"MaximumThreads":
	number,
	"RestartAPI": true
	}
		JSON BODY START
		Change the HTTP Listener Port Number (default = 80, or range between 1024 to 65535; 0 = turn off HTTP Listener (HTTPS must be left on)
		Change the HTTPS Listener Port Number (default = 443, or range between 1024 to 65535; 0 = 0 turn off HTTPS Listener (HTTP must be left on)
		Change the Authentication Type; 0 = Basic or 1 = Digest.
		Client Filter to allow only a single or range of Clients based on a REGEX of the IP Address delimited by "|" to have more than one REGEX entry. EX: "ClientFilter": "192.168 | 10.20.30.40"
		Maximum number of outstanding requests (threads) allowed; default 5
		On-demand restarting of the management API service (WriteOnly)
		JSON BODY END
		NOTE: Changes to any of the above attributes will require user to log back in

Response	200 OK 301 Moved Permanently 400 Bad Request 401 Unauthorized 412 Precondition Failed 428 Precondition Required 429 Too Many Requests 500 Internal Server Error	OK & Volume information in the response body + ETag Header URI Address has moved to a new location if the Port Number(s) are changed; provides new URI in "Location" header in the response Bad Request (typically a faulty parameter) Unauthorized; credential entry failed or missing Indicates the “If-Match” Etag check failed Indicates the need for an “If-Match” conditional with an Etag value in the Request Header Indicates API service is Busy, client should try again later Indicates the device could not complete the request

HEAD /Query/InformationStructure/ - Ping the Information Structure

URI:	/Query/InformationStructure/	Description
Method	HEAD	Pings the Information Structure resource

Request Header		
Query Parameters		
Response	200 OK 401 Unauthorized 404 Not Found 429 Too Many Requests	OK with no response body + Header "Server: OpenFlex API" to help determine that the IP address response to the doorbell request Unauthorized; credential entry failed or missing 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

OPTIONS /Query/InformationStructure/ - Determine Allowable Methods for the Information Structure Resource

URI:	**/Query/InformationStructure/**	**Description**
Method	OPTIONS	Get the allowable HTTP Methods list for this resource
Request Header	(None) Documentation (Optional) Documentation (Optional) If-None-Match (Optional)	Returns the full resource schema as Content-Type application/json Info - Returns documentation information in the form of plain text Schema - Returns the schema information in "pretty" JSON text as plain text Etag - The request is conditionally processed only if the current ETag for the resource does not match the ETag passed in this header
Query Parameters		
Response	200 OK 304 Not Modified 404 Not Found 429 Too Many Requests	OK & the “Allow” list of methods in the response header. The response body provides the JSON Schema for this resource If-None-Match Etag value matched, therefore no Response Body will be returned 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

Methods Not Allowed on **/Query/InformationStructure/**

URI:	/Query/InformationStructure/	Description
Method	POST, DELETE	Methods that are not allowed
Request Header		
Query Parameters		
Response	405 Method Not Allowed	Method not allowed for this Resource

Resource Attributes

Attribute	Type	Requirement	User Configurable	Possible Values	Description	Model Correspondence
Self	String	Mandatory	No	Free-Form URI Format 256 Chars	Describes the fully qualified URI link	{ IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking }
SystemQuery	String	Mandatory	No	Free-Form URI Format with IP plus "/System/Query"	Link to ask this Device to discover other devices	{ IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking }
InformationStructure.Self	String	Mandatory	No	Free-Form URI Format 256 Chars	Link to use to display or modify the InformationStructure	{ IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking }
InformationStructure.Name	String	Mandatory	No	Free-Form 64 Chars	The API name	{ DMTF | CIM | Interop.SchemaInformationStructure.Name }
InformationStructure.HTTPPort	Number	Mandatory	Yes	80, or 1024 - 65535 range	Port number for HTTP listener; default = 80	

InformationStructure.HTTPSPort	Number	Mandatory	Yes	443, or 1024 - 65535 range	Port number for HTTPS listener; default = 443	
InformationStructure.ID	String	Mandatory	No	Free-Form 256 Chars	The query identifier represents the main device ID	{ DMTF | CIM | LogicalElement.DeviceID }
InformationStrucuture.AuthenticationType.ID	Number	Mandatory	Yes	0 = Basic; 1 = Digest	The current authentication type ID	
InformationStrucuture.AuthenticationType.Name	String	Mandatory	No	Basic or Digest	The current authentication type Name	
InformationStructure.StructureDescription	String	Mandatory	No	Free-Form 256 Chars	The API Schema Description	{ DMTF | CIM | Interop.SchemaInformationStructure.Description }
InformationStructure.OwningOrganization	String	Mandatory	No	Free-Form 64 Chars	The API Schema Owner	{ DMTF | CIM | Interop.SchemaInformationStructure.OwningOrganization }
InformationStructure.Status	String	Mandatory	No	Free-Form 64 Chars	The API Schema Version Release Status	{ DMTF | CIM | Interop.SchemaInformationStructure.Status }
InformationStructure.URI	String	Mandatory	No	Free-Form URI Format	The API Schema URI starting point	{ DMTF | CIM | Interop.SchemaInformationStructure.URI }
InformationStructure.Version	String	Mandatory	No	Major.Minor.Release Format	The API Schema Version Number	{ DMTF | CIM | Interop.SchemaInformationStructure.Version }

InformationStructure.ClientFilter	String	Optional	Yes	Default: All Clients if empty; REGEX of IP Address ranges with "|" delimiter	Creates a "white list filter" of allowed Clients based on REGEX pattern of IP Addresses. Multiple entries with "|" delimiter.	
InformationStructure.MaximumThreads	Number	Optional	Yes	Default: 5	Throttles the total number of web client connections. Returns a 429 Too Many Requests if maximum number reached. Try again.	
RestartAPI	Boolean	WriteOnly	Yes	true	Directs the device to restart the API service	

EXAMPLES

GET Information Structure Example

Request

Method	URI	Query String	Request Header	Request Body
GET	/Query/InformationStructure/			

Response

Precondition	Response Code	Response Header	Response Body

Resource Id does not exist	404 Not Found		
If-None-Match true	304 Not Modified	ETag: {etag}	
API Busy	429 Too Many Requests		

Success
If-None-Match false or missing
	200 OK	Content-Type: application/json
		ETag: {etag}
			{
			"Self": "http://10.20.30.40:80/Query/InformationStructure/",
			"Name": "OpenFlex API",
			"AuthenticationType": {
			"ID": 0,
			"Name": "Basic"
			},
			"HTTPPort": 80,
			"HTTPSPort": 443,
			"ID": "0123456789",
			"MaximumThreads": 5,
			"StructureDescription": "REST-based API for Device or System Management. Use HTTP OPTIONS to get resource schema information based on URI.",
			"OwningOrganization": "WDC",
			"Status": "Preliminary",
			"URI": "/Query/",
			"Version": "0.9.11"
			}

9.1.3 System Query

Description

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

Allowable Methods

URI	Allowable Methods
/System/Query/	GET, HEAD, OPTIONS

GET /System/Query/- Retrieve the System Query resource information

URI:	/System/Query/	Description
Method	GET	Returns the information of the System Query resource
Request Header	Authorization (Mandatory)	The request requires either Basic or Digest authorization
Query Parameters	Netmask = {ip_address/cidr} DiscoveryTimeout = {1-n} QueryTimeout = {1-n} Threads = {1-n}	The IP address and CIDR code range for the sweep/scan process; default sweep is system IP Address subnet The timeout value in seconds for the discovery process; default = 5 seconds The timeout value in seconds for the query process; default = 20 seconds The number of parallel /Query doorbell requests based on the number of IP Address/CIDR to send to the network (multi-threaded unicast)
Response	200 OK 304 Not Modified 401 Unauthorized 404 Not Found 429 Too Many Requests	OK & System Query resource information in the response body If-None-Match Etag value matched, therefore no Response Body will be returned (Note: for /System/Query, the order of devices coming back may be different, so it is rare to get a 304) Unauthorized; credential entry failed or missing 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

HEAD /System/Query/- Ping the System Query resource

URI:	/System/Query/	Description
Method	HEAD	Pings the System Query resource
Request Header	Authorization (Mandatory)	
Query Parameters		
Response	200 OK 401 Unauthorized 404 Not Found 429 Too Many Requests	OK with no response body Unauthorized; credential entry failed or missing 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

OPTIONS /System/Query/- Determine Allowable Methods for the System Query resource

URI:	/System/Query/	Description
Method	OPTIONS	Get the allowable HTTP Methods list for this resource
Request Header	(None) Documentation (Optional) Documentation (Optional) If-None-Match (Optional)	Returns the full resource schema as Content-Type application/json Info - Returns documentation information in the form of plain text Schema - Returns the schema information in "pretty" JSON text as plain text Etag - The request is conditionally processed only if the current ETag for the resource does not match the ETag passed in this header
Query Parameters		
Response	200 OK 304 Not Modified 404 Not Found 429 Too Many Requests	OK & the "Allow" list of methods in the response header. The response body provides the JSON Schema for this resource If-None-Match Etag value matched, therefore no Response Body will be returned (Note: for /System/Query, the order of devices coming back may be different, so it is rare to get a 304) 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

Methods Not Allowed on **/System/Query/**

URI:	/System/Query/	Description
Method	POST, PUT, DELETE	• Methods that are not allowed
Request Header		
Query Parameters		
Response	405 Method Not Allowed	Method not allowed for this Resource

Resource Attributes

Attribute	Type	Requirement	User Configurable	Possible Values	Description	Model Correspondence

Self	String	Mandatory	No	Free-Form URI Format 256 Chars	Describes the fully qualified URI link	{ IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking }
Members	String Array	Optional	No	One or more discovered /Query bodies	Collection of discovered /Query doorbell resources	

EXAMPLES

GET System Query Example

Request

Method	URI	Query String	Request Header	Request Body
GET	/System/Query/	?Netmask=10.20.30.0/22&DiscoveryTimeout=1&QueryTimeout=8&Threads=1024	Authorization (Mandatory)	

Response

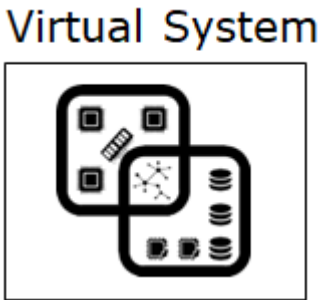
Precondition	Response Code	Response Header	Response Body
Credentials invalid or missing	401 Unauthorized		
Resource Id does not exist	404 Not Found		
API Busy	429 Too Many Requests		

Success	200 OK	Content-Type: application/json	{
			"Self": "http://10.20.30.40/System/Query/",
			"Members": [{
			"Self": "http://10.20.30.40/Query/",
			"SystemQuery": "http://10.20.30.40/System/Query/",

```
"InformationStructure": {
    "Self":
    "http://10.20.30.40:80/Query/InformationStructu
    re/",
    "AuthenticationType": {
        "ID": 0,
        "Name": "Basic"
    },
    "Name": "OpenFlex API",
    "HTTPPort": 80,
    "HTTPSPort": 443,
    "ID": "0123456789",
    "StructureDescription": "REST-based API for
    Device or System Management. Use HTTP
    OPTIONS to get resource schema information
    based on URI.",
    "OwningOrganization": "WDC",
    "Status": "Preliminary",
    "URI": "/Query/",
    "Version": "0.9.11"
},
"Devices": {
    "Self": "http://10.20.30.40/Devices/",
    "Members": [{
        "Self":
        "http://10.20.30.40/Storage/Devices/01234
        56789/",
        "SystemType": {
            "ID": 2,
            "Name": "Storage"
        },
        "Name": "opnflx-6789",
        "ID": "blade_uuid_0123456789",
        "OperatingSystem": {
            "Self":
            "http://10.20.30.40/Storage/Devicess
            /0123456789/OperatingSystem/",
            "Name": "Vendor Firmware",
            "OSType": {
                "ID": 0,
                "Name": "Unknown"
            },
            "Version": "blade-FW-Rev0"
        },
        "SerialNumber": "blade-SN-0123456789",
        "Model": "blade-MN-0123456789",
        "Manufacturer": "WDC",
```

```
                                "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": 40,
                                        "Name": "Blade",
                                        "CapabilityDescription": "This device
                                        is a blade device."
                                }]},
                                "Status": {
                                        "State": {
                                                "ID": 16,
                                                "Name": "In service"
                                        },
                                        "Health": [{
                                                "ID": 5,
                                                "Name": "OK"
                                        }],
                                        "Details": ["None"]
                                },
                                "IPAddresses": {"Members": [{"IPAddress":
                                "10.20.30.40"}, {"IPAddress":
                                "192.168.0.9"}]
                        }]
                }}]
        }
```

9.2 System Composites - Virtual



This tables shows the virtual resources for a System Composite. The set of resource URIs is as follows:

URI Pattern	Description
/System/Composites/	Collection of all composed Virtual Systems
/System/Composites/{id}	A specific Virtual System
/System/Composites/{id}/Performance	The Performance information for this Virtual System

9.2.1 System Composites

Description

The System-level methods and attributes return information about the Composite(s) and do certain operations.

Allowable Methods

URI	Allowable Methods
/System/Composites/	GET, POST, HEAD, OPTIONS
/System/Composites/{id}/	GET, PUT, DELETE, HEAD, OPTIONS

GET /System/Composites/ - Retrieve all System Composites

URI:	/System/Composites/	Description
Method	GET	Returns the Collection of Composites
Request Header	Authorization (Mandatory)	The request requires either Basic or Digest authorization

	If-None-Match (Optional)	The request is conditionally processed only if the current ETag for the resource does not match the ETag passed in this header
Query Parameters		
Response	200 OK 304 Not Modified 401 Unauthorized 404 Not Found	OK & List of Composites + ETag Header If-None-Match Etag value matched, therefore no Response Body will be returned Unauthorized; credential entry failed or missing Resource Collection does not exist; this IP Address is running an HTTP service, but does not recognize this resource

GET /System/Composites/{id}/ - Retrieve a specific System Composite

URI:	**/System/Composites/{id}/**	**Description**
Method	GET	Returns the information regarding a specific Composite based on the {id} in the URI address string
Request Header	Authorization (Mandatory) If-None-Match (Optional)	The request requires either Basic or Digest authorization The request is conditionally processed only if the current ETag for the resource does not match the ETag passed in this header
Query Parameters		
Response	200 OK 401 Unauthorized 404 Not Found	OK & Composite information in the response body + ETag Header Unauthorized; credential entry failed or missing Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource

POST/System/Composites/ - Create a new System Composite

URI:	**/System/Composites/**	**Description**
Method	POST	Create a new Composite
Request Header	Authorization (Mandatory)	The request requires either Basic or Digest authorization
Query Parameters		
Request Body	{	JSON BODY START Name of the Composite

	"Name": "volume_name", "Description": "desc", "ResourcePools": [pools] }	User description for the Composite List of ResourcePools to make up the Composite JSON BODY END
Response	201 Created 400 Bad Request 401 Unauthorized 409 Conflict 500 Internal Server Error	Created & Composite information in the response body + ETag Header + new URI in Location Header Bad Request (typically a faulty parameter) Unauthorized; credential entry failed or missing A new parameter value already exists (e.g., Name) System could not process the request

PUT /System/Composites/{id}/ - Modify specific System Composite attributes

URI:	**/System/Composites/{id}/**	**Description**
Method	PUT	Modify an attribute or execute an operation for this Composite
Request Header	Authorization (Mandatory) If-Match (Mandatory)	The request requires either Basic or Digest authorization The request is conditionally processed only if the current ETag for the resource matches the ETag passed in this header
Query Parameters		
Request Body	{ "Name" : "new_name", "PolicyTimePeriodCondition" : { "Name:": "condition_name", "LocalOrUtcTime": "local or utc", "TimePeriod" : "new_time_period" }, "ResourcePools": [pools] }	JSON BODY START Specify a new name TimePeriodCondition selection name Select time period type: Local or UTC Enter new time period span values Update the ResourcePool list to add or remove members JSON BODY END
Response	200 OK 400 Bad Request 401 Unauthorized 404 Not Found 409 Conflict 412 Precondition Failed	OK & Composite information in the response body + ETag Header Bad Request (typically a faulty parameter) Unauthorized; credential entry failed or missing The Resource doesn't exist

	428 Precondition Required 500 Internal Server Error	Name may be duplicate or some other composite-level operation is in progress Indicates the "If-Match" Etag check failed Indicates the need for an "If-Match" conditional with an Etag value in the Request Header System could not process the request

HEAD /System/Composites/ - Ping the Collection of System Composites

URI:	/System/Composites/{id}/	Description
Method	HEAD	Pings this System Composite Collection
Request Header	Authorization (Mandatory)	The request requires either Basic or Digest authorization
Query Parameters		
Response	200 OK 401 Unauthorized 404 Not Found	OK with no response body Unauthorized; credential entry failed or missing Resource Collection does not exist; this IP Address is running an HTTP service, but does not recognize this resource

HEAD /System/Composites/{id}/ - Ping a specific System Composite

URI:	/System/Composites/{id}/	Description
Method	HEAD	Pings this System Composite
Request Header	Authorization (Mandatory)	The request requires either Basic or Digest authorization
Query Parameters		
Response	200 OK 401 Unauthorized 404 Not Found	OK with no response body Unauthorized; credential entry failed or missing Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource

OPTIONS /System/Composites/- Determine Allowable Methods for a Collection of System Composites

Method	OPTIONS	Get the allowable HTTP Methods list for this resource

Request Header		
Query Parameters		
Response	200 OK 404 Not Found	OK & the "Allow" list of methods in the response header. The response body provides the JSON Schema for this resource Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource

OPTIONS /System/Composites/{id}/ - Determine Allowable Methods for a specific System Composite

URI:	**/System/Composites/{id}/**	**Description**
Method	OPTIONS	Get the allowable HTTP Methods list for this resource
Request Header		
Query Parameters		
Response	200 OK 404 Not Found	OK & the "Allow" list of methods in the response header. The response body provides the JSON Schema for this resource Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource

DELETE /System/Composites/{id}/ - Delete specific System Composite

URI:	**/System/Composites/{id}/**	**Description**
Method	DELETE	Delete this Composite
Request Header	Authorization (Mandatory) If-Match (Mandatory)	The request requires either Basic or Digest authorization The request is conditionally processed only if the current ETag for the resource matches the ETag passed in this header
Query Parameters		
Request Body		
Response	204 No Content 401 Unauthorized	Delete successful, no content in the response body Unauthorized; credential entry failed or missing

	404 Not Found 412 Precondition Failed 428 Precondition Required 500 Internal Server Error	The Resource doesn't exist Indicates the "If-Match" Etag check failed Indicates the need for an "If-Match" conditional with an Etag value in the Request Header System could not process the request

Methods Not Allowed on **/System/Composites/** Collection

URI:	**/System/Composites/**	**Description**
Method	PUT, DELETE	Methods that are not allowed
Request Header		
Query Parameters		
Response	405 Method Not Allowed	Method not allowed for this Resource; returns "Allow" header with allowable methods list

Methods Not Allowed on **/System/Composites/{id}/** Instance

URI:	**/System/Composites/{id}/**	**Description**
Method	POST	Methods that are not allowed
Request Header		
Query Parameters		
Response	405 Method Not Allowed	Method not allowed for this Resource; returns "Allow" header with allowable methods list

Collection Resource Attributes

Attribute	**Type**	**Requirement**	**User Configurable**	**Possible Values**	**Description**	**Model Correspondence**
Self	URI String	Mandatory	No	Free-Form URI Format 256 Chars	Describes the fully qualified URI link for the Collection	{ IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking }
Members	String Array	Mandatory	No	Resource Collection (0 - n entries)	The array of Resource Instances	

					(see Instance Resource Attributes Table for Instance Attribute details)	

Instance Resource Attributes

Attribute	Type	Requirement	User Configurable	Possible Values	Description	Model Correspondence
Self	URI String	Mandatory	No	Free-Form URI Format 256 Chars	Describes the fully qualified URI link	{ IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking }
Name	String	Mandatory	Yes	Free-Form 256 Chars	The user-defined Friendly Name for this Resource	{ DMTF | CIM | ManagedSystemElement.Name }
ID	String	Mandatory	No	Free-Form 256 Chars	The resource identifier that is unique in space and time	{ DMTF | CIM | LogicalElement.DeviceID }
CreationDate	Datetime	Mandatory	No	Date and Time	The date and time	{ DMTF | CIM | ManagedSystemElement.InstallDate }

					the Composite was created	
LastModified	Datetime	Mandatory	No	Date and Time	The date and time the Composite was modified	{ DMTF | CIM | LogicalElement.TimeOfLastStateChange }
Status.State.Name	String	Mandatory	No	"Unknown" "Not available" "Servicing" "Starting" "Stopping" "Stopped" "Aborted" "Dormant" "Completed" "Migrating" "Emigrating" "Immigrating" "Snapshotting" "Shutting down" "In test" "Transitioning" "In service"	The current state value of this Resource	{ DMTF | CIM | ManagedSystemElement.State }
Status.State.ID	Number	Mandatory	No	0 1 2 3 4 5 6	The current state value map of this	{ DMTF | CIM | ManagedSystemElement.State }

				7 8 9 10 11 12 13 14 15 16	Resource	
Status.Health[].Name	String (1..*)	Mandatory	No	"Unknown" "OK" "Degraded/ Warning" "Minor failure" "Major failure" "Critical failure" "Non-recoverable error" "Not installed" "Not available" "No access allowed"	The current health value of this Resource. There can be 1 or more Name entries.	{ DMTF | CIM | ManagedSystemElement.HealthState }
Status.Health[].ID	Number (1..*)	Mandatory	No	0 5 10 15 20 25 30 65536 65537 65538	The current health value map of this Resource. There can be 1 or more Id entries.	{ DMTF | CIM | ManagedSystemElement.HealthState }

Status.Details[]	String Array	Mandatory	No	Free-Form 32 Characters per Array entry. If no entry, then “None”.	The current Health Details of the Virtual System	{ DMTF | CIM | ManagedSystemElement.DetailedStatus }
PolicyTimePeriodCondition.Name	String	Mandatory	Yes	"TimeToLive"	Condition Name	{ DMTF | CIM | Policy.TimePeriodCondition.Name }
PolicyTimePeriodCondition.ID	String	Mandatory	Yes	12	Condition Id	{ DMTF | CIM | Policy.TimePeriodCondition.Id }
PolicyTimePeriodCondition.LocalOrUtcTime	String	Mandatory	Yes	"Local Time" "UTC Time"	Time type	{ DMTF | CIM | Policy.TimePeriodCondition.LocalOrUtcTime }
PolicyTimePeriodCondition.TimePeriod	String	Mandatory	Yes	Free-Form URI	Time Period based on the Name/Id type, e.g., TimeToLive date range	{ DMTF | CIM | Policy.TimePeriodCondition.TimePeriod }
ResourceNodes.Storage	String Array	Mandatory	Yes	Free-Form URIs	List of Storage Device URI Links that make up the Composite	{ DMTF | CIM | Logical.Devices, IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking }
ResourceNodes.Compute	String Array	Mandatory	Yes	Free-Form URIs	List of Compute Device URI Links	{ DMTF | CIM | Logical.Devices, IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking }

					that make up the Composite	
ResourceNodes.Network	String Array	Mandatory	Yes	Free-Form URIs	List of Network Device URI Links that make up the Composite	{ DMTF | CIM | Logical.Devices, IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking }
ResourceNodes.Memory	String Array	Mandatory	Yes	Free-Form URIs	List of Memory Device URI Links that make up the Composite	{ DMTF | CIM | Logical.Devices, IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking }
ResourceLinks	String Array	Mandatory	Yes	Free-Form URIs	List of Initiator, Link, and Target triplets	{ DMTF | CIM | Logical.Devices, IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking }

EXAMPLES

GET Composite Example - Specific Instance Based on the Identifier

Request

Method	URI	Query String	Request Header	Request Body

GET	/System/Composites/{id}/		Authorization (Mandatory) If-None-Match: {etag} (Optional)	

Response

Precondition	Response Code	Response Header	Response Body
Credentials invalid or missing	401 Unauthorized		
Resource Id does not exist	404 Not Found		
If-None-Match true	304 Not Modified		

If-None-Match false or missing	200 OK	Content-Type: application/json
		ETag: {etag}
			{
			"Self": "http://10.20.30.40:80/System/Composites/1004440712133522/",
			"Name": "VirtualSystem01",
			"ID": "1004440712133522",
			"Description": "This is VS 01",
			"CreationDate": "20180818T011228",
			"LastModified": "20181024T080508",
			"Status": {
			"State": {
			"ID": 16,
			"Name": "In Service"
			},
			"Health": [{
			"ID": 10,
			"Name": "Degraded/Warning"
			}],
			"Details": ["Performance Degraded: VLAN3 due to congestion"]
			},

```
"PolicyTimePeriodCondition": {
        "Name": "TimeToLive",
        "ID": "12",
        "LocalOrUtcTime": "Local Time",
        "TimePeriod": "20180818T011228/20181130T000000"
},
"ResourceNodes": {
        "Storage": [{
                "Self":
                "http://10.20.30.40:80/Storage/Devices/f876640cc6c1
                43fa/Volumes/3672116326702125/",
                "Name": "Volume02",
                "ID": "3672116326702125",
                "Role": "Flash Media"
        }, {
                "Self":
                "http://10.20.30.40:80/Storage/Devices/820d7b9c078
                c492d974fe764287c0827/Volumes/241605107462234
                3/",
                "Name": "Volume03",
                "ID": "2416051074622343",
                "Role": "Flash Media"
        }],
        "Compute": [{
                "Self":
                "http://10.20.30.40:80/Compute/Devices/00000000-
                0000-0000-0000-0CC47A6BAB1C/Processors/CPU0/",
                "Name": "CPU0",
                "ID": "CPU0",
                "Role": "Central Processor"
        }],
        "Network": [{
                "Self":
                "http://10.20.30.40:80/Network/Devices/48a2fa76-
                0f6f-11e7-8000-248a07c88044/VLANs/3/",
                "Name": "VLAN3",
                "ID": "3",
                "Role": "Memory Fabric"
        }, {
                "Self":
                "http://10.20.30.40:80/Network/Devices/48a2fa76-
                0f6f-11e7-8000-248a07c88045/VLANs/1/",
                "Name": "VLAN1",
                "ID": "1",
                "Role": "Data Fabric"
        }],
        "Memory": [{
```

```
                "Self":
                "http://10.20.30.40:80/Memory/Devices/48a2fa76-
                0f6f-11e7-8000-
                248a07c880c1/Modules/7672116326702125/",
                "Name": "DRAM03",
                "ID": "7672116326702125",
                "Role": "DRAM"
            }, {
                "Self":
                "http://10.20.30.40:80/Memory/Devices/48a2fa76-
                0f6f-11e7-8000-
                248a07c88046/Modules/9375424022601235/",
                "Name": "DRAM04",
                "ID": "9375424022601235",
                "Role": "DRAM"
            }]
        },
        "ResourceLinks": [{
            "Initiator":
            "http://10.20.30.40:80/Compute/Devices/00000000-0000-
            0000-0000-0CC47A6BAB1C/Processors/CPU0/",
            "Link": "http://10.20.30.40:80/Network/Devices/48a2fa76-
            0f6f-11e7-8000-248a07c88044/VLANs/3/",
            "Target":
            "http://10.20.30.40:80/Memory/Devices/48a2fa76-0f6f-
            11e7-8000-248a07c880c1/Modules/7672116326702125/"
        }, {
            "Initiator":
            "http://10.20.30.40:80/Compute/Devices/00000000-0000-
            0000-0000-0CC47A6BAB1C/Processors/CPU0/",
            "Link": "http://10.20.30.40:80/Network/Devices/48a2fa76-
            0f6f-11e7-8000-248a07c88044/VLANs/3/",
            "Target":
            "http://10.20.30.40:80/Memory/Devices/48a2fa76-0f6f-
            11e7-8000-248a07c88046/Modules/9375424022601235/"
        }, {
            "Initiator":
            "http://10.20.30.40:80/Compute/Devices/00000000-0000-
            0000-0000-0CC47A6BAB1C/Processors/CPU0/",
            "Link": "http://10.20.30.40:80/Network/Devices/48a2fa76-
            0f6f-11e7-8000-248a07c88044/VLANs/1/",
            "Target":
            "http://10.20.30.40:80/Storage/Devices/f876640cc6c143fa/
            Volumes/3672116326702125/"
        }, {
```

			"Initiator": "http://10.20.30.40:80/Compute/Devices/00000000-0000-0000-0000-0CC47A6BAB1C/Processors/CPU0/", "Link": "http://10.20.30.40:80/Network/Devices/48a2fa76-0f6f-11e7-8000-248a07c88044/VLANs/1/", "Target": "http://10.20.30.40:80/Storage/Devices/f876640cc6c143fa/Volumes/3672116326702125/" }] }

POST Composite Example - Create a new Composite

Request

Method	URI	Query String	Request Header	Request Body
POST	/System/Composites/		Authorization (Mandatory)	{ "Name": "VirtualSystem1", "PolicyTimePeriodCondition": { "Name": "TimeToLive", "ID": "12", "LocalOrUtcTime": "Local Time", "TimePeriod": "20180910T011200/20180930T000000" }, "ResourceNodes": { "Storage": [{ "Self": "http://10.20.30.40:80/Storage/Devices/f876640cc6c143fa/Volumes/3672116326702125/", "Name": "Volume02", "ID": "3672116326702125", "Role": "Flash Media" }, { "Self": "http://10.20.30.40:80/Storage/Devices/820d7b9c078c492d974fe764287c0827/Volumes/2416051074622343/", "Name": "Volume03", "ID": "2416051074622343", "Role": "Flash Media" }], "Compute": [{

```
                "Self":
                "http://10.20.30.40:80/Compute/Devices/00000000-
                0000-0000-0000-0CC47A6BAB1C/Processors/CPU0/",
                "Name": "CPU0",
                "ID": "CPU0",
                "Role": "Central Processor"
        }],
        "Network": [{
                "Self":
                "http://10.20.30.40:80/Network/Devices/48a2fa76-
                0f6f-11e7-8000-248a07c88044/VLANs/3/",
                "Name": "VLAN3",
                "ID": "3",
                "Role": "Memory Fabric"
        }, {
                "Self":
                "http://10.20.30.40:80/Network/Devices/48a2fa76-
                0f6f-11e7-8000-248a07c88045/VLANs/1/",
                "Name": "VLAN1",
                "ID": "1",
                "Role": "Data Fabric"
        }],
        "Memory": [{
                "Self":
                "http://10.20.30.40:80/Memory/Devices/48a2fa76-
                0f6f-11e7-8000-
                248a07c880c1/Modules/7672116326702125/",
                "Name": "DRAM03",
                "ID": "7672116326702125",
                "Role": "DRAM"
        }, {
                "Self":
                "http://10.20.30.40:80/Memory/Devices/48a2fa76-
                0f6f-11e7-8000-
                248a07c88046/Modules/9375424022601235/",
                "Name": "DRAM04",
                "ID": "9375424022601235",
                "Role": "DRAM"
        }]
},
"ResourceLinks": [{
        "Initiator":
        "http://10.20.30.40:80/Compute/Devices/00000000-0000-
        0000-0000-0CC47A6BAB1C/Processors/CPU0/",
        "Link": "http://10.20.30.40:80/Network/Devices/48a2fa76-
        0f6f-11e7-8000-248a07c88044/VLANs/3/",
```

				"Target": "http://10.20.30.40:80/Memory/Devices/48a2fa76-0f6f-11e7-8000-248a07c880c1/Modules/7672116326702125/"
				}, {
				"Initiator": "http://10.20.30.40:80/Compute/Devices/00000000-0000-0000-0000-0CC47A6BAB1C/Processors/CPU0/",
				"Link": "http://10.20.30.40:80/Network/Devices/48a2fa76-0f6f-11e7-8000-248a07c88044/VLANs/3/",
				"Target": "http://10.20.30.40:80/Memory/Devices/48a2fa76-0f6f-11e7-8000-248a07c88046/Modules/9375424022601235/"
				}, {
				"Initiator": "http://10.20.30.40:80/Compute/Devices/00000000-0000-0000-0000-0CC47A6BAB1C/Processors/CPU0/",
				"Link": "http://10.20.30.40:80/Network/Devices/48a2fa76-0f6f-11e7-8000-248a07c88044/VLANs/1/",
				"Target": "http://10.20.30.40:80/Storage/Devices/f876640cc6c143fa/Volumes/3672116326702125/"
				}, {
				"Initiator": "http://10.20.30.40:80/Compute/Devices/00000000-0000-0000-0000-0CC47A6BAB1C/Processors/CPU0/",
				"Link": "http://10.20.30.40:80/Network/Devices/48a2fa76-0f6f-11e7-8000-248a07c88044/VLANs/1/",
				"Target": "http://10.20.30.40:80/Storage/Devices/f876640cc6c143fa/Volumes/3672116326702125/"
				}]
				
				}

Response

Precondition	Response Code	Response Header	Response Body
Credentials invalid or missing	401 Unauthorized		
Resource Id does not exist	404 Not Found		
Bad/Missing Parameter in Body	400 Bad Request		
New value already exists	409 Conflict		
System could not process the request	500 Internal Server Error		

If-Match false	412 Precondition Failed		
If-Match missing	428 Precondition Required		
If-Match true	200 OK	Content-Type: application/json	Composite Resource JSON

PUT Composite Example - Modify a specific Composite

Request

Method	URI	Query String	Request Header	Request Body

PUT	/System/Composites/{id}/		Authorization (Mandatory)
			If-Match: {etag} (Mandatory)
				{
				"Name" : "new_name"
				}

Response

Precondition	Response Code	Response Header	Response Body
Credentials invalid or missing	401 Unauthorized		
Resource Id does not exist	404 Not Found		
Bad/Missing Parameter in Body	400 Bad Request		
System could not process the request	500 Internal Server Error		
If-Match false	412 Precondition Failed		
If-Match missing	428 Precondition Required		
If-Match true	200 OK	Content-Type: application/json	Composite Resource JSON

DELETE Composite Example - Delete a specific Composite

Request

Method	URI	Query String	Request Header	Request Body

DELETE	/System/Composites/{id}/		Authorization (Mandatory) If-Match: {etag} (Mandatory)	

Response

Precondition	Response Code	Response Header	Response Body
Credentials invalid or missing	401 Unauthorized		
Resource Id does not exist	404 Not Found		
Bad/Missing Parameter in Body	400 Bad Request		
System could not process the request	500 Internal Server Error		
If-Match false	412 Precondition Failed		
If-Match missing	428 Precondition Required		
If-Match true	204 No Content		

9.2.2 Performance

Description

The Device-level methods and attributes return information about the Performance.

Allowable Methods

URI	Allowable Methods
/System/Composites/{id}/Performance	GET, HEAD, OPTIONS

GET /System/Composites/{id}/Performance/ - Retrieve the Performance resource information

URI:	/System/Composites/{id}/Performance/	Description
Method	GET	Returns the information of the Performance resource
Request Header	Authorization (Mandatory) If-None-Match (Optional)	The request requires either Basic or Digest authorization

		The request is conditionally processed only if the current ETag for the resource matches the ETag passed in this header
Query Parameters		
Response	200 OK 304 Not Modified 401 Unauthorized 404 Not Found	OK & Performance resource information in the response body Unauthorized; credential entry failed or missing Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource

HEAD /System/Composites/{id}/Performance- Ping the Performance resource

URI:	/System/Composites/{id}/Performance/	Description
Method	HEAD	Pings the Performance resource
Request Header	Authorization (Mandatory)	
Query Parameters		
Response	200 OK 401 Unauthorized 404 Not Found	OK with no response body Unauthorized; credential entry failed or missing Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource

OPTIONS /System/Composites/{id}/Performance/ - Determine Allowable Methods for the Performance resource

URI:	/System/Composites/{id}/Performance/	Description
Method	OPTIONS	Get the allowable HTTP Methods list for this resource
Request Header		
Query Parameters		

Response	200 OK 404 Not Found	OK & the "Allow" list of methods in the response header. The response body provides the JSON Schema for this resource Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource

Methods Not Allowed on **/System/Composites/{id}/Performance/**

URI:	**/System/Composites/{id}/Performance/**	**Description**
Method	POST, DELETE	Methods that are not allowed
Request Header		
Query Parameters		
Response	405 Method Not Allowed	Method not allowed for this Resource

Resource Attributes

Attribute	**Type**	**Requirement**	**User Configurable**	**Possible Values**	**Description**	**Model Correspondence**
Self	String	Mandatory	No	Free-Form URI Format 256 Chars	Describes the fully qualified URI link	{ IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking }
Diskstats[].Name	String	Optional	No	Free-Form 64 Chars	Name of the device	
Diskstats[].TimestampUs	Number	Optional	No	0 - n	Microseconds since power on	

Diskstats[].BytesRead	Number	Optional	No	0 - n	Integer counter for number of bytes read	{ DMTF | CIM | BlockStorageStatisticalData.BytesRead }
Diskstats[].BytesWritten	Number	Optional	No	0 - n	Integer counter for number of bytes written	{ DMTF | CIM | BlockStorageStatisticalData.BytesWritten }
Diskstats[].NumReadOps	Number	Optional	No	0 - n	Integer counter for number of read operations	{ DMTF | CIM | BlockStorageStatisticalData.ReadIOs }
Diskstats[].NumWriteOps	Number	Optional	No	0 - n	Integer counter for number of write operations	{ DMTF | CIM | BlockStorageStatisticalData.WriteIOs }
Diskstats[].ReadLatencyUs	Number	Optional	No	0 - n	Read response time in microseconds	{ DMTF | CIM | BlockStorageStatisticalData.ReadIOTimeCounter }
Diskstats[].ReadMaxLatencyUs	Number	Optional	No	0 - n	Read response time in microseconds	{ DMTF | CIM | BlockStorageStatisticalData.ReadIOTimeCounter }
Iostats[].WriteLatencyUs	Number	Optional	No	0 - n	Read response time in microseconds	{ DMTF | CIM | BlockStorageStatisticalData.WriteIOTimeCounter }

Iostats[].WriteMaxLatencyUs	Number	Optional	No	0 - n	Read response time in microseconds	{ DMTF | CIM | BlockStorageStatisticalData.WriteIOTimeCounter }

EXAMPLES

GET Performance Example

Request

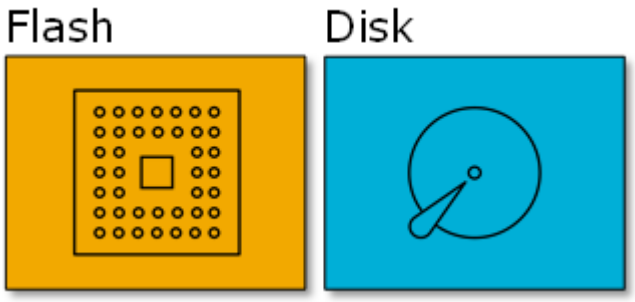
Method	URI	Query String	Request Header	Request Body
GET	/System/Composites/{id}/Performance/		Authorization (Mandatory) If-None-Match: {etag} (Optional)	

Response

Precondition	Response Code	Response Header	Response Body
Credentials invalid or missing	401 Unauthorized		
Resource Id does not exist	404 Not Found		
If-None-Match true	304 Not Modified		
If-None-Match false or missing	200 OK	Content-Type: application/json ETag: {etag}	{ "Self": "http://10.20.30.40/System/Composites/182c/Performance/", "Diskstats": [{ "BytesRead": 0, "BytesWritten": 0, "Name": "/dev/nvme0n1", "NumReadOps": 0, "NumWriteOps": 0, "ReadLatencyUs": 0, "ReadMaxLatencyUs": 0, "TimestampUs": 30880599736, "WriteLatencyUs": 0,

			"WriteMaxLatencyUs": 0 }] }

9.3 Storage Devices - Physical



This table shows the physical resources for a storage device. The set of resource URIs is as follows:

URI Pattern	Description
/Devices/	Collection of all Devices
/Storage/Devices/	Collection of Storage Devices
/Storage/Devices/{id}/	A specific Storage Device
/Storage/Devices/{id}/Controllers/	Collection of Controllers within this Storage Device
/Storage/Devices/{id}/Controllers/{id}/	A specific Controller within this Storage Device
/Storage/Devices/{id}/Adapters/	Collection of Adapters within this Storage Device
/Storage/Devices/{id}/Adapters/{id}/	A specific Adapter within this Storage Device
/Storage/Devices/{id}/Adapters/{id}/Ports/	Collection of Ports within this Adapter
/Storage/Devices/{id}/Adapters/{id}/Ports/{id}/	A specific Port within this Adapter

9.3.1 Devices

Description

The Device-level methods and attributes return information about the Device(s) and do certain operations.

Allowable Methods

URI	Allowable Methods
/Devices/	GET, HEAD, OPTIONS
/Storage/Devices/	GET, HEAD, OPTIONS
/Storage/Devices/{id}/	GET, PUT, HEAD, OPTIONS

GET /Storage/Devices/ - Retrieve all Storage Devices

URI:	/Storage/Devices/	Description
Method	GET	Returns the Collection of Devices
Request Header	Authorization (Mandatory) If-None-Match (Optional)	The request requires either Basic or Digest authorization The request is conditionally processed only if the current ETag for the resource does not match the ETag passed in this header
Query Parameters		
Response	200 OK 304 Not Modified 401 Unauthorized 404 Not Found 429 Too Many Requests	OK & List of Devices + ETag Header If-None-Match Etag value matched, therefore no Response Body will be returned Unauthorized; credential entry failed or missing Resource Collection 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

GET /Storage/Devices/{id}/ - Retrieve a specific Storage Device

URI:	/Storage/Devices/{id}/	Description
Method	GET	Returns the information regarding a specific Device based on the {id} in the URI address string
Request Header	Authorization (Mandatory) If-None-Match (Optional)	The request requires either Basic or Digest authorization The request is conditionally processed only if the current ETag for the resource does not match the ETag passed in this header

Query Parameters		
Response	200 OK 304 Not Modified 401 Unauthorized 404 Not Found 429 Too Many Requests	OK & Device information in the response body + ETag Header If-None-Match Etag value matched, therefore no Response Body will be returned Unauthorized; credential entry failed or missing 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

PUT /Storage/Devices/{id}/ - Modify specific Storage Device attributes

URI:	/Storage/Devices/{id}/	Description
Method	PUT	Modify an attribute or execute an operation for this Device
Request Header	Authorization (Mandatory) If-Match (Mandatory)	The request requires either Basic or Digest authorization The request is conditionally processed only if the current ETag for the resource matches the ETag passed in this header
Query Parameters		

Request Body	{
	"IndicatorLED": {
	"ID" : 4 | 2
	},
	"Name" :
	"new_name",
	"Description": "desc",
	"Reboot": true,
	"Shutdown" : true,
	"FirmwareActivate":
	true,
	"FactoryReset": true,
	"Format" : true,
	"SetCount": 1 | 2 | 4
	| 8
	
	}
		JSON BODY START
		
		Toggles the Indicator LED on the Device; default “Off = 4”; "Lit = 2"
		
		Specify a new name
		Modify the description; required to be sent by itself (no other attributes should be sent with this change)
		true = Reboot the Resource (WriteOnly)
		true=Shutdown the Resource (Shutdown takes precedence over Restart if both are sent) (WriteOnly)
		True=Activate new FW image after a successful upload (WriteOnly)
		Return the Device to Factory fresh settings (resets system configuration and wipes media); All volumes must be deleted first (WriteOnly)
		Format will rearrange the internal SSDs into pools or "sets" and will destroy any existing data referencing; "SetCount" is required with this entry; All volumes must be deleted first (WriteOnly)
		The value of how to arrange the internal storage into "Pools" (Sets in NVMe); the "Format" entry must be set

		to "true" in order to initialize the storage into Pools; default is 1 Pool out of the box (WriteOnly) JSON BODY END
Response	200 OK 202 Accepted 400 Bad Request 401 Unauthorized 404 Not Found 409 Conflict 412 Precondition Failed 428 Precondition Required 429 Too Many Requests	OK & Device information in the response body + ETag Header Accepted & Jobs URI returned in the header to get more information regarding the long-lived operation Bad Request (typically a faulty parameter) Unauthorized; credential entry failed or missing The Resource doesn't exist Indicates that there are existing Volumes that need to be removed first for Format and/or Factory Reset Indicates the "If-Match" Etag check failed Indicates the need for an "If-Match" conditional with an Etag value in the Request Header Indicates API service is Busy, client should try again later

HEAD /Storage/Devices/ - Ping the Collection of Storage Devices

URI:	**/Storage/Devices/{id}/**	**Description**
Method	HEAD	Pings this Storage Device Collection
Request Header	Authorization (Mandatory)	The request requires either Basic or Digest authorization
Query Parameters		
Response	200 OK 401 Unauthorized 404 Not Found 429 Too Many Requests	OK with no response body Unauthorized; credential entry failed or missing Resource Collection 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

HEAD /Storage/Devices/{id}/ - Ping a specific Storage Device

URI:	**/Storage/Devices/{id}/**	**Description**
Method	HEAD	Pings this Storage Device
Request Header	Authorization (Mandatory)	The request requires either Basic or Digest authorization
Query Parameters		
Response	200 OK 401 Unauthorized	OK with no response body Unauthorized; credential entry failed or missing

	404 Not Found 429 Too Many Requests	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

OPTIONS /Storage/Devices/- Determine Allowable Methods for a Collection of Storage Devices

URI:	**/Storage/Devices/**	**Description**
Method	OPTIONS	Get the allowable HTTP Methods list for this resource
Request Header	(None) Documentation (Optional) Documentation (Optional) If-None-Match (Optional)	Returns the full resource schema as Content-Type application/json Info - Returns documentation information in the form of plain text Schema - Returns the schema information in "pretty" JSON text as plain text Etag - The request is conditionally processed only if the current ETag for the resource does not match the ETag passed in this header
Query Parameters		
Response	200 OK 304 Not Modified 404 Not Found 429 Too Many Requests	OK & the “Allow” list of methods in the response header. The response body provides the JSON Schema for this resource If-None-Match Etag value matched, therefore no Response Body will be returned 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

OPTIONS /Storage/Devices/{id}/ - Determine Allowable Methods for a specific Storage Device

URI:	**/Storage/Devices/{id}/**	**Description**
Method	OPTIONS	Get the allowable HTTP Methods list for this resource
Request Header	(None) Documentation (Optional) Documentation (Optional) If-None-Match (Optional)	Returns the full resource schema as Content-Type application/json Info - Returns documentation information in the form of plain text Schema - Returns the schema information in "pretty" JSON text as plain text Etag - The request is conditionally processed only if the current ETag for the resource does not match the ETag passed in this header

Query Parameters		
Response	200 OK 304 Not Modified 404 Not Found 429 Too Many Requests	OK & the "Allow" list of methods in the response header. The response body provides the JSON Schema for this resource If-None-Match Etag value matched, therefore no Response Body will be returned 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

Methods Not Allowed on **/Storage/Devices/** Collection

URI:	**/Storage/Devices/**	**Description**
Method	POST, PUT, DELETE	Methods that are not allowed
Request Header		
Query Parameters		
Response	405 Method Not Allowed	Method not allowed for this Resource; returns "Allow" header with allowable methods list

Methods Not Allowed on **/Storage/Devices/{id}/** Instance

URI:	**/Storage/Devices/{id}/**	**Description**
Method	POST, DELETE	Methods that are not allowed
Request Header		
Query Parameters		
Response	405 Method Not Allowed	Method not allowed for this Resource; returns "Allow" header with allowable methods list

Collection Resource Attributes

Attribute	**Type**	**Requirement**	**User Configurable**	**Possible Values**	**Description**	**Model Correspondence**
Self	URI String	Mandatory	No	Free-Form URI Format 256 Chars	Describes the fully qualified	{ IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking }

					URI link for the Collection	
Members	String Array	Mandatory	No	Resource Collection (0 - n entries)	The array of Resource Instances (see Instance Resource Attributes Table for Instance Attribute details)	

Instance Resource Attributes

Attribute	Type	Requirement	User Configurable	Possible Values	Description	Model Correspondence
Self	URI String	Mandatory	No	Free-Form URI Format 256 Chars	Describes the fully qualified URI link	{ IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking }
Name	String	Mandatory	Yes	Free-Form 256 Chars	The user-defined Friendly Name for this Resource	{ DMTF | CIM | ManagedSystemElement.Name }
ID	String	Mandatory	No	Free-Form 256 Chars	The resource identifier that is unique in space	{ DMTF | CIM | LogicalElement.DeviceID }

					and time	
Description	String	Optional	Yes	Free-Form 256 Chars	The user-defined description for this Device	{ DMTF | CIM | ManagedElement.Description }
SerialNumber	String	Mandatory	No	Free-Form 64 Chars	The serial number for this Resource	{ DMTF | CIM | ManagedSystemElement.SerialNumber }
Model	String	Mandatory	No	Free-Form 64 Chars	The model name or number for this Resource	{ DMTF | CIM | ManagedSystemElement.Model }
SystemType.Name	String	Mandatory	No	"Storage"	The domain type string indicating the type of Device Resource	{ DMTF | CIM | ComputeSystem.Dedicated.Storage }
SystemType.ID	Number	Mandatory	No	2	The domain type number indicating the type of	{ DMTF | CIM | ComputeSystem.Dedicated.Storage }

					Device Resource	
Manufacturer	String	Mandatory	No	Free-Form 64 Chars	The vendor name for this Resource	{ DMTF | CIM | ManagedSystemElement.Manufacturer }
TotalCapacity	Number	Mandatory	No	Integer Bytes	The total number of raw bytes for this device	{ DMTF | CIM | Physicial.PhysicalMedia.Capacity }
RemainingCapacity	Number	Mandatory	No	Integer Bytes	The available number of bytes to create volumes on this device	{ DMTF | CIM | Physicial.PhysicalMedia.Capacity }
PredictedLifeLeftPercent	Number	Mandatory	No	0 - 100	The predicted life left of the media	{ DMTF | Redfish | Drive.PredictedMediaLifeLeftPercent }
OperatingSystem.Self	URI String	Mandatory	No	Free-Form URI Format 256 Chars	Describes the fully qualified URI link	{ IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking }
OperatingSystem.Name	String	Optional	No	Free-Form 128 Chars	The Operat	{ DMTF | CIM | System.OperatingSystem.Name }

					ing System or Firmware Name	
OperatingSystem.OSType.ID	Number	Mandatory	No	59	Indicates dedicated software	{ DMTF | CIM | System.OperatingSystem.OSType }
OperatingSystem.OSType.Name	String	Mandatory	No	Dedicated	Indicates dedicated software value	{ DMTF | CIM | System.OperatingSystem.OSType }
OperatingSystem.Version	String	Mandatory	No	Free-Form 128 Chars	The Operating System or Firmware Version	{ DMTF | CIM | System.OperatingSystem.Version }
IndicatorLED.Name	String	Mandatory	No	"Off" "Lit"	The current state value of the Indicator LED for this Resource	{ DMTF | CIM | IndicatorLED.ActivationState }
IndicatorLED.ID	Number	Mandatory	Yes	4 2	The current state value map of the	{ DMTF | CIM | IndicatorLED.ActivationState }

					Indicator LED for this Resource	
Status.State.Name	String	Mandatory	No	"Unknown" "Not available" "Servicing" "Starting" "Stopping" "Stopped" "Aborted" "Dormant" "Completed" "Migrating" "Emigrating" "Immigrating" "Snapshotting" "Shutting down" "In test" "Transitioning" "In service"	The current state value of this Resource	{ DMTF | CIM | ManagedSystemElement.State }
Status.State.ID	Number	Mandatory	No	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16	The current state value map of this Resource	{ DMTF | CIM | ManagedSystemElement.State }

Status.Health[].Name	String (1..*)	Mandatory	No	"Unknown" "OK" "Degraded/ Warning" "Minor failure" "Major failure" "Critical failure" "Non-recoverable error" "Not installed" "Not available" "No access allowed"	The current health value of this Resource. There can be 1 or more Name entries.	{ DMTF | CIM | ManagedSystemElement.HealthState }
Status.Health[].ID	Number (1..*)	Mandatory	No	0 5 10 15 20 25 30 65536 65537 65538	The current health value map of this Resource. There can be 1 or more Id entries.	{ DMTF | CIM | ManagedSystemElement.HealthState }
Status.Details[]	String Array	Optional	No	Free-Form Array entry. If no entry, then “None”.	The current Health Details of the Device	{ DMTF | CIM | ManagedSystemElement.DetailedStatus }
Capabilities.Members[].Name	String	Mandatory	No	Storage Block Server	The capabilities information	{ DMTF | CIM | ComputeSystem.Dedicated }

				Storage Device Enclosure Storage Virtualizer Blade	value(s) regarding the Resource	
Capabilities.Members[].ID	Number	Mandatory	No	3 15 31 21 40	The capabilities information value map(s) regarding the Resource	{ DMTF | CIM | ComputeSystem.Dedicated }
Capabilities.Members[].CapabilityDescription	String	Mandatory	No	Free-Form	Entry describing the capability	{ DMTF | CIM | ComputeSystem.Dedicated }
IPAddresses.Members[].IPAddress	String	Mandatory	Yes	IPv4 or IPv6 pattern	The IP Address list for this Resource	{ DMTF | CIM | ManagedSystemElement.FSIPInterfaceSettingData.IpAddress }
SlotNumber	Number	Mandatory	No	0 - 9	The Slot Number in the hosting Chassis Device	
ActiveQPairs	Number	Mandatory	No	0 - 2048	The currently active or allocated Queue Pair	

					resources	
MaxQPairs	Number	Mandatory	No	2048	The total number of Queue Pair resources	
PowerThrottled	Boolean	Mandatory	No	true | false	Indicates if the Storage Device is in Power Throttled Mode set by the Chassis power algorithm	
Accounts.Self	String	Mandatory	No	Free-Form URI	Fully qualified link to the Controller Resource Collection	{ DMTF | CIM | Device.Controller, IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking }
Adapters.Self	String	Mandatory	No	Free-Form URI	Fully qualified link to Media Resource	{ DMTF | CIM | MediaAccessDevice, IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking }

					Collection	
Volumes.Self	String	Mandatory	No	Free-Form URI	Fully qualified link to Storage Volumes Resource Collection	{ DMTF | CIM | Logical.StorageVolume, IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking }
Performance.Self	String	Mandatory	No	Free-Form URI	Fully qualified link to the Performance Resource	{ DMTF | CIM | Statistics, IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking }
SystemClock.Self	String	Mandatory	No	Free-Form URI	Fully qualified link to the System Clock Resource	{ DMTF | CIM | Time, IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking }
Location.Self	String	Mandatory	No	Free-Form URI	Fully qualified link to the Location Resource	{ DMTF | Redfish | SNIA | Swordfish | Location, IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking }
Support.Self	String	Mandatory	No	Free-Form URI	Fully qualified link to the Support	{ WDC| Support, IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking}

					Resource	
Hosts.Self	String	Mandatory	No	Free-Form URI	Fully qualified link to the Host Resource	{ DMTF | CIM | Host, IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking }
Paths.Self	String	Mandatory	No	Free-Form URI	Fully qualified link to the Path Resource	{ DMTF | CIM | Path, IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking }
Jobs.Self	String	Mandatory	No	Free-Form URI	Fully qualified link to the Jobs Resource	{ DMTF | CIM | Path, IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking }
Files.Self	String	Mandatory	No	Free-Form URI	Fully qualified link to the Files Resource	{ DMTF | CIM | Path, IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking }
Reboot	Boolean	WriteOnly	Yes	true	Directs this device to reboot	
Shutdown	Boolean	WriteOnly	Yes	true	Directs this device to shutdown	

FirmwareActivate	Boolean	WriteOnly	Yes	true	Directs this device to Activate the previously uploaded Device OS image	
FactoryReset	Boolean	WriteOnly	Yes	true	Directs this device to return to factory fresh settings	
Format	Boolean	WriteOnly	Yes	true	Directs this device to Initialize the number of Storage Pools (must be paired with "SetCount" entry value	
SetCount	Number	WriteOnly	Yes	1, 2, 4, 8	Directs this device to	

					Initialize to the set number of Storage Pools (must be paired with "Format" entry	

EXAMPLES

GET Device Example - Specific Instance Based on the Identifier

Request

Method	URI	Query String	Request Header	Request Body
GET	/Storage/Devices/{id}/		Authorization (Mandatory) If-None-Match: {etag} (Optional)	

Response

Precondition	Response Code	Response Header	Response Body
Credentials invalid or missing	401 Unauthorized		
Resource Id does not exist	404 Not Found		
If-None-Match true	304 Not Modified	ETag: {etag}	

API Busy	429 Too Many Requests		

Success
If-None-Match false or missing
	200 OK	Content-Type: application/json
		ETag: {etag}
			{
			"Self": "http://10.20.30.40:80/Storage/Devices/0123456789/",
			"SystemType": {
			"ID": 2,
			"Name": "Storage"
			},
			"Name": "storage_device1",
			"ActiveQPairs": 0,
			"Description": "",
			"ID": "0123456789",
			"OperatingSystem": {
			"Self": "http://10.20.30.40:80/Storage/Devices/0123456789/OperatingSystem/",
			"Name": "Vendor Firmware",
			"OSType": {
			"ID": 59,
			"Name": "Dedicated"
			},
			"Version": "0.3.0"
			},
			"SerialNumber": "USALP05018KN0008",
			"Model": "OpenFlex F3000",
			"Manufacturer": "WDC",
			"MaxQPairs": 2048,
			"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": 40,
            "Name": "Blade",
            "CapabilityDescription": "This device is a blade
            device."
        }]
    },
    "Status": {
        "State": {
            "ID": 16,
            "Name": "In service"
        },
        "Health": [{
            "ID": 5,
            "Name": "OK"
        }],
        "Details": ["None"]
    },
    "IPAddresses": {
        "Members": [{
            "IPAddress": "192.168.0.52"
        }, {
            "IPAddress": "192.168.1.52"
        }]
    },
    "PredictedLifeLeftPercent": 100,
    "PowerThrottled": false,
    "RemainingCapacity": 7579505786880,
    "SlotNumber": 2,
    "TotalCapacity": 7681511260160,
    "Location": {
        "Self":
        "http://http://10.20.30.40:80/Storage/Devices/0123
        456789/Location/"
    },
    "IndicatorLED": {
        "ID": 4,
        "Name": "Off"
    },
    "Accounts": {
        "Self":
        "http://10.20.30.40:80/Storage/Devices/012345678
        9/Accounts/"
    },
    "Adapters": {
```

```
"Self":
"http://10.20.30.40:80/Storage/Devices/0123456789/Adapters/"
},
"Files": {
"Self":
"http://10.20.30.40:80/Storage/Devices/0123456789/Files/"
},
"Hosts": {
"Self":
"http://10.20.30.40:80/Storage/Devices/0123456789/Hosts/"
},
"Jobs": {
"Self":
"http://10.20.30.40:80/Storage/Devices/0123456789/Jobs/"
},
"Paths": {
"Self":
"http://10.20.30.40:80/Storage/Devices/0123456789/Paths/"
},
"Performance": {
"Self":
"http://10.20.30.40:80/Storage/Devices/0123456789/Performance/"
},
"Pools": {
"Self":
"http://10.20.30.40:80/Storage/Devices/0123456789/Pools/"
},
"Sensors": {
"Self":
"http://10.20.30.40:80/Storage/Devices/0123456789/Sensors/"
},
"Support": {
"Self":
"http://10.20.30.40:80/Storage/Devices/0123456789/Support/"
},
"SystemClock": {
```

			"Self": "http://10.20.30.40:80/Storage/Devices/0123456789/SystemClock/" },
			"Volumes": {
			"Self": "http://10.20.30.40:80/Storage/Devices/0123456789/Volumes/"
			}
			}

PUT Device Example - Change the name of a specific Device

Request

Method	URI	Query String	Request Header	Request Body

PUT	/Storage/Devices/{id}/		Authorization (Mandatory)
			If-Match: {etag} (Mandatory)
				{
				"Name" : "new_name"
				}

Response

Precondition	Response Code	Response Header	Response Body
Credentials invalid or missing	401 Unauthorized		
Resource Id does not exist	404 Not Found		
Bad/Missing Parameter in Body	400 Bad Request		
New value already exists	409 Conflict		
System could not process the request	500 Internal Server Error		
If-Match false	412 Precondition Failed		
If-Match missing	428 Precondition Required		
API Busy	429 Too Many Requests		
If-Match true	200 OK	Content-Type: application/json	Device Resource JSON

PUT Device Example - Restart a specific Device

Request

Method	URI	Query String	Request Header	Request Body

PUT	/Storage/Devices/{id}/		Authorization (Mandatory)
			If-Match: {etag} (Mandatory)
				{
				"Reboot" : true
				}

Response

Precondition	Response Code	Response Header	Response Body
Credentials invalid or missing	401 Unauthorized		
Resource Id does not exist	404 Not Found		
Bad/Missing Parameter in Body	400 Bad Request		
System could not process the request	500 Internal Server Error		
If-Match false	412 Precondition Failed		
If-Match missing	428 Precondition Required		
API Busy	429 Too Many Requests		
If-Match true	200 OK	Content-Type: application/json	Device Resource JSON Note: Device will RESTART breaking the connection

PUT Device Example - Shutdown a specific Device

Request

Method	URI	Query String	Request Header	Request Body

PUT	/Storage/Devices/{id}/		Authorization (Mandatory)
			If-Match: {etag} (Mandatory)
				{
				"Shutdown" : true
				}

Response

Precondition	Response Code	Response Header	Response Body
Credentials invalid or missing	401 Unauthorized		
Resource Id does not exist	404 Not Found		
Bad/Missing Parameter in Body	400 Bad Request		
System could not process the request	500 Internal Server Error		
If-Match false	412 Precondition Failed		
If-Match missing	428 Precondition Required		
API Busy	429 Too Many Requests		
If-Match true	200 OK	Content-Type: application/json	Device Resource JSON Note: Device will SHUTDOWN breaking the connection

9.3.2 Controllers

Description

The Device-level methods and attributes return information about the Controller(s) and do certain operations.

Allowable Methods

URI	Allowable Methods
/Storage/Devices/{id}/Controllers/	GET, HEAD, OPTIONS
/Storage/Devices/{id}/Controllers/{id}/	GET, PUT, HEAD, OPTIONS

GET /Storage/Devices/{id}/Controllers/ - Retrieve all Controllers

URI:	/Storage/Devices/{id}/Controllers/	Description
Method	GET	Returns the Collection of Controllers

Request Header	Authorization (Mandatory) If-None-Match (Optional)	The request requires either Basic or Digest authorization The request is conditionally processed only if the current ETag for the resource does not match the ETag passed in this header
Query Parameters		
Response	200 OK 304 Not Modified 401 Unauthorized 404 Not Found	OK & List of Controllers + ETag Header If-None-Match Etag value matched, therefore no Response Body will be returned Unauthorized; credential entry failed or missing Resource Collection does not exist; this IP Address is running an HTTP service, but does not recognize this resource

GET /Storage/Devices/{id}/Controllers/{id}/ - Retrieve a specific Controller

URI:	**/Storage/Devices/{id}/Controllers/{id}/**	**Description**
Method	GET	Returns the information regarding a specific Controller based on the {id} in the URI address string
Request Header	Authorization (Mandatory) If-None-Match (Optional)	The request requires either Basic or Digest authorization The request is conditionally processed only if the current ETag for the resource does not match the ETag passed in this header
Query Parameters		
Response	200 OK 401 Unauthorized 404 Not Found	OK & Controller information in the response body + ETag Header Unauthorized; credential entry failed or missing Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource

PUT /Storage/Devices/{id}/Controllers/{id}/ - Modify specific Controller attributes

URI:	**/Storage/Devices/{id}/Controllers/{id}/**	**Description**
Method	PUT	Modify an attribute or execute an operation for this Controller

Request Header	Authorization (Mandatory) If-Match (Mandatory)	The request requires either Basic or Digest authorization The request is conditionally processed only if the current ETag for the resource matches the ETag passed in this header
Query Parameters		

Request Body	{
	"Name" : "new_name",
	}
		JSON BODY START
		Specify a new name
		JSON BODY END

Response	200 OK 400 Bad Request 401 Unauthorized 404 Not Found 409 Conflict 412 Precondition Failed 428 Precondition Required 500 Internal Server Error	OK & Controller information in the response body + ETag Header Bad Request (typically a faulty parameter) Unauthorized; credential entry failed or missing The Resource doesn't exist A new parameter value already exists (e.g., Name) Indicates the "If-Match" Etag check failed Indicates the need for an "If-Match" conditional with an Etag value in the Request Header System could not process the request

HEAD /Storage/Devices/{id}/Controllers/ - Ping the Collection of Controllers

URI:	/Storage/Devices/{id}/Controllers/	Description
Method	HEAD	Pings this Controller Collection
Request Header	Authorization (Mandatory)	The request requires either Basic or Digest authorization
Query Parameters		
Response	200 OK 401 Unauthorized 404 Not Found	OK with no response body Unauthorized; credential entry failed or missing Resource Collection does not exist; this IP Address is running an HTTP service, but does not recognize this resource

HEAD /Storage/Devices/{id}/Controllers/{id}/ - Ping a specific Controller

URI:	/Storage/Devices/{id}/Controllers/{id}/	Description

Method	HEAD	Pings this Controller
Request Header	Authorization (Mandatory)	The request requires either Basic or Digest authorization
Query Parameters		
Response	200 OK 401 Unauthorized 404 Not Found	OK with no response body Unauthorized; credential entry failed or missing Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource

OPTIONS /Storage/Devices/{id}/Controllers/- Determine Allowable Methods for a Collection of Controllers

URI:	**/Storage/Devices/{id}/Controllers/**	**Description**
Method	OPTIONS	Get the allowable HTTP Methods list for this resource
Request Header		
Query Parameters		
Response	200 OK 404 Not Found	OK & the "Allow" list of methods in the response header. The response body provides the JSON Schema for this resource Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource

OPTIONS /Storage/Devices/{id}/Controllers/{id}/ - Determine Allowable Methods for a specific Controller

URI:	**/Storage/Devices/{id}/Controllers/{id}/**	**Description**
Method	OPTIONS	Get the allowable HTTP Methods list for this resource
Request Header		
Query Parameters		

Response	200 OK 404 Not Found	OK & the "Allow" list of methods in the response header. The response body provides the JSON Schema for this resource Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource

Methods Not Allowed on **/Storage/Devices/{id}/Controllers/** Collection

URI:	**/Storage/Devices/{id}/Controllers/**	**Description**
Method	POST, PUT, DELETE	Methods that are not allowed
Request Header		
Query Parameters		
Response	405 Method Not Allowed	Method not allowed for this Resource; returns "Allow" header with allowable methods list

Methods Not Allowed on **/Storage/Devices/{id}/Controllers/{id}/** Instance

URI:	**/Storage/Devices/{id}/Controllers/{id}/**	**Description**
Method	POST, DELETE	Methods that are not allowed
Request Header		
Query Parameters		
Response	405 Method Not Allowed	Method not allowed for this Resource; returns "Allow" header with allowable methods list

Collection Resource Attributes

Attribute	**Type**	**Requirement**	**User Configurable**	**Possible Values**	**Description**	**Model Correspondence**
Self	URI String	Mandatory	No	Free-Form URI Format 256 Chars	Describes the fully qualified URI link for the Collection	{ IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking }

Members	String Array	Mandatory	No	Resource Collection (0 - n entries)	The array of Resource Instances (see Instance Resource Attributes Table for Instance Attribute details)	

Instance Resource Attributes

Attribute	Type	Requirement	User Configurable	Possible Values	Description	Model Correspondence
Self	URI String	Mandatory	No	Free-Form URI Format 256 Chars	Describes the fully qualified URI link	{ IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking }
Name	String	Mandatory	Yes	Free-Form 256 Chars	The user-defined Friendly Name for this Resource	{ DMTF | CIM | ManagedSystemElement.Name }
ID	String	Mandatory	No	Free-Form 256 Chars	The resource identifier that is unique in space and time	{ DMTF | CIM | LogicalElement.DeviceID }
Status.State.Name	String	Mandatory	No	"Unknown" "Not available" "Servicing" "Starting" "Stopping" "Stopped" "Aborted" "Dormant" "Completed"	The current state value of this Resource	{ DMTF | CIM | ManagedSystemElement.State }

				"Migrating" "Emigrating" "Immigrating" "Snapshotting" "Shutting down" "In test" "Transitioning" "In service"		
Status.State.ID	Number	Mandatory	No	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16	The current state value map of this Resource	{ DMTF | CIM | ManagedSystemElement.State }
Status.Health[].Name	String (1..*)	Mandatory	No	"Unknown" "OK" "Degraded/Warning" "Minor failure" "Major failure" "Critical failure" "Non-recoverable error" "Not installed" "Not available" "No access allowed"	The current health value of this Resource. There can be 1 or more Name entries.	{ DMTF | CIM | ManagedSystemElement.HealthState }
Status.Health[].ID	Number (1..*)	Mandatory	No	0 5 10 15 20 25	The current health value map of this	{ DMTF | CIM | ManagedSystemElement.HealthState }

				30 65536 65537 65538	Resource. There can be 1 or more Id entries.	

EXAMPLES

GET Controller Example - Specific Instance Based on the Identifier

Request

Method	URI	Query String	Request Header	Request Body
GET	/Storage/Devices/{id}/Controllers/{id}/		Authorization (Mandatory) If-None-Match: {etag} (Optional)	

Response

Precondition	Response Code	Response Header	Response Body
Credentials invalid or missing	401 Unauthorized		
Resource Id does not exist	404 Not Found		
If-None-Match true	304 Not Modified		
If-None-Match false or missing	200 OK	Content-Type: application/json	{ "Self": "http://10.20.30.40/Storage/Devices/0123456789/Controllers/d00a8e73e529d3d07c803f67597a4773/", "ID": "d00a8e73e529d3d07c803f67597a4773",

		ETag: {etag}	"Status": { "State": { "ID": 16, "Name": "In Service" }, "Health": [{ "ID": 5, "Name": "OK" }] }, "Name": "controller_name" }

PUT Controller Example - Change the name of a specific Controller

Request

Method	URI	Query String	Request Header	Request Body
PUT	/Storage/Devices/{id}/Controllers/{id}/		Authorization (Mandatory) If-Match: {etag} (Mandatory)	{ "Name" : "controller_new_name" }

Response

Precondition	Response Code	Response Header	Response Body
Credentials invalid or missing	401 Unauthorized		
Resource Id does not exist	404 Not Found		
Bad/Missing Parameter in Body	400 Bad Request		

New value already exists	409 Conflict		
System could not process the request	500 Internal Server Error		
If-Match false	412 Precondition Failed		
If-Match missing	428 Precondition Required		
If-Match true	200 OK	Content-Type: application/json	{ "Self": "http://10.20.30.40/Storage/Devices/0123456789/Controllers/d00a8e73e529d3d07c803f67597a4773/", "ID": "d00a8e73e529d3d07c803f67597a4773", "Status": { "State": { "ID": 16, "Name": "In Service" }, "Health": [{ "ID": 5, "Name": "OK" }] }, "Name": "controller_new_name" }

9.3.3 Adapters

Description

The Device-level methods and attributes return information about the Adapter(s) and do certain operations.

Allowable Methods

URI	Allowable Methods
/Storage/Devices/{id}/Adapters/	GET, PUT, HEAD, OPTIONS
/Storage/Devices/{id}/Adapters/{id}/	GET, HEAD, OPTIONS

GET /Storage/Devices/{id}/Adapters/ - Retrieve all Adapters

URI:	/Storage/Devices/{id}/Adapters/	Description
Method	GET	Returns the Collection of Adapters
Request Header	Authorization (Mandatory) If-None-Match (Optional)	The request requires either Basic or Digest authorization The request is conditionally processed only if the current ETag for the resource does not match the ETag passed in this header
Query Parameters		
Response	200 OK 304 Not Modified 401 Unauthorized 404 Not Found 429 Too Many Requests	OK & List of Adapters + ETag Header If-None-Match Etag value matched, therefore no Response Body will be returned Unauthorized; credential entry failed or missing Resource Collection 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

GET /Storage/Devices/{id}/Adapters/{id}/ - Retrieve a specific Adapter

URI:	/Storage/Devices/{id}/Adapters/{id}/	Description
Method	GET	Returns the information regarding a specific Adapter based on the {id} in the URI address string
Request Header	Authorization (Mandatory) If-None-Match (Optional)	The request requires either Basic or Digest authorization The request is conditionally processed only if the current ETag for the resource does not match the ETag passed in this header

Query Parameters		
Response	200 OK 304 Not Modified 401 Unauthorized 404 Not Found 429 Too Many Requests	OK & Adapter information in the response body + ETag Header If-None-Match Etag value matched, therefore no Response Body will be returned Unauthorized; credential entry failed or missing 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

PUT /Storage/Devices/{id}/Adapters/ - Modify DCB Setting Attributes

URI:	/Storage/Devices/{id}/Adapters/	Description
Method	PUT	Modify the DCB Network Settings for all Adapters
Request Header	Authorization (Mandatory) If-Match (Mandatory)	The request requires either Basic or Digest authorization The request is conditionally processed only if the current ETag for the resource matches the ETag passed in this header
Query Parameters		

Request Body	{
	"CNPDSCP": {0 - 63},
	"CNPPriority": {0 - 7},
	"EnableECN" : 0 | 1,
	"EnablePFCDSCP": 0 | 1
	"DSCP": {0 - 63},
	"Priority": {0 - 7},
	"Defaults": true
	}
		JSON BODY START
		Congestion Notification Packet (CNP) setting
		Congestion Notification Packet Priority setting
		Disable/Enable Explicit Congestion Notification (ECN)
		Disable/Enable Priority-Based Flow Control (PFC) of type DSCP
		Differentiated Services field Code Point (DSCP) setting
		DSCP Priority setting
		Returns the above attributes to their default settings
		JSON BODY END

Response	200 OK 400 Bad Request 401 Unauthorized 404 Not Found	OK & Adapter information in the response body + ETag Header Bad Request (typically a faulty parameter)

	412 Precondition Failed 428 Precondition Required 429 Too Many Requests 500 Internal Server Error	Unauthorized; credential entry failed or missing The Resource doesn't exist Indicates the "If-Match" Etag check failed Indicates the need for an "If-Match" conditional with an Etag value in the Request Header Indicates API service is Busy, client should try again later System could not process the request

HEAD /Storage/Devices/{id}/Adapters/ - Ping the Collection of Adapters

URI:	/Storage/Devices/{id}/Adapters/	Description
Method	HEAD	Pings this Adapter Collection
Request Header	Authorization (Mandatory)	The request requires either Basic or Digest authorization
Query Parameters		
Response	200 OK 401 Unauthorized 404 Not Found 429 Too Many Requests	OK with no response body Unauthorized; credential entry failed or missing Resource Collection 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

HEAD /Storage/Devices/{id}/Adapters/{id}/ - Ping a specific Adapter

URI:	/Storage/Devices/{id}/Adapters/{id}/	Description
Method	HEAD	Pings this Adapter
Request Header	Authorization (Mandatory)	The request requires either Basic or Digest authorization
Query Parameters		
Response	200 OK 401 Unauthorized 404 Not Found 429 Too Many Requests	OK with no response body Unauthorized; credential entry failed or missing 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

OPTIONS /Storage/Devices/{id}/Adapters/- Determine Allowable Methods for a Collection of Adapters

URI:	/Storage/Devices/{id}/Adapters/	Description
Method	OPTIONS	Get the allowable HTTP Methods list for this resource
Request Header	(None) Documentation (Optional) Documentation (Optional) If-None-Match (Optional)	Returns the full resource schema as Content-Type application/json Info - Returns documentation information in the form of plain text Schema - Returns the schema information in "pretty" JSON text as plain text Etag - The request is conditionally processed only if the current ETag for the resource does not match the ETag passed in this header
Query Parameters		
Response	200 OK 304 Not Modified 404 Not Found 429 Too Many Requests	OK & the “Allow” list of methods in the response header. The response body provides the JSON Schema for this resource If-None-Match Etag value matched, therefore no Response Body will be returned 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

OPTIONS /Storage/Devices/{id}/Adapters/{id}/ - Determine Allowable Methods for a specific Adapter

URI:	/Storage/Devices/{id}/Adapters/{id}/	Description
Method	OPTIONS	Get the allowable HTTP Methods list for this resource
Request Header	(None) Documentation (Optional) Documentation (Optional) If-None-Match (Optional)	Returns the full resource schema as Content-Type application/json Info - Returns documentation information in the form of plain text

		Schema - Returns the schema information in "pretty" JSON text as plain text Etag - The request is conditionally processed only if the current ETag for the resource does not match the ETag passed in this header
Query Parameters		
Response	200 OK 304 Not Modified 404 Not Found 429 Too Many Requests	OK & the "Allow" list of methods in the response header. The response body provides the JSON Schema for this resource If-None-Match Etag value matched, therefore no Response Body will be returned 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

Methods Not Allowed on **/Storage/Devices/{id}/Adapters/** Collection

URI:	**/Storage/Devices/{id}/Adapters/**	**Description**
Method	POST, DELETE	Methods that are not allowed
Request Header		
Query Parameters		
Response	405 Method Not Allowed	Method not allowed for this Resource; returns "Allow" header with allowable methods list

Methods Not Allowed on **/Storage/Devices/{id}/Adapters/{id}/** Instance

URI:	**/Storage/Devices/{id}/Adapters/{id}/**	**Description**
Method	POST, PUT, DELETE	Methods that are not allowed
Request Header		
Query Parameters		
Response	405 Method Not Allowed	Method not allowed for this Resource; returns "Allow" header with allowable methods list

Collection Resource Attributes

Attribute	Type	Requirement	User Configurable	Possible Values	Description	Model Correspondence
Self	URI String	Mandatory	No	Free-Form URI Format 256 Chars	Describes the fully qualified URI link for the Collection	{ IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking }
CNPDSCP	Number	Optional	Yes	Range: 1 - 63 (default: 24)	Congestion Notification Packet (CNP) setting	
CNPPriority	Number	Optional	Yes	Range: 0 - 7 (default: 3)	Congestion Notification Packet Priority setting	
EnableECN	Number	Optional	Yes	0 - Disabled, 1 - Enabled	Disable/Enable Explicit Congestion Notification (ECN)	
EnablePFCDSCP	Number	Optional	Yes	0 - Disabled, 1 - Enabled	Disable/Enable Priority-Based Flow Control (PFC) of type DSCP	
DSCP	Number	Optional	Yes	Range: 1 - 63 (default: 48)	Differentiated Services field Code Point (DSCP) setting	
Priority	Number	Optional	Yes	Range: 0 - 7 (default: 6)	DSCP Priority setting	
Defaults	Boolean	WriteOnly	Yes	true	Returns the above attributes to their default settings	

Members	String Array	Optional	No	Resource Collection (0 - n entries)	The array of Resource Instances (see Instance Resource Attributes Table for Instance Attribute details)	

Instance Resource Attributes

Attribute	Type	Requirement	User Configurable	Possible Values	Description	Model Correspondence
Self	URI String	Mandatory	No	Free-Form URI Format 256 Chars	Describes the fully qualified URI link	{ IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking }
ID	String	Mandatory	No	Free-Form 256 Chars	The resource identifier that is unique in space and time	{ DMTF | CIM | LogicalElement.DeviceID }
Status.State.Name	String	Mandatory	No	"Unknown" "Not available" "Servicing" "Starting" "Stopping" "Stopped" "Aborted" "Dormant" "Completed" "Migrating" "Emigrating" "Immigrating" "Snapshotting" "Shutting down" "In test" "Transitioning"	The current state value of this Resource	{ DMTF | CIM | ManagedSystemElement.State }

				"In service"		
Status.State.ID	Number	Mandatory	No	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16	The current state value map of this Resource	{ DMTF | CIM | ManagedSystemElement.State }
Status.Health[].Name	String (1..*)	Mandatory	No	"Unknown" "OK" "Degraded/Warning" "Minor failure" "Major failure" "Critical failure" "Non-recoverable error" "Not installed" "Not available" "No access allowed"	The current health value of this Resource. There can be 1 or more Name entries.	{ DMTF | CIM | ManagedSystemElement.HealthState }
Status.Health[].ID	Number (1..*)	Mandatory	No	0 5 10 15 20 25 30 65536 65537 65538	The current health value map of this Resource. There can be 1 or more Identries.	{ DMTF | CIM | ManagedSystemElement.HealthState }

Status.Details[]	String Array	Optional	No	Free-Form Array entry. If no entry, then “None”.	The current Health Details of the Device	{ DMTF | CIM | ManagedSystemElement.DetailedStatus }
Ports.Self	String	Mandatory	No	Free-Form URI Format 256 Chars	Describes the fully qualified URI link	{ IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking }

EXAMPLES

GET Adapters Example - Returning the Adapters Collection Information

Request

Method	URI	Query String	Request Header	Request Body
GET	/Storage/Devices/{id}/Adapters/		Authorization (Mandatory) If-None-Match: {etag} (Optional)	

Response

Precondition	Response Code	Response Header	Response Body
Credentials invalid or missing	401 Unauthorized		
Resource Id does not exist	404 Not Found		
If-None-Match true	304 Not Modified	ETag: {etag}	

API Busy	429 Too Many Requests		

Success If-None-Match false or missing	200 OK	Content-Type: application/json ETag: {etag}	{
			"Self": "http://10.20.30.40:80/Storage/Devices/0123456789/Adapters/",
			"CNPDSCP": 48,
			"CNPPriority": 6,
			"EnableECN": 0,
			"EnablePFCDSCP": 0,
			"DSCP": 24,
			"Priority": 3,
			"Members": [{
			"Self": "http://10.20.30.40:80/Storage/Devices/0123456789/Adapters/fabric1/",
			"ID": "fabric1",
			"Status": {
			"State": {
			"ID": 0,
			"Name": "Unknown"
			},
			"Health": [{
			"ID": 5,
			"Name": "OK"
			}]
			},
			"Ports": {
			"Self": "http://10.20.30.40:80/Storage/Devices/0123456789/Adapters/fabric1/Ports/"
			}
			}]
			}

GET Adapters Example - Specific Instance Based on the Identifier

Request

Method	URI	Query String	Request Header	Request Body
GET	/Storage/Devices/{id}/Adapters/fabric1/		Authorization (Mandatory) If-None-Match: {etag} (Optional)	

Response

Precondition	Response Code	Response Header	Response Body
Credentials invalid or missing	401 Unauthorized		
Resource Id does not exist	404 Not Found		
If-None-Match true	304 Not Modified		
API Busy	429 Too Many Requests		
If-None-Match false or missing	200 OK	Content-Type: application/json ETag: {etag}	{ "Self": "http://10.20.30.40:80/Storage/Devices/0123456789/Adapters/fabric1/", "ID": "fabric1", "Status": { "State": { "ID": 16, "Name": "In service" }, "Health": [{ "Id": 5, "Name": "OK" }] }, "Ports": { "Self": "http://10.20.30.40:80/Storage/Devices/0123456789/Adapters/fabric1/Ports/", "Members": [{

```
                        "Self":
                        "http://10.20.30.40:80/Storage/Devices/012345678
                        9/Adapters/fabric1/Ports/00_0a_f7_95_8c_ac/",
                        "ID": "00_0a_f7_95_8c_ac",
                        "Status": {
                                "State": {
                                        "ID": 16,
                                        "Name": "In service"
                                },
                                "Health": [{
                                        "ID": 5,
                                        "Name": "OK"
                                }]
                        },
                        "AddressOrigin": {
                                "ID": 4,
                                "Name": "DHCP"
                        },
                        "IPv4Address": "10.20.30.40/22",
                        "MACAddress": "00:0a:f7:95:8c:ac",
                        "NetworkType": {
                                "ID": 8,
                                "Name": "IPv4 Network"
                        },
                        "MTUBytes": 1500,
                        "TransceiverMode": {
                                "ID": 56,
                                "Name": "Consortium-Based:No      FEC:None"
                        }
                }]
        }
}
```


9.3.4 Ports

Description

The Device-level methods and attributes return information about the Port(s) and do certain operations.

Allowable Methods

URI	Allowable Methods
/Storage/Devices/{id}/Adapters/{id}/Ports/	GET, HEAD, OPTIONS
/Storage/Devices/{id}/Adapters/{id}/Ports/{id}/	GET, PUT, HEAD, OPTIONS

GET /Storage/Devices/{id}/Adapters/{id}/Ports/ - Retrieve all Ports on a specific Adapter

URI:	/Storage/Devices/{id}/Adapters/{id}/Ports/	Description
Method	GET	Returns the Collection of Ports
Request Header	Authorization (Mandatory) If-None-Match (Optional)	The request requires either Basic or Digest authorization The request is conditionally processed only if the current ETag for the resource does not match the ETag ed in this header
Query Parameters		
Response	200 OK 304 Not Modified 401 Unauthorized 404 Not Found 429 Too Many Requests	OK & List of Ports + ETag Header If-None-Match Etag value matched, therefore no Response Body will be returned Unauthorized; credential entry failed or missing Resource Collection 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

GET /Storage/Devices/{id}/Adapters/{id}/Ports/{id} - Retrieve a specific Port on a specific Adapter

URI:	/Storage/Devices/{id}/Adapters/{id}/Ports/{id}/	Description
Method	GET	Returns the information regarding a specific Port based on the {id} in the URI address string
Request Header	Authorization (Mandatory) If-None-Match (Optional)	The request requires either Basic or Digest authorization The request is conditionally processed only if the current ETag for the resource does not match the ETag passed in this header
Query Parameters		
Response	200 OK 304 Not Modified	OK & Port information in the response body + ETag Header

	401 Unauthorized 404 Not Found 429 Too Many Requests	If-None-Match Etag value matched, therefore no Response Body will be returned Unauthorized; credential entry failed or missing 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

PUT /Storage/Devices/{id}/Adapters/{id}/Ports/{id} - Modify specific Port attributes

URI:	**/Storage/Devices/{id}/Adapters/{id}/Ports/{id}/**	**Description**
Method	PUT	Modify an attribute or execute an operation for this Port
Request Header	Authorization (Mandatory) If-Match (Mandatory)	The request requires either Basic or Digest authorization The request is conditionally processed only if the current ETag for the resource matches the ETag passed in this header
Query Parameters		

Request Body	{
	"AddressOrigin": {
	"ID": number,
	},
	"IPv4Address": "ipv4_address/cidr",
	"IPGateway": "ipv4_gateway",
	"MTUBytes": 1500,
	"TransceiverMode": {
	"ID": number,
	},
	
	}
		JSON BODY START
		Address Origin - where the IP Address comes from
		Origin Type ID (4 or 3) (DHCP or STATIC)
		
		IPv4 Address and CIDR mask value
		IPv4 Gateway Address
		Maximum Transfer Unit in bytes (range: 46 - 9216)
		Transceiver Mode Setting (must be sent independently from the others above)
		Mode Type ID (56 - 61)
		
		JSON BODY END

		NOTE: All attributes (except TransceiverMode) must be sent together even if there is no change
Response	200 OK 400 Bad Request 401 Unauthorized 404 Not Found 412 Precondition Failed 428 Precondition Required 429 Too Many Requests 500 Internal Server Error	OK & Port information in the response body + ETag Header Bad Request (typically a faulty parameter) Unauthorized; credential entry failed or missing The Resource doesn't exist Indicates the "If-Match" Etag check failed Indicates the need for an "If-Match" conditional with an Etag value in the Request Header Indicates API service is Busy, client should try again later System could not process the request

HEAD /Storage/Devices/{id}/Adapters/{id}/Ports/ - Ping the Collection of Ports on a specific Adapter

URI:	**/Storage/Devices/{id}/Adapters/{id}/Ports/**	**Description**
Method	HEAD	Pings this Port Collection
Request Header	Authorization (Mandatory)	The request requires either Basic or Digest authorization
Query Parameters		
Response	200 OK 401 Unauthorized 404 Not Found 429 Too Many Requests	OK with no response body Unauthorized; credential entry failed or missing Resource Collection 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

HEAD /Storage/Devices/{id}/Adapters/{id}/Ports/{id}/ - Ping a specific Port on a specific Adapter

URI:	**/Storage/Devices/{id}/Adapters/{id}/Ports/{id}/**	**Description**

Method	HEAD	Pings this Port
Request Header	Authorization (Mandatory)	The request requires either Basic or Digest authorization
Query Parameters		
Response	200 OK 401 Unauthorized 404 Not Found 429 Too Many Requests	OK with no response body Unauthorized; credential entry failed or missing 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

OPTIONS /Storage/Devices/{id}/Adapters/{id}/Ports/- Determine Allowable Methods for a Collection of Ports on a specific Adapter

URI:	**/Storage/Devices/{id}/Adapters/{id}/Ports/**	**Description**
Method	OPTIONS	Get the allowable HTTP Methods list for this resource
Request Header	(None) Documentation (Optional) Documentation (Optional) If-None-Match (Optional)	Returns the full resource schema as Content-Type application/json Info - Returns documentation information in the form of plain text Schema - Returns the schema information in "pretty" JSON text as plain text Etag - The request is conditionally processed only if the current ETag for the resource does not match the ETag passed in this header
Query Parameters		
Response	200 OK 304 Not Modified 404 Not Found 429 Too Many Requests	OK & the “Allow” list of methods in the response header. The response body provides the JSON Schema for this resource If-None-Match Etag value matched, therefore no Response Body will be returned

		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

OPTIONS /Storage/Devices/{id}/Adapters/{id}/Ports/{id}/ - Determine Allowable Methods for a specific Port on a specific Adapter

URI:	**/Storage/Devices/{id}/Adapters/{id}/Ports/{id}/**	**Description**
Method	OPTIONS	Get the allowable HTTP Methods list for this resource
Request Header	(None) Documentation (Optional) Documentation (Optional) If-None-Match (Optional)	Returns the full resource schema as Content-Type application/json Info - Returns documentation information in the form of plain text Schema - Returns the schema information in "pretty" JSON text as plain text Etag - The request is conditionally processed only if the current ETag for the resource does not match the ETag passed in this header
Query Parameters		
Response	200 OK 304 Not Modified 404 Not Found 429 Too Many Requests	OK & the “Allow” list of methods in the response header. The response body provides the JSON Schema for this resource If-None-Match Etag value matched, therefore no Response Body will be returned 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

Methods Not Allowed on **/Storage/Devices/{id}/Adapters/{id}/Ports/** Collection

URI:	**/Storage/Devices/{id}/Adapters/{id}/Ports/**	**Description**

Method	POST, PUT, DELETE	Methods that are not allowed
Request Header		
Query Parameters		
Response	405 Method Not Allowed	Method not allowed for this Resource; returns "Allow" header with allowable methods list

Methods Not Allowed on **/Storage/Devices/{id}/Adapters/{id}/Ports/{id}/** Instance

URI:	**/Storage/Devices/{id}/Adapters/{id}/Ports/{id}/**	**Description**
Method	POST, DELETE	Methods that are not allowed
Request Header		
Query Parameters		
Response	405 Method Not Allowed	Method not allowed for this Resource; returns "Allow" header with allowable methods list

Collection Resource Attributes

Attribute	**Type**	**Requirement**	**User Configurable**	**Possible Values**	**Description**	**Model Correspondence**
Self	URI String	Mandatory	No	Free-Form URI Format 256 Chars	Describes the fully qualified URI link for the Collection	{ IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking }
Members	String Array	Optional	No	Resource Collection (0 - n entries)	The array of Resource Instances (see Instance Resource Attributes Table for Instance Attribute details)	

Instance Resource Attributes

Attribute	Type	Requirement	User Configurable	Possible Values	Description	Model Correspondence
Self	URI String	Mandatory	No	Free-Form URI Format 256 Chars	Describes the fully qualified URI link	{ IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking }
ID	String	Mandatory	No	Free-Form 256 Chars	The resource identifier that is unique in space and time	{ DMTF | CIM | LogicalElement.DeviceID }
Status.State.Name	String	Mandatory	No	"Unknown" "Not available" "Servicing" "Starting" "Stopping" "Stopped" "Aborted" "Dormant" "Completed" "Migrating" "Emigrating" "Immigrating" "Snapshotting" "Shutting down" "In test" "Transitioning" "In service"	The current state value of this Resource	{ DMTF | CIM | ManagedSystemElement.State }

Status.State.ID	Number	Mandatory	No	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16	The current state value map of this Resource	{ DMTF | CIM | ManagedSystemElement.State }
Status.Health[].Name	String (1..*)	Mandatory	No	"Unknown" "OK" "Degraded/Warning" "Minor failure" "Major failure" "Critical failure" "Non-recoverable error" "Not installed" "Not available" "No access allowed"	The current health value of this Resource. There can be 1 or more Name entries.	{ DMTF | CIM | ManagedSystemElement.HealthState }
Status.Health[].ID	Number (1..*)	Mandatory	No	0 5 10 15 20 25 30 65536 65537 65538	The current health value map of this Resource. There can be	{ DMTF | CIM | ManagedSystemElement.HealthState }

					1 or more Id entries.	
Status.Details[]	String Array	Optional	No	Free-Form Array entry. If no entry, then “None”.	The current Health Details of the Device	{ DMTF | CIM | ManagedSystemElement.DetailedStatus }
AddressOrigin.Name	String	Mandatory	No	"UNKNOWN" "OTHER" "NOT APPLICABLE" "STATIC" "DHCP"	Information value as to where the address is supplied	{ DMTF | CIM | DHCPSettingData.AddressOrigin }
AddressOrigin.ID	Number	Mandatory	Yes	0 1 2 3 4	Information value map as to where the address is supplied	{ DMTF | CIM | DHCPSettingData.AddressOrigin }
IPv4Address	String	Mandatory	Yes	IPv4 4-Octet pattern + CIDR mask	The Network IP Address for this Device; IPv4 type NOTE: 0.0.0.0/8 & 127.0.0.0/8 are	{ DMTF | CIM | StaticIPAssignmentSettingData.IPv4Address }

					reserved and rejected	
IPGateway	String	Optional	Yes	IPv4 4-Octet pattern	The Network IP Gateway address setting	{ DMTF | CIM | StaticIPAssignmentSettingData.GatewayIPv4Address }
MACAddress	String	Mandatory	No	6-hex digit HW address		
NetworkType.Name	String	Mandatory	No	"LAN" "WLAN" "WAN" "MAN" "SAN" "VLAN" "Ethernet Network" "IP Network" "IPv4 Network" "IPv6 Network"	The network type value	{ DMTF | CIM | System.AdminDomain.Network }
NetworkType.ID	Number	Mandatory	No	0 1 2 3 4 5 6 7 8	The network type value map	{ DMTF | CIM | System.AdminDomain.Network }
MTUBytes	Number	Mandatory	Yes	Range: 46 - 9216 (default: 1500)	The current Maximum Transfer Bytes value	{ DMTF | CIM | System.AdminDomain.Network.NetworkVLAN.TransmissionSize }

TransceiverMode.Id	Number	Mandatory	Yes	0 56 57 58 59 60 61		
TransceiverMode.Name	String	Mandatory	No	"Unknown" "Consortium-Based:No FEC:None" "Consortium-Based:No FEC:BASE-R" "Consortium-Based:No FEC:RS" "Consortium-Based:Yes FEC:None" "Consortium-Based:Yes FEC:KR" "Consortium-Based:Yes FEC:RS"		
CablePresent	Boolean	Optional	No	true or false	Reports if a cable is plugged into the port	
LinkStatus	Boolean	Optional	No	true or false	Reports if the Link is Up (true) or Down (false)	

EXAMPLES

GET Ports Example - Specific Instance Based on the Identifier

Request

Method	URI	Query String	Request Header	Request Body
GET	/Storage/Devices/{id}/Adapters/management/Ports/{id}		Authorization (Mandatory) If-None-Match: {etag} (Optional)	

Response

Precondition	Response Code	Response Header	Response Body
Credentials invalid or missing	401 Unauthorized		
Resource Id does not exist	404 Not Found		
If-None-Match true	304 Not Modified	ETag: {etag}	
API Busy	429 Too Many Requests		

Success If-None-Match false or missing	200 OK	Content-Type: application/json
		ETag: {etag}
			{
			"Self": "http://10.20.30.40/Storage/Devices/0123456789/Adapters/management/Ports/01_0a_f7_95_79_3c/",
			"ID": "01_0a_f7_95_79_3c",
			"Status": {
			"State": {
			"ID": 16,
			"Name": "In service"
			},
			"Health": [{

			"ID": 5,
			"Name": "OK"
			}]
			},
			"AddressOrigin": {
			"ID": 4,
			"Name": "DHCP"
			},
			"IPv4Address": "10.20.30.40/22",
			"IPGateway": "",
			"MACAddress": "01:0a:f7:95:79:3c",
			"NetworkType": {
			"ID": 8,
			"Name": "IPv4 Network"
			},
			"MTUBytes": 1500,
			"TransceiverMode": {
			"ID": 56,
			"Name": "Consortium-Based:No FEC:None"
			}
			}

PUT Port Example - Change the MTUBytes of a specific Port

Request

Method	URI	Query String	Request Header	Request Body

PUT	/Storage/Devices/{id}/Adapters/{id}/Ports/{id}		Authorization (Mandatory)
			If-Match: {etag} (Mandatory)
				{
				"MTUBytes" : 5000
				}

Response

Precondition	Response Code	Response Header	Response Body
Credentials invalid or missing	401 Unauthorized		
Resource Id does	404 Not Found		

not exist			
Bad/Missing Parameter in Body	400 Bad Request		
System could not process the request	500 Internal Server Error		
If-Match false	412 Precondition Failed		
If-Match missing	428 Precondition Required		
API Busy	429 Too Many Requests		

If-Match true	200 OK	Content-Type: application/json	{
			"Self": "http://10.20.30.40/Storage/Devices/0123456789/Adapters/management/Ports/01_0a_f7_95_79_3c/",
			"ID": "01_0a_f7_95_79_3c",
			"Status": {
			"State": {
			"ID": 16,
			"Name": "In service"
			},
			"Health": [{
			"ID": 5,
			"Name": "OK"
			}]
			},
			"AddressOrigin": {
			"ID": 4,

```
                "Name": "DHCP"
        },
        "IPv4Address": "10.20.30.40/22",
        "IPGateway": "",
        "MACAddress": "01:0a:f7:95:79:3c",
        "NetworkType": {
                "ID": 8,
                "Name": "IPv4 Network"
        },
        "MTUBytes": 5000,
        "TransceiverMode": {
                "ID": 56,
                "Name": "Consortium-Based:No      FEC:None"
        }
}
```


9.3.5 Media

Description

The Device-level methods and attributes return information about the Media and do certain operations.

Allowable Methods

URI	Allowable Methods
/Storage/Devices/{id}/Media/	GET, HEAD, OPTIONS
/Storage/Devices/{id}/Media/{id}/	GET, HEAD, OPTIONS

GET /Storage/Devices/{id}/Media/ - Retrieve all Media

URI:	/Storage/Devices/{id}/Media/	Description
Method	GET	Returns the Collection of Media
Request Header	Authorization (Mandatory) If-None-Match (Optional)	The request requires either Basic or Digest authorization The request is conditionally processed only if the current ETag for the resource does not match the ETag passed in this header
Query Parameters		
Response	200 OK 304 Not Modified 401 Unauthorized	OK & List of Media + ETag Header If-None-Match Etag value matched, therefore no Response Body will be returned

	404 Not Found	Unauthorized; credential entry failed or missing Resource Collection does not exist; this IP Address is running an HTTP service, but does not recognize this resource

GET /Storage/Devices/{id}/Media/{id}/ - Retrieve a specific Medium

URI:	/Storage/Devices/{id}/Media/{id}/	Description
Method	GET	Returns the information regarding a specific Medium based on the {id} in the URI address string
Request Header	Authorization (Mandatory) If-None-Match (Optional)	The request requires either Basic or Digest authorization The request is conditionally processed only if the current ETag for the resource does not match the ETag passed in this header
Query Parameters		
Response	200 OK 401 Unauthorized 404 Not Found	OK & Adapter information in the response body + ETag Header Unauthorized; credential entry failed or missing Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource

HEAD /Storage/Devices/{id}/Media/ - Ping the Collection of Media

URI:	/Storage/Devices/{id}/Media/	Description
Method	HEAD	Pings this Media Collection
Request Header	Authorization (Mandatory)	The request requires either Basic or Digest authorization
Query Parameters		
Response	200 OK 401 Unauthorized 404 Not Found	OK with no response body Unauthorized; credential entry failed or missing Resource Collection does not exist; this IP Address is running an HTTP service, but does not recognize this resource

HEAD /Storage/Devices/{id}/Media/{id}/ - Ping a specific Medium

URI:	/Storage/Devices/{id}/Media/{id}/	Description
Method	HEAD	Pings this Medium
Request Header	Authorization (Mandatory)	The request requires either Basic or Digest authorization
Query Parameters		
Response	200 OK 401 Unauthorized 404 Not Found	OK with no response body Unauthorized; credential entry failed or missing Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource

OPTIONS /Storage/Devices/{id}/Media/- Determine Allowable Methods for a Collection of Media

URI:	/Storage/Devices/{id}/Media/	Description
Method	OPTIONS	Get the allowable HTTP Methods list for this resource
Request Header		
Query Parameters		
Response	200 OK 404 Not Found	OK & the “Allow” list of methods in the response header. The response body provides the JSON Schema for this resource Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource

OPTIONS /Storage/Devices/{id}/Media/{id}/ - Determine Allowable Methods for a specific Medium

URI:	/Storage/Devices/{id}/Media/{id}/	Description
Method	OPTIONS	Get the allowable HTTP Methods list for this resource
Request Header		

Query Parameters		
Response	200 OK 404 Not Found	OK & the "Allow" list of methods in the response header. The response body provides the JSON Schema for this resource Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource

Methods Not Allowed on **/Storage/Devices/{id}/Media/** Collection

URI:	**/Storage/Devices/{id}/Media/**	**Description**
Method	POST, DELETE	Methods that are not allowed
Request Header		
Query Parameters		
Response	405 Method Not Allowed	Method not allowed for this Resource; returns "Allow" header with allowable methods list

Methods Not Allowed on **/Storage/Devices/{id}/Media/{id}/** Instance

URI:	**/Storage/Devices/{id}/Media/{id}/**	**Description**
Method	POST, DELETE	Methods that are not allowed
Request Header		
Query Parameters		
Response	405 Method Not Allowed	Method not allowed for this Resource; returns "Allow" header with allowable methods list

Collection Resource Attributes

Attribute	**Type**	**Requirement**	**User Configurable**	**Possible Values**	**Description**	**Model Correspondence**
Self	URI String	Mandatory	No	Free-Form URI Format 256 Chars	Describes the fully qualified URI link for the Collection	{ IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking }

Members	String Array	Optional	No	Resource Collection (0 - n entries)	The array of Resource Instances (see Instance Resource Attributes Table for Instance Attribute details)	

Instance Resource Attributes

Attribute	Type	Requirement	User Configurable	Possible Values	Description	Model Correspondence
Self	URI String	Mandatory	No	Free-Form URI Format 256 Chars	Describes the fully qualified URI link	{ IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking }
ID	String	Mandatory	No	Free-Form 256 Chars	The resource identifier that is unique in space and time	{ DMTF | CIM | LogicalElement.DeviceID }
SerialNumber	String	Mandatory	No	Free-Form 64 Chars	The serial number for this Resource	{ DMTF | CIM | ManagedSystemElement.SerialNumber }
Model	String	Mandatory	No	Free-Form 64 Chars	The model name or number for this	{ DMTF | CIM | ManagedSystemElement.Model }

					Resource	
OperatingSystem.Name	String	Optional	No	Free-Form 128 Chars	The Operating System or Firmware Name	{ DMTF | CIM | System.OperatingSystem.Name }
OperatingSystem.Version	String	Mandatory	No	Free-Form 128 Chars	The Operating System or Firmware Version	{ DMTF | CIM | System.OperatingSystem.Version }
OperatingSystem.OSType.Name	String	Mandatory	No	Free-Form 128 Chars	The Operating System or OS Type value	{ DMTF | CIM | System.OperatingSystem.Type }
OperatingSystem.OSType.Name	Number	Mandatory	No	0 - n	The Operating System or OS Type value map	{ DMTF | CIM | System.OperatingSystem.Type }
Manufacturer	String	Mandatory	No	Free-Form 64 Chars	The vendor name for this Resource	{ DMTF | CIM | ManagedSystemElement.Manufacturer }
Protocol.Name	String	Mandatory	No	Free-Form 128 Chars	The Operating System or	{ DMTF | CIM | System.OperatingSystem.Name }

					Firmware Name	
Protocol.ID	Number	Mandatory	No	Free-Form 128 Chars	The Operating System or Firmware Version	{ DMTF | CIM | System.OperatingSystem.Version }
Status.State.Name	String	Mandatory	No	"Unknown" "Not available" "Servicing" "Starting" "Stopping" "Stopped" "Aborted" "Dormant" "Completed" "Migrating" "Emigrating" "Immigrating" "Snapshotting" "Shutting down" "In test" "Transitioning" "In service"	The current state value of this Resource	{ DMTF | CIM | ManagedSystemElement.State }
Status.State.ID	Number	Mandatory	No	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16	The current state value map of this Resource	{ DMTF | CIM | ManagedSystemElement.State }

Status.Health[].Name	String (1..*)	Mandatory	No	"Unknown" "OK" "Degraded/Warning" "Minor failure" "Major failure" "Critical failure" "Non-recoverable error" "Not installed" "Not available" "No access allowed"	The current health value of this Resource. There can be 1 or more Name entries.	{ DMTF | CIM | ManagedSystemElement.HealthState }
Status.Health[].ID	Number (1..*)	Mandatory	No	0 5 10 15 20 25 30 65536 65537 65538	The current health value map of this Resource. There can be 1 or more Id entries.	{ DMTF | CIM | ManagedSystemElement.HealthState }
Status.Details[]	String Array	Mandatory	No	Free-Form 32 Characters per Array entry. If no entry, then “None”.	The current Health Details of the Device	{ DMTF | CIM | ManagedSystemElement.DetailedStatus }
Pools.Self	String	Mandatory	No	Free-Form URI Format 256 Chars	Describes the fully qualified URI link for Pools	{ IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking }
Slots.Self	String	Mandatory	No	Free-Form URI Format 256 Chars	Describes the fully qualifie	{ IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking }

					d URI link for Slots	

EXAMPLES

GET Media Example - Specific Instance Based on the Identifier

Request

Method	URI	Query String	Request Header	Request Body
GET	/Storage/Devices/{id}/Media/management/		Authorization (Mandatory) If-None-Match: {etag} (Optional)	

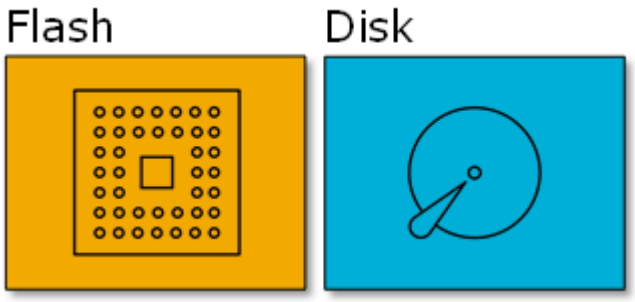
Response

Precondition	Response Code	Response Header	Response Body
Credentials invalid or missing	401 Unauthorized		
Resource Id does not exist	404 Not Found		
If-None-Match true	304 Not Modified		

If-None-Match false or missing	200 OK	Content-Type: application/json
		ETag: {etag}
			{
			"Self": "http://10.20.30.40/Storage/Devices/0123456789/Media/1000235232013e7d/",
			"ID": "1000235232013e7d",
			"Status": {
			"State": {
			"ID": 16,

```
                        "Name": "In service"
                },
                "Health": [{
                        "ID": 5,
                        "Name": "OK"
                }],
                "Details": ["None"]
        },
        "Capacity": 6001175126016,
        "Name": "Media1",
        "Manufacturer": "Acme",
        "Model": "12345",
        "Protocol": {
                "ID": 65537,
                "Name": "NVMe"
        },
        "OperatingSystem": {
                "Self":
                "http://10.20.30.40/Storage/Devices/0123456789/Media
                /1000235232013e7d/OperatingSystem/",
                "Name": "",
                "OSType": {
                        "ID": 59,
                        "Name": "Dedicated"
                },
                "Version": "FW-Rev0"
        },
        "SerialNumber": "1EG0P6JA",
        "Pools": {
                "Self":
                "http://10.20.30.40/Storage/Devices/0123456789/Pools/
                ?media=1000235232013e7d"
        },
        "Slots": {
                "Self":
                "http://10.20.30.40/Storage/Devices/0123456789/Slots/S
                lot00/"
        }
}
```

9.4 Storage Devices - Logical



This table shows the logical and virtual resources for a storage device. The set of resource URIs is as follows:

URI Pattern	Description
/Storage/Devices/{id}/Volumes/	Collection of Storage Volumes available within this Storage Device
/Storage/Devices/{id}/Volumes/{id}/	A specific Storage Volume carved from a Storage Pool available within this Storage Device
/Storage/Devices/{id}/Paths/	Collection of Paths available within this Storage Device
/Storage/Devices/{id}/Paths/{id}/	A specific Path available within this Storage Device
/Storage/Devices/{id}/Hosts/	Collection of Hosts available within this Storage Device
/Storage/Devices/{id}/Hosts/{id}/	A specific Host available within this Storage Device
/Storage/Devices/{id}/Pools/	Collection of Pools available within this Storage Device
/Storage/Devices/{id}/Pools/{id}/	A specific Pool available within this Storage Device
/Storage/Devices/{id}/Location/	The Location information for the Storage Device
/Storage/Devices/{id}/SystemClock/	The System Clock information for this Storage Device
/Storage/Devices/{id}/Accounts/	Collection of Accounts available within this Storage Device
/Storage/Devices/{id}/Accounts/{id}/	A specific Account available within this Storage Device
/Storage/Devices/{id}/OperatingSystem/	The local Operating System information for this Storage Device
/Storage/Devices/{id}/Jobs/	Collection of Jobs available within this Storage Device
/Storage/Devices/{id}/Jobs/{id}/	A specific Job available within this Storage Device

/Storage/Devices/{id}/Performance/	The Performance information within this Storage Device

9.4.1 Volumes

Description

The Device-level methods and attributes return information about the Storage Volume(s) and do certain operations.

Allowable Methods

URI	Allowable Methods
/Storage/Devices/{id}/Volumes/	GET, POST, HEAD, OPTIONS
/Storage/Devices/{id}/Volumes/{id}/	GET, PUT, DELETE, HEAD, OPTIONS

GET /Storage/Devices/{id}/Volumes/ - Retrieve all Storage Volumes

URI:	/Storage/Devices/{id}/Volumes/	Description
Method	GET	Returns the Collection of Volumes
Request Header	Authorization (Mandatory) If-None-Match (Optional)	The request requires either Basic or Digest authorization The request is conditionally processed only if the current ETag for the resource does not match the ETag passed in this header
Query Parameters		
Response	200 OK 304 Not Modified 401 Unauthorized 404 Not Found 429 Too Many Requests	OK & Volume Collection information + ETag Header If-None-Match Etag value matched, therefore no Response Body will be returned Unauthorized; credential entry failed or missing Resource Collection 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

GET /Storage/Devices/{id}/Volumes/{Id}/ - Retrieve a specific Storage Volume

URI:	/Storage/Devices/{id}/Volumes/{id}/	Description

Method	GET	Returns the information regarding a specific Volume based on the {id} in the URI address string
Request Header	Authorization (Mandatory) If-None-Match (Optional)	The request requires either Basic or Digest authorization The request is conditionally processed only if the current ETag for the resource does not match the ETag passed in this header
Query Parameters		
Response	200 OK 304 Not Modified 401 Unauthorized 404 Not Found 429 Too Many Requests	OK & Volume information in the response body + ETag Header If-None-Match Etag value matched, therefore no Response Body will be returned Unauthorized; credential entry failed or missing 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

POST /Storage/Devices/{id}/Volumes/ - Create a new Storage Volume

URI:	/Storage/Devices/{id}/Volumes/{id}	Description
Method	POST	Create a new Volume
Request Header	Authorization (Mandatory)	The request requires either Basic or Digest authorization
Query Parameters		

Request Body	{
	"Name": "volume_name",
	"Capacity" : bytes,
	"Description": "desc",
	"PoolID": "pool_id",
	"NQN":
	"nqn.<datecode>.<company_domain>:<volume_name>,
	"AllowAnyHost": true | false
	}
		JSON BODY START
		Name of the Volume
		Size of the Volume in bytes (must be on 1024^3 or 1GB boundaries with min value = 1GB)
		User description for the Volume (Optional)
		The Pool ID from which the Volume is created
		NQN for the Volume (Optional; default pattern: "nqn.1992-

		05.com.wdc:<vol_name>", otherwise: "nqn.<datecode>.<company_domain>:<vol_name>) The Allow Any Host setting (Optional: true (default) means any host can connect; false requires a Path be created to a Host in order for the remote Host to connect) JSON BODY END
Response	201 Created 400 Bad Request 401 Unauthorized 404 Not Found 409 Conflict 429 Too Many Requests 500 Internal Server Error	Created & Volume information in the response body + ETag Header + new URI in Location Header Bad Request (typically a faulty parameter) Unauthorized; credential entry failed or missing Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource A new parameter value already exists (e.g., Name) Indicates API service is Busy, client should try again later System could not process the request

PUT /Storage/Devices/{id}/Volumes/{id} - Modify specific Storage Volume attributes

URI:	**/Storage/Devices/{id}/Volumes/{id}**	**Description**
Method	PUT	Modify an attribute or execute an operation for this Volume
Request Header	Authorization (Mandatory) If-Match (Mandatory)	The request requires either Basic or Digest authorization The request is conditionally processed only if the current ETag for the resource matches the ETag passed in this header
Query Parameters		

Request Body	{
	"Name": "volume_name",
	"Description": "desc",
	"UUID": "volume_uuid"
	}
		JSON BODY START
		Name of the Volume.
		User description for the Volume
		UUID required for any changes
		JSON BODY END

Response	200 OK 400 Bad Request 401 Unauthorized 404 Not Found 409 Conflict 412 Precondition Failed 428 Precondition Required 429 Too Many Requests	OK & Volume information in the response body + ETag Header Bad Request (typically a faulty parameter) Unauthorized; credential entry failed or missing The Resource doesn't exist A new parameter value already exists (e.g., Name or NQN) Indicates the "If-Match" Etag check failed Indicates the need for an "If-Match" conditional with an Etag value in the Request Header Indicates API service is Busy, client should try again later

HEAD /Storage/Devices/{id}/Volumes/ - Ping the Collection of Storage Volumes

URI:	**/Storage/Devices/{id}/Volumes/**	**Description**
Method	HEAD	Pings this Storage Volume Collection
Request Header	Authorization (Mandatory)	The request requires either Basic or Digest authorization
Query Parameters		
Response	200 OK 401 Unauthorized 404 Not Found 429 Too Many Requests	OK with no response body Unauthorized; credential entry failed or missing Resource Collection 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

HEAD /Storage/Devices/{id}/Volumes/{id}/ - Ping a specific Storage Volume

URI:	**/Storage/Devices/{id}/Volumes/{id}/**	**Description**
Method	HEAD	Pings this Storage Volume
Request Header	Authorization (Mandatory)	The request requires either Basic or Digest authorization
Query Parameters		
Response	200 OK 401 Unauthorized 404 Not Found 429 Too Many Requests	OK with no response body Unauthorized; credential entry failed or missing

		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

OPTIONS /Storage/Devices/{id}/Volumes/ - Determine Allowable Methods for a Collection of Storage Volumes

URI:	**/Storage/Devices/{id}/Volumes/**	**Description**
Method	OPTIONS	Get the allowable HTTP Methods list for this resource
Request Header	(None) Documentation (Optional) Documentation (Optional) If-None-Match (Optional)	Returns the full resource schema as Content-Type application/json Info - Returns documentation information in the form of plain text Schema - Returns the schema information in "pretty" JSON text as plain text Etag - The request is conditionally processed only if the current ETag for the resource does not match the ETag passed in this header
Query Parameters		
Response	200 OK 304 Not Modified 404 Not Found 429 Too Many Requests	OK & the “Allow” list of methods in the response header. The response body provides information based on the Request Header setting (see above) If-None-Match Etag value matched, therefore no Response Body will be returned 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

OPTIONS /Storage/Devices/{id}/Volumes/{Id}/ - Determine Allowable Methods for a specific Storage Volume

URI:	**/Storage/Devices/{id}/Volumes/{id}/**	**Description**
Method	OPTIONS	Get the allowable HTTP Methods list for this resource
Request Header	(None) Documentation (Optional)	Returns the full resource schema as Content-Type application/json

	Documentation (Optional) If-None-Match (Optional)	Info - Returns documentation information in the form of plain text Schema - Returns the schema information in "pretty" JSON text as plain text Etag - The request is conditionally processed only if the current ETag for the resource does not match the ETag passed in this header
Query Parameters		
Response	200 OK 304 Not Modified 404 Not Found 429 Too Many Requests	OK & the "Allow" list of methods in the response header. The response body provides the JSON Schema for this resource If-None-Match Etag value matched, therefore no Response Body will be returned 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

DELETE /Storage/Devices/{id}/Volumes/{id} - Delete specific Storage Volume

URI:	**/Storage/Devices/{id}/Volumes/{id}**	**Description**
Method	DELETE	Delete this Volume
Request Header	Authorization (Mandatory) If-Match (Mandatory)	The request requires either Basic or Digest authorization The request is conditionally processed only if the current ETag for the resource matches the ETag passed in this header
Query Parameters		
Request Body		
Response	204 No Content 401 Unauthorized 404 Not Found 409 Conflict 412 Precondition Failed 428 Precondition Required 429 Too Many Requests 500 Internal Server Error	Delete successful, no content in the response body Unauthorized; credential entry failed or missing The Resource doesn't exist Indicates that the DELETE is not allowed until any Paths are removed from the Volume Indicates the "If-Match" Etag check failed

		Indicates the need for an “If-Match” conditional with an Etag value in the Request Header Indicates API service is Busy, client should try again later System could not process the request

Methods Not Allowed on **/Storage/Devices/{id}/Volumes/** Collection

URI:	**/Storage/Devices/{id}/Volumes/**	**Description**
Method	PUT, DELETE	Methods that are not allowed
Request Header		
Query Parameters		
Response	405 Method Not Allowed	Method not allowed for this Resource; returns "Allow" header with allowable methods list

Methods Not Allowed on **/Storage/Devices/{id}/Volumes/{id}/** Instance

URI:	**/Storage/Devices/{id}/Volumes/{id}/**	**Description**
Method	POST	Methods that are not allowed
Request Header		
Query Parameters		
Response	405 Method Not Allowed	Method not allowed for this Resource; returns "Allow" header with allowable methods list

Collection Resource Attributes

Attribute	**Type**	**Requirement**	**User Configurable**	**Possible Values**	**Description**	**Model Correspondence**
Self	URI String	Mandatory	No	Free-Form URI Format 256 Chars	Describes the fully qualified URI link for the Collection	{ IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking }

Members	String Array	Optional	No	Resource Collection (0 - n entries)	The array of Resource Instances (see Instance Resource Attributes Table for Instance Attribute details)	

Instance Resource Attributes

Attribute	Type	Requirement	User Configurable	Possible Values	Description	Model Correspondence
Self	URI String	Mandatory	No	Free-Form URI Format 256 Chars	Describes the fully qualified URI link	{ IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking }
Name	String	Mandatory	Yes	Free-Form 32 Chars; no spaces allowed	The user-defined name of this Volume	{ DMTF | CIM | ManagedSystemElement.Name }
Id	String	Mandatory	No	Free-Form 256 Chars	The resource identifier that is unique in space and time	{ DMTF | CIM | LogicalElement.DeviceID }
UUID	String	Mandatory	No	Free-Form 256 Chars	The resource identifier that is used in creating Paths	{ DMTF | CIM | LogicalElement.DeviceID }

Capacity	Number	Mandatory	Yes	Integer Bytes; on 1024^3 boundary	The total number of raw bytes for this Volume	{ DMTF | CIM | Physicial.PhysicalMedia.Capacity }
Description	String	Optional	Yes	Free-Form 256 Chars	The user-defined description for this Volume	{ DMTF | CIM | ManagedElement.Description }
CreateDate	datetime	Mandatory	No	Date and Time	The date and time the Volume was created	{ DMTF | CIM | ManagedSystemElement.InstallDate }
LastModified	datetime	Mandatory	No	Date and Time	The date and time the Volume was modified	{ DMTF | CIM | LogicalElement.TimeOfLastStateChange }
NQN	String	Mandatory	Yes	Fixed prefix with user-defined suffix; 223 Chars	The fabric name for the Volume	{ WDC | OpenFlex| Volumes.Nqn }
Model	String	Mandatory	No	Free-Form 32 Chars	The model name or number for the Volume	{ DMTF | CIM | ManagedSystemElement.Model }

Manufacturer	String	Mandatory	No	Free-Form 32 Chars	The manufacturer name for the Volume	{ DMTF | CIM | ManagedSystemElement.Manufacturer }
SerialNumber	String	Mandatory	No	Alphanumeric values	The serial number for the Volume	{ DMTF | CIM | ManagedSystemElement.SerialNumber }
AllowAnyHost	Boolean	Mandatory	Yes	true false	The host connection capability of the Volume	{ WDC | OpenFlex| Volumes.AllowAnyHost }
Connections	Number	Mandatory	No	0 - n	The number of current connections to an initial host	
RemoteConnections.Members[].RemoteConnection	String Array	Mandatory	No	Empty or IPAddress:Port format list	The current Remote Host/Client IP Address /Port connection list	
ActiveQPairs	Number	Mandatory	No	0 -2048	The current number of Queue Pairs allocate	

					d to the volume	
PoolID	String	Mandatory	No	"0"-"7"	The Pool identifier that this Volume is created from	{ DMTF | CIM | LogicalElement.DeviceID }
Status.State.Name	String	Mandatory	No	"Unknown" "Not available" "Servicing" "Starting" "Stopping" "Stopped" "Aborted" "Dormant" "Completed" "Migrating" "Emigrating" "Immigrating" "Snapshotting" "Shutting down" "In test" "Transitioning" "In service"	The current state value of this Resource	{ DMTF | CIM | ManagedSystemElement.State }
Status.State.ID	Number	Mandatory	No	0 1 2 3 4 5 6 7 8 9 10	The current state value map of this Resource	{ DMTF | CIM | ManagedSystemElement.State }

				11 12 13 14 15 16		
Status.Health[].Name	String (1..*)	Mandatory	No	"Unknown" "OK" "Degraded/ Warning" "Minor failure" "Major failure" "Critical failure" "Non-recoverable error" "Not installed" "Not available" "No access allowed"	The current health value of this Resource. There can be 1 or more Name entries.	{ DMTF | CIM | ManagedSystemElement.HealthState }
Status.Health[].ID	Number (1..*)	Mandatory	No	0 5 10 15 20 25 30 65536 65537 65538	The current health value map of this Resource. There can be 1 or more Id entries.	{ DMTF | CIM | ManagedSystemElement.HealthState }
Status.Details[]	String Array	Optional	No	Free-Form Array entry. If no entry, then “None”.	The current Health Details of the Device	{ DMTF | CIM | ManagedSystemElement.DetailedStatus }

Hosts	URI String	Optional	No	Free-Form URI Format 256 Chars	Link to the participating Host	{ DMTF | CIM | Logical.RemoteHost, IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking }
Paths	URI String	Optional	No	Free-Form URI Format 256 Chars	Link to the participating Paths	{ DMTF | CIM | Logical.StorageVolume, IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking }
Pools	URI String	Mandatory	No	Free-Form URI Format 256 Chars	Fully qualified link to Storage Pool providing the Volume	{ DMTF | CIM | Logical.StoragePool, IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking }

EXAMPLES

GET Volume Example - Specific Instance Based on the Identifier

Request

Method	URI	Query String	Request Header	Request Body
GET	/Storage/Devices/{id}/Volume/c4e91cab-9e4f-45b7-b206-9271f68c7e86		Authorization (Mandatory) If-None-Match: {etag} (Optional)	

Response

Precondition	Response Code	Response Header	Response Body
Credentials invalid or missing	401 Unauthorized		
Resource Id does not exist	404 Not Found		

If-None-Match true	304 Not Modified	ETag: {etag}	
API Busy	429 Too Many Requests		

Success If-None-Match false or missing	200 OK	Content-Type: application/json ETag: {etag}	{
			"Self": "http://10.202.30.40:80/Storage/Devices/0123456789/Volumes/331c0887/",
			"ID": "331c0887",
			"Status": {
			"State": {
			"ID": 16,
			"Name": "In service"
			},
			"Health": [{
			"ID": 5,
			"Name": "OK"
			}]
			},
			"Capacity": 199715979264,
			"UUID": "331c0887",
			"Pools": "http://10.20.30.40:80/Storage/Devices/0123456789/Pools/?volumeid=331c0887",
			"AllowAnyHost": true,
			"ActiveQPairs": 2,
			"Connections": 1,
			"CreateDate": "Tue Apr 30 12:00:14 2019",
			"Description": "",
			"LastModified": "Tue Apr 30 12:00:14 2019",
			"Manufacturer": "WDC",
			"Model": "OpenFlex F3000",
			"Name": "TestVolume01",
			"NQN": "nqn.1992-05.com.wdc.eup2-2:TestVolume01",
			"PoolID": "0",
			"RemoteConnections": {
			"Members": [{
			"RemoteConnection": "192.168.0.37:41357"
			}]
			},
			"SerialNumber": "SN000AF7957E00000004"
			}

9.4.2 Paths

Description

The Device-level methods and attributes return information about the Path(s) and do certain operations.

Allowable Methods

URI	Allowable Methods
/Storage/Devices/{id}/Paths/	GET, POST, HEAD, OPTIONS
/Storage/Devices/{id}/Paths/{id}/	GET, DELETE, HEAD, OPTIONS

GET /Storage/Devices/{id}/Paths/ - Retrieve all Paths

URI:	/Storage/Devices/{id}/Paths/	Description
Method	GET	Returns the Collection of Paths
Request Header	Authorization (Mandatory) If-None-Match (Optional)	The request requires either Basic or Digest authorization The request is conditionally processed only if the current ETag for the resource does not match the ETag passed in this header
Query Parameters		
Response	200 OK 304 Not Modified 401 Unauthorized 404 Not Found 429 Too Many Requests	OK & List of Paths + ETag Header If-None-Match Etag value matched, therefore no Response Body will be returned Unauthorized; credential entry failed or missing Resource Collection 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

GET /Storage/Devices/{id}/Paths/{Id}/ - Retrieve a specific Path

URI:	/Storage/Devices/{id}/Paths/{id}/	Description
Method	GET	Returns the information regarding a specific Path based on the {id} in the URI address string
Request Header	Authorization (Mandatory) If-None-Match (Optional)	The request requires either Basic or Digest authorization

		The request is conditionally processed only if the current ETag for the resource does not match the ETag passed in this header
Query Parameters		
Response	200 OK 304 Not Modified 401 Unauthorized 404 Not Found 429 Too Many Requests	OK & Path information in the response body + ETag Header If-None-Match Etag value matched, therefore no Response Body will be returned Unauthorized; credential entry failed or missing 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

POST/Storage/Devices/{id}/Paths/ - Create a new Path

URI:	**/Storage/Devices/{id}/Paths/{id}**	**Description**
Method	POST	Create a new Path
Request Header	Authorization (Mandatory)	The request requires either Basic or Digest authorization
Query Parameters		

Request Body	{
	"HostUUID": "host_uuid",
	"VolumeUUID": "vol_uuid"
	}
		JSON BODY START
		UUID of the Host Initiator for the new Path
		UUID of the Volume Target for the new Path
		JSON BODY END

Response	201 Created 400 Bad Request 401 Unauthorized 409 Conflict 429 Too Many Requests 500 Internal Server Error	Created & Path information in the response body + ETag Header + new URI in Location Header Bad Request (typically a faulty parameter) Unauthorized; credential entry failed or missing A path with these values already exists Indicates API service is Busy, client should try again later System could not process the request

HEAD /Storage/Devices/{id}/Paths/ - Ping the Collection of Paths

URI:	**/Storage/Devices/{id}/Paths/**	**Description**

Method	HEAD	Pings this Path Collection
Request Header	Authorization (Mandatory)	The request requires either Basic or Digest authorization
Query Parameters		
Response	200 OK 401 Unauthorized 404 Not Found 429 Too Many Requests	OK with no response body Unauthorized; credential entry failed or missing Resource Collection 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

HEAD /Storage/Devices/{id}/Paths/{id}/ - Ping a specific Path

URI:	/Storage/Devices/{id}/Paths/{id}/	Description
Method	HEAD	Pings this Path
Request Header	Authorization (Mandatory)	The request requires either Basic or Digest authorization
Query Parameters		
Response	200 OK 401 Unauthorized 404 Not Found 429 Too Many Requests	OK with no response body Unauthorized; credential entry failed or missing 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

OPTIONS /Storage/Devices/{id}/Paths/ - Determine Allowable Methods for a Collection of Paths

URI:	/Storage/Devices/{id}/Paths/	Description
Method	OPTIONS	Get the allowable HTTP Methods list for this resource
Request Header	(None) Documentation (Optional) Documentation (Optional) If-None-Match (Optional)	Returns the full resource schema as Content-Type application/json Info - Returns documentation information in the form of plain text

		Schema - Returns the schema information in "pretty" JSON text as plain text Etag - The request is conditionally processed only if the current ETag for the resource does not match the ETag passed in this header
Query Parameters		
Response	200 OK 304 Not Modified 404 Not Found 429 Too Many Requests	OK & the "Allow" list of methods in the response header. The response body provides the JSON Schema for this resource If-None-Match Etag value matched, therefore no Response Body will be returned 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

OPTIONS /Storage/Devices/{id}/Paths/{Id}/ - Determine Allowable Methods for a specific Path

URI:	**/Storage/Devices/{id}/Paths/{id}/**	**Description**
Method	OPTIONS	Get the allowable HTTP Methods list for this resource
Request Header	(None) Documentation (Optional) Documentation (Optional) If-None-Match (Optional)	Returns the full resource schema as Content-Type application/json Info - Returns documentation information in the form of plain text Schema - Returns the schema information in "pretty" JSON text as plain text Etag - The request is conditionally processed only if the current ETag for the resource does not match the ETag passed in this header
Query Parameters		
Response	200 OK 304 Not Modified 404 Not Found 429 Too Many Requests	OK & the "Allow" list of methods in the response header. The response body provides the JSON Schema for this resource If-None-Match Etag value matched, therefore no Response Body will be returned 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

DELETE /Storage/Devices/{id}/Paths/{id} - Delete specific Path

URI:	/Storage/Devices/{id}/Paths/{id}	Description
Method	DELETE	Delete this Path
Request Header	Authorization (Mandatory) If-Match (Mandatory)	The request requires either Basic or Digest authorization The request is conditionally processed only if the current ETag for the resource matches the ETag passed in this header
Query Parameters		
Request Body		
Response	204 No Content 401 Unauthorized 404 Not Found 412 Precondition Failed 428 Precondition Required 429 Too Many Requests 500 Internal Server Error	Delete successful, no content in the response body Unauthorized; credential entry failed or missing The Resource doesn't exist Indicates the "If-Match" Etag check failed Indicates the need for an "If-Match" conditional with an Etag value in the Request Header Indicates API service is Busy, client should try again later System could not process the request

Methods Not Allowed on /Storage/Devices/{id}/Paths/ Collection

URI:	/Storage/Devices/{id}/Paths/	Description
Method	PUT, DELETE	Methods that are not allowed
Request Header		
Query Parameters		
Response	405 Method Not Allowed	Method not allowed for this Resource; returns "Allow" header with allowable methods list

Methods Not Allowed on /Storage/Devices/{id}/Paths/{id}/ Instance

URI:	/Storage/Devices/{id}/Paths/{id}/	Description

Method	POST, PUT	Methods that are not allowed
Request Header		
Query Parameters		
Response	405 Method Not Allowed	Method not allowed for this Resource; returns "Allow" header with allowable methods list

Collection Resource Attributes

Attribute	Type	Requirement	User Configurable	Possible Values	Description	Model Correspondence
Self	URI String	Mandatory	No	Free-Form URI Format 256 Chars	Describes the fully qualified URI link for the Collection	{ IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking }
Members	String Array	Optional	No	Resource Collection (0 - n entries)	The array of Resource Instances (see Instance Resource Attributes Table for Instance Attribute details)	

Instance Resource Attributes

Attribute	Type	Requirement	User Configurable	Possible Values	Description	Model Correspondence
Self	URI String	Mandatory	No	Free-Form URI Format 256 Chars	Describes the fully qualified URI link	{ IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking }
UUID	String	Mandatory	No	Free-Form 256 Chars	The resource identifier that is unique in space and time	{ DMTF | CIM | LogicalElement.DeviceID }

HostNQN	String	Mandatory	No	Free-Form 256 Chars	The Host Initiator NQN name	
HostUUID	String	Mandatory	No	Free-Form 256 Chars	The Host Initiator unique identifier	
VolumeNQN	String	Mandatory	No	Free-Form 256 Chars	The Volume Target NQN name	
VolumeUUID	String	Mandatory	No	Free-Form 256 Chars	The Volume Target unique identifier	
Status.State.Name	String	Mandatory	No	"Unknown" "Not available" "Servicing" "Starting" "Stopping" "Stopped" "Aborted" "Dormant" "Completed" "Migrating" "Emigrating" "Immigrating" "Snapshotting" "Shutting down" "In test" "Transitioning" "In service"	The current state value of this Resource	{ DMTF | CIM | ManagedSystemElement.State }
Status.State.ID	Number	Mandatory	No	0 1 2 3 4 5 6 7	The current state value map of this Resource	{ DMTF | CIM | ManagedSystemElement.State }

				8 9 10 11 12 13 14 15 16		
Status.Health[].Name	String (1..*)	Mandatory	No	"Unknown" "OK" "Degraded/Warning" "Minor failure" "Major failure" "Critical failure" "Non-recoverable error" "Not installed" "Not available" "No access allowed"	The current health value of this Resource. There can be 1 or more Name entries.	{ DMTF | CIM | ManagedSystemElement.HealthState }
Status.Health[].ID	Number (1..*)	Mandatory	No	0 5 10 15 20 25 30 65536 65537 65538	The current health value map of this Resource. There can be 1 or more Id entries.	{ DMTF | CIM | ManagedSystemElement.HealthState }
Status.Details[]	String Array	Optional	No	Free-Form Array entry. If no entry, then “None”.	The current Health Details of the Device	{ DMTF | CIM | ManagedSystemElement.DetailedStatus }
Hosts	URI String	Mandatory	No	Free-Form URI Format 256 Chars	Link to the	{ DMTF | CIM | Logical.RemoteHost, IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking }

					participating Host	
Volumes	URI String	Mandatory	No	Free-Form URI Format 256 Chars	Link to the participating Volume	{ DMTF | CIM | Logical.StorageVolume, IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking }
Pools	URI String	Mandatory	No	Free-Form URI Format 256 Chars	Link to the participating Volume's source Pool	{ DMTF | CIM | Logical.StoragePool, IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking }

EXAMPLES

GET Path Example - Specific Instance Based on the Identifier

Request

Method	URI	Query String	Request Header	Request Body
GET	/Storage/Devices/{id}/Paths/d5e1e7fa_22ad_4500_9d52_44134fcb7268159f6b8f_de63_42fd_bb4a_0ddc84ed1eaf		Authorization (Mandatory) If-None-Match: {etag} (Optional)	

Response

Precondition	Response Code	Response Header	Response Body
Credentials invalid or missing	401 Unauthorized		

Resource Id does not exist	404 Not Found		
If-None-Match true	304 Not Modified	ETag: {etag}	
API Busy	429 Too Many Requests		

Success If-None-Match false or missing	200 OK	Content-Type: application /json ETag: {etag}	{
			"Self": "http://10.20.30.40:80/Storage/Devices/0123456789/Paths/1339acf2/",
			"ID": "1339acf2",
			"Status": {
			"State": {
			"ID": 0,
			"Name": "Unknown"
			},
			"Health": [{
			"ID": 5,
			"Name": "OK"
			}]
			},
			"HostNQN": "nqn.1992-05.com.wdc:TestHost01",
			"HostUUID": "1339acf2-06dc-46cd-abb8-a667d0035a57",
			"VolumeNQN": "nqn.1992-05.com.wdc.eup2-5:TestVolume03",
			"VolumeUUID": "137d6752-e5ff-4c34-9e9b-539a050eeff8",
			"UUID": "1339acf2",
			"Hosts": "http://10.20.30.40:80/Storage/Devices/0123456789/Hosts/?pathid=1339acf2",
			"Pools": "http://10.20.30.40:80/Storage/Devices/0123456789/Pools/?pathid=1339acf2",
			"Volumes": "http://10.20.30.40:80/Storage/Devices/0123456789/Volumes/?pathid=1339acf2"
			}

9.4.3 Hosts

Description

The Device-level methods and attributes return information about the Host(s) and do certain operations.

Allowable Methods

URI	Allowable Methods
/Storage/Devices/{id}/Hosts/	GET, POST, HEAD, OPTIONS
/Storage/Devices/{id}/Hosts/{id}/	GET, PUT, DELETE, HEAD, OPTIONS

GET /Storage/Devices/{id}/Hosts/ - Retrieve all Hosts

URI:	/Storage/Devices/{id}/Hosts/	Description
Method	GET	Returns the Collection of Hosts
Request Header	Authorization (Mandatory) If-None-Match (Optional)	The request requires either Basic or Digest authorization The request is conditionally processed only if the current ETag for the resource does not match the ETag passed in this header
Query Parameters		
Response	200 OK 304 Not Modified 401 Unauthorized 404 Not Found 429 Too Many Requests	OK & List of Hosts + ETag Header If-None-Match Etag value matched, therefore no Response Body will be returned Unauthorized; credential entry failed or missing Resource Collection 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

GET /Storage/Devices/{id}/Hosts/{Id}/ - Retrieve a specific Host

URI:	/Storage/Devices/{id}/Hosts/{id}/	Description
Method	GET	Returns the information regarding a specific Host based on the {id} in the URI address string
Request Header	Authorization (Mandatory) If-None-Match (Optional)	The request requires either Basic or Digest authorization

		The request is conditionally processed only if the current ETag for the resource does not match the ETag passed in this header
Query Parameters		
Response	200 OK 304 Not Modified 401 Unauthorized 404 Not Found 429 Too Many Requests	OK & Host information in the response body + ETag Header If-None-Match Etag value matched, therefore no Response Body will be returned Unauthorized; credential entry failed or missing 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

POST/Storage/Devices/{id}/Hosts/ - Create a new Host

URI:	**/Storage/Devices/{id}/Hosts/{id}**	**Description**
Method	POST	Create a new Host
Request Header	Authorization (Mandatory)	The request requires either Basic or Digest authorization
Query Parameters		

Request Body	{
	"Name": "host_name",
	"Description": "desc",
	"NQN": "nqn"
	
	}
		JSON BODY START
		Name of the Host - Mandatory
		User description for the Host - Optional
		The NQN name for the Host - Optional - If set, overrides default auto-generated "nqn.1992.com.wdc:<Name>".
		JSON BODY END

Response	201 Created 400 Bad Request 401 Unauthorized 409 Conflict 429 Too Many Requests	Created & Host information in the response body + ETag Header + new URI in Location Header Bad Request (typically a faulty parameter) Unauthorized; credential entry failed or missing A new parameter value already exists (e.g., Name) Indicates API service is Busy, client should try again later

PUT /Storage/Devices/{id}/Hosts/{id} - Modify specific Host attributes

URI:	**/Storage/Devices/{id}/Hosts/{id}**	**Description**

Method	PUT	Modify an attribute or execute an operation for this Host
Request Header	Authorization (Mandatory) If-Match (Mandatory)	The request requires either Basic or Digest authorization The request is conditionally processed only if the current ETag for the resource matches the ETag passed in this header
Query Parameters		

Request Body	{
	"Name": "host_name",
	"Description": "desc",
	"NQN": "nqn"
	}
		JSON BODY START
		Name of the Host
		User description for the Host
		The NQN name for the Host
		JSON BODY END

Response	200 OK 400 Bad Request 401 Unauthorized 404 Not Found 409 Conflict 412 Precondition Failed 428 Precondition Required 429 Too Many Requests 500 Internal Server Error	OK & Host information in the response body + ETag Header Bad Request (typically a faulty parameter) Unauthorized; credential entry failed or missing The Resource doesn't exist A new parameter value already exists (e.g., Name) Indicates the "If-Match" Etag check failed Indicates the need for an "If-Match" conditional with an Etag value in the Request Header Indicates API service is Busy, client should try again later System could not process the request

HEAD /Storage/Devices/{id}/Hosts/ - Ping the Collection of Hosts

URI:	/Storage/Devices/{id}/Hosts/	Description
Method	HEAD	Pings this Storage Host Collection
Request Header	Authorization (Mandatory)	The request requires either Basic or Digest authorization
Query Parameters		
Response	200 OK 401 Unauthorized 404 Not Found 429 Too Many Requests	OK with no response body Unauthorized; credential entry failed or missing Resource Collection 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

HEAD /Storage/Devices/{id}/Hosts/{id}/ - Ping a specific Host

URI:	/Storage/Devices/{id}/Hosts/{id}/	Description
Method	HEAD	Pings this Storage Host
Request Header	Authorization (Mandatory)	The request requires either Basic or Digest authorization
Query Parameters		
Response	200 OK 401 Unauthorized 404 Not Found 429 Too Many Requests	OK with no response body Unauthorized; credential entry failed or missing 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

OPTIONS /Storage/Devices/{id}/Hosts/ - Determine Allowable Methods for a Collection of Hosts

URI:	/Storage/Devices/{id}/Hosts/	Description
Method	OPTIONS	Get the allowable HTTP Methods list for this resource
Request Header	(None) Documentation (Optional) Documentation (Optional) If-None-Match (Optional)	Returns the full resource schema as Content-Type application/json Info - Returns documentation information in the form of plain text Schema - Returns the schema information in "pretty" JSON text as plain text Etag - The request is conditionally processed only if the current ETag for the resource does not match the ETag passed in this header
Query Parameters		
Response	200 OK 304 Not Modified 404 Not Found 429 Too Many Requests	OK & the “Allow” list of methods in the response header. The response body provides the JSON Schema for this resource If-None-Match Etag value matched, therefore no Response Body will be returned

		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

OPTIONS /Storage/Devices/{id}/Hosts/{Id}/ - Determine Allowable Methods for a specific Host

URI:	/Storage/Devices/{id}/Hosts/{id}/	Description
Method	OPTIONS	Get the allowable HTTP Methods list for this resource
Request Header	(None) Documentation (Optional) Documentation (Optional) If-None-Match (Optional)	Returns the full resource schema as Content-Type application/json Info - Returns documentation information in the form of plain text Schema - Returns the schema information in "pretty" JSON text as plain text Etag - The request is conditionally processed only if the current ETag for the resource does not match the ETag passed in this header
Query Parameters		
Response	200 OK 304 Not Modified 404 Not Found 429 Too Many Requests	OK & the “Allow” list of methods in the response header. The response body provides the JSON Schema for this resource If-None-Match Etag value matched, therefore no Response Body will be returned 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

DELETE /Storage/Devices/{id}/Hosts/{id} - Delete specific Host

URI:	/Storage/Devices/{id}/Hosts/{id}	Description
Method	DELETE	Delete this Host
Request Header	Authorization (Mandatory) If-Match (Mandatory)	The request requires either Basic or Digest authorization The request is conditionally processed only if the current ETag for the resource matches the ETag passed in this header

Query Parameters		
Request Body		
Response	204 No Content 401 Unauthorized 404 Not Found 412 Precondition Failed 428 Precondition Required 429 Too Many Requests 500 Internal Server Error	Delete successful, no content in the response body Unauthorized; credential entry failed or missing The Resource doesn't exist Indicates the "If-Match" Etag check failed Indicates the need for an "If-Match" conditional with an Etag value in the Request Header Indicates API service is Busy, client should try again later System could not process the request

Methods Not Allowed on **/Storage/Devices/{id}/Hosts/** Collection

URI:	**/Storage/Devices/{id}/Hosts/**	**Description**
Method	PUT, DELETE	Methods that are not allowed
Request Header		
Query Parameters		
Response	405 Method Not Allowed	Method not allowed for this Resource; returns "Allow" header with allowable methods list

Methods Not Allowed on **/Storage/Devices/{id}/Hosts/{id}/** Instance

URI:	**/Storage/Devices/{id}/Hosts/{id}/**	**Description**
Method	POST	Methods that are not allowed
Request Header		
Query Parameters		
Response	405 Method Not Allowed	Method not allowed for this Resource; returns "Allow" header with allowable methods list

Collection Resource Attributes

Attribute	**Type**	**Requirement**	**User Configurable**	**Possible Values**	**Description**	**Model Correspondence**

Self	URI String	Mandatory	No	Free-Form URI Format 256 Chars	Describes the fully qualified URI link for the Collection	{ IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking }
Members	String Array	Optional	No	Resource Collection (0 - n entries)	The array of Resource Instances (see Instance Resource Attributes Table for Instance Attribute details)	

Instance Resource Attributes

Attribute	Type	Requirement	User Configurable	Possible Values	Description	Model Correspondence
Self	URI String	Mandatory	No	Free-Form URI Format 256 Chars	Describes the fully qualified URI link	{ IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking }
Name	String	Mandatory	Yes	Free-Form 32 Chars	The user-defined name of this Host	{ DMTF | CIM | ManagedSystemElement.Name }
ID	String	Mandatory	No	Free-Form 256 Chars	The resource identifier that is unique in space and time	{ DMTF | CIM | LogicalElement.DeviceID }
UUID	String	Mandatory	No	Free-Form 256 Chars	The resource identifier that is unique in space and time	{ DMTF | CIM | LogicalElement.DeviceID }

Description	String	Optional	Yes	Free-Form 256 Chars	The user-defined description for this Host	{ DMTF | CIM | ManagedElement.Description }
NQN	String	Optional	Yes	"nqn.1992.com.wdc:<Name>" "<user-defined>:<Name>"; 223 Chars	The fabric name for the Host; auto-generated or user-defined	{ WDC | OpenFlex| Hosts.Nqn }
Status.State.Name	String	Mandatory	No	"Unknown" "Not available" "Servicing" "Starting" "Stopping" "Stopped" "Aborted" "Dormant" "Completed" "Migrating" "Emigrating" "Immigrating" "Snapshotting" "Shutting down" "In test" "Transitioning" "In service"	The current state value of this Resource	{ DMTF | CIM | ManagedSystemElement.State }
Status.State.ID	Number	Mandatory	No	0 1 2 3 4 5 6 7 8 9 10 11	The current state value map of this Resource	{ DMTF | CIM | ManagedSystemElement.State }

				12 13 14 15 16		
Status.Health[].Name	String (1..*)	Mandatory	No	"Unknown" "OK" "Degraded/Warning" "Minor failure" "Major failure" "Critical failure" "Non-recoverable error" "Not installed" "Not available" "No access allowed"	The current health value of this Resource. There can be 1 or more Name entries.	{ DMTF | CIM | ManagedSystemElement.HealthState }
Status.Health[].ID	Number (1..*)	Mandatory	No	0 5 10 15 20 25 30 65536 65537 65538	The current health value map of this Resource. There can be 1 or more Id entries.	{ DMTF | CIM | ManagedSystemElement.HealthState }
Status.Details[]	String Array	Optional	No	Free-Form Array entry. If no entry, then “None”.	The current Health Details of the Device	{ DMTF | CIM | ManagedSystemElement.DetailedStatus }
Paths	URI String	Mandatory	No	Free-Form URI Format 256 Chars	Link to the participating Path	{ DMTF | CIM | Logical.Path, IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking }
Volumes	URI String	Mandatory	No	Free-Form URI Format 256 Chars	Link to the participating Volume	{ DMTF | CIM | Logical.StorageVolume, IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking }

Pools	URI String	Mandatory	No	Free-Form URI Format 256 Chars	Link to the participating Volume's source Pool	{ DMTF | CIM | Logical.StoragePool, IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking }

EXAMPLES

GET Host Example - Specific Instance Based on the Identifier

Request

Method	URI	Query String	Request Header	Request Body
GET	/Storage/Devices/{id}/Hosts/a667d0035a57		Authorization (Mandatory) If-None-Match: {etag} (Optional)	

Response

Precondition	Response Code	Response Header	Response Body
Credentials invalid or missing	401 Unauthorized		
Resource Id does not exist	404 Not Found		
If-None-Match true	304 Not Modified	ETag: {etag}	
API Busy	429 Too Many Requests		
Success If-None-Match false or missing	200 OK	Content-Type: application/json	{ "Self": "http://10.20.30.40:80/Storage/Devices/0123456789/Hosts/a667d0035a57/", "ID": "a667d0035a57",

		ETag:
		{etag}
			"Status": {
			"State": {
			"ID": 0,
			"Name": "Unknown"
			},
			"Health": [{
			"ID": 5,
			"Name": "OK"
			}]
			},
			"Description": "This is a test host",
			"Name": "TestHost01",
			"NQN": "nqn.1992-05.com.wdc:TestHost01",
			"UUID": "a667d0035a57",
			"Paths":
			"http://10.20.30.40:80/Storage/Devices/0123456789/Paths/?hostid=a667d0035a57",
			"Pools":
			"http://10.20.30.40:80/Storage/Devices/0123456789/Pools/?hostid=a667d0035a57",
			"Volumes":
			"http://10.20.30.40:80/Storage/Devices/0123456789/Volumes/?hostid=a667d0035a57"
			}

9.4.4 Pools

Description

The Device-level methods and attributes return information about the Storage Pool(s) and do certain operations.

Allowable Methods

URI	Allowable Methods
/Storage/Devices/{id}/Pools/	GET, HEAD, OPTIONS
/Storage/Devices/{id}/Pools/{id}/	GET, HEAD, OPTIONS

GET /Storage/Devices/{id}/Pools/ - Retrieve all Storage Pools

URI:	/Storage/Devices/{id}/Pools/	Description
Method	GET	Returns the Collection of Pools
Request Header	Authorization (Mandatory) If-None-Match (Optional)	The request requires either Basic or Digest authorization

		The request is conditionally processed only if the current ETag for the resource does not match the ETag passed in this header
Query Parameters		
Response	200 OK 304 Not Modified 401 Unauthorized 404 Not Found 429 Too Many Requests	OK & List of Pools + ETag Header If-None-Match Etag value matched, therefore no Response Body will be returned Unauthorized; credential entry failed or missing Resource Collection 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

GET /Storage/Devices/{id}/Pools/{Id}/ - Retrieve a specific Storage Pool

URI:	**/Storage/Devices/{id}/Pools/{id}/**	**Description**
Method	GET	Returns the information regarding a specific Pool based on the {id} in the URI address string
Request Header	Authorization (Mandatory) If-None-Match (Optional)	The request requires either Basic or Digest authorization The request is conditionally processed only if the current ETag for the resource does not match the ETag passed in this header
Query Parameters		
Response	200 OK 304 Not Modified 401 Unauthorized 404 Not Found 429 Too Many Requests	OK & Pool information in the response body + ETag Header If-None-Match Etag value matched, therefore no Response Body will be returned Unauthorized; credential entry failed or missing 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

HEAD /Storage/Devices/{id}/Pools/ - Ping the Collection of Storage Pools

URI:	**/Storage/Devices/{id}/Pools/**	**Description**
Method	HEAD	Pings this Storage Pool Collection

Request Header	Authorization (Mandatory)	The request requires either Basic or Digest authorization
Query Parameters		
Response	200 OK 401 Unauthorized 404 Not Found 429 Too Many Requests	OK with no response body Unauthorized; credential entry failed or missing Resource Collection 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

HEAD /Storage/Devices/{id}/Pools/{id}/ - Ping a specific Storage Pool

URI:	/Storage/Devices/{id}/Pools/{id}/	Description
Method	HEAD	Pings this Storage Pool
Request Header	Authorization (Mandatory)	The request requires either Basic or Digest authorization
Query Parameters		
Response	200 OK 401 Unauthorized 404 Not Found 429 Too Many Requests	OK with no response body Unauthorized; credential entry failed or missing 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

OPTIONS /Storage/Devices/{id}/Pools/ - Determine Allowable Methods for a Collection of Storage Pools

URI:	/Storage/Devices/{id}/Pools/	Description
Method	OPTIONS	Get the allowable HTTP Methods list for this resource
Request Header	(None) Documentation (Optional) Documentation (Optional) If-None-Match (Optional)	Returns the full resource schema as Content-Type application/json Info - Returns documentation information in the form of plain text Schema - Returns the schema information in "pretty" JSON text as plain text

		Etag - The request is conditionally processed only if the current ETag for the resource does not match the ETag passed in this header
Query Parameters		
Response	200 OK 304 Not Modified 404 Not Found 429 Too Many Requests	OK & the "Allow" list of methods in the response header. The response body provides the JSON Schema for this resource If-None-Match Etag value matched, therefore no Response Body will be returned 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

OPTIONS /Storage/Devices/{id}/Pools/{Id}/ - Determine Allowable Methods for a specific Storage Pool

URI:	**/Storage/Devices/{id}/Pools/{id}/**	**Description**
Method	OPTIONS	Get the allowable HTTP Methods list for this resource
Request Header	(None) Documentation (Optional) Documentation (Optional) If-None-Match (Optional)	Returns the full resource schema as Content-Type application/json Info - Returns documentation information in the form of plain text Schema - Returns the schema information in "pretty" JSON text as plain text Etag - The request is conditionally processed only if the current ETag for the resource does not match the ETag passed in this header
Query Parameters		
Response	200 OK 304 Not Modified 404 Not Found 429 Too Many Requests	OK & the "Allow" list of methods in the response header. The response body provides the JSON Schema for this resource If-None-Match Etag value matched, therefore no Response Body will be returned 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

Methods Not Allowed on **/Storage/Devices/{id}/Pools/** Collection

URI:	/Storage/Devices/{id}/Pools/	Description
Method	POST, PUT, DELETE	Methods that are not allowed
Request Header		
Query Parameters		
Response	405 Method Not Allowed	Method not allowed for this Resource; returns "Allow" header with allowable methods list

Methods Not Allowed on **/Storage/Devices/{id}/Pools/{id}/** Instance

URI:	/Storage/Devices/{id}/Pools/{id}/	Description
Method	POST, PUT, DELETE	Methods that are not allowed
Request Header		
Query Parameters		
Response	405 Method Not Allowed	Method not allowed for this Resource; returns "Allow" header with allowable methods list

Collection Resource Attributes

Attribute	Type	Requirement	User Configurable	Possible Values	Description	Model Correspondence
Self	URI String	Mandatory	No	Free-Form URI Format 256 Chars	Describes the fully qualified URI link for the Collection	{ IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking }
Members	String Array	Optional	No	Resource Collection (0 - n entries)	The array of Resource Instances (see Instance Resource Attributes Table for Instance Attribute details)	

Instance Resource Attributes

Attribute	Type	Requirement	User Configurable	Possible Values	Description	Model Correspondence
Self	URI String	Mandatory	No	Free-Form URI Format 256 Chars	Describes the fully qualified URI link	{ IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking }
ID	String	Mandatory	No	Free-Form 256 Chars	The resource identifier that is unique in space and time	{ DMTF | CIM | LogicalElement.DeviceID }
UUID	String	Mandatory	No	Free-Form 256 Chars	The resource identifier that is unique in space and time	{ DMTF | CIM | LogicalElement.DeviceID }
TotalCapacity	Number	Mandatory	No	Integer Bytes	The total number of raw bytes for this pool	{ DMTF | CIM | Physicial.PhysicalMedia.Capacity }
RemainingCapacity	Number	Mandatory	No	Integer Bytes	The available number of bytes to create volumes on this device	{ DMTF | CIM | Physicial.PhysicalMedia.Capacity }
PredictedLifeLeftPercent	Number	Mandatory	No	0 - 100	The predicte	{ DMTF | Redfish | Drive.PredictedMediaLifeLeftPercent }

					d life left of the Pool	
Status.State.Name	String	Mandatory	No	"Unknown" "Not available" "Servicing" "Starting" "Stopping" "Stopped" "Aborted" "Dormant" "Completed" "Migrating" "Emigrating" "Immigrating" "Snapshotting" "Shutting down" "In test" "Transitioning" "In service"	The current state value of this Resource	{ DMTF | CIM | ManagedSystemElement.State }
Status.State.ID	Number	Mandatory	No	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16	The current state value map of this Resource	{ DMTF | CIM | ManagedSystemElement.State }
Status.Health[].Name	String (1..*)	Mandatory	No	"Unknown" "OK" "Degraded/Warning" "Minor failure" "Major failure" "Critical failure"	The current health value of this Resource. There	{ DMTF | CIM | ManagedSystemElement.HealthState }

				"Non-recoverable error" "Not installed" "Not available" "No access allowed"	can be 1 or more Name entries.	
Status.Health[].ID	Number (1..*)	Mandatory	No	0 5 10 15 20 25 30 65536 65537 65538	The current health value map of this Resource. There can be 1 or more Id entries.	{ DMTF | CIM | ManagedSystemElement.HealthState }
Status.Details[]	String Array	Optional	No	Free-Form Array entry. If no entry, then “None”.	The current Health Details of the Device	{ DMTF | CIM | ManagedSystemElement.DetailedStatus }
Volumes	String	Optional	No	Free-Form URI	Fully qualified link to Storage Volumes Members from this Pool	{ DMTF | CIM | Logical.StorageVolume, IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking }
Hosts	String	Optional	No	Free-Form URI	Fully qualified link to Hosts Members from this Pool	{ DMTF | CIM | Logical.StorageVolume, IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking }
Paths	String	Optional	No	Free-Form URI	Fully qualified link to Path	{ DMTF | CIM | Logical.StorageVolume, IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking }

					Members from this Pool	

EXAMPLES

GET Pool Example - Specific Instance Based on the Identifier

Request

Method	URI	Query String	Request Header	Request Body
GET	/Storage/Devices/{id}/Pools/0/		Authorization (Mandatory) If-None-Match: {etag} (Optional)	

Response

Precondition	Response Code	Response Header	Response Body
Credentials invalid or missing	401 Unauthorized		
Resource Id does not exist	404 Not Found		
If-None-Match true	304 Not Modified	ETag: {etag}	
API Busy	429 Too Many Requests		

Success If-None-Match false or missing	200 OK	Content-Type: application/json
		ETag: {etag}
			{
			"Self": "http://10.20.30.40:80/Storage/Devices/0123456789/Pools/0/",
			"ID": "0",
			"Status": {
			"State": {
			"ID": 16,

			"Name": "In service"
			},
			"Health": [{
			"ID": 5,
			"Name": "OK"
			}]
			},
			"RemainingCapacity": 29844461060096,
			"TotalCapacity": 30726003097600,
			"UUID": "0",
			"Volumes":
			"http://10.20.30.40:80/Storage/Devices/0123456789/Volumes/?poolid=0",
			"Hosts":
			"http://10.20.30.40:80/Storage/Devices/0123456789/Hosts/?poolid=0",
			"Paths":
			"http://10.20.30.40:80/Storage/Devices/0123456789/Paths/?poolid=0"
			}

9.4.5 Location

Description

The Device-level methods and attributes return information about the Location and do certain operations.

Allowable Methods

URI	Allowable Methods
/Storage/Devices/{id}/Location	GET, PUT, HEAD, OPTIONS

GET /Storage/Devices/{id}/Location- Retrieve the Location information

URI:	/Storage/Devices/{id}/Location	Description
Method	GET	Returns the information of the Location
Request Header	Authorization (Mandatory) If-None-Match (Optional)	The request requires either Basic or Digest authorization The request is conditionally processed only if the current ETag for the resource does not match the ETag passed in this header
Query Parameters		

Response	200 OK 304 Not Modified 401 Unauthorized 404 Not Found	OK & Location information in the response body If-None-Match Etag value matched, therefore no Response Body will be returned Unauthorized; credential entry failed or missing Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource

PUT /Storage/Devices/{id}/Location- Modify an attribute of the Location

URI:	**/Storage/Devices/{id}/Location**	**Description**
Method	PUT	Modify an attribute of the Location
Request Header	Authorization (Mandatory) If-Match (Mandatory)	The request requires either Basic or Digest authorization The request is conditionally processed only if the current ETag for the resource matches the ETag passed in this header
Query Parameters		

Request Body	{
	"Country" : "new_country",
	"Territory" : "new_territory",
	"State" : "new_state",
	"City" : "new_city",
	"Address1": "new_addr1",
	"Address2": "new_addr2",
	"Address3": "new_addr3",
	"PostalCode": "new_zip",
	"SiteName": "new_name",
	"Building": "new_bldg",
	"Room": "new_room",
	"Pod": "new_pod",
	"Rack": "new_row",
	"Shelf": "new_shelf",
	"Item": "new_item",
	"GPSCoords": "new_coords",
	"OtherLocationInformation": "new_info",
	}
		JSON BODY START
		Change the Country
		Change the Territory
		Change the State
		Change the City
		Change the Address1
		Change the Address2
		Change the Address3
		Change the PostalCode
		Change the SiteName
		Change the Building number or name
		Change the Room number or name
		Change the Pod number or name
		Change the Row number or name
		Change the Shelf number or name
		Change the Item
		Change the GPS coordinates
		Change the other location information
		JSON BODY END

Response	200 OK 400 Bad Request 401 Unauthorized 500 Internal Server Error	OK & Location information in the response body Bad Request (typically a faulty parameter) Unauthorized; credential entry failed or missing

		Resource could not execute the request

HEAD /Storage/Devices/{id}/Location- Ping the Location

URI:	/Storage/Devices/{id}/Location	Description
Method	HEAD	Pings the Location
Request Header	Authorization (Mandatory)	
Query Parameters		
Response	200 OK 401 Unauthorized 404 Not Found	OK with no response body Unauthorized; credential entry failed or missing Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource

OPTIONS /Storage/Devices/{id}/Location- Determine Allowable Methods for Location

URI:	/Storage/Devices/{id}/Location	Description
Method	OPTIONS	Get the allowable HTTP Methods list for this resource
Request Header		
Query Parameters		
Response	200 OK 404 Not Found	OK & the "Allow" list of methods in the response header. The response body provides the JSON Schema for this resource Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource

Methods Not Allowed on /Storage/Devices/{id}/Location

URI:	/Storage/Devices/{id}/Location	Description
Method	POST, DELETE	Methods that are not allowed

Request Header		
Query Parameters		
Response	405 Method Not Allowed	Method not allowed for this Resource

Resource Attributes

Attribute	Type	Requirement	User Configurable	Possible Values	Description	Model Correspondence
Self	String	Mandatory	No	Free-Form URI Format 256 Chars	Describes the fully qualified URI link	{ IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking }
Country	String	Optional	Yes	Free-Form 64 Chars	The Country name where this Device is located	{ DMTF | Redfish | SNIA | Swordfish | Location.Country }
Territory	String	Optional	Yes	Free-Form 64 Chars	The Territory name where this Device is located	{ DMTF | Redfish | SNIA | Swordfish | Location.Territory}
State	String	Optional	Yes	Free-Form 64 Chars	The State name where this Device is located	{ DMTF | Redfish | SNIA | Swordfish | Location.State}
City	String	Optional	Yes	Free-Form 64 Chars	The City name where this Device is located	{ DMTF | Redfish | SNIA | Swordfish | Location.City}
Address1	String	Optional	Yes	Free-Form 64 Chars	The first Address informatio	{ DMTF | Redfish | SNIA | Swordfish | Location.Address1}

					n where this Device is located	
Address2	String	Optional	Yes	Free-Form 64 Chars	The second Address information where this Device is located as needed	{ DMTF | Redfish | SNIA | Swordfish | Location.Address2}
Address3	String	Optional	Yes	Free-Form 64 Chars	The third Address information where this Device is located as needed	{ DMTF | Redfish | SNIA | Swordfish | Location.Address3}
PostalCode	String	Optional	Yes	Free-Form 32Chars	The Postal or Zip Code name where this Device is located	{ DMTF | Redfish | SNIA | Swordfish | Location.PostalCode}
SiteName	String	Optional	Yes	Free-Form 32Chars	The friendly Site Name	{WDC | OpenFlex| Location.SiteName }
Building	String	Optional	Yes	Free-Form 32Chars	The Building name or number where this Device is located	{ DMTF | Redfish | SNIA | Swordfish | Location.Building}
Room	String	Optional	Yes	Free-Form 32Chars	The Room name or number in the Building where this Device is located	{ DMTF | Redfish | SNIA | Swordfish | Location.Room}

Pod	String	Optional	Yes	Free-Form 32Chars	The Pod name or number in the Room this Device is located as needed	{WDC | OpenFlex| Location.Pod}
Row	String	Optional	Yes	Free-Form 32Chars	The Row name or number in the Room or Pod this Device is located	{ DMTF | Redfish | SNIA | Swordfish | Location.Row}
Rack	String	Optional	Yes	Free-Form 32Chars	The Rack name or number in the Row this Device is located	{ DMTF | Redfish | SNIA | Swordfish | Location.Rack}
Shelf	String	Optional	Yes	Free-Form 32Chars	The Shelf name or number of the Rack this Device is located	{ DMTF | Redfish | SNIA | Swordfish | Location.Shelf}
Device	String	Optional	Yes	Free-Form 32Chars	The Device name or number in the Shelf this Device is located as needed	{WDC | Kingfish | Location.Device }
Item	String	Optional	Yes	Free-Form 32Chars	The Item name indicating the Shelf units or dimension for this Device	{ DMTF | Redfish | SNIA | Swordfish | Location.Item}
GPSCoords	String	Optional	Yes	Decimal Latitude,	The GPS coordinate	{ DMTF | Redfish | SNIA | Swordfish | Location.GPSCoords}

				Decimal Longitude Format	s of the location of this Device	
OtherLocationInfo	String	Optional	Yes	Free-Form 64 Chars	A place-holder for other location information	{ DMTF | Redfish | SNIA | Swordfish | Location.OtherLocationInfo }

EXAMPLES

GET Location Example - Specific Instance Based on the Identifier

Request

Method	URI	Query String	Request Header	Request Body
GET	/Storage/Devices/{id}/Location		Authorization (Mandatory) If-None-Match: {etag} (Optional)	

Response

Precondition	Response Code	Response Header	Response Body
Credentials invalid or missing	401 Unauthorized		
Resource Id does not exist	404 Not Found		
If-None-Match true	304 Not Modified		
If-None-Match false or missing	200 OK	Content-Type: application/json ETag: {etag}	{ "Self": "http://10.20.30.40/Storage/Devices/0123456789/Location/", "Country": "USA", "Territory": "", "State": "NV", "City": "Coyote Springs", "Address1": "123 Hwy 93",

			"Address2": "Suite -200", "Address3":"", "PostalCode": "89025", "SiteName": "Acme DataCenter 1", "Building": "1", "Room": "1", "Pod": "p2", "Rack": "r02", "Shelf" : "30", "Device": "3", "Item": "Rack Units", "GPSCoords": "36.821768, -114.937472", "OtherLocationInfo": "This is other info" }

PUT Location Example - Change the City

Request

Method	URI	Query String	Request Header	Request Body

PUT	/Storage/Devices/{id}/Location		Authorization (Mandatory)
			If-Match: {etag} (Mandatory)
				{
				"City" : "COS"
				}

Response

Precondition	Response Code	Response Header	Response Body
Credentials invalid or missing	401 Unauthorized		
Resource Id does not exist	404 Not Found		
Bad/Missing Parameter in Body	400 Bad Request		
System could not process	500 Internal		

the request	Server Error		
If-Match false	412 Precondition Failed		
If-Match missing	428 Precondition Required		

If-Match true	200 OK	Content-Type: application/json	{
			"Self": "http://10.20.30.40/Storage/Devices/0123456789/Location/",
			"Country": "USA",
			"Territory": "",
			"State": "Colorado",
			"City": "COS",
			"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",
			"Item": "Rack Units",
			"GPSCoords": "38.9838684,-104.8062493",
			"OtherLocationInfo": "This is other info"
			
			}

9.4.6 System Clock

Description

The Device-level methods and attributes return information about the System Clock and do certain operations.

Allowable Methods

URI	Allowable Methods
/Storage/Devices/{id}/SystemClock	GET, PUT, HEAD, OPTIONS

GET /Storage/Devices/{id}/SystemClock - Retrieve the System Clock information

URI:	/Storage/Devices/{id}/SystemClock	Description
Method	GET	Returns the information of the System Clock
Request Header	Authorization (Mandatory)	
Query Parameters		
Response	200 OK 401 Unauthorized 404 Not Found	OK & System Clock information in the response body Unauthorized; credential entry failed or missing Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource

PUT /Storage/Devices/{id}/SystemClock - Modify an attribute of the System Clock

URI:	/Storage/Devices/{id}/SystemClock	Description
Method	PUT	Modify an attribute of the System Clock
Request Header	Authorization (Mandatory)	
Query Parameters		

Request Body	{
	"Date" : "new_date",
	"Time" : "new_time",
	"TimeZone" : "new_tz",
	"DST" : "Enabled | Disabled"
	}
		JSON BODY START
		Change the Date
		Change the Time
		Change the TimeZone
		Change the Daylight Savings Time setting
		JSON BODY END

Response	200 OK 400 Bad Request 401 Unauthorized 500 Internal Server Error	OK & System Clock information in the response body Bad Request (typically a faulty parameter) Unauthorized; credential entry failed or missing Resource could not execute the request

HEAD /Storage/Devices/{id}/SystemClock - Ping the System Clock

URI:	/Storage/Devices/{id}/SystemClock	Description
Method	HEAD	Pings the System Clock
Request Header	Authorization (Mandatory)	
Query Parameters		
Response	200 OK 401 Unauthorized 404 Not Found	OK with no response body Unauthorized; credential entry failed or missing Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource

OPTIONS /Storage/Devices/{id}/SystemClock - Determine Allowable Methods for System Clock

URI:	/Storage/Devices/{id}/SystemClock	Description
Method	OPTIONS	Get the allowable HTTP Methods list for this resource
Request Header		
Query Parameters		
Response	200 OK 404 Not Found	OK & the “Allow” list of methods in the response header. The response body provides the JSON Schema for this resource Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource

Methods Not Allowed on **/Storage/Devices/{id}/SystemClock**

URI:	/Storage/Devices/{id}/SystemClock	Description
Method	POST, DELETE	Methods that are not allowed
Request Header		

Query Parameters		
Response	405 Method Not Allowed	Method not allowed for this Resource

Resource Attributes

Attribute	Type	Requirement	User Configurable	Possible Values	Description	Model Correspondence
Self	String	Mandatory	No	Free-Form URI Format 256 Chars	Describes the fully qualified URI link	{ IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking }
Date	String	Mandatory	Yes	Free-Form 256 Chars	The current Date	{ DMTF | CIM | OperatingSystem.LocalDateTime }
Time	String	Mandatory	Yes	Free-Form 256 Chars	The current Time	{ DMTF | CIM | OperatingSystem.LocalDateTime }
TimeZone	String	Mandatory	Yes	Free-Form 64 Chars	The current Time Zone	{ DMTF | CIM | OperatingSystem.CurrentTimeZone }
TimeZoneSetting	String	Mandatory	No	Free-Form 64 Chars	The current Time Zone Setting	{ DMTF | CIM | OperatingSystem.CurrentTimeZone }
DST	String	Mandatory	Yes	"Enabled" "Disabled" "Unknown"	The current Day Light Savings Time setting	{ DMTF | CIM | OperatingSystem.CurrentTimeZone }
Uptime.Duration	String	Mandatory	No		The current uptime value in ISO 8601 format	{ ISO | 8601| Duration }
Uptime.Days	Number	Mandatory	No	0-n	The current	{ ISO | 8601| Duration }

					uptime Days since boot	
Uptime.Hours	Number	Mandatory	No	0-23	The current uptime Hours since boot	{ ISO | 8601| Duration }
Uptime.Minutes	Number	Mandatory	No	0-59	The current uptime Minutes since boot	{ ISO | 8601| Duration }
Uptime.Seconds	Number	Mandatory	No	0-59	The current uptime Seconds since boot	{ ISO | 8601| Duration }

EXAMPLES

GET SystemClock Example

Request

Method	URI	Query String	Request Header	Request Body
GET	/Storage/Devices/{id}/SystemClock		Authorization (Mandatory)	

Response

Precondition	Response Code	Response Header	Response Body
Credentials invalid or missing	401 Unauthorized		
Success	200 OK	Content-Type: application/json	{ "Self": "http://10.20.30.40/Storage/Devices/0123456789/SystemClock/", "Date": "23-Aug-2018", "Time": "10:13:18", "TimeZone": "(UTC-6.00) MDT",

			"TimeZoneSetting": "MDT",
			"DST": "Enabled",
			"Uptime": {
			"Duration": "P0DT3H20M38S",
			"Days": 0,
			"Hours": 3,
			"Minutes": 20,
			"Seconds": 38
			}
			}

PUT SystemClock Example - Change the Date

Request

Method	URI	Query String	Request Header	Request Body

PUT	/Storage/Devices/{id}/SystemClock		Authorization (Mandatory)	{
				"Date" : "24-Aug-2018"
				}

Response

Precondition	Response Code	Response Header	Response Body
Credentials invalid or missing	401 Unauthorized		
Bad/Missing Parameter in Body	400 Bad Request		
System could not process the request	500 Internal Server Error		
Success	200 OK	Content-Type: application/json	{ "Self": "http://10.20.30.40/Storage/Devices/12345/SystemClock/", "Date": "24-Aug-2018", "Time": "10:14:18", "TimeZone": "(UTC-6.00) MDT", "TimeZoneSetting": "MDT",

			"DST": "Enabled",
			"Uptime": {
			"Duration": "P0DT3H20M38S",
			"Days": 0,
			"Hours": 3,
			"Minutes": 21,
			"Seconds": 38
			}
			}

9.4.7 Accounts

Description

The Device-level methods and attributes return information about the Account(s) and do certain operations.

Allowable Methods

URI	Allowable Methods
/Storage/Devices/{id}/Accounts/	GET, POST, HEAD, OPTIONS
/Storage/Devices/{id}/Accounts/{id}/	GET, PUT, DELETE, HEAD, OPTIONS

GET /Storage/Devices/{id}/Accounts/ - Retrieve all Accounts

URI:	/Storage/Devices/{id}/Accounts/	Description
Method	GET	Returns the Collection of Accounts
Request Header	Authorization (Mandatory) If-None-Match (Optional)	The request requires either Basic or Digest authorization The request is conditionally processed only if the current ETag for the resource does not match the ETag passed in this header
Query Parameters		
Response	200 OK 304 Not Modified 401 Unauthorized 404 Not Found 429 Too Many Requests	OK & List of Account + ETag Header If-None-Match Etag value matched, therefore no Response Body will be returned Unauthorized; credential entry failed or missing Resource Collection 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

GET /Storage/Devices/{id}/Accounts/{Id}/ - Retrieve a specific Account

URI:	/Storage/Devices/{id}/Accounts/{id}/	Description
Method	GET	Returns the information regarding a specific Account based on the {id} in the URI address string
Request Header	Authorization (Mandatory) If-None-Match (Optional)	The request requires either Basic or Digest authorization The request is conditionally processed only if the current ETag for the resource does not match the ETag passed in this header
Query Parameters		
Response	200 OK 304 Not Modified 401 Unauthorized 404 Not Found 429 Too Many Requests	OK & Account information in the response body + ETag Header If-None-Match Etag value matched, therefore no Response Body will be returned Unauthorized; credential entry failed or missing 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

POST/Storage/Devices/{id}/Accounts/ - Create a new Account

URI:	/Storage/Devices/{id}/Accounts/{id}	Description
Method	POST	Create a new Account
Request Header	Authorization (Mandatory)	The request requires either Basic or Digest authorization
Query Parameters		
Request Body	{ "UserID": "user_id", "BasicAuthentication": { "UserPassword":"password"	JSON BODY START User ID of the Account - Valid characters include: "a-z A-Z 0-9 _ - "

	},
	"DigestAuthentication":
	{
	"UserPassword":"password"
	}
	}
		Basic Authentication structure (when the API service is started with Basic Auth - default)
		
		Basic Authentication passphrase
		
		Digest Authentication structure (when the API service is started with Digest Auth)
		
		Digest Authentication passphrase
		
		JSON BODY END

Response	201 Created 400 Bad Request 401 Unauthorized 409 Conflict 429 Too Many Requests	Created & Account information in the response body + ETag Header + new URI in Location Header Bad Request (typically a faulty parameter) Unauthorized; credential entry failed or missing A new parameter value already exists (e.g., Name) Indicates API service is Busy, client should try again later

PUT /Storage/Devices/{id}/Accounts/{id} - Modify specific Account attributes

URI:	/Storage/Devices/{id}/Accounts/{id}	Description
Method	PUT	Modify an attribute or execute an operation for this Account
Request Header	Authorization (Mandatory) If-Match (Mandatory)	The request requires either Basic or Digest authorization The request is conditionally processed only if the current ETag for the resource matches the ETag passed in this header
Query Parameters		
Request Body	{ "UserId": "userId", "BasicAuthentication": { "UserPassword":"new_password"	JSON BODY START User ID is required as a fail-safe that the client verifies this is the correct account to change

	},
	"DigestAuthentication":
	{
	"UserPassword":"new_password",
	}
	}
		Basic Authentication structure (when the API service is started with Basic Auth - default)
		
		Basic Authentication passphrase
		
		Digest Authentication structure (when the API service is started with Digest Auth)
		
		Digest Authentication passphrase
		
		JSON BODY END

Response	200 OK 400 Bad Request 401 Unauthorized 404 Not Found 412 Precondition Failed 428 Precondition Required 429 Too Many Requests	OK & Account information in the response body + ETag Header Bad Request (typically a faulty parameter) Unauthorized; credential entry failed or missing The Resource doesn't exist Indicates the "If-Match" Etag check failed Indicates the need for an "If-Match" conditional with an Etag value in the Request Header Indicates API service is Busy, client should try again later

HEAD /Storage/Devices/{id}/Accounts/ - Ping the Collection of Accounts

URI:	/Storage/Devices/{id}/Accounts/	Description
Method	HEAD	Pings this Account Collection
Request Header	Authorization (Mandatory)	The request requires either Basic or Digest authorization
Query Parameters		
Response	200 OK 401 Unauthorized 404 Not Found 429 Too Many Requests	OK with no response body Unauthorized; credential entry failed or missing Resource Collection 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

HEAD /Storage/Devices/{id}/Accounts/{id}/ - Ping a specific Account

URI:	/Storage/Devices/{id}/Accounts/{id}/	Description
Method	HEAD	Pings this Account
Request Header	Authorization (Mandatory)	The request requires either Basic or Digest authorization
Query Parameters		
Response	200 OK 401 Unauthorized 404 Not Found 429 Too Many Requests	OK with no response body Unauthorized; credential entry failed or missing 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

OPTIONS /Storage/Devices/{id}/Accounts/ - Determine Allowable Methods for a Collection of Accounts

URI:	/Storage/Devices/{id}/Accounts/	Description
Method	OPTIONS	Get the allowable HTTP Methods list for this resource
Request Header	(None) Documentation (Optional) Documentation (Optional) If-None-Match (Optional)	Returns the full resource schema as Content-Type application/json Info - Returns documentation information in the form of plain text Schema - Returns the schema information in "pretty" JSON text as plain text Etag - The request is conditionally processed only if the current ETag for the resource does not match the ETag passed in this header
Query Parameters		
Response	200 OK 304 Not Modified 404 Not Found 429 Too Many Requests	OK & the “Allow” list of methods in the response header. The response body provides the JSON Schema for this resource

		If-None-Match Etag value matched, therefore no Response Body will be returned 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

OPTIONS /Storage/Devices/{id}/Accounts/{Id}/ - Determine Allowable Methods for a specific Account

URI:	/Storage/Devices/{id}/Accounts/{id}/	Description
Method	OPTIONS	Get the allowable HTTP Methods list for this resource
Request Header	(None) Documentation (Optional) Documentation (Optional) If-None-Match (Optional)	Returns the full resource schema as Content-Type application/json Info - Returns documentation information in the form of plain text Schema - Returns the schema information in "pretty" JSON text as plain text Etag - The request is conditionally processed only if the current ETag for the resource does not match the ETag passed in this header
Query Parameters		
Response	200 OK 304 Not Modified 404 Not Found 429 Too Many Requests	OK & the “Allow” list of methods in the response header. The response body provides the JSON Schema for this resource If-None-Match Etag value matched, therefore no Response Body will be returned 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

DELETE /Storage/Devices/{id}/Accounts/{id} - Delete specific Account

URI:	/Storage/Devices/{id}/Accounts/{id}	Description
Method	DELETE	Delete this Account
Request Header	Authorization (Mandatory) If-Match (Mandatory)	The request requires either Basic or Digest authorization

		The request is conditionally processed only if the current ETag for the resource matches the ETag passed in this header
Query Parameters		
Request Body		
Response	204 No Content 401 Unauthorized 404 Not Found 409 Conflict 412 Precondition Failed 428 Precondition Required 429 Too Many Requests	Delete successful, no content in the response body Unauthorized; credential entry failed or missing The Resource doesn't exist In the case of only one account, that last one cannot be deleted Indicates the "If-Match" Etag check failed Indicates the need for an "If-Match" conditional with an Etag value in the Request Header Indicates API service is Busy, client should try again later

Methods Not Allowed on **/Storage/Devices/{id}/Accounts/** Collection

URI:	**/Storage/Devices/{id}/Accounts/**	**Description**
Method	PUT, DELETE	Methods that are not allowed
Request Header		
Query Parameters		
Response	405 Method Not Allowed	Method not allowed for this Resource; returns "Allow" header with allowable methods list

Methods Not Allowed on **/Storage/Devices/{id}/Accounts/{id}/** Instance

URI:	**/Storage/Devices/{id}/Accounts/{id}/**	**Description**
Method	POST	Methods that are not allowed
Request Header		
Query Parameters		

Response	405 Method Not Allowed	Method not allowed for this Resource; returns "Allow" header with allowable methods list

Collection Resource Attributes

Attribute	Type	Requirement	User Configurable	Possible Values	Description	Model Correspondence
Self	URI String	Mandatory	No	Free-Form URI Format 256 Chars	Describes the fully qualified URI link for the Collection	{ IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking }
Members	String Array	Mandatory	No	Resource Collection (1 - n entries)	The array of Resource Instances (see Instance Resource Attributes Table for Instance Attribute details)	

Instance Resource Attributes

Attribute	Type	Requirement	User Configurable	Possible Values	Description	Model Correspondence
Self	URI String	Mandatory	No	Free-Form URI Format 256 Chars	Describes the fully qualified URI link	{ IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking }
ID	String	Mandatory	No	Free-Form 64 Chars Valid characters include:	The Identifier this particular Account	{ DMTF | CIM | LogicalElement.DeviceID }

				"a-z A-Z 0-9 _ - "		
BasicAuthentication.UserPasswordSHA1Checksum	String	Mandatory	No	Free-Form 128 Characters	The basic authentication checksum	{ DMTF | CIM | SignedCredential.X509Infrastructure.SHA1Fingerprints }
BasicAuthentication.UserPassword	String	Optional	Yes	Free-Form 128 Characters	The user password used to create the checksum (not shown in the GET response)	{ DMTF | CIM | SignedCredential.X509Infrastructure.Password }
DigestAuthentication.UserPasswordMD5Checksum	String	Mandatory	No	Free-Form 128 Characters	The digest authentication checksum	{ DMTF | CIM | SignedCredential.X509Infrastructure.MD5Fingerprints }
DigestAuthentication.UserPassword	String	Optional	Yes	Free-Form 128 Characters	The user password used to create the checksum (not shown in the GET response)	{ DMTF | CIM | SignedCredential.X509Infrastructure.Password }
DigestAuthentication.Realm	String	Optional	No	Free-Form 128	The digest authenti	

				Characters	cation realm	
Role.Name	String	Mandatory	No	"Admin"	The Role type string for this Account	{ DMTF | CIM | ManagedElement.Collection.Role }
Role.ID	Number	Mandatory	No	0	The Role type value for this Account	{ DMTF | CIM | ManagedElement.Collection.Role }
UserID	String	Mandatory	Yes	Free-Form 64 Chars	The user identifier for this Account	{ DMTF | CIM | LogicalElement.Account.UserId }

EXAMPLES

GET Accounts Example - Specific Instance Based on the Identifier

Request

Method	URI	Query String	Request Header	Request Body
GET	/Storage/Devices/{id}/Accounts/admin		Authorization (Mandatory) If-None-Match: {etag} (Optional)	

Response

Precondition	Response Code	Response Header	Response Body
Credentials invalid or missing	401 Unauthorized		
Resource Id does not exist	404 Not Found		

If-None-Match true	304 Not Modified	ETag: {etag}	
API Busy	429 Too Many Requests		

Success If-None-Match false or missing	200 OK	Content-Type: application/json ETag: {etag}	{
			"Self": "http://10.20.30.40/Storage/Devices/0123456789/Accounts/admin/",
			"ID": "admin",
			"BasicAuthentication": {
			"UserPasswordSHA1Checksum": "{SHA}0DPiKuNIrrVmD8IUCuw1hQxNqZc="
			},
			"DigestAuthentication": {
			"UserPasswordMD5Checksum": "97ebad852d0dabfd6b71ae26fff61fa3",
			"Realm": "Western Digital Corporation"
			},
			"Role": {
			"ID": 0,
			"Name": "Admin"
			},
			"UserID": "admin"
			}

9.4.8 Operating System

Description

The Device-level methods and attributes return information about the Operating System and do certain operations.

Allowable Methods

URI	Allowable Methods
/Storage/Devices/{id}/OperatingSystem/	GET, POST, HEAD, OPTIONS

GET /Storage/Devices/{id}/OperatingSystem/- Retrieve the Operating System resource information

URI:	/Storage/Devices/{id}/OperatingSystem/	Description

Method	GET	Returns the information of the Operating System resource
Request Header	Authorization (Mandatory) If-None-Match (Optional)	The request requires either Basic or Digest authorization The request is conditionally processed only if the current ETag for the resource matches the ETag passed in this header
Query Parameters		
Response	200 OK 304 Not Modified 401 Unauthorized 404 Not Found 429 Too Many Requests	OK & Operating System resource information in the response body If-None-Match Etag value matched, therefore no Response Body will be returned Unauthorized; credential entry failed or missing 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

POST /Storage/Devices/{id}/OperatingSystem/ - Update the Firmware Image

URI:	/Storage/Devices/{id}/OperatingSystem/	Description
Method	POST	Update the Firmware with a new image
Request Header	Authorization (Mandatory) Content-Type: multipart/form-data	The request requires either Basic or Digest authorization The FW image file is of content type "multipart/form-data"
Query Parameters		
Request Body	Content-Disposition: form-data; name="FirmwareFile"; filename="{FW_file_name}" FW Image File	Request Body preamble setting up the content information The FW image file with appropriate POST body
Response	202 Accepted 400 Bad Request 401 Unauthorized 404 Not Found	Accepted & Header "Location" with a /Jobs URI to check status (e.g., ../Jobs/FirmwareUpdate)

	409 Conflict 429 Too Many Requests	Bad Request (typically a faulty parameter) Unauthorized; credential entry failed or missing Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource Another FW update is in progress or some other operation that does not a FW update at this time Indicates API service is Busy, client should try again later

HEAD /Storage/Devices/{id}/OperatingSystem/ - Ping the Operating System resource

URI:	/Storage/Devices/{id}/OperatingSystem/	Description
Method	HEAD	Pings the Operating System resource
Request Header	Authorization (Mandatory)	
Query Parameters		
Response	200 OK 401 Unauthorized 404 Not Found 429 Too Many Requests	OK with no response body Unauthorized; credential entry failed or missing 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

OPTIONS /Storage/Devices/{id}/OperatingSystem/ - Determine Allowable Methods for the Operating System resource

URI:	/Storage/Devices/{id}/OperatingSystem/	Description
Method	OPTIONS	Get the allowable HTTP Methods list for this resource
Request Header	(None) Documentation (Optional) Documentation (Optional) If-None-Match (Optional)	Returns the full resource schema as Content-Type application/json Info - Returns documentation information in the form of plain text

		Schema - Returns the schema information in "pretty" JSON text as plain text Etag - The request is conditionally processed only if the current ETag for the resource does not match the ETag passed in this header
Query Parameters		
Response	200 OK 304 Not Modified 404 Not Found 429 Too Many Requests	OK & the "Allow" list of methods in the response header. The response body provides the JSON Schema for this resource If-None-Match Etag value matched, therefore no Response Body will be returned 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

Methods Not Allowed on **/Storage/Devices/{id}/OperatingSystem/**

URI:	**/Storage/Devices/{id}/OperatingSystem/**	**Description**
Method	PUT, DELETE	Methods that are not allowed
Request Header		
Query Parameters		
Response	405 Method Not Allowed	Method not allowed for this Resource

Resource Attributes

Attribute	**Type**	**Requirement**	**User Configurable**	**Possible Values**	**Description**	**Model Correspondence**
Self	String	Mandatory	No	Free-Form URI Format	Describes the fully qualified URI link	{ IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking }

				256 Chars		
Name	String	Mandatory	No	Free-Form 128 Chars	The Operating System or Firmware name	{ DMTF | CIM | System.OperatingSystem.Name }
OSType.Name	String	Mandatory	No	Depends on Operating System Type	The Operating System Type value	{ DMTF | CIM | System.OperatingSystem.Type }
OSType.ID	Number	Mandatory	No	Depends on Operating System Type	The Operating System Type value map	{ DMTF | CIM | System.OperatingSystem.Type }
Version	String	Mandatory	No	Free-Form 128 Chars	The Operating System or Firmware Version	{ DMTF | CIM | System.OperatingSystem.Version }

EXAMPLES

GET Operating System Example

Request

Method	URI	Query String	Request Header	Request Body
GET	/Storage/Devices/{id}/OperatingSystem		Authorization (Mandatory) If-None-Match: {etag} (Optional)	

Response

Precondition	Response Code	Response Header	Response Body
Credentials invalid or missing	401 Unauthorized		

Resource Id does not exist	404 Not Found		
If-None-Match true	304 Not Modified	ETag: {etag}	
API Busy	429 Too Many Requests		

Success If-None-Match false or missing	200 OK	Content-Type: application/json
		ETag: {etag}
			{
			"Self": "http://10.20.30.40/Storage/Devices/0123456789/OperatingSystem/",
			"Name": "Vendor Firmware",
			"OSType": {
			"ID": 59,
			"Name": "Dedicated"
			},
			"Version": "0.1.0"
			}

POST Operating System Example - Update the Device FW Image

Request

Method	URI	Query String	Request Header	Request Body
POST	/Storage/Devices/{id}/OperatingSystem/		Authorization (Mandatory) Content-Type: multipart/form-data (Mandatory)	Content-Disposition: form-data; name="FirmwareFile"; filename="{FW_file_name}" FW Image File

Response

Precondition	Response Code	Response Header	Response Body
Credentials invalid or missing	401 Unauthorized		
Resource Id does not exist	404 Not Found		

Bad/Missing Parameter in Body	400 Bad Request		
Conflict with a previous update or some other operation not allowing an update at this time	409 Conflict		
API Busy	429 Too Many Requests		
If-Match true	202 Accepted	Location: ../Jobs/FirmwareUpdate(a GET on this URI will return current status and percent complete information	

9.4.9 Jobs

Description

The Device-level methods and attributes return information about the Job(s) and do certain operations.

Allowable Methods

URI	Allowable Methods
/Storage/Devices/{id}/Jobs/	GET, HEAD, OPTIONS
/Storage/Devices/{id}/Jobs/{id}/	GET, DELETE, HEAD, OPTIONS

GET /Storage/Devices/{id}/Jobs/ - Retrieve all Jobs

URI:	**/Storage/Devices/{id}/Jobs/**	**Description**
Method	GET	Returns the Collection of Jobs
Request Header	Authorization (Mandatory) If-None-Match (Optional)	The request requires either Basic or Digest authorization The request is conditionally processed only if the current ETag for the resource does not match the ETag passed in this header
Query Parameters		
Response	200 OK 304 Not Modified 401 Unauthorized 404 Not Found	OK & List of Job + ETag Header If-None-Match Etag value matched, therefore no Response Body will be returned Unauthorized; credential entry failed or missing

	429 Too Many Requests	Resource Collection 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

GET /Storage/Devices/{id}/Jobs/{Id}/ - Retrieve a specific Job

URI:	/Storage/Devices/{id}/Jobs/{id}/	Description
Method	GET	Returns the information regarding a specific Account based on the {id} in the URI address string
Request Header	Authorization (Mandatory) If-None-Match (Optional)	The request requires either Basic or Digest authorization The request is conditionally processed only if the current ETag for the resource does not match the ETag passed in this header
Query Parameters		
Response	200 OK 304 Not Modified 401 Unauthorized 404 Not Found 429 Too Many Requests	OK & Job information in the response body + ETag Header If-None-Match Etag value matched, therefore no Response Body will be returned Unauthorized; credential entry failed or missing 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

HEAD /Storage/Devices/{id}/Jobs/ - Ping the Collection of Jobs

URI:	/Storage/Devices/{id}/Jobs/	Description
Method	HEAD	Pings this Job Collection
Request Header	Authorization (Mandatory)	The request requires either Basic or Digest authorization
Query Parameters		
Response	200 OK 401 Unauthorized 404 Not Found	OK with no response body Unauthorized; credential entry failed or missing

	429 Too Many Requests	Resource Collection 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

HEAD /Storage/Devices/{id}/Jobs/{id}/ - Ping a specific Job

URI:	/Storage/Devices/{id}/Jobs/{id}/	Description
Method	HEAD	Pings this Job
Request Header	Authorization (Mandatory)	The request requires either Basic or Digest authorization
Query Parameters		
Response	200 OK 401 Unauthorized 404 Not Found 429 Too Many Requests	OK with no response body Unauthorized; credential entry failed or missing 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

OPTIONS /Storage/Devices/{id}/Jobs/ - Determine Allowable Methods for a Collection of Jobs

URI:	/Storage/Devices/{id}/Jobs/	Description
Method	OPTIONS	Get the allowable HTTP Methods list for this resource
Request Header	(None) Documentation (Optional) Documentation (Optional) If-None-Match (Optional)	Returns the full resource schema as Content-Type application/json Info - Returns documentation information in the form of plain text Schema - Returns the schema information in "pretty" JSON text as plain text Etag - The request is conditionally processed only if the current ETag for the resource does not match the ETag passed in this header
Query Parameters		
Response	200 OK 304 Not Modified 404 Not Found	OK & the “Allow” list of methods in the response header. The response body provides the JSON Schema for this resource

	429 Too Many Requests	If-None-Match Etag value matched, therefore no Response Body will be returned 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

OPTIONS /Storage/Devices/{id}/Jobs/{Id}/ - Determine Allowable Methods for a specific Job

URI:	/Storage/Devices/{id}/Jobs/{id}/	Description
Method	OPTIONS	Get the allowable HTTP Methods list for this resource
Request Header	(None) Documentation (Optional) Documentation (Optional) If-None-Match (Optional)	Returns the full resource schema as Content-Type application/json Info - Returns documentation information in the form of plain text Schema - Returns the schema information in "pretty" JSON text as plain text Etag - The request is conditionally processed only if the current ETag for the resource does not match the ETag passed in this header
Query Parameters		
Response	200 OK 304 Not Modified 404 Not Found 429 Too Many Requests	OK & the “Allow” list of methods in the response header. The response body provides the JSON Schema for this resource If-None-Match Etag value matched, therefore no Response Body will be returned 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

DELETE /Storage/Devices/{id}/Jobs/{id} - Delete specific Job

URI:	/Storage/Devices/{id}/Jobs/{id}	Description
Method	DELETE	Delete this Job
Request Header	Authorization (Mandatory) If-Match (Mandatory)	The request requires either Basic or Digest authorization

		The request is conditionally processed only if the current ETag for the resource matches the ETag passed in this header
Query Parameters		
Request Body		
Response	204 No Content 401 Unauthorized 404 Not Found 409 Conflict 412 Precondition Failed 428 Precondition Required 429 Too Many Requests	Delete successful, no content in the response body Unauthorized; credential entry failed or missing The Resource doesn't exist If job is still in progress Indicates the "If-Match" Etag check failed Indicates the need for an "If-Match" conditional with an Etag value in the Request Header Indicates API service is Busy, client should try again later **NOTE**: When deleting the FW-related jobs, it is suggested to delete FirmwareUpdate before FirmwareActivate

Methods Not Allowed on **/Storage/Devices/{id}/Jobs/**

URI:	**/Storage/Devices/{id}/Jobs/**	**Description**
Method	POST, PUT, DELETE	Methods that are not allowed
Request Header		
Query Parameters		
Response	405 Method Not Allowed	Method not allowed for this Resource

Methods Not Allowed on **/Storage/Devices/{id}/Jobs/{id}/**

URI:	**/Storage/Devices/{id}/Jobs/{id}/**	**Description**
Method	POST, PUT	Methods that are not allowed Methods that are not allowed (DELETE only for FirmwareUpdate and FirmwareActivate)
Request Header		
Query Parameters		

Response	405 Method Not Allowed	Method not allowed for this Resource

Collection Resource Attributes

Attribute	Type	Requirement	User Configurable	Possible Values	Description	Model Correspondence
Self	URI String	Mandatory	No	Free-Form URI Format 256 Chars	Describes the fully qualified URI link for the Collection	{ IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking }
Members	String Array	Optional	No	Resource Collection (1 - n entries)	The array of Resource Instances (see Instance Resource Attributes Table for Instance Attribute details)	

Instance Resource Attributes

Attribute	Type	Requirement	User Configurable	Possible Values	Description	Model Correspondence
Self	URI String	Mandatory	No	Free-Form URI Format 256 Chars	Describes the fully qualified URI link	{ IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking }
ID	String	Mandatory	No	"FirmwareUpdate" "FactoryReset" "Reboot" "Shutdown" "FirmwareActivate" "FormatBlade"	The Name this particular Job.	{ DMTF | CIM | ManagedSystemElement.Name }
Status.State.Name	String	Mandatory	No	"Unknown" "Not available" "Servicing" "Starting" "Stopping" "Stopped" "Aborted"	The current state value of this Resource	{ DMTF | CIM | ManagedSystemElement.State }

				"Dormant" "Completed" "Migrating" "Emigrating" "Immigrating" "Snapshotting" "Shutting down" "In test" "Transitioning" "In service" "Inoperative" "Write Protected" "Reboot Needed" "Activate Needed" "Activate with reboot needed" "Activate invalidated by reboot"		
Status.State.ID	Number	Mandatory	No	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 65537 65538 65539 65540 65541 65542	The current state value map of this Resource	{ DMTF | CIM | ManagedSystemElement.State }

Status.Health[].Name	String (1..*)	Mandatory	No	"Unknown" "OK" "Degraded/Warning" "Minor failure" "Major failure" "Critical failure" "Non-recoverable error" "Not installed" "Not available" "No access allowed"	The current health value of this Resource. There can be 1 or more Name entries.	{ DMTF | CIM | ManagedSystemElement.HealthState }
Status.Health[].ID	Number (1..*)	Mandatory	No	0 5 10 15 20 25 30 65537 65538 65539 65540 65541	The current health value map of this Resource. There can be 1 or more Id entries.	{ DMTF | CIM | ManagedSystemElement.HealthState }
Status.Details[]	String Array	Optional	No	Free-Form Array entry. If no entry, then “None”.	The current Health Details of the Device	{ DMTF | CIM | ManagedSystemElement.DetailedStatus }
PercentComplete	Number	Mandatory	No	0 -100	The percent complete status of the Job	{ DMTF | CIM | LogicalElement.Job.PercentComplete }
ErrorCode	Number	Mandatory	No	Integer values	The error code number for the Job upon	{ DMTF | CIM | LogicalElement.Job.ErrorCode }

					completion; “0” = Success, otherwise, a vendor-unique value	
ErrorDescription	String	Optional	No	Free-Form 128 Chars	The description of the vendor-unique error code; if error code is “0”, then this is “Success”	{ DMTF | CIM | LogicalElement.Job.ErrorDescription }

EXAMPLES

GET Jobs Example - Specific Instance Based on the Identifier

Request

Method	URI	Query String	Request Header	Request Body
GET	/Storage/Devices/{id}/Jobs/FirmwareUpdate		Authorization (Mandatory) If-None-Match: {etag} (Optional)	

Response

Precondition	Response Code	Response Header	Response Body
Credentials invalid or missing	401 Unauthorized		

Resource Id does not exist	404 Not Found		
If-None-Match true	304 Not Modified	ETag: {etag}	
API Busy	429 Too Many Requests		

Success If-None-Match false or missing	200 OK	Content-Type: application/json
		ETag: {etag}
			{
			"Self": "http://10.20.30.40:80/Storage/Devices/0123456789/Jobs/FirmwareUpdate/",
			"ID": "FirmwareUpdate",
			"PercentComplete": 100,
			"Status": {
			"State": {
			"ID": 65539,
			"Name": "Activate with reboot needed"
			},
			"Health": [{
			"ID": 5,
			"Name": "OK"
			}]
			}
			}

9.4.10 Performance

Description

The Device-level methods and attributes return information about the Performance.

Allowable Methods

URI	Allowable Methods
/Storage/Devices/{id}/Performance	GET, HEAD, OPTIONS

GET /Storage/Devices/{id}/Performance- Retrieve the Performance resource information

URI:	/Storage/Devices/{id}/Performance	Description

Method	GET	Returns the information of the Performance resource
Request Header	Authorization (Mandatory) If-None-Match (Optional)	The request requires either Basic or Digest authorization The request is conditionally processed only if the current ETag for the resource does not match the ETag passed in this header
Query Parameters		
Response	200 OK 304 Not Modified 401 Unauthorized 404 Not Found 429 Too Many Requests	OK & Performance resource information in the response body If-None-Match Etag value matched, therefore no Response Body will be returned. **NOTE:** Due to the timestamp changes, catching a 304 response will be very rare Unauthorized; credential entry failed or missing 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 **NOTE**: The Performance Data is returned as IO Request and Byte counters for Request Operations and Bytes Transferred. It is the responsibility of the user to send at least two Performance data requests in order to take the delta between the 2nd and the 1st sets of counter data using the "TimestampUS" difference to determine the IO/s and Bytes/s for both reads and writes; those can be summed to get Total IO/s and Total Bytes/s for each Volume and all the Volume entries can be summed to get Device Totals.

HEAD /Storage/Devices/{id}/Performance- Ping the Performance resource

URI:	/Storage/Devices/{id}/Performance	Description
Method	HEAD	Pings the Performance resource
Request Header	Authorization (Mandatory)	
Query Parameters		

Response	200 OK 401 Unauthorized 404 Not Found 429 Too Many Requests	OK with no response body Unauthorized; credential entry failed or missing 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

OPTIONS /Storage/Devices/{id}/Performance- Determine Allowable Methods for the Performance resource

URI:	**/Storage/Devices/{id}/Performance**	**Description**
Method	OPTIONS	Get the allowable HTTP Methods list for this resource
Request Header	(None) Documentation (Optional) Documentation (Optional) If-None-Match (Optional)	Returns the full resource schema as Content-Type application/json Info - Returns documentation information in the form of plain text Schema - Returns the schema information in "pretty" JSON text as plain text Etag - The request is conditionally processed only if the current ETag for the resource does not match the ETag passed in this header
Query Parameters		
Response	200 OK 304 Not Modified 404 Not Found 429 Too Many Requests	OK & the "Allow" list of methods in the response header. The response body provides the JSON Schema for this resource If-None-Match Etag value matched, therefore no Response Body will be returned 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

Methods Not Allowed on **/Storage/Devices/{id}/Performance**

URI:	**/Storage/Devices/{id}/Performance**	**Description**
Method	POST, PUT, DELETE	Methods that are not allowed

Request Header		
Query Parameters		
Response	405 Method Not Allowed	Method not allowed for this Resource

Resource Attributes

Attribute	Type	Requirement	User Configurable	Possible Values	Description	Model Correspondence
Self	String	Mandatory	No	Free-Form URI Format 256 Chars	Describes the fully qualified URI link	{ IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking }
IOStats[].Name	String	Optional	No	Free-Form 64 Chars	Name of the device	
IOStats[].TimestampUS	Number	Optional	No	0 - n	Microseconds since power on	
IOStats[].BytesRead	Number	Optional	No	0 - n	Integer counter for number of bytes read	{ DMTF | CIM | BlockStorageStatisticalData.BytesRead }
IOStats[].BytesWritten	Number	Optional	No	0 - n	Integer counter for number of bytes written	{ DMTF | CIM | BlockStorageStatisticalData.BytesWritten }
IOStats[].NumReadOps	Number	Optional	No	0 - n	Integer counter for	{ DMTF | CIM | BlockStorageStatisticalData.ReadIOs }

					number of read operations	
IOStats[].NumWriteOps	Number	Optional	No	0 - n	Integer counter for number of write operations	{ DMTF | CIM | BlockStorageStatisticalData.WriteIOs }
IOStats[].ReadLatencyUS	Number	Optional	No	0 - n	Read response time in microseconds	{ DMTF | CIM | BlockStorageStatisticalData.ReadIOTimeCounter }
IOStats[].ReadMaxLatencyUS	Number	Optional	No	0 - n	Read response time in microseconds	{ DMTF | CIM | BlockStorageStatisticalData.WriteIOTimeCounter }
IOStats[].WriteLatencyUS	Number	Optional	No	0 - n	Read response time in microseconds	{ DMTF | CIM | BlockStorageStatisticalData.WriteIOTimeCounter }
IOStats[].WriteMaxLatencyUS	Number	Optional	No	0 - n	Read response time in microseconds	{ DMTF | CIM | BlockStorageStatisticalData.WriteIOTimeCounter }

EXAMPLES

GET Performance Example

Request

Method	URI	Query String	Request Header	Request Body
GET	/Storage/Devices/{id}/Performance		Authorization (Mandatory)	

Response

Precondition	Response Code	Response Header	Response Body
Credentials invalid or missing	401 Unauthorized		
Resource Id does not exist	404 Not Found		
API Busy	429 Too Many Requests		

Success	200 OK	Content-Type: application/json
		ETag: {etag}
			{
			"Self": "http://10.20.30.40/Storage/Devices/0123456789/Performance/",
			"IOStats": [{
			"BytesRead": 36864,
			"BytesWritten": 0,
			"Name": "Volume01",
			"NumReadOps": 2,
			"NumWriteOps": 0,
			"ReadLatencyUS": 466367,
			"ReadMaxLatencyUS": 0,
			"TimestampUS": 72787264251,
			"WriteLatencyUS": 0,
			"WriteMaxLatencyUS": 0
			}]
			}

9.4.11 ServiceLevelTargets

Description

The Device-level methods and attributes return information about the ServiceLevelTarget(s) and do certain operations.

Allowable Methods

URI	Allowable Methods
/Storage/Devices/{id}/ServiceLevelTargets/	GET, POST, HEAD, OPTIONS
/Storage/Devices/{id}/ServiceLevelTargets/{id}/	GET, PUT, DELETE, HEAD, OPTIONS

GET /Storage/Devices/{id}/ServiceLevelTargets/ - Retrieve all ServiceLevelTargets

URI:	/Storage/Devices/{id}/ServiceLevelTargets/	Description
Method	GET	Returns the Collection of ServiceLevelTargets
Request Header	Authorization (Mandatory) If-None-Match (Optional)	The request requires either Basic or Digest authorization The request is conditionally processed only if the current ETag for the resource does not match the ETag passed in this header
Query Parameters		
Response	200 OK 304 Not Modified 401 Unauthorized 404 Not Found	OK & List of ServiceLevelTargets + ETag Header If-None-Match Etag value matched, therefore no Response Body will be returned Unauthorized; credential entry failed or missing Resource Collection does not exist; this IP Address is running an HTTP service, but does not recognize this resource

GET /Storage/Devices/{id}/ServiceLevelTargets/{Id}/ - Retrieve a specific ServiceLevelTarget

URI:	/Storage/Devices/{id}/ServiceLevelTargets/{id}/	Description
Method	GET	Returns the information regarding a specific ServiceLevelTarget based on the {id} in the URI address string
Request Header	Authorization (Mandatory) If-None-Match (Optional)	The request requires either Basic or Digest authorization The request is conditionally processed only if the current ETag for the resource does not match the ETag passed in this header
Query Parameters		

Response	200 OK 304 Not Modified 401 Unauthorized 404 Not Found	OK & ServiceLevelTarget information in the response body + ETag Header If-None-Match Etag value matched, therefore no Response Body will be returned Unauthorized; credential entry failed or missing Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource

POST/Storage/Devices/{id}/ServiceLevelTargets/ - Create a new ServiceLevelTargets

URI:	**/Storage/Devices/{id}/ServiceLevelTargets/{id}/**	**Description**
Method	POST	Create a new ServiceLevelTarget
Request Header	Authorization (Mandatory)	The request requires either Basic or Digest authorization
Query Parameters		

Request Body	{
	"Name": "",
	}
		JSON BODY START
		Name of the ServiceLevelTarget
		JSON BODY END

Response	201 Created 400 Bad Request 401 Unauthorized 409 Conflict 500 Internal Server Error	Created & ServiceLevelTarget information in the response body + ETag Header + new URI in Location Header Bad Request (typically a faulty parameter) Unauthorized; credential entry failed or missing A new parameter value already exists (e.g., Name) System could not process the request

PUT /Storage/Devices/{id}/ServiceLevelTargets/{id}/ - Modify specific ServiceLevelTarget attributes

URI:	**/Storage/Devices/{id}/ServiceLevelTargets/{id}/**	**Description**

Method	PUT	Modify an attribute or execute an operation for this ServiceLevelTarget
Request Header	Authorization (Mandatory) If-Match (Mandatory)	The request requires either Basic or Digest authorization The request is conditionally processed only if the current ETag for the resource matches the ETag passed in this header
Query Parameters		

Request Body	{
	"Name": "account_name"
	}
		JSON BODY START
		Name of the ServiceLevelTarget
		JSON BODY END

Response	200 OK 400 Bad Request 401 Unauthorized 404 Not Found 409 Conflict 412 Precondition Failed 428 Precondition Required 500 Internal Server Error	OK & ServiceLevelTarget information in the response body + ETag Header Bad Request (typically a faulty parameter) Unauthorized; credential entry failed or missing The Resource doesn't exist A new parameter value already exists (e.g., Name) Indicates the "If-Match" Etag check failed Indicates the need for an "If-Match" conditional with an Etag value in the Request Header System could not process the request

HEAD /Storage/Devices/{id}/ServiceLevelTargets/ - Ping the Collection of ServiceLevelTargets

URI:	**/Storage/Devices/{id}/ServiceLevelTargets/**	**Description**
Method	HEAD	Pings this ServiceLevelTarget Collection
Request Header	Authorization (Mandatory)	The request requires either Basic or Digest authorization
Query Parameters		

Response	200 OK 401 Unauthorized 404 Not Found	OK with no response body Unauthorized; credential entry failed or missing Resource Collection does not exist; this IP Address is running an HTTP service, but does not recognize this resource

HEAD /Storage/Devices/{id}/ServiceLevelTargets/{id}/ - Ping a specific ServiceLevelTarget

URI:	/Storage/Devices/{id}/ServiceLevelTargets/{id}/	Description
Method	HEAD	Pings this ServiceLevelTarget
Request Header	Authorization (Mandatory)	The request requires either Basic or Digest authorization
Query Parameters		
Response	200 OK 401 Unauthorized 404 Not Found	OK with no response body Unauthorized; credential entry failed or missing Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource

OPTIONS /Storage/Devices/{id}/ServiceLevelTargets/ - Determine Allowable Methods for a Collection of ServiceLevelTargets

URI:	/Storage/Devices/{id}/ServiceLevelTargets/	Description
Method	OPTIONS	Get the allowable HTTP Methods list for this resource
Request Header		
Query Parameters		
Response	200 OK 404 Not Found	OK & the “Allow” list of methods in the response header. The response body provides the JSON Schema for this resource Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource

OPTIONS /Storage/Devices/{id}/ServiceLevelTargets/{Id}/ - Determine Allowable Methods for a specific ServiceLevelTarget

URI:	/Storage/Devices/{id}/ServiceLevelTargets/{id}/	Description
Method	OPTIONS	Get the allowable HTTP Methods list for this resource
Request Header		
Query Parameters		
Response	200 OK 404 Not Found	OK & the "Allow" list of methods in the response header. The response body provides the JSON Schema for this resource Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource

DELETE /Storage/Devices/{id}/ServiceLevelTargets/{id}/ - Delete specific ServiceLevelTarget

URI:	/Storage/Devices/{id}/ServiceLevelTargets/{id}/	Description
Method	DELETE	Delete this ServiceLevelTarget
Request Header	Authorization (Mandatory) If-Match (Mandatory)	The request requires either Basic or Digest authorization The request is conditionally processed only if the current ETag for the resource matches the ETag passed in this header
Query Parameters		
Request Body		
Response	204 No Content 401 Unauthorized 404 Not Found 412 Precondition Failed 428 Precondition Required 500 Internal Server Error	Delete successful, no content in the response body Unauthorized; credential entry failed or missing The Resource doesn't exist Indicates the "If-Match" Etag check failed

		Indicates the need for an “If-Match” conditional with an Etag value in the Request Header System could not process the request

Methods Not Allowed on **/Storage/Devices/{id}/ServiceLevelTargets/** Collection

URI:	**/Storage/Devices/{id}/ServiceLevelTargets/**	**Description**
Method	PUT, DELETE	Methods that are not allowed
Request Header		
Query Parameters		
Response	405 Method Not Allowed	Method not allowed for this Resource; returns "Allow" header with allowable methods list

Methods Not Allowed on **/Storage/Devices/{id}/ServiceLevelTargets/{id}/** Instance

URI:	**/Storage/Devices/{id}/ServiceLevelTargets/{id}/**	**Description**
Method	POST	Methods that are not allowed
Request Header		
Query Parameters		
Response	405 Method Not Allowed	Method not allowed for this Resource; returns "Allow" header with allowable methods list

Collection Resource Attributes

Attribute	**Type**	**Requirement**	**User Configurable**	**Possible Values**	**Description**	**Model Correspondence**
Self	URI String	Mandatory	No	Free-Form URI Format 256 Chars	Describes the fully qualified URI link for the Collection	{ IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking }

Members	String Array	Mandatory	No	Resource Collection (1 - n entries)	The array of Resource Instances (see Instance Resource Attributes Table for Instance Attribute details)	

Instance Resource Attributes

Attribute	Type	Requirement	User Configurable	Possible Values	Description	Model Correspondence
Self	URI String	Mandatory	No	Free-Form URI Format 256 Chars	Describes the fully qualified URI link	{ IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking }
Id	String	Mandatory	Yes	Free-Form 64 Chars	The Identifier this particular ServiceLevelTarget	{ DMTF | CIM | LogicalElement.DeviceID }

EXAMPLES

GET ServiceLevelTarget Example - Specific Instance Based on the Identifier

Request

Method	URI	Query String	Request Header	Request Body
GET	/Storage/Devices/{id}/ServiceLevelTargets/{id}/		Authorization (Mandatory) If-None-Match: {etag} (Optional)	

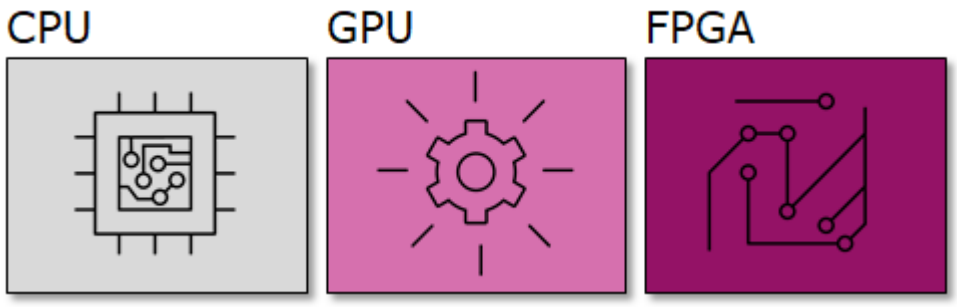
Response

Precondition	Response Code	Response Header	Response Body

Credentials invalid or missing	401 Unauthorized		
Resource Id does not exist	404 Not Found		
If-None-Match true	304 Not Modified		

If-None-Match false or missing	200 OK	Content-Type: application/json
		ETag: {etag}
			{
			"Self": "http://10.20.30.40/Storage/Devices/0123456789/ServiceLevelTargets/1/",
			"ID": "1"
			}

9.5 Compute Devices - Physical



This table shows the physical resources for a compute device. The set of resource URIs is as follows:

URI Pattern	Description
/Devices/	Collection of all Devices
/Compute/Devices/	Collection of Compute Devices
/Compute/Devices/{id}/	A specific Compute Device
/Compute/Devices/{id}/Processors/	Collection of Processors within this Compute Device
/Compute/Devices/{id}/Processors/{id}/	A specific Processors within this Compute Device

/Compute/Devices/{id}/Adapters/	Collection of Adapters within this Compute Device
/Compute/Devices/{id}/Adapters/{id}/	A specific Adapter within this Compute Device
/Compute/Devices/{id}/Adapters/{id}/Ports/	Collection of Ports within this Adapter
/Compute/Devices/{id}/Adapters/{id}/Ports/{id}/	A specific Port within this Adapter

9.5.1 Devices

Description

The Device-level methods and attributes return information about the Compute Device(s) and do certain operations.

Allowable Methods

URI	Allowable Methods
/Devices/	GET, HEAD, OPTIONS
/Compute/Devices/	GET, HEAD, OPTIONS
/Compute/Devices/{id}/	GET, PUT, HEAD, OPTIONS

GET /Compute/Devices/ - Retrieve all Compute Devices

URI:	/Compute/Devices/	Description
Method	GET	Returns the Collection of Devices
Request Header	Authorization (Mandatory) If-None-Match (Optional)	The request requires either Basic or Digest authorization The request is conditionally processed only if the current ETag for the resource does not match the ETag passed in this header
Query Parameters		
Response	200 OK 304 Not Modified 401 Unauthorized 404 Not Found	OK & List of Devices + ETag Header If-None-Match Etag value matched, therefore no Response Body will be returned Unauthorized; credential entry failed or missing Resource Collection does not exist; this IP Address is running an HTTP service, but does not recognize this resource

GET /Compute/Devices/{id}/ - Retrieve a specific Compute Device

URI:	/Compute/Devices/{id}/	Description
Method	GET	Returns the information regarding a specific Device based on the {id} in the URI address string
Request Header	Authorization (Mandatory) If-None-Match (Optional)	The request requires either Basic or Digest authorization The request is conditionally processed only if the current ETag for the resource does not match the ETag passed in this header
Query Parameters		
Response	200 OK 401 Unauthorized 404 Not Found	OK & Device information in the response body + ETag Header Unauthorized; credential entry failed or missing Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource

PUT /Compute/Devices/{id}/ - Modify specific Compute Device attributes

URI:	/Compute/Devices/{id}/	Description
Method	PUT	Modify an attribute or execute an operation for this Device
Request Header	Authorization (Mandatory) If-Match (Mandatory)	The request requires either Basic or Digest authorization The request is conditionally processed only if the current ETag for the resource matches the ETag passed in this header
Query Parameters		

Request Body	{
	"IndicatorLED": {
	"ID" : 4 | 2
	},
	"Name" :
	"new_name",
	"Restart": true | false,
	"Shutdown" : true | false,
	"FactoryReset": true
	}
		JSON BODY START
		
		Toggles the Indicator LED on the Device; default “Off = 4”
		
		Specify a new name
		Restart the Resource
		Shutdown the Resource (Shutdown takes precedence over Restart if both are sent)
		Return the Device to Factory fresh settings (resets system configuration and wipes media)
		JSON BODY END

Response	200 OK 400 Bad Request	OK & Device information in the response body + ETag Header

	401 Unauthorized 404 Not Found 409 Conflict 412 Precondition Failed 428 Precondition Required 500 Internal Server Error	Bad Request (typically a faulty parameter) Unauthorized; credential entry failed or missing The Resource doesn't exist Some other device-level operation is in progress (e.g., Update FW or Format or Factory Reset) or Volumes exist during a Format Indicates the "If-Match" Etag check failed Indicates the need for an "If-Match" conditional with an Etag value in the Request Header System could not process the request

HEAD /Compute/Devices/ - Ping the Collection of Compute Devices

URI:	**/Compute/Devices/{id}/**	**Description**
Method	HEAD	Pings this Compute Device Collection
Request Header	Authorization (Mandatory)	The request requires either Basic or Digest authorization
Query Parameters		
Response	200 OK 401 Unauthorized 404 Not Found	OK with no response body Unauthorized; credential entry failed or missing Resource Collection does not exist; this IP Address is running an HTTP service, but does not recognize this resource

HEAD /Compute/Devices/{id}/ - Ping a specific Compute Device

URI:	**/Compute/Devices/{id}/**	**Description**
Method	HEAD	Pings this Compute Device
Request Header	Authorization (Mandatory)	The request requires either Basic or Digest authorization
Query Parameters		
Response	200 OK 401 Unauthorized 404 Not Found	OK with no response body Unauthorized; credential entry failed or missing Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource

OPTIONS /Compute/Devices/- Determine Allowable Methods for a Collection of Compute Devices

URI:	/Compute/Devices/	Description
Method	OPTIONS	Get the allowable HTTP Methods list for this resource
Request Header		
Query Parameters		
Response	200 OK 404 Not Found	OK & the "Allow" list of methods in the response header. The response body provides the JSON Schema for this resource Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource

OPTIONS /Compute/Devices/{id}/ - Determine Allowable Methods for a specific Compute Device

URI:	/Compute/Devices/{id}/	Description
Method	OPTIONS	Get the allowable HTTP Methods list for this resource
Request Header		
Query Parameters		
Response	200 OK 404 Not Found	OK & the "Allow" list of methods in the response header. The response body provides the JSON Schema for this resource Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource

Methods Not Allowed on **/Compute/Devices/** Collection

URI:	/Compute/Devices/	Description
Method	POST, PUT, DELETE	Methods that are not allowed
Request Header		
Query Parameters		
Response	405 Method Not Allowed	Method not allowed for this Resource; returns "Allow" header with allowable methods list

Methods Not Allowed on **/Compute/Devices/{id}/** Instance

URI:	/Compute/Devices/{id}/	Description
Method	POST, DELETE	Methods that are not allowed
Request Header		
Query Parameters		
Response	405 Method Not Allowed	Method not allowed for this Resource; returns "Allow" header with allowable methods list

Collection Resource Attributes

Attribute	Type	Requirement	User Configurable	Possible Values	Description	Model Correspondence
Self	URI String	Mandatory	No	Free-Form URI Format 256 Chars	Describes the fully qualified URI link for the Collection	{ IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking }
Members	String Array	Mandatory	No	Resource Collection (0 - n entries)	The array of Resource Instances (see Instance Resource Attributes Table for Instance Attribute details)	

Instance Resource Attributes

Attribute	Type	Requirement	User Configurable	Possible Values	Description	Model Correspondence
Self	URI String	Mandatory	No	Free-Form URI Format 256 Chars	Describes the fully qualified URI link	{ IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking }
Name	String	Mandatory	Yes	Free-Form 256 Chars	The user-define	{ DMTF | CIM | ManagedSystemElement.Name }

					d Friendly Name for this Resource	
ID	String	Mandatory	No	Free-Form 256 Chars	The resource identifier that is unique in space and time	{ DMTF | CIM | LogicalElement.DeviceID }
SerialNumber	String	Mandatory	No	Free-Form 64 Chars	The serial number for this Resource	{ DMTF | CIM | ManagedSystemElement.SerialNumber }
Model	String	Mandatory	No	Free-Form 64 Chars	The model name or number for this Resource	{ DMTF | CIM | ManagedSystemElement.Model }
SystemType.Name	String	Mandatory	No	"Compute"	The domain type string indicating the type of Device Resource	{ DMTF | CIM | ComputeSystem.Dedicated.Server }

SystemType.ID	Number	Mandatory	No	1	The domain type number indicating the type of Device Resource	{ DMTF | CIM | ComputeSystem.Dedicated.Server }
ChassisPackageType	String	Mandatory	No	"Compute Chassis"	The type of chassis for this Resource	{ DMTF | CIM | Chassis.ChassisPackageType }
RackMountable	String	Mandatory	No	"Unknown" "True" "False"	Indicates this chassis is rack mountable	{ DMTF | CIM | Chassis.RackMountable }
Manufacturer	String	Mandatory	No	Free-Form 64 Chars	The vendor name for this Resource	{ DMTF | CIM | ManagedSystemElement.Manufacturer }
TotalCapacity	Number	Mandatory	No	Integer Bytes	The total number of raw bytes for this device	{ DMTF | CIM | Physicial.PhysicalMedia.Capacity }
RemainingCapacity	Number	Mandatory	No	Integer Bytes	The available number of bytes to	{ DMTF | CIM | Physicial.PhysicalMedia.Capacity }

					create volumes on this device	
OperatingSystem.Name	String	Optional	No	Free-Form 128 Chars	The Operating System or Firmware Name	{ DMTF | CIM | System.OperatingSystem.Name }
OperatingSystem.Version	String	Mandatory	No	Free-Form 128 Chars	The Operating System or Firmware Version	{ DMTF | CIM | System.OperatingSystem.Version }
IndicatorLED.Name	String	Mandatory	Yes	"Off" "Lit"	The current state value of the Indicator LED for this Resource	{ DMTF | CIM | IndicatorLED.ActivationState }
IndicatorLED.ID	Number	Mandatory	Yes	4 2	The current state value map of the Indicator LED for this Resource	{ DMTF | CIM | IndicatorLED.ActivationState }

Status.State.Name	String	Mandatory	No	"Unknown" "Not available" "Servicing" "Starting" "Stopping" "Stopped" "Aborted" "Dormant" "Completed" "Migrating" "Emigrating" "Immigrating" "Snapshotting" "Shutting down" "In test" "Transitioning" "In service"	The current state value of this Resource	{ DMTF | CIM | ManagedSystemElement.State }
Status.State.ID	Number	Mandatory	No	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16	The current state value map of this Resource	{ DMTF | CIM | ManagedSystemElement.State }
Status.Health[].Name	String (1..*)	Mandatory	No	"Unknown" "OK" "Degraded/Warning"	The current health value of this	{ DMTF | CIM | ManagedSystemElement.HealthState }

				"Minor failure" "Major failure" "Critical failure" "Non-recoverable error" "Not installed" "Not available" "No access allowed"	Resource. There can be 1 or more Name entries.	
Status.Health[].ID	Number (1..*)	Mandatory	No	0 5 10 15 20 25 30 65536 65537 65538	The current health value map of this Resource. There can be 1 or more Id entries.	{ DMTF | CIM | ManagedSystemElement.HealthState }
Status.Details[]	String Array	Mandatory	No	Free-Form 32 Characters per Array entry. If no entry, then “None”.	The current Health Details of the Device	{ DMTF | CIM | ManagedSystemElement.DetailedStatus }
Capabilities.Members[].Name	String	Mandatory	No	Server File Server Compute Device Enclosure Blade	The capabilities information value(s) regardi	{ DMTF | CIM | ComputeSystem.Dedicated }

					ng the Resource	
Capabilities.Members[].ID	Number	Mandatory	No	39 16 31 40	The capabilities information value map(s) regarding the Resource	{ DMTF | CIM | ComputeSystem.Dedicated }
Capabilities.Members[].CapabilityDescription	String	Mandatory	No	Free-Form 64 Characters	Entry describing the capability	{ DMTF | CIM | ComputeSystem.Dedicated }
Memory	Number	Mandatory	No	Unsigned Integer	Current amount of memory in bytes	{ DMTF | CIM | LogicalDevice.StorageExtent.Memory.EndingAddress-StartingAddress }
IpAddresses.Members[].IpAddress	String	Mandatory	Yes	IPv4 or IPv6 pattern	The IP Address list for this Resource	{ DMTF | CIM | ManagedSystemElement.FSIPInterfaceSettingData.IpAddress }
Accounts.Self	String	Mandatory	No	Free-Form URI	Fully qualified link to the Controller Resource Collection	{ DMTF | CIM | Device.Controller, IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking }

Adapters.Self	String	Mandatory	No	Free-Form URI	Fully qualified link to Media Resource Collection	{ DMTF | CIM | MediaAccessDevice, IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking }
Processor.Self	String	Mandatory	No	Free-Form URI	Fully qualified link to Storage Pool Resource Collection	{ DMTF | CIM | Logical.Processor, IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking }
Volumes.Self	String	Mandatory	No	Free-Form URI	Fully qualified link to Storage Volumes Resource Collection	{ DMTF | CIM | Logical.StorageVolume, IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking }
Performance.Self	String	Mandatory	No	Free-Form URI	Fully qualified link to the Performance Resource	{ DMTF | CIM | Statistics, IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking }
SystemClock.Self	String	Mandatory	No	Free-Form URI	Fully qualified link to the System	{ DMTF | CIM | Time, IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking }

					Clock Resource	
Location.Self	String	Mandatory	No	Free-Form URI	Fully qualified link to the Location Resource	{ DMTF | Redfish | SNIA | Swordfish | Location, IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking }
Support.Self	String	Mandatory	No	Free-Form URI	Fully qualified link to the Support Resource	{ WDC| OpenFlex| Support, IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking}

EXAMPLES

GET Device Example - Specific Instance Based on the Identifier

Request

Method	URI	Query String	Request Header	Request Body
GET	/Compute/Devices/{id}/		Authorization (Mandatory) If-None-Match: {etag} (Optional)	

Response

Precondition	Response Code	Response Header	Response Body
Credentials invalid or missing	401 Unauthorized		

Resource Id does not exist	404 Not Found		
If-None-Match true	304 Not Modified		

If-None-Match false or missing	200 OK	Content-Type: application/json
		ETag: {etag}
			{
			"Self": "http://10.20.30.40/Compute/Devices/0123456789/",
			"SystemType": {
			"ID": 1,
			"Name": "Compute"
			},
			"Name": "Compute Device",
			"ID": "0123456789",
			"OperatingSystem": {
			"Self": "http://10.20.30.40/Compute/Devices/0123456789/OperatingSystem/",
			"Name": "",
			"OSType": {
			"ID": 36,
			"Name": "Linux"
			},
			"Version": "Linux 123"
			},
			"SerialNumber": "SN-0123456789",
			"Model": "MN-0123456789",
			"Manufacturer": "",
			"Capabilities": {"Members" :[{
			"ID": 39,
			"Name": "Server",
			"CapabilityDescription": "This device is a compute server."
			}, {
			"ID": 16,
			"Name": "File Server",
			"CapabilityDescription": "This device is a file server."
			}, {
			"ID": 14,
			"Name": "Management",
			"CapabilityDescription": "This platform provides software system management capabilities."
			}, {
			"ID": 40,
			"Name": "Blade",

```
        "CapabilityDescription": "This device is a blade
        device."
    }]},
    "Status": {
        "State": {
            "ID": 16,
            "Name": "In service"
        },
        "Health": [{
            "ID": 5,
            "Name": "OK"
        }],
        "Details": ["None"]
    },
    "IPAddresses": {"Members": [{"IPAddress" :
    "10.20.30.40"}],
    "RemainingCapacity": 85899345920,
    "TotalCapacity": 85899345920,
    "Location": {
        "Self":
        "http://10.20.30.40/Compute/Devices/Location/"
    },
    "Accounts": {
        "Self":
        "http://10.20.30.40/Compute/Devices/0123456789
        /Accounts/"
    },
    "Adapters": {
        "Self":
        "http://10.20.30.40/Compute/Devices/0123456789
        /Adapters/"
    },
    "Processors": {
        "Self":
        "http://10.20.30.40/Compute/Devices/0123456789
        /Processors/"
    },
    "Pools": {
        "Self":
        "http://10.20.30.40/Compute/Devices/0123456789
        /Pools/"
    },
    "Support": {
        "Self":
        "http://10.20.30.40/Compute/Devices/0123456789
        /Support/"
    },
```

			"SystemClock": {
			"Self":
			"http://10.20.30.40/Compute/Devices/0123456789/SystemClock/"
			},
			"Performance": {
			"Self":
			"http://10.20.30.40/Compute/Devices/0123456789/Performance/"
			},
			"Volumes": {
			"Self":
			"http://10.20.30.40/Compute/Devices/0123456789/Volumes/"
			}
			}

PUT Device Example - Change the name of a specific Device

Request

Method	URI	Query String	Request Header	Request Body

PUT	/Compute/Devices/{id}/		Authorization (Mandatory)
			If-Match: {etag} (Mandatory)
				{
				"Name" : "new_name"
				}

Response

Precondition	Response Code	Response Header	Response Body
Credentials invalid or missing	401 Unauthorized		
Resource Id does not exist	404 Not Found		
Bad/Missing Parameter in Body	400 Bad Request		
New value already exists	409 Conflict		
System could not process the request	500 Internal Server Error		
If-Match false	412 Precondition Failed		

If-Match missing	428 Precondition Required		
If-Match true	200 OK	Content-Type: application/json	Device Resource JSON

9.5.2 Processors

Description

The Device-level methods and attributes return information about the Processor(s) and do certain operations.

Allowable Methods

URI	Allowable Methods
/Compute/Devices/{id}/Processors/	GET, HEAD, OPTIONS
/Compute/Devices/{id}/Processors/{id}/	GET, HEAD, OPTIONS

GET /Compute/Devices/{id}/Processors/ - Retrieve all Controllers

URI:	/Compute/Devices/{id}/Processors/	Description
Method	GET	Returns the Collection of Controllers
Request Header	Authorization (Mandatory) If-None-Match (Optional)	The request requires either Basic or Digest authorization The request is conditionally processed only if the current ETag for the resource does not match the ETag passed in this header
Query Parameters		
Response	200 OK 304 Not Modified 401 Unauthorized 404 Not Found	OK & List of Controllers + ETag Header If-None-Match Etag value matched, therefore no Response Body will be returned Unauthorized; credential entry failed or missing Resource Collection does not exist; this IP Address is running an HTTP service, but does not recognize this resource

GET /Compute/Devices/{id}/Processors/{id}/ - Retrieve a specific Controller

URI:	/Compute/Devices/{id}/Processors/{id}/	Description

Method	GET	Returns the information regarding a specific Controller based on the {id} in the URI address string
Request Header	Authorization (Mandatory) If-None-Match (Optional)	The request requires either Basic or Digest authorization The request is conditionally processed only if the current ETag for the resource does not match the ETag passed in this header
Query Parameters		
Response	200 OK 401 Unauthorized 404 Not Found	OK & Controller information in the response body + ETag Header Unauthorized; credential entry failed or missing Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource

HEAD /Compute/Devices/{id}/Processors/ - Ping the Collection of Controllers

URI:	/Storage/Devices/{id}/Processors/	Description
Method	HEAD	Pings this Controller Collection
Request Header	Authorization (Mandatory)	The request requires either Basic or Digest authorization
Query Parameters		
Response	200 OK 401 Unauthorized 404 Not Found	OK with no response body Unauthorized; credential entry failed or missing Resource Collection does not exist; this IP Address is running an HTTP service, but does not recognize this resource

HEAD /Compute/Devices/{id}/Processors/{id}/ - Ping a specific Controller

URI:	/Compute/Devices/{id}/Processors/{id}/	Description
Method	HEAD	Pings this Controller
Request Header	Authorization (Mandatory)	The request requires either Basic or Digest authorization

Query Parameters		
Response	200 OK 401 Unauthorized 404 Not Found	OK with no response body Unauthorized; credential entry failed or missing Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource

OPTIONS /Compute/Devices/{id}/Processors/- Determine Allowable Methods for a Collection of Controllers

URI:	**/Compute/Devices/{id}/Processors/**	**Description**
Method	OPTIONS	Get the allowable HTTP Methods list for this resource
Request Header		
Query Parameters		
Response	200 OK 404 Not Found	OK & the "Allow" list of methods in the response header. The response body provides the JSON Schema for this resource Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource

OPTIONS /Compute/Devices/{id}/Processors/{id}/ - Determine Allowable Methods for a specific Controller

URI:	**/Compute/Devices/{id}/Processors/{id}/**	**Description**
Method	OPTIONS	Get the allowable HTTP Methods list for this resource
Request Header		
Query Parameters		
Response	200 OK 404 Not Found	OK & the "Allow" list of methods in the response header. The response body provides the JSON Schema for this resource

		Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource

Methods Not Allowed on **/Compute/Devices/{id}/Processors/** Collection

URI:	**/Compute/Devices/{id}/Controllers/**	**Description**
Method	POST, PUT, DELETE	Methods that are not allowed
Request Header		
Query Parameters		
Response	405 Method Not Allowed	Method not allowed for this Resource; returns "Allow" header with allowable methods list

Methods Not Allowed on **/Compute/Devices/{id}/Processors/{id}/** Instance

URI:	**/Compute/Devices/{id}/Controllers/{id}/**	**Description**
Method	POST, PUT, DELETE	Methods that are not allowed
Request Header		
Query Parameters		
Response	405 Method Not Allowed	Method not allowed for this Resource; returns "Allow" header with allowable methods list

Collection Resource Attributes

Attribute	**Type**	**Requirement**	**User Configurable**	**Possible Values**	**Description**	**Model Correspondence**
Self	URI String	Mandatory	No	Free-Form URI Format 256 Chars	Describes the fully qualified URI link for the Collection	{ IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking }
Members	String Array	Mandatory	No	Resource Collection (0 - n entries)	The array of Resource Instances	

					(see Instance Resource Attributes Table for Instance Attribute details)	

Instance Resource Attributes

Attribute	Type	Requirement	User Configurable	Possible Values	Description	Model Correspondence
Self	URI String	Mandatory	No	Free-Form URI Format 256 Chars	Describes the fully qualified URI link	{ IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking }
Name	String	Mandatory	Yes	Free-Form 256 Chars	The user-defined Friendly Name for this Resource	{ DMTF | CIM | ManagedSystemElement.Name }
ID	String	Mandatory	No	Free-Form 256 Chars	The resource identifier that is unique in space and time	{ DMTF | CIM | LogicalElement.DeviceID }
Status.State.Name	String	Mandatory	No	"Unknown" "Not available" "Servicing" "Starting" "Stopping" "Stopped" "Aborted" "Dormant" "Completed" "Migrating"	The current state value of this Resource	{ DMTF | CIM | ManagedSystemElement.State }

				"Emigrating" "Immigrating" "Snapshotting" "Shutting down" "In test" "Transitioning" "In service"		
Status.State.ID	Number	Mandatory	No	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16	The current state value map of this Resource	{ DMTF | CIM | ManagedSystemElement.State }
Status.Health[].Name	String (1..*)	Mandatory	No	"Unknown" "OK" "Degraded/ Warning" "Minor failure" "Major failure" "Critical failure" "Non-recoverable error" "Not installed" "Not available"	The current health value of this Resource. There can be 1 or more Name entries.	{ DMTF | CIM | ManagedSystemElement.HealthState }

				"No access allowed"		
Status.Health[].ID	Number (1..*)	Mandatory	No	0 5 10 15 20 25 30 65536 65537 65538	The current health value map of this Resource. There can be 1 or more Id entries.	{ DMTF | CIM | ManagedSystemElement.HealthState }
Architecture	String	Mandatory	No	Free-form string indicating the architecture	The is the architecture type for the processor	{ DMTF | CIM | Application.Check.ArchitectureType }
Cores	Number	Mandatory	No	Unsigned Integer	The number of processor cores	{ DMTF | CIM | LogicalDevice.Processor.NumberOfEnabledCores }
DataWidth	String	Mandatory	No	Free-form string indicating the data width in bits	The number of processor cores	{ DMTF | CIM | LogicalDevice.Processor.DataWidth }
ProcessorDescription	String	Mandatory	No	Free-form 256 Chars	The number of processor cores	{ DMTF | CIM | ManagedElement.Description }
Family	Number	Mandatory	No	Unsigned Integer	The processor family value	{ DMTF | CIM | LogicalDevice.Processor.Family }
LogicalProcessors	Number	Mandatory	No	Unsigned Integer	The number	

					of logical processors	
Manufacturer	String	Mandatory	No	Free-form 64 Chars	The processor manufacturer	{ DMTF | CIM | ManagedSystemElement.Manufacturer }
Model	Number	Mandatory	No	Unsigned Integer	The processor model name or number	{ DMTF | CIM | ManagedSystemElement.Model }
ProcessorID	String	Mandatory	No	Hex String	The processor unique identifier	{ DMTF | CIM | LogicalDevice.Processor.UniqueID }
ProcessorSpeed.BaseUnits	String	Mandatory	No	MHz	The base units for the processor speed	
ProcessorSpeed.CurrentClockSpeed	Number	Mandatory	No	0 - n	The current speed of the processor	{ DMTF | CIM | LogicalDevice.Processor.CurrentClockSpeed }
ProcessorSpeed.MaxClockSpeed	Number	Mandatory	No	0 - n	The maximum speed of the processor	{ DMTF | CIM | LogicalDevice.Processor.MaxClockSpeed }
Stepping	Number	Mandatory	No	Unsigned Integer	The processor stepping value	{ DMTF | CIM | LogicalDevice.Processor.Stepping }

Revision	String	Mandatory	No	Free-form 64 Chars	The processor version	{ DMTF | CIM | Application.Check.Version }
LoadPercentage	Number	Mandatory	No	0 - 100	The processor stepping value	{ DMTF | CIM | LogicalDevice.Processor.LoadPercentage}
Role	String	Mandatory	No	"Central Processor" "Math Processor" "Graphics Processing Unit" "Field-Programmable Gate Array"	The processor role	{ DMTF | CIM | LogicalDevice.Processor.Role }

EXAMPLES

GET Processor Example - Specific Instance Based on the Identifier

Request

Method	URI	Query String	Request Header	Request Body
GET	/Compute/Devices/{id}/Processors/{id}/		Authorization (Mandatory) If-None-Match: {etag} (Optional)	

Response

Precondition	Response Code	Response Header	Response Body
Credentials invalid or missing	401 Unauthorized		
Resource Id does not exist	404 Not Found		

If-None-Match true	304 Not Modified		

If-None-Match false or missing	200 OK	Content-Type: application/json
		ETag: {etag}
			{
			"Self": "http://10.20.30.40/Compute/Devices/0123456789/Processors/CPU1/",
			"Status": {
			"State": {
			"ID": 16,
			"Name": "In service"
			},
			"Health": [{
			"ID": 5,
			"Name": "OK"
			}],
			"Details": ["None"]
			},
			"Architecture": "x86_64",
			"Cores": 10,
			"DataWidth": "64-bit",
			"ProcessorDescription": "Type 0, Family 6, Model 63, Stepping 2",
			"Family": 6,
			"ID": "CPU1",
			"LogicalProcessors": 20,
			"Manufacturer": "Intel",
			"Model": 63,
			"Name": "Intel(R) Xeon(R) CPU E5-2650 v3 @ 2.30GHz",
			"ProcessorID": "BFEBFBFF000306F2",
			"ProcessorSpeed": {
			"BaseUnits": "MHz",
			"CurrentClockSpeed": 2300,
			"MaxClockSpeed": 4000
			},
			"Stepping": 2,
			"Revision": "Intel(R) Xeon(R) CPU E5-2650 v3 @ 2.30GHz",
			"LoadPercentage": 0,
			"Role": "Central Processor"
			}

9.5.3 Adapters

Description

The Device-level methods and attributes return information about the Adapter(s) and do certain operations.

Allowable Methods

URI	Allowable Methods
/Compute/Devices/{id}/Adapters/	GET, HEAD, OPTIONS
/Compute/Devices/{id}/Adapters/{id}/	GET, HEAD, OPTIONS

GET /Compute/Devices/{id}/Adapters/ - Retrieve all Adapters

URI:	/Compute/Devices/{id}/Adapters/	Description
Method	GET	Returns the Collection of Adapters
Request Header	Authorization (Mandatory) If-None-Match (Optional)	The request requires either Basic or Digest authorization The request is conditionally processed only if the current ETag for the resource does not match the ETag passed in this header
Query Parameters		
Response	200 OK 304 Not Modified 401 Unauthorized 404 Not Found	OK & List of Adapters + ETag Header If-None-Match Etag value matched, therefore no Response Body will be returned Unauthorized; credential entry failed or missing Resource Collection does not exist; this IP Address is running an HTTP service, but does not recognize this resource

GET /Compute/Devices/{id}/Adapters/{id}/ - Retrieve a specific Adapter

URI:	/Compute/Devices/{id}/Adapters/{id}/	Description
Method	GET	Returns the information regarding a specific Adapter based on the {id} in the URI address string
Request Header	Authorization (Mandatory) If-None-Match (Optional)	The request requires either Basic or Digest authorization The request is conditionally processed only if the current ETag for the resource does not match the ETag passed in this header

Query Parameters		
Response	200 OK 401 Unauthorized 404 Not Found	OK & Adapter information in the response body + ETag Header Unauthorized; credential entry failed or missing Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource

HEAD /Compute/Devices/{id}/Adapters/ - Ping the Collection of Adapters

URI:	**/Compute/Devices/{id}/Adapters/**	**Description**
Method	HEAD	Pings this Adapter Collection
Request Header	Authorization (Mandatory)	The request requires either Basic or Digest authorization
Query Parameters		
Response	200 OK 401 Unauthorized 404 Not Found	OK with no response body Unauthorized; credential entry failed or missing Resource Collection does not exist; this IP Address is running an HTTP service, but does not recognize this resource

HEAD /Compute/Devices/{id}/Adapters/{id}/ - Ping a specific Adapter

URI:	**/Compute/Devices/{id}/Adapters/{id}/**	**Description**
Method	HEAD	Pings this Adapter
Request Header	Authorization (Mandatory)	The request requires either Basic or Digest authorization
Query Parameters		
Response	200 OK 401 Unauthorized 404 Not Found	OK with no response body Unauthorized; credential entry failed or missing Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource

OPTIONS /Compute/Devices/{id}/Adapters/- Determine Allowable Methods for a Collection of Adapters

URI:	**/Compute/Devices/{id}/Adapters/**	**Description**
Method	OPTIONS	Get the allowable HTTP Methods list for this resource
Request Header		
Query Parameters		
Response	200 OK 404 Not Found	OK & the "Allow" list of methods in the response header. The response body provides the JSON Schema for this resource Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource

OPTIONS /Compute/Devices/{id}/Adapters/{id}/ - Determine Allowable Methods for a specific Adapter

URI:	**/Compute/Devices/{id}/Adapters/{id}/**	**Description**
Method	OPTIONS	Get the allowable HTTP Methods list for this resource
Request Header		
Query Parameters		
Response	200 OK 404 Not Found	OK & the "Allow" list of methods in the response header. The response body provides the JSON Schema for this resource Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource

Methods Not Allowed on **/Compute/Devices/{id}/Adapters/** Collection

URI:	**/Compute/Devices/{id}/Adapters/**	**Description**
Method	POST, PUT, DELETE	Methods that are not allowed
Request Header		

Query Parameters		
Response	405 Method Not Allowed	Method not allowed for this Resource; returns "Allow" header with allowable methods list

Methods Not Allowed on **/Compute/Devices/{id}/Adapters/{id}/** Instance

URI:	**/Compute/Devices/{id}/Adapters/{id}/**	**Description**
Method	POST, PUT, DELETE	Methods that are not allowed
Request Header		
Query Parameters		
Response	405 Method Not Allowed	Method not allowed for this Resource; returns "Allow" header with allowable methods list

Collection Resource Attributes

Attribute	**Type**	**Requirement**	**User Configurable**	**Possible Values**	**Description**	**Model Correspondence**
Self	URI String	Mandatory	No	Free-Form URI Format 256 Chars	Describes the fully qualified URI link for the Collection	{ IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking }
Members	String Array	Optional	No	Resource Collection (0 - n entries)	The array of Resource Instances (see Instance Resource Attributes Table for Instance Attribute details)	

Instance Resource Attributes

Attribute	**Type**	**Requirement**	**User Configurable**	**Possible Values**	**Description**	**Model Correspondence**

Self	URI String	Mandatory	No	Free-Form URI Format 256 Chars	Describes the fully qualified URI link	{ IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking }
ID	String	Mandatory	No	Free-Form 256 Chars	The resource identifier that is unique in space and time	{ DMTF | CIM | LogicalElement.DeviceID }
Status.State.Name	String	Mandatory	No	"Unknown" "Not available" "Servicing" "Starting" "Stopping" "Stopped" "Aborted" "Dormant" "Completed" "Migrating" "Emigrating" "Immigrating" "Snapshotting" "Shutting down" "In test" "Transitioning" "In service"	The current state value of this Resource	{ DMTF | CIM | ManagedSystemElement.State }
Status.State.ID	Number	Mandatory	No	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15	The current state value map of this Resource	{ DMTF | CIM | ManagedSystemElement.State }

				16		
Status.Health[].Name	String (1..*)	Mandatory	No	"Unknown" "OK" "Degraded/Warning" "Minor failure" "Major failure" "Critical failure" "Non-recoverable error" "Not installed" "Not available" "No access allowed"	The current health value of this Resource. There can be 1 or more Name entries.	{ DMTF | CIM | ManagedSystemElement.HealthState }
Status.Health[].ID	Number (1..*)	Mandatory	No	0 5 10 15 20 25 30 65536 65537 65538	The current health value map of this Resource. There can be 1 or more Identries.	{ DMTF | CIM | ManagedSystemElement.HealthState }
Ports.Self	String	Mandatory	No	Free-Form URI Format 256 Chars	Describes the fully qualified URI link	{ IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking }

EXAMPLES

GET Adapters Example - Specific Instance Based on the Identifier

Request

Method	URI	Query String	Request Header	Request Body

GET	/Compute/Devices/{id}/Adapters/management/		Authorization (Mandatory) If-None-Match: {etag} (Optional)	

Response

Precondition	Response Code	Response Header	Response Body
Credentials invalid or missing	401 Unauthorized		
Resource Id does not exist	404 Not Found		
If-None-Match true	304 Not Modified		
If-None-Match false or missing	200 OK	Content-Type: application/json ETag: {etag}	{ "Self": "http://10.20.30.40/Compute/Devices/0123456789/Adapters/management/", "ID": "management", "Status": { "State": { "ID": 16, "Name": "In service" }, "Health": [{ "ID": 5, "Name": "OK" }] }, "Ports": { "Self": "http://10.20.30.40/Compute/Devices/0123456789/Adapters/management/Ports/", } }

9.5.4 Ports

Description

The Device-level methods and attributes return information about the Port(s) and do certain operations.

Allowable Methods

URI	Allowable Methods
/Compute/Devices/{id}/Adapters/{id}/Ports/	GET, HEAD, OPTIONS
/Compute/Devices/{id}/Adapters/{id}/Ports/{id}/	GET, PUT, HEAD, OPTIONS

GET /Compute/Devices/{id}/Adapters/{id}/Ports/ - Retrieve all Ports on a specific Adapter

URI:	/Compute/Devices/{id}/Adapters/{id}/Ports/	Description
Method	GET	Returns the Collection of Ports
Request Header	Authorization (Mandatory) If-None-Match (Optional)	The request requires either Basic or Digest authorization The request is conditionally processed only if the current ETag for the resource does not match the ETag passed in this header
Query Parameters		
Response	200 OK 304 Not Modified 401 Unauthorized 404 Not Found	OK & List of Ports + ETag Header If-None-Match Etag value matched, therefore no Response Body will be returned Unauthorized; credential entry failed or missing Resource Collection does not exist; this IP Address is running an HTTP service, but does not recognize this resource

GET /Compute/Devices/{id}/Adapters/{id}/Ports/{id} - Retrieve a specific Port on a specific Adapter

URI:	/Compute/Devices/{id}/Adapters/{id}/Ports/{id}/	Description
Method	GET	Returns the information regarding a specific Port based on the {id} in the URI address string

Request Header	Authorization (Mandatory) If-None-Match (Optional)	The request requires either Basic or Digest authorization The request is conditionally processed only if the current ETag for the resource does not match the ETag passed in this header
Query Parameters		
Response	200 OK 401 Unauthorized 404 Not Found	OK & Port information in the response body + ETag Header Unauthorized; credential entry failed or missing Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource

PUT /Compute/Devices/{id}/Adapters/{id}/Ports/{id} - Modify specific Port attributes

URI:	**/Compute/Devices/{id}/Adapters/{id}/Ports/{id}/**	**Description**
Method	PUT	Modify an attribute or execute an operation for this Port
Request Header	Authorization (Mandatory) If-Match (Mandatory)	The request requires either Basic or Digest authorization The request is conditionally processed only if the current ETag for the resource matches the ETag passed in this header
Query Parameters		

Request Body	{
	"AddressOrigin": {
	"ID": number,
	"Name": "DHCP | STATIC"
	},
	"IPv4Address": "ipv4_address/cidr",
	"IPGateway": "ipv4_gateway",
	"MTUBytes": 1500,
	"DNS": ["ipv4_address"]
	}
		JSON BODY START
		Address Origin - where the IP Address comes from
		Origin Type ID (4 or 3)
		Origin Type Name (DHCP or Static)
		
		IPv4 Address and CIDR mask value
		IPv4 Gateway Address
		Maximum Transfer Unit in bytes (range: 46 - 9216)
		DNS address list comma separated

		JSON BODY END
Response	200 OK 400 Bad Request 401 Unauthorized 404 Not Found 412 Precondition Failed 428 Precondition Required 500 Internal Server Error	OK & Port information in the response body + ETag Header Bad Request (typically a faulty parameter) Unauthorized; credential entry failed or missing The Resource doesn't exist Indicates the "If-Match" Etag check failed Indicates the need for an "If-Match" conditional with an Etag value in the Request Header System could not process the request

HEAD /Compute/Devices/{id}/Adapters/{id}/Ports/{id}/ - Ping the Collection of Ports on a specific Adapter

URI:	**/Compute/Devices/{id}/Adapters/{id}/Ports/**	**Description**
Method	HEAD	Pings this Port Collection
Request Header	Authorization (Mandatory)	The request requires either Basic or Digest authorization
Query Parameters		
Response	200 OK 401 Unauthorized 404 Not Found	OK with no response body Unauthorized; credential entry failed or missing Resource Collection does not exist; this IP Address is running an HTTP service, but does not recognize this resource

HEAD /Compute/Devices/{id}/Adapters/{id}/Ports/{id}/ - Ping a specific Port on a specific Adapter

URI:	**/Compute/Devices/{id}/Adapters/{id}/Ports/{id}/**	**Description**
Method	HEAD	Pings this Port
Request Header	Authorization (Mandatory)	The request requires either Basic or Digest authorization

Query Parameters		
Response	200 OK 401 Unauthorized 404 Not Found	OK with no response body Unauthorized; credential entry failed or missing Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource

OPTIONS /Compute/Devices/{id}/Adapters/{id}/Ports/- Determine Allowable Methods for a Collection of Ports on a specific Adapter

URI:	**/Compute/Devices/{id}/Adapters/{id}/Ports/**	**Description**
Method	OPTIONS	Get the allowable HTTP Methods list for this resource
Request Header		
Query Parameters		
Response	200 OK 404 Not Found	OK & the "Allow" list of methods in the response header. The response body provides the JSON Schema for this resource Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource

OPTIONS /Compute/Devices/{id}/Adapters/{id}/Ports/{id}/ - Determine Allowable Methods for a specific Port on a specific Adapter

URI:	**/Compute/Devices/{id}/Adapters/{id}/Ports/{id}/**	**Description**
Method	OPTIONS	Get the allowable HTTP Methods list for this resource
Request Header		
Query Parameters		
Response	200 OK 404 Not Found	OK & the "Allow" list of methods in the response header. The

		response body provides the JSON Schema for this resource Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource

Methods Not Allowed on **/Compute/Devices/{id}/Adapters/{id}/Ports/** Collection

URI:	**/Compute/Devices/{id}/Adapters/{id}/Ports/**	**Description**
Method	POST, PUT, DELETE	Methods that are not allowed
Request Header		
Query Parameters		
Response	405 Method Not Allowed	Method not allowed for this Resource; returns "Allow" header with allowable methods list

Methods Not Allowed on **/Compute/Devices/{id}/Adapters/{id}/Ports/{id}/** Instance

URI:	**/Compute/Devices/{id}/Adapters/{id}/Ports/{id}/**	**Description**
Method	POST, DELETE	Methods that are not allowed
Request Header		
Query Parameters		
Response	405 Method Not Allowed	Method not allowed for this Resource; returns "Allow" header with allowable methods list

Collection Resource Attributes

Attribute	**Type**	**Requirement**	**User Configurable**	**Possible Values**	**Description**	**Model Correspondence**
Self	URI String	Mandatory	No	Free-Form URI Format 256 Chars	Describes the fully qualified	{ IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking }

					URI link for the Collection	
Members	String Array	Optional	No	Resource Collection (0 - n entries)	The array of Resource Instances (see Instance Resource Attributes Table for Instance Attribute details)	

Instance Resource Attributes

Attribute	Type	Requirement	User Configurable	Possible Values	Description	Model Correspondence
Self	URI String	Mandatory	No	Free-Form URI Format 256 Chars	Describes the fully qualified URI link	{ IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking }
Id	String	Mandatory	No	Free-Form 256 Chars	The resource identifier that is unique in space and time	{ DMTF | CIM | LogicalElement.DeviceID }
Status.State.Name	String	Mandatory	No	"Unknown" "Not available" "Servicing" "Starting" "Stopping" "Stopped" "Aborted"	The current state value of this Resource	{ DMTF | CIM | ManagedSystemElement.State }

				"Dormant" "Completed" "Migrating" "Emigrating" "Immigrating" "Snapshotting" "Shutting down" "In test" "Transitioning" "In service"		
Status.State.ID	Number	Mandatory	No	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16	The current state value map of this Resource	{ DMTF | CIM | ManagedSystemElement.State }
Status.Health[].Name	String (1..*)	Mandatory	No	"Unknown" "OK" "Degraded/Warning" "Minor failure" "Major failure" "Critical failure" "Non-recoverable error" "Not installed"	The current health value of this Resource. There can be 1 or more Name entries.	{ DMTF | CIM | ManagedSystemElement.HealthState }

				"Not available" "No access allowed"		
Status.Health[].ID	Number (1..*)	Mandatory	No	0 5 10 15 20 25 30 65536 65537 65538	The current health value map of this Resource. There can be 1 or more Id entries.	{ DMTF | CIM | ManagedSystemElement.HealthState }
AddressOrigin.Name	String	Mandatory	Yes	"UNKNOWN" "OTHER" "NOT APPLICABLE" "STATIC" "DHCP"	Information value as to where the address is supplied	{ DMTF | CIM | DHCPSettingData.AddressOrigin }
AddressOrigin.ID	Number	Mandatory	Yes	0 1 2 3 4	Information value map as to where the address is supplied	{ DMTF | CIM | DHCPSettingData.AddressOrigin }
IPv4Address	String	Mandatory	Yes	IPv4 4-Octet pattern + CIDR mask	The Network IP Address for this Device;	{ DMTF | CIM | StaticIPAssignmentSettingData.IPv4Address }

					IPv4 type NOTE: 0.0.0.0/8 & 127.0.0.0/8 are reserved and rejected	
IPGateway	String	Optional	Yes	IPv4 4-Octet pattern	The Network IP Gateway address setting	{ DMTF | CIM | StaticIPAssignmentSettingData.GatewayIPv4Address }
MACAddress	String	Mandatory	No	6-hex digit HW address		
NetworkType.Name	String	Mandatory	No	"LAN" "WLAN" "WAN" "MAN" "SAN" "VLAN" "Ethernet Network" "IP Network" "IPv4 Network" "IPv6 Network"	The network type value	{ DMTF | CIM | System.AdminDomain.Network }
NetworkType.ID	Number	Mandatory	No	0 1 2 3 4 5 6 7 8	The network type value map	{ DMTF | CIM | System.AdminDomain.Network }

MTUBytes	Number	Mandatory	Yes	Range: 46 - 9216 (default: 1500)	The current Maximum Transfer Bytes value	{ DMTF | CIM | System.AdminDomain.Network.NetworkVLAN.TransmissionSize }
DNS	String Array	Optional	Yes	IPv4 4-Octet pattern	List of DNS server addresses	{ DMTF | CIM | IPAssignmentSettingData.DNSSettingData.DNSServerAddresses }

EXAMPLES

GET Ports Example - Specific Instance Based on the Identifier

Request

Method	URI	Query String	Request Header	Request Body
GET	/Compute/Devices/{id}/Adapters/management/Ports/{id}		Authorization (Mandatory) If-None-Match: {etag} (Optional)	

Response

Precondition	Response Code	Response Header	Response Body
Credentials invalid or missing	401 Unauthorized		
Resource Id does not exist	404 Not Found		

If-None-Match true	304 Not Modified		

If-None-Match false or missing	200 OK	Content-Type: application/json
		ETag: {etag}
			{
			"Self": "http://10.20.30.40/Compute/Devices/0123456789/Adapters/management/Ports/01_0a_f7_95_79_3c/",
			"ID": "01_0a_f7_95_79_3c",
			"Status": {
			"State": {
			"ID": 16,
			"Name": "In service"
			},
			"Health": [{
			"ID": 5,
			"Name": "OK"
			}]
			},
			"AddressOrigin": {
			"ID": 4,
			"Name": "DHCP"
			},
			"IPv4Address": "10.20.30.40/22",
			"IPGateway": "",
			"MACAddress": "01:0a:f7:95:79:3c",
			"NetworkType": {
			"ID": 8,
			"Name": "IPv4 Network"
			},
			"MTUBytes": 1500
			}

PUT Port Example - Change the MTUBytes of a specific Port

Request

Method	URI	Query String	Request Header	Request Body

PUT	/Compute/Devices/{id}/Adapters/{id}/Ports/{id}		Authorization (Mandatory)
			If-Match: {etag} (Mandatory)
				{
				"MTUBytes" : 5000
				}

Response

Precondition	Response Code	Response Header	Response Body
Credentials invalid or missing	401 Unauthorized		
Resource Id does not exist	404 Not Found		
Bad/Missing Parameter in Body	400 Bad Request		
System could not process the request	500 Internal Server Error		
If-Match false	412 Precondition Failed		
If-Match missing	428 Precondition Required		

If-Match true	200 OK	Content-Type: application/json	{
			"Self": "http://10.20.30.40/Compute/Devices/0123456789/Adapters/management/Ports/01_0a_f7_95_79_3c/",
			"ID": "01_0a_f7_95_79_3c",
			"Status": {
			"State": {
			"ID": 16,
			"Name": "In service"
			},

```
                "Health": [{
                        "ID": 5,
                        "Name": "OK"
                }]
        },
        "AddressOrigin": {
                "ID": 4,
                "Name": "DHCP"
        },
        "IPv4Address": "10.20.30.40/22",
        "IPGateway": "",
        "MACAddress": "01:0a:f7:95:79:3c",
        "NetworkType": {
                "ID": 8,
                "Name": "IPv4 Network"
        },
        "MTUBytes": 5000
}
```


9.5.5 Media

Description

The Device-level methods and attributes return information about the Media and do certain operations.

Allowable Methods

URI	Allowable Methods
/Compute/Devices/{id}/Media/	GET, HEAD, OPTIONS
/Compute/Devices/{id}/Media/{id}/	GET, HEAD, OPTIONS

GET /Compute/Devices/{id}/Media/ - Retrieve all Media

URI:	/Compute/Devices/{id}/Media/	Description
Method	GET	Returns the Collection of Media
Request Header	Authorization (Mandatory) If-None-Match (Optional)	The request requires either Basic or Digest authorization The request is conditionally processed only if the current ETag for the resource does not match the ETag passed in this header
Query Parameters		

Response	200 OK 304 Not Modified 401 Unauthorized 404 Not Found	OK & List of Media + ETag Header If-None-Match Etag value matched, therefore no Response Body will be returned Unauthorized; credential entry failed or missing Resource Collection does not exist; this IP Address is running an HTTP service, but does not recognize this resource

GET /Compute/Devices/{id}/Media/{id}/ - Retrieve a specific Medium

URI:	**/Compute/Devices/{id}/Media/{id}/**	**Description**
Method	GET	Returns the information regarding a specific Medium based on the {id} in the URI address string
Request Header	Authorization (Mandatory) If-None-Match (Optional)	The request requires either Basic or Digest authorization The request is conditionally processed only if the current ETag for the resource does not match the ETag passed in this header
Query Parameters		
Response	200 OK 401 Unauthorized 404 Not Found	OK & Adapter information in the response body + ETag Header Unauthorized; credential entry failed or missing Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource

HEAD /Compute/Devices/{id}/Media/ - Ping the Collection of Media

URI:	**/Compute/Devices/{id}/Media/**	**Description**
Method	HEAD	Pings this Media Collection
Request Header	Authorization (Mandatory)	The request requires either Basic or Digest authorization
Query Parameters		
Response	200 OK 401 Unauthorized 404 Not Found	OK with no response body Unauthorized; credential entry failed or missing

		Resource Collection does not exist; this IP Address is running an HTTP service, but does not recognize this resource

HEAD /Compute/Devices/{id}/Media/{id}/ - Ping a specific Medium

URI:	/Compute/Devices/{id}/Media/{id}/	Description
Method	HEAD	Pings this Medium
Request Header	Authorization (Mandatory)	The request requires either Basic or Digest authorization
Query Parameters		
Response	200 OK 401 Unauthorized 404 Not Found	OK with no response body Unauthorized; credential entry failed or missing Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource

OPTIONS /Compute/Devices/{id}/Media/- Determine Allowable Methods for a Collection of Media

URI:	/Compute/Devices/{id}/Media/	Description
Method	OPTIONS	Get the allowable HTTP Methods list for this resource
Request Header		
Query Parameters		
Response	200 OK 404 Not Found	OK & the "Allow" list of methods in the response header. The response body provides the JSON Schema for this resource Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource

OPTIONS /Compute/Devices/{id}/Media/{id}/ - Determine Allowable Methods for a specific Medium

URI:	/Compute/Devices/{id}/Media/{id}/	Description

Method	OPTIONS	Get the allowable HTTP Methods list for this resource
Request Header		
Query Parameters		
Response	200 OK 404 Not Found	OK & the “Allow” list of methods in the response header. The response body provides the JSON Schema for this resource Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource

Methods Not Allowed on **/Compute/Devices/{id}/Media/** Collection

URI:	**/Compute/Devices/{id}/Media/**	**Description**
Method	POST, PUT, DELETE	Methods that are not allowed
Request Header		
Query Parameters		
Response	405 Method Not Allowed	Method not allowed for this Resource; returns "Allow" header with allowable methods list

Methods Not Allowed on **/Compute/Devices/{id}/Media/{id}/** Instance

URI:	**/Compute/Devices/{id}/Media/{id}/**	**Description**
Method	POST, PUT, DELETE	Methods that are not allowed
Request Header		
Query Parameters		
Response	405 Method Not Allowed	Method not allowed for this Resource; returns "Allow" header with allowable methods list

Collection Resource Attributes

Attribute	**Type**	**Requirement**	**User Configurable**	**Possible Values**	**Description**	**Model Correspondence**

Self	URI String	Mandatory	No	Free-Form URI Format 256 Chars	Describes the fully qualified URI link for the Collection	{ IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking }
Members	String Array	Optional	No	Resource Collection (0 - n entries)	The array of Resource Instances (see Instance Resource Attributes Table for Instance Attribute details)	

Instance Resource Attributes

Attribute	Type	Requirement	User Configurable	Possible Values	Description	Model Correspondence
Self	URI String	Mandatory	No	Free-Form URI Format 256 Chars	Describes the fully qualified URI link	{ IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking }
Id	String	Mandatory	No	Free-Form 256 Chars	The resource identifier that is unique in space and time	{ DMTF | CIM | LogicalElement.DeviceID }
SerialNumber	String	Mandatory	No	Free-Form 64 Chars	The serial number for this Resource	{ DMTF | CIM | ManagedSystemElement.SerialNumber }
Model	String	Mandatory	No	Free-Form 64 Chars	The model name or number	{ DMTF | CIM | ManagedSystemElement.Model }

					for this Resource	
OperatingSystem.Name	String	Optional	No	Free-Form 128 Chars	The Operating System or Firmware Name	{ DMTF | CIM | System.OperatingSystem.Name }
OperatingSystem.Version	String	Mandatory	No	Free-Form 128 Chars	The Operating System or Firmware Version	{ DMTF | CIM | System.OperatingSystem.Version }
OperatingSystem.OSType.Name	String	Mandatory	No	Free-Form 128 Chars	The Operating System or OS Type value	{ DMTF | CIM | System.OperatingSystem.Type }
OperatingSystem.OSType.Name	Number	Mandatory	No	0 - n	The Operating System or OS Type value map	{ DMTF | CIM | System.OperatingSystem.Type }
Manufacturer	String	Mandatory	No	Free-Form 64 Chars	The vendor name for this Resource	{ DMTF | CIM | ManagedSystemElement.Manufacturer }
Protocol.Name	String	Mandatory	No	Free-Form 128 Chars	The Operating System	{ DMTF | CIM | System.OperatingSystem.Name }

					or Firmware Name	
Protocol.ID	Number	Mandatory	No	Free-Form 128 Chars	The Operating System or Firmware Version	{ DMTF | CIM | System.OperatingSystem.Version }
Status.State.Name	String	Mandatory	No	"Unknown" "Not available" "Servicing" "Starting" "Stopping" "Stopped" "Aborted" "Dormant" "Completed" "Migrating" "Emigrating" "Immigrating" "Snapshotting" "Shutting down" "In test" "Transitioning" "In service"	The current state value of this Resource	{ DMTF | CIM | ManagedSystemElement.State }
Status.State.ID	Number	Mandatory	No	0 1 2 3 4 5 6 7 8 9 10 11 12 13	The current state value map of this Resource	{ DMTF | CIM | ManagedSystemElement.State }

				14 15 16		
Status.Health[].Name	String (1..*)	Mandatory	No	"Unknown" "OK" "Degraded/Warning" "Minor failure" "Major failure" "Critical failure" "Non-recoverable error" "Not installed" "Not available" "No access allowed"	The current health value of this Resource. There can be 1 or more Name entries.	{ DMTF | CIM | ManagedSystemElement.HealthState }
Status.Health[].ID	Number (1..*)	Mandatory	No	0 5 10 15 20 25 30 65536 65537 65538	The current health value map of this Resource. There can be 1 or more Id entries.	{ DMTF | CIM | ManagedSystemElement.HealthState }
Status.Details[]	String Array	Mandatory	No	Free-Form 32 Characters per Array entry. If no entry, then “None”.	The current Health Details of the Device	{ DMTF | CIM | ManagedSystemElement.DetailedStatus }

EXAMPLES

GET Media Example - Specific Instance Based on the Identifier

Request

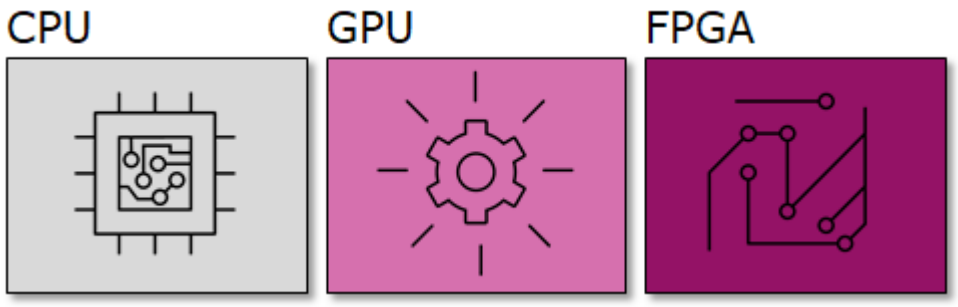
Method	URI	Query String	Request Header	Request Body
GET	/Compute/Devices/{id}/Media/{id}/		Authorization (Mandatory) If-None-Match: {etag} (Optional)	

Response

Precondition	Response Code	Response Header	Response Body
Credentials invalid or missing	401 Unauthorized		
Resource Id does not exist	404 Not Found		
If-None-Match true	304 Not Modified		
If-None-Match false or missing	200 OK	Content-Type: application/json ETag: {etag}	{ "Self": "http://10.20.30.40/Compute/Devices/0123456789/Media/1000235232013e7d/", "ID": "1000235232013e7d", "Status": { "State": { "ID": 16, "Name": "In service" }, "Health": [{ "ID": 5, "Name": "OK" }], "Details": ["None"] }, "Capacity": 6001175126016, "Name": "Media1", "Manufacturer": "Acme", "Model": "12345", "Protocol": {

```
                "ID": 65537,
                "Name": "NVMe"
        },
        "OperatingSystem": {
                "Self":
                "http://10.20.30.40/Storage/Devices/0123456789/Media
                /1000235232013e7d/OperatingSystem/",
                "Name": "",
                "OSType": {
                        "ID": 59,
                        "Name": Dedicated"
                },
                "Version": "FW-Rev0"
        },
        "SerialNumber": "1EG0P6JA"
}
```


9.6 Compute Devices - Logical



This table shows the logical and virtual resources for a compute device. The set of resource URIs is as follows:

URI Pattern	Description
/Compute/Devices/{id}/Volumes/	Collection of Compute Volumes available within this Compute Device
/Compute/Devices/{id}/Volumes/{id}/	A specific Compute Volume carved from a Storage Pool available within this Compute Device
/Compute/Devices/{id}/Pools/	Collection of Pools available within this Compute Device
/Compute/Devices/{id}/Pools/{id}/	A specific Pool available within this Compute Device
/Compute/Devices/{id}/Location/	The Location information for the Compute Device

/Compute/Devices/{id}/SystemClock/	The System Clock information for this Compute Device
/Compute/Devices/{id}/Accounts/	Collection of Accounts available within this Compute Device
/Compute/Devices/{id}/Accounts/{id}/	A specific Account available within this Compute Device
/Compute/Devices/{id}/OperatingSystem/	The local Operating System information for this Compute Device
/Compute/Devices/{id}/Jobs/	Collection of Jobs available within this Compute Device
/Compute/Devices/{id}/Jobs/{id}/	A specific Job available within this Compute Device
/Compute/Devices/{id}/Performance/	The Performance information within this Compute Device

9.6.1 Volumes

Description

The Device-level methods and attributes return information about the Storage Volume(s) and do certain operations.

Allowable Methods

URI	Allowable Methods
/Compute/Devices/{id}/Volumes/	GET, POST, HEAD, OPTIONS
/Compute/Devices/{id}/Volumes/{id}/	GET, PUT, DELETE, HEAD, OPTIONS

GET /Compute/Devices/{id}/Volumes/ - Retrieve all Compute Volumes

URI:	/Compute/Devices/{id}/Volumes/	Description
Method	GET	Returns the Collection of Volumes
Request Header	Authorization (Mandatory) If-None-Match (Optional)	The request requires either Basic or Digest authorization The request is conditionally processed only if the current ETag for the resource does not match the ETag passed in this header
Query Parameters		
Response	200 OK 304 Not Modified 401 Unauthorized	OK & List of Volumes + ETag Header If-None-Match Etag value matched, therefore no Response Body will be returned

	404 Not Found	Unauthorized; credential entry failed or missing Resource Collection does not exist; this IP Address is running an HTTP service, but does not recognize this resource

GET /Compute/Devices/{id}/Volumes/{Id}/ - Retrieve a specific Compute Volume

URI:	/Compute/Devices/{id}/Volumes/{id}/	Description
Method	GET	Returns the information regarding a specific Volume based on the {id} in the URI address string
Request Header	Authorization (Mandatory) If-None-Match (Optional)	The request requires either Basic or Digest authorization The request is conditionally processed only if the current ETag for the resource does not match the ETag passed in this header
Query Parameters		
Response	200 OK 401 Unauthorized 404 Not Found	OK & Volume information in the response body + ETag Header Unauthorized; credential entry failed or missing Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource

POST/Compute/Devices/{id}/Volumes/ - Create a new Compute Volume

URI:	/Compute/Devices/{id}/Volumes/{id}	Description
Method	POST	Create a new Volume
Request Header	Authorization (Mandatory)	The request requires either Basic or Digest authorization
Query Parameters		

Request Body	{
	"Name": "volume_name",
	"Capacity" : bytes,
	"Description": "desc",
	"PoolID": pool_id
	}
		JSON BODY START
		Name of the Volume
		Size of the Volume in bytes
		User description for the Volume
		The Pool ID from which the Volume is created (values can be 0, 1, 2, 3, 4, 5, 6, 7)

		JSON BODY END
Response	201 Created 400 Bad Request 401 Unauthorized 409 Conflict 500 Internal Server Error	Created & Volume information in the response body + ETag Header + new URI in Location Header Bad Request (typically a faulty parameter) Unauthorized; credential entry failed or missing A new parameter value already exists (e.g., Name) System could not process the request

PUT /Compute/Devices/{id}/Volumes/{id} - Modify specific Compute Volume attributes

URI:	**/Compute/Devices/{id}/Volumes/{id}**	**Description**
Method	PUT	Modify an attribute or execute an operation for this Volume
Request Header	Authorization (Mandatory) If-Match (Mandatory)	The request requires either Basic or Digest authorization The request is conditionally processed only if the current ETag for the resource matches the ETag passed in this header
Query Parameters		

Request Body	{
	"Name": "volume_name",
	"Description": "desc",
	}
		JSON BODY START
		Name of the Volume
		User description for the Volume
		JSON BODY END

Response	200 OK 400 Bad Request 401 Unauthorized 404 Not Found 409 Conflict 412 Precondition Failed 428 Precondition Required 500 Internal Server Error	OK & Volume information in the response body + ETag Header Bad Request (typically a faulty parameter) Unauthorized; credential entry failed or missing The Resource doesn't exist A new parameter value already exists (e.g., Name) Indicates the "If-Match" Etag check failed Indicates the need for an "If-Match" conditional with an Etag value in the Request Header System could not process the request

HEAD /Compute/Devices/{id}/Volumes/ - Ping the Collection of Compute Volumes

URI:	/Compute/Devices/{id}/Volumes/	Description
Method	HEAD	Pings this Compute Volume Collection
Request Header	Authorization (Mandatory)	The request requires either Basic or Digest authorization
Query Parameters		
Response	200 OK 401 Unauthorized 404 Not Found	OK with no response body Unauthorized; credential entry failed or missing Resource Collection does not exist; this IP Address is running an HTTP service, but does not recognize this resource

HEAD /Compute/Devices/{id}/Volumes/{id}/ - Ping a specific Compute Volume

URI:	/Compute/Devices/{id}/Volumes/{id}/	Description
Method	HEAD	Pings this Compute Volume
Request Header	Authorization (Mandatory)	The request requires either Basic or Digest authorization
Query Parameters		
Response	200 OK 401 Unauthorized 404 Not Found	OK with no response body Unauthorized; credential entry failed or missing Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource

OPTIONS /Compute/Devices/{id}/Volumes/ - Determine Allowable Methods for a Collection of Compute Volumes

URI:	/Compute/Devices/{id}/Volumes/	Description
Method	OPTIONS	Get the allowable HTTP Methods list for this resource
Request Header		
Query Parameters		

Response	200 OK 404 Not Found	OK & the "Allow" list of methods in the response header. The response body provides the JSON Schema for this resource Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource

OPTIONS /Compute/Devices/{id}/Volumes/{Id}/ - Determine Allowable Methods for a specific Compute Volume

URI:	/Compute/Devices/{id}/Volumes/{id}/	Description
Method	OPTIONS	Get the allowable HTTP Methods list for this resource
Request Header		
Query Parameters		
Response	200 OK 404 Not Found	OK & the "Allow" list of methods in the response header. The response body provides the JSON Schema for this resource Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource

DELETE /Compute/Devices/{id}/Volumes/{id} - Delete specific Compute Volume

URI:	/Compute/Devices/{id}/Volumes/{id}	Description
Method	DELETE	Delete this Volume
Request Header	Authorization (Mandatory) If-Match (Mandatory)	The request requires either Basic or Digest authorization The request is conditionally processed only if the current ETag for the resource matches the ETag passed in this header
Query Parameters		
Request Body		
Response	204 No Content 401 Unauthorized 404 Not Found 412 Precondition Failed	Delete successful, no content in the response body Unauthorized; credential entry failed or missing

	428 Precondition Required 500 Internal Server Error	The Resource doesn't exist Indicates the "If-Match" Etag check failed Indicates the need for an "If-Match" conditional with an Etag value in the Request Header System could not process the request

Methods Not Allowed on **/Compute/Devices/{id}/Volumes/** Collection

URI:	**/Compute/Devices/{id}/Volumes/**	**Description**
Method	PUT, DELETE	Methods that are not allowed
Request Header		
Query Parameters		
Response	405 Method Not Allowed	Method not allowed for this Resource; returns "Allow" header with allowable methods list

Methods Not Allowed on **/Compute/Devices/{id}/Volumes/{id}/** Instance

URI:	**/Compute/Devices/{id}/Volumes/{id}/**	**Description**
Method	POST	Methods that are not allowed
Request Header		
Query Parameters		
Response	405 Method Not Allowed	Method not allowed for this Resource; returns "Allow" header with allowable methods list

Collection Resource Attributes

Attribute	**Type**	**Requirement**	**User Configurable**	**Possible Values**	**Description**	**Model Correspondence**
Self	URI String	Mandatory	No	Free-Form URI Format 256 Chars	Describes the fully qualified URI link for the Collection	{ IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking }

Members	String Array	Optional	No	Resource Collection (0 - n entries)	The array of Resource Instances (see Instance Resource Attributes Table for Instance Attribute details)	

Instance Resource Attributes

Attribute	Type	Requirement	User Configurable	Possible Values	Description	Model Correspondence
Self	URI String	Mandatory	No	Free-Form URI Format 256 Chars	Describes the fully qualified URI link	{ IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking }
Name	String	Mandatory	Yes	Free-Form 256 Chars	The user-defined name of this Volume	{ DMTF | CIM | ManagedSystemElement.Name }
UUID	String	Mandatory	No	Free-Form 256 Chars	The resource identifier that is unique in space and time	{ DMTF | CIM | LogicalElement.DeviceID }
TotalCapacity	Number	Mandatory	Yes	Integer Bytes	The total number of raw bytes for this Volume	{ DMTF | CIM | Physicial.PhysicalMedia.Capacity }
Description	String	Optional	Yes	Free-Form 64 Chars	The user-defined descripti	{ DMTF | CIM | ManagedElement.Description }

					on for this Volume	
CreateDate	datetime	Mandatory	No	Date and Time	The date and time the Volume was created	{ DMTF | CIM | ManagedSystemElement.InstallDate }
LastModified	datetime	Mandatory	No	Date and Time	The date and time the Volume was modified	{ DMTF | CIM | LogicalElement.TimeOfLastStateChange }
NQN	String	Mandatory	Yes	Fixed prefix with user-defined suffix	The fabric name for the Volume	{ WDC | OpenFlex| Volumes.Nqn }
Model	String	Mandatory	No	Alphanumeric values	The product ID for the Volume	{ DMTF | CIM | ManagedSystemElement.Model }
Manufacturer	String	Mandatory	No	"101c" (WDC)	The vendor ID for the Volume	{ DMTF | CIM | ManagedSystemElement.Manufacturer }
SerialNumber	String	Mandatory	No	Alphanumeric values	The serial number for the Volume	{ DMTF | CIM | ManagedSystemElement.SerialNumber }
AllowAnyHost	Boolean	Mandatory	Yes	true false	The host connection capability of the Volume	{ WDC | OpenFlex | Volumes.AllowAnyHost }

Status.State.Name	String	Mandatory	No	"Unknown" "Not available" "Servicing" "Starting" "Stopping" "Stopped" "Aborted" "Dormant" "Completed" "Migrating" "Emigrating" "Immigrating" "Snapshotting" "Shutting down" "In test" "Transitioning" "In service"	The current state value of this Resource	{ DMTF | CIM | ManagedSystemElement.State }
Status.State.ID	Number	Mandatory	No	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16	The current state value map of this Resource	{ DMTF | CIM | ManagedSystemElement.State }
Status.Health[].Name	String (1..*)	Mandatory	No	"Unknown" "OK" "Degraded/Warning" "Minor failure" "Major failure" "Critical failure" "Non-recoverable error" "Not installed"	The current health value of this Resource. There can be 1 or more Name entries.	{ DMTF | CIM | ManagedSystemElement.HealthState }

				"Not available" "No access allowed"		
Status.Health[].ID	Number (1..*)	Mandatory	No	0 5 10 15 20 25 30 65536 65537 65538	The current health value map of this Resource. There can be 1 or more Id entries.	{ DMTF | CIM | ManagedSystemElement.HealthState }

EXAMPLES

GET Volume Example - Specific Instance Based on the Identifier

Request

Method	URI	Query String	Request Header	Request Body
GET	/Compute/Devices/{id}/Volume/c4e91cab-9e4f-45b7-b206-9271f68c7e86		Authorization (Mandatory) If-None-Match: {etag} (Optional)	

Response

Precondition	Response Code	Response Header	Response Body
Credentials invalid or missing	401 Unauthorized		
Resource Id does not exist	404 Not Found		
If-None-Match true	304 Not Modified		

If-None-Match false or missing	200 OK	Content-Type: application/json
		ETag: {etag}
			{
			"Self": "http://10.20.30.40/Compute/Devices/0123456789/Volumes/c4e91cab-9e4f-45b7-b206-9271f68c7e86/",
			"AllowAnyHost": false,
			"Capacity": 1073741824,
			"CreateDate": "Thu Aug 23 13:10:27 2018",
			"Description": "",
			"LastModified": "Thu Aug 23 13:10:27 2018",
			"Name": "test",
			"NQN": "nqn.1992-05.com.acme:test",
			"Model": "x123",
			"SerialNumber": "SN000AF7957D74000005",
			"PoolID": 0,
			"Manufacturer": "Acme",
			"UUID": "c4e91cab-9e4f-45b7-b206-9271f68c7e86"
			}]
			}

9.6.2 Location

Description

The Device-level methods and attributes return information about the Location and do certain operations.

Allowable Methods

URI	Allowable Methods
/Compute/Devices/{id}/Location	GET, PUT, HEAD, OPTIONS

GET /Compute/Devices/{id}/Location- Retrieve the Location information

URI:	/Compute/Devices/{id}/Location	Description
Method	GET	Returns the information of the Location
Request Header	Authorization (Mandatory) If-None-Match (Optional)	The request requires either Basic or Digest authorization The request is conditionally processed only if the current ETag for the resource does not match the ETag passed in this header
Query Parameters		
Response	200 OK	OK & Location information in the response body

	304 Not Modified 401 Unauthorized 404 Not Found	If-None-Match Etag value matched, therefore no Response Body will be returned Unauthorized; credential entry failed or missing Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource

PUT /Compute/Devices/{id}/Location- Modify an attribute of the Location

URI:	/Compute/Devices/{id}/Location	Description
Method	PUT	Modify an attribute of the Location
Request Header	Authorization (Mandatory) If-Match (Mandatory)	The request requires either Basic or Digest authorization The request is conditionally processed only if the current ETag for the resource matches the ETag passed in this header
Query Parameters		

Request Body	{
	"Country" : "new_country",
	"Territory" : "new_territory",
	"State" : "new_state",
	"City" : "new_city",
	"Address1": "new_addr1",
	"Address2": "new_addr2",
	"Address3": "new_addr3",
	"PostalCode": "new_zip",
	"SiteName": "new_name",
	"Building": "new_bldg",
	"Room": "new_room",
	"Pod": "new_pod",
	"Rack": "new_row",
	"Shelf": "new_shelf",
	"Item": "new_item",
	"GPSCoords": "new_coords",
	"OtherLocationInfo":
	"new_info",
	}
		JSON BODY START
		Change the Country
		Change the Territory
		Change the State
		Change the City
		Change the Address1
		Change the Address2
		Change the Address3
		Change the PostalCode
		Change the SiteName
		Change the Building number or name
		Change the Room number or name
		Change the Pod number or name
		Change the Row number or name
		Change the Shelf number or name
		Change the Item
		Change the GPS coordinates
		Change the other location information
		JSON BODY END

Response	200 OK 400 Bad Request 401 Unauthorized 500 Internal Server Error	OK & Location information in the response body Bad Request (typically a faulty parameter) Unauthorized; credential entry failed or missing Resource could not execute the request

HEAD /Compute/Devices/{id}/Location- Ping the Location

URI:	/Compute/Devices/{id}/Location	Description
Method	HEAD	Pings the Location
Request Header	Authorization (Mandatory)	
Query Parameters		
Response	200 OK 401 Unauthorized 404 Not Found	OK with no response body Unauthorized; credential entry failed or missing Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource

OPTIONS /Compute/Devices/{id}/Location- Determine Allowable Methods for Location

URI:	/Compute/Devices/{id}/Location	Description
Method	OPTIONS	Get the allowable HTTP Methods list for this resource
Request Header		
Query Parameters		
Response	200 OK 404 Not Found	OK & the “Allow” list of methods in the response header. The response body provides the JSON Schema for this resource Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource

Methods Not Allowed on /Compute/Devices/{id}/Location

URI:	/Compute/Devices/{id}/Location	Description
Method	POST, DELETE	Methods that are not allowed
Request Header		

Query Parameters		
Response	405 Method Not Allowed	Method not allowed for this Resource

Resource Attributes

Attribute	Type	Requirement	User Configurable	Possible Values	Description	Model Correspondence
Self	String	Mandatory	No	Free-Form URI Format 256 Chars	Describes the fully qualified URI link	{ IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking }
Country	String	Optional	Yes	Free-Form 64 Chars	The Country name where this Device is located	{ DMTF | Redfish | SNIA | Swordfish | Location.Country }
Territory	String	Optional	Yes	Free-Form 64 Chars	The Territory name where this Device is located	{ DMTF | Redfish | SNIA | Swordfish | Location.Territory}
State	String	Optional	Yes	Free-Form 64 Chars	The State name where this Device is located	{ DMTF | Redfish | SNIA | Swordfish | Location.State}
City	String	Optional	Yes	Free-Form 64 Chars	The City name where this Device is located	{ DMTF | Redfish | SNIA | Swordfish | Location.City}
Address1	String	Optional	Yes	Free-Form 64 Chars	The first Address information where	{ DMTF | Redfish | SNIA | Swordfish | Location.Address1}

					this Device is located	
Address2	String	Optional	Yes	Free-Form 64 Chars	The second Address information where this Device is located as needed	{ DMTF | Redfish | SNIA | Swordfish | Location.Address2}
Address3	String	Optional	Yes	Free-Form 64 Chars	The third Address information where this Device is located as needed	{ DMTF | Redfish | SNIA | Swordfish | Location.Address3}
PostalCode	String	Optional	Yes	Free-Form 32Chars	The Postal or Zip Code name where this Device is located	{ DMTF | Redfish | SNIA | Swordfish | Location.PostalCode}
SiteName	String	Optional	Yes	Free-Form 32Chars	The friendly Site Name	{WDC | OpenFlex| Location.SiteName }
Building	String	Optional	Yes	Free-Form 32Chars	The Building name or number where this Device is located	{ DMTF | Redfish | SNIA | Swordfish | Location.Building}
Room	String	Optional	Yes	Free-Form 32Chars	The Room name or number in the Building where this Device is located	{ DMTF | Redfish | SNIA | Swordfish | Location.Room}

Pod	String	Optional	Yes	Free-Form 32Chars	The Pod name or number in the Room this Device is located as needed	{WDC | OpenFlex | Location.Pod}
Row	String	Optional	Yes	Free-Form 32Chars	The Row name or number in the Room or Pod this Device is located	{ DMTF | Redfish | SNIA | Swordfish | Location.Row}
Rack	String	Optional	Yes	Free-Form 32Chars	The Rack name or number in the Row this Device is located	{ DMTF | Redfish | SNIA | Swordfish | Location.Rack}
Shelf	String	Optional	Yes	Free-Form 32Chars	The Shelf name or number of the Rack this Device is located	{ DMTF | Redfish | SNIA | Swordfish | Location.Shelf}
Device	String	Optional	Yes	Free-Form 32Chars	The Device name or number in the Shelf this Device is located as needed	{WDC | OpenFlex| Location.Device }
Item	String	Optional	Yes	Free-Form 32Chars	The Item name indicating the Shelf units or dimension for this Device	{ DMTF | Redfish | SNIA | Swordfish | Location.Item}
GPSCoords	String	Optional	Yes	Decimal Latitude,	The GPS coordinate	{ DMTF | Redfish | SNIA | Swordfish | Location.GPSCoords}

				Decimal Longitude Format	s of the location of this Device	
OtherLocationInfo	String	Optional	Yes	Free-Form 64 Chars	A place-holder for other location information	{ DMTF | Redfish | SNIA | Swordfish | Location.OtherLocationInfo }

EXAMPLES

GET Location Example - Specific Instance Based on the Identifier

Request

Method	URI	Query String	Request Header	Request Body
GET	/Compute/Devices/{id}/Location		Authorization (Mandatory) If-None-Match: {etag} (Optional)	

Response

Precondition	Response Code	Response Header	Response Body
Credentials invalid or missing	401 Unauthorized		
Resource Id does not exist	404 Not Found		
If-None-Match true	304 Not Modified		
If-None-Match false or missing	200 OK	Content-Type: application/json ETag: {etag}	{ "Self": "http://10.20.30.40/Storage/Devices/0123456789/Location/", "Country": "USA", "Territory": "", "State": "NV", "City": "Coyote Springs", "Address1": "123 Hwy 93",

			"Address2": "Suite -200", "Address3":"", "PostalCode": "89025", "SiteName": "Acme DataCenter 1", "Building": "1", "Room": "1", "Pod": "p2", "Rack": "r02", "Shelf" : "30", "Device": "3", "Item": "Rack Units", "GPSCoords": "36.821768, -114.937472", "OtherLocationInfo": "This is other info" }

PUT Location Example - Change the City

Request

Method	URI	Query String	Request Header	Request Body

PUT	/Compute/Devices/{id}/Location		Authorization (Mandatory)
			If-Match: {etag} (Mandatory)
				{
				"City" : "COS"
				}

Response

Precondition	Response Code	Response Header	Response Body
Credentials invalid or missing	401 Unauthorized		
Resource Id does not exist	404 Not Found		
Bad/Missing Parameter in Body	400 Bad Request		
System could not	500 Internal Server Error		

process the request			
If-Match false	412 Precondition Failed		
If-Match missing	428 Precondition Required		

If-Match true	200 OK	Content-Type: application/json	{
			"Self": "http://10.20.30.40/Compute/Devices/12345/Location/",
			"Country": "USA",
			"Territory": "",
			"State": "Colorado",
			"City": "COS",
			"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",
			"Item": "Rack Units",
			"GPSCoords": "38.9838684,-104.8062493",
			"OtherLocationInfo": "This is other info"
			
			}

9.6.3 System Clock

Description

The Device-level methods and attributes return information about the System Clock and do certain operations.

Allowable Methods

URI	Allowable Methods
/Compute/Devices/{id}/SystemClock	GET, PUT, HEAD, OPTIONS

GET /Compute/Devices/{id}/SystemClock - Retrieve the System Clock information

URI:	**/Compute/Devices/{id}/SystemClock**	**Description**
Method	GET	Returns the information of the System Clock
Request Header	Authorization (Mandatory)	
Query Parameters		
Response	200 OK 401 Unauthorized 404 Not Found	OK & System Clock information in the response body Unauthorized; credential entry failed or missing Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource

PUT /Compute/Devices/{id}/SystemClock - Modify an attribute of the System Clock

URI:	**/Compute/Devices/{id}/SystemClock**	**Description**
Method	PUT	Modify an attribute of the System Clock
Request Header	Authorization (Mandatory)	
Query Parameters		

Request Body	{
	"Date" : "new_date",
	"Time" : "new_time",
	"TimeZone" : "new_tz",
	"DST" : "Enabled | Disabled"
	}
		JSON BODY START
		Change the Date
		Change the Time
		Change the TimeZone
		Change the Daylight Savings Time setting
		JSON BODY END

Response	200 OK 400 Bad Request 401 Unauthorized 500 Internal Server Error	OK & System Clock information in the response body Bad Request (typically a faulty parameter) Unauthorized; credential entry failed or missing Resource could not execute the request

HEAD /Compute/Devices/{id}/SystemClock - Ping the System Clock

URI:	/Compute/Devices/{id}/SystemClock	Description
Method	HEAD	Pings the System Clock
Request Header	Authorization (Mandatory)	
Query Parameters		
Response	200 OK 401 Unauthorized 404 Not Found	OK with no response body Unauthorized; credential entry failed or missing Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource

OPTIONS /Compute/Devices/{id}/SystemClock - Determine Allowable Methods for System Clock

URI:	/Compute/Devices/{id}/SystemClock	Description
Method	OPTIONS	Get the allowable HTTP Methods list for this resource
Request Header		
Query Parameters		
Response	200 OK 404 Not Found	OK & the "Allow" list of methods in the response header. The response body provides the JSON Schema for this resource Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource

Methods Not Allowed on **/Compute/Devices/{id}/SystemClock**

URI:	/Compute/Devices/{id}/SystemClock	Description
Method	POST, DELETE	Methods that are not allowed
Request Header		

Query Parameters		
Response	405 Method Not Allowed	Method not allowed for this Resource

Resource Attributes

Attribute	Type	Requirement	User Configurable	Possible Values	Description	Model Correspondence
Self	String	Mandatory	No	Free-Form URI Format 256 Chars	Describes the fully qualified URI link	{ IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking }
Date	String	Mandatory	Yes	Free-Form 256 Chars	The current Date	{ DMTF | CIM | OperatingSystem.LocalDateTime }
Time	String	Mandatory	Yes	Free-Form 256 Chars	The current Time	{ DMTF | CIM | OperatingSystem.LocalDateTime }
TimeZone	String	Mandatory	Yes	Free-Form 64 Chars	The current Time Zone	{ DMTF | CIM | OperatingSystem.CurrentTimeZone }
TimeZoneSetting	String	Mandatory	No	Free-Form 64 Chars	The current Time Zone Setting	{ DMTF | CIM | OperatingSystem.CurrentTimeZone }
DST	String	Mandatory	Yes	"Enabled" "Disabled" "Unknown"	The current Day Light Savings Time setting	{ DMTF | CIM | OperatingSystem.CurrentTimeZone }
Uptime.Duration	String	Mandatory	No		The current uptime value in ISO 8601 format	{ ISO | 8601| Duration }
Uptime.Days	Number	Mandatory	No	0-n	The current	{ ISO | 8601| Duration }

					uptime Days since boot	
Uptime.Hours	Number	Mandatory	No	0-23	The current uptime Hours since boot	{ ISO | 8601| Duration }
Uptime.Minutes	Number	Mandatory	No	0-59	The current uptime Minutes since boot	{ ISO | 8601| Duration }
Uptime.Seconds	Number	Mandatory	No	0-59	The current uptime Seconds since boot	{ ISO | 8601| Duration }

EXAMPLES

GET SystemClock Example

Request

Method	URI	Query String	Request Header	Request Body
GET	/Compute/Devices/{id}/SystemClock		Authorization (Mandatory)	

Response

Precondition	Response Code	Response Header	Response Body
Credentials invalid or missing	401 Unauthorized		
Success	200 OK	Content-Type: application/json	{ "Self": "http://10.20.30.40/Compute/Devices/12345/SystemClock/", "Date": "23-Aug-2018", "Time": "10:13:18", "TimeZone": "(UTC-6.00) MDT",

			"TimeZoneSetting": "MDT",
			"DST": "Enabled",
			"Uptime": {
			"Duration": "P0DT3H20M38S",
			"Days": 0,
			"Hours": 3,
			"Minutes": 20,
			"Seconds": 38
			}
			}

PUT SystemClock Example - Change the Date

Request

Method	URI	Query String	Request Header	Request Body

PUT	/Compute/Devices/{id}/SystemClock		Authorization (Mandatory)	{
				"Date" : "24-Aug-2018"
				}

Response

Precondition	Response Code	Response Header	Response Body
Credentials invalid or missing	401 Unauthorized		
Bad/Missing Parameter in Body	400 Bad Request		
System could not process the request	500 Internal Server Error		
Success	200 OK	Content-Type: application/json	{ "Self": "http://10.20.30.40/Compute/Devices/12345/SystemClock/", "Date": "24-Aug-2018", "Time": "10:14:18", "TimeZone": "(UTC-6.00) MDT",

			"TimeZoneSetting": "MDT",
			"DST": "Enabled",
			"Uptime": {
			"Duration": "P0DT3H20M38S",
			"Days": 0,
			"Hours": 3,
			"Minutes": 21,
			"Seconds": 38
			}
			}

9.6.4 Accounts

Description

The Device-level methods and attributes return information about the Account(s) and do certain operations.

Allowable Methods

URI	Allowable Methods
/Compute/Devices/{id}/Accounts/	GET, POST, HEAD, OPTIONS
/Compute/Devices/{id}/Accounts/{id}/	GET, PUT, DELETE, HEAD, OPTIONS

GET /Compute/Devices/{id}/Accounts/ - Retrieve all Accounts

URI:	/Compute/Devices/{id}/Accounts/	Description
Method	GET	Returns the Collection of Accounts
Request Header	Authorization (Mandatory) If-None-Match (Optional)	The request requires either Basic or Digest authorization The request is conditionally processed only if the current ETag for the resource does not match the ETag passed in this header
Query Parameters		
Response	200 OK 304 Not Modified 401 Unauthorized 404 Not Found	OK & List of Account + ETag Header If-None-Match Etag value matched, therefore no Response Body will be returned Unauthorized; credential entry failed or missing Resource Collection does not exist; this IP Address is running an HTTP service, but does not recognize this resource

GET /Compute/Devices/{id}/Accounts/{Id}/ - Retrieve a specific Account

URI:	/Compute/Devices/{id}/Accounts/{id}/	Description
Method	GET	Returns the information regarding a specific Account based on the {id} in the URI address string
Request Header	Authorization (Mandatory) If-None-Match (Optional)	The request requires either Basic or Digest authorization The request is conditionally processed only if the current ETag for the resource does not match the ETag passed in this header
Query Parameters		
Response	200 OK 304 Not Modified 401 Unauthorized 404 Not Found	OK & Account information in the response body + ETag Header If-None-Match Etag value matched, therefore no Response Body will be returned Unauthorized; credential entry failed or missing Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource

POST/Compute/Devices/{id}/Accounts/ - Create a new Account

URI:	/Compute/Devices/{id}/Accounts/{id}	Description
Method	POST	Create a new Account
Request Header	Authorization (Mandatory)	The request requires either Basic or Digest authorization
Query Parameters		

Request Body	{
	"Name": "account_name",
	}
		JSON BODY START
		Name of the Account
		JSON BODY END

Response	201 Created 400 Bad Request 401 Unauthorized 409 Conflict 500 Internal Server Error	Created & Account information in the response body + ETag Header + new URI in Location Header Bad Request (typically a faulty parameter)

		Unauthorized; credential entry failed or missing A new parameter value already exists (e.g., Name) System could not process the request

PUT /Compute/Devices/{id}/Accounts/{id} - Modify specific Account attributes

URI:	/Compute/Devices/{id}/Accounts/{id}	Description
Method	PUT	Modify an attribute or execute an operation for this Account
Request Header	Authorization (Mandatory) If-Match (Mandatory)	The request requires either Basic or Digest authorization The request is conditionally processed only if the current ETag for the resource matches the ETag passed in this header
Query Parameters		

Request Body	{
	"Name": "account_name"
	}
		JSON BODY START
		Name of the Account
		JSON BODY END

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

HEAD /Compute/Devices/{id}/Accounts/ - Ping the Collection of Accounts

URI:	/Compute/Devices/{id}/Accounts/	Description
Method	HEAD	Pings this Account Collection
Request Header	Authorization (Mandatory)	The request requires either Basic or Digest authorization

Query Parameters		
Response	200 OK 401 Unauthorized 404 Not Found	OK with no response body Unauthorized; credential entry failed or missing Resource Collection does not exist; this IP Address is running an HTTP service, but does not recognize this resource

HEAD /Compute/Devices/{id}/Accounts/{id}/ - Ping a specific Account

URI:	/Compute/Devices/{id}/Accounts/{id}/	Description
Method	HEAD	Pings this Account
Request Header	Authorization (Mandatory)	The request requires either Basic or Digest authorization
Query Parameters		
Response	200 OK 401 Unauthorized 404 Not Found	OK with no response body Unauthorized; credential entry failed or missing Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource

OPTIONS /Compute/Devices/{id}/Accounts/ - Determine Allowable Methods for a Collection of Accounts

URI:	/Compute/Devices/{id}/Accounts/	Description
Method	OPTIONS	Get the allowable HTTP Methods list for this resource
Request Header		
Query Parameters		
Response	200 OK 404 Not Found	OK & the “Allow” list of methods in the response header. The response body provides the JSON Schema for this resource Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource

OPTIONS /Compute/Devices/{id}/Accounts/{Id}/ - Determine Allowable Methods for a specific Account

URI:	/Compute/Devices/{id}/Accounts/{id}/	Description
Method	OPTIONS	Get the allowable HTTP Methods list for this resource
Request Header		
Query Parameters		
Response	200 OK 404 Not Found	OK & the "Allow" list of methods in the response header. The response body provides the JSON Schema for this resource Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource

DELETE /Compute/Devices/{id}/Accounts/{id} - Delete specific Account

URI:	/Compute/Devices/{id}/Accounts/{id}	Description
Method	DELETE	Delete this Account
Request Header	Authorization (Mandatory) If-Match (Mandatory)	The request requires either Basic or Digest authorization The request is conditionally processed only if the current ETag for the resource matches the ETag passed in this header
Query Parameters		
Request Body		
Response	204 No Content 401 Unauthorized 404 Not Found 409 Conflict 412 Precondition Failed 428 Precondition Required 500 Internal Server Error	Delete successful, no content in the response body Unauthorized; credential entry failed or missing The Resource doesn't exist In the case of only one account, that last one cannot be deleted Indicates the "If-Match" Etag check failed Indicates the need for an "If-Match" conditional with an Etag value in the Request Header

		System could not process the request

Methods Not Allowed on **/Compute/Devices/{id}/Accounts/** Collection

URI:	**/Compute/Devices/{id}/Accounts/**	**Description**
Method	PUT, DELETE	Methods that are not allowed
Request Header		
Query Parameters		
Response	405 Method Not Allowed	Method not allowed for this Resource; returns "Allow" header with allowable methods list

Methods Not Allowed on **/Compute/Devices/{id}/Accounts/{id}/** Instance

URI:	**/Compute/Devices/{id}/Accounts/{id}/**	**Description**
Method	POST	Methods that are not allowed
Request Header		
Query Parameters		
Response	405 Method Not Allowed	Method not allowed for this Resource; returns "Allow" header with allowable methods list

Collection Resource Attributes

Attribute	**Type**	**Requirement**	**User Configurable**	**Possible Values**	**Description**	**Model Correspondence**
Self	URI String	Mandatory	No	Free-Form URI Format 256 Chars	Describes the fully qualified URI link for the Collection	{ IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking }
Members	String Array	Mandatory	No	Resource Collection (1 - n entries)	The array of Resource Instances (see Instance Resource Attributes Table for	

					Instance Attribute details)	

Instance Resource Attributes

Attribute	Type	Requirement	User Configurable	Possible Values	Description	Model Correspondence
Self	URI String	Mandatory	No	Free-Form URI Format 256 Chars	Describes the fully qualified URI link	{ IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking }
Id	String	Mandatory	Yes	Free-Form 64 Chars	The Identifier this particular Account	{ DMTF | CIM | LogicalElement.DeviceID }
BasicAuthentication.UserPasswordSHA1Checksum	String	Mandatory	Yes	Free-Form 128 Characters	The basic authentication checksum	{ DMTF | CIM | SignedCredential.X509Infrastructure.SHA1Fingerprints }
DigestAuthentication.UserPasswordMD5Checksum	String	Optional	Yes	Free-Form 128 Characters	The digest authentication checksum	{ DMTF | CIM | SignedCredential.X509Infrastructure.MD5Fingerprints }
DigestAuthentication.Realm	String	Optional	Yes	Free-Form 128 Characters	The digest authentication realm	
Role.Name	String	Mandatory	Yes	"Admin"	The Role type string	{ DMTF | CIM | ManagedElement.Collection.Role }

					for this Account	
Role.ID	Number	Mandatory	Yes	0	The Role type value for this Account	{ DMTF | CIM | ManagedElement.Collection.Role }
UserID	String	Mandatory	Yes	Free-Form 64 Chars	The user identifier for this Account	{ DMTF | CIM | LogicalElement.Account.UserId }

EXAMPLES

GET Accounts Example - Specific Instance Based on the Identifier

Request

Method	URI	Query String	Request Header	Request Body
GET	/Compute/Devices/{id}/Accounts/admin		Authorization (Mandatory) If-None-Match: {etag} (Optional)	

Response

Precondition	Response Code	Response Header	Response Body
Credentials invalid or missing	401 Unauthorized		
Resource Id does not exist	404 Not Found		
If-None-Match true	304 Not Modified		
If-None-Match	200 OK	Content-Type:	{

false or missing		application/json
		ETag: {etag}
			"Self": "http://10.20.30.40/Compute/Devices/0123456789/Accounts/admin/",
			"ID": "admin",
			"BasicAuthentication": {
			"UserPasswordSHA1Checksum": "{SHA}0DPiKuNIttttmD8IUCuw1hQxNqZc="
			},
			"DigestAuthentication": {
			"UserPasswordMD5Checksum": "97ebad852d0000fd6b71ae26fff61fa3",
			"Realm": "Acme Corporation"
			},
			"Role": {
			"ID": 0,
			"Name": "Admin"
			},
			"UserID": "admin"
			}

9.6.5 Operating System

Description

The Device-level methods and attributes return information about the Operating System and do certain operations.

Allowable Methods

URI	Allowable Methods
/Compute/Devices/{id}/OperatingSystem/	GET, POST, HEAD, OPTIONS

GET /Compute/Devices/{id}/OperatingSystem/- Retrieve the Operating System resource information

URI:	/Compute/Devices/{id}/OperatingSystem/	Description
Method	GET	Returns the information of the Operating System resource
Request Header	Authorization (Mandatory) If-None-Match (Optional)	The request requires either Basic or Digest authorization The request is conditionally processed only if the current ETag for the resource matches the ETag passed in this header

Query Parameters		
Response	200 OK 304 Not Modified 401 Unauthorized 404 Not Found	OK & Operating System resource information in the response body Unauthorized; credential entry failed or missing Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource

POST /Compute/Devices/{id}/OperatingSystem/ - Update the Firmware Image

URI:	/Compute/Devices/{id}/OperatingSystem/	Description
Method	POST	Update the Firmware with a new image
Request Header	Authorization (Mandatory) If-Match (Mandatory) Content-Type: multipart/form-data	The request requires either Basic or Digest authorization The request is conditionally processed only if the current ETag for the resource matches the ETag passed in this header The FW image file is of content type "multipart/form-data"
Query Parameters		
Request Body	Content-Disposition: form-data; name="FirmwareFile"; filename="{FW_file_name}" FW Image File	Request Body preamble setting up the content information The FW image file with appropriate POST body
Response	202 Accepted 400 Bad Request 401 Unauthorized 409 Conflict 500 Internal Server Error	Accepted & Header "Location" with a /Jobs URI to check status (e.g., ../Jobs/UpdateFW) Bad Request (typically a faulty parameter) Unauthorized; credential entry failed or missing Some other device-level operation is in progress (e.g., Factory Reset or Format) Resource could not execute the request

HEAD /Compute/Devices/{id}/OperatingSystem/ - Ping the Operating System resource

URI:	/Compute/Devices/{id}/OperatingSystem/	Description
Method	HEAD	Pings the Operating System resource
Request Header	Authorization (Mandatory)	
Query Parameters		
Response	200 OK 401 Unauthorized 404 Not Found	OK with no response body Unauthorized; credential entry failed or missing Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource

OPTIONS /Compute/Devices/{id}/OperatingSystem/ - Determine Allowable Methods for the Operating System resource

URI:	/Compute/Devices/{id}/OperatingSystem/	Description
Method	OPTIONS	Get the allowable HTTP Methods list for this resource
Request Header		
Query Parameters		
Response	200 OK 404 Not Found	OK & the “Allow” list of methods in the response header. The response body provides the JSON Schema for this resource Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource

Methods Not Allowed on /Compute/Devices/{id}/OperatingSystem/

URI:	/Compute/Devices/{id}/OperatingSystem/	Description
Method	PUT, DELETE	Methods that are not allowed

Request Header		
Query Parameters		
Response	405 Method Not Allowed	Method not allowed for this Resource

Resource Attributes

Attribute	Type	Requirement	User Configurable	Possible Values	Description	Model Correspondence
Self	String	Mandatory	No	Free-Form URI Format 256 Chars	Describes the fully qualified URI link	{ IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking }
Name	String	Mandatory	No	Free-Form 128 Chars	The Operating System or Firmware name	{ DMTF | CIM | System.OperatingSystem.Name }
OSType.Name	String	Mandatory	No	Depends on Operating System Type	The Operating System Type value	{ DMTF | CIM | System.OperatingSystem.Type }
OSType.ID	Number	Mandatory	No	Depends on Operating System Type	The Operating System Type value map	{ DMTF | CIM | System.OperatingSystem.Type }
Version	String	Mandatory	No	Free-Form 128 Chars	The Operating System or Firmware Version	{ DMTF | CIM | System.OperatingSystem.Version }

EXAMPLES

GET Operating System Example

Request

Method	URI	Query String	Request Header	Request Body
GET	/Compute/Devices/{id}/OperatingSystem		Authorization (Mandatory) If-None-Match: {etag} (Optional)	

Response

Precondition	Response Code	Response Header	Response Body
Credentials invalid or missing	401 Unauthorized		
Resource Id does not exist	404 Not Found		
If-None-Match true	304 Not Modified		

If-None-Match false or missing	200 OK	Content-Type: application/json
		ETag: {etag}
			{
			"Self": "http://10.20.30.40/Compute/Devices/0123456789/OperatingSystem/",
			"Name": "Vendor Firmware",
			"OSType": {
			"ID": 59,
			"Name": "Dedicated"
			},
			"Version": "FW-Rev0"
			}

POST Operating System Example - Update the Platform FW Image

Request

Method	URI	Query String	Request Header	Request Body
POST	/Compute/Devices/{id}/OperatingSystem		Authorization (Mandatory)	Content-Disposition: form-data; name="FirmwareFile";

			If-Match: {etag} (Mandatory) Content-Type: multipart/form-data (Mandatory)	filename="{FW_file_name}" FW Image File

Response

Precondition	Response Code	Response Header	Response Body
Credentials invalid or missing	401 Unauthorized		
Resource Id does not exist	404 Not Found		
Bad/Missing Parameter in Body	400 Bad Request		
System could not process the request	500 Internal Server Error		
If-Match false	412 Precondition Failed		
If-Match missing	428 Precondition Required		
If-Match true	202 Accepted	Location: ../Jobs/firmwareupdate (a GET on this URI will return current status and percent complete information	

9.6.6 Jobs

Description

The Device-level methods and attributes return information about the Job(s) and do certain operations.

Allowable Methods

URI	Allowable Methods
/Compute/Devices/{id}/Jobs/	GET, HEAD, OPTIONS
/Compute/Devices/{id}/Jobs/{id}/	GET, HEAD, OPTIONS

GET /Compute/Devices/{id}/Jobs/ - Retrieve all Jobs

URI:	/Compute/Devices/{id}/Jobs/	Description
Method	GET	Returns the Collection of Jobs
Request Header	Authorization (Mandatory) If-None-Match (Optional)	The request requires either Basic or Digest authorization The request is conditionally processed only if the current ETag for the resource does not match the ETag passed in this header
Query Parameters		
Response	200 OK 304 Not Modified 401 Unauthorized 404 Not Found	OK & List of Job + ETag Header If-None-Match Etag value matched, therefore no Response Body will be returned Unauthorized; credential entry failed or missing Resource Collection does not exist; this IP Address is running an HTTP service, but does not recognize this resource

GET /Compute/Devices/{id}/Jobs/{Id}/ - Retrieve a specific Job

URI:	/Compute/Devices/{id}/Jobs/{id}/	Description
Method	GET	Returns the information regarding a specific Account based on the {id} in the URI address string
Request Header	Authorization (Mandatory) If-None-Match (Optional)	The request requires either Basic or Digest authorization The request is conditionally processed only if the current ETag for the resource does not match the ETag passed in this header
Query Parameters		
Response	200 OK 401 Unauthorized 404 Not Found	OK & Job information in the response body + ETag Header Unauthorized; credential entry failed or missing Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource

HEAD /Compute/Devices/{id}/Jobs/ - Ping the Collection of Jobs

URI:	/Compute/Devices/{id}/Jobs/	Description
Method	HEAD	Pings this Job Collection

Request Header	Authorization (Mandatory)	The request requires either Basic or Digest authorization
Query Parameters		
Response	200 OK 401 Unauthorized 404 Not Found	OK with no response body Unauthorized; credential entry failed or missing Resource Collection does not exist; this IP Address is running an HTTP service, but does not recognize this resource

HEAD /Compute/Devices/{id}/Jobs/{id}/ - Ping a specific Job

URI:	**/Compute/Devices/{id}/Jobs/{id}/**	**Description**
Method	HEAD	Pings this Job
Request Header	Authorization (Mandatory)	The request requires either Basic or Digest authorization
Query Parameters		
Response	200 OK 401 Unauthorized 404 Not Found	OK with no response body Unauthorized; credential entry failed or missing Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource

OPTIONS /Compute/Devices/{id}/Jobs/ - Determine Allowable Methods for a Collection of Jobs

URI:	**/Compute/Devices/{id}/Jobs/**	**Description**
Method	OPTIONS	Get the allowable HTTP Methods list for this resource
Request Header		
Query Parameters		
Response	200 OK 404 Not Found	OK & the “Allow” list of methods in the response header. The response body provides the JSON Schema for this resource Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource

OPTIONS /Compute/Devices/{id}/Jobs/{Id}/ - Determine Allowable Methods for a specific Job

URI:	/Compute/Devices/{id}/Jobs/{id}/	Description
Method	OPTIONS	Get the allowable HTTP Methods list for this resource
Request Header		
Query Parameters		
Response	200 OK 404 Not Found	OK & the "Allow" list of methods in the response header. The response body provides the JSON Schema for this resource Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource

Methods Not Allowed on **/Compute/Devices/{id}/Jobs/**

URI:	/Compute/Devices/{id}/Jobs/	Description
Method	POST, PUT, DELETE	Methods that are not allowed
Request Header		
Query Parameters		
Response	405 Method Not Allowed	Method not allowed for this Resource

Methods Not Allowed on **/Compute/Devices/{id}/Jobs/{id}/**

URI:	/Compute/Devices/{id}/Jobs/{id}/	Description
Method	POST, PUT, DELETE	Methods that are not allowed
Request Header		
Query Parameters		
Response	405 Method Not Allowed	Method not allowed for this Resource

Collection Resource Attributes

Attribute	Type	Requirement	User Configurable	Possible Values	Description	Model Correspondence
Self	URI String	Mandatory	No	Free-Form URI Format 256 Chars	Describes the fully qualified URI link for the Collection	{ IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking }
Members	String Array	Optional	No	Resource Collection (1 - n entries)	The array of Resource Instances (see Instance Resource Attributes Table for Instance Attribute details)	

Instance Resource Attributes

Attribute	Type	Requirement	User Configurable	Possible Values	Description	Model Correspondence
Self	URI String	Mandatory	No	Free-Form URI Format 256 Chars	Describes the fully qualified URI link	{ IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking }
ID	String	Mandatory	No	"SoftwareUpdate" "FactoryReset"	The Identifier for this particular Job. These are all mutually exclusive, meaning only one of these can be active at a time. Otherwise, the	{ DMTF | CIM | ManagedSystemElement.Name }

					response to executing one of the others should return a 409 Conflict.	
Status	String	Mandatory	No	“OK” “Error” “Completed”	The current status or state of the Job	{ DMTF | CIM | LogicalElement.Job.JobStatus }
PercentComplete	Number	Mandatory	No	0 -100	The percent complete status of the Job	{ DMTF | CIM | LogicalElement.Job.PercentComplete }
ErrorCode	Number	Mandatory	No	Integer values	The error code number for the Job upon completion; “0” = Success, otherwise, a vendor-unique value	{ DMTF | CIM | LogicalElement.Job.ErrorCode }
ErrorDescription	String	Optional	No	Free-Form 128 Chars	The description of the vendor-unique error code; if error code is “0”, then	{ DMTF | CIM | LogicalElement.Job.ErrorDescription }

					this is “Success”	

EXAMPLES

GET Jobs Example - Specific Instance Based on the Identifier

Request

Method	URI	Query String	Request Header	Request Body
GET	/Compute/Devices/{id}/Jobs/UpdateFW		Authorization (Mandatory) If-None-Match: {etag} (Optional)	

Response

Precondition	Response Code	Response Header	Response Body
Credentials invalid or missing	401 Unauthorized		
Resource Id does not exist	404 Not Found		
If-None-Match true	304 Not Modified		

If-None-Match false or missing	200 OK	Content-Type: application/json
		ETag: {etag}
			{
			"Self": "http://10.20.30.40/Compute/Devices/0123456789/Jobs/SoftwareUpdate/",
			"ID": "SoftwareUpdate",
			"Status": "OK",
			"PercentComplete": 72,
			"ErrorCode": 0,
			"ErrorDescription": "Success"
			}

9.6.7 Performance

Description

The Device-level methods and attributes return information about the Performance.

Allowable Methods

URI	Allowable Methods
/Compute/Devices/{id}/Performance	GET, HEAD, OPTIONS

GET /Compute/Devices/{id}/Performance- Retrieve the Performance resource information

URI:	/Compute/Devices/{id}/Performance	Description
Method	GET	Returns the information of the Performance resource
Request Header	Authorization (Mandatory) If-None-Match (Optional)	The request requires either Basic or Digest authorization The request is conditionally processed only if the current ETag for the resource matches the ETag passed in this header
Query Parameters		
Response	200 OK 304 Not Modified 401 Unauthorized 404 Not Found	OK & Performance resource information in the response body Unauthorized; credential entry failed or missing Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource

HEAD /Compute/Devices/{id}/Performance- Ping the Performance resource

URI:	/Compute/Devices/{id}/Performance	Description
Method	HEAD	Pings the Performance resource
Request Header	Authorization (Mandatory)	
Query Parameters		

Response	200 OK 401 Unauthorized 404 Not Found	OK with no response body Unauthorized; credential entry failed or missing Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource

OPTIONS /Compute/Devices/{id}/Performance- Determine Allowable Methods for the Performance resource

URI:	**/Compute/Devices/{id}/Performance**	**Description**
Method	OPTIONS	Get the allowable HTTP Methods list for this resource
Request Header		
Query Parameters		
Response	200 OK 404 Not Found	OK & the "Allow" list of methods in the response header. The response body provides the JSON Schema for this resource Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource

Methods Not Allowed on **/Compute/Devices/{id}/Performance**

URI:	**/Compute/Devices/{id}/Performance**	**Description**
Method	POST, PUT, DELETE	Methods that are not allowed
Request Header		
Query Parameters		
Response	405 Method Not Allowed	Method not allowed for this Resource

Resource Attributes

Attribute	Type	Requirement	User Configurable	Possible Values	Description	Model Correspondence
Self	String	Mandatory	No	Free-Form URI Format 256 Chars	Describes the fully qualified URI link	{ IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking }
Diskstats[].Name	String	Optional	No	Free-Form 64 Chars	Name of the device	
Diskstats[].TimestampUs	Number	Optional	No	0 - n	Microseconds since power on	
Diskstats[].BytesRead	Number	Optional	No	0 - n	Integer counter for number of bytes read	{ DMTF | CIM | BlockStorageStatisticalData.BytesRead }
Diskstats[].BytesWritten	Number	Optional	No	0 - n	Integer counter for number of bytes written	{ DMTF | CIM | BlockStorageStatisticalData.BytesWritten }
Diskstats[].NumReadOps	Number	Optional	No	0 - n	Integer counter for number of read operations	{ DMTF | CIM | BlockStorageStatisticalData.ReadIOs }
Diskstats[].NumWriteOps	Number	Optional	No	0 - n	Integer counter for number	{ DMTF | CIM | BlockStorageStatisticalData.WriteIOs }

					of write operations	
Diskstats[].ReadLatencyUs	Number	Optional	No	0 - n	Read response time in microseconds	{ DMTF | CIM | BlockStorageStatisticalData.ReadIOTimeCounter }
Diskstats[].ReadMaxLatencyUs	Number	Optional	No	0 - n	Read response time in microseconds	{ DMTF | CIM | BlockStorageStatisticalData.ReadIOTimeCounter }
Diskstats[].WriteLatencyUs	Number	Optional	No	0 - n	Read response time in microseconds	{ DMTF | CIM | BlockStorageStatisticalData.WriteIOTimeCounter }
Diskstats[].WriteMaxLatencyUs	Number	Optional	No	0 - n	Read response time in microseconds	{ DMTF | CIM | BlockStorageStatisticalData.WriteIOTimeCounter }

EXAMPLES

GET Performance Example

Request

Method	URI	Query String	Request Header	Request Body
GET	/Compute/Devices/{id}/Performance		Authorization (Mandatory) If-None-Match: {etag} (Optional)	

Response

Precondition	Response Code	Response Header	Response Body
Credentials invalid or missing	401 Unauthorized		

Resource Id does not exist	404 Not Found		
If-None-Match true	304 Not Modified		

If-None-Match false or missing	200 OK	Content-Type: application/json
		ETag: {etag}
			{
			"Self": "http://10.20.30.40/Compute/Devices/0123456789/Performance/",
			"Diskstats": [{
			"TimestampUs": 1536621182777154514,
			"Id": "http://10.20.30.40/Compute/Devices/0123456789/Volumes/004/",
			"Name": "vol04",
			"BytesRead": 0,
			"BytesWritten": 0,
			"NumReadOps": 0,
			"NumWriteOps": 0,
			"ReadLatencyUs": 0,
			"ReadMaxLatencyUs": 0,
			"WriteLatencyUs": 0,
			"WriteMaxLatencyUs": 0
			
			}]
			}

9.6.8 ServiceLevelTargets

Description

The Device-level methods and attributes return information about the ServiceLevelTarget(s) and do certain operations.

Allowable Methods

URI	Allowable Methods
/Compute/Devices/{id}/ServiceLevelTargets/	GET, POST, HEAD, OPTIONS
/Compute/Devices/{id}/ServiceLevelTargets/{id}/	GET, PUT, DELETE, HEAD, OPTIONS

GET /Compute/Devices/{id}/ServiceLevelTargets/ - Retrieve all ServiceLevelTargets

URI:	/Compute/Devices/{id}/ServiceLevelTargets/	Description
Method	GET	Returns the Collection of ServiceLevelTargets
Request Header	Authorization (Mandatory) If-None-Match (Optional)	The request requires either Basic or Digest authorization The request is conditionally processed only if the current ETag for the resource does not match the ETag passed in this header
Query Parameters		
Response	200 OK 304 Not Modified 401 Unauthorized 404 Not Found	OK & List of ServiceLevelTargets + ETag Header If-None-Match Etag value matched, therefore no Response Body will be returned Unauthorized; credential entry failed or missing Resource Collection does not exist; this IP Address is running an HTTP service, but does not recognize this resource

GET /Compute/Devices/{id}/ServiceLevelTargets/{Id}/ - Retrieve a specific ServiceLevelTarget

URI:	/Compute/Devices/{id}/ServiceLevelTargets/{id}/	Description
Method	GET	Returns the information regarding a specific ServiceLevelTarget

		based on the {id} in the URI address string
Request Header	Authorization (Mandatory) If-None-Match (Optional)	The request requires either Basic or Digest authorization The request is conditionally processed only if the current ETag for the resource does not match the ETag passed in this header
Query Parameters		
Response	200 OK 304 Not Modified 401 Unauthorized 404 Not Found	OK & ServiceLevelTarget information in the response body + ETag Header If-None-Match Etag value matched, therefore no Response Body will be returned Unauthorized; credential entry failed or missing Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource

POST/Compute/Devices/{id}/ServiceLevelTargets/ - Create a new ServiceLevelTargets

URI:	**/Compute/Devices/{id}/ServiceLevelTargets/{id}/**	**Description**
Method	POST	Create a new ServiceLevelTarget
Request Header	Authorization (Mandatory)	The request requires either Basic or Digest authorization
Query Parameters		

Request Body	{
	"Name": "account_name",
	}
		JSON BODY START
		Name of the ServiceLevelTarget
		JSON BODY END

Response	201 Created 400 Bad Request 401 Unauthorized 409 Conflict 500 Internal Server Error	Created & ServiceLevelTarget information in the response body + ETag Header + new URI in Location Header Bad Request (typically a faulty parameter)

		Unauthorized; credential entry failed or missing A new parameter value already exists (e.g., Name) System could not process the request

PUT /Compute/Devices/{id}/ServiceLevelTargets/{id}/ - Modify specific ServiceLevelTarget attributes

URI:	/Compute/Devices/{id}/ServiceLevelTargets/{id}/	Description
Method	PUT	Modify an attribute or execute an operation for this ServiceLevelTarget
Request Header	Authorization (Mandatory) If-Match (Mandatory)	The request requires either Basic or Digest authorization The request is conditionally processed only if the current ETag for the resource matches the ETag passed in this header
Query Parameters		

Request Body	{
	"Name": "account_name"
	}
		JSON BODY START
		Name of the ServiceLevelTarget
		JSON BODY END

Response	200 OK 400 Bad Request 401 Unauthorized 404 Not Found 409 Conflict 412 Precondition Failed 428 Precondition Required 500 Internal Server Error	OK & ServiceLevelTarget information in the response body + ETag Header Bad Request (typically a faulty parameter) Unauthorized; credential entry failed or missing The Resource doesn't exist A new parameter value already exists (e.g., Name) Indicates the "If-Match" Etag check failed Indicates the need for an "If-Match" conditional with an Etag value in the Request Header System could not process the request

HEAD /Compute/Devices/{id}/ServiceLevelTargets/ - Ping the Collection of ServiceLevelTargets

URI:	/Compute/Devices/{id}/ServiceLevelTargets/	Description
Method	HEAD	Pings this ServiceLevelTarget Collection
Request Header	Authorization (Mandatory)	The request requires either Basic or Digest authorization
Query Parameters		
Response	200 OK 401 Unauthorized 404 Not Found	OK with no response body Unauthorized; credential entry failed or missing Resource Collection does not exist; this IP Address is running an HTTP service, but does not recognize this resource

HEAD /Compute/Devices/{id}/ServiceLevelTargets/{id}/ - Ping a specific ServiceLevelTarget

URI:	/Compute/Devices/{id}/ServiceLevelTargets/{id}/	Description
Method	HEAD	Pings this ServiceLevelTarget
Request Header	Authorization (Mandatory)	The request requires either Basic or Digest authorization
Query Parameters		
Response	200 OK 401 Unauthorized 404 Not Found	OK with no response body Unauthorized; credential entry failed or missing Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource

OPTIONS /Compute/Devices/{id}/ServiceLevelTargets/ - Determine Allowable Methods for a Collection of ServiceLevelTargets

URI:	/Compute/Devices/{id}/ServiceLevelTargets/	Description
Method	OPTIONS	Get the allowable HTTP Methods list for this resource

Request Header		
Query Parameters		
Response	200 OK 404 Not Found	OK & the "Allow" list of methods in the response header. The response body provides the JSON Schema for this resource Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource

OPTIONS /Compute/Devices/{id}/ServiceLevelTargets/{Id}/ - Determine Allowable Methods for a specific ServiceLevelTarget

URI:	**/Compute/Devices/{id}/ServiceLevelTargets/{id}/**	**Description**
Method	OPTIONS	Get the allowable HTTP Methods list for this resource
Request Header		
Query Parameters		
Response	200 OK 404 Not Found	OK & the "Allow" list of methods in the response header. The response body provides the JSON Schema for this resource Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource

DELETE /Compute/Devices/{id}/ServiceLevelTargets/{id}/ - Delete specific ServiceLevelTarget

URI:	**/Compute/Devices/{id}/ServiceLevelTargets/{id}/**	**Description**
Method	DELETE	Delete this ServiceLevelTarget
Request Header	Authorization (Mandatory) If-Match (Mandatory)	The request requires either Basic or Digest authorization The request is conditionally processed only if the current ETag

		for the resource matches the ETag passed in this header
Query Parameters		
Request Body		
Response	204 No Content 401 Unauthorized 404 Not Found 412 Precondition Failed 428 Precondition Required 500 Internal Server Error	Delete successful, no content in the response body Unauthorized; credential entry failed or missing The Resource doesn't exist Indicates the "If-Match" Etag check failed Indicates the need for an "If-Match" conditional with an Etag value in the Request Header System could not process the request

Methods Not Allowed on **/Compute/Devices/{id}/ServiceLevelTargets/** Collection

URI:	**/Compute/Devices/{id}/ServiceLevelTargets/**	**Description**
Method	PUT, DELETE	Methods that are not allowed
Request Header		
Query Parameters		
Response	405 Method Not Allowed	Method not allowed for this Resource; returns "Allow" header with allowable methods list

Methods Not Allowed on **/Compute/Devices/{id}/ServiceLevelTargets/{id}/** Instance

URI:	**/Compute/Devices/{id}/ServiceLevelTargets/{id}/**	**Description**
Method	POST	Methods that are not allowed
Request Header		

Query Parameters		
Response	405 Method Not Allowed	Method not allowed for this Resource; returns "Allow" header with allowable methods list

Collection Resource Attributes

Attribute	Type	Requirement	User Configurable	Possible Values	Description	Model Correspondence
Self	URI String	Mandatory	No	Free-Form URI Format 256 Chars	Describes the fully qualified URI link for the Collection	{ IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking }
Members	String Array	Mandatory	No	Resource Collection (1 - n entries)	The array of Resource Instances (see Instance Resource Attributes Table for Instance Attribute details)	

Instance Resource Attributes

Attribute	Type	Requirement	User Configurable	Possible Values	Description	Model Correspondence
Self	URI String	Mandatory	No	Free-Form URI Format 256 Chars	Describes the fully qualified URI link	{ IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking }
ID	String	Mandatory	Yes	Free-Form 64 Chars	The Identifier this particular ServiceLevelTarget	{ DMTF | CIM | LogicalElement.DeviceID }

EXAMPLES

GET ServiceLevelTarget Example - Specific Instance Based on the Identifier

Request

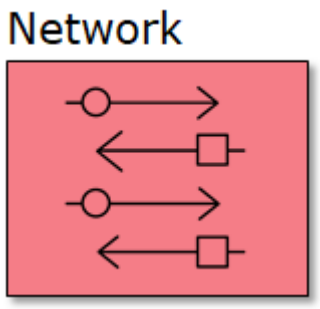
Method	URI	Query String	Request Header	Request Body
GET	/Compute/Devices/{id}/ServiceLevelTargets/{id}/		Authorization (Mandatory) If-None-Match: {etag} (Optional)	

Response

Precondition	Response Code	Response Header	Response Body
Credentials invalid or missing	401 Unauthorized		
Resource Id does not exist	404 Not Found		
If-None-Match true	304 Not Modified		

If-None-Match false or missing	200 OK	Content-Type: application/json
		ETag: {etag}
			{
			"Self": "http://10.20.30.40/Compute/Devices/0123456789/ServiceLevelTargets/1/",
			"ID": "1"
			}

9.7 Network Devices - Physical



This table shows the physical resources for a network device. The set of resource URIs is as follows:

URI Pattern	Description
/Devices/	Collection of all Devices
/Network/Devices/	Collection of Network Devices
/Network/Devices/{id}/	A specific Network Device
/Network/Devices/{id}/Adapters/	Collection of Adapters within this Network Device
/Network/Devices/{id}/Adapters/{id}/	A specific Adapter within this Network Device
/Network/Devices/{id}/Adapters/{id}/Ports/	Collection of Ports within this Adapter
/Network/Devices/{id}/Adapters/{id}/Ports/{id}/	A specific Port within this Adapter

9.7.1 Devices

Description

The Device-level methods and attributes return information about the Network Device(s) and do certain operations.

Allowable Methods

URI	Allowable Methods
/Devices/	GET, HEAD, OPTIONS
/Network/Devices/	GET, HEAD, OPTIONS
/Network/Devices/{id}/	GET, PUT, HEAD, OPTIONS

GET /Network/Devices/ - Retrieve all Network Devices

URI:	/Network/Devices/	Description
Method	GET	Returns the Collection of Devices
Request Header	Authorization (Mandatory) If-None-Match (Optional)	The request requires either Basic or Digest authorization The request is conditionally processed only if the current ETag for the resource does not match the ETag passed in this header
Query Parameters		
Response	200 OK 304 Not Modified 401 Unauthorized 404 Not Found	OK & List of Devices + ETag Header If-None-Match Etag value matched, therefore no Response Body will be returned Unauthorized; credential entry failed or missing Resource Collection does not exist; this IP Address is running an HTTP service, but does not recognize this resource

GET /Network/Devices/{id}/ - Retrieve a specific Network Device

URI:	/Network/Devices/{id}/	Description
Method	GET	Returns the information regarding a specific Device based on the {id} in the URI address string
Request Header	Authorization (Mandatory) If-None-Match (Optional)	The request requires either Basic or Digest authorization The request is conditionally processed only if the current ETag for the resource does not match the ETag passed in this header
Query Parameters		
Response	200 OK 401 Unauthorized 404 Not Found	OK & Device information in the response body + ETag Header Unauthorized; credential entry failed or missing Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource

PUT /Network/Devices/{id}/ - Modify specific Network Device attributes

URI:	/Network/Devices/{id}/	Description
Method	PUT	Modify an attribute or execute an operation for this Device

Request Header	Authorization (Mandatory) If-Match (Mandatory)	The request requires either Basic or Digest authorization The request is conditionally processed only if the current ETag for the resource matches the ETag passed in this header
Query Parameters		

Request Body	{
	"IndicatorLED": {
	"Id" : 4 | 2
	},
	"Name" :
	"new_name",
	"Restart": true | false,
	"Shutdown" : true |
	false,
	"FactoryReset": true |
	false
	}
		JSON BODY START
		
		Toggles the Indicator LED on the Device; default "Off = 4"
		
		Specify a new name
		Restart the Resource
		Shutdown the Resource (Shutdown takes precedence over Restart if both are sent)
		Return the Device to Factory fresh settings (resets system configuration)
		JSON BODY END

Response	200 OK 400 Bad Request 401 Unauthorized 404 Not Found 409 Conflict 412 Precondition Failed 428 Precondition Required 500 Internal Server Error	OK & Device information in the response body + ETag Header Bad Request (typically a faulty parameter) Unauthorized; credential entry failed or missing The Resource doesn't exist Some other device-level operation is in progress (e.g., Update FW or Format or Factory Reset) or Volumes exist during a Format Indicates the "If-Match" Etag check failed Indicates the need for an "If-Match" conditional with an Etag value in the Request Header System could not process the request

HEAD /Network/Devices/ - Ping the Collection of Network Devices

URI:	**/Network/Devices/{id}/**	**Description**
Method	HEAD	Pings this Network Device Collection
Request Header	Authorization (Mandatory)	The request requires either Basic or Digest authorization
Query Parameters		
Response	200 OK 401 Unauthorized 404 Not Found	OK with no response body Unauthorized; credential entry failed or missing

		Resource Collection does not exist; this IP Address is running an HTTP service, but does not recognize this resource

HEAD /Network/Devices/{id}/ - Ping a specific Network Device

URI:	/Network/Devices/{id}/	Description
Method	HEAD	Pings this Network Device
Request Header	Authorization (Mandatory)	The request requires either Basic or Digest authorization
Query Parameters		
Response	200 OK 401 Unauthorized 404 Not Found	OK with no response body Unauthorized; credential entry failed or missing Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource

OPTIONS /Network/Devices/- Determine Allowable Methods for a Collection of Network Devices

URI:	/Network/Devices/	Description
Method	OPTIONS	Get the allowable HTTP Methods list for this resource
Request Header		
Query Parameters		
Response	200 OK 404 Not Found	OK & the "Allow" list of methods in the response header. The response body provides the JSON Schema for this resource Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource

OPTIONS /Network/Devices/{id}/ - Determine Allowable Methods for a specific Network Device

URI:	/Network/Devices/{id}/	Description
Method	OPTIONS	Get the allowable HTTP Methods list for this resource
Request Header		

Query Parameters		
Response	200 OK 404 Not Found	OK & the “Allow” list of methods in the response header. The response body provides the JSON Schema for this resource Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource

Methods Not Allowed on **/Network/Devices/** Collection

URI:	**/Network/Devices/**	**Description**
Method	POST, PUT, DELETE	Methods that are not allowed
Request Header		
Query Parameters		
Response	405 Method Not Allowed	Method not allowed for this Resource; returns "Allow" header with allowable methods list

Methods Not Allowed on **/Network/Devices/{id}/** Instance

URI:	**/Network/Devices/{id}/**	**Description**
Method	POST, DELETE	Methods that are not allowed
Request Header		
Query Parameters		
Response	405 Method Not Allowed	Method not allowed for this Resource; returns "Allow" header with allowable methods list

Collection Resource Attributes

Attribute	**Type**	**Requirement**	**User Configurable**	**Possible Values**	**Description**	**Model Correspondence**
Self	URI String	Mandatory	No	Free-Form URI Format 256 Chars	Describes the fully qualified URI link for the Collection	{ IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking }

Members	String Array	Mandatory	No	Resource Collection (0 - n entries)	The array of Resource Instances (see Instance Resource Attributes Table for Instance Attribute details)	

Instance Resource Attributes

Attribute	Type	Requirement	User Configurable	Possible Values	Description	Model Correspondence
Self	URI String	Mandatory	No	Free-Form URI Format 256 Chars	Describes the fully qualified URI link	{ IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking }
Name	String	Mandatory	Yes	Free-Form 256 Chars	The user-defined Friendly Name for this Resource	{ DMTF | CIM | ManagedSystemElement.Name }
ID	String	Mandatory	No	Free-Form 256 Chars	The resource identifier that is unique in space and time	{ DMTF | CIM | LogicalElement.DeviceID }

SerialNumber	String	Mandatory	No	Free-Form 64 Chars	The serial number for this Resource	{ DMTF | CIM | ManagedSystemElement.SerialNumber }
Model	String	Mandatory	No	Free-Form 64 Chars	The model name or number for this Resource	{ DMTF | CIM | ManagedSystemElement.Model }
SystemType.Name	String	Mandatory	No	"Compute"	The domain type string indicating the type of Device Resource	{ DMTF | CIM | ComputeSystem.Dedicated.Server }
SystemType.ID	Number	Mandatory	No	1	The domain type number indicating the type of Device Resource	{ DMTF | CIM | ComputeSystem.Dedicated.Server }
ChassisPackageType	String	Mandatory	No	"Compute Chassis"	The type of chassis for this Resource	{ DMTF | CIM | Chassis.ChassisPackageType }

RackMountable	String	Mandatory	No	"Unknown" "True" "False"	Indicates this chassis is rack mountable	{ DMTF | CIM | Chassis.RackMountable }
Manufacturer	String	Mandatory	No	Free-Form 64 Chars	The vendor name for this Resource	{ DMTF | CIM | ManagedSystemElement.Manufacturer }
OperatingSystem.Name	String	Optional	No	Free-Form 128 Chars	The Operating System or Firmware Name	{ DMTF | CIM | System.OperatingSystem.Name }
OperatingSystem.Version	String	Mandatory	No	Free-Form 128 Chars	The Operating System or Firmware Version	{ DMTF | CIM | System.OperatingSystem.Version }
IndicatorLED.Name	String	Mandatory	Yes	"Off" "Lit"	The current state value of the Indicator LED for this Resource	{ DMTF | CIM | IndicatorLED.ActivationState }
IndicatorLED.ID	Number	Mandatory	Yes	4 2	The current state value map of	{ DMTF | CIM | IndicatorLED.ActivationState }

					the Indicator LED for this Resource	
Status.State.Name	String	Mandatory	No	"Unknown" "Not available" "Servicing" "Starting" "Stopping" "Stopped" "Aborted" "Dormant" "Completed" "Migrating" "Emigrating" "Immigrating" "Snapshotting" "Shutting down" "In test" "Transitioning" "In service"	The current state value of this Resource	{ DMTF | CIM | ManagedSystemElement.State }
Status.State.ID	Number	Mandatory	No	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15	The current state value map of this Resource	{ DMTF | CIM | ManagedSystemElement.State }

				16		
Status.Health[].Name	String (1..*)	Mandatory	No	"Unknown" "OK" "Degraded/Warning" "Minor failure" "Major failure" "Critical failure" "Non-recoverable error" "Not installed" "Not available" "No access allowed"	The current health value of this Resource. There can be 1 or more Name entries.	{ DMTF | CIM | ManagedSystemElement.HealthState }
Status.Health[].ID	Number (1..*)	Mandatory	No	0 5 10 15 20 25 30 65536 65537 65538	The current health value map of this Resource. There can be 1 or more Id entries.	{ DMTF | CIM | ManagedSystemElement.HealthState }
Status.Details[]	String Array	Mandatory	No	Free-Form 32 Characters per Array entry. If no entry, then “None”.	The current Health Details of the Device	{ DMTF | CIM | ManagedSystemElement.DetailedStatus }
Capabilities.Members[].Name	String	Mandatory	No	Server File Server	The capabil	{ DMTF | CIM | ComputeSystem.Dedicated }

				Compute Device Enclosure Blade	ities information value(s) regarding the Resource	
Capabilities.Members[].ID	Number	Mandatory	No	39 16 31 40	The capabilities information value map(s) regarding the Resource	{ DMTF | CIM | ComputeSystem.Dedicated }
Capabilities.Members[].CapabilityDescription	String	Mandatory	No	Free-Form 64 Characters	Entry describing the capability	{ DMTF | CIM | ComputeSystem.Dedicated }
MaximumBandwidth	Number	Mandatory	No	Unsigned Integer	Total Bandwidth possible in Bits per Second based on the total number of full duplex interfaces	
RemainingBandwidth	Number	Mandatory	No	Unsigned Integer	Remaining Bandwi	

					dth in Bits per Seconds based on the total number of full duplex interfaces that are idle	
IpAddresses.Members[].IpAddress	String	Mandatory	Yes	IPv4 or IPv6 pattern	The IP Address list for this Resource	{ DMTF | CIM | ManagedSystemElement.FSIPInterfaceSettingData.IpAddress }
Accounts.Self	String	Mandatory	No	Free-Form URI	Fully qualified link to the Controller Resource Collection	{ DMTF | CIM | Device.Controller, IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking }
Adapters.Self	String	Mandatory	No	Free-Form URI	Fully qualified link to Media Resource Collection	{ DMTF | CIM | MediaAccessDevice, IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking }
Performance.Self	String	Mandatory	No	Free-Form URI	Fully qualified link to the Perfor	{ DMTF | CIM | Statistics, IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking }

					mance Resource	
SystemClock.Self	String	Mandatory	No	Free-Form URI	Fully qualified link to the System Clock Resource	{ DMTF | CIM | Time, IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking }
Location.Self	String	Mandatory	No	Free-Form URI	Fully qualified link to the Location Resource	{ DMTF | Redfish | SNIA | Swordfish | Location, IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking }
Jobs.Self	String	Mandatory	No	Free-Form URI	Fully qualified link to the Jobs Resource	{ DMTF| CIM | Jobs, IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking}

EXAMPLES

GET Device Example - Specific Instance Based on the Identifier

Request

Method	URI	Query String	Request Header	Request Body
GET	/Network/Devices/{id}/		Authorization (Mandatory) If-None-Match: {etag} (Optional)	

Response

Precondition	Response Code	Response Header	Response Body
Credentials invalid or missing	401 Unauthorized		
Resource Id does not exist	404 Not Found		
If-None-Match true	304 Not Modified		

If-None-Match false or missing	200 OK	Content-Type: application/json
		ETag: {etag}
			{
			"Self": "http://10.20.30.40/Network/Devices/0123456789/",
			"SystemType": {
			"ID": 3,
			"Name": "Network"
			},
			"Name": "Network Device",
			"ID": "0123456789",
			"OperatingSystem": {
			"Self": "http://10.20.30.40/Network/Devices/0123456789/OperatingSystem/",
			"Name": "Vendor FW",
			"OSType": {
			"Id": 59,
			"Name": "Dedicated"
			},
			"Version": "0001"
			},
			"SerialNumber": "SN-0123456789",
			"Model": "MN-0123456789",
			"Manufacturer": "",
			"Capabilities": {"Members" :[{
			"ID": 5,
			"Name": "Switch",
			"CapabilityDescription": "This device is a network switch."
			}, {
			"ID": 14,
			"Name": "Management",

```
            "CapabilityDescription": "This device provide
            software system management capabilities."
        }, {
            "ID": 38,
            "Name": "Ethernet Switch",
            "CapabilityDescription": "This device is an ethernet
            switch."
        }, {
            "ID": 40,
            "Name": "Blade",
            "CapabilityDescription": "This device is a blade
            device."
        }]},
        "Status": {
            "State": {
                "ID": 16,
                "Name": "In service"
            },
            "Health": [{
                "ID": 5,
                "Name": "OK"
            }],
            "Details": ["None"]
        },
        "IPAddresses": {"Members": [{"IPAddress" :
        "10.20.30.40"}],
        "RemainingBandwidth": 560000000,
        "MaximumBandwidth": 640000000,
        "Location": {
            "Self":
            "http://10.20.30.40/Network/Devices/Location/"
        },
        "Accounts": {
            "Self":
            "http://10.20.30.40/Network/Devices/0123456789/
            Accounts/"
        },
        "Adapters": {
            "Self":
            "http://10.20.30.40/Network/Devices/0123456789/
            Adapters/"
        },
        "SystemClock": {
            "Self":
            "http://10.20.30.40/Network/Devices/0123456789/
            SystemClock/"
        },
```

			"Performance": {
			"Self":
			"http://10.20.30.40/Network/Devices/0123456789/Performance/"
			},
			"Jobs": {
			"Self":
			"http://10.20.30.40/Network/Devices/0123456789/Jobs/"
			}
			}

PUT Device Example - Change the name of a specific Device

Request

Method	URI	Query String	Request Header	Request Body

PUT	/Network/Devices/{id}/		Authorization (Mandatory)
			If-Match: {etag} (Mandatory)
				{
				"Name" : "new_name"
				}

Response

Precondition	Response Code	Response Header	Response Body
Credentials invalid or missing	401 Unauthorized		
Resource Id does not exist	404 Not Found		
Bad/Missing Parameter in Body	400 Bad Request		
New value already exists	409 Conflict		
System could not process the request	500 Internal Server Error		
If-Match false	412 Precondition Failed		
If-Match missing	428 Precondition Required		
If-Match true	200 OK	Content-Type: application/json	Device Resource JSON

9.7.2 Adapters

Description

The Device-level methods and attributes return information about the Adapter(s) and do certain operations.

Allowable Methods

URI	Allowable Methods
/Network/Devices/{id}/Adapters/	GET, HEAD, OPTIONS
/Network/Devices/{id}/Adapters/{id}/	GET, HEAD, OPTIONS

GET /Network/Devices/{id}/Adapters/ - Retrieve all Adapters

URI:	/Network/Devices/{id}/Adapters/	Description
Method	GET	Returns the Collection of Adapters
Request Header	Authorization (Mandatory) If-None-Match (Optional)	The request requires either Basic or Digest authorization The request is conditionally processed only if the current ETag for the resource does not match the ETag passed in this header
Query Parameters		
Response	200 OK 304 Not Modified 401 Unauthorized 404 Not Found	OK & List of Adapters + ETag Header If-None-Match Etag value matched, therefore no Response Body will be returned Unauthorized; credential entry failed or missing Resource Collection does not exist; this IP Address is running an HTTP service, but does not recognize this resource

GET /Network/Devices/{id}/Adapters/{id}/ - Retrieve a specific Adapter

URI:	/Network/Devices/{id}/Adapters/{id}/	Description
Method	GET	Returns the information regarding a specific Adapter based on the {id} in the URI address string
Request Header	Authorization (Mandatory) If-None-Match (Optional)	The request requires either Basic or Digest authorization

		The request is conditionally processed only if the current ETag for the resource does not match the ETag passed in this header
Query Parameters		
Response	200 OK 401 Unauthorized 404 Not Found	OK & Adapter information in the response body + ETag Header Unauthorized; credential entry failed or missing Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource

HEAD /Network/Devices/{id}/Adapters/ - Ping the Collection of Adapters

URI:	**/Network/Devices/{id}/Adapters/**	**Description**
Method	HEAD	Pings this Adapter Collection
Request Header	Authorization (Mandatory)	The request requires either Basic or Digest authorization
Query Parameters		
Response	200 OK 401 Unauthorized 404 Not Found	OK with no response body Unauthorized; credential entry failed or missing Resource Collection does not exist; this IP Address is running an HTTP service, but does not recognize this resource

HEAD /Network/Devices/{id}/Adapters/{id}/ - Ping a specific Adapter

URI:	**/Network/Devices/{id}/Adapters/{id}/**	**Description**
Method	HEAD	Pings this Adapter
Request Header	Authorization (Mandatory)	The request requires either Basic or Digest authorization
Query Parameters		
Response	200 OK 401 Unauthorized 404 Not Found	OK with no response body Unauthorized; credential entry failed or missing

		Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource

OPTIONS /Network/Devices/{id}/Adapters/- Determine Allowable Methods for a Collection of Adapters

URI:	**/Network/Devices/{id}/Adapters/**	**Description**
Method	OPTIONS	Get the allowable HTTP Methods list for this resource
Request Header		
Query Parameters		
Response	200 OK 404 Not Found	OK & the "Allow" list of methods in the response header. The response body provides the JSON Schema for this resource Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource

OPTIONS /Network/Devices/{id}/Adapters/{id}/ - Determine Allowable Methods for a specific Adapter

URI:	**/Network/Devices/{id}/Adapters/{id}/**	**Description**
Method	OPTIONS	Get the allowable HTTP Methods list for this resource
Request Header		
Query Parameters		
Response	200 OK 404 Not Found	OK & the "Allow" list of methods in the response header. The response body provides the JSON Schema for this resource Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource

Methods Not Allowed on **/Network/Devices/{id}/Adapters/** Collection

URI:	**/Network/Devices/{id}/Adapters/**	**Description**

Method	POST, PUT, DELETE	Methods that are not allowed
Request Header		
Query Parameters		
Response	405 Method Not Allowed	Method not allowed for this Resource; returns "Allow" header with allowable methods list

Methods Not Allowed on **/Network/Devices/{id}/Adapters/{id}/** Instance

URI:	**/Network/Devices/{id}/Adapters/{id}/**	**Description**
Method	POST, PUT, DELETE	Methods that are not allowed
Request Header		
Query Parameters		
Response	405 Method Not Allowed	Method not allowed for this Resource; returns "Allow" header with allowable methods list

Collection Resource Attributes

Attribute	**Type**	**Requirement**	**User Configurable**	**Possible Values**	**Description**	**Model Correspondence**
Self	URI String	Mandatory	No	Free-Form URI Format 256 Chars	Describes the fully qualified URI link for the Collection	{ IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking }
Members	String Array	Optional	No	Resource Collection (0 - n entries)	The array of Resource Instances (see Instance Resource Attributes Table for Instance Attribute details)	

Instance Resource Attributes

Attribute	Type	Requirement	User Configurable	Possible Values	Description	Model Correspondence
Self	URI String	Mandatory	No	Free-Form URI Format 256 Chars	Describes the fully qualified URI link	{ IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking }
ID	String	Mandatory	No	Free-Form 256 Chars	The resource identifier that is unique in space and time	{ DMTF | CIM | LogicalElement.DeviceID }
Status.State.Name	String	Mandatory	No	"Unknown" "Not available" "Servicing" "Starting" "Stopping" "Stopped" "Aborted" "Dormant" "Completed" "Migrating" "Emigrating" "Immigrating" "Snapshotting" "Shutting down" "In test" "Transitioning" "In service"	The current state value of this Resource	{ DMTF | CIM | ManagedSystemElement.State }
Status.State.ID	Number	Mandatory	No	0 1 2 3 4 5 6 7 8 9 10 11	The current state value map of this Resource	{ DMTF | CIM | ManagedSystemElement.State }

				12 13 14 15 16		
Status.Health[].Name	String (1..*)	Mandatory	No	"Unknown" "OK" "Degraded/Warning" "Minor failure" "Major failure" "Critical failure" "Non-recoverable error" "Not installed" "Not available" "No access allowed"	The current health value of this Resource. There can be 1 or more Name entries.	{ DMTF | CIM | ManagedSystemElement.HealthState }
Status.Health[].ID	Number (1..*)	Mandatory	No	0 5 10 15 20 25 30 65536 65537 65538	The current health value map of this Resource. There can be 1 or more Identries.	{ DMTF | CIM | ManagedSystemElement.HealthState }
Ports.Self	String	Mandatory	No	Free-Form URI Format 256 Chars	Describes the fully qualified URI link	{ IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking }

EXAMPLES

GET Adapters Example - Specific Instance Based on the Identifier

Request

Method	URI	Query String	Request Header	Request Body
GET	/Network/Devices/{id}/Adapters/management/		Authorization (Mandatory) If-None-Match: {etag} (Optional)	

Response

Precondition	Response Code	Response Header	Response Body
Credentials invalid or missing	401 Unauthorized		
Resource Id does not exist	404 Not Found		
If-None-Match true	304 Not Modified		
If-None-Match false or missing	200 OK	Content-Type: application/json ETag: {etag}	{ "Self": "http://10.20.30.40/Network/Devices/0123456789/Adapters/management/", "ID": "management", "Status": { "State": { "ID": 16, "Name": "In service" }, "Health": [{ "ID": 5, "Name": "OK" }] }, "Ports": { "Self": "http://10.20.30.40/Network/Devices/0123456789/Adapters/management/Ports/", } }

9.7.3 Ports

Description

The Device-level methods and attributes return information about the Port(s) and do certain operations.

Allowable Methods

URI	Allowable Methods
/Network/Devices/{id}/Adapters/{id}/Ports/	GET, HEAD, OPTIONS
/Network/Devices/{id}/Adapters/{id}/Ports/{id}/	GET, PUT, HEAD, OPTIONS

GET /Network/Devices/{id}/Adapters/{id}/Ports/ - Retrieve all Ports on a specific Adapter

URI:	/Network/Devices/{id}/Adapters/{id}/Ports/	Description
Method	GET	Returns the Collection of Ports
Request Header	Authorization (Mandatory) If-None-Match (Optional)	The request requires either Basic or Digest authorization The request is conditionally processed only if the current ETag for the resource does not match the ETag passed in this header
Query Parameters		
Response	200 OK 304 Not Modified 401 Unauthorized 404 Not Found	OK & List of Ports + ETag Header If-None-Match Etag value matched, therefore no Response Body will be returned Unauthorized; credential entry failed or missing Resource Collection does not exist; this IP Address is running an HTTP service, but does not recognize this resource

GET /Network/Devices/{id}/Adapters/{id}/Ports/{id} - Retrieve a specific Port on a specific Adapter

URI:	/Network/Devices/{id}/Adapters/{id}/Ports/{id}/	Description

Method	GET	Returns the information regarding a specific Port based on the {id} in the URI address string
Request Header	Authorization (Mandatory) If-None-Match (Optional)	The request requires either Basic or Digest authorization The request is conditionally processed only if the current ETag for the resource does not match the ETag passed in this header
Query Parameters		
Response	200 OK 401 Unauthorized 404 Not Found	OK & Port information in the response body + ETag Header Unauthorized; credential entry failed or missing Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource

PUT /Network/Devices/{id}/Adapters/{id}/Ports/{id} - Modify specific Port attributes

URI:	**/Network/Devices/{id}/Adapters/{id}/Ports/{id}/**	**Description**
Method	PUT	Modify an attribute or execute an operation for this Port
Request Header	Authorization (Mandatory) If-Match (Mandatory)	The request requires either Basic or Digest authorization The request is conditionally processed only if the current ETag for the resource matches the ETag passed in this header
Query Parameters		

Request Body	{
	"AddressOrigin": {
	"ID": number,
	"Name": "DHCP | STATIC"
	},
	"IPv4Address": "ipv4_address/cidr",
	"IPGateway": "ipv4_gateway",
	"MTUBytes": 1500,
		JSON BODY START
		Address Origin - where the IP Address comes from
		Origin Type ID (4 or 3)
		Origin Type Name (DHCP or Static)
		
		IPv4 Address and CIDR mask value
		IPv4 Gateway Address

	"DNS": ["ipv4_address"] }	Maximum Transfer Unit in bytes (range: 46 - 9216) DNS address list comma separated JSON BODY END
Response	200 OK 400 Bad Request 401 Unauthorized 404 Not Found 412 Precondition Failed 428 Precondition Required 500 Internal Server Error	OK & Port information in the response body + ETag Header Bad Request (typically a faulty parameter) Unauthorized; credential entry failed or missing The Resource doesn't exist Indicates the "If-Match" Etag check failed Indicates the need for an "If-Match" conditional with an Etag value in the Request Header System could not process the request

HEAD /Network/Devices/{id}/Adapters/{id}/Ports/{id}/ - Ping the Collection of Ports on a specific Adapter

URI:	**/Network/Devices/{id}/Adapters/{id}/Ports/**	**Description**
Method	HEAD	Pings this Port Collection
Request Header	Authorization (Mandatory)	The request requires either Basic or Digest authorization
Query Parameters		
Response	200 OK 401 Unauthorized 404 Not Found	OK with no response body Unauthorized; credential entry failed or missing Resource Collection does not exist; this IP Address is running an HTTP service, but does not recognize this resource

HEAD /Network/Devices/{id}/Adapters/{id}/Ports/{id}/ - Ping a specific Port on a specific Adapter

URI:	**/Network/Devices/{id}/Adapters/{id}/Ports/{id}/**	**Description**
Method	HEAD	Pings this Port

Request Header	Authorization (Mandatory)	The request requires either Basic or Digest authorization
Query Parameters		
Response	200 OK 401 Unauthorized 404 Not Found	OK with no response body Unauthorized; credential entry failed or missing Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource

OPTIONS /Network/Devices/{id}/Adapters/{id}/Ports/- Determine Allowable Methods for a Collection of Ports on a specific Adapter

URI:	**/Network/Devices/{id}/Adapters/{id}/Ports/**	**Description**
Method	OPTIONS	Get the allowable HTTP Methods list for this resource
Request Header		
Query Parameters		
Response	200 OK 404 Not Found	OK & the “Allow” list of methods in the response header. The response body provides the JSON Schema for this resource Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource

OPTIONS /Network/Devices/{id}/Adapters/{id}/Ports/{id}/ - Determine Allowable Methods for a specific Port on a specific Adapter

URI:	**/Network/Devices/{id}/Adapters/{id}/Ports/{id}/**	**Description**
Method	OPTIONS	Get the allowable HTTP Methods list for this resource
Request Header		
Query Parameters		

Response	200 OK 404 Not Found	OK & the "Allow" list of methods in the response header. The response body provides the JSON Schema for this resource Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource

Methods Not Allowed on **/Network/Devices/{id}/Adapters/{id}/Ports/** Collection

URI:	**/Network/Devices/{id}/Adapters/{id}/Ports/**	**Description**
Method	POST, PUT, DELETE	Methods that are not allowed
Request Header		
Query Parameters		
Response	405 Method Not Allowed	Method not allowed for this Resource; returns "Allow" header with allowable methods list

Methods Not Allowed on **/Network/Devices/{id}/Adapters/{id}/Ports/{id}/** Instance

URI:	**/Network/Devices/{id}/Adapters/{id}/Ports/{id}/**	**Description**
Method	POST, DELETE	Methods that are not allowed
Request Header		
Query Parameters		
Response	405 Method Not Allowed	Method not allowed for this Resource; returns "Allow" header with allowable methods list

Collection Resource Attributes

Attribute	**Type**	**Requirement**	**User Configurable**	**Possible Values**	**Description**	**Model Correspondence**
Self	URI String	Mandatory	No	Free-Form URI Format 256 Chars	Describes the fully qualified	{ IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking }

					URI link for the Collection	
Members	String Array	Optional	No	Resource Collection (0 - n entries)	The array of Resource Instances (see Instance Resource Attributes Table for Instance Attribute details)	

Instance Resource Attributes

Attribute	Type	Requirement	User Configurable	Possible Values	Description	Model Correspondence
Self	URI String	Mandatory	No	Free-Form URI Format 256 Chars	Describes the fully qualified URI link	{ IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking }
ID	String	Mandatory	No	Free-Form 256 Chars	The resource identifier that is unique in space and time	{ DMTF | CIM | LogicalElement.DeviceID }
Status.State.Name	String	Mandatory	No	"Unknown" "Not available" "Servicing" "Starting" "Stopping" "Stopped" "Aborted" "Dormant" "Completed"	The current state value of this Resource	{ DMTF | CIM | ManagedSystemElement.State }

				"Migrating" "Emigrating" "Immigrating" "Snapshotting" "Shutting down" "In test" "Transitioning" "In service"		
Status.State.ID	Number	Mandatory	No	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16	The current state value map of this Resource	{ DMTF | CIM | ManagedSystemElement.State }
Status.Health[].Name	String (1..*)	Mandatory	No	"Unknown" "OK" "Degraded/Warning" "Minor failure" "Major failure" "Critical failure" "Non-recoverable error" "Not installed" "Not available"	The current health value of this Resource. There can be 1 or more Name entries.	{ DMTF | CIM | ManagedSystemElement.HealthState }

				"No access allowed"		
Status.Health[].ID	Number (1..*)	Mandatory	No	0 5 10 15 20 25 30 65536 65537 65538	The current health value map of this Resource. There can be 1 or more Id entries.	{ DMTF | CIM | ManagedSystemElement.HealthState }
AddressOrigin.Name	String	Mandatory	Yes	"UNKNOWN" "OTHER" "NOT APPLICABLE" "STATIC" "DHCP"	Information value as to where the address is supplied	{ DMTF | CIM | DHCPSettingData.AddressOrigin }
AddressOrigin.ID	Number	Mandatory	Yes	0 1 2 3 4	Information value map as to where the address is supplied	{ DMTF | CIM | DHCPSettingData.AddressOrigin }
IPv4Address	String	Mandatory	Yes	IPv4 4-Octet pattern + CIDR mask	The Network IP Address for this Device; IPv4 type	{ DMTF | CIM | StaticIPAssignmentSettingData.IPv4Address }

					NOTE: 0.0.0.0/8 & 127.0.0.0/8 are reserved and rejected	
IPGateway	String	Optional	Yes	IPv4 4-Octet pattern	The Network IP Gateway address setting	{ DMTF | CIM | StaticIPAssignmentSettingData.GatewayIPv4Address }
MACAddress	String	Mandatory	No	6-hex digit HW address		
NetworkType.Name	String	Mandatory	No	"LAN" "WLAN" "WAN" "MAN" "SAN" "VLAN" "Ethernet Network" "IP Network" "IPv4 Network" "IPv6 Network"	The network type value	{ DMTF | CIM | System.AdminDomain.Network }
NetworkType.ID	Number	Mandatory	No	0 1 2 3 4 5 6 7 8	The network type value map	{ DMTF | CIM | System.AdminDomain.Network }
MTUBytes	Number	Mandatory	Yes	Range: 46 - 9216 (default: 1500)	The current Maximum	{ DMTF | CIM | System.AdminDomain.Network.NetworkVLAN.TransmissionSize }

					Transfer Bytes value	
DNS	String Array	Optional	Yes	IPv4 4-Octet pattern	List of DNS server addresses	{ DMTF | CIM | IPAssignmentSettingData.DNSSettingData.DNSServerAddresses }

EXAMPLES

GET Ports Example - Specific Instance Based on the Identifier

Request

Method	URI	Query String	Request Header	Request Body
GET	/Network/Devices/{id}/Adapters/management/Ports/{id}		Authorization (Mandatory) If-None-Match: {etag} (Optional)	

Response

Precondition	Response Code	Response Header	Response Body
Credentials invalid or missing	401 Unauthorized		
Resource Id does not exist	404 Not Found		
If-None-Match true	304 Not Modified		

If-None-Match false or missing	200 OK	Content-Type: application/json ETag: {etag}	{
			"Self": "http://10.20.30.40/Network/Devices/0123456789/Adapters/management/Ports/01_0a_f7_95_79_3c/",
			"ID": "01_0a_f7_95_79_3c",
			"Status": {
			"State": {
			"ID": 16,
			"Name": "In service"
			},
			"Health": [{
			"ID": 5,
			"Name": "OK"
			}]
			},
			"AddressOrigin": {
			"ID": 4,
			"Name": "DHCP"
			},
			"IPv4Address": "10.20.30.40/22",
			"IPGateway": "",
			"MACAddress": "01:0a:f7:95:79:3c",
			"NetworkType": {
			"ID": 8,
			"Name": "IPv4 Network"
			},
			"MTUBytes": 1500
			}

PUT Port Example - Change the MTUBytes of a specific Port

Request

Method	URI	Query String	Request Header	Request Body

PUT	/Network/Devices/{id}/Adapters/{id}/Ports/{id}		Authorization (Mandatory)
			If-Match: {etag} (Mandatory)
				{
				"MTUBytes" : 5000
				}

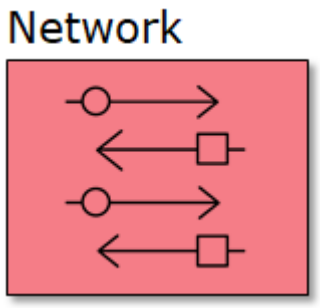
Response

Precondition	Response Code	Response Header	Response Body
Credentials invalid	401 Unauthorized		

or missing			
Resource Id does not exist	404 Not Found		
Bad/Missing Parameter in Body	400 Bad Request		
System could not process the request	500 Internal Server Error		
If-Match false	412 Precondition Failed		
If-Match missing	428 Precondition Required		
If-Match true	200 OK	Content-Type: application/json	{ "Self": "http://10.20.30.40/Network/Devices/0123456789/Adapters/management/Ports/01_0a_f7_95_79_3c/", "ID": "01_0a_f7_95_79_3c", "Status": { "State": { "ID": 16, "Name": "In service" }, "Health": [{ "ID": 5, "Name": "OK" }] }, "AddressOrigin": {

			"ID": 4,
			"Name": "DHCP"
			},
			"IPv4Address": "10.20.30.40/22",
			"IPGateway": "",
			"MACAddress": "01:0a:f7:95:79:3c",
			"NetworkType": {
			"ID": 8,
			"Name": "IPv4 Network"
			},
			"MTUBytes": 5000
			}

9.8 Network Devices - Logical



This table shows the logical and virtual resources for a network device. The set of resource URIs is as follows:

URI Pattern	Description
/Network/Devices/{id}/VLANs/	Collection of Network VLANs available within this Network Device
/Network/Devices/{id}/VLANs/{id}/	A specific Network VLAN within this Network Device
/Network/Devices/{id}/Interfaces/	Collection of Interfaces available within this Network Device
/Network/Devices/{id}/Interfaces/{id}/	A specific Interface available within this Network Device
/Network/Devices/{id}/Location/	The Location information for the Network Device
/Network/Devices/{id}/SystemClock/	The System Clock information for this Network Device

/Network/Devices/{id}/Accounts/	Collection of Accounts available within this Network Device
/Network/Devices/{id}/Accounts/{id}/	A specific Account available within this Network Device
/Network/Devices/{id}/OperatingSystem/	The local Operating System information for this Network Device
/Network/Devices/{id}/Jobs/	Collection of Jobs available within this Network Device
/Network/Devices/{id}/Jobs/{id}/	A specific Job available within this Network Device
/Network/Devices/{id}/Performance/	The Performance information within this Network Device

9.8.1 VLANs

Description

The Device-level methods and attributes return information about the Network VLAN(s) and do certain operations.

Allowable Methods

URI	Allowable Methods
/Network/Devices/{id}/VLANs/	GET, POST, HEAD, OPTIONS
/Network/Devices/{id}/VLANs/{id}/	GET, PUT, DELETE, HEAD, OPTIONS

GET /Network/Devices/{id}/VLANs/ - Retrieve all Network VLANs

URI:	/Network/Devices/{id}/VLANs/	Description
Method	GET	Returns the Collection of VLANs
Request Header	Authorization (Mandatory) If-None-Match (Optional)	The request requires either Basic or Digest authorization The request is conditionally processed only if the current ETag for the resource does not match the ETag passed in this header
Query Parameters		
Response	200 OK 304 Not Modified 401 Unauthorized 404 Not Found	OK & List of VLANs + ETag Header If-None-Match Etag value matched, therefore no Response Body will be returned Unauthorized; credential entry failed or missing

		Resource Collection does not exist; this IP Address is running an HTTP service, but does not recognize this resource

GET /Network/Devices/{id}/VLANs/{Id}/ - Retrieve a specific Network VLAN

URI:	/Network/Devices/{id}/VLANs/{id}/	Description
Method	GET	Returns the information regarding a specific VLAN based on the {id} in the URI address string
Request Header	Authorization (Mandatory) If-None-Match (Optional)	The request requires either Basic or Digest authorization The request is conditionally processed only if the current ETag for the resource does not match the ETag passed in this header
Query Parameters		
Response	200 OK 401 Unauthorized 404 Not Found	OK & VLAN information in the response body + ETag Header Unauthorized; credential entry failed or missing Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource

POST/Network/Devices/{id}/VLANs/ - Create a new Network VLAN

URI:	/Network/Devices/{id}/VLANs/{id}	Description
Method	POST	Create a new VLAN
Request Header	Authorization (Mandatory)	The request requires either Basic or Digest authorization
Query Parameters		

Request Body	{
	"Name": "vlan_name",
	"Description": "desc"
	}
		JSON BODY START
		Name of the VLAN
		User description for the VLAN
		JSON BODY END

Response	201 Created 400 Bad Request 401 Unauthorized 409 Conflict	Created & VLAN information in the response body + ETag Header + new URI in Location Header Bad Request (typically a faulty parameter)

	500 Internal Server Error	Unauthorized; credential entry failed or missing A new parameter value already exists (e.g., Name) System could not process the request

PUT /Network/Devices/{id}/VLANs/{id} - Modify specific Network VLAN attributes

URI:	**/Network/Devices/{id}/VLANs/{id}**	**Description**
Method	PUT	Modify an attribute or execute an operation for this VLAN
Request Header	Authorization (Mandatory) If-Match (Mandatory)	The request requires either Basic or Digest authorization The request is conditionally processed only if the current ETag for the resource matches the ETag passed in this header
Query Parameters		

Request Body	{
	"Name": "vlan_name",
	"Description": "desc",
	}
		JSON BODY START
		Name of the VLAN
		User description for the VLAN
		JSON BODY END

Response	200 OK 400 Bad Request 401 Unauthorized 404 Not Found 409 Conflict 412 Precondition Failed 428 Precondition Required 500 Internal Server Error	OK & VLAN information in the response body + ETag Header Bad Request (typically a faulty parameter) Unauthorized; credential entry failed or missing The Resource doesn't exist A new parameter value already exists (e.g., Name) Indicates the "If-Match" Etag check failed Indicates the need for an "If-Match" conditional with an Etag value in the Request Header System could not process the request

HEAD /Network/Devices/{id}/VLANs/ - Ping the Collection of Network VLANs

URI:	**/Network/Devices/{id}/VLANs/**	**Description**
Method	HEAD	Pings this Network VLAN Collection
Request Header	Authorization (Mandatory)	The request requires either Basic or Digest authorization

Query Parameters		
Response	200 OK 401 Unauthorized 404 Not Found	OK with no response body Unauthorized; credential entry failed or missing Resource Collection does not exist; this IP Address is running an HTTP service, but does not recognize this resource

HEAD /Network/Devices/{id}/VLANs/{id}/ - Ping a specific Network VLAN

URI:	/Network/Devices/{id}/VLANs/{id}/	Description
Method	HEAD	Pings this Network VLAN
Request Header	Authorization (Mandatory)	The request requires either Basic or Digest authorization
Query Parameters		
Response	200 OK 401 Unauthorized 404 Not Found	OK with no response body Unauthorized; credential entry failed or missing Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource

OPTIONS /Network/Devices/{id}/VLANs/ - Determine Allowable Methods for a Collection of Network VLANs

URI:	/Network/Devices/{id}/VLANs/	Description
Method	OPTIONS	Get the allowable HTTP Methods list for this resource
Request Header		
Query Parameters		
Response	200 OK 404 Not Found	OK & the “Allow” list of methods in the response header. The response body provides the JSON Schema for this resource Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource

OPTIONS /Network/Devices/{id}/VLANs/{Id}/ - Determine Allowable Methods for a specific Network VLAN

URI:	**/Network/Devices/{id}/VLANs/{id}/**	**Description**
Method	OPTIONS	Get the allowable HTTP Methods list for this resource
Request Header		
Query Parameters		
Response	200 OK 404 Not Found	OK & the "Allow" list of methods in the response header. The response body provides the JSON Schema for this resource Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource

DELETE /Network/Devices/{id}/VLANs/{id} - Delete specific Network VLAN

URI:	**/Network/Devices/{id}/VLANs/{id}**	**Description**
Method	DELETE	Delete this VLAN
Request Header	Authorization (Mandatory) If-Match (Mandatory)	The request requires either Basic or Digest authorization The request is conditionally processed only if the current ETag for the resource matches the ETag passed in this header
Query Parameters		
Request Body		
Response	204 No Content 401 Unauthorized 404 Not Found 412 Precondition Failed 428 Precondition Required 500 Internal Server Error	Delete successful, no content in the response body Unauthorized; credential entry failed or missing The Resource doesn't exist Indicates the "If-Match" Etag check failed Indicates the need for an "If-Match" conditional with an Etag value in the Request Header System could not process the request

Methods Not Allowed on **/Network/Devices/{id}/VLANs/** Collection

URI:	/Network/Devices/{id}/VLANs/	Description
Method	PUT, DELETE	Methods that are not allowed
Request Header		
Query Parameters		
Response	405 Method Not Allowed	Method not allowed for this Resource; returns "Allow" header with allowable methods list

Methods Not Allowed on **/Network/Devices/{id}/VLANs/{id}/** Instance

URI:	/Network/Devices/{id}/VLANs/{id}/	Description
Method	POST	Methods that are not allowed
Request Header		
Query Parameters		
Response	405 Method Not Allowed	Method not allowed for this Resource; returns "Allow" header with allowable methods list

Collection Resource Attributes

Attribute	Type	Requirement	User Configurable	Possible Values	Description	Model Correspondence
Self	URI String	Mandatory	No	Free-Form URI Format 256 Chars	Describes the fully qualified URI link for the Collection	{ IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking }
Members	String Array	Optional	No	Resource Collection (0 - n entries)	The array of Resource Instances (see Instance Resource Attributes Table for Instance Attribute details)	

Instance Resource Attributes

Attribute	Type	Requirement	User Configurable	Possible Values	Description	Model Correspondence
Self	URI String	Mandatory	No	Free-Form URI Format 256 Chars	Describes the fully qualified URI link	{ IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking }
Name	String	Mandatory	Yes	Free-Form 256 Chars	The user-defined name of this VLAN	{ DMTF | CIM | ManagedSystemElement.Name }
ID	String	Mandatory	No	Free-Form 256 Chars	The resource identifier that is unique in space and time	{ DMTF | CIM | LogicalElement.DeviceID }
Description	String	Optional	Yes	Free-Form 64 Chars	The user-defined description for this VLAN	{ DMTF | CIM | ManagedElement.Description }
CreateDate	datetime	Mandatory	No	Date and Time	The date and time the VLAN was created	{ DMTF | CIM | ManagedSystemElement.InstallDate }
LastModified	datetime	Mandatory	No	Date and Time	The date and time the VLAN was modified	{ DMTF | CIM | LogicalElement.TimeOfLastStateChange }
Status.State.Name	String	Mandatory	No	"Unknown" "Not available" "Servicing" "Starting" "Stopping" "Stopped" "Aborted" "Dormant"	The current state value of this Resource	{ DMTF | CIM | ManagedSystemElement.State }

				"Completed" "Migrating" "Emigrating" "Immigrating" "Snapshotting" "Shutting down" "In test" "Transitioning" "In service" "Down" "Up"		
Status.State.ID	Number	Mandatory	No	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 65536 65537	The current state value map of this Resource	{ DMTF | CIM | ManagedSystemElement.State }
Interfaces	String Array	Mandatory	Yes	Free-Form URI Format 256 Chars	Describes the fully qualified URI link to one or more interfaces	{ IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking }

EXAMPLES

GET VLAN Example - Specific Instance Based on the Identifier

Request

Method	URI	Query String	Request Header	Request Body
GET	/Network/Devices/{id}/VLANs/{id}		Authorization (Mandatory) If-None-Match: {etag} (Optional)	

Response

Precondition	Response Code	Response Header	Response Body
Credentials invalid or missing	401 Unauthorized		
Resource Id does not exist	404 Not Found		
If-None-Match true	304 Not Modified		

If-None-Match false or missing	200 OK	Content-Type: application/json
		ETag: {etag}
			{
			"Self": "http://10.20.30.40/Network/Devices/0123456789/VLANs/c4e91cab-9e4f-45b7-b206-9271f68c7e86/",
			"Name": "vlan01",
			"ID": "c4e91cab-9e4f-45b7-b206-9271f68c7e86",
			"Description": "",
			"CreateDate": "Thu Aug 23 13:10:27 2018",
			"LastModified": "Thu Aug 23 13:10:27 2018",
			"Status": {
			"State": {
			"ID": 65537,
			"Name": "Up"

			}
			},
			"Interfaces": [{
			"http://10.20.30.42/Network/Devices/0123456789/Interfaces/d5e1e7fa_22ad_4500_9d52_44134fcb7268",
			"http://10.20.30.42/Network/Devices/0123456789/Interfaces/159f6b8f_de63_42fd_bb4a_0ddc84ed1eaf"
			}]
			}

9.8.2 Interfaces

Description

The Device-level methods and attributes return information about the Interface(s) and do certain operations.

Allowable Methods

URI	Allowable Methods
/Network/Devices/{id}/Interfaces/	GET, HEAD, OPTIONS
/Network/Devices/{id}/Interfaces/{id}/	GET, HEAD, OPTIONS

GET /Network/Devices/{id}/Interfaces/ - Retrieve all Interfaces

URI:	/Network/Devices/{id}/Interfaces/	Description
Method	GET	Returns the Collection of Interfaces
Request Header	Authorization (Mandatory) If-None-Match (Optional)	The request requires either Basic or Digest authorization The request is conditionally processed only if the current ETag for the resource does not match the ETag passed in this header
Query Parameters		
Response	200 OK 304 Not Modified 401 Unauthorized 404 Not Found	OK & List of Interfaces + ETag Header If-None-Match Etag value matched, therefore no Response Body will be returned Unauthorized; credential entry failed or missing Resource Collection does not exist; this IP Address is running an HTTP service, but does not recognize this resource

GET /Network/Devices/{id}/Interfaces/{id}/ - Retrieve a specific Interface

URI:	/Network/Devices/{id}/Interfaces/{id}/	Description
Method	GET	Returns the information regarding a specific Interface based on the {id} in the URI address string
Request Header	Authorization (Mandatory) If-None-Match (Optional)	The request requires either Basic or Digest authorization The request is conditionally processed only if the current ETag for the resource does not match the ETag passed in this header
Query Parameters		
Response	200 OK 401 Unauthorized 404 Not Found	OK & Interface information in the response body + ETag Header Unauthorized; credential entry failed or missing Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource

HEAD /Network/Devices/{id}/Interfaces/ - Ping the Collection of Interfaces

URI:	/Network/Devices/{id}/Interfaces/	Description
Method	HEAD	Pings this Interface Collection
Request Header	Authorization (Mandatory)	The request requires either Basic or Digest authorization
Query Parameters		
Response	200 OK 401 Unauthorized 404 Not Found	OK with no response body Unauthorized; credential entry failed or missing Resource Collection does not exist; this IP Address is running an HTTP service, but does not recognize this resource

HEAD /Network/Devices/{id}/Interfaces/{id}/ - Ping a specific Interface

URI:	/Network/Devices/{id}/Interfaces/{id}/	Description
Method	HEAD	Pings this Interface
Request Header	Authorization (Mandatory)	The request requires either Basic or Digest authorization

Query Parameters		
Response	200 OK 401 Unauthorized 404 Not Found	OK with no response body Unauthorized; credential entry failed or missing Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource

OPTIONS /Network/Devices/{id}/Interfaces/- Determine Allowable Methods for a Collection of Interfaces

URI:	/Network/Devices/{id}/Interfaces/	Description
Method	OPTIONS	Get the allowable HTTP Methods list for this resource
Request Header		
Query Parameters		
Response	200 OK 404 Not Found	OK & the "Allow" list of methods in the response header. The response body provides the JSON Schema for this resource Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource

OPTIONS /Network/Devices/{id}/Interfaces/{id}/ - Determine Allowable Methods for a specific Interface

URI:	/Network/Devices/{id}/Interfaces/{id}/	Description
Method	OPTIONS	Get the allowable HTTP Methods list for this resource
Request Header		
Query Parameters		
Response	200 OK 404 Not Found	OK & the "Allow" list of methods in the response header. The response body provides the JSON Schema for this resource

		Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource

Methods Not Allowed on **/Network/Devices/{id}/Interfaces/** Collection

URI:	**/Network/Devices/{id}/Interfaces/**	**Description**
Method	POST, PUT, DELETE	Methods that are not allowed
Request Header		
Query Parameters		
Response	405 Method Not Allowed	Method not allowed for this Resource; returns "Allow" header with allowable methods list

Methods Not Allowed on **/Network/Devices/{id}/Interfaces/{id}/** Instance

URI:	**/Network/Devices/{id}/Interfaces/{id}/**	**Description**
Method	POST, PUT, DELETE	Methods that are not allowed
Request Header		
Query Parameters		
Response	405 Method Not Allowed	Method not allowed for this Resource; returns "Allow" header with allowable methods list

Collection Resource Attributes

Attribute	**Type**	**Requirement**	**User Configurable**	**Possible Values**	**Description**	**Model Correspondence**
Self	URI String	Mandatory	No	Free-Form URI Format 256 Chars	Describes the fully qualified URI link for the Collection	{ IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking }
Members	String Array	Optional	No	Resource Collection (0 - n entries)	The array of Resource Instances (see Instance Resource	

					Attributes Table for Instance Attribute details)	

Instance Resource Attributes

Attribute	Type	Requirement	User Configurable	Possible Values	Description	Model Correspondence
Self	URI String	Mandatory	No	Free-Form URI Format 256 Chars	Describes the fully qualified URI link	{ IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking }
ID	String	Mandatory	No	Free-Form 256 Chars	The resource identifier that is unique in space and time	{ DMTF | CIM | LogicalElement.DeviceID }
Status.State.Name	String	Mandatory	No	"Unknown" "Not available" "Servicing" "Starting" "Stopping" "Stopped" "Aborted" "Dormant" "Completed" "Migrating" "Emigrating" "Immigrating" "Snapshotting"	The current state value of this Resource	{ DMTF | CIM | ManagedSystemElement.State }

				"Shutting down" "In test" "Transitioning" "In service" "Down" "Up"		
Status.State.ID	Number	Mandatory	No	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 65536 65537	The current state value map of this Resource	{ DMTF | CIM | ManagedSystemElement.State }
ARP.AgeTimeout	String	Mandatory	Yes	0-n		
DCBX.State	String	Mandatory	Yes	Off | On		
DCBX.PFCAdvt	String	Mandatory	Yes	Off | On		
DCBX.ETSAdvt	String	Mandatory	Yes	Off | On		
DCBX.AppAdvt	String	Mandatory	Yes	Off | On		
PFC.State	String	Mandatory	Yes	Off | PCB | PFC		
PFC.Value	String	Mandatory	Yes	1-63		

PFC.Priority Map	String	Mandatory	Yes	0-7		
ECN.State	String	Mandatory	Yes	Off | On		
ECN.Value	String	Mandatory	Yes	1-63		
ECN.Priority Map	String	Mandatory	Yes	0-7		
MACAddress	String	Mandatory	No	6-hex digit HW address		
Duplex	String	Mandatory	No	"Full" "Half"	The duplex type	
Name	String	Mandatory	No	Free-Form 256 Chars	The interface name	
MTUBytes	Number	Mandatory	Yes	Range: 46 - 9216 (default: 1500)	The current Maximum Transfer Bytes value	{ DMTF | CIM | System.AdminDomain.Network.NetworkVLAN.TransmissionSize }
Speed	Number	Mandatory	No	Integer	The maximum speed of the interface in Bits per Second	
VLANs	String Array	Mandatory	No	Free-Form URI Format 256 Chars	Describes the fully qualified URI link	{ IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking }

EXAMPLES

GET Interfaces Example - Specific Instance Based on the Identifier

Request

Method	URI	Query String	Request Header	Request Body
GET	/Network/Devices/{id}/Interfaces/{id}/		Authorization (Mandatory) If-None-Match: {etag} (Optional)	

Response

Precondition	Response Code	Response Header	Response Body
Credentials invalid or missing	401 Unauthorized		
Resource Id does not exist	404 Not Found		
If-None-Match true	304 Not Modified		

If-None-Match false or missing	200 OK	Content-Type: application/json
		ETag: {etag}
			{
			"Self": "http://10.20.30.40/Network/Devices/0123456789/Interfaces/12345/DCBX",
			"ID": "management",
			"Status": {
			"State": {
			"ID": 65536,
			"Name": "Down"
			}
			},
			"Duplex": "Full",
			"Name": "Eth1/1",
			"MTUBytes": 1500,
			"MACAddress": "a8:97:dc:1b:86:02",
			"Index": 410001,
			"Speed": "40000000",

```
        "ARP": {
                "AgeTimeout": "0"
        },
        "DCBX": {
                "State": "Off",
                "PFCAdvt": "Off",
                "ETSAdvt": "Off",
                "AppAdvt": "Off"
        },
        "PFC": {
                "State": "Off",
                "Value": "1",
                "PriorityMap": "0"
        },
        "ECN": {
                "State": "Off",
                "Value": "1",
                "PriorityMap": "0"
        },
        "VLANs": {
                "Self":
                "http://10.20.30.40/Network/Devices/0123456789
                /VLANs/1/"
        }
}
```


9.8.3 DCB

Description

The Device-level methods and attributes return information about the Interface(s) and do certain operations.

Allowable Methods

URI	Allowable Methods
/Network/Devices/{id}/Interfaces/{id}/DCB	GET, PUT, HEAD, OPTIONS

GET /Network/Devices/{id}/Interfaces/{id}/DCB - Retrieve a specific Interface DCB Settings Resource

URI:	/Network/Devices/{id}/Interfaces/{id}/DCB	Description

Method	GET	Returns the information regarding a specific Interface DCB Settings
Request Header	Authorization (Mandatory) If-None-Match (Optional)	The request requires either Basic or Digest authorization The request is conditionally processed only if the current ETag for the resource does not match the ETag passed in this header
Query Parameters		
Response	200 OK 401 Unauthorized 404 Not Found	OK & Interface information in the response body + ETag Header Unauthorized; credential entry failed or missing Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource

PUT /Network/Devices/{id}/Interfaces/{id}/DCB - Modify specific Interface DCB Settings attributes

URI:	**/Compute/Devices/{id}/Volumes/{id}**	**Description**
Method	PUT	Modify an attribute or execute an operation for this Volume
Request Header	Authorization (Mandatory) If-Match (Mandatory)	The request requires either Basic or Digest authorization The request is conditionally processed only if the current ETag for the resource matches the ETag passed in this header
Query Parameters		

Request Body	{
	"DCBX": {
	"State": "Off | On",
	"PFCAdvt": "Off | On",
	"ETSAdvt": "Off | On",
	"AppAdvt": "Off | On"
	},
	"PFC": {
	"State": "Off | PCP |
	DSCP",
		JSON BODY START
		Data Center Bridging Exchange Settings
		Change the DCBX state
		Change the PFC state
		Change the ETS state
		Change the Application Protocol State
		
		Priority Flow Control Settings
		Change the PFC state
		Change the PFC value

	"Value": "1-63",
	"PriorityMap": "0-7"
	},
	"ECN": {
	"State": "Off | On",
	"Value": "1-63",
	"PriorityMap": "0-7"
	}
	}
		Change the PFC priority map value
		
		Explicit Congestion Notification
		Change the ECN state
		Change the ECN value
		Change the ECN priority map value
		
		JSON BODY END

Response	200 OK 400 Bad Request 401 Unauthorized 404 Not Found 409 Conflict 412 Precondition Failed 428 Precondition Required 500 Internal Server Error	OK & Volume information in the response body + ETag Header Bad Request (typically a faulty parameter) Unauthorized; credential entry failed or missing The Resource doesn't exist A new parameter value already exists (e.g., Name) Indicates the "If-Match" Etag check failed Indicates the need for an "If-Match" conditional with an Etag value in the Request Header System could not process the request

HEAD /Network/Devices/{id}/Interfaces/{id}/DCB - Ping a specific Interface DCB Settings Resource

URI:	**/Network/Devices/{id}/Interfaces/{id}/**	**Description**
Method	HEAD	Pings this Interface
Request Header	Authorization (Mandatory)	The request requires either Basic or Digest authorization
Query Parameters		
Response	200 OK 401 Unauthorized 404 Not Found	OK with no response body Unauthorized; credential entry failed or missing Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource

OPTIONS /Network/Devices/{id}/Interfaces/{id}/DCB - Determine Allowable Methods for a specific Interface DCB Settings

URI:	/Network/Devices/{id}/Interfaces/{id}/	Description
Method	OPTIONS	Get the allowable HTTP Methods list for this resource
Request Header		
Query Parameters		
Response	200 OK 404 Not Found	OK & the “Allow” list of methods in the response header. The response body provides the JSON Schema for this resource Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource

Methods Not Allowed on **/Network/Devices/{id}/Interfaces/{id}/DCB** Instance

URI:	/Network/Devices/{id}/Interfaces/{id}/	Description
Method	POST, DELETE	Methods that are not allowed
Request Header		
Query Parameters		
Response	405 Method Not Allowed	Method not allowed for this Resource; returns "Allow" header with allowable methods list

Instance Resource Attributes

Attribute	Type	Requirement	User Configurable	Possible Values	Description	Model Correspondence
Self	URI String	Mandatory	No	Free-Form URI Format 256 Chars	Describes the fully qualified URI link	{ IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking }
DCBX.State	String	Mandatory	Yes	Off | On	Data Center Bridging	

					Exchange current state	
DCBX.PFCAdvt	String	Mandatory	Yes	Off | On	DCBX Priority Flow Control current state	
DCBX.ETSAdvt	String	Mandatory	Yes	Off | On	DCBX Priority Flow Control current state	
DCBX.AppAdvt	String	Mandatory	Yes	Off | On	DCBX Enhanced Transmission Selection current status	
PFC.State	String	Mandatory	Yes	Off | PCP | DSCP	Priority Flow Control current state	
PFC.Value	String	Mandatory	Yes	1-63	PFC current value	
PFC.PriorityMap	String	Mandatory	Yes	0-7 Bitwise Mask	PFC current priority map value	
ECN.State	String	Mandatory	Yes	Off | On	Explicit Congestion Notification current state	
ECN.Value	String	Mandatory	Yes	1-63	ECN current value	
ECN.PriorityMap	String	Mandatory	Yes	0-7 Bitwise Mask	ECN current priority map value	

EXAMPLES

GET Interfaces/{id}/DCB Example - Specific Instance Based on the Identifier

Request

Method	URI	Query String	Request Header	Request Body

GET	/Network/Devices/{id}/Interfaces/{id}/DCB		Authorization (Mandatory) If-None-Match: {etag} (Optional)	

Response

Precondition	Response Code	Response Header	Response Body
Credentials invalid or missing	401 Unauthorized		
Resource Id does not exist	404 Not Found		
If-None-Match true	304 Not Modified		
If-None-Match false or missing	200 OK	Content-Type: application/json ETag: {etag}	{ "Self": "http://10.20.30.40/Network/Devices/0123456789/Interfaces/12345/DCB", "DCBX": { "State": "Off", "PFCAdvt": "Off", "ETSAdvt": "Off", "AppAdvt": "Off" }, "PFC": { "State": "Off", "Value": "1", "PriorityMap": "0" }, "ECN": { "State": "Off", "Value": "1", "PriorityMap": "0" } }

9.8.4 Paths

Description

The Device-level methods and attributes return information about the Path(s) and do certain operations.

Allowable Methods

URI	Allowable Methods
/Network/Devices/{id}/Paths/	GET, POST, HEAD, OPTIONS
/Network/Devices/{id}/Paths/{id}/	GET, DELETE, HEAD, OPTIONS

GET /Network/Devices/{id}/Paths/ - Retrieve all Paths

URI:	/Network/Devices/{id}/Paths/	Description
Method	GET	Returns the Collection of Paths
Request Header	Authorization (Mandatory) If-None-Match (Optional)	The request requires either Basic or Digest authorization The request is conditionally processed only if the current ETag for the resource does not match the ETag passed in this header
Query Parameters		
Response	200 OK 304 Not Modified 401 Unauthorized 404 Not Found	OK & List of Paths + ETag Header If-None-Match Etag value matched, therefore no Response Body will be returned Unauthorized; credential entry failed or missing Resource Collection does not exist; this IP Address is running an HTTP service, but does not recognize this resource

GET /Network/Devices/{id}/Paths/{Id}/ - Retrieve a specific Path

URI:	/Network/Devices/{id}/Paths/{id}/	Description
Method	GET	Returns the information regarding a specific Path based on the {id} in the URI address string
Request Header	Authorization (Mandatory) If-None-Match (Optional)	The request requires either Basic or Digest authorization The request is conditionally processed only if the current ETag for the resource does not match the ETag passed in this header
Query Parameters		

Response	200 OK 401 Unauthorized 404 Not Found	OK & Path information in the response body + ETag Header Unauthorized; credential entry failed or missing Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource

POST/Network/Devices/{id}/Paths/ - Create a new Path

URI:	/Network/Devices/{id}/Paths/{id}	Description
Method	POST	Create a new Path
Request Header	Authorization (Mandatory)	The request requires either Basic or Digest authorization
Query Parameters		

Request Body	{
	"Endpoints": ["endpoint1",
	"endpoint2"]
	}
		JSON BODY START
		Endpoints participating in the new Path
		JSON BODY END

Response	201 Created 400 Bad Request 401 Unauthorized 409 Conflict 500 Internal Server Error	Created & Path information in the response body + ETag Header + new URI in Location Header Bad Request (typically a faulty parameter) Unauthorized; credential entry failed or missing A path with these values already exists System could not process the request

HEAD /Network/Devices/{id}/Paths/ - Ping the Collection of Paths

URI:	/Network/Devices/{id}/Paths/	Description
Method	HEAD	Pings this Path Collection
Request Header	Authorization (Mandatory)	The request requires either Basic or Digest authorization
Query Parameters		
Response	200 OK 401 Unauthorized 404 Not Found	OK with no response body Unauthorized; credential entry failed or missing Resource Collection does not exist; this IP Address is running an HTTP service, but does not recognize this resource

HEAD /Network/Devices/{id}/Paths/{id}/ - Ping a specific Path

URI:	/Network/Devices/{id}/Paths/{id}/	Description
Method	HEAD	Pings this Path
Request Header	Authorization (Mandatory)	The request requires either Basic or Digest authorization
Query Parameters		
Response	200 OK 401 Unauthorized 404 Not Found	OK with no response body Unauthorized; credential entry failed or missing Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource

OPTIONS /Network/Devices/{id}/Paths/ - Determine Allowable Methods for a Collection of Paths

URI:	/Network/Devices/{id}/Paths/	Description
Method	OPTIONS	Get the allowable HTTP Methods list for this resource
Request Header		
Query Parameters		
Response	200 OK 404 Not Found	OK & the “Allow” list of methods in the response header. The response body provides the JSON Schema for this resource Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource

OPTIONS /Network/Devices/{id}/Paths/{Id}/ - Determine Allowable Methods for a specific Path

URI:	/Network/Devices/{id}/Paths/{id}/	Description
Method	OPTIONS	Get the allowable HTTP Methods list for this resource

Request Header		
Query Parameters		
Response	200 OK 404 Not Found	OK & the "Allow" list of methods in the response header. The response body provides the JSON Schema for this resource Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource

DELETE /Network/Devices/{id}/Paths/{id} - Delete specific Path

URI:	/Network/Devices/{id}/Paths/{id}	Description
Method	DELETE	Delete this Path
Request Header	Authorization (Mandatory) If-Match (Mandatory)	The request requires either Basic or Digest authorization The request is conditionally processed only if the current ETag for the resource matches the ETag passed in this header
Query Parameters		
Request Body		
Response	204 No Content 401 Unauthorized 404 Not Found 412 Precondition Failed 428 Precondition Required 500 Internal Server Error	Delete successful, no content in the response body Unauthorized; credential entry failed or missing The Resource doesn't exist Indicates the "If-Match" Etag check failed Indicates the need for an "If-Match" conditional with an Etag value in the Request Header System could not process the request

Methods Not Allowed on /Network/Devices/{id}/Paths/ Collection

URI:	/Network/Devices/{id}/Paths/	Description
Method	PUT, DELETE	Methods that are not allowed
Request Header		
Query Parameters		

Response	405 Method Not Allowed	Method not allowed for this Resource; returns "Allow" header with allowable methods list

Methods Not Allowed on **/Network/Devices/{id}/Paths/{id}/** Instance

URI:	**/Network/Devices/{id}/Paths/{id}/**	**Description**
Method	POST, PUT	Methods that are not allowed
Request Header		
Query Parameters		
Response	405 Method Not Allowed	Method not allowed for this Resource; returns "Allow" header with allowable methods list

Collection Resource Attributes

Attribute	**Type**	**Requirement**	**User Configurable**	**Possible Values**	**Description**	**Model Correspondence**
Self	URI String	Mandatory	No	Free-Form URI Format 256 Chars	Describes the fully qualified URI link for the Collection	{ IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking }
Members	String Array	Optional	No	Resource Collection (0 - n entries)	The array of Resource Instances (see Instance Resource Attributes Table for Instance Attribute details)	

Instance Resource Attributes

Attribute	**Type**	**Requirement**	**User Configurable**	**Possible Values**	**Description**	**Model Correspondence**
Self	URI String	Mandatory	No	Free-Form URI Format 256 Chars	Describes the fully qualified URI link	{ IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking }
ID	String	Mandatory	No	Free-Form 256 Chars	The resource	{ DMTF | CIM | LogicalElement.DeviceID }

					identifier that is unique in space and time	
Status.State.Name	String	Mandatory	No	"Unknown" "Not available" "Servicing" "Starting" "Stopping" "Stopped" "Aborted" "Dormant" "Completed" "Migrating" "Emigrating" "Immigrating" "Snapshotting" "Shutting down" "In test" "Transitioning" "In service"	The current state value of this Resource	{ DMTF | CIM | ManagedSystemElement.State }
Status.State.ID	Number	Mandatory	No	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16	The current state value map of this Resource	{ DMTF | CIM | ManagedSystemElement.State }
Status.Health[].Name	String (1..*)	Mandatory	No	"Unknown" "OK" "Degraded/Warning" "Minor failure" "Major failure"	The current health value of this Resource.	{ DMTF | CIM | ManagedSystemElement.HealthState }

				"Critical failure" "Non-recoverable error" "Not installed" "Not available" "No access allowed"	There can be 1 or more Name entries.	
Status.Health[].ID	Number (1..*)	Mandatory	No	0 5 10 15 20 25 30 65536 65537 65538	The current health value map of this Resource. There can be 1 or more Id entries.	{ DMTF | CIM | ManagedSystemElement.HealthState }
Endpoints	URI Strings	Mandatory	No	Free-Form URI Format 256 Chars	Links to the participating Endpoints connected with this Path	{ DMTF | CIM | Logical.RemoteHost, IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking }

EXAMPLES

GET Path Example - Specific Instance Based on the Identifier

Request

Method	URI	Query String	Request Header	Request Body
GET	/Network/Devices/{id}/Paths/d5e1e7fa_22ad_4500_9d52_44134fcb7268159f6b8f_de63_42fd_bb4a_0ddc84ed1eaf		Authorization (Mandatory)	

			If-None-Match: {etag} (Optional)	

Response

Precondition	Response Code	Response Header	Response Body
Credentials invalid or missing	401 Unauthorized		
Resource Id does not exist	404 Not Found		
If-None-Match true	304 Not Modified		

If-None-Match false or missing	200 OK	Content-Type: application/json
		ETag: {etag}
			{
			"Self": "http://10.20.30.40/Network/Devices/0123456789/Paths/d5e1e7fa_22ad_4500_9d52_44134fcb7268159f6b8f_de63_42fd_bb4a_0ddc84ed1eaf/",
			"ID": "d5e1e7fa_22ad_4500_9d52_44134fcb7268159f6b8f_de63_42fd_bb4a_0ddc84ed1eaf",
			"Status": {
			"State": {
			"ID": 16,
			"Name": "In Service"
			},
			"Health": [{
			"ID": 5,
			"Name": "OK"
			}]
			},
			"Interfaces": [{

			"http://10.20.30.40/Network/Devices/0123456789/Interfaces/d5e1e7fa_22ad_4500_9d52_44134fcb7268", "http://10.20.30.40/Network/Devices/0123456789/Interfaces/159f6b8f_de63_42fd_bb4a_0ddc84ed1eaf" }] }

9.8.5 Location

Description

The Device-level methods and attributes return information about the Location and do certain operations.

Allowable Methods

URI	Allowable Methods
/Network/Devices/{id}/Location	GET, PUT, HEAD, OPTIONS

GET /Network/Devices/{id}/Location- Retrieve the Location information

URI:	/Network/Devices/{id}/Location	Description
Method	GET	Returns the information of the Location
Request Header	Authorization (Mandatory) If-None-Match (Optional)	The request requires either Basic or Digest authorization The request is conditionally processed only if the current ETag for the resource does not match the ETag passed in this header
Query Parameters		
Response	200 OK 304 Not Modified 401 Unauthorized 404 Not Found	OK & Location information in the response body If-None-Match Etag value matched, therefore no Response Body will be returned Unauthorized; credential entry failed or missing Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource

PUT /Network/Devices/{id}/Location- Modify an attribute of the Location

URI:	/Network/Devices/{id}/Location	Description
Method	PUT	Modify an attribute of the Location

Request Header	Authorization (Mandatory) If-Match (Mandatory)	The request requires either Basic or Digest authorization The request is conditionally processed only if the current ETag for the resource matches the ETag passed in this header
Query Parameters		

Request Body	{
	"Country" : "new_country",
	"Territory" : "new_territory",
	"State" : "new_state",
	"City" : "new_city",
	"Address1": "new_addr1",
	"Address2": "new_addr2",
	"Address3": "new_addr3",
	"PostalCode": "new_zip",
	"SiteName": "new_name",
	"Building": "new_bldg",
	"Room": "new_room",
	"Pod": "new_pod",
	"Rack": "new_row",
	"Shelf": "new_shelf",
	"Item": "new_item",
	"GPSCoords": "new_coords",
	"OtherLocationInfo":
	"new_info",
	}
		JSON BODY START
		Change the Country
		Change the Territory
		Change the State
		Change the City
		Change the Address1
		Change the Address2
		Change the Address3
		Change the PostalCode
		Change the SiteName
		Change the Building number or name
		Change the Room number or name
		Change the Pod number or name
		Change the Row number or name
		Change the Shelf number or name
		Change the Item
		Change the GPS coordinates
		Change the other location information
		JSON BODY END

Response	200 OK 400 Bad Request 401 Unauthorized 500 Internal Server Error	OK & Location information in the response body Bad Request (typically a faulty parameter) Unauthorized; credential entry failed or missing Resource could not execute the request

HEAD /Network/Devices/{id}/Location- Ping the Location

URI:	**/Network/Devices/{id}/Location**	**Description**
Method	HEAD	Pings the Location
Request Header	Authorization (Mandatory)	
Query Parameters		

Response	200 OK 401 Unauthorized 404 Not Found	OK with no response body Unauthorized; credential entry failed or missing Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource

OPTIONS /Network/Devices/{id}/Location- Determine Allowable Methods for Location

URI:	**/Network/Devices/{id}/Location**	**Description**
Method	OPTIONS	Get the allowable HTTP Methods list for this resource
Request Header		
Query Parameters		
Response	200 OK 404 Not Found	OK & the "Allow" list of methods in the response header. The response body provides the JSON Schema for this resource Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource

Methods Not Allowed on **/Network/Devices/{id}/Location**

URI:	**/Network/Devices/{id}/Location**	**Description**
Method	POST, DELETE	Methods that are not allowed
Request Header		
Query Parameters		
Response	405 Method Not Allowed	Method not allowed for this Resource

Resource Attributes

Attribute	**Type**	**Requirement**	**User Configurable**	**Possible Values**	**Description**	**Model Correspondence**

Self	String	Mandatory	No	Free-Form URI Format 256 Chars	Describes the fully qualified URI link	{ IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking }
Country	String	Optional	Yes	Free-Form 64 Chars	The Country name where this Device is located	{ DMTF | Redfish | SNIA | Swordfish | Location.Country }
Territory	String	Optional	Yes	Free-Form 64 Chars	The Territory name where this Device is located	{ DMTF | Redfish | SNIA | Swordfish | Location.Territory}
State	String	Optional	Yes	Free-Form 64 Chars	The State name where this Device is located	{ DMTF | Redfish | SNIA | Swordfish | Location.State}
City	String	Optional	Yes	Free-Form 64 Chars	The City name where this Device is located	{ DMTF | Redfish | SNIA | Swordfish | Location.City}
Address1	String	Optional	Yes	Free-Form 64 Chars	The first Address information where this Device is located	{ DMTF | Redfish | SNIA | Swordfish | Location.Address1}
Address2	String	Optional	Yes	Free-Form 64 Chars	The second Address information where this Device is located as needed	{ DMTF | Redfish | SNIA | Swordfish | Location.Address2}

Address3	String	Optional	Yes	Free-Form 64 Chars	The third Address information where this Device is located as needed	{ DMTF | Redfish | SNIA | Swordfish | Location.Address3}
PostalCode	String	Optional	Yes	Free-Form 32Chars	The Postal or Zip Code name where this Device is located	{ DMTF | Redfish | SNIA | Swordfish | Location.PostalCode}
SiteName	String	Optional	Yes	Free-Form 32Chars	The friendly Site Name	{WDC | OpenFlex| Location.SiteName }
Building	String	Optional	Yes	Free-Form 32Chars	The Building name or number where this Device is located	{ DMTF | Redfish | SNIA | Swordfish | Location.Building}
Room	String	Optional	Yes	Free-Form 32Chars	The Room name or number in the Building where this Device is located	{ DMTF | Redfish | SNIA | Swordfish | Location.Room}
Pod	String	Optional	Yes	Free-Form 32Chars	The Pod name or number in the Room this Device is located as needed	{WDC | OpenFlex | Location.Pod}
Row	String	Optional	Yes	Free-Form 32Chars	The Row name or number in the Room or Pod this	{ DMTF | Redfish | SNIA | Swordfish | Location.Row}

					Device is located	
Rack	String	Optional	Yes	Free-Form 32Chars	The Rack name or number in the Row this Device is located	{ DMTF | Redfish | SNIA | Swordfish | Location.Rack}
Shelf	String	Optional	Yes	Free-Form 32Chars	The Shelf name or number of the Rack this Device is located	{ DMTF | Redfish | SNIA | Swordfish | Location.Shelf}
Device	String	Optional	Yes	Free-Form 32Chars	The Device name or number in the Shelf this Device is located as needed	{WDC | OpenFlex| Location.Device }
Item	String	Optional	Yes	Free-Form 32Chars	The Item name indicating the Shelf units or dimension for this Device	{ DMTF | Redfish | SNIA | Swordfish | Location.Item}
GPSCoords	String	Optional	Yes	Decimal Latitude, Decimal Longitude Format	The GPS coordinates of the location of this Device	{ DMTF | Redfish | SNIA | Swordfish | Location.GPSCoords}
OtherLocationInfo	String	Optional	Yes	Free-Form 64 Chars	A place-holder for other location information	{ DMTF | Redfish | SNIA | Swordfish | Location.OtherLocationInfo }

EXAMPLES

GET Location Example - Specific Instance Based on the Identifier

Request

Method	URI	Query String	Request Header	Request Body
GET	/Network/Devices/{id}/Location		Authorization (Mandatory) If-None-Match: {etag} (Optional)	

Response

Precondition	Response Code	Response Header	Response Body
Credentials invalid or missing	401 Unauthorized		
Resource Id does not exist	404 Not Found		
If-None-Match true	304 Not Modified		
If-None-Match false or missing	200 OK	Content-Type: application/json ETag: {etag}	{ "Self": "http://10.20.30.40/Storage/Devices/0123456789/Location/", "Country": "USA", "Territory": "", "State": "NV", "City": "Coyote Springs", "Address1": "123 Hwy 93", "Address2": "Suite -200", "Address3":"", "PostalCode": "89025", "SiteName": "Acme DataCenter 1", "Building": "1", "Room": "1", "Pod": "p2", "Rack": "r02", "Shelf" : "30", "Device": "3", "Item": "Rack Units", "GPSCoords": "36.816483,-114.9414881", "OtherLocationInfo": "This is other info"

			}

PUT Location Example - Change the Address3

Request

Method	URI	Query String	Request Header	Request Body

PUT	/Network/Devices/{id}/Location		Authorization (Mandatory)
			If-Match: {etag} (Mandatory)
				{
				"Self": "http://10.20.30.40/Storage/Devices/0123456789/Location/",
				"Country": "USA",
				"Territory": "",
				"State": "NV",
				"City": "Coyote Springs",
				"Address1": "123 Hwy 93",
				"Address2": "Suite -200",
				"Address3":"Level 2",
				"PostalCode": "89025",
				"SiteName": "Acme DataCenter 1",
				"Building": "1",
				"Room": "1",
				"Pod": "p2",
				"Rack": "r02",
				"Shelf" : "30",
				"Device": "3",
				"Item": "Rack Units",
				"GPSCoords": "36.821768, -114.937472",
				"OtherLocationInfo": "This is other info"
				
				}

Response

Precondition	Response Code	Response Header	Response Body
Credentials invalid or missing	401 Unauthorized		
Resource Id does not exist	404 Not Found		

Bad/Missing Parameter in Body	400 Bad Request		
System could not process the request	500 Internal Server Error		
If-Match false	412 Precondition Failed		
If-Match missing	428 Precondition Required		

If-Match true	200 OK	Content-Type: application/json	{
			"Self": "http://10.20.30.40/Storage/Devices/0123456789/Location/",
			"Country": "USA",
			"Territory": "",
			"State": "NV",
			"City": "Coyote Springs",
			"Address1": "123 Hwy 93",
			"Address2": "Suite -200",
			"Address3":"Level 2",
			"PostalCode": "89025",
			"SiteName": "Acme DataCenter 1",
			"Building": "1",
			"Room": "1",
			"Pod": "p2",
			"Rack": "r02",
			"Shelf" : "30",
			"Device": "3",
			"Item": "Rack Units",
			"GPSCoords": "36.816483,-114.9414881",
			"OtherLocationInfo": "This is other info"
			}

9.8.6 System Clock

Description

The Device-level methods and attributes return information about the System Clock and do certain operations.

Allowable Methods

URI	Allowable Methods
/Network/Devices/{id}/SystemClock	GET, PUT, HEAD, OPTIONS

GET /Network/Devices/{id}/SystemClock - Retrieve the System Clock information

URI:	/Network/Devices/{id}/SystemClock	Description
Method	GET	Returns the information of the System Clock
Request Header	Authorization (Mandatory)	
Query Parameters		
Response	200 OK 401 Unauthorized 404 Not Found	OK & System Clock information in the response body Unauthorized; credential entry failed or missing Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource

PUT /Network/Devices/{id}/SystemClock - Modify an attribute of the System Clock

URI:	/Network/Devices/{id}/SystemClock	Description
Method	PUT	Modify an attribute of the System Clock
Request Header	Authorization (Mandatory)	
Query Parameters		

Request Body	{
	"Date" : "new_date",
	"Time" : "new_time",
	"TimeZone" : "new_tz",
	"DST" : "Enabled | Disabled"
	}
		JSON BODY START
		Change the Date
		Change the Time
		Change the TimeZone
		Change the Daylight Savings Time setting
		JSON BODY END

Response	200 OK 400 Bad Request	OK & System Clock information in the response body

	401 Unauthorized 500 Internal Server Error	Bad Request (typically a faulty parameter) Unauthorized; credential entry failed or missing Resource could not execute the request

HEAD /Network/Devices/{id}/SystemClock - Ping the System Clock

URI:	/Network/Devices/{id}/SystemClock	Description
Method	HEAD	Pings the System Clock
Request Header	Authorization (Mandatory)	
Query Parameters		
Response	200 OK 401 Unauthorized 404 Not Found	OK with no response body Unauthorized; credential entry failed or missing Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource

OPTIONS /Network/Devices/{id}/SystemClock - Determine Allowable Methods for System Clock

URI:	/Network/Devices/{id}/SystemClock	Description
Method	OPTIONS	Get the allowable HTTP Methods list for this resource
Request Header		
Query Parameters		
Response	200 OK 404 Not Found	OK & the “Allow” list of methods in the response header. The response body provides the JSON Schema for this resource Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource

Methods Not Allowed on /Network/Devices/{id}/SystemClock

URI:	/Network/Devices/{id}/SystemClock	Description
Method	POST, DELETE	Methods that are not allowed
Request Header		
Query Parameters		
Response	405 Method Not Allowed	Method not allowed for this Resource

Resource Attributes

Attribute	Type	Requirement	User Configurable	Possible Values	Description	Model Correspondence
Self	String	Mandatory	No	Free-Form URI Format 256 Chars	Describes the fully qualified URI link	{ IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking }
Date	String	Mandatory	Yes	Free-Form 256 Chars	The current Date	{ DMTF | CIM | OperatingSystem.LocalDateTime }
Time	String	Mandatory	Yes	Free-Form 256 Chars	The current Time	{ DMTF | CIM | OperatingSystem.LocalDateTime }
TimeZone	String	Mandatory	Yes	Free-Form 64 Chars	The current Time Zone	{ DMTF | CIM | OperatingSystem.CurrentTimeZone }
TimeZoneSetting	String	Mandatory	No	Free-Form 64 Chars	The current Time Zone Setting	{ DMTF | CIM | OperatingSystem.CurrentTimeZone }
DST	String	Mandatory	Yes	"Enabled" "Disabled" "Unknown"	The current Day Light Savings Time setting	{ DMTF | CIM | OperatingSystem.CurrentTimeZone }
Uptime.Duration	String	Mandatory	No		The current uptime	{ ISO | 8601| Duration }

					value in ISO 8601 format	
Uptime.Days	Number	Mandatory	No	0-n	The current uptime Days since boot	{ ISO | 8601| Duration }
Uptime.Hours	Number	Mandatory	No	0-23	The current uptime Hours since boot	{ ISO | 8601| Duration }
Uptime.Minutes	Number	Mandatory	No	0-59	The current uptime Minutes since boot	{ ISO | 8601| Duration }
Uptime.Seconds	Number	Mandatory	No	0-59	The current uptime Seconds since boot	{ ISO | 8601| Duration }

EXAMPLES

GET SystemClock Example

Request

Method	URI	Query String	Request Header	Request Body
GET	/Network/Devices/{id}/SystemClock		Authorization (Mandatory)	

Response

Precondition	Response Code	Response Header	Response Body
Credentials invalid or missing	401 Unauthorized		

Success	200 OK	Content-Type: application/json	{
			"Self": "http://10.20.30.40/Network/Devices/12345/SystemClock/",
			"Date": "23-Aug-2018",
			"Time": "10:13:18",
			"TimeZone": "(UTC-6.00) MDT",
			"TimeZoneSetting": "MDT",
			"DST": "Enabled",
			"Uptime": {
			"Duration": "P0DT3H20M38S",
			"Days": 0,
			"Hours": 3,
			"Minutes": 20,
			"Seconds": 38
			}
			}

PUT SystemClock Example - Change the Date

Request

Method	URI	Query String	Request Header	Request Body

PUT	/Network/Devices/{id}/SystemClock		Authorization (Mandatory)	{
				"Date" : "24-Aug-2018"
				}

Response

Precondition	Response Code	Response Header	Response Body
Credentials invalid or missing	401 Unauthorized		
Bad/Missing Parameter in Body	400 Bad Request		
System could not process the request	500 Internal Server Error		

Success	200 OK	Content-Type: application/json	{
			"Self": "http://10.20.30.40/Network/Devices/12345/SystemClock/",
			"Date": "24-Aug-2018",
			"Time": "10:14:18",
			"TimeZone": "(UTC-6.00) MDT",
			"TimeZoneSetting": "MDT",
			"DST": "Enabled",
			"Uptime": {
			"Duration": "P0DT3H20M38S",
			"Days": 0,
			"Hours": 3,
			"Minutes": 21,
			"Seconds": 38
			}
			}

9.8.7 Accounts

Description

The Device-level methods and attributes return information about the Account(s) and do certain operations.

Allowable Methods

URI	Allowable Methods
/Network/Devices/{id}/Accounts/	GET, POST, HEAD, OPTIONS
/Network/Devices/{id}/Accounts/{id}/	GET, PUT, DELETE, HEAD, OPTIONS

GET /Network/Devices/{id}/Accounts/ - Retrieve all Accounts

URI:	/Network/Devices/{id}/Accounts/	Description
Method	GET	Returns the Collection of Accounts
Request Header	Authorization (Mandatory) If-None-Match (Optional)	The request requires either Basic or Digest authorization The request is conditionally processed only if the current ETag for the resource does not match the ETag passed in this header
Query Parameters		

Response	200 OK 304 Not Modified 401 Unauthorized 404 Not Found	OK & List of Account + ETag Header If-None-Match Etag value matched, therefore no Response Body will be returned Unauthorized; credential entry failed or missing Resource Collection does not exist; this IP Address is running an HTTP service, but does not recognize this resource

GET /Network/Devices/{id}/Accounts/{Id}/ - Retrieve a specific Account

URI:	**/Network/Devices/{id}/Accounts/{id}/**	**Description**
Method	GET	Returns the information regarding a specific Account based on the {id} in the URI address string
Request Header	Authorization (Mandatory) If-None-Match (Optional)	The request requires either Basic or Digest authorization The request is conditionally processed only if the current ETag for the resource does not match the ETag passed in this header
Query Parameters		
Response	200 OK 304 Not Modified 401 Unauthorized 404 Not Found	OK & Account information in the response body + ETag Header If-None-Match Etag value matched, therefore no Response Body will be returned Unauthorized; credential entry failed or missing Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource

POST /Network/Devices/{id}/Accounts/ - Create a new Account

URI:	**/Network/Devices/{id}/Accounts/{id}**	**Description**
Method	POST	Create a new Account
Request Header	Authorization (Mandatory)	The request requires either Basic or Digest authorization
Query Parameters		
Request Body	{ "Name": "account_name",	JSON BODY START Name of the Account

	}	JSON BODY END
Response	201 Created 400 Bad Request 401 Unauthorized 409 Conflict 500 Internal Server Error	Created & Account information in the response body + ETag Header + new URI in Location Header Bad Request (typically a faulty parameter) Unauthorized; credential entry failed or missing A new parameter value already exists (e.g., Name) System could not process the request

PUT /Network/Devices/{id}/Accounts/{id} - Modify specific Account attributes

URI:	**/Network/Devices/{id}/Accounts/{id}**	**Description**
Method	PUT	Modify an attribute or execute an operation for this Account
Request Header	Authorization (Mandatory) If-Match (Mandatory)	The request requires either Basic or Digest authorization The request is conditionally processed only if the current ETag for the resource matches the ETag passed in this header
Query Parameters		

Request Body	{
	"Name": "account_name"
	}
		JSON BODY START
		Name of the Account
		JSON BODY END

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

HEAD /Network/Devices/{id}/Accounts/ - Ping the Collection of Accounts

URI:	**/Network/Devices/{id}/Accounts/**	**Description**

Method	HEAD	Pings this Account Collection
Request Header	Authorization (Mandatory)	The request requires either Basic or Digest authorization
Query Parameters		
Response	200 OK 401 Unauthorized 404 Not Found	OK with no response body Unauthorized; credential entry failed or missing Resource Collection does not exist; this IP Address is running an HTTP service, but does not recognize this resource

HEAD /Network/Devices/{id}/Accounts/{id}/ - Ping a specific Account

URI:	/Network/Devices/{id}/Accounts/{id}/	Description
Method	HEAD	Pings this Account
Request Header	Authorization (Mandatory)	The request requires either Basic or Digest authorization
Query Parameters		
Response	200 OK 401 Unauthorized 404 Not Found	OK with no response body Unauthorized; credential entry failed or missing Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource

OPTIONS /Network/Devices/{id}/Accounts/ - Determine Allowable Methods for a Collection of Accounts

URI:	/Network/Devices/{id}/Accounts/	Description
Method	OPTIONS	Get the allowable HTTP Methods list for this resource
Request Header		
Query Parameters		
Response	200 OK 404 Not Found	OK & the “Allow” list of methods in the response header. The response body provides the JSON Schema for this resource

		Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource

OPTIONS /Network/Devices/{id}/Accounts/{Id}/ - Determine Allowable Methods for a specific Account

URI:	/Network/Devices/{id}/Accounts/{id}/	Description
Method	OPTIONS	Get the allowable HTTP Methods list for this resource
Request Header		
Query Parameters		
Response	200 OK 404 Not Found	OK & the "Allow" list of methods in the response header. The response body provides the JSON Schema for this resource Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource

DELETE /Network/Devices/{id}/Accounts/{id} - Delete specific Account

URI:	/Network/Devices/{id}/Accounts/{id}	Description
Method	DELETE	Delete this Account
Request Header	Authorization (Mandatory) If-Match (Mandatory)	The request requires either Basic or Digest authorization The request is conditionally processed only if the current ETag for the resource matches the ETag passed in this header
Query Parameters		
Request Body		
Response	204 No Content 401 Unauthorized 404 Not Found 409 Conflict 412 Precondition Failed 428 Precondition Required 500 Internal Server Error	Delete successful, no content in the response body Unauthorized; credential entry failed or missing The Resource doesn't exist In the case of only one account, that last one cannot be deleted

		Indicates the “If-Match” Etag check failed Indicates the need for an “If-Match” conditional with an Etag value in the Request Header System could not process the request

Methods Not Allowed on **/Network/Devices/{id}/Accounts/** Collection

URI:	**/Network/Devices/{id}/Accounts/**	**Description**
Method	PUT, DELETE	Methods that are not allowed
Request Header		
Query Parameters		
Response	405 Method Not Allowed	Method not allowed for this Resource; returns "Allow" header with allowable methods list

Methods Not Allowed on **/Network/Devices/{id}/Accounts/{id}/** Instance

URI:	**/Network/Devices/{id}/Accounts/{id}/**	**Description**
Method	POST	Methods that are not allowed
Request Header		
Query Parameters		
Response	405 Method Not Allowed	Method not allowed for this Resource; returns "Allow" header with allowable methods list

Collection Resource Attributes

Attribute	**Type**	**Requirement**	**User Configurable**	**Possible Values**	**Description**	**Model Correspondence**
Self	URI String	Mandatory	No	Free-Form URI Format 256 Chars	Describes the fully qualified URI link for the Collection	{ IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking }
Members	String Array	Mandatory	No	Resource Collection	The array of Resource Instances	

				(1 - n entries)	(see Instance Resource Attributes Table for Instance Attribute details)	

Instance Resource Attributes

Attribute	Type	Requirement	User Configurable	Possible Values	Description	Model Correspondence
Self	URI String	Mandatory	No	Free-Form URI Format 256 Chars	Describes the fully qualified URI link	{ IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking }
ID	String	Mandatory	Yes	Free-Form 64 Chars	The Identifier this particular Account	{ DMTF | CIM | LogicalElement.DeviceID }
BasicAuthentication.UserPasswordSHA1Checksum	String	Mandatory	Yes	Free-Form 128 Characters	The basic authentication checksum	{ DMTF | CIM | SignedCredential.X509Infrastructure.SHA1Fingerprints }
DigestAuthentication.UserPasswordMD5Checksum	String	Optional	Yes	Free-Form 128 Characters	The digest authentication checksum	{ DMTF | CIM | SignedCredential.X509Infrastructure.MD5Fingerprints }
DigestAuthentication.Realm	String	Optional	Yes	Free-Form 128 Characters	The digest authentication realm	

Role.Name	String	Mandatory	Yes	"Admin"	The Role type string for this Account	{ DMTF | CIM | ManagedElement.Collection.Role }
Role.ID	Number	Mandatory	Yes	0	The Role type value for this Account	{ DMTF | CIM | ManagedElement.Collection.Role }
UserID	String	Mandatory	Yes	Free-Form 64 Chars	The user identifier for this Account	{ DMTF | CIM | LogicalElement.Account.UserId }

EXAMPLES

GET Accounts Example - Specific Instance Based on the Identifier

Request

Method	URI	Query String	Request Header	Request Body
GET	/Network/Devices/{id}/Accounts/admin		Authorization (Mandatory) If-None-Match: {etag} (Optional)	

Response

Precondition	Response Code	Response Header	Response Body
Credentials invalid or missing	401 Unauthorized		
Resource Id does not exist	404 Not Found		
If-None-Match true	304 Not Modified		

If-None-Match false or missing	200 OK	Content-Type: application/json
		ETag: {etag}
			{
			"Self": "http://10.20.30.40/Network/Devices/0123456789/Accounts/admin/",
			"ID": "admin",
			"BasicAuthentication": {
			"UserPasswordSHA1Checksum": "{SHA}0DPiKuNIr4erD8IUCuw1hQxNqZc="
			},
			"DigestAuthentication": {
			"UserPasswordMD5Checksum": "97ebad852d0342fd6b71ae26fff61fa3",
			"Realm": "Acme Corporation"
			},
			"Role": {
			"ID": 0,
			"Name": "Admin"
			},
			"UserID": "admin"
			}

9.8.8 Operating System

Description

The Device-level methods and attributes return information about the Operating System and do certain operations.

Allowable Methods

URI	Allowable Methods
/Network/Devices/{id}/OperatingSystem/	GET, POST, HEAD, OPTIONS

GET /Network/Devices/{id}/OperatingSystem/- Retrieve the Operating System resource information

URI:	/Network/Devices/{id}/OperatingSystem/	Description
Method	GET	Returns the information of the Operating System resource
Request Header	Authorization (Mandatory) If-None-Match (Optional)	The request requires either Basic or Digest authorization The request is conditionally processed only if the current ETag for the resource matches the ETag passed in this header

Query Parameters		
Response	200 OK 304 Not Modified 401 Unauthorized 404 Not Found	OK & Operating System resource information in the response body Unauthorized; credential entry failed or missing Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource

POST /Network/Devices/{id}/OperatingSystem/ - Update the Firmware Image

URI:	/Network/Devices/{id}/OperatingSystem/	Description
Method	POST	Update the Firmware with a new image
Request Header	Authorization (Mandatory) If-Match (Mandatory) Content-Type: multipart/form-data	The request requires either Basic or Digest authorization The request is conditionally processed only if the current ETag for the resource matches the ETag passed in this header The FW image file is of content type "multipart/form-data"
Query Parameters		
Request Body	Content-Disposition: form-data; name="FirmwareFile"; filename="{FW_file_name}" FW Image File	Request Body preamble setting up the content information The FW image file with appropriate POST body
Response	202 Accepted 400 Bad Request 401 Unauthorized 409 Conflict 500 Internal Server Error	Accepted & Header "Location" with a /Jobs URI to check status (e.g., ../Jobs/firmwareupdate) Bad Request (typically a faulty parameter) Unauthorized; credential entry failed or missing Some other device-level operation is in progress (e.g., Factory Reset or Format) Resource could not execute the request

HEAD /Network/Devices/{id}/OperatingSystem/ - Ping the Operating System resource

URI:	/Storage/Devices/{id}/OperatingSystem/	Description
Method	HEAD	Pings the Operating System resource
Request Header	Authorization (Mandatory)	
Query Parameters		
Response	200 OK 401 Unauthorized 404 Not Found	OK with no response body Unauthorized; credential entry failed or missing Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource

OPTIONS /Network/Devices/{id}/OperatingSystem/ - Determine Allowable Methods for the Operating System resource

URI:	/Network/Devices/{id}/OperatingSystem/	Description
Method	OPTIONS	Get the allowable HTTP Methods list for this resource
Request Header		
Query Parameters		
Response	200 OK 404 Not Found	OK & the "Allow" list of methods in the response header. The response body provides the JSON Schema for this resource Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource

Methods Not Allowed on /Network/Devices/{id}/OperatingSystem/

URI:	/Network/Devices/{id}/OperatingSystem/	Description
Method	PUT, DELETE	Methods that are not allowed

Request Header		
Query Parameters		
Response	405 Method Not Allowed	Method not allowed for this Resource

Resource Attributes

Attribute	Type	Requirement	User Configurable	Possible Values	Description	Model Correspondence
Self	String	Mandatory	No	Free-Form URI Format 256 Chars	Describes the fully qualified URI link	{ IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking }
Name	String	Mandatory	No	Free-Form 128 Chars	The Operating System or Firmware name	{ DMTF | CIM | System.OperatingSystem.Name }
OSType.Name	String	Mandatory	No	Depends on Operating System Type	The Operating System Type value	{ DMTF | CIM | System.OperatingSystem.Type }
OSType.ID	Number	Mandatory	No	Depends on Operating System Type	The Operating System Type value map	{ DMTF | CIM | System.OperatingSystem.Type }
Version	String	Mandatory	No	Free-Form 128 Chars	The Operating System or Firmware Version	{ DMTF | CIM | System.OperatingSystem.Version }

EXAMPLES

GET Operating System Example

Request

Method	URI	Query String	Request Header	Request Body
GET	/Network/Devices/{id}/OperatingSystem		Authorization (Mandatory) If-None-Match: {etag} (Optional)	

Response

Precondition	Response Code	Response Header	Response Body
Credentials invalid or missing	401 Unauthorized		
Resource Id does not exist	404 Not Found		
If-None-Match true	304 Not Modified		

If-None-Match false or missing	200 OK	Content-Type: application/json
		ETag: {etag}
			{
			"Self": "http://10.20.30.40/Network/Devices/0123456789/OperatingSystem/",
			"Name": "Vendor Firmware",
			"OSType": {
			"ID": 59,
			"Name": "Dedicated"
			},
			"Version": "FW-Rev0"
			}

POST Operating System Example - Update the Platform FW Image

Request

Method	URI	Query String	Request Header	Request Body
POST	/Network/Devices/{id}/OperatingSystem		Authorization (Mandatory)	Content-Disposition: form-data; name="FirmwareFile";

			If-Match: {etag} (Mandatory) Content-Type: multipart/form-data (Mandatory)	filename="{FW_file_name}" FW Image File

Response

Precondition	Response Code	Response Header	Response Body
Credentials invalid or missing	401 Unauthorized		
Resource Id does not exist	404 Not Found		
Bad/Missing Parameter in Body	400 Bad Request		
System could not process the request	500 Internal Server Error		
If-Match false	412 Precondition Failed		
If-Match missing	428 Precondition Required		
If-Match true	202 Accepted	Location: ../Jobs/firmwareupdate (a GET on this URI will return current status and percent complete information	

9.8.9 Jobs

Description

The Device-level methods and attributes return information about the Job(s) and do certain operations.

Allowable Methods

URI	Allowable Methods
/Network/Devices/{id}/Jobs/	GET, HEAD, OPTIONS
/Network/Devices/{id}/Jobs/{id}/	GET, HEAD, OPTIONS

GET /Network/Devices/{id}/Jobs/ - Retrieve all Jobs

URI:	/Network/Devices/{id}/Jobs/	Description
Method	GET	Returns the Collection of Jobs
Request Header	Authorization (Mandatory) If-None-Match (Optional)	The request requires either Basic or Digest authorization The request is conditionally processed only if the current ETag for the resource does not match the ETag passed in this header
Query Parameters		
Response	200 OK 304 Not Modified 401 Unauthorized 404 Not Found	OK & List of Job + ETag Header If-None-Match Etag value matched, therefore no Response Body will be returned Unauthorized; credential entry failed or missing Resource Collection does not exist; this IP Address is running an HTTP service, but does not recognize this resource

GET /Network/Devices/{id}/Jobs/{Id}/ - Retrieve a specific Job

URI:	/Network/Devices/{id}/Jobs/{id}/	Description
Method	GET	Returns the information regarding a specific Account based on the {id} in the URI address string
Request Header	Authorization (Mandatory) If-None-Match (Optional)	The request requires either Basic or Digest authorization The request is conditionally processed only if the current ETag for the resource does not match the ETag passed in this header
Query Parameters		
Response	200 OK 401 Unauthorized 404 Not Found	OK & Job information in the response body + ETag Header Unauthorized; credential entry failed or missing Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource

HEAD /Network/Devices/{id}/Jobs/ - Ping the Collection of Jobs

URI:	/Network/Devices/{id}/Jobs/	Description

Method	HEAD	Pings this Job Collection
Request Header	Authorization (Mandatory)	The request requires either Basic or Digest authorization
Query Parameters		
Response	200 OK 401 Unauthorized 404 Not Found	OK with no response body Unauthorized; credential entry failed or missing Resource Collection does not exist; this IP Address is running an HTTP service, but does not recognize this resource

HEAD /Network/Devices/{id}/Jobs/{id}/ - Ping a specific Job

URI:	/Network/Devices/{id}/Jobs/{id}/	Description
Method	HEAD	Pings this Job
Request Header	Authorization (Mandatory)	The request requires either Basic or Digest authorization
Query Parameters		
Response	200 OK 401 Unauthorized 404 Not Found	OK with no response body Unauthorized; credential entry failed or missing Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource

OPTIONS /Network/Devices/{id}/Jobs/ - Determine Allowable Methods for a Collection of Jobs

URI:	/Network/Devices/{id}/Jobs/	Description
Method	OPTIONS	Get the allowable HTTP Methods list for this resource
Request Header		
Query Parameters		
Response	200 OK 404 Not Found	OK & the “Allow” list of methods in the response header. The response body provides the JSON Schema for this resource

		Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource

OPTIONS /Network/Devices/{id}/Jobs/{Id}/ - Determine Allowable Methods for a specific Job

URI:	**/Network/Devices/{id}/Jobs/{id}/**	**Description**
Method	OPTIONS	Get the allowable HTTP Methods list for this resource
Request Header		
Query Parameters		
Response	200 OK 404 Not Found	OK & the "Allow" list of methods in the response header. The response body provides the JSON Schema for this resource Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource

Methods Not Allowed on **/Network/Devices/{id}/Jobs/**

URI:	**/Network/Devices/{id}/Jobs/**	**Description**
Method	POST, PUT, DELETE	Methods that are not allowed
Request Header		
Query Parameters		
Response	405 Method Not Allowed	Method not allowed for this Resource

Methods Not Allowed on **/Network/Devices/{id}/Jobs/{id}/**

URI:	**/Network/Devices/{id}/Jobs/{id}/**	**Description**
Method	POST, PUT, DELETE	Methods that are not allowed
Request Header		

Query Parameters		
Response	405 Method Not Allowed	Method not allowed for this Resource

Collection Resource Attributes

Attribute	Type	Requirement	User Configurable	Possible Values	Description	Model Correspondence
Self	URI String	Mandatory	No	Free-Form URI Format 256 Chars	Describes the fully qualified URI link for the Collection	{ IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking }
Members	String Array	Optional	No	Resource Collection (1 - n entries)	The array of Resource Instances (see Instance Resource Attributes Table for Instance Attribute details)	

Instance Resource Attributes

Attribute	Type	Requirement	User Configurable	Possible Values	Description	Model Correspondence
Self	URI String	Mandatory	No	Free-Form URI Format 256 Chars	Describes the fully qualified URI link	{ IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking }
Name	String	Mandatory	No	"UpdateFW" "FactoryReset"	The Name this particular Job. These are all mutually exclusive, meaning only one of these can be	{ DMTF | CIM | ManagedSystemElement.Name }

					active at a time. Otherwise, the response to executing one of the others should return a 409 Conflict.	
Status	String	Mandatory	No	“OK” “Error” “Completed”	The current status or state of the Job	{ DMTF | CIM | LogicalElement.Job.JobStatus }
PercentComplete	Number	Mandatory	No	0 -100	The percent complete status of the Job	{ DMTF | CIM | LogicalElement.Job.PercentComplete }
ErrorCode	Number	Mandatory	No	Integer values	The error code number for the Job upon completion; “0” = Success, otherwise, a vendor-unique value	{ DMTF | CIM | LogicalElement.Job.ErrorCode }
ErrorDescription	String	Optional	No	Free-Form 128 Chars	The description of the vendor-unique error code; if error	{ DMTF | CIM | LogicalElement.Job.ErrorDescription }

					code is “0”, then this is “Success”	

EXAMPLES

GET Jobs Example - Specific Instance Based on the Identifier

Request

Method	URI	Query String	Request Header	Request Body
GET	/Network/Devices/{id}/Jobs/UpdateFW		Authorization (Mandatory) If-None-Match: {etag} (Optional)	

Response

Precondition	Response Code	Response Header	Response Body
Credentials invalid or missing	401 Unauthorized		
Resource Id does not exist	404 Not Found		
If-None-Match true	304 Not Modified		

If-None-Match false or missing	200 OK	Content-Type: application/json
		ETag: {etag}
			{
			"Self": "http://10.20.30.40/Network/Devices/0123456789/Jobs/firmwareupdate/",
			"Name": "firmwareupdate",
			"Status": "OK",
			"PercentComplete": 72,
			"ErrorCode": 0,
			"ErrorDescription": "Success"
			}

9.8.10 Performance

Description

The Device-level methods and attributes return information about the Performance.

Allowable Methods

URI	Allowable Methods
/Network/Devices/{id}/Performance	GET, HEAD, OPTIONS

GET /Network/Devices/{id}/Performance- Retrieve the Performance resource information

URI:	/Network/Devices/{id}/Performance	Description
Method	GET	Returns the information of the Performance resource
Request Header	Authorization (Mandatory) If-None-Match (Optional)	The request requires either Basic or Digest authorization The request is conditionally processed only if the current ETag for the resource matches the ETag passed in this header
Query Parameters		
Response	200 OK 304 Not Modified 401 Unauthorized 404 Not Found	OK & Performance resource information in the response body Unauthorized; credential entry failed or missing Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource

HEAD /Network/Devices/{id}/Performance- Ping the Performance resource

URI:	/Network/Devices/{id}/Performance	Description
Method	HEAD	Pings the Performance resource
Request Header	Authorization (Mandatory)	
Query Parameters		

Response	200 OK 401 Unauthorized 404 Not Found	OK with no response body Unauthorized; credential entry failed or missing Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource

OPTIONS /Network/Devices/{id}/Performance- Determine Allowable Methods for the Performance resource

URI:	**/Network/Devices/{id}/Performance**	**Description**
Method	OPTIONS	Get the allowable HTTP Methods list for this resource
Request Header		
Query Parameters		
Response	200 OK 404 Not Found	OK & the "Allow" list of methods in the response header. The response body provides the JSON Schema for this resource Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource

Methods Not Allowed on **/Network/Devices/{id}/Performance**

URI:	**/Network/Devices/{id}/Performance**	**Description**
Method	POST, PUT, DELETE	Methods that are not allowed
Request Header		
Query Parameters		
Response	405 Method Not Allowed	Method not allowed for this Resource

Resource Attributes

Attribute	Type	Requirement	User Configurable	Possible Values	Description	Model Correspondence
Self	String	Mandatory	No	Free-Form URI Format 256 Chars	Describes the fully qualified URI link	{ IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking }
Netstats[].Name	String	Mandatory	No	Free-Form 64 Chars	Name of the VLAN	
Netstats[].Id	String	Mandatory	No	Free-Form Format 256 Chars	Id of the VLAN	
Netstats[].TimestampUs	Number	Mandatory	No	0 - n	Microseconds since power on	
Netstats[].RxBytes	Number	Mandatory	No	0 - n	Integer counter for number of bytes received	{ DMTF | CIM | BlockStorageStatisticalData.BytesRead }
Netstats[].RxPackets	Number	Mandatory	No	0 - n	Integer counter for number of packets received	{ DMTF | CIM | BlockStorageStatisticalData.BytesWritten }
Netstats[].TxBytes	Number	Mandatory	No	0 - n	Integer counter for number of bytes transmitted	{ DMTF | CIM | BlockStorageStatisticalData.ReadIOs }
Netstats[].TxPackets	Number	Mandatory	No	0 - n	Integer counter for number of packets written	{ DMTF | CIM | BlockStorageStatisticalData.WriteIOs }

EXAMPLES

GET Performance Example

Request

Method	URI	Query String	Request Header	Request Body
GET	/Network/Devices/{id}/Performance		Authorization (Mandatory) If-None-Match: {etag} (Optional)	

Response

Precondition	Response Code	Response Header	Response Body
Credentials invalid or missing	401 Unauthorized		
Resource Id does not exist	404 Not Found		
If-None-Match true	304 Not Modified		
If-None-Match false or missing	200 OK	Content-Type: application/json ETag: {etag}	{ "Self": "http://10.20.30.40/Network/Platforms/0123456789/Performance/", "Netstats": [{ "TimestampUs": 1536621182777154514, "Name": "VLAN4", "DeviceId": "http://10.20.30.40/Network/Devices/0123456789/VLANs/4/", "RxBytes": 51175114, "RxPackets": 322366, "TxBytes": 92877302, "TxPackets": 791707 }] }

9.8.11 ServiceLevelTargets

Description

The Device-level methods and attributes return information about the ServiceLevelTarget(s) and do certain operations.

Allowable Methods

URI	Allowable Methods
/Network/Devices/{id}/ServiceLevelTargets/	GET, POST, HEAD, OPTIONS
/Network/Devices/{id}/ServiceLevelTargets/{id}/	GET, PUT, DELETE, HEAD, OPTIONS

GET /Network/Devices/{id}/ServiceLevelTargets/ - Retrieve all ServiceLevelTargets

URI:	/Network/Devices/{id}/ServiceLevelTargets/	Description
Method	GET	Returns the Collection of ServiceLevelTargets
Request Header	Authorization (Mandatory) If-None-Match (Optional)	The request requires either Basic or Digest authorization The request is conditionally processed only if the current ETag for the resource does not match the ETag passed in this header
Query Parameters		
Response	200 OK 304 Not Modified 401 Unauthorized 404 Not Found	OK & List of ServiceLevelTargets + ETag Header If-None-Match Etag value matched, therefore no Response Body will be returned

		Unauthorized; credential entry failed or missing Resource Collection does not exist; this IP Address is running an HTTP service, but does not recognize this resource

GET /Network/Devices/{id}/ServiceLevelTargets/{Id}/ - Retrieve a specific ServiceLevelTarget

URI:	/Network/Devices/{id}/ServiceLevelTargets/{id}/	Description
Method	GET	Returns the information regarding a specific ServiceLevelTarget based on the {id} in the URI address string
Request Header	Authorization (Mandatory) If-None-Match (Optional)	The request requires either Basic or Digest authorization The request is conditionally processed only if the current ETag for the resource does not match the ETag passed in this header
Query Parameters		
Response	200 OK 304 Not Modified 401 Unauthorized 404 Not Found	OK & ServiceLevelTarget information in the response body + ETag Header If-None-Match Etag value matched, therefore no Response Body will be returned Unauthorized; credential entry failed or missing Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource

POST/Network/Devices/{id}/ServiceLevelTargets/ - Create a new ServiceLevelTargets

URI:	/Network/Devices/{id}/ServiceLevelTargets/{id}/	Description
Method	POST	Create a new ServiceLevelTarget
Request Header	Authorization (Mandatory)	The request requires either Basic or Digest authorization

Query Parameters		

Request Body	{
	"Name": "account_name",
	}
		JSON BODY START
		Name of the ServiceLevelTarget
		JSON BODY END

Response	201 Created 400 Bad Request 401 Unauthorized 409 Conflict 500 Internal Server Error	Created & ServiceLevelTarget information in the response body + ETag Header + new URI in Location Header Bad Request (typically a faulty parameter) Unauthorized; credential entry failed or missing A new parameter value already exists (e.g., Name) System could not process the request

PUT /Network/Devices/{id}/ServiceLevelTargets/{id}/ - Modify specific ServiceLevelTarget attributes

URI:	**/Network/Devices/{id}/ServiceLevelTargets/{id}/**	**Description**
Method	PUT	Modify an attribute or execute an operation for this ServiceLevelTarget
Request Header	Authorization (Mandatory) If-Match (Mandatory)	The request requires either Basic or Digest authorization The request is conditionally processed only if the current ETag for the resource matches the ETag passed in this header
Query Parameters		

Request Body	{
	"Name": "account_name"
	}
		JSON BODY START
		Name of the ServiceLevelTarget
		JSON BODY END

Response	200 OK 400 Bad Request 401 Unauthorized 404 Not Found 409 Conflict 412 Precondition Failed	OK & ServiceLevelTarget information in the response body + ETag Header Bad Request (typically a faulty parameter)

	428 Precondition Required 500 Internal Server Error	Unauthorized; credential entry failed or missing The Resource doesn't exist A new parameter value already exists (e.g., Name) Indicates the "If-Match" Etag check failed Indicates the need for an "If-Match" conditional with an Etag value in the Request Header System could not process the request

HEAD /Network/Devices/{id}/ServiceLevelTargets/ - Ping the Collection of ServiceLevelTargets

URI:	/Network/Devices/{id}/ServiceLevelTargets/	Description
Method	HEAD	Pings this ServiceLevelTarget Collection
Request Header	Authorization (Mandatory)	The request requires either Basic or Digest authorization
Query Parameters		
Response	200 OK 401 Unauthorized 404 Not Found	OK with no response body Unauthorized; credential entry failed or missing Resource Collection does not exist; this IP Address is running an HTTP service, but does not recognize this resource

HEAD /Network/Devices/{id}/ServiceLevelTargets/{id}/ - Ping a specific ServiceLevelTarget

URI:	/Network/Devices/{id}/ServiceLevelTargets/{id}/	Description
Method	HEAD	Pings this ServiceLevelTarget
Request Header	Authorization (Mandatory)	The request requires either Basic or Digest authorization
Query Parameters		
Response	200 OK 401 Unauthorized 404 Not Found	OK with no response body Unauthorized; credential entry failed or missing

		Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource

OPTIONS /Network/Devices/{id}/ServiceLevelTargets/ - Determine Allowable Methods for a Collection of ServiceLevelTargets

URI:	**/Network/Devices/{id}/ServiceLevelTargets/**	**Description**
Method	OPTIONS	Get the allowable HTTP Methods list for this resource
Request Header		
Query Parameters		
Response	200 OK 404 Not Found	OK & the "Allow" list of methods in the response header. The response body provides the JSON Schema for this resource Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource

OPTIONS /Network/Devices/{id}/ServiceLevelTargets/{Id}/ - Determine Allowable Methods for a specific ServiceLevelTarget

URI:	**/Network/Devices/{id}/ServiceLevelTargets/{id}/**	**Description**
Method	OPTIONS	Get the allowable HTTP Methods list for this resource
Request Header		
Query Parameters		
Response	200 OK 404 Not Found	OK & the "Allow" list of methods in the response header. The response body provides the JSON Schema for this resource Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource

DELETE /Network/Devices/{id}/ServiceLevelTargets/{id}/ - Delete specific ServiceLevelTarget

URI:	**/Network/Devices/{id}/ServiceLevelTargets/{id}/**	**Description**
Method	DELETE	Delete this ServiceLevelTarget
Request Header	Authorization (Mandatory) If-Match (Mandatory)	The request requires either Basic or Digest authorization The request is conditionally processed only if the current ETag for the resource matches the ETag passed in this header
Query Parameters		
Request Body		
Response	204 No Content 401 Unauthorized 404 Not Found 412 Precondition Failed 428 Precondition Required 500 Internal Server Error	Delete successful, no content in the response body Unauthorized; credential entry failed or missing The Resource doesn't exist Indicates the "If-Match" Etag check failed Indicates the need for an "If-Match" conditional with an Etag value in the Request Header System could not process the request

Methods Not Allowed on **/Network/Devices/{id}/ServiceLevelTargets/** Collection

URI:	**/Network/Devices/{id}/ServiceLevelTargets/**	**Description**
Method	PUT, DELETE	Methods that are not allowed
Request Header		
Query Parameters		
Response	405 Method Not Allowed	Method not allowed for this Resource; returns "Allow" header with allowable methods list

Methods Not Allowed on **/Network/Devices/{id}/ServiceLevelTargets/{id}/** Instance

URI:	/Network/Devices/{id}/ServiceLevelTargets/{id}/	Description
Method	POST	Methods that are not allowed
Request Header		
Query Parameters		
Response	405 Method Not Allowed	Method not allowed for this Resource; returns "Allow" header with allowable methods list

Collection Resource Attributes

Attribute	Type	Requirement	User Configurable	Possible Values	Description	Model Correspondence
Self	URI String	Mandatory	No	Free-Form URI Format 256 Chars	Describes the fully qualified URI link for the Collection	{ IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking }
Members	String Array	Mandatory	No	Resource Collection (1 - n entries)	The array of Resource Instances (see Instance Resource Attributes Table for Instance Attribute details)	

Instance Resource Attributes

Attribute	Type	Requirement	User Configurable	Possible Values	Description	Model Correspondence
Self	URI String	Mandatory	No	Free-Form URI Format 256 Chars	Describes the fully qualified URI link	{ IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking }
ID	String	Mandatory	Yes	Free-Form 64 Chars	The Identifier this particular ServiceLevelTarget	{ DMTF | CIM | LogicalElement.DeviceID }

EXAMPLES

GET ServiceLevelTarget Example - Specific Instance Based on the Identifier

Request

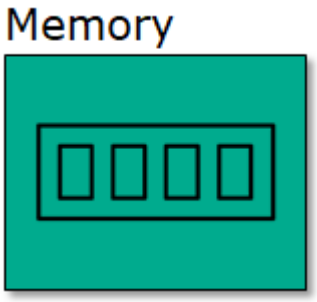
Method	URI	Query String	Request Header	Request Body
GET	/Network/Devices/{id}/ServiceLevelTargets/{id}/		Authorization (Mandatory) If-None-Match: {etag} (Optional)	

Response

Precondition	Response Code	Response Header	Response Body
Credentials invalid or missing	401 Unauthorized		
Resource Id does not exist	404 Not Found		
If-None-Match true	304 Not Modified		

If-None-Match false or missing	200 OK	Content-Type: application/json
		ETag: {etag}
			{
			"Self": "http://10.20.30.40/Network/Devices/0123456789/ServiceLevelTargets/1/",
			"ID": "1"
			}

9.9 Memory Devices - Physical



This table shows the physical resources for a memory device. The set of resource URIs is as follows:

URI Pattern	Description
/Devices/	Collection of all Devices
/Memory/Devices/	Collection of Memory Devices
/Memory/Devices/{id}/	A specific Memory Device
/Memory/Devices/{id}/Chips/	Collection of Memory Chips within this Memory Device
/Memory/Devices/{id}/Chips/{id}/	A specific Memory Chip within this Memory Device
/Memory/Devices/{id}/Adapters/	Collection of Adapters within this Memory Device
/Memory/Devices/{id}/Adapters/{id}/	A specific Adapter within this Memory Device
/Memory/Devices/{id}/Adapters/{id}/Ports/	Collection of Ports within this Adapter
/Memory/Devices/{id}/Adapters/{id}/Ports/{id}/	A specific Port within this Adapter

9.9.1 Devices

Description

The Device-level methods and attributes return information about the Memory Device(s) and do certain operations.

Allowable Methods

URI	Allowable Methods
/Devices/	GET, HEAD, OPTIONS
/Memory/Devices/	GET, HEAD, OPTIONS

/Memory/Devices/{id}/	GET, PUT, HEAD, OPTIONS

GET /Memory/Devices/ - Retrieve all Memory Devices

URI:	/Memory/Devices/	Description
Method	GET	Returns the Collection of Devices
Request Header	Authorization (Mandatory) If-None-Match (Optional)	The request requires either Basic or Digest authorization The request is conditionally processed only if the current ETag for the resource does not match the ETag passed in this header
Query Parameters		
Response	200 OK 304 Not Modified 401 Unauthorized 404 Not Found	OK & List of Devices + ETag Header If-None-Match Etag value matched, therefore no Response Body will be returned Unauthorized; credential entry failed or missing Resource Collection does not exist; this IP Address is running an HTTP service, but does not recognize this resource

GET /Memory/Devices/{id}/ - Retrieve a specific Memory Device

URI:	/Memory/Devices/{id}/	Description
Method	GET	Returns the information regarding a specific Device based on the {id} in the URI address string
Request Header	Authorization (Mandatory) If-None-Match (Optional)	The request requires either Basic or Digest authorization The request is conditionally processed only if the current ETag for the resource does not match the ETag passed in this header
Query Parameters		
Response	200 OK 401 Unauthorized 404 Not Found	OK & Device information in the response body + ETag Header Unauthorized; credential entry failed or missing Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource

PUT /Memory/Devices/{id}/ - Modify specific Memory Device attributes

URI:	/Memory/Devices/{id}/	Description

Method	PUT	Modify an attribute or execute an operation for this Device
Request Header	Authorization (Mandatory) If-Match (Mandatory)	The request requires either Basic or Digest authorization The request is conditionally processed only if the current ETag for the resource matches the ETag passed in this header
Query Parameters		

Request Body	{
	"IndicatorLED": {
	"Id" : 4 | 2
	},
	"Name" :
	"new_name",
	"Restart": true | false,
	"Shutdown" : true | false,
	"FactoryReset": true | false
	}
		JSON BODY START
		
		Toggles the Indicator LED on the Device; default "Off = 4"
		
		Specify a new name
		Restart the Resource
		Shutdown the Resource (Shutdown takes precedence over Restart if both are sent)
		Return the Device to Factory fresh settings (resets system configuration and wipes media)
		JSON BODY END

Response	200 OK 400 Bad Request 401 Unauthorized 404 Not Found 409 Conflict 412 Precondition Failed 428 Precondition Required 500 Internal Server Error	OK & Device information in the response body + ETag Header Bad Request (typically a faulty parameter) Unauthorized; credential entry failed or missing The Resource doesn't exist Some other device-level operation is in progress (e.g., Update FW or Format or Factory Reset) or Volumes exist during a Format Indicates the "If-Match" Etag check failed Indicates the need for an "If-Match" conditional with an Etag value in the Request Header System could not process the request

HEAD /Memory/Devices/ - Ping the Collection of Memory Devices

URI:	**/Memory/Devices/{id}/**	**Description**
Method	HEAD	Pings this Memory Device Collection
Request Header	Authorization (Mandatory)	The request requires either Basic or Digest authorization
Query Parameters		
Response	200 OK	OK with no response body

	401 Unauthorized 404 Not Found	Unauthorized; credential entry failed or missing Resource Collection does not exist; this IP Address is running an HTTP service, but does not recognize this resource

HEAD /Memory/Devices/{id}/ - Ping a specific Memory Device

URI:	/Memory/Devices/{id}/	Description
Method	HEAD	Pings this Memory Device
Request Header	Authorization (Mandatory)	The request requires either Basic or Digest authorization
Query Parameters		
Response	200 OK 401 Unauthorized 404 Not Found	OK with no response body Unauthorized; credential entry failed or missing Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource

OPTIONS /Memory/Devices/- Determine Allowable Methods for a Collection of Memory Devices

URI:	/Memory/Devices/	Description
Method	OPTIONS	Get the allowable HTTP Methods list for this resource
Request Header		
Query Parameters		
Response	200 OK 404 Not Found	OK & the "Allow" list of methods in the response header. The response body provides the JSON Schema for this resource Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource

OPTIONS /Memory/Devices/{id}/ - Determine Allowable Methods for a specific Memory Device

URI:	/Memory/Devices/{id}/	Description
Method	OPTIONS	Get the allowable HTTP Methods list for this resource
Request Header		

Query Parameters		
Response	200 OK 404 Not Found	OK & the “Allow” list of methods in the response header. The response body provides the JSON Schema for this resource Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource

Methods Not Allowed on **/Memory/Devices/** Collection

URI:	**/Memory/Devices/**	**Description**
Method	POST, PUT, DELETE	Methods that are not allowed
Request Header		
Query Parameters		
Response	405 Method Not Allowed	Method not allowed for this Resource; returns "Allow" header with allowable methods list

Methods Not Allowed on **/Memory/Devices/{id}/** Instance

URI:	**/Memory/Devices/{id}/**	**Description**
Method	POST, DELETE	Methods that are not allowed
Request Header		
Query Parameters		
Response	405 Method Not Allowed	Method not allowed for this Resource; returns "Allow" header with allowable methods list

Collection Resource Attributes

Attribute	**Type**	**Requirement**	**User Configurable**	**Possible Values**	**Description**	**Model Correspondence**
Self	URI String	Mandatory	No	Free-Form URI Format 256 Chars	Describes the fully qualified URI link for the Collection	{ IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking }

Members	String Array	Mandatory	No	Resource Collection (0 - n entries)	The array of Resource Instances (see Instance Resource Attributes Table for Instance Attribute details)	

Instance Resource Attributes

Attribute	Type	Requirement	User Configurable	Possible Values	Description	Model Correspondence
Self	URI String	Mandatory	No	Free-Form URI Format 256 Chars	Describes the fully qualified URI link	{ IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking }
Name	String	Mandatory	Yes	Free-Form 256 Chars	The user-defined Friendly Name for this Resource	{ DMTF | CIM | ManagedSystemElement.Name }
ID	String	Mandatory	No	Free-Form 256 Chars	The resource identifier that is unique in space and time	{ DMTF | CIM | LogicalElement.DeviceID }

SerialNumber	String	Mandatory	No	Free-Form 64 Chars	The serial number for this Resource	{ DMTF | CIM | ManagedSystemElement.SerialNumber }
Model	String	Mandatory	No	Free-Form 64 Chars	The model name or number for this Resource	{ DMTF | CIM | ManagedSystemElement.Model }
SystemType.Name	String	Mandatory	No	"Compute"	The domain type string indicating the type of Device Resource	{ DMTF | CIM | ComputeSystem.Dedicated.Server }
SystemType.ID	Number	Mandatory	No	1	The domain type number indicating the type of Device Resource	{ DMTF | CIM | ComputeSystem.Dedicated.Server }
ChassisPackageType	String	Mandatory	No	"Compute Chassis"	The type of chassis for this Resource	{ DMTF | CIM | Chassis.ChassisPackageType }

RackMountable	String	Mandatory	No	"Unknown" "True" "False"	Indicates this chassis is rack mountable	{ DMTF | CIM | Chassis.RackMountable }
Manufacturer	String	Mandatory	No	Free-Form 64 Chars	The vendor name for this Resource	{ DMTF | CIM | ManagedSystemElement.Manufacturer }
OperatingSystem.Name	String	Optional	No	Free-Form 128 Chars	The Operating System or Firmware Name	{ DMTF | CIM | System.OperatingSystem.Name }
OperatingSystem.Version	String	Mandatory	No	Free-Form 128 Chars	The Operating System or Firmware Version	{ DMTF | CIM | System.OperatingSystem.Version }
IndicatorLED.Name	String	Mandatory	Yes	"Off" "Lit"	The current state value of the Indicator LED for this Resource	{ DMTF | CIM | IndicatorLED.ActivationState }
IndicatorLED.ID	Number	Mandatory	Yes	4 2	The current state value map of	{ DMTF | CIM | IndicatorLED.ActivationState }

					the Indicator LED for this Resource	
Status.State.Name	String	Mandatory	No	"Unknown" "Not available" "Servicing" "Starting" "Stopping" "Stopped" "Aborted" "Dormant" "Completed" "Migrating" "Emigrating" "Immigrating" "Snapshotting" "Shutting down" "In test" "Transitioning" "In service"	The current state value of this Resource	{ DMTF | CIM | ManagedSystemElement.State }
Status.State.ID	Number	Mandatory	No	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15	The current state value map of this Resource	{ DMTF | CIM | ManagedSystemElement.State }

				16		
Status.Health[].Name	String (1..*)	Mandatory	No	"Unknown" "OK" "Degraded/Warning" "Minor failure" "Major failure" "Critical failure" "Non-recoverable error" "Not installed" "Not available" "No access allowed"	The current health value of this Resource. There can be 1 or more Name entries.	{ DMTF | CIM | ManagedSystemElement.HealthState }
Status.Health[].ID	Number (1..*)	Mandatory	No	0 5 10 15 20 25 30 65536 65537 65538	The current health value map of this Resource. There can be 1 or more Id entries.	{ DMTF | CIM | ManagedSystemElement.HealthState }
Status.Details[]	String Array	Mandatory	No	Free-Form 32 Characters per Array entry. If no entry, then “None”.	The current Health Details of the Device	{ DMTF | CIM | ManagedSystemElement.DetailedStatus }
Capabilities.Members[].Name	String	Mandatory	No	Server File Server	The capabil	{ DMTF | CIM | ComputeSystem.Dedicated }

				Compute Device Enclosure Blade	ities information value(s) regarding the Resource	
Capabilities.Members[].ID	Number	Mandatory	No	39 16 31 40	The capabilities information value map(s) regarding the Resource	{ DMTF | CIM | ComputeSystem.Dedicated }
Capabilities.Members[].CapabilityDescription	String	Mandatory	No	Free-Form 64 Characters	Entry describing the capability	{ DMTF | CIM | ComputeSystem.Dedicated }
IpAddresses.Members[].IpAddress	String	Mandatory	Yes	IPv4 or IPv6 pattern	The IP Address list for this Resource	{ DMTF | CIM | ManagedSystemElement.FSIPInterfaceSettingData.IpAddress }
Accounts.Self	String	Mandatory	No	Free-Form URI	Fully qualified link to the Controller Resource Collection	{ DMTF | CIM | Device.Controller, IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking }
Adapters.Self	String	Mandatory	No	Free-Form URI	Fully qualified link	{ DMTF | CIM | MediaAccessDevice, IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking }

					to Media Resource Collection	
Performance.Self	String	Mandatory	No	Free-Form URI	Fully qualified link to the Performance Resource	{ DMTF | CIM | Statistics, IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking }
SystemClock.Self	String	Mandatory	No	Free-Form URI	Fully qualified link to the System Clock Resource	{ DMTF | CIM | Time, IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking }
Location.Self	String	Mandatory	No	Free-Form URI	Fully qualified link to the Location Resource	{ DMTF | Redfish | SNIA | Swordfish | Location, IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking }
Jobs.Self	String	Mandatory	No	Free-Form URI	Fully qualified link to the Jobs Resource	{ DMTF| CIM | Jobs, IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking}

EXAMPLES

GET Device Example - Specific Instance Based on the Identifier

Request

Method	URI	Query String	Request Header	Request Body
GET	/Memory/Devices/{id}/		Authorization (Mandatory) If-None-Match: {etag} (Optional)	

Response

Precondition	Response Code	Response Header	Response Body
Credentials invalid or missing	401 Unauthorized		
Resource Id does not exist	404 Not Found		
If-None-Match true	304 Not Modified		

If-None-Match false or missing	200 OK	Content-Type: application/json
		ETag: {etag}
			{
			"Self": "http://10.20.30.40/Memory/Devices/0123456789/",
			"SystemType": {
			"ID": 4,
			"Name": "Memory"
			},
			"Name": "Memory Device",
			"ID": "0123456789",
			"OperatingSystem": {
			"Self": "http://10.20.30.40/Memory/Devices/0123456789/OperatingSystem/",
			"Name": "Vendor FW",
			"OSType": {
			"ID": 59,
			"Name": "Dedicated"
			},
			"Version": "0001"
			},
			"SerialNumber": "SN-0123456789",
			"Model": "MN-0123456789",

```
"Manufacturer": "",
"Capabilities": {"Members" :[{
        "ID": 47010,
        "Name": "Memory",
        "CapabilityDescription": "This device is a memory
        device."
}, {
        "ID": 14,
        "Name": "Management",
        "CapabilityDescription": "This device provide
        software system management capabilities."
}, {
        "ID": 40,
        "Name": "Blade",
        "CapabilityDescription": "This device is a blade
        device."
}]},
"Status": {
        "State": {
                "ID": 16,
                "Name": "In service"
        },
        "Health": [{
                "ID": 5,
                "Name": "OK"
        }],
        "Details": ["None"]
},
"IPAddresses": {"Members": [{"IPAddress" :
"10.20.30.40"}],
"Location": {
        "Self":
        "http://10.20.30.40/Network/Devices/Location/"
},
"Accounts": {
        "Self":
        "http://10.20.30.40/Network/Devices/0123456789/
        Accounts/"
},
"Adapters": {
        "Self":
        "http://10.20.30.40/Network/Devices/0123456789/
        Adapters/"
},
"Modules": {
```

			"Self": "http://10.20.30.40/Network/Devices/0123456789/Modules/" }, "Chips": { "Self": "http://10.20.30.40/Network/Devices/0123456789/Chips/" }, "SystemClock": { "Self": "http://10.20.30.40/Network/Devices/0123456789/SystemClock/" }, "Performance": { "Self": "http://10.20.30.40/Network/Devices/0123456789/Performance/" }, "Jobs": { "Self": "http://10.20.30.40/Network/Devices/0123456789/Jobs/" }, "ServiceLevelTargets": { "Self": "http://10.20.30.40/Network/Devices/0123456789/ServiceLevelTargets/" } }

PUT Device Example - Change the name of a specific Device

Request

Method	URI	Query String	Request Header	Request Body

PUT	/Memory/Devices/{id}/		Authorization (Mandatory)
			If-Match: {etag} (Mandatory)
				{
				"Name" : "new_name"
				}

Response

Precondition	Response Code	Response Header	Response Body

Credentials invalid or missing	401 Unauthorized		
Resource Id does not exist	404 Not Found		
Bad/Missing Parameter in Body	400 Bad Request		
New value already exists	409 Conflict		
System could not process the request	500 Internal Server Error		
If-Match false	412 Precondition Failed		
If-Match missing	428 Precondition Required		
If-Match true	200 OK	Content-Type: application/json	Device Resource JSON

9.9.2 Chips

Description

The Device-level methods and attributes return information about the Memory Chips(s) and do certain operations.

Allowable Methods

URI	Allowable Methods
/Memory/Devices/{id}/Chips/	GET, HEAD, OPTIONS
/Memory/Devices/{id}/Chips/{id}/	GET, HEAD, OPTIONS

GET /Memory/Devices/{id}/Chips/ - Retrieve all Chips

URI:	/Memory/Devices/{id}/Chips/	Description
Method	GET	Returns the Collection of Chips
Request Header	Authorization (Mandatory) If-None-Match (Optional)	The request requires either Basic or Digest authorization The request is conditionally processed only if the current ETag for the resource does not match the ETag passed in this header

Query Parameters		
Response	200 OK 304 Not Modified 401 Unauthorized 404 Not Found	OK & List of Chips + ETag Header If-None-Match Etag value matched, therefore no Response Body will be returned Unauthorized; credential entry failed or missing Resource Collection does not exist; this IP Address is running an HTTP service, but does not recognize this resource

GET /Memory/Devices/{id}/Chips/{id}/ - Retrieve a specific Chip

URI:	**/Memory/Devices/{id}/Chips/{id}/**	**Description**
Method	GET	Returns the information regarding a specific Chip based on the {id} in the URI address string
Request Header	Authorization (Mandatory) If-None-Match (Optional)	The request requires either Basic or Digest authorization The request is conditionally processed only if the current ETag for the resource does not match the ETag passed in this header
Query Parameters		
Response	200 OK 401 Unauthorized 404 Not Found	OK & Chip information in the response body + ETag Header Unauthorized; credential entry failed or missing Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource

HEAD /Memory/Devices/{id}/Chips/ - Ping the Collection of Chips

URI:	**/Memory/Devices/{id}/Chips/**	**Description**
Method	HEAD	Pings this Chip Collection
Request Header	Authorization (Mandatory)	The request requires either Basic or Digest authorization
Query Parameters		
Response	200 OK 401 Unauthorized 404 Not Found	OK with no response body Unauthorized; credential entry failed or missing

		Resource Collection does not exist; this IP Address is running an HTTP service, but does not recognize this resource

HEAD /Memory/Devices/{id}/Chips/{id}/ - Ping a specific Chip

URI:	/Memory/Devices/{id}/Chips/{id}/	Description
Method	HEAD	Pings this Chip
Request Header	Authorization (Mandatory)	The request requires either Basic or Digest authorization
Query Parameters		
Response	200 OK 401 Unauthorized 404 Not Found	OK with no response body Unauthorized; credential entry failed or missing Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource

OPTIONS /Memory/Devices/{id}/Chips/- Determine Allowable Methods for a Collection of Chips

URI:	/Memory/Devices/{id}/Chips/	Description
Method	OPTIONS	Get the allowable HTTP Methods list for this resource
Request Header		
Query Parameters		
Response	200 OK 404 Not Found	OK & the “Allow” list of methods in the response header. The response body provides the JSON Schema for this resource Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource

OPTIONS /Memory/Devices/{id}/Chips/{id}/ - Determine Allowable Methods for a specific Chip

URI:	/Memory/Devices/{id}/Chips/{id}/	Description

Method	OPTIONS	Get the allowable HTTP Methods list for this resource
Request Header		
Query Parameters		
Response	200 OK 404 Not Found	OK & the "Allow" list of methods in the response header. The response body provides the JSON Schema for this resource Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource

Methods Not Allowed on **/Memory/Devices/{id}/Chips/** Collection

URI:	**/Memory/Devices/{id}/Chips/**	**Description**
Method	POST, PUT, DELETE	Methods that are not allowed
Request Header		
Query Parameters		
Response	405 Method Not Allowed	Method not allowed for this Resource; returns "Allow" header with allowable methods list

Methods Not Allowed on **/Memory/Devices/{id}/Chips/{id}/** Instance

URI:	**/Memory/Devices/{id}/Chips/{id}/**	**Description**
Method	POST, PUT, DELETE	Methods that are not allowed
Request Header		
Query Parameters		
Response	405 Method Not Allowed	Method not allowed for this Resource; returns "Allow" header with allowable methods list

Collection Resource Attributes

Attribute	**Type**	**Requirement**	**User Configurable**	**Possible Values**	**Description**	**Model Correspondence**

Self	URI String	Mandatory	No	Free-Form URI Format 256 Chars	Describes the fully qualified URI link for the Collection	{ IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking }
Members	String Array	Mandatory	No	Resource Collection (0 - n entries)	The array of Resource Instances (see Instance Resource Attributes Table for Instance Attribute details)	

Instance Resource Attributes

Attribute	Type	Requirement	User Configurable	Possible Values	Description	Model Correspondence
Self	URI String	Mandatory	No	Free-Form URI Format 256 Chars	Describes the fully qualified URI link	{ IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking }
Name	String	Mandatory	Yes	Free-Form 256 Chars	The user-defined Friendly Name for this Resource	{ DMTF | CIM | ManagedSystemElement.Name }
ID	String	Mandatory	No	Free-Form 256 Chars	The resource identifier that is unique in space and time	{ DMTF | CIM | LogicalElement.DeviceID }
Status.State.Name	String	Mandatory	No	"Unknown" "Not available" "Servicing" "Starting" "Stopping" "Stopped" "Aborted"	The current state value of this Resource	{ DMTF | CIM | ManagedSystemElement.State }

				"Dormant" "Completed" "Migrating" "Emigrating" "Immigrating" "Snapshotting" "Shutting down" "In test" "Transitioning" "In service"		
Status.State.ID	Number	Mandatory	No	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16	The current state value map of this Resource	{ DMTF | CIM | ManagedSystemElement.State }
Status.Health[].Name	String (1..*)	Mandatory	No	"Unknown" "OK" "Degraded/Warning" "Minor failure" "Major failure" "Critical failure" "Non-recoverable error" "Not installed" "Not available" "No access allowed"	The current health value of this Resource. There can be 1 or more Name entries.	{ DMTF | CIM | ManagedSystemElement.HealthState }
Status.Health[].ID	Number (1..*)	Mandatory	No	0 5 10	The current health	{ DMTF | CIM | ManagedSystemElement.HealthState }

				15 20 25 30 65536 65537 65538	value map of this Resource. There can be 1 or more Id entries.	
Manufacturer	String	Mandatory	No	Free-form 64 Chars	The processor manufacturer	{ DMTF | CIM | ManagedSystemElement.Manufacturer }

EXAMPLES

GET Chip Example - Specific Instance Based on the Identifier

Request

Method	URI	Query String	Request Header	Request Body
GET	/Memory/Devices/{id}/Chips/{id}/		Authorization (Mandatory) If-None-Match: {etag} (Optional)	

Response

Precondition	Response Code	Response Header	Response Body
Credentials invalid or missing	401 Unauthorized		
Resource Id does not exist	404 Not Found		
If-None-Match true	304 Not Modified		
If-None-Match false or missing	200 OK	Content-Type: application/json ETag: {etag}	{ "Self": "http://10.20.30.40/Memory/Devices/0123456789/Chips/123/", "Name": "DIMM1", "ID": "123"

			"MemoryType": "DIMM",
			"Status": {
			"State": {
			"ID": 16,
			"Name": "In service"
			},
			"Health": [{
			"ID": 5,
			"Name": "OK"
			}],
			"Details": ["None"]
			},
			"Manufacturer": "Acme"
			}

9.9.3 Adapters

Description

The Device-level methods and attributes return information about the Adapter(s) and do certain operations.

Allowable Methods

URI	Allowable Methods
/Compute/Devices/{id}/Adapters/	GET, HEAD, OPTIONS
/Compute/Devices/{id}/Adapters/{id}/	GET, HEAD, OPTIONS

GET /Compute/Devices/{id}/Adapters/ - Retrieve all Adapters

URI:	/Compute/Devices/{id}/Adapters/	Description
Method	GET	Returns the Collection of Adapters
Request Header	Authorization (Mandatory) If-None-Match (Optional)	The request requires either Basic or Digest authorization The request is conditionally processed only if the current ETag for the resource does not match the ETag passed in this header
Query Parameters		
Response	200 OK 304 Not Modified 401 Unauthorized	OK & List of Adapters + ETag Header If-None-Match Etag value matched, therefore no Response Body will be returned

	404 Not Found	Unauthorized; credential entry failed or missing Resource Collection does not exist; this IP Address is running an HTTP service, but does not recognize this resource

GET /Compute/Devices/{id}/Adapters/{id}/ - Retrieve a specific Adapter

URI:	/Compute/Devices/{id}/Adapters/{id}/	Description
Method	GET	Returns the information regarding a specific Adapter based on the {id} in the URI address string
Request Header	Authorization (Mandatory) If-None-Match (Optional)	The request requires either Basic or Digest authorization The request is conditionally processed only if the current ETag for the resource does not match the ETag passed in this header
Query Parameters		
Response	200 OK 401 Unauthorized 404 Not Found	OK & Adapter information in the response body + ETag Header Unauthorized; credential entry failed or missing Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource

HEAD /Compute/Devices/{id}/Adapters/ - Ping the Collection of Adapters

URI:	/Compute/Devices/{id}/Adapters/	Description
Method	HEAD	Pings this Adapter Collection
Request Header	Authorization (Mandatory)	The request requires either Basic or Digest authorization
Query Parameters		
Response	200 OK 401 Unauthorized 404 Not Found	OK with no response body Unauthorized; credential entry failed or missing Resource Collection does not exist; this IP Address is running an HTTP service, but does not recognize this resource

HEAD /Compute/Devices/{id}/Adapters/{id}/ - Ping a specific Adapter

URI:	/Compute/Devices/{id}/Adapters/{id}/	Description
Method	HEAD	Pings this Adapter
Request Header	Authorization (Mandatory)	The request requires either Basic or Digest authorization
Query Parameters		
Response	200 OK 401 Unauthorized 404 Not Found	OK with no response body Unauthorized; credential entry failed or missing Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource

OPTIONS /Compute/Devices/{id}/Adapters/- Determine Allowable Methods for a Collection of Adapters

URI:	/Compute/Devices/{id}/Adapters/	Description
Method	OPTIONS	Get the allowable HTTP Methods list for this resource
Request Header		
Query Parameters		
Response	200 OK 404 Not Found	OK & the "Allow" list of methods in the response header. The response body provides the JSON Schema for this resource Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource

OPTIONS /Compute/Devices/{id}/Adapters/{id}/ - Determine Allowable Methods for a specific Adapter

URI:	/Compute/Devices/{id}/Adapters/{id}/	Description
Method	OPTIONS	Get the allowable HTTP Methods list for this resource
Request Header		

Query Parameters		
Response	200 OK 404 Not Found	OK & the “Allow” list of methods in the response header. The response body provides the JSON Schema for this resource Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource

Methods Not Allowed on **/Compute/Devices/{id}/Adapters/** Collection

URI:	**/Compute/Devices/{id}/Adapters/**	**Description**
Method	POST, PUT, DELETE	Methods that are not allowed
Request Header		
Query Parameters		
Response	405 Method Not Allowed	Method not allowed for this Resource; returns "Allow" header with allowable methods list

Methods Not Allowed on **/Compute/Devices/{id}/Adapters/{id}/** Instance

URI:	**/Compute/Devices/{id}/Adapters/{id}/**	**Description**
Method	POST, PUT, DELETE	Methods that are not allowed
Request Header		
Query Parameters		
Response	405 Method Not Allowed	Method not allowed for this Resource; returns "Allow" header with allowable methods list

Collection Resource Attributes

Attribute	**Type**	**Requirement**	**User Configurable**	**Possible Values**	**Description**	**Model Correspondence**
Self	URI String	Mandatory	No	Free-Form URI Format 256 Chars	Describes the fully qualified URI link for the Collection	{ IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking }

Members	String Array	Optional	No	Resource Collection (0 - n entries)	The array of Resource Instances (see Instance Resource Attributes Table for Instance Attribute details)	

Instance Resource Attributes

Attribute	Type	Requirement	User Configurable	Possible Values	Description	Model Correspondence
Self	URI String	Mandatory	No	Free-Form URI Format 256 Chars	Describes the fully qualified URI link	{ IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking }
ID	String	Mandatory	No	Free-Form 256 Chars	The resource identifier that is unique in space and time	{ DMTF | CIM | LogicalElement.DeviceID }
Status.State.Name	String	Mandatory	No	"Unknown" "Not available" "Servicing" "Starting" "Stopping" "Stopped" "Aborted" "Dormant" "Completed" "Migrating" "Emigrating" "Immigrating" "Snapshotting" "Shutting down" "In test" "Transitioning" "In service"	The current state value of this Resource	{ DMTF | CIM | ManagedSystemElement.State }

Status.State.ID	Number	Mandatory	No	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16	The current state value map of this Resource	{ DMTF | CIM | ManagedSystemElement.State }
Status.Health[].Name	String (1..*)	Mandatory	No	"Unknown" "OK" "Degraded/Warning" "Minor failure" "Major failure" "Critical failure" "Non-recoverable error" "Not installed" "Not available" "No access allowed"	The current health value of this Resource. There can be 1 or more Name entries.	{ DMTF | CIM | ManagedSystemElement.HealthState }
Status.Health[].ID	Number (1..*)	Mandatory	No	0 5 10 15 20 25 30 65536 65537 65538	The current health value map of this Resource. There can be 1 or more Identries.	{ DMTF | CIM | ManagedSystemElement.HealthState }

Ports.Self	String	Mandatory	No	Free-Form URI Format 256 Chars	Describes the fully qualified URI link	{ IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking }

EXAMPLES

GET Adapters Example - Specific Instance Based on the Identifier

Request

Method	URI	Query String	Request Header	Request Body
GET	/Compute/Devices/{id}/Adapters/management/		Authorization (Mandatory) If-None-Match: {etag} (Optional)	

Response

Precondition	Response Code	Response Header	Response Body
Credentials invalid or missing	401 Unauthorized		
Resource Id does not exist	404 Not Found		
If-None-Match true	304 Not Modified		

If-None-Match false or missing	200 OK	Content-Type: application/json
		ETag: {etag}
			{
			"Self": "http://10.20.30.40/Compute/Devices/0123456789/Adapters/management/",
			"ID": "management",
			"Status": {
			"State": {
			"ID": 16,

			"Name": "In service"
			},
			"Health": [{
			"ID": 5,
			"Name": "OK"
			}]
			},
			"Ports": {
			"Self":
			"http://10.20.30.40/Compute/Devices/0123456789/Adapters/management/Ports/",
			}
			}

9.9.4 Ports

Description

The Device-level methods and attributes return information about the Port(s) and do certain operations.

Allowable Methods

URI	Allowable Methods
/Compute/Devices/{id}/Adapters/{id}/Ports/	GET, HEAD, OPTIONS
/Compute/Devices/{id}/Adapters/{id}/Ports/{id}/	GET, PUT, HEAD, OPTIONS

GET /Compute/Devices/{id}/Adapters/{id}/Ports/ - Retrieve all Ports on a specific Adapter

URI:	/Compute/Devices/{id}/Adapters/{id}/Ports/	Description
Method	GET	Returns the Collection of Ports
Request Header	Authorization (Mandatory) If-None-Match (Optional)	The request requires either Basic or Digest authorization The request is conditionally processed only if the current ETag for the resource does not match the ETag passed in this header
Query Parameters		
Response	200 OK 304 Not Modified 401 Unauthorized	OK & List of Ports + ETag Header

	404 Not Found	If-None-Match Etag value matched, therefore no Response Body will be returned Unauthorized; credential entry failed or missing Resource Collection does not exist; this IP Address is running an HTTP service, but does not recognize this resource

GET /Compute/Devices/{id}/Adapters/{id}/Ports/{id} - Retrieve a specific Port on a specific Adapter

URI:	**/Compute/Devices/{id}/Adapters/{id}/Ports/{id}/**	**Description**
Method	GET	Returns the information regarding a specific Port based on the {id} in the URI address string
Request Header	Authorization (Mandatory) If-None-Match (Optional)	The request requires either Basic or Digest authorization The request is conditionally processed only if the current ETag for the resource does not match the ETag passed in this header
Query Parameters		
Response	200 OK 401 Unauthorized 404 Not Found	OK & Port information in the response body + ETag Header Unauthorized; credential entry failed or missing Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource

PUT /Compute/Devices/{id}/Adapters/{id}/Ports/{id} - Modify specific Port attributes

URI:	**/Compute/Devices/{id}/Adapters/{id}/Ports/{id}/**	**Description**
Method	PUT	Modify an attribute or execute an operation for this Port
Request Header	Authorization (Mandatory) If-Match (Mandatory)	The request requires either Basic or Digest authorization

		The request is conditionally processed only if the current ETag for the resource matches the ETag passed in this header
Query Parameters		

Request Body	{
	"AddressOrigin": {
	"ID": number,
	"Name": "DHCP | STATIC"
	},
	"IPv4Address": "ipv4_address/cidr",
	"IPGateway": "ipv4_gateway",
	"MTUBytes": 1500,
	"DNS": ["ipv4_address"]
	}
		JSON BODY START
		Address Origin - where the IP Address comes from
		Origin Type ID (4 or 3)
		Origin Type Name (DHCP or Static)
		
		IPv4 Address and CIDR mask value
		IPv4 Gateway Address
		Maximum Transfer Unit in bytes (range: 46 - 9216)
		DNS address list comma separated
		JSON BODY END

Response	200 OK 400 Bad Request 401 Unauthorized 404 Not Found 412 Precondition Failed 428 Precondition Required 500 Internal Server Error	OK & Port information in the response body + ETag Header Bad Request (typically a faulty parameter) Unauthorized; credential entry failed or missing The Resource doesn't exist Indicates the "If-Match" Etag check failed Indicates the need for an "If-Match" conditional with an Etag value in the Request Header System could not process the request

HEAD /Compute/Devices/{id}/Adapters/{id}/Ports/{id}/ - Ping the Collection of Ports on a specific Adapter

URI:	**/Compute/Devices/{id}/Adapters/{id}/Ports/**	**Description**
Method	HEAD	Pings this Port Collection
Request Header	Authorization (Mandatory)	The request requires either Basic or Digest authorization
Query Parameters		

Response	200 OK 401 Unauthorized 404 Not Found	OK with no response body Unauthorized; credential entry failed or missing Resource Collection does not exist; this IP Address is running an HTTP service, but does not recognize this resource

HEAD /Compute/Devices/{id}/Adapters/{id}/Ports/{id}/ - Ping a specific Port on a specific Adapter

URI:	/Compute/Devices/{id}/Adapters/{id}/Ports/{id}/	Description
Method	HEAD	Pings this Port
Request Header	Authorization (Mandatory)	The request requires either Basic or Digest authorization
Query Parameters		
Response	200 OK 401 Unauthorized 404 Not Found	OK with no response body Unauthorized; credential entry failed or missing Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource

OPTIONS /Compute/Devices/{id}/Adapters/{id}/Ports/- Determine Allowable Methods for a Collection of Ports on a specific Adapter

URI:	/Compute/Devices/{id}/Adapters/{id}/Ports/	Description
Method	OPTIONS	Get the allowable HTTP Methods list for this resource
Request Header		
Query Parameters		
Response	200 OK 404 Not Found	OK & the “Allow” list of methods in the response header. The response body provides the JSON Schema for this resource

		Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource

OPTIONS /Compute/Devices/{id}/Adapters/{id}/Ports/{id}/ - Determine Allowable Methods for a specific Port on a specific Adapter

URI:	**/Compute/Devices/{id}/Adapters/{id}/Ports/{id}/**	**Description**
Method	OPTIONS	Get the allowable HTTP Methods list for this resource
Request Header		
Query Parameters		
Response	200 OK 404 Not Found	OK & the "Allow" list of methods in the response header. The response body provides the JSON Schema for this resource Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource

Methods Not Allowed on **/Compute/Devices/{id}/Adapters/{id}/Ports/** Collection

URI:	**/Compute/Devices/{id}/Adapters/{id}/Ports/**	**Description**
Method	POST, DELETE	Methods that are not allowed
Request Header		
Query Parameters		
Response	405 Method Not Allowed	Method not allowed for this Resource; returns "Allow" header with allowable methods list

Methods Not Allowed on **/Compute/Devices/{id}/Adapters/{id}/Ports/{id}/** Instance

URI:	**/Compute/Devices/{id}/Adapters/{id}/Ports/{id}/**	**Description**

Method	POST, DELETE	Methods that are not allowed
Request Header		
Query Parameters		
Response	405 Method Not Allowed	Method not allowed for this Resource; returns "Allow" header with allowable methods list

Collection Resource Attributes

Attribute	Type	Requirement	User Configurable	Possible Values	Description	Model Correspondence
Self	URI String	Mandatory	No	Free-Form URI Format 256 Chars	Describes the fully qualified URI link for the Collection	{ IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking }
Members	String Array	Optional	No	Resource Collection (0 - n entries)	The array of Resource Instances (see Instance Resource Attributes Table for Instance Attribute details)	

Instance Resource Attributes

Attribute	Type	Requirement	User Configurable	Possible Values	Description	Model Correspondence
Self	URI String	Mandatory	No	Free-Form URI Format 256 Chars	Describes the fully qualified URI link	{ IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking }
ID	String	Mandatory	No	Free-Form 256 Chars	The resourc	{ DMTF | CIM | LogicalElement.DeviceID }

					e identifier that is unique in space and time	
Status.State.Name	String	Mandatory	No	"Unknown" "Not available" "Servicing" "Starting" "Stopping" "Stopped" "Aborted" "Dormant" "Completed" "Migrating" "Emigrating" "Immigrating" "Snapshotting" "Shutting down" "In test" "Transitioning" "In service"	The current state value of this Resource	{ DMTF | CIM | ManagedSystemElement.State }
Status.State.ID	Number	Mandatory	No	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15	The current state value map of this Resource	{ DMTF | CIM | ManagedSystemElement.State }

				16		
Status.Health[].Name	String (1..*)	Mandatory	No	"Unknown" "OK" "Degraded/Warning" "Minor failure" "Major failure" "Critical failure" "Non-recoverable error" "Not installed" "Not available" "No access allowed"	The current health value of this Resource. There can be 1 or more Name entries.	{ DMTF | CIM | ManagedSystemElement.HealthState }
Status.Health[].ID	Number (1..*)	Mandatory	No	0 5 10 15 20 25 30 65536 65537 65538	The current health value map of this Resource. There can be 1 or more Id entries.	{ DMTF | CIM | ManagedSystemElement.HealthState }
AddressOrigin.Name	String	Mandatory	Yes	"UNKNOWN" "OTHER" "NOT APPLICABLE" "STATIC" "DHCP"	Information value as to where the address is supplied	{ DMTF | CIM | DHCPSettingData.AddressOrigin }

AddressOrigin.ID	Number	Mandatory	Yes	0 1 2 3 4	Information value map as to where the address is supplied	{ DMTF | CIM | DHCPSettingData.AddressOrigin }
IPv4Address	String	Mandatory	Yes	IPv4 4-Octet pattern + CIDR mask	The Network IP Address for this Device; IPv4 type NOTE: 0.0.0.0/8 & 127.0.0.0/8 are reserved and rejected	{ DMTF | CIM | StaticIPAssignmentSettingData.IPv4Address }
IPGateway	String	Optional	Yes	IPv4 4-Octet pattern	The Network IP Gateway address setting	{ DMTF | CIM | StaticIPAssignmentSettingData.GatewayIPv4Address }
MACAddress	String	Mandatory	No	6-hex digit HW address		
NetworkType.Name	String	Mandatory	No	"LAN" "WLAN" "WAN" "MAN" "SAN" "VLAN"	The network type value	{ DMTF | CIM | System.AdminDomain.Network }

				"Ethernet Network" "IP Network" "IPv4 Network" "IPv6 Network"		
NetworkType.ID	Number	Mandatory	No	0 1 2 3 4 5 6 7 8	The network type value map	{ DMTF | CIM | System.AdminDomain.Network }
MTUBytes	Number	Mandatory	Yes	Range: 46 - 9216 (default: 1500)	The current Maximum Transfer Bytes value	{ DMTF | CIM | System.AdminDomain.Network.NetworkVLAN.TransmissionSize }
DNS	String Array	Optional	Yes	IPv4 4-Octet pattern	List of DNS server addresses	{ DMTF | CIM | IPAssignmentSettingData.DNSSettingData.DNSServerAddresses }

EXAMPLES

GET Ports Example - Specific Instance Based on the Identifier

Request

Method	URI	Query String	Request Header	Request Body
GET	/Compute/Devices/{id}/Adapters/management/Ports/{id}		Authorization (Mandatory) If-None-Match: {etag} (Optional)	

Response

Precondition	Response Code	Response Header	Response Body
Credentials invalid or missing	401 Unauthorized		
Resource Id does not exist	404 Not Found		
If-None-Match true	304 Not Modified		

If-None-Match false or missing	200 OK	Content-Type: application/json
		ETag: {etag}
			{
			"Self": "http://10.20.30.40/Compute/Devices/0123456789/Adapters/management/Ports/01_0a_f7_95_79_3c/",
			"ID": "01_0a_f7_95_79_3c",
			"Status": {
			"State": {
			"ID": 16,
			"Name": "In service"
			},
			"Health": [{
			"ID": 5,
			"Name": "OK"
			}]
			},
			"AddressOrigin": {
			"ID": 4,
			"Name": "DHCP"
			},
			"IPv4Address": "10.20.30.40/22",
			"IPGateway": "",
			"MACAddress": "01:0a:f7:95:79:3c",
			"NetworkType": {
			"ID": 8,
			"Name": "IPv4 Network"
			},
			"MTUBytes": 1500

			}

PUT Port Example - Change the MTUBytes of a specific Port

Request

Method	URI	Query String	Request Header	Request Body

PUT	/Compute/Devices/{id}/Adapters/{id}/Ports/{id}		Authorization (Mandatory)
			If-Match: {etag} (Mandatory)
				{
				"MTUBytes" : 5000
				}

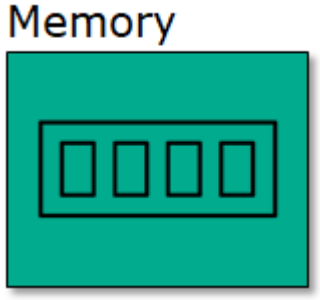
Response

Precondition	Response Code	Response Header	Response Body
Credentials invalid or missing	401 Unauthorized		
Resource Id does not exist	404 Not Found		
Bad/Missing Parameter in Body	400 Bad Request		
System could not process the request	500 Internal Server Error		
If-Match false	412 Precondition Failed		

If-Match missing	428 Precondition Required		

If-Match true	200 OK	Content-Type: application/json	{
			"Self": "http://10.20.30.40/Compute/Devices/0123456789/Adapters/management/Ports/01_0a_f7_95_79_3c/",
			"Id": "01_0a_f7_95_79_3c",
			"Status": {
			"State": {
			"Id": 16,
			"Name": "In service"
			},
			"Health": [{
			"Id": 5,
			"Name": "OK"
			}]
			},
			"AddressOrigin": {
			"Id": 4,
			"Name": "DHCP"
			},
			"Ipv4Address": "10.20.30.40/22",
			"IpGateway": "",
			"MACAddress": "01:0a:f7:95:79:3c",
			"NetworkType": {
			"Id": 8,
			"Name": "IPv4 Network"
			},
			"MTUBytes": 5000
			}

9.10 Memory Devices - Logical



This table shows the logical and virtual resources for a memory device. The set of resource URIs is as follows:

URI Pattern	Description
/Memory/Devices/{id}/Modules/	Collection of Memory Modules available within this Memory Device
/Memory/Devices/{id}/Modules/{id}/	A specific Memory Module within this Memory Device
/Memory/Devices/{id}/Location/	The Location information for the Memory Device
/Memory/Devices/{id}/SystemClock/	The System Clock information for this Memory Device
/Memory/Devices/{id}/Accounts/	Collection of Accounts available within this Memory Device
/Memory/Devices/{id}/Accounts/{id}/	A specific Account available within this Memory Device
/Memory/Devices/{id}/OperatingSystem/	The local Operating System information for this Memory Device
/Memory/Devices/{id}/Jobs/	Collection of Jobs available within this Memory Device
/Memory/Devices/{id}/Jobs/{id}/	A specific Job available within this Memory Device
/Memory/Devices/{id}/Performance/	The Performance information within this Memory Device

9.10.1 Modules

Description

The Device-level methods and attributes return information about the Network Module(s) and do certain operations.

Allowable Methods

URI	Allowable Methods
/Memory/Devices/{id}/Modules/	GET, POST, HEAD, OPTIONS
/Memory/Devices/{id}/Modules/{id}/	GET, PUT, DELETE, HEAD, OPTIONS

GET /Network/Devices/{id}/Modules/ - Retrieve all Memory Modules

URI:	/Memory/Devices/{id}/Modules/	Description
Method	GET	Returns the Collection of Modules

Request Header	Authorization (Mandatory) If-None-Match (Optional)	The request requires either Basic or Digest authorization The request is conditionally processed only if the current ETag for the resource does not match the ETag passed in this header
Query Parameters		
Response	200 OK 304 Not Modified 401 Unauthorized 404 Not Found	OK & List of Modules + ETag Header If-None-Match Etag value matched, therefore no Response Body will be returned Unauthorized; credential entry failed or missing Resource Collection does not exist; this IP Address is running an HTTP service, but does not recognize this resource

GET /Memory/Devices/{id}/Modules/{Id}/ - Retrieve a specific Memory Module

URI:	**/Memory/Devices/{id}/Modules/{id}/**	**Description**
Method	GET	Returns the information regarding a specific Module based on the {id} in the URI address string
Request Header	Authorization (Mandatory) If-None-Match (Optional)	The request requires either Basic or Digest authorization The request is conditionally processed only if the current ETag for the resource does not match the ETag passed in this header
Query Parameters		
Response	200 OK 401 Unauthorized 404 Not Found	OK & Module information in the response body + ETag Header Unauthorized; credential entry failed or missing Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource

POST/Memory/Devices/{id}/Modules/ - Create a new Memory Module

URI:	**/Memory/Devices/{id}/Modules/{id}**	**Description**
Method	POST	Create a new Module

Request Header	Authorization (Mandatory)	The request requires either Basic or Digest authorization
Query Parameters		

Request Body	{
	"Name": "module_name",
	"Description": "desc"
	}
		JSON BODY START
		Name of the Module
		User description for the Module
		JSON BODY END

Response	201 Created 400 Bad Request 401 Unauthorized 409 Conflict 500 Internal Server Error	Created & Module information in the response body + ETag Header + new URI in Location Header Bad Request (typically a faulty parameter) Unauthorized; credential entry failed or missing A new parameter value already exists (e.g., Name) System could not process the request

PUT /Memory/Devices/{id}/Modules/{id} - Modify specific Memory Module attributes

URI:	**/Memory/Devices/{id}/Modules/{id}**	**Description**
Method	PUT	Modify an attribute or execute an operation for this Module
Request Header	Authorization (Mandatory) If-Match (Mandatory)	The request requires either Basic or Digest authorization The request is conditionally processed only if the current ETag for the resource matches the ETag passed in this header
Query Parameters		

Request Body	{
	"Name": "module_name",
	"Description": "desc",
	}
		JSON BODY START
		Name of the Module
		User description for the Module
		JSON BODY END

Response	200 OK 400 Bad Request 401 Unauthorized 404 Not Found 409 Conflict 412 Precondition Failed	OK & Module information in the response body + ETag Header Bad Request (typically a faulty parameter) Unauthorized; credential entry failed or missing The Resource doesn't exist

	428 Precondition Required 500 Internal Server Error	A new parameter value already exists (e.g., Name) Indicates the “If-Match” Etag check failed Indicates the need for an “If-Match” conditional with an Etag value in the Request Header System could not process the request

HEAD /Memory/Devices/{id}/Modules/ - Ping the Collection of Memory Modules

URI:	**/Memory/Devices/{id}/Modules/**	**Description**
Method	HEAD	Pings this Memory Module Collection
Request Header	Authorization (Mandatory)	The request requires either Basic or Digest authorization
Query Parameters		
Response	200 OK 401 Unauthorized 404 Not Found	OK with no response body Unauthorized; credential entry failed or missing Resource Collection does not exist; this IP Address is running an HTTP service, but does not recognize this resource

HEAD /Memory/Devices/{id}/Modules/{id}/ - Ping a specific Memory Module

URI:	**/Memory/Devices/{id}/Modules/{id}/**	**Description**
Method	HEAD	Pings this Memory Module
Request Header	Authorization (Mandatory)	The request requires either Basic or Digest authorization
Query Parameters		
Response	200 OK 401 Unauthorized 404 Not Found	OK with no response body Unauthorized; credential entry failed or missing Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource

OPTIONS /Memory/Devices/{id}/Modules/ - Determine Allowable Methods for a Collection of Memory Modules

URI:	/Memory/Devices/{id}/Modules/	Description
Method	OPTIONS	Get the allowable HTTP Methods list for this resource
Request Header		
Query Parameters		
Response	200 OK 404 Not Found	OK & the "Allow" list of methods in the response header. The response body provides the JSON Schema for this resource Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource

OPTIONS /Memory/Devices/{id}/Modules/{Id}/ - Determine Allowable Methods for a specific Memory Module

URI:	/Memory/Devices/{id}/Modules/{id}/	Description
Method	OPTIONS	Get the allowable HTTP Methods list for this resource
Request Header		
Query Parameters		
Response	200 OK 404 Not Found	OK & the "Allow" list of methods in the response header. The response body provides the JSON Schema for this resource Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource

DELETE /Memory/Devices/{id}/Modules/{id} - Delete specific Memory Module

URI:	/Memory/Devices/{id}/Modules/{id}	Description
Method	DELETE	Delete this Memory Module
Request Header	Authorization (Mandatory) If-Match (Mandatory)	The request requires either Basic or Digest authorization The request is conditionally processed only if the current ETag for the resource matches the ETag passed in this header

Query Parameters		
Request Body		
Response	204 No Content 401 Unauthorized 404 Not Found 412 Precondition Failed 428 Precondition Required 500 Internal Server Error	Delete successful, no content in the response body Unauthorized; credential entry failed or missing The Resource doesn't exist Indicates the "If-Match" Etag check failed Indicates the need for an "If-Match" conditional with an Etag value in the Request Header System could not process the request

Methods Not Allowed on **/Memory/Devices/{id}/Modules/** Collection

URI:	**/Memory/Devices/{id}/Modules/**	**Description**
Method	PUT, DELETE	Methods that are not allowed
Request Header		
Query Parameters		
Response	405 Method Not Allowed	Method not allowed for this Resource; returns "Allow" header with allowable methods list

Methods Not Allowed on **/Memory/Devices/{id}/Modules/{id}/** Instance

URI:	**/Memory/Devices/{id}/Modules/{id}/**	**Description**
Method	POST	Methods that are not allowed
Request Header		
Query Parameters		
Response	405 Method Not Allowed	Method not allowed for this Resource; returns "Allow" header with allowable methods list

Collection Resource Attributes

Attribute	Type	Requirement	User Configurable	Possible Values	Description	Model Correspondence
Self	URI String	Mandatory	No	Free-Form URI Format 256 Chars	Describes the fully qualified URI link for the Collection	{ IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking }
Members	String Array	Optional	No	Resource Collection (0 - n entries)	The array of Resource Instances (see Instance Resource Attributes Table for Instance Attribute details)	

Instance Resource Attributes

Attribute	Type	Requirement	User Configurable	Possible Values	Description	Model Correspondence
Self	URI String	Mandatory	No	Free-Form URI Format 256 Chars	Describes the fully qualified URI link	{ IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking }
Name	String	Mandatory	Yes	Free-Form 256 Chars	The user-defined name of this Module	{ DMTF | CIM | ManagedSystemElement.Name }
ID	String	Mandatory	No	Free-Form 256 Chars	The resource identifier that is unique in space and time	{ DMTF | CIM | LogicalElement.DeviceID }
Description	String	Optional	Yes	Free-Form 64 Chars	The user-defined	{ DMTF | CIM | ManagedElement.Description }

					description for this Module	
CreateDate	datetime	Mandatory	No	Date and Time	The date and time the Module was created	{ DMTF | CIM | ManagedSystemElement.InstallDate }
LastModified	datetime	Mandatory	No	Date and Time	The date and time the Module was modified	{ DMTF | CIM | LogicalElement.TimeOfLastStateChange }
Status.State.Name	String	Mandatory	No	"Unknown" "Not available" "Servicing" "Starting" "Stopping" "Stopped" "Aborted" "Dormant" "Completed" "Migrating" "Emigrating" "Immigrating" "Snapshotting" "Shutting down" "In test" "Transitioning" "In service"	The current state value of this Resource	{ DMTF | CIM | ManagedSystemElement.State }
Status.State.ID	Number	Mandatory	No	0 1 2 3 4 5 6 7 8 9	The current state value map of this Resource	{ DMTF | CIM | ManagedSystemElement.State }

				10 11 12 13 14 15 16		
Status.Health[].Name	String (1..*)	Mandatory	No	"Unknown" "OK" "Degraded/Warning" "Minor failure" "Major failure" "Critical failure" "Non-recoverable error" "Not installed" "Not available" "No access allowed"	The current health value of this Resource. There can be 1 or more Name entries.	{ DMTF | CIM | ManagedSystemElement.HealthState }
Status.Health[].ID	Number (1..*)	Mandatory	No	0 5 10 15 20 25 30 65536 65537 65538	The current health value map of this Resource. There can be 1 or more Id entries.	{ DMTF | CIM | ManagedSystemElement.HealthState }

EXAMPLES

GET Module Example - Specific Instance Based on the Identifier

Request

Method	URI	Query String	Request Header	Request Body

GET	/Memory/Devices/{id}/Modules/{id}		Authorization (Mandatory) If-None-Match: {etag} (Optional)	

Response

Precondition	Response Code	Response Header	Response Body
Credentials invalid or missing	401 Unauthorized		
Resource Id does not exist	404 Not Found		
If-None-Match true	304 Not Modified		

If-None-Match false or missing	200 OK	Content-Type: application/json
		ETag: {etag}
			{
			"Self": "http://10.20.30.40/Memory/Devices/0123456789/Modules/f4e91cab-9e4f-45b7-b206-9271f68c7e86/",
			"Name": "Module12",
			"ID": "f4e91cab-9e4f-45b7-b206-9271f68c7e86",
			"Description": ""
			}]
			}

9.10.2 Location

Description

The Device-level methods and attributes return information about the Location and do certain operations.

Allowable Methods

URI	Allowable Methods
/Memory/Devices/{id}/Location	GET, PUT, HEAD, OPTIONS

GET /Memory/Devices/{id}/Location- Retrieve the Location information

URI:	/Memory/Devices/{id}/Location	Description
Method	GET	Returns the information of the Location
Request Header	Authorization (Mandatory) If-None-Match (Optional)	The request requires either Basic or Digest authorization The request is conditionally processed only if the current ETag for the resource does not match the ETag passed in this header
Query Parameters		
Response	200 OK 304 Not Modified 401 Unauthorized 404 Not Found	OK & Location information in the response body If-None-Match Etag value matched, therefore no Response Body will be returned Unauthorized; credential entry failed or missing Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource

PUT /Memory/Devices/{id}/Location- Modify an attribute of the Location

URI:	/Memory/Devices/{id}/Location	Description
Method	PUT	Modify an attribute of the Location
Request Header	Authorization (Mandatory) If-Match (Mandatory)	The request requires either Basic or Digest authorization The request is conditionally processed only if the current ETag for the resource matches the ETag passed in this header
Query Parameters		
Request Body	{ "Country" : "new_country", "Territory" : "new_territory", "State" : "new_state", "City" : "new_city", "Address1": "new_addr1", "Address2": "new_addr2", "Address3": "new_addr3", "PostalCode": "new_zip", "SiteName": "new_name", "Building": "new_bldg", "Room": "new_room", "Pod": "new_pod", "Rack": "new_row",	JSON BODY START Change the Country Change the Territory Change the State Change the City Change the Address1 Change the Address2 Change the Address3 Change the PostalCode Change the SiteName Change the Building number or name Change the Room number or name Change the Pod number or name Change the Row number or name

	"Shelf": "new_shelf", "Item": "new_item", "GPSCoords": "new_coords", "OtherLocationInfo": "new_info", }	Change the Shelf number or name Change the Item Change the GPS coordinates Change the other location information JSON BODY END
Response	200 OK 400 Bad Request 401 Unauthorized 500 Internal Server Error	OK & Location information in the response body Bad Request (typically a faulty parameter) Unauthorized; credential entry failed or missing Resource could not execute the request

HEAD /Memory/Devices/{id}/Location- Ping the Location

URI:	/Memory/Devices/{id}/Location	Description
Method	HEAD	Pings the Location
Request Header	Authorization (Mandatory)	
Query Parameters		
Response	200 OK 401 Unauthorized 404 Not Found	OK with no response body Unauthorized; credential entry failed or missing Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource

OPTIONS /Memory/Devices/{id}/Location- Determine Allowable Methods for Location

URI:	/Memory/Devices/{id}/Location	Description
Method	OPTIONS	Get the allowable HTTP Methods list for this resource
Request Header		
Query Parameters		

Response	200 OK 404 Not Found	OK & the "Allow" list of methods in the response header. The response body provides the JSON Schema for this resource Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource

Methods Not Allowed on **/Memory/Devices/{id}/Location**

URI:	**/Memory/Devices/{id}/Location**	**Description**
Method	POST, DELETE	Methods that are not allowed
Request Header		
Query Parameters		
Response	405 Method Not Allowed	Method not allowed for this Resource

Resource Attributes

Attribute	**Type**	**Requirement**	**User Configurable**	**Possible Values**	**Description**	**Model Correspondence**
Self	String	Mandatory	No	Free-Form URI Format 256 Chars	Describes the fully qualified URI link	{ IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking }
Country	String	Optional	Yes	Free-Form 64 Chars	The Country name where this Device is located	{ DMTF | Redfish | SNIA | Swordfish | Location.Country }
Territory	String	Optional	Yes	Free-Form 64 Chars	The Territory name where this Device is located	{ DMTF | Redfish | SNIA | Swordfish | Location.Territory}

State	String	Optional	Yes	Free-Form 64 Chars	The State name where this Device is located	{ DMTF | Redfish | SNIA | Swordfish | Location.State}
City	String	Optional	Yes	Free-Form 64 Chars	The City name where this Device is located	{ DMTF | Redfish | SNIA | Swordfish | Location.City}
Address1	String	Optional	Yes	Free-Form 64 Chars	The first Address information where this Device is located	{ DMTF | Redfish | SNIA | Swordfish | Location.Address1}
Address2	String	Optional	Yes	Free-Form 64 Chars	The second Address information where this Device is located as needed	{ DMTF | Redfish | SNIA | Swordfish | Location.Address2}
Address3	String	Optional	Yes	Free-Form 64 Chars	The third Address information where this Device is located as needed	{ DMTF | Redfish | SNIA | Swordfish | Location.Address3}
PostalCode	String	Optional	Yes	Free-Form 32Chars	The Postal or Zip Code name where this Device is located	{ DMTF | Redfish | SNIA | Swordfish | Location.PostalCode}
SiteName	String	Optional	Yes	Free-Form 32Chars	The friendly Site Name	{WDC | OpenFlex| Location.SiteName }
Building	String	Optional	Yes	Free-Form 32Chars	The Building name or	{ DMTF | Redfish | SNIA | Swordfish | Location.Building}

					number where this Device is located	
Room	String	Optional	Yes	Free-Form 32Chars	The Room name or number in the Building where this Device is located	{ DMTF | Redfish | SNIA | Swordfish | Location.Room}
Pod	String	Optional	Yes	Free-Form 32Chars	The Pod name or number in the Room this Device is located as needed	{WDC | OpenFlex | Location.Pod}
Row	String	Optional	Yes	Free-Form 32Chars	The Row name or number in the Room or Pod this Device is located	{ DMTF | Redfish | SNIA | Swordfish | Location.Row}
Rack	String	Optional	Yes	Free-Form 32Chars	The Rack name or number in the Row this Device is located	{ DMTF | Redfish | SNIA | Swordfish | Location.Rack}
Shelf	String	Optional	Yes	Free-Form 32Chars	The Shelf name or number of the Rack this Device is located	{ DMTF | Redfish | SNIA | Swordfish | Location.Shelf}
Device	String	Optional	Yes	Free-Form 32Chars	The Device name or number in the Shelf this Device	{WDC | OpenFlex| Location.Device }

					is located as needed	
Item	String	Optional	Yes	Free-Form 32Chars	The Item name indicating the Shelf units or dimension for this Device	{ DMTF | Redfish | SNIA | Swordfish | Location.Item}
GPSCoords	String	Optional	Yes	Decimal Latitude, Decimal Longitude Format	The GPS coordinates of the location of this Device	{ DMTF | Redfish | SNIA | Swordfish | Location.GPSCoords}
OtherLocationInfo	String	Optional	Yes	Free-Form 64 Chars	A place-holder for other location information	{ DMTF | Redfish | SNIA | Swordfish | Location.OtherLocationInfo }

EXAMPLES

GET Location Example - Specific Instance Based on the Identifier

Request

Method	URI	Query String	Request Header	Request Body
GET	/Memory/Devices/{id}/Location		Authorization (Mandatory) If-None-Match: {etag} (Optional)	

Response

Precondition	Response Code	Response Header	Response Body
Credentials invalid or missing	401 Unauthorized		

Resource Id does not exist	404 Not Found		
If-None-Match true	304 Not Modified		

If-None-Match false or missing	200 OK	Content-Type: application/json
		ETag: {etag}
			{
			"Self": "http://10.20.30.40/Storage/Devices/0123456789/Location/",
			"Country": "USA",
			"Territory": "",
			"State": "NV",
			"City": "Coyote Springs",
			"Address1": "123 Hwy 93",
			"Address2": "Suite -200",
			"Address3":"",
			"PostalCode": "89025",
			"SiteName": "Acme DataCenter 1",
			"Building": "1",
			"Room": "1",
			"Pod": "p2",
			"Rack": "r02",
			"Shelf" : "30",
			"Device": "3",
			"Item": "Rack Units",
			"GPSCoords": "36.821768, -114.937472",
			"OtherLocationInfo": "This is other info"
			
			}

PUT Location Example - Change the Address3

Request

Method	URI	Query String	Request Header	Request Body
PUT	/Memory/Devices/{id}/Location		Authorization (Mandatory) If-Match: {etag}	{ "Self": "http://10.20.30.40/Storage/Devices/0123456789/Location/", "Country": "USA", "Territory": "", "State": "NV",

			(Mandatory)	"City": "Coyote Springs", "Address1": "123 Hwy 93", "Address2": "Suite -200", "Address3":"Level 2", "PostalCode": "89025", "SiteName": "Acme DataCenter 1", "Building": "1", "Room": "1", "Pod": "p2", "Rack": "r02", "Shelf" : "30", "Device": "3", "Item": "Rack Units", "GPSCoords": "36.816483,-114.9414881", "OtherLocationInfo": "This is other info" }

Response

Precondition	Response Code	Response Header	Response Body
Credentials invalid or missing	401 Unauthorized		
Resource Id does not exist	404 Not Found		
Bad/Missing Parameter in Body	400 Bad Request		
System could not process the request	500 Internal Server Error		
If-Match false	412 Precondition Failed		
If-Match missing	428 Precondition Required		

If-Match true	200 OK	Content-Type: application/json	{
			"Self": "http://10.20.30.40/Storage/Devices/0123456789/Location/",
			"Country": "USA",
			"Territory": "",
			"State": "NV",
			"City": "Coyote Springs",
			"Address1": "123 Hwy 93",
			"Address2": "Suite -200",
			"Address3":"Level 2",
			"PostalCode": "89025",
			"SiteName": "Acme DataCenter 1",
			"Building": "1",
			"Room": "1",
			"Pod": "p2",
			"Rack": "r02",
			"Shelf" : "30",
			"Device": "3",
			"Item": "Rack Units",
			"GPSCoords": "36.816483,-114.9414881",
			"OtherLocationInfo": "This is other info"
			
			}

9.10.3 System Clock

Description

The Device-level methods and attributes return information about the System Clock and do certain operations.

Allowable Methods

URI	Allowable Methods
/Memory/Devices/{id}/SystemClock	GET, PUT, HEAD, OPTIONS

GET /Memory/Devices/{id}/SystemClock - Retrieve the System Clock information

URI:	/Memory/Devices/{id}/SystemClock	Description
Method	GET	Returns the information of the System Clock
Request Header	Authorization (Mandatory)	

Query Parameters		
Response	200 OK 401 Unauthorized 404 Not Found	OK & System Clock information in the response body Unauthorized; credential entry failed or missing Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource

PUT /Memory/Devices/{id}/SystemClock - Modify an attribute of the System Clock

URI:	**/Memory/Devices/{id}/SystemClock**	**Description**
Method	PUT	Modify an attribute of the System Clock
Request Header	Authorization (Mandatory)	
Query Parameters		

Request Body	{
	"Date" : "new_date",
	"Time" : "new_time",
	"TimeZone" : "new_tz",
	"DST" : "Enabled | Disabled"
	}
		JSON BODY START
		Change the Date
		Change the Time
		Change the TimeZone
		Change the Daylight Savings Time setting
		JSON BODY END

Response	200 OK 400 Bad Request 401 Unauthorized 500 Internal Server Error	OK & System Clock information in the response body Bad Request (typically a faulty parameter) Unauthorized; credential entry failed or missing Resource could not execute the request

HEAD /Memory/Devices/{id}/SystemClock - Ping the System Clock

URI:	**/Memory/Devices/{id}/SystemClock**	**Description**
Method	HEAD	Pings the System Clock
Request Header	Authorization (Mandatory)	
Query Parameters		

Response	200 OK 401 Unauthorized 404 Not Found	OK with no response body Unauthorized; credential entry failed or missing Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource

OPTIONS /Memory/Devices/{id}/SystemClock - Determine Allowable Methods for System Clock

URI:	**/Memory/Devices/{id}/SystemClock**	**Description**
Method	OPTIONS	Get the allowable HTTP Methods list for this resource
Request Header		
Query Parameters		
Response	200 OK 404 Not Found	OK & the "Allow" list of methods in the response header. The response body provides the JSON Schema for this resource Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource

Methods Not Allowed on **/Memory/Devices/{id}/SystemClock**

URI:	**/Memory/Devices/{id}/SystemClock**	**Description**
Method	POST, DELETE	Methods that are not allowed
Request Header		
Query Parameters		
Response	405 Method Not Allowed	Method not allowed for this Resource

Resource Attributes

Attribute	Type	Requirement	User Configurable	Possible Values	Description	Model Correspondence
Self	String	Mandatory	No	Free-Form URI Format 256 Chars	Describes the fully qualified URI link	{ IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking }
Date	String	Mandatory	Yes	Free-Form 256 Chars	The current Date	{ DMTF | CIM | OperatingSystem.LocalDateTime }
Time	String	Mandatory	Yes	Free-Form 256 Chars	The current Time	{ DMTF | CIM | OperatingSystem.LocalDateTime }
TimeZone	String	Mandatory	Yes	Free-Form 64 Chars	The current Time Zone	{ DMTF | CIM | OperatingSystem.CurrentTimeZone }
TimeZoneSetting	String	Mandatory	No	Free-Form 64 Chars	The current Time Zone Setting	{ DMTF | CIM | OperatingSystem.CurrentTimeZone }
DST	String	Mandatory	Yes	"Enabled" "Disabled" "Unknown"	The current Day Light Savings Time setting	{ DMTF | CIM | OperatingSystem.CurrentTimeZone }
Uptime.Duration	String	Mandatory	No		The current uptime value in ISO 8601 format	{ ISO | 8601| Duration }
Uptime.Days	Number	Mandatory	No	0-n	The current uptime Days since boot	{ ISO | 8601| Duration }
Uptime.Hours	Number	Mandatory	No	0-23	The current uptime	{ ISO | 8601| Duration }

					Hours since boot	
Uptime.Minutes	Number	Mandatory	No	0-59	The current uptime Minutes since boot	{ ISO | 8601| Duration }
Uptime.Seconds	Number	Mandatory	No	0-59	The current uptime Seconds since boot	{ ISO | 8601| Duration }

EXAMPLES

GET SystemClock Example

Request

Method	URI	Query String	Request Header	Request Body
GET	/Memory/Devices/{id}/SystemClock		Authorization (Mandatory)	

Response

Precondition	Response Code	Response Header	Response Body
Credentials invalid or missing	401 Unauthorized		
Success	200 OK	Content-Type: application/json	{ "Self": "http://10.20.30.40/Memory/Devices/12345/SystemClock/", "Date": "23-Aug-2018", "Time": "10:13:18", "TimeZone": "(UTC-6.00) MDT", "TimeZoneSetting": "MDT", "DST": "Enabled", "Uptime": { "Duration": "P0DT3H20M38S", "Days": 0, "Hours": 3, "Minutes": 20,

			"Seconds": 38 } }

PUT SystemClock Example - Change the Date

Request

Method	URI	Query String	Request Header	Request Body

PUT	/Memory/Devices/{id}/SystemClock		Authorization (Mandatory)	{
				"Date" : "24-Aug-2018"
				}

Response

Precondition	Response Code	Response Header	Response Body
Credentials invalid or missing	401 Unauthorized		
Bad/Missing Parameter in Body	400 Bad Request		
System could not process the request	500 Internal Server Error		

Success	200 OK	Content-Type: application/json	{
			"Self": "http://10.20.30.40/Memory/Devices/12345/SystemClock/",
			"Date": "24-Aug-2018",
			"Time": "10:14:18",
			"TimeZone": "(UTC-6.00) MDT",
			"TimeZoneSetting": "MDT",
			"DST": "Enabled",
			"Uptime": {
			"Duration": "P0DT3H20M38S",
			"Days": 0,
			"Hours": 3,
			"Minutes": 21,
			"Seconds": 38

			} }

9.10.4 Accounts

Description

The Device-level methods and attributes return information about the Account(s) and do certain operations.

Allowable Methods

URI	Allowable Methods
/Memory/Devices/{id}/Accounts/	GET, POST, HEAD, OPTIONS
/Memory/Devices/{id}/Accounts/{id}/	GET, PUT, DELETE, HEAD, OPTIONS

GET /Memory/Devices/{id}/Accounts/ - Retrieve all Accounts

URI:	/Memory/Devices/{id}/Accounts/	Description
Method	GET	Returns the Collection of Accounts
Request Header	Authorization (Mandatory) If-None-Match (Optional)	The request requires either Basic or Digest authorization The request is conditionally processed only if the current ETag for the resource does not match the ETag passed in this header
Query Parameters		
Response	200 OK 304 Not Modified 401 Unauthorized 404 Not Found	OK & List of Account + ETag Header If-None-Match Etag value matched, therefore no Response Body will be returned Unauthorized; credential entry failed or missing Resource Collection does not exist; this IP Address is running an HTTP service, but does not recognize this resource

GET /Memory/Devices/{id}/Accounts/{Id}/ - Retrieve a specific Account

URI:	/Memory/Devices/{id}/Accounts/{id}/	Description
Method	GET	Returns the information regarding a specific Account based on the {id} in the URI address string

Request Header	Authorization (Mandatory) If-None-Match (Optional)	The request requires either Basic or Digest authorization The request is conditionally processed only if the current ETag for the resource does not match the ETag passed in this header
Query Parameters		
Response	200 OK 304 Not Modified 401 Unauthorized 404 Not Found	OK & Account information in the response body + ETag Header If-None-Match Etag value matched, therefore no Response Body will be returned Unauthorized; credential entry failed or missing Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource

POST /Memory/Devices/{id}/Accounts/ - Create a new Account

URI:	/Memory/Devices/{id}/Accounts/{id}	Description
Method	POST	Create a new Account
Request Header	Authorization (Mandatory)	The request requires either Basic or Digest authorization
Query Parameters		

Request Body	{
	"Name": "account_name",
	}
		JSON BODY START
		Name of the Account
		JSON BODY END

Response	201 Created 400 Bad Request 401 Unauthorized 409 Conflict 500 Internal Server Error	Created & Account information in the response body + ETag Header + new URI in Location Header Bad Request (typically a faulty parameter) Unauthorized; credential entry failed or missing A new parameter value already exists (e.g., Name) System could not process the request

PUT /Memory/Devices/{id}/Accounts/{id} - Modify specific Account attributes

URI:	/Memory/Devices/{id}/Accounts/{id}	Description

Method	PUT	Modify an attribute or execute an operation for this Account
Request Header	Authorization (Mandatory) If-Match (Mandatory)	The request requires either Basic or Digest authorization The request is conditionally processed only if the current ETag for the resource matches the ETag passed in this header
Query Parameters		

Request Body	{
	"Name": "account_name"
	}
		JSON BODY START
		Name of the Account
		JSON BODY END

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

HEAD /Memory/Devices/{id}/Accounts/ - Ping the Collection of Accounts

URI:	/Memory/Devices/{id}/Accounts/	Description
Method	HEAD	Pings this Account Collection
Request Header	Authorization (Mandatory)	The request requires either Basic or Digest authorization
Query Parameters		
Response	200 OK 401 Unauthorized 404 Not Found	OK with no response body Unauthorized; credential entry failed or missing Resource Collection does not exist; this IP Address is running an HTTP service, but does not recognize this resource

HEAD /Memory/Devices/{id}/Accounts/{id}/ - Ping a specific Account

URI:	/Memory/Devices/{id}/Accounts/{id}/	Description
Method	HEAD	Pings this Account
Request Header	Authorization (Mandatory)	The request requires either Basic or Digest authorization
Query Parameters		
Response	200 OK 401 Unauthorized 404 Not Found	OK with no response body Unauthorized; credential entry failed or missing Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource

OPTIONS /Memory/Devices/{id}/Accounts/ - Determine Allowable Methods for a Collection of Accounts

URI:	/Memory/Devices/{id}/Accounts/	Description
Method	OPTIONS	Get the allowable HTTP Methods list for this resource
Request Header		
Query Parameters		
Response	200 OK 404 Not Found	OK & the “Allow” list of methods in the response header. The response body provides the JSON Schema for this resource Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource

OPTIONS /Memory/Devices/{id}/Accounts/{Id}/ - Determine Allowable Methods for a specific Account

URI:	/Memory/Devices/{id}/Accounts/{id}/	Description
Method	OPTIONS	Get the allowable HTTP Methods list for this resource
Request Header		

Query Parameters		
Response	200 OK 404 Not Found	OK & the "Allow" list of methods in the response header. The response body provides the JSON Schema for this resource Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource

DELETE /Memory/Devices/{id}/Accounts/{id} - Delete specific Account

URI:	/Memory/Devices/{id}/Accounts/{id}	Description
Method	DELETE	Delete this Account
Request Header	Authorization (Mandatory) If-Match (Mandatory)	The request requires either Basic or Digest authorization The request is conditionally processed only if the current ETag for the resource matches the ETag passed in this header
Query Parameters		
Request Body		
Response	204 No Content 401 Unauthorized 404 Not Found 409 Conflict 412 Precondition Failed 428 Precondition Required 500 Internal Server Error	Delete successful, no content in the response body Unauthorized; credential entry failed or missing The Resource doesn't exist In the case of only one account, that last one cannot be deleted Indicates the "If-Match" Etag check failed Indicates the need for an "If-Match" conditional with an Etag value in the Request Header System could not process the request

Methods Not Allowed on /Memory/Devices/{id}/Accounts/ Collection

URI:	/Memory/Devices/{id}/Accounts/	Description
Method	PUT, DELETE	Methods that are not allowed
Request Header		

Query Parameters		
Response	405 Method Not Allowed	Method not allowed for this Resource; returns "Allow" header with allowable methods list

Methods Not Allowed on **/Memory/Devices/{id}/Accounts/{id}/** Instance

URI:	**/Memory/Devices/{id}/Accounts/{id}/**	**Description**
Method	POST	Methods that are not allowed
Request Header		
Query Parameters		
Response	405 Method Not Allowed	Method not allowed for this Resource; returns "Allow" header with allowable methods list

Collection Resource Attributes

Attribute	**Type**	**Requirement**	**User Configurable**	**Possible Values**	**Description**	**Model Correspondence**
Self	URI String	Mandatory	No	Free-Form URI Format 256 Chars	Describes the fully qualified URI link for the Collection	{ IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking }
Members	String Array	Mandatory	No	Resource Collection (1 - n entries)	The array of Resource Instances (see Instance Resource Attributes Table for Instance Attribute details)	

Instance Resource Attributes

Attribute	**Type**	**Requirement**	**User Configurable**	**Possible Values**	**Description**	**Model Correspondence**

Self	URI String	Mandatory	No	Free-Form URI Format 256 Chars	Describes the fully qualified URI link	{ IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking }
ID	String	Mandatory	Yes	Free-Form 64 Chars	The Identifier this particular Account	{ DMTF | CIM | LogicalElement.DeviceID }
BasicAuthentication.UserPasswordSHA1Checksum	String	Mandatory	Yes	Free-Form 128 Characters	The basic authentication checksum	{ DMTF | CIM | SignedCredential.X509Infrastructure.SHA1Fingerprints }
DigestAuthentication.UserPasswordMD5Checksum	String	Optional	Yes	Free-Form 128 Characters	The digest authentication checksum	{ DMTF | CIM | SignedCredential.X509Infrastructure.MD5Fingerprints }
DigestAuthentication.Realm	String	Optional	Yes	Free-Form 128 Characters	The digest authentication realm	
Role.Name	String	Mandatory	Yes	"Admin"	The Role type string for this Account	{ DMTF | CIM | ManagedElement.Collection.Role }
Role.ID	Number	Mandatory	Yes	0	The Role type value for this Account	{ DMTF | CIM | ManagedElement.Collection.Role }
UserID	String	Mandatory	Yes	Free-Form	The user identifie	{ DMTF | CIM | LogicalElement.Account.UserId }

				64 Chars	r for this Account	

EXAMPLES

GET Accounts Example - Specific Instance Based on the Identifier

Request

Method	URI	Query String	Request Header	Request Body
GET	/Memory/Devices/{id}/Accounts/admin		Authorization (Mandatory) If-None-Match: {etag} (Optional)	

Response

Precondition	Response Code	Response Header	Response Body
Credentials invalid or missing	401 Unauthorized		
Resource Id does not exist	404 Not Found		
If-None-Match true	304 Not Modified		

If-None-Match false or missing	200 OK	Content-Type: application/json
		ETag: {etag}
			{
			"Self": "http://10.20.30.40/Memory/Devices/0123456789/Accounts/admin/",
			"ID": "admin",
			"BasicAuthentication": {
			"UserPasswordSHA1Checksum": "{SHA}0DPiKuNIrr5438IUCuw1hQxNqZc="
			},
			"DigestAuthentication": {
			"UserPasswordMD5Checksum": "97ebad852d054dfd6b71ae26fff61fa3",
			"Realm": "Western Digital Corporation"
			},

			"Role": {
			"ID": 0,
			"Name": "Admin"
			},
			"UserID": "admin"
			}

9.10.5 Operating System

Description

The Device-level methods and attributes return information about the Operating System and do certain operations.

Allowable Methods

URI	Allowable Methods
/Memory/Devices/{id}/OperatingSystem/	GET, POST, HEAD, OPTIONS

GET /Memory/Devices/{id}/OperatingSystem/- Retrieve the Operating System resource information

URI:	/Memory/Devices/{id}/OperatingSystem/	Description
Method	GET	Returns the information of the Operating System resource
Request Header	Authorization (Mandatory) If-None-Match (Optional)	The request requires either Basic or Digest authorization The request is conditionally processed only if the current ETag for the resource matches the ETag passed in this header
Query Parameters		
Response	200 OK 304 Not Modified 401 Unauthorized 404 Not Found	OK & Operating System resource information in the response body Unauthorized; credential entry failed or missing Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource

POST /Memory/Devices/{id}/OperatingSystem/ - Update the Firmware Image

URI:	/Memory/Devices/{id}/OperatingSystem/	Description
Method	POST	Update the Firmware with a new image
Request Header	Authorization (Mandatory) If-Match (Mandatory) Content-Type: multipart/form-data	The request requires either Basic or Digest authorization The request is conditionally processed only if the current ETag for the resource matches the ETag passed in this header The FW image file is of content type "multipart/form-data"
Query Parameters		
Request Body	Content-Disposition: form-data; name="FirmwareFile"; filename="{FW_file_name}" FW Image File	Request Body preamble setting up the content information The FW image file with appropriate POST body
Response	202 Accepted 400 Bad Request 401 Unauthorized 409 Conflict 500 Internal Server Error	Accepted & Header "Location" with a /Jobs URI to check status (e.g., ../Jobs/firmwareupdate) Bad Request (typically a faulty parameter) Unauthorized; credential entry failed or missing Some other device-level operation is in progress (e.g., Factory Reset or Format) Resource could not execute the request

HEAD /Memory/Devices/{id}/OperatingSystem/ - Ping the Operating System resource

URI:	/Memory/Devices/{id}/OperatingSystem/	Description
Method	HEAD	Pings the Operating System resource
Request Header	Authorization (Mandatory)	
Query Parameters		
Response	200 OK	OK with no response body

	401 Unauthorized 404 Not Found	Unauthorized; credential entry failed or missing Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource

OPTIONS /Memory/Devices/{id}/OperatingSystem/ - Determine Allowable Methods for the Operating System resource

URI:	**/Memory/Devices/{id}/OperatingSystem/**	**Description**
Method	OPTIONS	Get the allowable HTTP Methods list for this resource
Request Header		
Query Parameters		
Response	200 OK 404 Not Found	OK & the "Allow" list of methods in the response header. The response body provides the JSON Schema for this resource Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource

Methods Not Allowed on **/Memory/Devices/{id}/OperatingSystem/**

URI:	**/Memory/Devices/{id}/OperatingSystem/**	**Description**
Method	PUT, DELETE	Methods that are not allowed
Request Header		
Query Parameters		
Response	405 Method Not Allowed	Method not allowed for this Resource

Resource Attributes

Attribute	Type	Requirement	User Configurable	Possible Values	Description	Model Correspondence
Self	String	Mandatory	No	Free-Form URI Format 256 Chars	Describes the fully qualified URI link	{ IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking }
Name	String	Mandatory	No	Free-Form 128 Chars	The Operating System or Firmware name	{ DMTF | CIM | System.OperatingSystem.Name }
OSType.Name	String	Mandatory	No	Depends on Operating System Type	The Operating System Type value	{ DMTF | CIM | System.OperatingSystem.Type }
OSType.ID	Number	Mandatory	No	Depends on Operating System Type	The Operating System Type value map	{ DMTF | CIM | System.OperatingSystem.Type }
Version	String	Mandatory	No	Free-Form 128 Chars	The Operating System or Firmware Version	{ DMTF | CIM | System.OperatingSystem.Version }

EXAMPLES

GET Operating System Example

Request

Method	URI	Query String	Request Header	Request Body
GET	/Memory/Devices/{id}/OperatingSystem		Authorization (Mandatory) If-None-Match: {etag} (Optional)	

Response

Precondition	Response Code	Response Header	Response Body
Credentials invalid or missing	401 Unauthorized		
Resource Id does not exist	404 Not Found		
If-None-Match true	304 Not Modified		

If-None-Match false or missing	200 OK	Content-Type: application/json
		ETag: {etag}
			{
			"Self": "http://10.20.30.40/Memory/Devices/0123456789/OperatingSystem/",
			"Name": "Vendor Firmware",
			"OSType": {
			"ID": 59,
			"Name": "Dedicated"
			},
			"Version": "FW-Rev0"
			}

POST Operating System Example - Update the Platform FW Image

Request

Method	URI	Query String	Request Header	Request Body
POST	/Memory/Devices/{id}/OperatingSystem		Authorization (Mandatory) If-Match: {etag} (Mandatory) Content-Type: multipart/form-data (Mandatory)	Content-Disposition: form-data; name="FirmwareFile"; filename="{FW_file_name}" FW Image File

Response

Precondition	Response Code	Response Header	Response Body
Credentials invalid or missing	401 Unauthorized		

Resource Id does not exist	404 Not Found		
Bad/Missing Parameter in Body	400 Bad Request		
System could not process the request	500 Internal Server Error		
If-Match false	412 Precondition Failed		
If-Match missing	428 Precondition Required		
If-Match true	202 Accepted	Location: ../Jobs/firmwareupdate (a GET on this URI will return current status and percent complete information	

9.10.6 Jobs

Description

The Device-level methods and attributes return information about the Job(s) and do certain operations.

Allowable Methods

URI	Allowable Methods
/Memory/Devices/{id}/Jobs/	GET, HEAD, OPTIONS
/Memory/Devices/{id}/Jobs/{id}/	GET, HEAD, OPTIONS

GET /Memory/Devices/{id}/Jobs/ - Retrieve all Jobs

URI:	/Memory/Devices/{id}/Jobs/	Description
Method	GET	Returns the Collection of Jobs
Request Header	Authorization (Mandatory) If-None-Match (Optional)	The request requires either Basic or Digest authorization The request is conditionally processed only if the current ETag for the resource does not match the ETag passed in this header
Query Parameters		
Response	200 OK	OK & List of Job + ETag Header

	304 Not Modified 401 Unauthorized 404 Not Found	If-None-Match Etag value matched, therefore no Response Body will be returned Unauthorized; credential entry failed or missing Resource Collection does not exist; this IP Address is running an HTTP service, but does not recognize this resource

GET /Memory/Devices/{id}/Jobs/{Id}/ - Retrieve a specific Job

URI:	/Memory/Devices/{id}/Jobs/{id}/	Description
Method	GET	Returns the information regarding a specific Account based on the {id} in the URI address string
Request Header	Authorization (Mandatory) If-None-Match (Optional)	The request requires either Basic or Digest authorization The request is conditionally processed only if the current ETag for the resource does not match the ETag passed in this header
Query Parameters		
Response	200 OK 401 Unauthorized 404 Not Found	OK & Job information in the response body + ETag Header Unauthorized; credential entry failed or missing Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource

HEAD /Memory/Devices/{id}/Jobs/ - Ping the Collection of Jobs

URI:	/Memory/Devices/{id}/Jobs/	Description
Method	HEAD	Pings this Job Collection
Request Header	Authorization (Mandatory)	The request requires either Basic or Digest authorization
Query Parameters		
Response	200 OK 401 Unauthorized 404 Not Found	OK with no response body Unauthorized; credential entry failed or missing Resource Collection does not exist; this IP Address is running an HTTP service, but does not recognize this resource

HEAD /Memory/Devices/{id}/Jobs/{id}/ - Ping a specific Job

URI:	/Memory/Devices/{id}/Jobs/{id}/	Description
Method	HEAD	Pings this Job
Request Header	Authorization (Mandatory)	The request requires either Basic or Digest authorization
Query Parameters		
Response	200 OK 401 Unauthorized 404 Not Found	OK with no response body Unauthorized; credential entry failed or missing Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource

OPTIONS /Memory/Devices/{id}/Jobs/ - Determine Allowable Methods for a Collection of Jobs

URI:	/Memory/Devices/{id}/Jobs/	Description
Method	OPTIONS	Get the allowable HTTP Methods list for this resource
Request Header		
Query Parameters		
Response	200 OK 404 Not Found	OK & the “Allow” list of methods in the response header. The response body provides the JSON Schema for this resource Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource

OPTIONS /Memory/Devices/{id}/Jobs/{Id}/ - Determine Allowable Methods for a specific Job

URI:	/Memory/Devices/{id}/Jobs/{id}/	Description
Method	OPTIONS	Get the allowable HTTP Methods list for this resource
Request Header		

Query Parameters		
Response	200 OK 404 Not Found	OK & the "Allow" list of methods in the response header. The response body provides the JSON Schema for this resource Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource

Methods Not Allowed on **/Memory/Devices/{id}/Jobs/**

URI:	**/Memory/Devices/{id}/Jobs/**	**Description**
Method	POST, PUT, DELETE	Methods that are not allowed
Request Header		
Query Parameters		
Response	405 Method Not Allowed	Method not allowed for this Resource

Methods Not Allowed on **/Memory/Devices/{id}/Jobs/{id}/**

URI:	**/Memory/Devices/{id}/Jobs/{id}/**	**Description**
Method	POST, PUT, DELETE	Methods that are not allowed
Request Header		
Query Parameters		
Response	405 Method Not Allowed	Method not allowed for this Resource

Collection Resource Attributes

Attribute	**Type**	**Requirement**	**User Configurable**	**Possible Values**	**Description**	**Model Correspondence**
Self	URI String	Mandatory	No	Free-Form URI Format 256 Chars	Describes the fully qualified URI link for the Collection	{ IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking }

Members	String Array	Optional	No	Resource Collection (1 - n entries)	The array of Resource Instances (see Instance Resource Attributes Table for Instance Attribute details)	

Instance Resource Attributes

Attribute	Type	Requirement	User Configurable	Possible Values	Description	Model Correspondence
Self	URI String	Mandatory	No	Free-Form URI Format 256 Chars	Describes the fully qualified URI link	{ IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking }
Name	String	Mandatory	No	"UpdateFW" "FactoryReset"	The Name this particular Job. These are all mutually exclusive, meaning only one of these can be active at a time. Otherwise, the response to executing one of the others should return a 409 Conflict.	{ DMTF | CIM | ManagedSystemElement.Name }

Status	String	Mandatory	No	“OK” “Error” “Completed”	The current status or state of the Job	{ DMTF | CIM | LogicalElement.Job.JobStatus }
PercentComplete	Number	Mandatory	No	0 -100	The percent complete status of the Job	{ DMTF | CIM | LogicalElement.Job.PercentComplete }
ErrorCode	Number	Mandatory	No	Integer values	The error code number for the Job upon completion; “0” = Success, otherwise, a vendor-unique value	{ DMTF | CIM | LogicalElement.Job.ErrorCode }
ErrorDescription	String	Optional	No	Free-Form 128 Chars	The description of the vendor-unique error code; if error code is “0”, then this is “Success”	{ DMTF | CIM | LogicalElement.Job.ErrorDescription }

EXAMPLES

GET Jobs Example - Specific Instance Based on the Identifier

Request

Method	URI	Query String	Request Header	Request Body

GET	/Memory/Devices/{id}/Jobs/UpdateFW		Authorization (Mandatory) If-None-Match: {etag} (Optional)	

Response

Precondition	Response Code	Response Header	Response Body
Credentials invalid or missing	401 Unauthorized		
Resource Id does not exist	404 Not Found		
If-None-Match true	304 Not Modified		

If-None-Match false or missing	200 OK	Content-Type: application/json
		ETag: {etag}
			{
			"Self": "http://10.20.30.40/Memory/Devices/0123456789/Jobs/firmwareupdate/",
			"Name": "firmwareupdate",
			"Status": "OK",
			"PercentComplete": 72,
			"ErrorCode": 0,
			"ErrorDescription": "Success"
			}

9.10.7 Performance

Description

The Device-level methods and attributes return information about the Performance.

Allowable Methods

URI	Allowable Methods
/Memory/Devices/{id}/Performance	GET, HEAD, OPTIONS

GET /Memory/Devices/{id}/Performance- Retrieve the Performance resource information

URI:	/Memory/Devices/{id}/Performance	Description
Method	GET	Returns the information of the Performance resource
Request Header	Authorization (Mandatory) If-None-Match (Optional)	The request requires either Basic or Digest authorization The request is conditionally processed only if the current ETag for the resource matches the ETag passed in this header
Query Parameters		
Response	200 OK 304 Not Modified 401 Unauthorized 404 Not Found	OK & Performance resource information in the response body Unauthorized; credential entry failed or missing Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource

HEAD /Memory/Devices/{id}/Performance- Ping the Performance resource

URI:	/Memory/Devices/{id}/Performance	Description
Method	HEAD	Pings the Performance resource
Request Header	Authorization (Mandatory)	
Query Parameters		
Response	200 OK 401 Unauthorized 404 Not Found	OK with no response body Unauthorized; credential entry failed or missing Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource

OPTIONS /Memory/Devices/{id}/Performance- Determine Allowable Methods for the Performance resource

URI:	/Memory/Devices/{id}/Performance	Description

Method	OPTIONS	Get the allowable HTTP Methods list for this resource
Request Header		
Query Parameters		
Response	200 OK 404 Not Found	OK & the "Allow" list of methods in the response header. The response body provides the JSON Schema for this resource Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource

Methods Not Allowed on **/Memory/Devices/{id}/Performance**

URI:	**/Memory/Devices/{id}/Performance**	**Description**
Method	POST, PUT, DELETE	Methods that are not allowed
Request Header		
Query Parameters		
Response	405 Method Not Allowed	Method not allowed for this Resource

Resource Attributes

Attribute	**Type**	**Requirement**	**User Configurable**	**Possible Values**	**Description**	**Model Correspondence**
Self	String	Mandatory	No	Free-Form URI Format 256 Chars	Describes the fully qualified URI link	{ IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking }
Memstats[].Name	String	Mandatory	No	Free-Form 64 Chars	Name of the Memory Module	

Memstats[].ID	String	Mandatory	No	Free-Form Format 256 Chars	Id of the Memory Module	
Memstats[].TimestampUs	Number	Mandatory	No	0 - n	Microseconds since power on	
Memstats[].ReadBytes	Number	Mandatory	No	0 - n	Integer counter for number of bytes read	{ DMTF | CIM | BlockStorageStatisticalData.BytesRead }
Memstats[].WriteBytes	Number	Mandatory	No	0 - n	Integer counter for number of bytes written	{ DMTF | CIM | BlockStorageStatisticalData.ReadIOs }

EXAMPLES

GET Performance Example

Request

Method	URI	Query String	Request Header	Request Body
GET	/Memory/Devices/{id}/Performance		Authorization (Mandatory) If-None-Match: {etag} (Optional)	

Response

Precondition	Response Code	Response Header	Response Body
Credentials invalid or missing	401 Unauthorized		
Resource Id does not exist	404 Not Found		

If-None-Match true	304 Not Modified		

If-None-Match false or missing	200 OK	Content-Type: application/json
		ETag: {etag}
			{
			"Self": "http://10.20.30.40/Memory/Platforms/0123456789/Performance/",
			"Memstats": [{
			"TimestampUs": 1536621182777154514,
			"Name": "Module12",
			"ID": "http://10.20.30.40/Memory/Devices/0123456789/Modules/12/",
			"ReadBytes": 51175114,
			"WriteBytes": 92877302
			}]
			}

9.10.8 ServiceLevelTargets

Description

The Device-level methods and attributes return information about the ServiceLevelTarget(s) and do certain operations.

Allowable Methods

URI	Allowable Methods
/Memory/Devices/{id}/ServiceLevelTargets/	GET, POST, HEAD, OPTIONS
/Memory/Devices/{id}/ServiceLevelTargets/{id}/	GET, PUT, DELETE, HEAD, OPTIONS

GET /Memory/Devices/{id}/ServiceLevelTargets/ - Retrieve all ServiceLevelTargets

URI:	/Memory/Devices/{id}/ServiceLevelTargets/	Description
Method	GET	Returns the Collection of ServiceLevelTargets
Request Header	Authorization (Mandatory) If-None-Match (Optional)	The request requires either Basic or Digest authorization The request is conditionally processed only if the current ETag for the resource does not match the ETag passed in this header
Query Parameters		
Response	200 OK 304 Not Modified 401 Unauthorized 404 Not Found	OK & List of ServiceLevelTargets + ETag Header If-None-Match Etag value matched, therefore no Response Body will be returned Unauthorized; credential entry failed or missing Resource Collection does not exist; this IP Address is running an HTTP service, but does not recognize this resource

GET /Memory/Devices/{id}/ServiceLevelTargets/{Id}/ - Retrieve a specific ServiceLevelTarget

URI:	/Memory/Devices/{id}/ServiceLevelTargets/{id}/	Description
Method	GET	Returns the information regarding a specific ServiceLevelTarget based on the {id} in the URI address string
Request Header	Authorization (Mandatory) If-None-Match (Optional)	The request requires either Basic or Digest authorization The request is conditionally processed only if the current ETag for the resource does not match the ETag passed in this header
Query Parameters		
Response	200 OK 304 Not Modified 401 Unauthorized 404 Not Found	OK & ServiceLevelTarget information in the response body + ETag Header

		If-None-Match Etag value matched, therefore no Response Body will be returned Unauthorized; credential entry failed or missing Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource

POST/Memory/Devices/{id}/ServiceLevelTargets/ - Create a new ServiceLevelTargets

URI:	**/Memory/Devices/{id}/ServiceLevelTargets/{id}/**	**Description**
Method	POST	Create a new ServiceLevelTarget
Request Header	Authorization (Mandatory)	The request requires either Basic or Digest authorization
Query Parameters		

Request Body	{
	"Name": "account_name",
	}
		JSON BODY START
		Name of the ServiceLevelTarget
		JSON BODY END

Response	201 Created 400 Bad Request 401 Unauthorized 409 Conflict 500 Internal Server Error	Created & ServiceLevelTarget information in the response body + ETag Header + new URI in Location Header Bad Request (typically a faulty parameter) Unauthorized; credential entry failed or missing A new parameter value already exists (e.g., Name) System could not process the request

PUT /Network/Devices/{id}/ServiceLevelTargets/{id}/ - Modify specific ServiceLevelTarget attributes

URI:	**/Network/Devices/{id}/ServiceLevelTargets/{id}/**	**Description**
Method	PUT	Modify an attribute or execute an operation for this ServiceLevelTarget

Request Header	Authorization (Mandatory) If-Match (Mandatory)	The request requires either Basic or Digest authorization The request is conditionally processed only if the current ETag for the resource matches the ETag passed in this header
Query Parameters		

Request Body	{
	"Name": "account_name"
	}
		JSON BODY START
		Name of the ServiceLevelTarget
		JSON BODY END

Response	200 OK 400 Bad Request 401 Unauthorized 404 Not Found 409 Conflict 412 Precondition Failed 428 Precondition Required 500 Internal Server Error	OK & ServiceLevelTarget information in the response body + ETag Header Bad Request (typically a faulty parameter) Unauthorized; credential entry failed or missing The Resource doesn't exist A new parameter value already exists (e.g., Name) Indicates the "If-Match" Etag check failed Indicates the need for an "If-Match" conditional with an Etag value in the Request Header System could not process the request

HEAD /Network/Devices/{id}/ServiceLevelTargets/ - Ping the Collection of ServiceLevelTargets

URI:	**/Network/Devices/{id}/ServiceLevelTargets/**	**Description**
Method	HEAD	Pings this ServiceLevelTarget Collection
Request Header	Authorization (Mandatory)	The request requires either Basic or Digest authorization
Query Parameters		
Response	200 OK 401 Unauthorized 404 Not Found	OK with no response body Unauthorized; credential entry failed or missing

		Resource Collection does not exist; this IP Address is running an HTTP service, but does not recognize this resource

HEAD /Network/Devices/{id}/ServiceLevelTargets/{id}/ - Ping a specific ServiceLevelTarget

URI:	/Network/Devices/{id}/ServiceLevelTargets/{id}/	Description
Method	HEAD	Pings this ServiceLevelTarget
Request Header	Authorization (Mandatory)	The request requires either Basic or Digest authorization
Query Parameters		
Response	200 OK 401 Unauthorized 404 Not Found	OK with no response body Unauthorized; credential entry failed or missing Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource

OPTIONS /Network/Devices/{id}/ServiceLevelTargets/ - Determine Allowable Methods for a Collection of ServiceLevelTargets

URI:	/Network/Devices/{id}/ServiceLevelTargets/	Description
Method	OPTIONS	Get the allowable HTTP Methods list for this resource
Request Header		
Query Parameters		
Response	200 OK 404 Not Found	OK & the “Allow” list of methods in the response header. The response body provides the JSON Schema for this resource Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource

OPTIONS /Network/Devices/{id}/ServiceLevelTargets/{Id}/ - Determine Allowable Methods for a specific ServiceLevelTarget

URI:	/Network/Devices/{id}/ServiceLevelTargets/{id}/	Description
Method	OPTIONS	Get the allowable HTTP Methods list for this resource
Request Header		
Query Parameters		
Response	200 OK 404 Not Found	OK & the "Allow" list of methods in the response header. The response body provides the JSON Schema for this resource Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource

DELETE /Network/Devices/{id}/ServiceLevelTargets/{id}/ - Delete specific ServiceLevelTarget

URI:	/Network/Devices/{id}/ServiceLevelTargets/{id}/	Description
Method	DELETE	Delete this ServiceLevelTarget
Request Header	Authorization (Mandatory) If-Match (Mandatory)	The request requires either Basic or Digest authorization The request is conditionally processed only if the current ETag for the resource matches the ETag passed in this header
Query Parameters		
Request Body		
Response	204 No Content 401 Unauthorized 404 Not Found 412 Precondition Failed 428 Precondition Required 500 Internal Server Error	Delete successful, no content in the response body Unauthorized; credential entry failed or missing The Resource doesn't exist Indicates the "If-Match" Etag check failed

		Indicates the need for an “If-Match” conditional with an Etag value in the Request Header System could not process the request

Methods Not Allowed on **/Network/Devices/{id}/ServiceLevelTargets/** Collection

URI:	**/Network/Devices/{id}/ServiceLevelTargets/**	**Description**
Method	PUT, DELETE	Methods that are not allowed
Request Header		
Query Parameters		
Response	405 Method Not Allowed	Method not allowed for this Resource; returns "Allow" header with allowable methods list

Methods Not Allowed on **/Network/Devices/{id}/ServiceLevelTargets/{id}/** Instance

URI:	**/Network/Devices/{id}/ServiceLevelTargets/{id}/**	**Description**
Method	POST	Methods that are not allowed
Request Header		
Query Parameters		
Response	405 Method Not Allowed	Method not allowed for this Resource; returns "Allow" header with allowable methods list

Collection Resource Attributes

Attribute	**Type**	**Requirement**	**User Configurable**	**Possible Values**	**Description**	**Model Correspondence**
Self	URI String	Mandatory	No	Free-Form URI Format 256 Chars	Describes the fully qualified URI link for the Collection	{ IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking }

Members	String Array	Mandatory	No	Resource Collection (1 - n entries)	The array of Resource Instances (see Instance Resource Attributes Table for Instance Attribute details)	

Instance Resource Attributes

Attribute	Type	Requirement	User Configurable	Possible Values	Description	Model Correspondence
Self	URI String	Mandatory	No	Free-Form URI Format 256 Chars	Describes the fully qualified URI link	{ IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking }
ID	String	Mandatory	Yes	Free-Form 64 Chars	The Identifier this particular ServiceLevelTarget	{ DMTF | CIM | LogicalElement.DeviceID }

EXAMPLES

GET ServiceLevelTarget Example - Specific Instance Based on the Identifier

Request

Method	URI	Query String	Request Header	Request Body
GET	/Network/Devices/{id}/ServiceLevelTargets/{id}/		Authorization (Mandatory) If-None-Match: {etag} (Optional)	

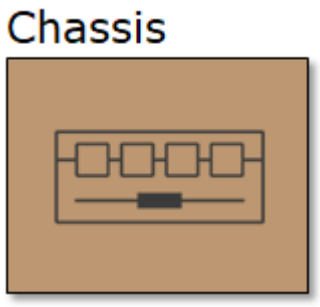
Response

Precondition	Response Code	Response Header	Response Body
Credentials invalid or missing	401 Unauthorized		

Resource Id does not exist	404 Not Found		
If-None-Match true	304 Not Modified		

If-None-Match false or missing	200 OK	Content-Type: application/json
		ETag: {etag}
			{
			"Self": "http://10.20.30.40/Network/Devices/0123456789/ServiceLevelTargets/1/",
			"ID": "1"
			}

9.11 Chassis Devices - Physical



This table shows the physical resources for a Chassis Device. The set of resource URIs is as follows:

URI Pattern	Description
/Devices/	Collection of all Devices
/Chassis/Devices/	Collection of Chassis Devices
/Chassis/Devices/{id}/	A specific Chassis Device
/Chassis/Devices/{id}/Adapters/	Collection of Adapters within this Chassis Device
/Chassis/Devices/{id}/Adapters/{id}/	A specific Adapter within this Chassis Device
/Chassis/Devices/{id}/Adapters/{id}/Ports/	Collection of Ports within this Adapter
/Chassis/Devices/{id}/Adapters/{id}/Ports/{id}/	A specific Port within this Adapter
/Chassis/Devices/{id}/PowerSupplies/	Collection of Power Supplies within this Chassis Device

/Chassis/Devices/{id}/PowerSupplies/{id}/	A specific Power Supply within this Chassis Device
/Chassis/Devices/{id}/Fans/	Collection of Fans within this Chassis Device
/Chassis/Devices/{id}/Fans/{id}/	A specific Fan within this Chassis Device
/Chassis/Devices/{id}/Slots/	Collection of Slots within this Chassis Device
/Chassis/Devices/{id}/Slot/{id}/	A specific Slots within this Chassis Device
/Chassis/Devices/{id}/Sensors/	Collection of Sensors within this Chassis Device
/Chassis/Devices/{id}/Sensors/{id}/	A specific Sensors within this Chassis Device

9.11.1 Devices

Description

The Device-level methods and attributes return information about the Device(s) and do certain operations.

Allowable Methods

URI	Allowable Methods
/Devices/	GET, HEAD, OPTIONS
/Chassis/Devices/	GET, HEAD, OPTIONS
/Chassis/Devices/{id}/	GET, PUT, HEAD, OPTIONS

GET /Chassis/Devices/ - Retrieve all Chassis Devices

URI:	/Chassis/Devices/	Description
Method	GET	Returns the Collection of Devices
Request Header	Authorization (Mandatory) If-None-Match (Optional)	The request requires either Basic or Digest authorization The request is conditionally processed only if the current ETag for the resource does not match the ETag passed in this header
Query Parameters		
Response	200 OK 304 Not Modified 401 Unauthorized 404 Not Found	OK & List of Devices + ETag Header If-None-Match Etag value matched, therefore no Response Body will be returned Unauthorized; credential entry failed or missing

	429 Too Many Requests	Resource Collection 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

GET /Chassis/Devices/{id}/ - Retrieve a specific Chassis Device

URI:	/Chassis/Devices/{id}/	Description
Method	GET	Returns the information regarding a specific Device based on the {id} in the URI address string
Request Header	Authorization (Mandatory) If-None-Match (Optional)	The request requires either Basic or Digest authorization The request is conditionally processed only if the current ETag for the resource does not match the ETag passed in this header
Query Parameters		
Response	200 OK 304 Not Modified 401 Unauthorized 404 Not Found 429 Too Many Requests	OK & Device information in the response body + ETag Header If-None-Match Etag value matched, therefore no Response Body will be returned Unauthorized; credential entry failed or missing 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

PUT /Chassis/Devices/{id}/ - Modify specific Chassis Device attributes

URI:	/Chassis/Devices/{id}/	Description
Method	PUT	Modify an attribute or execute an operation for this Device
Request Header	Authorization (Mandatory) If-Match (Mandatory)	The request requires either Basic or Digest authorization The request is conditionally processed only if the current ETag for the resource matches the ETag passed in this header
Query Parameters		

Request Body	{
	"IndicatorLED": {
	"ID" : 4 | 2
	},
	"Name" : "new_name",
		JSON BODY START
		
		Toggles the Indicator LED on the Device; default “Off = 4”; "Lit = 2"

	"Reboot": true, "FirmwareActivate": true, "FactoryReset": true }	Specify a new name true = Reboot the Resource True=Activate new FW image after a successful upload Return the Device to Factory fresh settings (resets system configuration) JSON BODY END
Response	200 OK 202 Accepted 400 Bad Request 401 Unauthorized 404 Not Found 412 Precondition Failed 428 Precondition Required 429 Too Many Requests	OK & Device information in the response body + ETag Header Accepted & Jobs URI returned in the header to get more information regarding the long-lived operation Bad Request (typically a faulty parameter) Unauthorized; credential entry failed or missing The Resource doesn't exist Indicates the "If-Match" Etag check failed Indicates the need for an "If-Match" conditional with an Etag value in the Request Header Indicates API service is Busy, client should try again later

HEAD /Chassis/Devices/ - Ping the Collection of Chassis Devices

URI:	/Chassis/Devices/{id}/	Description
Method	HEAD	Pings this Chassis Device Collection
Request Header	Authorization (Mandatory)	The request requires either Basic or Digest authorization
Query Parameters		
Response	200 OK 401 Unauthorized 404 Not Found 429 Too Many Requests	OK with no response body Unauthorized; credential entry failed or missing Resource Collection 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

HEAD /Chassis/Devices/{id}/ - Ping a specific Chassis Device

URI:	/Chassis/Devices/{id}/	Description
Method	HEAD	Pings this Chassis Device
Request Header	Authorization (Mandatory)	The request requires either Basic or Digest authorization

Query Parameters		
Response	200 OK 401 Unauthorized 404 Not Found 429 Too Many Requests	OK with no response body Unauthorized; credential entry failed or missing 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

OPTIONS /Chassis/Devices/- Determine Allowable Methods for a Collection of Chassis Devices

URI:	**/Chassis/Devices/**	**Description**
Method	OPTIONS	Get the allowable HTTP Methods list for this resource
Request Header	(None) Documentation (Optional) Documentation (Optional) If-None-Match (Optional)	Returns the full resource schema as Content-Type application/json Info - Returns documentation information in the form of plain text Schema - Returns the schema information in "pretty" JSON text as plain text Etag - The request is conditionally processed only if the current ETag for the resource does not match the ETag passed in this header
Query Parameters		
Response	200 OK 304 Not Modified 404 Not Found 429 Too Many Requests	OK & the “Allow” list of methods in the response header. The response body provides the JSON Schema for this resource If-None-Match Etag value matched, therefore no Response Body will be returned 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

OPTIONS /Chassis/Devices/{id}/ - Determine Allowable Methods for a specific Chassis Device

URI:	**/Chassis/Devices/{id}/**	**Description**
Method	OPTIONS	Get the allowable HTTP Methods list for this resource
Request Header	(None) Documentation (Optional)	Returns the full resource schema as Content-Type application/json Info - Returns documentation information in the form of plain text

	Documentation (Optional) If-None-Match (Optional)	Schema - Returns the schema information in "pretty" JSON text as plain text Etag - The request is conditionally processed only if the current ETag for the resource does not match the ETag passed in this header
Query Parameters		
Response	200 OK 304 Not Modified 404 Not Found 429 Too Many Requests	OK & the "Allow" list of methods in the response header. The response body provides the JSON Schema for this resource If-None-Match Etag value matched, therefore no Response Body will be returned 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

Methods Not Allowed on **/Chassis/Devices/** Collection

URI:	**/Chassis/Devices/**	**Description**
Method	POST, PUT, DELETE	Methods that are not allowed
Request Header		
Query Parameters		
Response	405 Method Not Allowed	Method not allowed for this Resource; returns "Allow" header with allowable methods list

Methods Not Allowed on **/Chassis/Devices/{id}/** Instance

URI:	**/Chassis/Devices/{id}/**	**Description**
Method	POST, DELETE	Methods that are not allowed
Request Header		
Query Parameters		
Response	405 Method Not Allowed	Method not allowed for this Resource; returns "Allow" header with allowable methods list

Collection Resource Attributes

Attribute	**Type**	**Requirement**	**User Configurable**	**Possible Values**	**Description**	**Model Correspondence**

Self	URI String	Mandatory	No	Free-Form URI Format 256 Chars	Describes the fully qualified URI link for the Collection	{ IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking }
Members	String Array	Mandatory	No	Resource Collection (0 - n entries)	The array of Resource Instances (see Instance Resource Attributes Table for Instance Attribute details)	

Instance Resource Attributes

Attribute	Type	Requirement	User Configurable	Possible Values	Description	Model Correspondence
Self	URI String	Mandatory	No	Free-Form URI Format 256 Chars	Describes the fully qualified URI link	{ IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking }
Name	String	Mandatory	Yes	Free-Form 256 Chars	The user-defined Friendly Name for this Resource	{ DMTF | CIM | ManagedSystemElement.Name }
ID	String	Mandatory	No	Free-Form 256 Chars	The resource identifier that is unique in	{ DMTF | CIM | LogicalElement.DeviceID }

					space and time	
SerialNumber	String	Mandatory	No	Free-Form 64 Chars	The serial number for this Resource	{ DMTF | CIM | ManagedSystemElement.SerialNumber }
Model	String	Mandatory	No	Free-Form 64 Chars	The model name or number for this Resource	{ DMTF | CIM | ManagedSystemElement.Model }
SystemType.Name	String	Mandatory	No	"Storage"	The domain type string indicating the type of Device Resource	{ DMTF | CIM | ComputeSystem.Dedicated.Storage }
SystemType.ID	Number	Mandatory	No	2	The domain type number indicating the type of Device Resource	{ DMTF | CIM | ComputeSystem.Dedicated.Storage }
ChassisPackageType	String	Optional	No	"Storage Chassis"	The type	{ DMTF | CIM | Chassis.ChassisPackageType }

					of chassis for this Resource	
RackMountable	String	Optional	No	"Unknown" "True" "False"	Indicates this chassis is rack mountable	{ DMTF | CIM | Chassis.RackMountable }
Manufacturer	String	Mandatory	No	Free-Form 64 Chars	The vendor name for this Resource	{ DMTF | CIM | ManagedSystemElement.Manufacturer }
OperatingSystem.Self	URI String	Mandatory	No	Free-Form URI Format 256 Chars	Describes the fully qualified URI link	{ IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking }
OperatingSystem.Name	String	Optional	No	Free-Form 128 Chars	The Operating System or Firmware Name	{ DMTF | CIM | System.OperatingSystem.Name }
OperatingSystem.OSType.ID	Number	Mandatory	No	59	Indicates dedicated software	{ DMTF | CIM | System.OperatingSystem.OSType }

OperatingSystem.OSType.Name	String	Mandatory	No	Dedicated	Indicates dedicated software value	{ DMTF | CIM | System.OperatingSystem.OSType }
OperatingSystem.Version	String	Mandatory	No	Free-Form 128 Chars	The Operating System or Firmware Version	{ DMTF | CIM | System.OperatingSystem.Version }
IndicatorLED.Name	String	Mandatory	No	"Off" "Lit"	The current state value of the Indicator LED for this Resource	{ DMTF | CIM | IndicatorLED.ActivationState }
IndicatorLED.ID	Number	Mandatory	Yes	4 2	The current state value map of the Indicator LED for this Resource	{ DMTF | CIM | IndicatorLED.ActivationState }
Status.State.Name	String	Mandatory	No	"Unknown" "Not available" "Servicing" "Starting"	The current state value of this	{ DMTF | CIM | ManagedSystemElement.State }

				"Stopping" "Stopped" "Aborted" "Dormant" "Completed" "Migrating" "Emigrating" "Immigrating" "Snapshotting" "Shutting down" "In test" "Transitioning" "In service"	Resource	
Status.State.ID	Number	Mandatory	No	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16	The current state value map of this Resource	{ DMTF | CIM | ManagedSystemElement.State }
Status.Health[].Name	String (1..*)	Mandatory	No	"Unknown" "OK" "Degraded/Warning" "Minor failure" "Major failure" "Critical failure"	The current health value of this Resource. There can be	{ DMTF | CIM | ManagedSystemElement.HealthState }

				"Non-recoverable error" "Not installed" "Not available" "No access allowed"	1 or more Name entries.	
Status.Health[].ID	Number (1..*)	Mandatory	No	0 5 10 15 20 25 30 65536 65537 65538	The current health value map of this Resource. There can be 1 or more Id entries.	{ DMTF | CIM | ManagedSystemElement.HealthState }
Status.Details[]	String Array	Optional	No	Free-Form Array entry. If no entry, then “None”.	The current Health Details of the Device	{ DMTF | CIM | ManagedSystemElement.DetailedStatus }
Capabilities.Members[].Name	String	Mandatory	No	Chassis Manager Chassis Device Enclosure	The capabilities information value(s) regarding the Resource	{ DMTF | CIM | ComputeSystem.Dedicated }

Capabilities.Members[].ID	Number	Mandatory	No	29 31	The capabilities information value map(s) regarding the Resource	{ DMTF | CIM | ComputeSystem.Dedicated }
Capabilities.Members[].CapabilityDescription	String	Mandatory	No	Free-Form	Entry describing the capability	{ DMTF | CIM | ComputeSystem.Dedicated }
IpAddresses.Members[].IpAddress	String	Mandatory	Yes	IPv4 or IPv6 pattern	The IP Address list for this Resource	{ DMTF | CIM | ManagedSystemElement.FSIPInterfaceSettingData.IpAddress }
Accounts.Self	String	Mandatory	No	Free-Form URI	Fully qualified link to the Account Resource Collection	{ DMTF | CIM | Account, IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking }
Adapters.Self	String	Mandatory	No	Free-Form URI	Fully qualified link to Adapter Resource Collection	{ DMTF | CIM | Adapter, IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking }

Fans.Self	String	Mandatory	No	Free-Form URI	Fully qualified link to Fan Resource Collection	{ DMTF | CIM | Fan, IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking }
PowerSupplies.Self	String	Mandatory	No	Free-Form URI	Fully qualified link to Power Supply Resource Collection	{ DMTF | CIM | PowerSupply, IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking }
Sensors.Self	String	Mandatory	No	Free-Form URI	Fully qualified link to the Sensor Resource	{ DMTF | CIM | Sensor, IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking }
Slots.Self	String	Mandatory	No	Free-Form URI	Fully qualified link to the Slot Resource	{ DMTF | CIM | Slot, IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking }
SystemClock.Self	String	Mandatory	No	Free-Form URI	Fully qualified link to the System Clock Resource	{ DMTF | CIM | Time, IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking }
Location.Self	String	Mandatory	No	Free-Form URI	Fully qualified link	{ DMTF | Redfish | SNIA | Swordfish | Location, IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking }

					to the Location Resource	
Support.Self	String	Mandatory	No	Free-Form URI	Fully qualified link to the Support Resource	{ WDC| OpenFlex | Support, IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking}
Jobs.Self	String	Mandatory	No	Free-Form URI	Fully qualified link to the Jobs Resource	{ DMTF | CIM | Path, IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking }
Files.Self	String	Mandatory	No	Free-Form URI	Fully qualified link to the Files Resource	{ DMTF | CIM | Path, IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking }

EXAMPLES

GET Device Example - Specific Instance Based on the Identifier

Request

Method	URI	Query String	Request Header	Request Body
GET	/Chassis/Devices/{id}/		Authorization (Mandatory) If-None-Match: {etag} (Optional)	

Response

Precondition	Response Code	Response Header	Response Body

Credentials invalid or missing	401 Unauthorized		
Resource Id does not exist	404 Not Found		
If-None-Match true	304 Not Modified	ETag: {etag}	
API Busy	429 Too Many Requests		

Success If-None-Match false or missing	200 OK	Content-Type: application/json ETag: {etag}	{
			"Self": "http://10.20.30.40:80/Chassis/Devices/0123456789/",
			"SystemType": {
			"ID": 5,
			"Name": "Chassis"
			},
			"Name": "chassis01",
			"ID": "0123456789",
			"OperatingSystem": {
			"Self": "http://10.20.30.40:80/Chassis/Devices/0123456789/OperatingSystem/",
			"Name": "Vendor Firmware",
			"OSType": {
			"ID": 59,
			"Name": "Dedicated"
			},
			"Version": " 01.00.01"
			},
			"SerialNumber": "3818KL0001",
			"Model": "OpenFlex E3000",
			"Manufacturer": "WDC",
			"Capabilities": {
			"Members": [{
			"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."
        }]
    },
    "Status": {
        "State": {
            "ID": 16,
            "Name": "In service"
        },
        "Health": [{
            "ID": 5,
            "Name": "OK"
        }],
        "Details": ["None"]
    },
    "IPAddresses": {
        "Members": [{
            "IPAddress": "10.20.30.40"
        }]
    },
    "Location": {
        "Self":
        "http://10.20.30.40:80/Chassis/Devices/012345678
        9/Location/"
    },
    "IndicatorLED": {
        "ID": 4,
        "Name": "Off"
    },
    "Accounts": {
        "Self":
        "http://10.20.30.40:80/Chassis/Devices/012345678
        9/Accounts/"
    },
    "Adapters": {
        "Self":
        "http://10.20.30.40:80/Chassis/Devices/012345678
        9/Adapters/"
    },
    "Fans": {
        "Self":
        "http://10.20.30.40:80/Chassis/Devices/012345678
        9/Fans/"
    },
```

			"Jobs": {
			"Self":
			"http://10.20.30.40:80/Chassis/Devices/0123456789/Jobs/"
			},
			"PowerSupplies": {
			"Self":
			"http://10.20.30.40:80/Chassis/Devices/0123456789/PowerSupplies/"
			},
			"Sensors": {
			"Self":
			"http://10.20.30.40:80/Chassis/Devices/0123456789/Sensors/"
			},
			"Slots": {
			"Self":
			"http://10.20.30.40:80/Chassis/Devices/0123456789/Slots/"
			},
			"Support": {
			"Self":
			"http://10.20.30.40:80/Chassis/Devices/0123456789/Support/"
			},
			"SystemClock": {
			"Self":
			"http://10.20.30.40:80/Chassis/Devices/0123456789/SystemClock/"
			}
			}

PUT Device Example - Change the name of a specific Device

Request

Method	URI	Query String	Request Header	Request Body

PUT	/Chassis/Devices/{id}/		Authorization (Mandatory)
			If-Match: {etag} (Mandatory)
				{
				"Name" : "new_name"
				}

Response

Precondition	Response Code	Response Header	Response Body
Credentials invalid or missing	401 Unauthorized		

Resource Id does not exist	404 Not Found		
Bad/Missing Parameter in Body	400 Bad Request		
New value already exists	409 Conflict		
System could not process the request	500 Internal Server Error		
If-Match false	412 Precondition Failed		
If-Match missing	428 Precondition Required		
API Busy	429 Too Many Requests		
Success If-Match true	200 OK	Content-Type: application/json	Device Resource JSON

PUT Device Example - Restart a specific Device

Request

Method	URI	Query String	Request Header	Request Body

PUT	/Chassis/Devices/{id}/		Authorization (Mandatory)
			If-Match: {etag} (Mandatory)
				{
				"Reboot" : true
				}

Response

Precondition	Response Code	Response Header	Response Body
Credentials invalid or missing	401 Unauthorized		
Resource Id does not exist	404 Not Found		
Bad/Missing Parameter in Body	400 Bad Request		
System could not process the request	500 Internal Server Error		
If-Match false	412 Precondition Failed		
If-Match missing	428 Precondition Required		

API Busy	429 Too Many Requests		
Success If-Match true	200 OK	Content-Type: application/json	Device Resource JSON Note: Device will RESTART breaking the connection

9.11.2 Adapters

Description

The Device-level methods and attributes return information about the Adapter(s) and do certain operations.

Allowable Methods

URI	Allowable Methods
/Chassis/Devices/{id}/Adapters/	GET, HEAD, OPTIONS
/Chassis/Devices/{id}/Adapters/{id}/	GET, HEAD, OPTIONS

GET /Chassis/Devices/{id}/Adapters/ - Retrieve all Adapters

URI:	/Chassis/Devices/{id}/Adapters/	Description
Method	GET	Returns the Collection of Adapters
Request Header	Authorization (Mandatory) If-None-Match (Optional)	The request requires either Basic or Digest authorization The request is conditionally processed only if the current ETag for the resource does not match the ETag passed in this header
Query Parameters		
Response	200 OK 304 Not Modified 401 Unauthorized 404 Not Found 429 Too Many Requests	OK & List of Adapters + ETag Header If-None-Match Etag value matched, therefore no Response Body will be returned Unauthorized; credential entry failed or missing Resource Collection 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

GET /Chassis/Devices/{id}/Adapters/{id}/ - Retrieve a specific Adapter

URI:	/Chassis/Devices/{id}/Adapters/{id}/	Description
Method	GET	Returns the information regarding a specific Adapter based on the {id} in the URI address string
Request Header	Authorization (Mandatory) If-None-Match (Optional)	The request requires either Basic or Digest authorization The request is conditionally processed only if the current ETag for the resource does not match the ETag passed in this header
Query Parameters		
Response	200 OK 304 Not Modified 401 Unauthorized 404 Not Found 429 Too Many Requests	OK & Adapter information in the response body + ETag Header If-None-Match Etag value matched, therefore no Response Body will be returned Unauthorized; credential entry failed or missing 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

HEAD /Chassis/Devices/{id}/Adapters/ - Ping the Collection of Adapters

URI:	/Chassis/Devices/{id}/Adapters/	Description
Method	HEAD	Pings this Adapter Collection
Request Header	Authorization (Mandatory)	The request requires either Basic or Digest authorization
Query Parameters		
Response	200 OK 401 Unauthorized 404 Not Found 429 Too Many Requests	OK with no response body Unauthorized; credential entry failed or missing Resource Collection 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

HEAD /Chassis/Devices/{id}/Adapters/{id}/ - Ping a specific Adapter

URI:	/Chassis/Devices/{id}/Adapters/{id}/	Description

Method	HEAD	Pings this Adapter
Request Header	Authorization (Mandatory)	The request requires either Basic or Digest authorization
Query Parameters		
Response	200 OK 401 Unauthorized 404 Not Found 429 Too Many Requests	OK with no response body Unauthorized; credential entry failed or missing 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

OPTIONS /Chassis/Devices/{id}/Adapters/- Determine Allowable Methods for a Collection of Adapters

URI:	**/Chassis/Devices/{id}/Adapters/**	**Description**
Method	OPTIONS	Get the allowable HTTP Methods list for this resource
Request Header	(None) Documentation (Optional) Documentation (Optional) If-None-Match (Optional)	Returns the full resource schema as Content-Type application/json Info - Returns documentation information in the form of plain text Schema - Returns the schema information in "pretty" JSON text as plain text Etag - The request is conditionally processed only if the current ETag for the resource does not match the ETag passed in this header
Query Parameters		
Response	200 OK 304 Not Modified 404 Not Found 429 Too Many Requests	OK & the “Allow” list of methods in the response header. The response body provides the JSON Schema for this resource If-None-Match Etag value matched, therefore no Response Body will be returned 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

OPTIONS /Chassis/Devices/{id}/Adapters/{id}/ - Determine Allowable Methods for a specific Adapter

URI:	**/Chassis/Devices/{id}/Adapters/{id}/**	**Description**
Method	OPTIONS	Get the allowable HTTP Methods list for this resource
Request Header	(None) Documentation (Optional) Documentation (Optional) If-None-Match (Optional)	Returns the full resource schema as Content-Type application/json Info - Returns documentation information in the form of plain text Schema - Returns the schema information in "pretty" JSON text as plain text Etag - The request is conditionally processed only if the current ETag for the resource does not match the ETag passed in this header
Query Parameters		
Response	200 OK 304 Not Modified 404 Not Found 429 Too Many Requests	OK & the “Allow” list of methods in the response header. The response body provides the JSON Schema for this resource If-None-Match Etag value matched, therefore no Response Body will be returned 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

Methods Not Allowed on **/Chassis/Devices/{id}/Adapters/** Collection

URI:	**/Chassis/Devices/{id}/Adapters/**	**Description**
Method	POST, PUT, DELETE	Methods that are not allowed
Request Header		
Query Parameters		
Response	405 Method Not Allowed	Method not allowed for this Resource; returns "Allow" header with allowable methods list

Methods Not Allowed on **/Chassis/Devices/{id}/Adapters/{id}/** Instance

URI:	**/Chassis/Devices/{id}/Adapters/{id}/**	**Description**

Method	POST, PUT, DELETE	Methods that are not allowed
Request Header		
Query Parameters		
Response	405 Method Not Allowed	Method not allowed for this Resource; returns "Allow" header with allowable methods list

Collection Resource Attributes

Attribute	Type	Requirement	User Configurable	Possible Values	Description	Model Correspondence
Self	URI String	Mandatory	No	Free-Form URI Format 256 Chars	Describes the fully qualified URI link for the Collection	{ IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking }
Members	String Array	Optional	No	Resource Collection (0 - n entries)	The array of Resource Instances (see Instance Resource Attributes Table for Instance Attribute details)	

Instance Resource Attributes

Attribute	Type	Requirement	User Configurable	Possible Values	Description	Model Correspondence
Self	URI String	Mandatory	No	Free-Form URI Format 256 Chars	Describes the fully qualified URI link	{ IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking }
ID	String	Mandatory	No	Free-Form 256 Chars	The resource identifier that is unique	{ DMTF | CIM | LogicalElement.DeviceID }

					in space and time	
Status.State.Name	String	Mandatory	No	"Unknown" "Not available" "Servicing" "Starting" "Stopping" "Stopped" "Aborted" "Dormant" "Completed" "Migrating" "Emigrating" "Immigrating" "Snapshotting" "Shutting down" "In test" "Transitioning" "In service"	The current state value of this Resource	{ DMTF | CIM | ManagedSystemElement.State }
Status.State.ID	Number	Mandatory	No	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16	The current state value map of this Resource	{ DMTF | CIM | ManagedSystemElement.State }
Status.Health[].Name	String (1..*)	Mandatory	No	"Unknown" "OK" "Degraded/Warning" "Minor failure" "Major failure" "Critical failure"	The current health value of this Resource. There can be 1	{ DMTF | CIM | ManagedSystemElement.HealthState }

				"Non-recoverable error" "Not installed" "Not available" "No access allowed"	or more Name entries.	
Status.Health[].ID	Number (1..*)	Mandatory	No	0 5 10 15 20 25 30 65536 65537 65538	The current health value map of this Resource. There can be 1 or more Identries.	{ DMTF | CIM | ManagedSystemElement.HealthState }
Status.Details[]	String Array	Optional	No	Free-Form Array entry. If no entry, then “None”.	The current Health Details of the Device	{ DMTF | CIM | ManagedSystemElement.DetailedStatus }
Ports.Self	String	Mandatory	No	Free-Form URI Format 256 Chars	Describes the fully qualified URI link	{ IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking }

EXAMPLES

GET Adapters Example - Specific Instance Based on the Identifier

Request

Method	URI	Query String	Request Header	Request Body
GET	/Chassis/Devices/{id}/Adapters/management/		Authorization (Mandatory)	

			If-None-Match: {etag} (Optional)	

Response

Precondition	Response Code	Response Header	Response Body
Credentials invalid or missing	401 Unauthorized		
Resource Id does not exist	404 Not Found		
If-None-Match true	304 Not Modified	ETag: {etag}	
API Busy	429 Too Many Requests		
Success If-None-Match false or missing	200 OK	Content-Type: application/json ETag: {etag}	{ "Self": "http://10.20.30.40:80/Storage/Devices/0123456789/Adapters/management/", "ID": "management", "Status": { "State": { "ID": 16, "Name": "In service" }, "Health": [{ "ID": 5, "Name": "OK" }] }, "Ports": {

```
                "Self":
                "http://10.20.30.40:80/Storage/Devices/0123456789/Adapt
                ers/management/Ports/",
                "Members": [{
                        "Self":
                        "http://10.20.30.40:80/Storage/Devices/0123456789
                        /Adapters/management/Ports/00_0a_f7_95_8c_ac/",
                        "ID": "00_0a_f7_95_8c_ac",
                        "Status": {
                                "State": {
                                        "ID": 16,
                                        "Name": "In service"
                                },
                                "Health": [{
                                        "ID": 5,
                                        "Name": "OK"
                                }]
                        },
                        "AddressOrigin": {
                                "ID": 4,
                                "Name": "DHCP"
                        },
                        "IPv4Address": "10.20.30.40/22",
                        "MACAddress": "00:0a:f7:95:8c:ac",
                        "NetworkType": {
                                "ID": 8,
                                "Name": "IPv4 Network"
                        },
                        "MTUBytes": 1500
                }]
        }
}
```


9.11.3 Ports

Description

The Device-level methods and attributes return information about the Port(s) and do certain operations.

Allowable Methods

URI	Allowable Methods
/Chassis/Devices/{id}/Adapters/{id}/Ports/	GET, HEAD, OPTIONS
/Chassis/Devices/{id}/Adapters/{id}/Ports/{id}/	GET, PUT, HEAD, OPTIONS

GET /Chassis/Devices/{id}/Adapters/{id}/Ports/ - Retrieve all Ports on a specific Adapter

URI:	/Chassis/Devices/{id}/Adapters/{id}/Ports/	Description
Method	GET	Returns the Collection of Ports
Request Header	Authorization (Mandatory) If-None-Match (Optional)	The request requires either Basic or Digest authorization The request is conditionally processed only if the current ETag for the resource does not match the ETag passed in this header
Query Parameters		
Response	200 OK 304 Not Modified 401 Unauthorized 404 Not Found 429 Too Many Requests	OK & List of Ports + ETag Header If-None-Match Etag value matched, therefore no Response Body will be returned Unauthorized; credential entry failed or missing Resource Collection 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

GET /Chassis/Devices/{id}/Adapters/{id}/Ports/{id} - Retrieve a specific Port on a specific Adapter

URI:	/Chassis/Devices/{id}/Adapters/{id}/Ports/{id}/	Description
Method	GET	Returns the information regarding a specific Port based on the {id} in the URI address string
Request Header	Authorization (Mandatory) If-None-Match (Optional)	The request requires either Basic or Digest authorization The request is conditionally processed only if the current ETag for the resource does not match the ETag passed in this header
Query Parameters		
Response	200 OK 304 Not Modified	OK & Port information in the response body + ETag Header

	401 Unauthorized 404 Not Found 429 Too Many Requests	If-None-Match Etag value matched, therefore no Response Body will be returned Unauthorized; credential entry failed or missing 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

PUT /Chassis/Devices/{id}/Adapters/{id}/Ports/{id} - Modify specific Port attributes

URI:	**/Chassis/Devices/{id}/Adapters/{id}/Ports/{id}/**	**Description**
Method	PUT	Modify an attribute or execute an operation for this Port
Request Header	Authorization (Mandatory) If-Match (Mandatory)	The request requires either Basic or Digest authorization The request is conditionally processed only if the current ETag for the resource matches the ETag passed in this header
Query Parameters		

Request Body	{
	"AddressOrigin": {
	"ID": number,
	},
	"IPv4Address": "ipv4_address/cidr",
	"IPGateway": "ipv4_gateway",
	"MTUBytes": 1500
	}
		JSON BODY START
		Address Origin - where the IP Address comes from
		Origin Type ID (4 or 3) (DHCP or Static)
		
		IPv4 Address and CIDR mask value
		IPv4 Gateway Address
		Maximum Transfer Unit in bytes (range: 46 - 9216)
		JSON BODY END
		NOTE: All attributes must be sent together even if there is no change

Response	200 OK 400 Bad Request 401 Unauthorized 404 Not Found	OK & Port information in the response body + ETag Header Bad Request (typically a faulty parameter)

	412 Precondition Failed 428 Precondition Required 429 Too Many Requests 500 Internal Server Error	Unauthorized; credential entry failed or missing The Resource doesn't exist Indicates the "If-Match" Etag check failed Indicates the need for an "If-Match" conditional with an Etag value in the Request Header Indicates API service is Busy, client should try again later System could not process the request

HEAD /Chassis/Devices/{id}/Adapters/{id}/Ports/ - Ping the Collection of Ports on a specific Adapter

URI:	**/Chassis/Devices/{id}/Adapters/{id}/Ports/**	**Description**
Method	HEAD	Pings this Port Collection
Request Header	Authorization (Mandatory)	The request requires either Basic or Digest authorization
Query Parameters		
Response	200 OK 401 Unauthorized 404 Not Found 429 Too Many Requests	OK with no response body Unauthorized; credential entry failed or missing Resource Collection 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

HEAD /Chassis/Devices/{id}/Adapters/{id}/Ports/{id}/ - Ping a specific Port on a specific Adapter

URI:	**/Chassis/Devices/{id}/Adapters/{id}/Ports/{id}/**	**Description**
Method	HEAD	Pings this Port
Request Header	Authorization (Mandatory)	The request requires either Basic or Digest authorization
Query Parameters		
Response	200 OK	OK with no response body

	401 Unauthorized 404 Not Found 429 Too Many Requests	Unauthorized; credential entry failed or missing 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

OPTIONS /Chassis/Devices/{id}/Adapters/{id}/Ports/- Determine Allowable Methods for a Collection of Ports on a specific Adapter

URI:	**/Chassis/Devices/{id}/Adapters/{id}/Ports/**	**Description**
Method	OPTIONS	Get the allowable HTTP Methods list for this resource
Request Header	(None) Documentation (Optional) Documentation (Optional) If-None-Match (Optional)	Returns the full resource schema as Content-Type application/json Info - Returns documentation information in the form of plain text Schema - Returns the schema information in "pretty" JSON text as plain text Etag - The request is conditionally processed only if the current ETag for the resource does not match the ETag passed in this header
Query Parameters		
Response	200 OK 304 Not Modified 404 Not Found 429 Too Many Requests	OK & the “Allow” list of methods in the response header. The response body provides the JSON Schema for this resource If-None-Match Etag value matched, therefore no Response Body will be returned 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

OPTIONS /Chassis/Devices/{id}/Adapters/{id}/Ports/{id}/ - Determine Allowable Methods for a specific Port on a specific Adapter

URI:	/Chassis/Devices/{id}/Adapters/{id}/Ports/{id}/	Description
Method	OPTIONS	Get the allowable HTTP Methods list for this resource
Request Header	(None) Documentation (Optional) Documentation (Optional) If-None-Match (Optional)	Returns the full resource schema as Content-Type application/json Info - Returns documentation information in the form of plain text Schema - Returns the schema information in "pretty" JSON text as plain text Etag - The request is conditionally processed only if the current ETag for the resource does not match the ETag passed in this header
Query Parameters		
Response	200 OK 304 Not Modified 404 Not Found 429 Too Many Requests	OK & the “Allow” list of methods in the response header. The response body provides the JSON Schema for this resource If-None-Match Etag value matched, therefore no Response Body will be returned 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

Methods Not Allowed on **/Chassis/Devices/{id}/Adapters/{id}/Ports/** Collection

URI:	/Chassis/Devices/{id}/Adapters/{id}/Ports/	Description
Method	POST, PUT, DELETE	Methods that are not allowed
Request Header		
Query Parameters		
Response	405 Method Not Allowed	Method not allowed for this Resource; returns "Allow" header with allowable methods list

Methods Not Allowed on **/Chassis/Devices/{id}/Adapters/{id}/Ports/{id}/** Instance

URI:	/Chassis/Devices/{id}/Adapters/{id}/Ports/{id}/	Description
Method	POST, DELETE	Methods that are not allowed
Request Header		
Query Parameters		
Response	405 Method Not Allowed	Method not allowed for this Resource; returns "Allow" header with allowable methods list

Collection Resource Attributes

Attribute	Type	Requirement	User Configurable	Possible Values	Description	Model Correspondence
Self	URI String	Mandatory	No	Free-Form URI Format 256 Chars	Describes the fully qualified URI link for the Collection	{ IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking }
Members	String Array	Optional	No	Resource Collection (0 - n entries)	The array of Resource Instances (see Instance Resource Attributes Table for Instance Attribute details)	

Instance Resource Attributes

Attribute	Type	Requirement	User Configurable	Possible Values	Description	Model Correspondence
Self	URI String	Mandatory	No	Free-Form URI Format 256 Chars	Describes the fully qualified URI link	{ IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking }

ID	String	Mandatory	No	Free-Form 256 Chars	The resource identifier that is unique in space and time	{ DMTF | CIM | LogicalElement.DeviceID }
Status.State.Name	String	Mandatory	No	"Unknown" "Not available" "Servicing" "Starting" "Stopping" "Stopped" "Aborted" "Dormant" "Completed" "Migrating" "Emigrating" "Immigrating" "Snapshotting" "Shutting down" "In test" "Transitioning" "In service"	The current state value of this Resource	{ DMTF | CIM | ManagedSystemElement.State }
Status.State.ID	Number	Mandatory	No	0 1 2 3 4 5 6 7 8 9 10 11 12 13	The current state value map of this Resource	{ DMTF | CIM | ManagedSystemElement.State }

				14 15 16		
Status.Health[].Name	String (1..*)	Mandatory	No	"Unknown" "OK" "Degraded/Warning" "Minor failure" "Major failure" "Critical failure" "Non-recoverable error" "Not installed" "Not available" "No access allowed"	The current health value of this Resource. There can be 1 or more Name entries.	{ DMTF | CIM | ManagedSystemElement.HealthState }
Status.Health[].ID	Number (1..*)	Mandatory	No	0 5 10 15 20 25 30 65536 65537 65538	The current health value map of this Resource. There can be 1 or more Id entries.	{ DMTF | CIM | ManagedSystemElement.HealthState }
Status.Details[]	String Array	Optional	No	Free-Form Array entry. If no entry, then “None”.	The current Health Details of the Device	{ DMTF | CIM | ManagedSystemElement.DetailedStatus }
AddressOrigin.Name	String	Mandatory	Yes	"UNKNOWN" "OTHER"	Information value as	{ DMTF | CIM | DHCPSettingData.AddressOrigin }

				"NOT APPLICABLE" "STATIC" "DHCP"	to where the address is supplied	
AddressOrigin.ID	Number	Mandatory	Yes	0 1 2 3 4	Information value map as to where the address is supplied	{ DMTF | CIM | DHCPSettingData.AddressOrigin }
IPv4Address	String	Mandatory	Yes	IPv4 4-Octet pattern + CIDR mask	The Network IP Address for this Device; IPv4 type NOTE: 0.0.0.0/8 & 127.0.0.0/8 are reserved and rejected	{ DMTF | CIM | StaticIPAssignmentSettingData.IPv4Address }
IPGateway	String	Optional	Yes	IPv4 4-Octet pattern	The Network IP Gateway address setting	{ DMTF | CIM | StaticIPAssignmentSettingData.GatewayIPv4Address }
MACAddress	String	Mandatory	No	6-hex digit HW address		

NetworkType.Name	String	Mandatory	No	"LAN" "WLAN" "WAN" "MAN" "SAN" "VLAN" "Ethernet Network" "IP Network" "IPv4 Network" "IPv6 Network"	The network type value	{ DMTF | CIM | System.AdminDomain.Network }
NetworkType.ID	Number	Mandatory	No	0 1 2 3 4 5 6 7 8	The network type value map	{ DMTF | CIM | System.AdminDomain.Network }
MTUBytes	Number	Mandatory	Yes	Range: 46 - 9216 (default: 1500)	The current Maximum Transfer Bytes value	{ DMTF | CIM | System.AdminDomain.Network.NetworkVLAN.TransmissionSize }

EXAMPLES

GET Ports Example - Specific Instance Based on the Identifier

Request

Method	URI	Query String	Request Header	Request Body
GET	/Chassis/Devices/{id}/Adapters/management/Ports/{id}		Authorization (Mandatory) If-None-Match: {etag} (Optional)	

Response

Precondition	Response Code	Response Header	Response Body
Credentials invalid or missing	401 Unauthorized		
Resource Id does not exist	404 Not Found		
If-None-Match true	304 Not Modified	ETag: {etag}	
API Busy	429 Too Many Requests		
Success If-None-Match false or missing	200 OK	Content-Type: application/json ETag: {etag}	{ "Self": "http://10.20.30.40/Chassis/Devices/0123456789/Adapters/management/Ports/01_0a_f7_95_79_3c/", "ID": "01_0a_f7_95_79_3c", "Status": { "State": { "ID": 16, "Name": "In service" }, "Health": [{ "ID": 5, "Name": "OK" }] }, "AddressOrigin": { "ID": 4, "Name": "DHCP" }, "IPv4Address": "10.20.30.40/22", "IPGateway": "", "MACAddress": "01:0a:f7:95:79:3c", "NetworkType": {

			"ID": 8, "Name": "IPv4 Network" }, "MTUBytes": 1500 }

PUT Port Example - Change the MTUBytes of a specific Port

Request

Method	URI	Query String	Request Header	Request Body

PUT	/Chassis/Devices/{id}/Adapters/{id}/Ports/{id}		Authorization (Mandatory)
			If-Match: {etag} (Mandatory)
				{
				"MTUBytes" : 5000
				}

Response

Precondition	Response Code	Response Header	Response Body
Credentials invalid or missing	401 Unauthorized		
Resource Id does not exist	404 Not Found		
Bad/Missing Parameter in Body	400 Bad Request		
System could not process the request	500 Internal Server Error		
If-Match false	412 Precond		

	ition Failed		
If-Match missing	428 Precondition Required		
API Busy	429 Too Many Requests		
Success If-Match true	200 OK	Content-Type: application/json	{ "Self": "http://10.20.30.40/Chassis/Devices/0123456789/Adapters/management/Ports/01_0a_f7_95_79_3c/", "ID": "01_0a_f7_95_79_3c", "Status": { "State": { "ID": 16, "Name": "In service" }, "Health": [{ "ID": 5, "Name": "OK" }] }, "AddressOrigin": { "ID": 4, "Name": "DHCP" }, "IPv4Address": "10.20.30.40/22", "IPGateway": "", "MACAddress": "01:0a:f7:95:79:3c", "NetworkType": { "ID": 8, "Name": "IPv4 Network" }, "MTUBytes": 5000 }

9.11.4 Power Supplies

Description

The Device-level methods and attributes return information about the Power Supply(ies) and do certain operations.

Allowable Methods

URI	Allowable Methods
/Chassis/Devices/{id}/PowerSupplies/	GET, HEAD, OPTIONS
/Chassis/Devices/{id}/PowerSupplies/{id}/	GET, PUT, HEAD, OPTIONS

GET /Chassis/Devices/{id}/PowerSupplies - Retrieve all Power Supplies

URI:	/Chassis/Devices/{id}/PowerSupplies/	Description
Method	GET	Returns the Collection of Power Supplies
Request Header	Authorization (Mandatory) If-None-Match (Optional)	The request requires either Basic or Digest authorization The request is conditionally processed only if the current ETag for the resource does not match the ETag passed in this header
Query Parameters		
Response	200 OK 304 Not Modified 401 Unauthorized 404 Not Found 429 Too Many Requests	OK & List of Power Supplies + ETag Header If-None-Match Etag value matched, therefore no Response Body will be returned Unauthorized; credential entry failed or missing Resource Collection 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

GET /Chassis/Devices/{id}/PowerSupplies/{id}/ - Retrieve a specific Power Supply

URI:	/Chassis/Devices/{id}/PowerSupplies/{id}/	Description
Method	GET	Returns the information regarding a specific Power Supply based on the {id} in the URI address string
Request Header	Authorization (Mandatory) If-None-Match (Optional)	The request requires either Basic or Digest authorization The request is conditionally processed only if the current ETag for the resource

		does not match the ETag passed in this header
Query Parameters		
Response	200 OK 304 Not Modified 401 Unauthorized 404 Not Found 429 Too Many Requests	OK & Power Supply information in the response body + ETag Header If-None-Match Etag value matched, therefore no Response Body will be returned Unauthorized; credential entry failed or missing 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

PUT /Chassis/Devices/{id}/PowerSupplies/{id}/ - Modify specific Power Supply attributes

URI:	**/Chassis/Devices/{id}/PowerSupplies/{id}/**	**Description**
Method	PUT	Modify an attribute or execute an operation for this Power Supply
Request Header	Authorization (Mandatory) If-Match (Mandatory)	The request requires either Basic or Digest authorization The request is conditionally processed only if the current ETag for the resource matches the ETag passed in this header
Query Parameters		

Request Body	{
	"IndicatorLED": {
	"ID" : 4 | 2
	}
	}
		JSON BODY START
		
		Toggles the Indicator LED on the Device; default “Off = 4”; "Lit = 2"
		
		JSON BODY END

Response	200 OK 400 Bad Request 401 Unauthorized 404 Not Found 412 Precondition Failed 428 Precondition Required	OK & Power Supply information in the response body + ETag Header Bad Request (typically a faulty parameter) Unauthorized; credential entry failed or missing

	429 Too Many Requests	The Resource doesn't exist Indicates the "If-Match" Etag check failed Indicates the need for an "If-Match" conditional with an Etag value in the Request Header Indicates API service is Busy, client should try again later

HEAD /Chassis/Devices/{id}/PowerSupplies/ - Ping the Collection of Power Supplies

URI:	**/Chassis/Devices/{id}/PowerSupplies/**	**Description**
Method	HEAD	Pings this Power Supply Collection
Request Header	Authorization (Mandatory)	The request requires either Basic or Digest authorization
Query Parameters		
Response	200 OK 401 Unauthorized 404 Not Found 429 Too Many Requests	OK with no response body Unauthorized; credential entry failed or missing Resource Collection 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

HEAD /Chassis/Devices/{id}/PowerSupplies/{id}/ - Ping a specific Power Supply

URI:	**/Chassis/Devices/{id}/PowerSupplies/{id}/**	**Description**
Method	HEAD	Pings this Power Supply
Request Header	Authorization (Mandatory)	The request requires either Basic or Digest authorization
Query Parameters		
Response	200 OK 401 Unauthorized 404 Not Found 429 Too Many Requests	OK with no response body Unauthorized; credential entry failed or missing 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

OPTIONS /Chassis/Devices/{id}/PowerSupplies/- Determine Allowable Methods for a Collection of Power Supplies

URI:	**/Chassis/Devices/{id}/PowerSupplies/**	**Description**
Method	OPTIONS	Get the allowable HTTP Methods list for this resource
Request Header	(None) Documentation (Optional) Documentation (Optional) If-None-Match (Optional)	Returns the full resource schema as Content-Type application/json Info - Returns documentation information in the form of plain text Schema - Returns the schema information in "pretty" JSON text as plain text Etag - The request is conditionally processed only if the current ETag for the resource does not match the ETag passed in this header
Query Parameters		
Response	200 OK 304 Not Modified 404 Not Found 429 Too Many Requests	OK & the “Allow” list of methods in the response header. The response body provides the JSON Schema for this resource If-None-Match Etag value matched, therefore no Response Body will be returned 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

OPTIONS /Chassis/Devices/{id}/PowerSupplies/{id}/ - Determine Allowable Methods for a specific Power Supply

URI:	**/Chassis/Devices/{id}/PowerSupplies/{id}/**	**Description**
Method	OPTIONS	Get the allowable HTTP Methods list for this resource
Request Header	(None) Documentation (Optional) Documentation (Optional) If-None-Match (Optional)	Returns the full resource schema as Content-Type application/json Info - Returns documentation information in the form of plain text

		Schema - Returns the schema information in "pretty" JSON text as plain text Etag - The request is conditionally processed only if the current ETag for the resource does not match the ETag passed in this header
Query Parameters		
Response	200 OK 304 Not Modified 404 Not Found 429 Too Many Requests	OK & the "Allow" list of methods in the response header. The response body provides the JSON Schema for this resource If-None-Match Etag value matched, therefore no Response Body will be returned 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

Methods Not Allowed on **/Chassis/Devices/{id}/PowerSupplies/** Collection

URI:	**/Chassis/Devices/**	**Description**
Method	POST, PUT, DELETE	Methods that are not allowed
Request Header		
Query Parameters		
Response	405 Method Not Allowed	Method not allowed for this Resource; returns "Allow" header with allowable methods list

Methods Not Allowed on **/Chassis/Devices/{id}/PowerSupplies/{id}/** Instance

URI:	**/Chassis/Devices/{id}/**	**Description**
Method	POST, DELETE	Methods that are not allowed
Request Header		
Query Parameters		

Response	405 Method Not Allowed	Method not allowed for this Resource; returns "Allow" header with allowable methods list

Collection Resource Attributes

Attribute	Type	Requirement	User Configurable	Possible Values	Description	Model Correspondence
Self	URI String	Mandatory	No	Free-Form URI Format 256 Chars	Describes the fully qualified URI link for the Collection	{ IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking }
Members	String Array	Mandatory	No	Resource Collection (0 - n entries)	The array of Resource Instances (see Instance Resource Attributes Table for Instance Attribute details)	

Instance Resource Attributes

Attribute	Type	Requirement	User Configurable	Possible Values	Description	Model Correspondence
Self	URI String	Mandatory	No	Free-Form URI Format 256 Chars	Describes the fully qualified URI link	{ IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking }
ID	String	Mandatory	No	Free-Form 256 Chars	The resource identifier that is unique in space and time	{ DMTF | CIM | LogicalElement.DeviceID }
IndicatorLED.Name	String	Mandatory	No	"Off" "Lit"	The current state value of	{ DMTF | CIM | IndicatorLED.ActivationState }

					the Indicator LED for this Resource	
IndicatorLED.ID	Number	Mandatory	Yes	4 2	The current state value map of the Indicator LED for this Resource	{ DMTF | CIM | IndicatorLED.ActivationState }
Status.State.Name	String	Mandatory	No	"Unknown" "Not available" "Servicing" "Starting" "Stopping" "Stopped" "Aborted" "Dormant" "Completed" "Migrating" "Emigrating" "Immigrating" "Snapshotting" "Shutting down" "In test" "Transitioning" "In service"	The current state value of this Resource	{ DMTF | CIM | ManagedSystemElement.State }
Status.State.ID	Number	Mandatory	No	0 1 2 3 4 5 6 7 8 9	The current state value map of this Resource	{ DMTF | CIM | ManagedSystemElement.State }

				10 11 12 13 14 15 16		
Status.Health[].Name	String (1..*)	Mandatory	No	"Unknown" "OK" "Degraded/Warning" "Minor failure" "Major failure" "Critical failure" "Non-recoverable error" "Not installed" "Not available" "No access allowed"	The current health value of this Resource. There can be 1 or more Name entries.	{ DMTF | CIM | ManagedSystemElement.HealthState }
Status.Health[].ID	Number (1..*)	Mandatory	No	0 5 10 15 20 25 30 65536 65537 65538	The current health value map of this Resource. There can be 1 or more Id entries.	{ DMTF | CIM | ManagedSystemElement.HealthState }
Status.Details[]	String Array	Optional	No	Free-Form 32 Characters per Array entry. If no entry, then “None”.	The current Health Details of the Power Supply	{ DMTF | CIM | ManagedSystemElement.DetailedStatus }
RemovalConditions.ID	Number	Mandatory	No	0 2 3	The value map of	{ DMTF | CIM | ManagedElement.ReplacementFRU.Description }

				4	the removal conditions for this FRU	
RemovalConditions.Name	String	Mandatory	No	"Unknown" "Not Applicable" "Removable when off" "Removable when on or off"	The value of the removal conditions for this FRU	{ DMTF | CIM | ManagedElement.ReplacementFRU.Description }

EXAMPLES

GET Power Supply Example - Specific Instance Based on the Identifier

Request

Method	URI	Query String	Request Header	Request Body
GET	/Chassis/Devices/{id}/PowerSupplies/{id}		Authorization (Mandatory) If-None-Match: {etag} (Optional)	

Response

Precondition	Response Code	Response Header	Response Body
Credentials invalid or missing	401 Unauthorized		
Resource Id does not exist	404 Not Found		
If-None-Match true	304 Not Modified	ETag: {etag}	

API Busy	429 Too Many Requests		

Success If-None-Match false or missing	200 OK	Content-Type: application/json ETag: {etag}	{
			"Self": "http://10.20.30.40/Chassis/Devices/bmc090007/PowerSupplies/POWER_SUPPLY_A/",
			"ID": "POWER_SUPPLY_A",
			"IndicatorLED": {
			"ID": 4,
			"Name": "Off"
			},
			"Status": {
			"State": {
			"ID": 0,
			"Name": "Unknown"
			},
			"Health": [{
			"ID": 5,
			"Name": "OK"
			}],
			"Details": ["None"]
			},
			"RemovalConditions": {
			"ID": 4,
			"Name": "Removable when on or off"
			}
			}

9.11.5 Fans

Description

The Device-level methods and attributes return information about the Fan(s) and do certain operations.

Allowable Methods

URI	Allowable Methods
/Chassis/Devices/{id}/Fans/	GET, HEAD, OPTIONS
/Chassis/Devices/{id}/Fans/{id}/	GET, PUT, HEAD, OPTIONS

GET /Chassis/Devices/{id}/Fans- Retrieve all Fans

URI:	/Chassis/Devices/{id}/Fans/	Description

Method	GET	Returns the Collection of Fans
Request Header	Authorization (Mandatory) If-None-Match (Optional)	The request requires either Basic or Digest authorization The request is conditionally processed only if the current ETag for the resource does not match the ETag passed in this header
Query Parameters		
Response	200 OK 304 Not Modified 401 Unauthorized 404 Not Found 429 Too Many Requests	OK & List of Fans + ETag Header If-None-Match Etag value matched, therefore no Response Body will be returned Unauthorized; credential entry failed or missing Resource Collection 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

GET /Chassis/Devices/{id}/Fans/{id}/ - Retrieve a specific Fan

URI:	/Chassis/Devices/{id}/Fans/{id}/	Description
Method	GET	Returns the information regarding a specific Fan based on the {id} in the URI address string
Request Header	Authorization (Mandatory) If-None-Match (Optional)	The request requires either Basic or Digest authorization The request is conditionally processed only if the current ETag for the resource does not match the ETag passed in this header
Query Parameters		
Response	200 OK 304 Not Modified 401 Unauthorized 404 Not Found 429 Too Many Requests	OK & Fan information in the response body + ETag Header If-None-Match Etag value matched, therefore no Response Body will be returned Unauthorized; credential entry failed or missing 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

PUT /Chassis/Devices/{id}/Fans/{id}/ - Modify specific Fan attributes

URI:	/Chassis/Devices/{id}/Fans/{id}/	Description
Method	PUT	Modify an attribute or execute an operation for this Fan
Request Header	Authorization (Mandatory) If-Match (Mandatory)	The request requires either Basic or Digest authorization The request is conditionally processed only if the current ETag for the resource matches the ETag passed in this header
Query Parameters		

Request Body	{
	"IndicatorLED": {
	"ID" : 4 | 2
	}
	}
		JSON BODY START
		
		Toggles the Indicator LED on the Device; default "Off = 4"; "Lit = 2"
		
		JSON BODY END

Response	200 OK 400 Bad Request 401 Unauthorized 404 Not Found 412 Precondition Failed 428 Precondition Required 429 Too Many Requests 500 Internal Server Error	OK & Fan information in the response body + ETag Header Bad Request (typically a faulty parameter) Unauthorized; credential entry failed or missing The Resource doesn't exist Indicates the "If-Match" Etag check failed Indicates the need for an "If-Match" conditional with an Etag value in the Request Header Indicates API service is Busy, client should try again later System could not process the request

HEAD /Chassis/Devices/{id}/Fans/ - Ping the Collection of Fans

URI:	/Chassis/Devices/{id}/Fans/	Description
Method	HEAD	Pings this Fan Collection
Request Header	Authorization (Mandatory)	The request requires either Basic or Digest authorization
Query Parameters		
Response	200 OK 401 Unauthorized 404 Not Found 429 Too Many Requests	OK with no response body Unauthorized; credential entry failed or missing Resource Collection 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

HEAD /Chassis/Devices/{id}/Fans/{id}/ - Ping a specific Fan

URI:	/Chassis/Devices/{id}/Fans/{id}/	Description
Method	HEAD	Pings this Fan
Request Header	Authorization (Mandatory)	The request requires either Basic or Digest authorization
Query Parameters		
Response	200 OK 401 Unauthorized 404 Not Found 429 Too Many Requests	OK with no response body Unauthorized; credential entry failed or missing 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

OPTIONS /Chassis/Devices/{id}/Fans/- Determine Allowable Methods for a Collection of Fans

URI:	/Chassis/Devices/{id}/Fans/	Description
Method	OPTIONS	Get the allowable HTTP Methods list for this resource
Request Header	(None) Documentation (Optional) Documentation (Optional) If-None-Match (Optional)	Returns the full resource schema as Content-Type application/json Info - Returns documentation information in the form of plain text Schema - Returns the schema information in "pretty" JSON text as plain text Etag - The request is conditionally processed only if the current ETag for the resource does not match the ETag passed in this header
Query Parameters		
Response	200 OK 304 Not Modified 404 Not Found 429 Too Many Requests	OK & the “Allow” list of methods in the response header. The response body provides the JSON Schema for this resource If-None-Match Etag value matched, therefore no Response Body will be returned

		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

OPTIONS /Chassis/Devices/{id}/Fans/{id}/ - Determine Allowable Methods for a specific Fan

URI:	**/Chassis/Devices/{id}/Fans/{id}/**	**Description**
Method	OPTIONS	Get the allowable HTTP Methods list for this resource
Request Header	(None) Documentation (Optional) Documentation (Optional) If-None-Match (Optional)	Returns the full resource schema as Content-Type application/json Info - Returns documentation information in the form of plain text Schema - Returns the schema information in "pretty" JSON text as plain text Etag - The request is conditionally processed only if the current ETag for the resource does not match the ETag passed in this header
Query Parameters		
Response	200 OK 304 Not Modified 404 Not Found 429 Too Many Requests	OK & the “Allow” list of methods in the response header. The response body provides the JSON Schema for this resource If-None-Match Etag value matched, therefore no Response Body will be returned 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

Methods Not Allowed on **/Chassis/Devices/{id}/Fans/** Collection

URI:	**/Chassis/Devices/{id}/Fans/**	**Description**
Method	POST, PUT, DELETE	Methods that are not allowed
Request Header		
Query Parameters		

Response	405 Method Not Allowed	Method not allowed for this Resource; returns "Allow" header with allowable methods list

Methods Not Allowed on **/Chassis/Devices/{id}/Fans/{id}/** Instance

URI:	**/Chassis/Devices/{id}/Fans/{id}/**	**Description**
Method	POST, DELETE	Methods that are not allowed
Request Header		
Query Parameters		
Response	405 Method Not Allowed	Method not allowed for this Resource; returns "Allow" header with allowable methods list

Collection Resource Attributes

Attribute	**Type**	**Requirement**	**User Configurable**	**Possible Values**	**Description**	**Model Correspondence**
Self	URI String	Mandatory	No	Free-Form URI Format 256 Chars	Describes the fully qualified URI link for the Collection	{ IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking }
Members	String Array	Mandatory	No	Resource Collection (0 - n entries)	The array of Resource Instances (see Instance Resource Attributes Table for Instance Attribute details)	

Instance Resource Attributes

Attribute	**Type**	**Requirement**	**User Configurable**	**Possible Values**	**Description**	**Model Correspondence**
Self	URI String	Mandatory	No	Free-Form URI Format 256 Chars	Describes the fully qualified URI link	{ IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking }

ID	String	Mandatory	No	Free-Form 256 Chars	The resource identifier that is unique in space and time	{ DMTF | CIM | LogicalElement.DeviceID }
IndicatorLED.Name	String	Mandatory	No	"Off" "Lit"	The current state value of the Indicator LED for this Resource	{ DMTF | CIM | IndicatorLED.ActivationState }
IndicatorLED.ID	Number	Mandatory	Yes	4 2	The current state value map of the Indicator LED for this Resource	{ DMTF | CIM | IndicatorLED.ActivationState }
Status.State.Name	String	Mandatory	No	"Unknown" "Not available" "Servicing" "Starting" "Stopping" "Stopped" "Aborted" "Dormant" "Completed" "Migrating" "Emigrating" "Immigrating" "Snapshotting" "Shutting down"	The current state value of this Resource	{ DMTF | CIM | ManagedSystemElement.State }

				"In test" "Transitioning" "In service"		
Status.State.ID	Number	Mandatory	No	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16	The current state value map of this Resource	{ DMTF | CIM | ManagedSystemElement.State }
Status.Health[].Name	String (1..*)	Mandatory	No	"Unknown" "OK" "Degraded/Warning" "Minor failure" "Major failure" "Critical failure" "Non-recoverable error" "Not installed" "Not available" "No access allowed"	The current health value of this Resource. There can be 1 or more Name entries.	{ DMTF | CIM | ManagedSystemElement.HealthState }
Status.Health[].ID	Number (1..*)	Mandatory	No	0 5 10 15 20 25 30 65536 65537 65538	The current health value map of this Resource. There can be 1 or more	{ DMTF | CIM | ManagedSystemElement.HealthState }

					Id entries.	
Status.Details[]	String Array	Optional	No	Free-Form 32 Characters per Array entry. If no entry, then “None”.	The current Health Details of the Fan	{ DMTF | CIM | ManagedSystemElement.DetailedStatus }
CurrentSpeed	Number	Mandatory	No	0 - n	The current speed of the fan in RPM	
BaseUnits.Name	String	Mandatory	No	"RPM"	The base units value for the speed value	
BaseUnits.ID	Number	Mandatory	No	19	The base units value map for the speed value	
RateUnits.Name	String	Mandatory	No	"None"	The rate units value for the fan	
RateUnits.ID	Number	Mandatory	No	0	The rate units value map for the fan	
UnitModifier	Number	Mandatory	No	0	The unit modifier for the	

					fan speed	
RemovalConditions.ID	Number	Mandatory	No	0 2 3 4	The value map of the removal conditions for this FRU	{ DMTF | CIM | ManagedElement.ReplacementFRU.Description }
RemovalConditions.Name	String	Mandatory	No	"Unknown" "Not Applicable" "Removable when off" "Removable when on or off"	The value of the removal conditions for this FRU	{ DMTF | CIM | ManagedElement.ReplacementFRU.Description }

EXAMPLES

GET Fan Example - Specific Instance Based on the Identifier

Request

Method	URI	Query String	Request Header	Request Body
GET	/Chassis/Devices/{id}/Fans/{id}		Authorization (Mandatory) If-None-Match: {etag} (Optional)	

Response

Precondition	Response Code	Response Header	Response Body
Credentials invalid or missing	401 Unauthorized		
Resource Id does not exist	404 Not Found		

If-None-Match true	304 Not Modified	ETag: {etag}	
API Busy	429 Too Many Requests		

Success If-None-Match false or missing	200 OK	Content-Type: application/json ETag: {etag}	{
			"Self": "http://10.20.30.40/Chassis/Devices/bmc090007/Fans/FAN_PSU_A/",
			"ID": "FAN_PSU_A",
			"IndicatorLED": {
			"ID": 4,
			"Name": "Off"
			},
			"Status": {
			"State": {
			"ID": 0,
			"Name": "Unknown"
			},
			"Health": [{
			"ID": 5,
			"Name": "OK"
			}]
			},
			"CurrentSpeed": 6530,
			"BaseUnits": {
			"ID": 19,
			"Name": "RPM"
			},
			"RateUnits": {
			"ID": 0,
			"Name": "None"
			},
			"UnitModifier": 0,
			"RemovalConditions": {
			"ID": 4,
			"Name": "Removable when on or off"
			}
			}

9.11.6 Slots

Description

The Device-level methods and attributes return information about the Slot(s) and do certain operations.

Allowable Methods

URI	Allowable Methods
/Chassis/Devices/{id}/Slots/	GET, HEAD, OPTIONS
/Chassis/Devices/{id}/Slots/{id}/	GET, PUT, HEAD, OPTIONS

GET /Chassis/Devices/{id}/Slots- Retrieve all Slots

URI:	/Chassis/Devices/{id}/Slots/	Description
Method	GET	Returns the Collection of Slots
Request Header	Authorization (Mandatory) If-None-Match (Optional)	The request requires either Basic or Digest authorization The request is conditionally processed only if the current ETag for the resource does not match the ETag passed in this header
Query Parameters		
Response	200 OK 304 Not Modified 401 Unauthorized 404 Not Found 429 Too Many Requests	OK & List of Slots + ETag Header If-None-Match Etag value matched, therefore no Response Body will be returned Unauthorized; credential entry failed or missing Resource Collection 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

GET /Chassis/Devices/{id}/Slots/{id}/ - Retrieve a specific Slot

URI:	/Chassis/Devices/{id}/Slots/{id}/	Description
Method	GET	Returns the information regarding a specific Slot based on the {id} in the URI address string
Request Header	Authorization (Mandatory) If-None-Match (Optional)	The request requires either Basic or Digest authorization The request is conditionally processed only if the current ETag for the resource does not match the ETag passed in this header
Query Parameters		

Response	200 OK 304 Not Modified 401 Unauthorized 404 Not Found 429 Too Many Requests	OK & Slot information in the response body + ETag Header If-None-Match Etag value matched, therefore no Response Body will be returned Unauthorized; credential entry failed or missing 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

PUT /Chassis/Devices/{id}/Slots/{id}/ - Modify specific Slot attributes

URI:	/Chassis/Devices/{id}/Slots/{id}/	Description
Method	PUT	Modify an attribute or execute an operation for this Slot
Request Header	Authorization (Mandatory) If-Match (Mandatory)	The request requires either Basic or Digest authorization The request is conditionally processed only if the current ETag for the resource matches the ETag passed in this header
Query Parameters		

Request Body	{
	"IndicatorLED": {
	"ID" : 4 |2
	},
	"PowerOn" : true
	}
		JSON BODY START
		
		Toggles the Indicator LED on the Device; default “Off = 4”; "Lit = 2"
		
		Power On the Fabric Storage Device in this Slot.
		JSON BODY END

Response	200 OK 400 Bad Request 401 Unauthorized 404 Not Found 412 Precondition Failed 428 Precondition Required 429 Too Many Requests	OK & Slot information in the response body + ETag Header Bad Request (typically a faulty parameter) Unauthorized; credential entry failed or missing The Resource doesn’t exist Indicates the “If-Match” Etag check failed Indicates the need for an “If-Match” conditional with an Etag value in the Request Header Indicates API service is Busy, client should try again later

HEAD /Chassis/Devices/{id}/Slots/ - Ping the Collection of Slots

URI:	/Chassis/Devices/{id}/Slots/	Description

Method	HEAD	Pings this Slot Collection
Request Header	Authorization (Mandatory)	The request requires either Basic or Digest authorization
Query Parameters		
Response	200 OK 401 Unauthorized 404 Not Found 429 Too Many Requests	OK with no response body Unauthorized; credential entry failed or missing Resource Collection 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

HEAD /Chassis/Devices/{id}/Slots/{id}/ - Ping a specific Slot

URI:	/Chassis/Devices/{id}/Slots/{id}/	Description
Method	HEAD	Pings this Slot
Request Header	Authorization (Mandatory)	The request requires either Basic or Digest authorization
Query Parameters		
Response	200 OK 401 Unauthorized 404 Not Found 429 Too Many Requests	OK with no response body Unauthorized; credential entry failed or missing 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

OPTIONS /Chassis/Devices/{id}/Slots/- Determine Allowable Methods for a Collection of Slots

URI:	/Chassis/Devices/{id}/Slots/	Description
Method	OPTIONS	Get the allowable HTTP Methods list for this resource
Request Header	(None) Documentation (Optional) Documentation (Optional) If-None-Match (Optional)	Returns the full resource schema as Content-Type application/json Info - Returns documentation information in the form of plain text Schema - Returns the schema information in "pretty" JSON text as plain text

		Etag - The request is conditionally processed only if the current ETag for the resource does not match the ETag passed in this header
Query Parameters		
Response	200 OK 304 Not Modified 404 Not Found 429 Too Many Requests	OK & the "Allow" list of methods in the response header. The response body provides the JSON Schema for this resource If-None-Match Etag value matched, therefore no Response Body will be returned 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

OPTIONS /Chassis/Devices/{id}/Slots/{id}/ - Determine Allowable Methods for a specific Slot

URI:	**/Chassis/Devices/{id}/Slots/{id}/**	**Description**
Method	OPTIONS	Get the allowable HTTP Methods list for this resource
Request Header	(None) Documentation (Optional) Documentation (Optional) If-None-Match (Optional)	Returns the full resource schema as Content-Type application/json Info - Returns documentation information in the form of plain text Schema - Returns the schema information in "pretty" JSON text as plain text Etag - The request is conditionally processed only if the current ETag for the resource does not match the ETag passed in this header
Query Parameters		
Response	200 OK 304 Not Modified 404 Not Found 429 Too Many Requests	OK & the "Allow" list of methods in the response header. The response body provides the JSON Schema for this resource If-None-Match Etag value matched, therefore no Response Body will be returned 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

Methods Not Allowed on **/Chassis/Devices/{id}/Slots/** Collection

URI:	/Chassis/Devices/{id}/Slots/	Description
Method	POST, PUT, DELETE	Methods that are not allowed
Request Header		
Query Parameters		
Response	405 Method Not Allowed	Method not allowed for this Resource; returns "Allow" header with allowable methods list

Methods Not Allowed on **/Chassis/Devices/{id}/Slots/{id}/** Instance

URI:	/Chassis/Devices/{id}/Slots/{id}/	Description
Method	POST, DELETE	Methods that are not allowed
Request Header		
Query Parameters		
Response	405 Method Not Allowed	Method not allowed for this Resource; returns "Allow" header with allowable methods list

Collection Resource Attributes

Attribute	Type	Requirement	User Configurable	Possible Values	Description	Model Correspondence
Self	URI String	Mandatory	No	Free-Form URI Format 256 Chars	Describes the fully qualified URI link for the Collection	{ IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking }
Members	String Array	Mandatory	No	Resource Collection (0 - n entries)	The array of Resource Instances (see Instance Resource Attributes Table for Instance Attribute details)	

Instance Resource Attributes

Attribute	Type	Requirement	User Configurable	Possible Values	Description	Model Correspondence
Self	URI String	Mandatory	No	Free-Form URI Format 256 Chars	Describes the fully qualified URI link	{ IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking }
ID	String	Mandatory	No	Free-Form 256 Chars	The resource identifier that is unique in space and time	{ DMTF | CIM | LogicalElement.DeviceID }
PowerOn	Boolean	Optional	Yes	true or false	Displays current power state of the slot if a Storage Device is physically installed, otherwise, attribute is not displayed; used to PowerOn: true if the Storage Device has been "Shutdown" and is still plugged into the slot	

IndicatorLED.Name	String	Mandatory	No	"Off" "Lit"	The current state value of the Indicator LED for this Resource	{ DMTF | CIM | IndicatorLED.ActivationState }
IndicatorLED.ID	Number	Mandatory	Yes	4 2	The current state value map of the Indicator LED for this Resource	{ DMTF | CIM | IndicatorLED.ActivationState }
Status.State.Name	String	Mandatory	No	"Unknown" "Not available" "Servicing" "Starting" "Stopping" "Stopped" "Aborted" "Dormant" "Completed" "Migrating" "Emigrating" "Immigrating" "Snapshotting" "Shutting down" "In test" "Transitioning" "In service"	The current state value of this Resource	{ DMTF | CIM | ManagedSystemElement.State }
Status.State.ID	Number	Mandatory	No	0 1 2 3 4 5 6 7	The current state value map of this Resource	{ DMTF | CIM | ManagedSystemElement.State }

				8 9 10 11 12 13 14 15 16		
Status.Health[].Name	String (1..*)	Mandatory	No	"Unknown" "OK" "Degraded/Warning" "Minor failure" "Major failure" "Critical failure" "Non-recoverable error" "Not installed" "Not available" "No access allowed"	The current health value of this Resource. There can be 1 or more Name entries.	{ DMTF | CIM | ManagedSystemElement.HealthState }
Status.Health[].ID	Number (1..*)	Mandatory	No	0 5 10 15 20 25 30 65536 65537 65538	The current health value map of this Resource. There can be 1 or more Id entries.	{ DMTF | CIM | ManagedSystemElement.HealthState }
Status.Details[]	String Array	Optional	No	Free-Form 32 Characters per Array entry. If no entry, then “None”.	The current Health Details of the Slot	{ DMTF | CIM | ManagedSystemElement.DetailedStatus }
Medium	String	Optional	No	Free-Form URI Format 256 Chars	The URI link to the	{ IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking }

					Media in the Slot	

EXAMPLES

GET Slot Example - Specific Instance Based on the Identifier

Request

Method	URI	Query String	Request Header	Request Body
GET	/Chassis/Devices/{id}/Slots/{id}		Authorization (Mandatory) If-None-Match: {etag} (Optional)	

Response

Precondition	Response Code	Response Header	Response Body
Credentials invalid or missing	401 Unauthorized		
Resource Id does not exist	404 Not Found		
If-None-Match true	304 Not Modified	ETag: {etag}	
API Busy	429 Too Many Requests		

Success If-None-Match false or missing	200 OK	Content-Type: application/json
		ETag: {etag}
			{
			"Self": "http://10.20.30.40/Chassis/Devices/50030480090e65ff/Slots/Slot00/",
			"ID": "Slot00",
			"IndicatorLED": {
			"ID": 4,
			"Name": "Off"
			},
			"Status": {
			"State": {

			"ID": 0,
			"Name": "Unknown"
			},
			"Health": [{
			"ID": 5,
			"Name": "OK"
			}]
			},
			"PowerOn": true,
			"Medium":
			"http://10.20.30.41/Chassis/Devices/0123456789/"
			}

9.11.7 Sensors

Description

The Device-level methods and attributes return information about the Sensor(s) and do certain operations.

Allowable Methods

URI	Allowable Methods
/Chassis/Devices/{id}/Sensors/	GET, HEAD, OPTIONS
/Chassis/Devices/{id}/Sensors/{id}/	GET, PUT, HEAD, OPTIONS

GET /Chassis/Devices/{id}/Sensors- Retrieve all Sensors

URI:	/Chassis/Devices/{id}/Sensors/	Description
Method	GET	Returns the Collection of Sensors
Request Header	Authorization (Mandatory) If-None-Match (Optional)	The request requires either Basic or Digest authorization The request is conditionally processed only if the current ETag for the resource does not match the ETag passed in this header
Query Parameters		
Response	200 OK 304 Not Modified 401 Unauthorized 404 Not Found 429 Too Many Requests	OK & List of Sensors + ETag Header If-None-Match Etag value matched, therefore no Response Body will be returned Unauthorized; credential entry failed or missing

		Resource Collection 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

GET /Chassis/Devices/{id}/Sensors/{id}/ - Retrieve a specific Sensor

URI:	/Chassis/Devices/{id}/Sensors/{id}/	Description
Method	GET	Returns the information regarding a specific Sensor based on the {id} in the URI address string
Request Header	Authorization (Mandatory) If-None-Match (Optional)	The request requires either Basic or Digest authorization The request is conditionally processed only if the current ETag for the resource does not match the ETag passed in this header
Query Parameters		
Response	200 OK 304 Not Modified 401 Unauthorized 404 Not Found 429 Too Many Requests	OK & Sensor information in the response body + ETag Header If-None-Match Etag value matched, therefore no Response Body will be returned Unauthorized; credential entry failed or missing 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

PUT /Chassis/Devices/{id}/Sensors/{id}/ - Modify specific Sensor attributes

URI:	/Chassis/Devices/{id}/Sensors/{id}/	Description
Method	PUT	Modify an attribute or execute an operation for this Sensor
Request Header	Authorization (Mandatory) If-Match (Mandatory)	The request requires either Basic or Digest authorization The request is conditionally processed only if the current ETag for the resource matches the ETag passed in this header

Query Parameters		

Request Body	{
	"IndicatorLED": {
	"ID" : 4 | 2
	}
	}
		JSON BODY START
		
		Toggles the Indicator LED on the Device; default “Off = 4”; "Lit = 2"
		
		JSON BODY END

Response	200 OK 400 Bad Request 401 Unauthorized 404 Not Found 412 Precondition Failed 428 Precondition Required 429 Too Many Requests	OK & Sensor information in the response body + ETag Header Bad Request (typically a faulty parameter) Unauthorized; credential entry failed or missing The Resource doesn’t exist Indicates the “If-Match” Etag check failed Indicates the need for an “If-Match” conditional with an Etag value in the Request Header Indicates API service is Busy, client should try again later

HEAD /Chassis/Devices/{id}/Sensors/ - Ping the Collection of Sensors

URI:	/Chassis/Devices/{id}/Sensors/	Description
Method	HEAD	Pings this Sensor Collection
Request Header	Authorization (Mandatory)	The request requires either Basic or Digest authorization
Query Parameters		
Response	200 OK 401 Unauthorized 404 Not Found 429 Too Many Requests	OK with no response body Unauthorized; credential entry failed or missing Resource Collection 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

HEAD /Chassis/Devices/{id}/Sensors/{id}/ - Ping a specific Sensor

URI:	/Chassis/Devices/{id}/Sensors/{id}/	Description
Method	HEAD	Pings this Sensor

Request Header	Authorization (Mandatory)	The request requires either Basic or Digest authorization
Query Parameters		
Response	200 OK 401 Unauthorized 404 Not Found 429 Too Many Requests	OK with no response body Unauthorized; credential entry failed or missing 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

OPTIONS /Chassis/Devices/{id}/Sensors/- Determine Allowable Methods for a Collection of Sensors

URI:	**/Chassis/Devices/{id}/Sensors/**	**Description**
Method	OPTIONS	Get the allowable HTTP Methods list for this resource
Request Header	(None) Documentation (Optional) Documentation (Optional) If-None-Match (Optional)	Returns the full resource schema as Content-Type application/json Info - Returns documentation information in the form of plain text Schema - Returns the schema information in "pretty" JSON text as plain text Etag - The request is conditionally processed only if the current ETag for the resource does not match the ETag passed in this header
Query Parameters		
Response	200 OK 304 Not Modified 404 Not Found 429 Too Many Requests	OK & the “Allow” list of methods in the response header. The response body provides the JSON Schema for this resource If-None-Match Etag value matched, therefore no Response Body will be returned 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

OPTIONS /Chassis/Devices/{id}/Sensors/{id}/ - Determine Allowable Methods for a specific Sensor

URI:	**/Chassis/Devices/{id}/Sensors/{id}/**	**Description**
Method	OPTIONS	Get the allowable HTTP Methods list for this resource
Request Header	(None) Documentation (Optional) Documentation (Optional) If-None-Match (Optional)	Returns the full resource schema as Content-Type application/json Info - Returns documentation information in the form of plain text Schema - Returns the schema information in "pretty" JSON text as plain text Etag - The request is conditionally processed only if the current ETag for the resource does not match the ETag passed in this header
Query Parameters		
Response	200 OK 304 Not Modified 404 Not Found 429 Too Many Requests	OK & the “Allow” list of methods in the response header. The response body provides the JSON Schema for this resource If-None-Match Etag value matched, therefore no Response Body will be returned 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

Methods Not Allowed on **/Chassis/Devices/{id}/Sensors/** Collection

URI:	**/Chassis/Devices/{id}/Sensors/**	**Description**
Method	POST, PUT, DELETE	Methods that are not allowed
Request Header		
Query Parameters		
Response	405 Method Not Allowed	Method not allowed for this Resource; returns "Allow" header with allowable methods list

Methods Not Allowed on **/Chassis/Devices/{id}/Sensors/{id}/** Instance

URI:	**/Chassis/Devices/{id}/Sensors/{id}/**	**Description**

Method	POST, DELETE	Methods that are not allowed
Request Header		
Query Parameters		
Response	405 Method Not Allowed	Method not allowed for this Resource; returns "Allow" header with allowable methods list

Collection Resource Attributes

Attribute	Type	Requirement	User Configurable	Possible Values	Description	Model Correspondence
Self	URI String	Mandatory	No	Free-Form URI Format 256 Chars	Describes the fully qualified URI link for the Collection	{ IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking }
Members	String Array	Mandatory	No	Resource Collection (0 - n entries)	The array of Resource Instances (see Instance Resource Attributes Table for Instance Attribute details)	

Instance Resource Attributes

Attribute	Type	Requirement	User Configurable	Possible Values	Description	Model Correspondence
Self	URI String	Mandatory	No	Free-Form URI Format 256 Chars	Describes the fully qualified URI link	{ IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking }
ID	String	Mandatory	No	Free-Form 256 Chars	The resource identifier that is unique in space	{ DMTF | CIM | LogicalElement.DeviceID }

					and time	
IndicatorLED.Name	String	Mandatory	No	"Off" "Lit"	The current state value of the Indicator LED for this Resource	{ DMTF | CIM | IndicatorLED.ActivationState }
IndicatorLED.ID	Number	Mandatory	Yes	4 2	The current state value map of the Indicator LED for this Resource	{ DMTF | CIM | IndicatorLED.ActivationState }
Status.State.Name	String	Mandatory	No	"Unknown" "Not available" "Servicing" "Starting" "Stopping" "Stopped" "Aborted" "Dormant" "Completed" "Migrating" "Emigrating" "Immigrating" "Snapshotting" "Shutting down" "In test" "Transitioning" "In service"	The current state value of this Resource	{ DMTF | CIM | ManagedSystemElement.State }

Status.State.ID	Number	Mandatory	No	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16	The current state value map of this Resource	{ DMTF | CIM | ManagedSystemElement.State }
Status.Health[].Name	String (1..*)	Mandatory	No	"Unknown" "OK" "Degraded/Warning" "Minor failure" "Major failure" "Critical failure" "Non-recoverable error" "Not installed" "Not available" "No access allowed"	The current health value of this Resource. There can be 1 or more Name entries.	{ DMTF | CIM | ManagedSystemElement.HealthState }
Status.Health[].ID	Number (1..*)	Mandatory	No	0 5 10 15 20 25 30 65536 65537 65538	The current health value map of this Resource. There can be 1 or more	{ DMTF | CIM | ManagedSystemElement.HealthState }

					Id entries.	
Status.Details[]	String Array	Optional	No	Free-Form 32 Characters per Array entry. If no entry, then “None”.	The current Health Details of the Sensor	{ DMTF | CIM | ManagedSystemElement.DetailedStatus }
CurrentReading	Number	Mandatory	No	Signed Integer	The current reading value for the sensor	{ DMTF | CIM | LogicalDevice.Sensor.NumericSensor.CurrentReading }
SensorType.Name	String	Mandatory	No	"Temperature" "Voltage" "Current"	The sensor type value	{ DMTF | CIM | LogicalDevice.Sensor.NumericSensor.CurrentReading }
SensorType.ID	Number	Mandatory	No	2 3 4	The sensor type value map	{ DMTF | CIM | LogicalDevice.Sensor.NumericSensor.CurrentReading }
BaseUnits.Name	String	Mandatory	No	"Degrees C" "Degrees F" "Volts" "Amps"	The base units value for the sensor current reading	{ DMTF | CIM | LogicalDevice.Sensor.NumericSensor.CurrentReading }
BaseUnits.ID	Number	Mandatory	No	2 3 5 6	The base units value map for the sensor current reading	{ DMTF | CIM | LogicalDevice.Sensor.NumericSensor.CurrentReading }
RateUnits.Name	String	Mandatory	No	"None"	The rate units	{ DMTF | CIM | LogicalDevice.Sensor.NumericSensor.CurrentReading }

					value for the sensor current reading	
RateUnits.ID	Number	Mandatory	No	0	The rate units value map for the sensor current reading	{ DMTF | CIM | LogicalDevice.Sensor.NumericSensor. }
UnitModifier	Number	Mandatory	No	Signed Integer	The unit modifier for the sensor current reading	{ DMTF | CIM | LogicalDevice.Sensor.NumericSensor.UnitModifier }
HighThresholdFatal	Number	Optional	No	Signed Integer	The high threshold fatal value usually for temperature	{ DMTF | CIM | LogicalDevice.Sensor.NumericSensor.HighThresholdFatal }
HighThresholdCritical	Number	Optional	No	Signed Integer	The high threshold critical value usually for temperature	{ DMTF | CIM | LogicalDevice.Sensor.NumericSensor.HighThresholdCritical }
LowThresholdCritical	Number	Optional	No	Signed Integer	The low threshold critical value usually for temperature	{ DMTF | CIM | LogicalDevice.Sensor.NumericSensor.LowThresholdCritical }

LowThreshold Fatal	Number	Optional	No	Signed Integer	The low threshold fatal value usually for temperature	{ DMTF | CIM | LogicalDevice.Sensor.NumericSensor.LowThresholdFatal }

EXAMPLES

GET Sensor Example - Specific Instance Based on the Identifier

Request

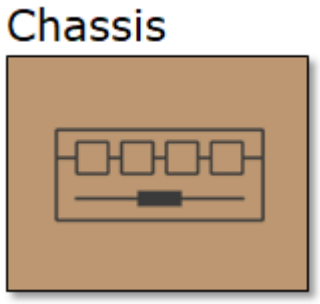
Method	URI	Query String	Request Header	Request Body
GET	/Chassis/Devices/{id}/Sensors/{id}		Authorization (Mandatory) If-None-Match: {etag} (Optional)	

Response

Precondition	Response Code	Response Header	Response Body
Credentials invalid or missing	401 Unauthorized		
Resource Id does not exist	404 Not Found		
If-None-Match true	304 Not Modified	ETag: {etag}	
API Busy	429 Too Many Requests		
Success If-None-Match	200 OK	Content-Type: application/json	{ "Self": "http://10.20.30.40/Chassis/Devices/bmc090007/Sensors/TEMP_BACKPL_LT/",

false or missing		ETag: {etag}	"ID": "TEMP_BACKPL_LT",
			"IndicatorLED": {
			"Id": 4,
			"Name": "Off"
			},
			"Status": {
			"State": {
			"ID": 0,
			"Name": "Unknown"
			},
			"Health": [{
			"ID": 5,
			"Name": "OK"
			}]
			},
			"SensorType": {
			"ID": 2,
			"Name": "Temperature"
			},
			"CurrentReading": 23,
			"BaseUnits": {
			"ID": 2,
			"Name": "Degrees C"
			},
			"RateUnits": {
			"ID": 0,
			"Name": "None"
			},
			"UnitModifier": 0,
			"HighThresholdFatal": 39,
			"HighThresholdCritical": 36,
			"LowThresholdCritical": -12,
			"LowThresholdFatal": -14
			}

9.12 Chassis Devices - Logical



This table shows the logical and virtual resources for a chassis enclosure. The set of resource URIs is as follows:

URI Pattern	Description
/Chassis/Devices/{id}/Location/	The Location information for the Chassis Device
/Chassis/Devices/{id}/SystemClock/	The System Clock information for this Chassis Device
/Chassis/Devices/{id}/Accounts/	Collection of Accounts available within this Chassis Device
/Chassis/Devices/{id}/Accounts/{id}/	A specific Account available within this Chassis Device
/Chassis/Devices/{id}/OperatingSystem/	The local Operating System information for this Chassis Device
/Chassis/Devices/{id}/Jobs/	Collection of Jobs available within this Chassis Device
/Chassis/Devices/{id}/Jobs/{id}/	A specific Job available within this Chassis Device

9.12.1 Location

Description

The Device-level methods and attributes return information about the Location and do certain operations.

Allowable Methods

URI	Allowable Methods
/ Chassis/Devices/{id}/Location	GET, PUT, HEAD, OPTIONS

GET / Chassis/Devices/{id}/Location- Retrieve the Location information

URI:	/ Chassis/Devices/{id}/Location	Description
Method	GET	Returns the information of the Location
Request Header	Authorization (Mandatory) If-None-Match (Optional)	The request requires either Basic or Digest authorization The request is conditionally processed only if the current ETag for the resource does not match the ETag passed in this header

Query Parameters		
Response	200 OK 304 Not Modified 401 Unauthorized 404 Not Found	OK & Location information in the response body If-None-Match Etag value matched, therefore no Response Body will be returned Unauthorized; credential entry failed or missing Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource

PUT / Chassis/Devices/{id}/Location- Modify an attribute of the Location

URI:	**/ Chassis/Devices/{id}/Location**	**Description**
Method	PUT	Modify an attribute of the Location
Request Header	Authorization (Mandatory) If-Match (Mandatory)	The request requires either Basic or Digest authorization The request is conditionally processed only if the current ETag for the resource matches the ETag passed in this header
Query Parameters		

Request Body	{
	"Country" : "new_country",
	"Territory" :
	"new_territory",
	"State" : "new_state",
	"City" : "new_city",
	"Address1": "new_addr1",
	"Address2": "new_addr2",
	"Address3": "new_addr3",
	"PostalCode": "new_zip",
	"SiteName": "new_name",
	"Building": "new_bldg",
	"Room": "new_room",
	"Pod": "new_pod",
	"Rack": "new_row",
	"Shelf": "new_shelf",
	"Item": "new_item",
	"GPSCoords":
	"new_coords",
	"OtherLocationInfo":
	"new_info",
	}
		JSON BODY START
		Change the Country
		Change the Territory
		Change the State
		Change the City
		Change the Address1
		Change the Address2
		Change the Address3
		Change the PostalCode
		Change the SiteName
		Change the Building number or name
		Change the Room number or name
		Change the Pod number or name
		Change the Row number or name
		Change the Shelf number or name
		Change the Item
		Change the GPS coordinates
		Change the other location information
		JSON BODY END

Response	200 OK 400 Bad Request 401 Unauthorized 500 Internal Server Error	OK & Location information in the response body Bad Request (typically a faulty parameter) Unauthorized; credential entry failed or missing Resource could not execute the request

HEAD / Chassis/Devices/{id}/Location- Ping the Location

URI:	**/ Chassis/Devices/{id}/Location**	**Description**
Method	HEAD	Pings the Location
Request Header	Authorization (Mandatory)	
Query Parameters		
Response	200 OK 401 Unauthorized 404 Not Found	OK with no response body Unauthorized; credential entry failed or missing Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource

OPTIONS / Chassis/Devices/{id}/Location- Determine Allowable Methods for Location

URI:	**/ Chassis/Devices/{id}/Location**	**Description**
Method	OPTIONS	Get the allowable HTTP Methods list for this resource
Request Header		
Query Parameters		
Response	200 OK 404 Not Found	OK & the “Allow” list of methods in the response header. The response body provides the JSON Schema for this resource Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource

Methods Not Allowed on **/ Chassis/Devices/{id}/Location**

URI:	/ Chassis/Devices/{id}/Location	Description
Method	POST, DELETE	Methods that are not allowed
Request Header		
Query Parameters		
Response	405 Method Not Allowed	Method not allowed for this Resource

Resource Attributes

Attribute	Type	Requirement	User Configurable	Possible Values	Description	Model Correspondence
Self	String	Mandatory	No	Free-Form URI Format 256 Chars	Describes the fully qualified URI link	{ IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking }
Country	String	Optional	Yes	Free-Form 64 Chars	The Country name where this Device is located	{ DMTF | Redfish | SNIA | Swordfish | Location.Country }
Territory	String	Optional	Yes	Free-Form 64 Chars	The Territory name where this Device is located	{ DMTF | Redfish | SNIA | Swordfish | Location.Territory}
State	String	Optional	Yes	Free-Form 64 Chars	The State name where this Device is located	{ DMTF | Redfish | SNIA | Swordfish | Location.State}
City	String	Optional	Yes	Free-Form 64 Chars	The City name where this Device is located	{ DMTF | Redfish | SNIA | Swordfish | Location.City}

Address1	String	Optional	Yes	Free-Form 64 Chars	The first Address information where this Device is located	{ DMTF | Redfish | SNIA | Swordfish | Location.Address1}
Address2	String	Optional	Yes	Free-Form 64 Chars	The second Address information where this Device is located as needed	{ DMTF | Redfish | SNIA | Swordfish | Location.Address2}
Address3	String	Optional	Yes	Free-Form 64 Chars	The third Address information where this Device is located as needed	{ DMTF | Redfish | SNIA | Swordfish | Location.Address3}
PostalCode	String	Optional	Yes	Free-Form 32Chars	The Postal or Zip Code name where this Device is located	{ DMTF | Redfish | SNIA | Swordfish | Location.PostalCode}
SiteName	String	Optional	Yes	Free-Form 32Chars	The friendly Site Name	{WDC | OpenFlex| Location.SiteName }
Building	String	Optional	Yes	Free-Form 32Chars	The Building name or number where this Device is located	{ DMTF | Redfish | SNIA | Swordfish | Location.Building}
Room	String	Optional	Yes	Free-Form 32Chars	The Room name or number in the Building where this	{ DMTF | Redfish | SNIA | Swordfish | Location.Room}

					Device is located	
Pod	String	Optional	Yes	Free-Form 32Chars	The Pod name or number in the Room this Device is located as needed	{WDC | OpenFlex | Location.Pod}
Row	String	Optional	Yes	Free-Form 32Chars	The Row name or number in the Room or Pod this Device is located	{ DMTF | Redfish | SNIA | Swordfish | Location.Row}
Rack	String	Optional	Yes	Free-Form 32Chars	The Rack name or number in the Row this Device is located	{ DMTF | Redfish | SNIA | Swordfish | Location.Rack}
Shelf	String	Optional	Yes	Free-Form 32Chars	The Shelf name or number of the Rack this Device is located	{ DMTF | Redfish | SNIA | Swordfish | Location.Shelf}
Device	String	Optional	Yes	Free-Form 32Chars	The Device name or number in the Shelf this Device is located as needed	{WDC | OpenFlex| Location.Device }
Item	String	Optional	Yes	Free-Form 32Chars	The Item name indicating the Shelf units or dimension for this Device	{ DMTF | Redfish | SNIA | Swordfish | Location.Item}

GPSCoords	String	Optional	Yes	Decimal Latitude, Decimal Longitude Format	The GPS coordinates of the location of this Device	{ DMTF | Redfish | SNIA | Swordfish | Location.GPSCoords}
OtherLocationInfo	String	Optional	Yes	Free-Form 64 Chars	A place-holder for other location information	{ DMTF | Redfish | SNIA | Swordfish | Location.OtherLocationInfo }

EXAMPLES

GET LocationExample - Specific Instance Based on the Identifier

Request

Method	URI	Query String	Request Header	Request Body
GET	/ Chassis/Devices/{id}/Location		Authorization (Mandatory) If-None-Match: {etag} (Optional)	

Response

Precondition	Response Code	Response Header	Response Body
Credentials invalid or missing	401 Unauthorized		
Resource Id does not exist	404 Not Found		
If-None-Match true	304 Not Modified		
If-None-Match false or missing	200 OK	Content-Type: application/json ETag: {etag}	{ "Self": "http://10.20.30.40/ Chassis/Devices/0123456789/Location/", "Country": "USA", "Territory": "", "State": "NV", "City": "Coyote Springs", "Address1": "123 Hwy 93", "Address2": "Suite -200",

			"Address3":"", "PostalCode": "89025", "SiteName": "Acme DataCenter 1", "Building": "1", "Room": "1", "Pod": "p2", "Rack": "r02", "Shelf" : "30", "Device": "3", "Item": "Rack Units", "GPSCoords": "36.821768, -114.937472", "OtherLocationInfo": "This is other info" }

9.12.2 System Clock

Description

The Device-level methods and attributes return information about the System Clock and do certain operations.

Allowable Methods

URI	Allowable Methods
/ Chassis/Devices/{id}/SystemClock	GET, PUT, HEAD, OPTIONS

GET / Chassis/Devices/{id}/SystemClock - Retrieve the System Clock information

URI:	/ Chassis/Devices/{id}/SystemClock	Description
Method	GET	Returns the information of the System Clock
Request Header	Authorization (Mandatory)	
Query Parameters		
Response	200 OK 401 Unauthorized 404 Not Found	OK & System Clock information in the response body Unauthorized; credential entry failed or missing Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource

PUT / Chassis/Devices/{id}/SystemClock - Modify an attribute of the System Clock

URI:	**/ Chassis/Devices/{id}/SystemClock**	**Description**
Method	PUT	Modify an attribute of the System Clock
Request Header	Authorization (Mandatory)	
Query Parameters		

Request Body	{
	"Date" : "new_date",
	"Time" : "new_time",
	"TimeZone" : "new_tz",
	"DST" : "Enabled | Disabled"
	}
		JSON BODY START
		Change the Date
		Change the Time
		Change the TimeZone
		Change the Daylight Savings Time setting
		JSON BODY END

Response	200 OK 400 Bad Request 401 Unauthorized 500 Internal Server Error	OK & System Clock information in the response body Bad Request (typically a faulty parameter) Unauthorized; credential entry failed or missing Resource could not execute the request

HEAD / Chassis/Devices/{id}/SystemClock - Ping the System Clock

URI:	**/ Chassis/Devices/{id}/SystemClock**	**Description**
Method	HEAD	Pings the System Clock
Request Header	Authorization (Mandatory)	
Query Parameters		
Response	200 OK 401 Unauthorized 404 Not Found	OK with no response body Unauthorized; credential entry failed or missing Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource

OPTIONS / Chassis/Devices/{id}/SystemClock - Determine Allowable Methods for System Clock

URI:	/ Chassis/Devices/{id}/SystemClock	Description
Method	OPTIONS	Get the allowable HTTP Methods list for this resource
Request Header		
Query Parameters		
Response	200 OK 404 Not Found	OK & the "Allow" list of methods in the response header. The response body provides the JSON Schema for this resource Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource

Methods Not Allowed on **/ Chassis/Devices/{id}/SystemClock**

URI:	/ Chassis/Devices/{id}/SystemClock	Description
Method	POST, DELETE	Methods that are not allowed
Request Header		
Query Parameters		
Response	405 Method Not Allowed	Method not allowed for this Resource

Resource Attributes

Attribute	Type	Requirement	User Configurable	Possible Values	Description	Model Correspondence
Self	String	Mandatory	No	Free-Form URI Format 256 Chars	Describes the fully qualified URI link	{ IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking }
Date	String	Mandatory	Yes	Free-Form 256 Chars	The current Date	{ DMTF | CIM | OperatingSystem.LocalDateTime }
Time	String	Mandatory	Yes	Free-Form 256 Chars	The current Time	{ DMTF | CIM | OperatingSystem.LocalDateTime }

TimeZone	String	Mandatory	Yes	Free-Form 64 Chars	The current Time Zone	{ DMTF | CIM | OperatingSystem.CurrentTimeZone }
TimeZoneSetting	String	Mandatory	No	Free-Form 64 Chars	The current Time Zone Setting	{ DMTF | CIM | OperatingSystem.CurrentTimeZone }
DST	String	Mandatory	Yes	"Enabled" "Disabled" "Unknown"	The current Day Light Savings Time setting	{ DMTF | CIM | OperatingSystem.CurrentTimeZone }
Uptime.Duration	String	Mandatory	No		The current uptime value in ISO 8601 format	{ ISO | 8601| Duration }
Uptime.Days	Number	Mandatory	No	0-n	The current uptime Days since boot	{ ISO | 8601| Duration }
Uptime.Hours	Number	Mandatory	No	0-23	The current uptime Hours since boot	{ ISO | 8601| Duration }
Uptime.Minutes	Number	Mandatory	No	0-59	The current uptime Minutes since boot	{ ISO | 8601| Duration }
Uptime.Seconds	Number	Mandatory	No	0-59	The current uptime Seconds since boot	{ ISO | 8601| Duration }

EXAMPLES

GET SystemClock Example

Request

Method	URI	Query String	Request Header	Request Body
GET	/ Chassis/Devices/{id}/SystemClock		Authorization (Mandatory)	

Response

Precondition	Response Code	Response Header	Response Body
Credentials invalid or missing	401 Unauthorized		
Success	200 OK	Content-Type: application/json	{ "Self": "http://10.20.30.40/ Chassis/Devices/12345/SystemClock/", "Date": "23-Aug-2018", "Time": "10:13:18", "TimeZone": "(UTC-6.00) MDT", "TimeZoneSetting": "MDT", "DST": "Enabled", "Uptime": { "Duration": "P0DT3H20M38S", "Days": 0, "Hours": 3, "Minutes": 20, "Seconds": 38 } }

PUT SystemClock Example - Change the Date

Request

Method	URI	Query String	Request Header	Request Body
PUT	/ Chassis/Devices/{id}/SystemClock		Authorization (Mandatory)	{ "Date" : "24-Aug-2018" }

Response

Precondition	Response Code	Response Header	Response Body
Credentials invalid or missing	401 Unauthorized		
Bad/Missing Parameter in Body	400 Bad Request		
System could not process the request	500 Internal Server Error		
Success	200 OK	Content-Type: application/json	{ "Self": "http://10.20.30.40/Chassis/Devices/12345/SystemClock/", "Date": "24-Aug-2018", "Time": "10:14:18", "TimeZone": "(UTC-6.00) MDT", "TimeZoneSetting": "MDT", "DST": "Enabled", "Uptime": { "Duration": "P0DT3H20M38S", "Days": 0, "Hours": 3, "Minutes": 21, "Seconds": 38 } }

9.12.3 Accounts

Description

The Device-level methods and attributes return information about the Account(s) and do certain operations.

Allowable Methods

URI	Allowable Methods
/Chassis/Devices/{id}/Accounts/	GET, POST, HEAD, OPTIONS
/Chassis/Devices/{id}/Accounts/{id}/	GET, PUT, DELETE, HEAD, OPTIONS

GET /Chassis/Devices/{id}/Accounts/ - Retrieve all Accounts

URI:	/Chassis/Devices/{id}/Accounts/	Description
Method	GET	Returns the Collection of Accounts
Request Header	Authorization (Mandatory) If-None-Match (Optional)	The request requires either Basic or Digest authorization The request is conditionally processed only if the current ETag for the resource does not match the ETag passed in this header
Query Parameters		
Response	200 OK 304 Not Modified 401 Unauthorized 404 Not Found 429 Too Many Requests	OK & List of Account + ETag Header If-None-Match Etag value matched, therefore no Response Body will be returned Unauthorized; credential entry failed or missing Resource Collection 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

GET /Chassis/Devices/{id}/Accounts/{Id}/ - Retrieve a specific Account

URI:	/Chassis/Devices/{id}/Accounts/{id}/	Description
Method	GET	Returns the information regarding a specific Account based on the {id} in the URI address string
Request Header	Authorization (Mandatory) If-None-Match (Optional)	The request requires either Basic or Digest authorization The request is conditionally processed only if the current ETag for the resource does not match the ETag passed in this header
Query Parameters		
Response	200 OK 304 Not Modified 401 Unauthorized 404 Not Found 429 Too Many Requests	OK & Account information in the response body + ETag Header If-None-Match Etag value matched, therefore no Response Body will be returned Unauthorized; credential entry failed or missing 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

POST/Chassis/Devices/{id}/Accounts/ - Create a new Account

URI:	/Chassis/Devices/{id}/Accounts/{id}	Description
Method	POST	Create a new Account
Request Header	Authorization (Mandatory)	The request requires either Basic or Digest authorization
Query Parameters		

Request Body	{
	"UserID": "user_id",
	"BasicAuthentication":
	{
	"UserPassword":"password"
	},
	"DigestAuthentication":
	{
	"UserPassword":"password",
	
	}
	}
		JSON BODY START
		User ID of the Account - Valid characters include: "a-z A-Z 0-9 _ - "
		Basic Authentication structure (when the API service is started with Basic Auth - default)
		
		Basic Authentication passphrase
		
		Digest Authentication structure (when the API service is started with Digest Auth)
		
		Digest Authentication passphrase
		Digest Authentication realm
		
		JSON BODY END

Response	201 Created 400 Bad Request 401 Unauthorized 409 Conflict 429 Too Many Requests	Created & Account information in the response body + ETag Header + new URI in Location Header Bad Request (typically a faulty parameter) Unauthorized; credential entry failed or missing A new parameter value already exists (e.g., Name) Indicates API service is Busy, client should try again later

PUT /Chassis/Devices/{id}/Accounts/{id} - Modify specific Account attributes

URI:	/Chassis/Devices/{id}/Accounts/{id}	Description

Method	PUT	Modify an attribute or execute an operation for this Account
Request Header	Authorization (Mandatory) If-Match (Mandatory)	The request requires either Basic or Digest authorization The request is conditionally processed only if the current ETag for the resource matches the ETag passed in this header
Query Parameters		

Request Body	{
	"UserID": "userid",
	"BasicAuthentication":
	{
	"UserPassword":"new_password"
	},
	"DigestAuthentication":
	{
	"UserPassword":"new_password"
	}
	}
		JSON BODY START
		User ID is required as a fail-safe that the client verifies this is the correct account to change
		Basic Authentication structure (when the API service is started with Basic Auth - default)
		
		Basic Authentication passphrase
		
		Digest Authentication structure (when the API service is started with Digest Auth)
		
		Digest Authentication passphrase
		
		JSON BODY END

Response	200 OK 400 Bad Request 401 Unauthorized 404 Not Found 412 Precondition Failed 428 Precondition Required 429 Too Many Requests	OK & Account information in the response body + ETag Header Bad Request (typically a faulty parameter) Unauthorized; credential entry failed or missing The Resource doesn't exist Indicates the "If-Match" Etag check failed Indicates the need for an "If-Match" conditional with an Etag value in the Request Header Indicates API service is Busy, client should try again later

HEAD /Chassis/Devices/{id}/Accounts/ - Ping the Collection of Accounts

URI:	/Chassis/Devices/{id}/Accounts/	Description
Method	HEAD	Pings this Account Collection
Request Header	Authorization (Mandatory)	The request requires either Basic or Digest authorization
Query Parameters		
Response	200 OK 401 Unauthorized 404 Not Found 429 Too Many Requests	OK with no response body Unauthorized; credential entry failed or missing Resource Collection 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

HEAD /Chassis/Devices/{id}/Accounts/{id}/ - Ping a specific Account

URI:	/Chassis/Devices/{id}/Accounts/{id}/	Description
Method	HEAD	Pings this Account
Request Header	Authorization (Mandatory)	The request requires either Basic or Digest authorization
Query Parameters		
Response	200 OK 401 Unauthorized 404 Not Found 429 Too Many Requests	OK with no response body Unauthorized; credential entry failed or missing 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

OPTIONS /Chassis/Devices/{id}/Accounts/ - Determine Allowable Methods for a Collection of Accounts

URI:	/Chassis/Devices/{id}/Accounts/	Description
Method	OPTIONS	Get the allowable HTTP Methods list for this resource
Request Header	(None) Documentation (Optional) Documentation (Optional)	Returns the full resource schema as Content-Type application/json

	If-None-Match (Optional)	Info - Returns documentation information in the form of plain text Schema - Returns the schema information in "pretty" JSON text as plain text Etag - The request is conditionally processed only if the current ETag for the resource does not match the ETag passed in this header
Query Parameters		
Response	200 OK 304 Not Modified 404 Not Found 429 Too Many Requests	OK & the "Allow" list of methods in the response header. The response body provides the JSON Schema for this resource If-None-Match Etag value matched, therefore no Response Body will be returned 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

OPTIONS /Chassis/Devices/{id}/Accounts/{Id}/ - Determine Allowable Methods for a specific Account

URI:	**/Chassis/Devices/{id}/Accounts/{id}/**	**Description**
Method	OPTIONS	Get the allowable HTTP Methods list for this resource
Request Header	(None) Documentation (Optional) Documentation (Optional) If-None-Match (Optional)	Returns the full resource schema as Content-Type application/json Info - Returns documentation information in the form of plain text Schema - Returns the schema information in "pretty" JSON text as plain text Etag - The request is conditionally processed only if the current ETag for the resource does not match the ETag passed in this header
Query Parameters		
Response	200 OK 304 Not Modified 404 Not Found 429 Too Many Requests	OK & the "Allow" list of methods in the response header. The response body provides the JSON Schema for this resource If-None-Match Etag value matched, therefore no Response Body will be returned

		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

DELETE /Chassis/Devices/{id}/Accounts/{id} - Delete specific Account

URI:	/Chassis/Devices/{id}/Accounts/{id}	Description
Method	DELETE	Delete this Account
Request Header	Authorization (Mandatory) If-Match (Mandatory)	The request requires either Basic or Digest authorization The request is conditionally processed only if the current ETag for the resource matches the ETag passed in this header
Query Parameters		
Request Body		
Response	204 No Content 401 Unauthorized 404 Not Found 409 Conflict 412 Precondition Failed 428 Precondition Required 429 Too Many Requests	Delete successful, no content in the response body Unauthorized; credential entry failed or missing The Resource doesn't exist In the case of only one account, that last one cannot be deleted Indicates the "If-Match" Etag check failed Indicates the need for an "If-Match" conditional with an Etag value in the Request Header Indicates API service is Busy, client should try again later

Methods Not Allowed on /Chassis/Devices/{id}/Accounts/ Collection

URI:	/Chassis/Devices/{id}/Accounts/	Description
Method	PUT, DELETE	Methods that are not allowed
Request Header		
Query Parameters		

Response	405 Method Not Allowed	Method not allowed for this Resource; returns "Allow" header with allowable methods list

Methods Not Allowed on **/Chassis/Devices/{id}/Accounts/{id}/** Instance

URI:	**/Chassis/Devices/{id}/Accounts/{id}/**	**Description**
Method	POST	Methods that are not allowed
Request Header		
Query Parameters		
Response	405 Method Not Allowed	Method not allowed for this Resource; returns "Allow" header with allowable methods list

Collection Resource Attributes

Attribute	**Type**	**Requirement**	**User Configurable**	**Possible Values**	**Description**	**Model Correspondence**
Self	URI String	Mandatory	No	Free-Form URI Format 256 Chars	Describes the fully qualified URI link for the Collection	{ IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking }
Members	String Array	Mandatory	No	Resource Collection (1 - n entries)	The array of Resource Instances (see Instance Resource Attributes Table for Instance Attribute details)	

Instance Resource Attributes

Attribute	**Type**	**Requirement**	**User Configurable**	**Possible Values**	**Description**	**Model Correspondence**
Self	URI String	Mandatory	No	Free-Form URI Forma	Describes the fully	{ IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking }

				t 256 Chars	qualified URI link	
ID	String	Mandatory	No	Free-Form 64 Chars Valid characters include: "a-z A-Z 0-9 _ - "	The Identifier this particular Account	{ DMTF | CIM | LogicalElement.DeviceID }
BasicAuthentication.UserPasswordSHA1Checksum	String	Mandatory	No	Free-Form 128 Characters	The basic authentication checksum	{ DMTF | CIM | SignedCredential.X509Infrastructure.SHA1Fingerprints }
BasicAuthentication.UserPassword	String	Optional	Yes	Free-Form 128 Characters	The user password used to create the checksum (not shown in the GET response)	{ DMTF | CIM | SignedCredential.X509Infrastructure.Password }
DigestAuthentication.UserPasswordMD5Checksum	String	Mandatory	No	Free-Form 128 Characters	The digest authentication checksum	{ DMTF | CIM | SignedCredential.X509Infrastructure.MD5Fingerprints }
DigestAuthentication.UserPassword	String	Optional	Yes	Free-Form 128 Characters	The user password used to create	{ DMTF | CIM | SignedCredential.X509Infrastructure.Password }

					the checksum (not shown in the GET response)	
DigestAuthentication.Realm	String	Optional	No	Free-Form 128 Characters	The digest authentication realm	
Role.Name	String	Mandatory	No	"Admin"	The Role type string for this Account	{ DMTF | CIM | ManagedElement.Collection.Role }
Role.ID	Number	Mandatory	No	0	The Role type value for this Account	{ DMTF | CIM | ManagedElement.Collection.Role }
UserID	String	Mandatory	Yes	Free-Form 64 Chars	The user identifier for this Account	{ DMTF | CIM | LogicalElement.Account.UserId }

EXAMPLES

GET Accounts Example - Specific Instance Based on the Identifier

Request

Method	URI	Query String	Request Header	Request Body
GET	/Chassis/Devices/{id}/Accounts/admin		Authorization (Mandatory) If-None-Match: {etag} (Optional)	

Response

Precondition	Response Code	Response Header	Response Body
Credentials invalid or missing	401 Unauthorized		
Resource Id does not exist	404 Not Found		
If-None-Match true	304 Not Modified	ETag: {etag}	
API Busy	429 Too Many Requests		

Success If-None-Match false or missing	200 OK	Content-Type: application/json
		ETag: {etag}
			{
			"Self": "http://10.20.30.40/Chassis/Devices/0123456789/Accounts/admin/",
			"ID": "admin",
			"BasicAuthentication": {
			"UserPasswordSHA1Checksum": "{SHA}0DPiKuNIrrVmD8IUCuw1hQxNqZc="
			},
			"DigestAuthentication": {
			"UserPasswordMD5Checksum": "97ebad852d0dabfd6b71ae26fff61fa3",
			"Realm": "Western Digital Corporation"
			},
			"Role": {
			"ID": 0,
			"Name": "Admin"
			},
			"UserID": "admin"
			}

9.12.4 Operating System

Description

The Device-level methods and attributes return information about the Operating System and do certain operations.

Allowable Methods

URI	Allowable Methods
/Chassis/Devices/{id}/OperatingSystem/	GET, POST, HEAD, OPTIONS

GET /Chassis/Devices/{id}/OperatingSystem/- Retrieve the Operating System resource information

URI:	/Chassis/Devices/{id}/OperatingSystem/	Description
Method	GET	Returns the information of the Operating System resource
Request Header	Authorization (Mandatory) If-None-Match (Optional)	The request requires either Basic or Digest authorization The request is conditionally processed only if the current ETag for the resource matches the ETag passed in this header
Query Parameters		
Response	200 OK 304 Not Modified 401 Unauthorized 404 Not Found 429 Too Many Requests	OK & Operating System resource information in the response body If-None-Match Etag value matched, therefore no Response Body will be returned Unauthorized; credential entry failed or missing 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

POST /Chassis/Devices/{id}/OperatingSystem/ - Update the Firmware Image

URI:	/Chassis/Devices/{id}/OperatingSystem/	Description
Method	POST	Update the Firmware with a new image
Request Header	Authorization (Mandatory) Content-Type: multipart/form-data	The request requires either Basic or Digest authorization The FW image file is of content type "multipart/form-data"
Query Parameters		

Request Body	Content-Disposition: form-data; name="FirmwareFile"; filename="{FW_file_name}" FW Image File	Request Body preamble setting up the content information The FW image file with appropriate POST body
Response	202 Accepted 400 Bad Request 401 Unauthorized 404 Not Found 409 Conflict 429 Too Many Requests	Accepted & Header "Location" with a /Jobs URI to check status (e.g., ../Jobs/FirmwareUpdate) Bad Request (typically a faulty parameter) Unauthorized; credential entry failed or missing Resource does not exist; this IP Address is running an HTTP service, but does not recognize this resource Another FW update is in progress or some other operation that does not a FW update at this time Indicates API service is Busy, client should try again later

HEAD /Chassis/Devices/{id}/OperatingSystem/ - Ping the Operating System resource

URI:	**/Chassis/Devices/{id}/OperatingSystem/**	**Description**
Method	HEAD	Pings the Operating System resource
Request Header	Authorization (Mandatory)	
Query Parameters		
Response	200 OK 401 Unauthorized 404 Not Found 429 Too Many Requests	OK with no response body Unauthorized; credential entry failed or missing 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

OPTIONS /Chassis/Devices/{id}/OperatingSystem/ - Determine Allowable Methods for the Operating System resource

URI:	/Chassis/Devices/{id}/OperatingSystem/	Description
Method	OPTIONS	Get the allowable HTTP Methods list for this resource
Request Header	(None) Documentation (Optional) Documentation (Optional) If-None-Match (Optional)	Returns the full resource schema as Content-Type application/json Info - Returns documentation information in the form of plain text Schema - Returns the schema information in "pretty" JSON text as plain text Etag - The request is conditionally processed only if the current ETag for the resource does not match the ETag passed in this header
Query Parameters		
Response	200 OK 304 Not Modified 404 Not Found 429 Too Many Requests	OK & the “Allow” list of methods in the response header. The response body provides the JSON Schema for this resource If-None-Match Etag value matched, therefore no Response Body will be returned 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

Methods Not Allowed on **/Chassis/Devices/{id}/OperatingSystem/**

URI:	/Chassis/Devices/{id}/OperatingSystem/	Description
Method	PUT, DELETE	Methods that are not allowed
Request Header		
Query Parameters		
Response	405 Method Not Allowed	Method not allowed for this Resource

Resource Attributes

Attribute	Type	Requirement	User Configurable	Possible Values	Description	Model Correspondence
Self	String	Mandatory	No	Free-Form URI Format 256 Chars	Describes the fully qualified URI link	{ IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking }
Name	String	Mandatory	No	Free-Form 128 Chars	The Operating System or Firmware name	{ DMTF | CIM | System.OperatingSystem.Name }
OSType.Name	String	Mandatory	No	Depends on Operating System Type	The Operating System Type value	{ DMTF | CIM | System.OperatingSystem.Type }
OSType.ID	Number	Mandatory	No	Depends on Operating System Type	The Operating System Type value map	{ DMTF | CIM | System.OperatingSystem.Type }
Version	String	Mandatory	No	Free-Form 128 Chars	The Operating System or Firmware Version	{ DMTF | CIM | System.OperatingSystem.Version }

EXAMPLES

GET Operating System Example

Request

Method	URI	Query String	Request Header	Request Body
GET	/Storage/Devices/{id}/OperatingSystem/		Authorization (Mandatory) If-None-Match: {etag} (Optional)	

Response

Precondition	Response Code	Response Header	Response Body
Credentials invalid or missing	401 Unauthorized		
Resource Id does not exist	404 Not Found		
If-None-Match true	304 Not Modified	ETag: {etag}	
API Busy	429 Too Many Requests		

Success If-None-Match false or missing	200 OK	Content-Type: application/json
		ETag: {etag}
			{
			"Self": "http://10.20.30.40/Chassis/Devices/0123456789/OperatingSystem/",
			"Name": "Vendor Firmware",
			"OSType": {
			"ID": 59,
			"Name": "Dedicated"
			},
			"Version": "0.1.0"
			}

POST Operating System Example - Update the Device FW Image

Request

Method	URI	Query String	Request Header	Request Body
POST	/Chassis/Devices/{id}/OperatingSystem/		Authorization (Mandatory) Content-Type: multipart/form-data (Mandatory)	Content-Disposition: form-data; name="FirmwareFile"; filename="{FW_file_name}" FW Image File

Response

Precondition	Response Code	Response Header	Response Body
Credentials invalid or missing	401 Unauthorized		
Resource Id does not exist	404 Not Found		
Bad/Missing Parameter in Body	400 Bad Request		
API Busy	429 Too Many Requests		
Success If-Match true	202 Accepted	Location: ../Jobs/FirmwareUpdate (a GET on this URI will return current status and percent complete information	

9.12.5 Jobs

Description

The Device-level methods and attributes return information about the Job(s) and do certain operations.

Allowable Methods

URI	Allowable Methods
/Chassis/Devices/{id}/Jobs/	GET, HEAD, OPTIONS
/Chassis/Devices/{id}/Jobs/{id}/	GET, HEAD, DELETE, OPTIONS

GET /Chassis/Devices/{id}/Jobs/ - Retrieve all Jobs

URI:	/Chassis/Devices/{id}/Jobs/	Description
Method	GET	Returns the Collection of Jobs
Request Header	Authorization (Mandatory) If-None-Match (Optional)	The request requires either Basic or Digest authorization The request is conditionally processed only if the current ETag for the resource does not match the ETag passed in this header
Query Parameters		
Response	200 OK 304 Not Modified	OK & List of Job + ETag Header

	401 Unauthorized 404 Not Found 429 Too Many Requests	If-None-Match Etag value matched, therefore no Response Body will be returned Unauthorized; credential entry failed or missing Resource Collection 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

GET /Chassis/Devices/{id}/Jobs/{Id}/ - Retrieve a specific Job

URI:	/Chassis/Devices/{id}/Jobs/{id}/	Description
Method	GET	Returns the information regarding a specific Account based on the {id} in the URI address string
Request Header	Authorization (Mandatory) If-None-Match (Optional)	The request requires either Basic or Digest authorization The request is conditionally processed only if the current ETag for the resource does not match the ETag passed in this header
Query Parameters		
Response	200 OK 304 Not Modified 401 Unauthorized 404 Not Found 429 Too Many Requests	OK & Job information in the response body + ETag Header If-None-Match Etag value matched, therefore no Response Body will be returned Unauthorized; credential entry failed or missing 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

HEAD /Chassis/Devices/{id}/Jobs/ - Ping the Collection of Jobs

URI:	/Chassis/Devices/{id}/Jobs/	Description
Method	HEAD	Pings this Job Collection
Request Header	Authorization (Mandatory)	The request requires either Basic or Digest authorization
Query Parameters		
Response	200 OK	OK with no response body

	401 Unauthorized 404 Not Found 429 Too Many Requests	Unauthorized; credential entry failed or missing Resource Collection 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

HEAD /Chassis/Devices/{id}/Jobs/{id}/ - Ping a specific Job

URI:	/Chassis/Devices/{id}/Jobs/{id}/	Description
Method	HEAD	Pings this Job
Request Header	Authorization (Mandatory)	The request requires either Basic or Digest authorization
Query Parameters		
Response	200 OK 401 Unauthorized 404 Not Found 429 Too Many Requests	OK with no response body Unauthorized; credential entry failed or missing 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

OPTIONS /Chassis/Devices/{id}/Jobs/ - Determine Allowable Methods for a Collection of Jobs

URI:	/Chassis/Devices/{id}/Jobs/	Description
Method	OPTIONS	Get the allowable HTTP Methods list for this resource
Request Header	(None) Documentation (Optional) Documentation (Optional) If-None-Match (Optional)	Returns the full resource schema as Content-Type application/json Info - Returns documentation information in the form of plain text Schema - Returns the schema information in "pretty" JSON text as plain text Etag - The request is conditionally processed only if the current ETag for the resource does not match the ETag passed in this header
Query Parameters		

Response	200 OK 304 Not Modified 404 Not Found 429 Too Many Requests	OK & the "Allow" list of methods in the response header. The response body provides the JSON Schema for this resource If-None-Match Etag value matched, therefore no Response Body will be returned 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

OPTIONS /Chassis/Devices/{id}/Jobs/{Id}/ - Determine Allowable Methods for a specific Job

URI:	/Chassis/Devices/{id}/Jobs/{id}/	Description
Method	OPTIONS	Get the allowable HTTP Methods list for this resource
Request Header	(None) Documentation (Optional) Documentation (Optional) If-None-Match (Optional)	Returns the full resource schema as Content-Type application/json Info - Returns documentation information in the form of plain text Schema - Returns the schema information in "pretty" JSON text as plain text Etag - The request is conditionally processed only if the current ETag for the resource does not match the ETag passed in this header
Query Parameters		
Response	200 OK 304 Not Modified 404 Not Found 429 Too Many Requests	OK & the "Allow" list of methods in the response header. The response body provides the JSON Schema for this resource If-None-Match Etag value matched, therefore no Response Body will be returned 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

DELETE /Chassis/Devices/{id}/Jobs/{id} - Delete specific Job

URI:	/Chassis/Devices/{id}/Jobs/{id}	Description
Method	DELETE	Delete this Job

Request Header	Authorization (Mandatory) If-Match (Mandatory)	The request requires either Basic or Digest authorization The request is conditionally processed only if the current ETag for the resource matches the ETag passed in this header
Query Parameters		
Request Body		
Response	204 No Content 401 Unauthorized 404 Not Found 409 Conflict 412 Precondition Failed 428 Precondition Required 429 Too Many Requests	Delete successful, no content in the response body Unauthorized; credential entry failed or missing The Resource doesn't exist If job is still in progress Indicates the "If-Match" Etag check failed Indicates the need for an "If-Match" conditional with an Etag value in the Request Header Indicates API service is Busy, client should try again later **NOTE**: When deleting the FW-related jobs, it is suggested to delete FirmwareUpdate before FirmwareActivate

Methods Not Allowed on **/Chassis/Devices/{id}/Jobs/**

URI:	**/Chassis/Devices/{id}/Jobs/**	**Description**
Method	POST, PUT, DELETE	Methods that are not allowed
Request Header		
Query Parameters		
Response	405 Method Not Allowed	Method not allowed for this Resource

Methods Not Allowed on **/Chassis/Devices/{id}/Jobs/{id}/**

URI:	**/Chassis/Devices/{id}/Jobs/{id}/**	**Description**
Method	POST, PUT	Methods that are not allowed (DELETE only for FirmwareUpdate and FirmwareActivate)
Request Header		
Query Parameters		

Response	405 Method Not Allowed	Method not allowed for this Resource

Collection Resource Attributes

Attribute	Type	Requirement	User Configurable	Possible Values	Description	Model Correspondence
Self	URI String	Mandatory	No	Free-Form URI Format 256 Chars	Describes the fully qualified URI link for the Collection	{ IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking }
Members	String Array	Optional	No	Resource Collection (1 - n entries)	The array of Resource Instances (see Instance Resource Attributes Table for Instance Attribute details)	

Instance Resource Attributes

Attribute	Type	Requirement	User Configurable	Possible Values	Description	Model Correspondence
Self	URI String	Mandatory	No	Free-Form URI Format 256 Chars	Describes the fully qualified URI link	{ IETF | RFC3986 | URI, IETF | RFC5988 | Web Linking }
ID	String	Mandatory	No	"FirmwareUpdate" "FactoryReset" "Reboot" "FirmwareActivate"	The Name this particular Job.	{ DMTF | CIM | ManagedSystemElement.DeviceID }
Status.State.Name	String	Mandatory	No	"Unknown" "Not available" "Servicing" "Starting" "Stopping" "Stopped" "Aborted" "Dormant" "Completed"	The current state value of this Resource	{ DMTF | CIM | ManagedSystemElement.State }

				"Migrating" "Emigrating" "Immigrating" "Snapshotting" "Shutting down" "In test" "Transitioning" "In service" "Inoperative" "Write Protected" "Reboot Needed" "Activate Needed" "Activate with reboot needed" "Activate invalidated by reboot"		
Status.State.ID	Number	Mandatory	No	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 65537 65538 65539 65540 65541 65542	The current state value map of this Resource	{ DMTF | CIM | ManagedSystemElement.State }

Status.Health[].Name	String (1..*)	Mandatory	No	"Unknown" "OK" "Degraded/Warning" "Minor failure" "Major failure" "Critical failure" "Non-recoverable error" "Not installed" "Not available" "No access allowed"	The current health value of this Resource. There can be 1 or more Name entries.	{ DMTF | CIM | ManagedSystemElement.HealthState }
Status.Health[].ID	Number (1..*)	Mandatory	No	0 5 10 15 20 25 30 65536 65537 65538	The current health value map of this Resource. There can be 1 or more Id entries.	{ DMTF | CIM | ManagedSystemElement.HealthState }
Status.Details[]	String Array	Optional	No	Free-Form Array entry. If no entry, then “None”.	The current Health Details of the Device	{ DMTF | CIM | ManagedSystemElement.DetailedStatus }
PercentComplete	Number	Mandatory	No	0 -100	The percent complete status of the Job	{ DMTF | CIM | LogicalElement.Job.PercentComplete }
ErrorCode	Number	Mandatory	No	Integer values	The error code number for the Job upon	{ DMTF | CIM | LogicalElement.Job.ErrorCode }

					completion; “0” = Success, otherwise, a vendor-unique value	
ErrorDescription	String	Optional	No	Free-Form 128 Chars	The description of the vendor-unique error code; if error code is “0”, then this is “Success”	{ DMTF | CIM | LogicalElement.Job.ErrorDescription }

EXAMPLES

GET Jobs Example - Specific Instance Based on the Identifier

Request

Method	URI	Query String	Request Header	Request Body
GET	/Chassis/Devices/{id}/Jobs/UpdateFW/		Authorization (Mandatory) If-None-Match: {etag} (Optional)	

Response

Precondition	Response Code	Response Header	Response Body
Credentials invalid or missing	401 Unauthorized		

Resource Id does not exist	404 Not Found		
If-None-Match true	304 Not Modified	ETag: {etag}	
API Busy	429 Too Many Requests		

Success If-None-Match false or missing	200 OK	Content-Type: application/json
		ETag: {etag}
			{
			"Self": "http://10.20.30.40:80/Storage/Devices/0123456789/Jobs/FirmwareUpdate/",
			"ID": "FirmwareUpdate",
			"PercentComplete": 100,
			"Status": {
			"State": {
			"ID": 65539,
			"Name": "Reboot needed"
			},
			"Health": [{
			"ID": 5,
			"Name": "OK"
			}]
			}
			}