Cisco UCS C-Series Servers REST API Programmer's Guide, Release 4.2

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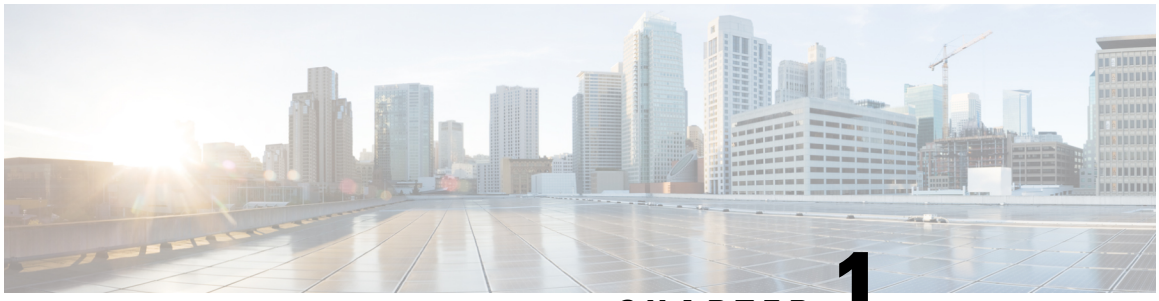


CHAPTER 1

Cisco IMC REST API Overview

This chapter includes the following sections:

Introduction

Representational state transfer (REST) or RESTful web services allow you to provide interoperability between computer systems on the Internet. Using the REST-compliant web services you can request systems to access and manipulate textual representations of web resources using a uniform and predefined set of stateless operations. Cisco has now built capabilities of using RESTful APIs to configure the UCS C-series servers using the Redfish™ technology.

Redfish™ is an open industry standard specification and schema that specifies a RESTful interface and utilizes JSON and OData to help customers integrate solutions within their existing tool chains. It utilizes a range of scalable IT technologies that are widely used, and by using these accepted technologies, it makes the use of Redfish™ easier. Redfish™ is sponsored and controlled by the Distributed Management Task Force, Inc. (DMTF), a peer-review standards body recognized throughout the industry.

Note To determine which Cisco UCS rack-mount servers are supported by this firmware release, see the associated *Release Notes*. The release notes are available at the following URL: http://www.cisco.com/en/US/products/ps10739/prod_release_notes_list.html

For more information on DMTF and Redfish™ standards, see DMTF and Redfish™

Beginning with release 4.2(2a), you can use REST with Cisco UCS S-Series servers also.

New and Modified APIs

New and Modified APIs in Release 4.2(3d)

New APIs:

- Data Sanitization - Beginning with release 4.2(3d), Cisco IMC supports data sanitization feature. Using the data sanitization process, Cisco IMC erases all sensitive data, thus making extraction or recovery of customer data impossible. You can check the status and progress of the data sanitization process for each individual device erase from the status report and rectify any issues, if required.
  - You must perform data sanitization on the components that contain customer data.
  - This feature is supported on the following servers:
    - Cisco UCS C220 M5, C240 M5, C480 M5, C125 M5 servers
    - Cisco UCS C220 M6, C240 M6, C225 M6, C245 M6 servers

New and Modified APIs in Release 4.2(3b)

New APIs:

- Password Change
- Configuring LDAP Server with NULL Address
- DDNS and Domain Name Properties Support Under NIC
- Enabling SMTP Service with Allowable Port from 1 to 65535
- Setting Session Timeout for SSH Protocol
- Setting COM Port for Serial Over LAN Policy

Note This API is available in both C-series and S-series servers.

- Setting Privilege and Encryption Key

Note This API is available in both C-series and S-series servers.

New and Modified APIs in Release 4.2(2a)

- Beginning with release 4.2(2a), you can use REST with Cisco UCS S-Series servers. For Cisco UCS S-Series server examples, see Cisco IMC REST API Examples for Supported S-Series Servers in Release 4.2, on page 133.

- Configuring TACACS+ and Priority for various authentication methods—As per Redfish schema, the value for **Priority** starts from **0** in Redfish API, whereas for other Cisco IMC interfaces, the priority starts from **1**.
- Following are deprecated in release 4.2(2a):
  - **EncryptionStatus** under Oem/Cisco in `/redfish/v1/Managers/CIMC` URI
  - **VideoEncryption** under Oem/Cisco in `/redfish/v1/Managers/CIMC/NetworkProtocol` URI
  - **SyslogConnectionInfo** under Oem/Cisco in `/redfish/v1/Managers/CIMC/LogServices/CIMC` URI
- New APIs:
  - Cisco IMC Syslog Configuration
  - FlexMMC Configurations

New and Modified APIs in Release 4.2(1a)

New APIs:

- Configuring SNMP Users
- Configuring MCTP Fault Alert Setting
- Adding SPDM Authority Certificate
- Viewing Endpoint SPDM Certificate

Redfish™ Architecture

The Redfish™ API comprises a folder structure that starts with the Redfish root at "/redfish/". In case of a C-Series server, the root is accessed through the URI https://<Cisco IMC IP>/redfish/v1/ - the "v1" at the end of the URI denotes the version of the API.

The URI is the primary unique identifier of resources. Redfish™ URIs consist of three parts as described in RFC3986: Part one defines the scheme and authority of the URI, part two specifies the root service and version, and part three defines a unique resource identifier.

For example, in the following URI: https://mgmt.vendor.com/redfish/v1/Systems/SvrID:

- https://mgmt.vendor.com is the scheme and authority
- /redfish/v1 is the root and version
- /Systems/SvrID is the resource identifier

Redfish™ Tree Structure

The Redfish tree structure comprises a top-level root from where the RESTful interface branches out to cover a number of "Collections" that subsequently include multiple levels within, creating a tree-like structure. You can navigate down to this structure to find information and settings.

For example, accessing the Redfish™ structure for the controller on a C-Series server would be navigated by using the following path: **https://10.10.10.10/redfish/v1/Systems/FCH2005V1EN/SimpleStorage/SLOT-HBA**

Note Some portions of an API path could vary depending on the hardware configuration. For example, "SLOT-HBA" may be different when another type of RAID controller is installed in the managed server.

Redfish™ Operations

Redfish™ uses the HTTPS method to perform operations of a RESTful API. You can specify the type of request being made. It adheres to a standard CRUD (Create, Retrieve, Update, and Delete) format. Depending on the desired result, you can issue the following types of commands:

- **GET**: View data
- **POST**: Create resources or use actions
- **PATCH**: Change one or more properties on a resource
- **DELETE**: Remove a resource

Note Currently, HEAD and PUT operations are not supported for Redfish™ URIs.

Table 1: Redfish Schema and Specification

Release	Redfish Schema	Redfish Specification
Release 4.2(1a)	https://www.dmtf.org/sites/default/files/standards/documents/DSP8010_2020.3.zip	https://www.dmtf.org/sites/default/files/standards/documents/DSP0266_1.7.0.pdf
Release 4.2(2a)	https://www.dmtf.org/sites/default/files/standards/documents/DSP8010_2021.1.zip	https://www.dmtf.org/sites/default/files/standards/documents/DSP0266_1.13.0.pdf
Release 4.2(3b)	https://www.dmtf.org/sites/default/files/standards/documents/DSP8010_2021.1.zip	https://www.dmtf.org/sites/default/files/standards/documents/DSP0266_1.13.0.pdf

Management Standard

IT solution models have evolved over the years and given way to several Out-of-Band (OOB) systems management standards, or lights-out management (LOM) systems that work within emerging programming standards and can be implemented in the embedded systems. While this has worked fairly well, there was still a need for a single management standard that could handle the various demands of IT solutions robustly. Expanded scale, higher security, and multi-vendor openness call for equally diverse DevOps tools and processes.

Keeping these requirements in mind, the DMTF took on the responsibility of creating a new management interface standard, which resulted in Redfish™ version 1.0, which was formally launched in July, 2015.

Key features of the Redfish™ management standard include:

- Simple to use and highly secure
- Encrypted connections and generally heightened security
- Simple programmatic interface that can be easily managed using scripts
- Meets Open Compute Project's Remote Machine Management requirements
- Based on widely-used standards for web APIs and data formats

Redfish™ can support an entire range of server architectures, right from monolithic servers to converged infrastructure and hyper-scale architecture. The Redfish™ data model is vendor neutral, and defines its own structure and format of data that comprises server status, inventory and existing operational functions. You, as an administrator can then automate management scripts to manage any Redfish™ compliant server, resulting in the efficient operation of a heterogeneous server fleet.

In terms of security, Redfish™ offers a highly secure and reliable communication opportunity with its use of HTTPS encryption as opposed to conventional management protocols. You can convey all Redfish™ network traffic, including event notifications across the network in an encrypted packet, reducing threats significantly.

Key Technologies

HTTPS Communications

The Hypertext Transfer Protocol or HTTP is an application protocol for distributed, collaborative, hypermedia information systems and forms the foundation of data communication for the World Wide Web. Secure HTTP or HTTPS is a secure version of HTTP that enables secure communications by operating HTTP within a network connection encrypted by TLS or SSL. By utilizing HTTPS, Redfish™ significantly enhances the security of server management especially in comparison to legacy server management protocols.

RESTful Application Programming Interface

Representational State Transfer (REST) or RESTful API is a programming interface that uses the HTTP request to retrieve information with the help of GET, POST, and DELETE data. Many IT companies use the RESTful architecture. Leveraging this standardized approach, Redfish™ implements a RESTful API for accessing management information and for issuing commands to change the configuration or operational state of a server.

Operational Model

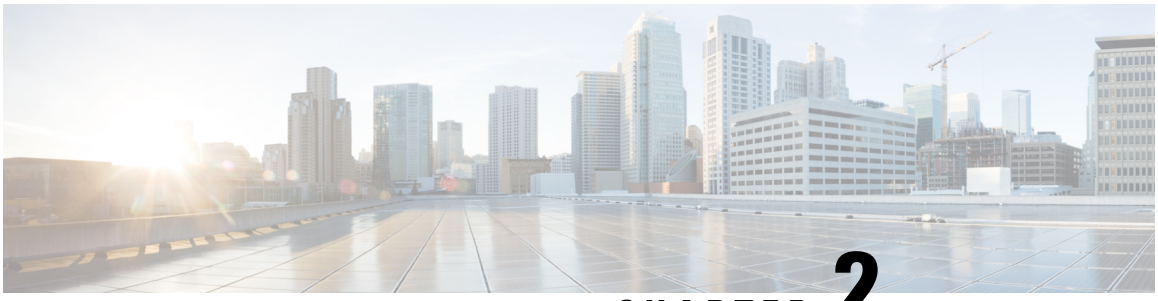
Redfish™ operations are initiated by a client using HTTPS for GET, POST, PATCH and DELETE operations and are capable of interpreting JSON responses from the managed server. The responses provide the requested information and indications of success or failure of the requested operation.

Redfish™ Client

RESTful API goes by the principle "Everything is a Resource". This means that every Uniform Resource Identifier or URI represents a resource of a specific type - a service, a collection or an individual entity. Within the Redfish™ context however, a resource can be thought of as the content of the HTTPS message returned

when accessing a URI. A variety of REST Clients can be used for gaining access to Redfish™ resources such as:

- Applications such as the “Advanced REST Client” and “Postman” from the Google Chrome web store.
- “REST Easy” and “RESTClient” plug-ins for the Firefox browser.
- cURL, Python, and other scripting or programming languages that provide support for dealing with URIs and for parsing JSON payloads.



CHAPTER 2

Cisco IMC REST API Examples for Supported C-Series Servers in Release 4.2

This chapter includes the following sections:

Creating a Redfish Session

Creating a Redfish Session

Request to create a Redfish session:

```
curl -v -k https://10.10.10.10/redfish/v1/SessionService/Sessions -XPOST -d '{
"UserName" : "admin",
"Password":"password"
}'
```

Response

```
< HTTP/1.1 201
< Server: webserver
< Date: Sun, 31 May 2020 16:29:03 GMT
< Content-Type: application/json
< Content-Length: 212
< Connection: keep-alive
< Location: /redfish/v1/SessionService/Sessions/1
< X-Auth-Token: b14b5dbe5fbb3bb14e5bbee54df51b84
< Cache-Control: no-cache
< OData-Version: 4.0
<
{
 "@odata.id": "/redfish/v1/SessionService/Sessions/1",
 "Id": "1",
 "Name": "User Session #1",
 "Description": "Redfish session for user admin",
 "UserName": "admin",
```

```
 "@odata.type": "#Session.v1_1_1.Session"
}
```

Using a Session Cookie

Request using the session cookie:

```
curl -k https://10.10.10.10/redfish/v1/SessionService/Sessions/1 -H
"X-Auth-Token:b14b5dbe5fbb3bb14e5bbee54df51b84"
```

Response

```
{
 "@odata.id": "/redfish/v1/SessionService/Sessions/1",
 "@odata.type": "#Session.v1_1_1.Session",
 "@odata.context": "/redfish/v1/$metadata#Session.Session",
 "Oem": {
  "Cisco": {
   "SessionType": "redfish",
   "RemoteIP": "10.10.10.11"
  }
 },
 "Id": "1",
 "Description": "redfish session for user admin",
 "Name": "User Session #1",
 "UserName": "admin"
}
```

Retrieving Cisco IMC User Sessions

Request to Retrieve All Active Sessions

```
curl -k -u admin:password https://10.10.10.10/redfish/v1/SessionService/Sessions
```

Response

```
{
 "@odata.id": "/redfish/v1/SessionService/Sessions",
 "@odata.context": "/redfish/v1/$metadata#SessionService/Sessions",
 "@odata.type": "#SessionCollection.SessionCollection",
 "Description": "Collection of Sessions",
 "Name": "Session Collection",
 "Members": [{
   "@odata.id": "/redfish/v1/SessionService/Sessions/1"
  }],
 "Members@odata.count": 1
}
```

Request to Retrieve Particular Sessions Details

```
curl -k -u admin:password https://10.10.10.10/redfish/v1/SessionService/Sessions/1
```

Response

```
{
 "@odata.id": "/redfish/v1/SessionService/Sessions/1",
 "@odata.context": "/redfish/v1/$metadata#SessionService/Sessions/Members/$entity",
 "@odata.type": "#Session.v1_1_1.Session",
 "Oem": {
  "Cisco": {
   "SessionType": "webgui",
   "RemoteIP": "10.65.50.218"
```

```
  }
 },
 "Id": "1",
 "Description": "webgui session for user admin",
 "Name": "User Session #1",
 "UserName": "admin"
}
```

Retrieving Server Summary Information and Host Power State

Request to retrieve details on the server:

```
curl -k -u admin:password https://10.10.10.10/redfish/v1/Systems/WZP21330G5B
```

Response

```
{
 "@odata.id": "/redfish/v1/Systems/WZP21330G5B",
 "@odata.context": "/redfish/v1/$metadata#Systems/Members/$entity",
 "@odata.type": "#ComputerSystem.v1_7_0.ComputerSystem",
 "Processors": {
  "@odata.id": "/redfish/v1/Systems/WZP21330G5B/Processors"
 },
 "SimpleStorage": {
  "@odata.id": "/redfish/v1/Systems/WZP21330G5B/SimpleStorage"
 },
 "Storage": {
  "@odata.id": "/redfish/v1/Systems/WZP21330G5B/Storage"
 },
 "Memory": {
  "@odata.id": "/redfish/v1/Systems/WZP21330G5B/Memory"
 },
 "MemoryDomains": {
  "@odata.id": "/redfish/v1/Systems/WZP21330G5B/MemoryDomains"
 },
 "NetworkInterfaces": {
  "@odata.id": "/redfish/v1/Systems/WZP21330G5B/NetworkInterfaces"
 },
 "Bios": {
  "@odata.id": "/redfish/v1/Systems/WZP21330G5B/Bios"
 },
 "SecureBoot": {
  "@odata.id": "/redfish/v1/Systems/WZP21330G5B/SecureBoot"
 },
 "EthernetInterfaces": {
  "@odata.id": "/redfish/v1/Systems/WZP21330G5B/EthernetInterfaces"
 },
 "LogServices": {
  "@odata.id": "/redfish/v1/Systems/WZP21330G5B/LogServices"
 },
 "Links": {
  "Chassis": [{
    "@odata.id": "/redfish/v1/Chassis/1"
   }],
  "CooledBy": [{
    "@odata.id": "/redfish/v1/Chassis/1/Thermal"
   }],
  "ManagedBy": [{
    "@odata.id": "/redfish/v1/Managers/CIMC"
   }],
  "PoweredBy": [{
```

```
    "@odata.id": "/redfish/v1/Chassis/1/Power"
   }]
 },
 "SerialNumber": "WZP21330G5B",
 "Boot": {
  "BootSourceOverrideTarget": "None",
  "BootSourceOverrideTarget@Redfish.AllowableValues": ["None", "Pxe",
"Floppy", "Cd", "Hdd", "BiosSetup", "Diags"],
  "BootSourceOverrideEnabled@Redfish.AllowableValues": ["Once", "Continuous",
 "Disabled"],
  "BootSourceOverrideEnabled": "Disabled"
 },
 "Id": "WZP21330G5B",
 "AssetTag": "Test assetTagRedfish",
 "PowerState": "On",
 "SystemType": "Physical",
 "ProcessorSummary": {
  "Model": "Intel(R) Xeon(R) Silver 4114 CPU @ 2.20GHz",
  "Count": 2
 },
 "HostName": "test-hostname-kr-webcimc",
 "MemorySummary": {
  "TotalSystemMemoryGiB": 64,
  "Status": {
   "HealthRollup": "OK",
   "Health": "OK"
  }
 },
 "PCIeDevices@odata.count": 6,
 "PCIeFunctions@odata.count": 6,
 "Description": "PatchName",
 "UUID": "1C61EBC6-8E10-4A9B-90CE-A4C03913EA56",
 "Status": {
  "State": "Enabled",
  "Health": "OK"
 },
 "PCIeDevices": [{
   "@odata.id": "/redfish/v1/Systems/WZP21330G5B/PCIeDevices/1"
  }, {
   "@odata.id": "/redfish/v1/Systems/WZP21330G5B/PCIeDevices/2"
  }, {
   "@odata.id": "/redfish/v1/Systems/WZP21330G5B/PCIeDevices/FRONT-NVME-2"
  }, {
   "@odata.id": "/redfish/v1/Systems/WZP21330G5B/PCIeDevices/MLOM"
  }, {
   "@odata.id": "/redfish/v1/Systems/WZP21330G5B/PCIeDevices/MRAID"
  }, {
   "@odata.id": "/redfish/v1/Systems/WZP21330G5B/PCIeDevices/L"
  }],
 "Name": "UCS C220 M5L",
 "HostWatchdogTimer": {
  "Status": {
   "State": "Enabled"
  },
  "WarningAction": "None",
  "FunctionEnabled": true,
  "TimeoutAction": "ResetSystem"
 },
 "PCIeFunctions": [{
   "@odata.id": "/redfish/v1/Systems/WZP21330G5B/PCIeFunctions/1"
  }, {
   "@odata.id": "/redfish/v1/Systems/WZP21330G5B/PCIeFunctions/2"
  }, {
   "@odata.id": "/redfish/v1/Systems/WZP21330G5B/PCIeFunctions/FRONT-NVME-2"
```

```
  }, {
   "@odata.id": "/redfish/v1/Systems/WZP21330G5B/PCIeFunctions/MLOM"
  }, {
   "@odata.id": "/redfish/v1/Systems/WZP21330G5B/PCIeFunctions/MRAID"
  }, {
   "@odata.id": "/redfish/v1/Systems/WZP21330G5B/PCIeFunctions/L"
  }],
 "Oem": {
  "Cisco": {
   "PostCompletionStatus": true,
   "SystemEffectiveMemory": 64,
   "SystemEffectiveSpeed": 2400
  }
 },
 "TrustedModules": [{
   "InterfaceType": "TPM2_0",
   "InterfaceTypeSelection": "BiosSetting",
   "FirmwareVersion": "2.0",
   "Status": {
    "Health": "OK"
   }
  }],
 "PowerRestorePolicy": "LastState",
 "Manufacturer": "Cisco Systems Inc",
 "IndicatorLED": "Off",
 "Model": "UCSC-C220-M5L",
 "BiosVersion": "C220M5.4.1.1.61.0504202214",
 "Actions": {
  "#ComputerSystem.Reset": {
   "target": "/redfish/v1/Systems/WZP21330G5B/Actions/ComputerSystem.Reset",
   "ResetType@Redfish.AllowableValues": ["On", "ForceOff", "GracefulShutdown",
"GracefulRestart", "ForceRestart", "Nmi", "PowerCycle"]
  }
 }
}
```


Activating Firmware Backup Image on Cisco IMC

Request to activate the backup image

```
curl -k -u admin:password https://10.10.10.10/redfish/v1/Managers/CIMC/Actions/Oem/
CiscoUCSExtensions.BmcFwActivate -XPOST -d '{}'
```

Response

No response in case of success. Error message is displayed in case of failure.

Retrieving Power Supply Unit Details on Server

Request

```
curl -k -u admin:password https://10.10.10.10/redfish/v1/Chassis/1/Power
```

Response


```
{
 "@odata.id": "/redfish/v1/Chassis/1/Power",
```

```
"@odata.context": "/redfish/v1/$metadata#Chassis/Members/$entity/Power",
"@odata.type": "#Power.v1_5_1.Power",
"PowerControl": [{
  "PhysicalContext": "PowerSupply",
  "PowerMetrics": {
   "MinConsumedWatts": 223,
   "AverageConsumedWatts": 289,
   "MaxConsumedWatts": 302
  },
  "MemberId": "1",
  "PowerLimit": {
   "LimitException": "NoAction"
  },
  "PowerConsumedWatts": 270,
  "@odata.id": "/redfish/v1/Chassis/1/Power#/PowerControl/1"
 }],
"Voltages": [{
  "PhysicalContext": "PowerSupply",
  "SensorNumber": 45,
  "MemberId": "1",
  "@odata.id": "/redfish/v1/Chassis/1/Power#/Voltages/PSU1_VOUT",
  "Status": {
   "State": "Enabled",
   "Health": "OK"
  },
  "UpperThresholdCritical": 14,
  "Name": "PSU1_VOUT",
  "ReadingVolts": 12.2
 }, {
  "PhysicalContext": "PowerSupply",
  "SensorNumber": 51,
  "MemberId": "2",
  "@odata.id": "/redfish/v1/Chassis/1/Power#/Voltages/PSU2_VOUT",
  "Status": {
   "State": "Enabled",
   "Health": "OK"
  },
  "UpperThresholdCritical": 14,
  "Name": "PSU2_VOUT",
  "ReadingVolts": 12.2
 }, {
  "@odata.id": "/redfish/v1/Chassis/1/Power#/Voltages/P12V",
  "Status": {
   "State": "Enabled",
   "Health": "OK"
  },
  "SensorNumber": 213,
  "Name": "P12V",
  "PhysicalContext": "PowerSupply",
  "MemberId": "3",
  "ReadingVolts": 11.89,
  "UpperThresholdCritical": 13.166,
  "LowerThresholdCritical": 10.788
 }, {
  "@odata.id": "/redfish/v1/Chassis/1/Power#/Voltages/P3V_BAT_SCALED",
  "Status": {
   "State": "Enabled",
   "Health": "OK"
  },
  "SensorNumber": 209,
  "Name": "P3V_BAT_SCALED",
  "PhysicalContext": "PowerSupply",
  "MemberId": "4",
  "ReadingVolts": 3.026,
```

```
    "UpperThresholdCritical": 3.588,
    "LowerThresholdCritical": 2.543
   }],
  "Id": "Power",
  "PowerSupplies": [{
    "SerialNumber": "LIT21302259",
    "InputRanges": [{
      "InputType": "AC",
      "OutputWattage": 1050,
      "MaximumFrequencyHz": 63,
      "MaximumVoltage": 264,
      "MinimumVoltage": 90,
      "MinimumFrequencyHz": 47
     }],
    "FirmwareVersion": "10062016",
    "@odata.id": "/redfish/v1/Chassis/1/Power#/PowerSupplies/PSU1",
    "PowerOutputWatts": 116,
    "LineInputVoltage": 233,
    "Name": "PSU1",
    "Status": {
     "State": "Enabled"
    },
    "PowerInputWatts": 139,
    "Manufacturer": "Cisco Systems Inc",
    "LastPowerOutputWatts": 116,
    "MemberId": "1",
    "PartNumber": "341-0638-02",
    "PowerSupplyType": "AC",
    "Model": "PS-2112-9S-LF",
    "SparePartNumber": "341-0638-02"
   }, {
    "SerialNumber": "LIT213347UK",
    "InputRanges": [{
      "InputType": "AC",
      "OutputWattage": 1050,
      "MaximumFrequencyHz": 63,
      "MaximumVoltage": 264,
      "MinimumVoltage": 90,
      "MinimumFrequencyHz": 47
     }],
    "FirmwareVersion": "10062016",
    "@odata.id": "/redfish/v1/Chassis/1/Power#/PowerSupplies/PSU2",
    "PowerOutputWatts": 134,
    "LineInputVoltage": 234,
    "Name": "PSU2",
    "Status": {
     "State": "Enabled"
    },
    "PowerInputWatts": 150,
    "Manufacturer": "Cisco Systems Inc",
    "LastPowerOutputWatts": 134,
    "MemberId": "2",
    "PartNumber": "341-0638-02",
    "PowerSupplyType": "AC",
    "Model": "PS-2112-9S-LF",
    "SparePartNumber": "341-0638-02"
   }],
  "Name": "Power",
  "Description": "Power"
}
```

Retrieving SNMP Configuration Details

Request

```
curl -k -u admin:password https://10.10.10.10/redfish/v1/Managers/CIMC/NetworkProtocol
```

Response

```
{
 "@odata.id": "/redfish/v1/Managers/CIMC/NetworkProtocol",
 "@odata.context": "/redfish/v1/$metadata#Managers/Members/$entity
/NetworkProtocol",
 "@odata.type": "#ManagerNetworkProtocol.v1_4_1.ManagerNetworkProtocol",
 "KVMIP": {
  "ProtocolEnabled": true,
  "Port": 2068
 },
 "SNMP": {
  "ProtocolEnabled": true,
  "Port": 161
 },
 "Id": "ManagerNetworkProtocol",
 "Oem": {
  "Cisco": {
   "KVMConfiguration": {
    "VideoEncryption": "Enabled",
    "LocalServerVideo": "Enabled",
    "MaxConcurrentSessions": 4
   }
  }
 },
 "NTP": {
  "ProtocolEnabled": true,
  "Port": 123,
  "NTPServers": ["ab", "GH", "fgf", "vfv"]
 },
 "Name": "Manager Network Protocol",
 "DHCPv6": {
  "ProtocolEnabled": false,
  "Port": null
 },
 "HTTPS": {
  "ProtocolEnabled": true,
  "Port": 443,
  "Certificates": {
   "@odata.id": "/redfish/v1/Managers/CIMC/NetworkProtocol/HTTPS
/Certificates/1"
  }
 },
 "HostName": "test-hostname-kr-webcimc",
 "DHCP": {
  "ProtocolEnabled": false,
  "Port": null
 },
 "SSH": {
  "ProtocolEnabled": true,
  "Port": 22
 },
 "IPMI": {
  "ProtocolEnabled": true,
```

```
  "Port": 623
 },
 "HTTP": {
  "ProtocolEnabled": true,
  "Port": 80
 },
 "VirtualMedia": {
  "ProtocolEnabled": true,
  "Port": 2068
 },
 "Description": "Manager Network Service"
}
```

Power Cycling the Server

Request

```
curl -k -u admin:password https://10.10.10.10/redfish/v1/Systems/WZP21330G5B/Actions
/ComputerSystem.Reset -XPOST -d '{"ResetType":"PowerCycle"}'
```

Response

No response in case of success. Error message is displayed in case of failure.

Retrieve SNMP Configuration of Trap Receivers

Request to Retrieve the Configured SNMP Traps

```
curl -k -u admin:password https://10.10.10.10/redfish/v1/EventService/Subscriptions
```

Response

```
{
        "@odata.id":    "/redfish/v1/EventService/Subscriptions",
        "@odata.type":  "#EventDestinationCollection.EventDestinationCollection",
        "@odata.context":
"/redfish/v1/$metadata#EventDestinationCollection.EventDestinationCollection",
        "Description":  "List of Event subscriptions",
        "Name": "Event Subscriptions Collection",
        "Members":[{
                        "@odata.id":    "/redfish/v1/EventService/Subscriptions/SNMP_1"
                }, {
                         "@odata.id":    "/redfish/v1/EventService/Subscriptions/SNMP_2"
                }, {
                         "@odata.id":    "/redfish/v1/EventService/Subscriptions/SNMP_3"
                }],
        "Members@odata.count":  3
}
```

Request to Retrieve Individual Configured SNMP Traps

```
curl -k -u admin:password https://10.10.10.10/redfish/v1/EventService/Subscriptions/SNMP_1
```

Response

```
{
        "@odata.id":    "/redfish/v1/EventService/Subscriptions/SNMP_1",
```

```
        "@odata.type":  "#EventDestination.v1_7_0.EventDestination",
        "@odata.context":       "/redfish/v1/$metadata#EventDestination.EventDestination",
        "Description":  "Event Subscription Details",
        "Destination":  "snmp://admin@10.0.0.0:162",
        "Protocol":     "SNMPv3",
        "SubscriptionType":     "SNMPTrap",
        "Context":      null,
        "Id":   "SNMP_1",
        "Name": "EventSubscription SNMP_1",
}
```

Retrieving BIOS Tokens

Request

```
curl -k -u admin:password https://10.10.10.10/redfish/v1/Systems/WZP21330G5B/Bios
```

Response

```
{
 "@odata.id": "/redfish/v1/Systems/WZP21330G5B/Bios",
 "@odata.context": "/redfish/v1/$metadata#Systems/Members/$entity/Bios",
 "@odata.type": "#Bios.v1_0_4.Bios",
 "Id": "BiosToken",
 "AttributeRegistry": "CiscoBiosAttributeRegistry.v1_0_0",
 "Attributes": {
  "ProcessorCMCI": "Enabled",
  "IMCInterleave": "1-way Interleave",
  "OSBootWatchdogTimerTimeout": "10 minutes",
  "MemorySizeLimit": "00000",
  "pSATA": "LSI SW RAID",
  "NUMAOptimize": "Enabled",
  "cdnEnable": "Enabled",
  "UsbPortFront": "Enabled",
  "PartialMirrorValue2": "0000",
  "PcieSlotMLOMLinkSpeed": "Auto",
  "CPUPerformance": "Custom",
  "PCIeRASSupport": "Enabled",
  "UsbPortRear": "Enabled",
  "IntelHyperThread": "Enabled",
  "SataModeSelect": "AHCI",
  "PcieSlot1LinkSpeed": "Auto",
  "SelectMemoryRAS": "ADDDC Sparing",
  "CoherencySupport": "Disabled",
  "CoreMultiProcessing": "All",
  "PartialMirrorModeConfig": "Disabled",
  "FRB_2": "Enabled",
  "FlowCtrl": "None",
  "PcieSlotN1OptionROM": "Enabled",
  "PwrPerfTuning": "OS",
  "VMDEnable": "Disabled",
  "PatrolScrub": "Enabled",
  "BootPerformanceMode": "Max Performance",
  "WorkLdConfig": "Balanced",
  "PcieSlot1OptionROM": "Enabled",
  "DcuIpPrefetch": "Enabled",
  "PsdCoordType": "HW ALL",
  "ProcessorC6Report": "Disabled",
  "IPV4PXE": "Enabled",
  "PcieSlot2LinkSpeed": "Auto",
```

```
 "NetworkStack": "Enabled",
 "PartialMirrorValue4": "0000",
 "PcieSlotMRAIDLinkSpeed": "Auto",
 "PartialMirrorValue1": "0000",
 "PcieSlotN2OptionROM": "Enabled",
 "ATS": "Enabled",
 "OSBootWatchdogTimerPolicy": "Reset",
 "PartialMirrorPercent": "00.00",
 "UsbPortSdCard": "Enabled",
 "UsbPortInt": "Enabled",
 "DCPMMFirmwareDowngrade": "Disabled",
 "UsbPortKVM": "Enabled",
 "KTIPrefetch": "Enabled",
 "BmeDmaMitigation": "Disabled",
 "PcieSlot2OptionROM": "Enabled",
 "IntelTurboBoostTech": "Enabled",
 "EPPProfile": "Balanced Performance",
 "AutoCCState": "Disabled",
 "EnergyEfficientTurbo": "Disabled",
 "ProcessorC1E": "Disabled",
 "SNC": "Enabled",
 "AdjacentCacheLinePrefetch": "Enabled",
 "CpuHWPM": "HWPM Native Mode",
 "BaudRate": "19.2k",
 "MemoryMappedIOAbove4GB": "Enabled",
 "CpuEngPerfBias": "Balanced Performance",
 "TPMControl": "Enabled",
 "LomOpromControlPort0": "Enabled",
 "IPV6PXE": "Disabled",
 "LLCPrefetch": "Disabled",
 "CiscoAdaptiveMemTraining": "Disabled",
 "PackageCstateLimit": "C0 C1 State",
 "PcieSlotMLOMOptionROM": "Enabled",
 "LomOpromControlPort1": "Enabled",
 "XPTPrefetch": "Disabled",
 "DcuStreamerPrefetch": "Disabled",
 "IntelVT": "Enabled",
 "PartialMirrorValue3": "0000",
 "TXTSupport": "Disabled",
 "TerminalType": "VT100",
 "ConsoleRedir": "COM 0",
 "CiscoDebugLevel": "Maximum",
 "PcieSlotFrontNvme1LinkSpeed": "Auto",
 "ExecuteDisable": "Enabled",
 "CiscoOpromLaunchOptimization": "Enabled",
 "IntelVTD": "Enabled",
 "AllLomPortControl": "Enabled",
 "PcieSlotMRAIDOptionROM": "Enabled",
 "IntelSpeedSelect": "Base",
 "VgaPriority": "Onboard",
 "UsbLegacySupport": "Enabled",
 "PowerOnPassword": "Disabled",
 "SelectPprType": "Hard PPR",
 "PcieSlotFrontNvme2LinkSpeed": "Auto",
 "LocalX2Apic": "Disabled",
 "HardwarePrefetch": "Enabled",
 "OSBootWatchdogTimer": "Enabled",
 "EnhancedIntelSpeedStep": "Enabled"
},
"Name": "BiosToken",
"Description": "BIOS Configuration Current Settings",
"Actions": {
 "#Bios.ResetBios": {
  "target": "/redfish/v1/Systems/WZP21330G5B/Bios/Actions/
```

```
Bios.ResetBios"
  }
 }
}
```

Configuring Select Memory RAS BIOS Token for Mirroring Mode

Request

```
curl -k -u admin:password https://10.10.10.10/redfish/v1/Systems/<SerialNumber>/
Bios -XPATCH -d '{"SelectMemoryRAS":"Mirror Mode 1LM"}'
```

Response

```
{
 "Id": "BiosToken",
 "AttributeRegistry": "CiscoBiosAttributeRegistry.v1_0_0",
 "Attributes": {
  "ProcessorCMCI": "Enabled",
  "IMCInterleave": "1-way Interleave",
  "OSBootWatchdogTimerTimeout": "10 minutes",
  "MemorySizeLimit": "00000",
  "pSATA": "LSI SW RAID",
  "NUMAOptimize": "Enabled",
  "cdnEnable": "Enabled",
  "UsbPortFront": "Enabled",
  "PartialMirrorValue2": "0000",
  "PcieSlotMLOMLinkSpeed": "Auto",
  "CPUPerformance": "Custom",
  "PCIeRASSupport": "Enabled",
  "UsbPortRear": "Enabled",
  "IntelHyperThread": "Enabled",
  "SataModeSelect": "AHCI",
  "PcieSlot1LinkSpeed": "Auto",
  "SelectMemoryRAS": " Mirror Mode 1LM ",
  "CoherencySupport": "Disabled",
  "CoreMultiProcessing": "All",
  "PartialMirrorModeConfig": "Disabled",
  "FRB_2": "Enabled",
  "FlowCtrl": "None",
  "PcieSlotN1OptionROM": "Enabled",
  "PwrPerfTuning": "OS",
  "VMDEnable": "Disabled",
  "PatrolScrub": "Enabled",
  "BootPerformanceMode": "Max Performance",
  "WorkLdConfig": "Balanced",
  "PcieSlot1OptionROM": "Enabled",
  "DcuIpPrefetch": "Enabled",
  "PsdCoordType": "HW ALL",
  "ProcessorC6Report": "Disabled",
  "IPV4PXE": "Enabled",
  "PcieSlot2LinkSpeed": "Auto",
  "NetworkStack": "Enabled",
  "PartialMirrorValue4": "0000",
  "PcieSlotMRAIDLinkSpeed": "Auto",
  "PartialMirrorValue1": "0000",
  "PcieSlotN2OptionROM": "Enabled",
  "ATS": "Enabled",
  "OSBootWatchdogTimerPolicy": "Reset",
  "PartialMirrorPercent": "00.00",
```

```
  "UsbPortSdCard": "Enabled",
  "UsbPortInt": "Enabled",
  "DCPMMFirmwareDowngrade": "Disabled",
  "UsbPortKVM": "Enabled",
  "KTIPrefetch": "Enabled",
  "BmeDmaMitigation": "Disabled",
  "PcieSlot2OptionROM": "Enabled",
  "IntelTurboBoostTech": "Enabled",
  "EPPProfile": "Balanced Performance",
  "AutoCCState": "Disabled",
  "EnergyEfficientTurbo": "Disabled",
  "ProcessorC1E": "Disabled",
  "SNC": "Enabled",
  "AdjacentCacheLinePrefetch": "Enabled",
  "CpuHWPM": "HWPM Native Mode",
  "BaudRate": "19.2k",
  "MemoryMappedIOAbove4GB": "Enabled",
  "CpuEngPerfBias": "Balanced Performance",
  "TPMControl": "Enabled",
  "LomOpromControlPort0": "Enabled",
  "IPV6PXE": "Disabled",
  "LLCPrefetch": "Disabled",
  "CiscoAdaptiveMemTraining": "Disabled",
  "PackageCstateLimit": "C0 C1 State",
  "PcieSlotMLOMOptionROM": "Enabled",
  "LomOpromControlPort1": "Enabled",
  "XPTPrefetch": "Disabled",
  "DcuStreamerPrefetch": "Disabled",
  "IntelVT": "Enabled",
  "PartialMirrorValue3": "0000",
  "TXTSupport": "Disabled",
  "TerminalType": "VT100",
  "ConsoleRedir": "COM 0",
  "CiscoDebugLevel": "Maximum",
  "PcieSlotFrontNvme1LinkSpeed": "Auto",
  "ExecuteDisable": "Enabled",
  "CiscoOpromLaunchOptimization": "Enabled",
  "IntelVTD": "Enabled",
  "AllLomPortControl": "Enabled",
  "PcieSlotMRAIDOptionROM": "Enabled",
  "IntelSpeedSelect": "Base",
  "VgaPriority": "Onboard",
  "UsbLegacySupport": "Enabled",
  "PowerOnPassword": "Disabled",
  "SelectPprType": "Hard PPR",
  "PcieSlotFrontNvme2LinkSpeed": "Auto",
  "LocalX2Apic": "Disabled",
  "HardwarePrefetch": "Enabled",
  "OSBootWatchdogTimer": "Enabled",
  "EnhancedIntelSpeedStep": "Enabled"
 },
 "Name": "BiosToken",
 "Description": "BIOS Configuration Current Settings",
 "Actions": {
  "#Bios.ResetBios": {
   "target": "/redfish/v1/Systems/WZP21330G5B/Bios/Actions/Bios.ResetBios"
  }
 }
}
```

Retrieving Default Values of BIOS Tokens

Request

```
curl -k -u admin:password https://10.10.10.10/redfish/v1/Registries/
CiscoBiosAttributeRegistry.v1_0_0/BiosAttributeRegistry.json
```

Response

Shows all the BIOS Token details including their default values. The following examples shows only two tokens.


```
{
    "SupportedSystems": [
        {
            "FirmwareVersion": "4.1(1fS4)",
            "ProductName": "UCS C220 M5L",
            "SystemId": "WZP21330G5B"
        }
    ],
    "Id": "BiosAttributeRegistry",
    "OwningEntity": "Cisco Systems Inc.",
    "Name": "BIOS Attribute Registry",
    "@odata.context":
"/redfish/v1/$metadata#Registries/Members/$entity/BiosAttributeRegistry",
    "@odata.type": "#AttributeRegistry.v1_2_1.AttributeRegistry",
    "RegistryPrefix": "CiscoBiosAttributeRegistry.v1_0_0",
    "@odata.id":
"/redfish/v1/Registries/CiscoBiosAttributeRegistry.v1_0_0/BiosAttributeRegistry",
    "RegistryEntries": {
        "Attributes": [            {
                "DefaultValue": "Enabled",
                "WriteOnly": false,
                "ResetRequired": true,
                "Hidden": false,
                "DisplayName": "Intel Virtualization Technology",
                "IsSystemUniqueProperty": true,
                "AttributeName": "IntelVT",
                "Immutable": false,
                "Value": [
                    {
                        "ValueName": "Enabled",
                        "ValueDisplayName": "Enabled"
                    },
                    {
                        "ValueName": "Disabled",
                        "ValueDisplayName": "Disabled"
                    }
                ],
                "ReadOnly": false,
                "MinLength": 1,
                "MaxLength": 64,
                "Type": "String"
            },
            {
                "DefaultValue": "Auto",
                "WriteOnly": false,
                "ResetRequired": true,
                "Hidden": false,
                "DisplayName": "IMC Interleaving",
```

```
                "IsSystemUniqueProperty": true,
                "AttributeName": "IMCInterleave",
                "Immutable": false,
                "Value": [
                    {
                        "ValueName": "Auto",
                        "ValueDisplayName": "Auto"
                    },
                    {
                        "ValueName": "1-way Interleave",
                        "ValueDisplayName": "1-way Interleave"
                    },
                    {
                        "ValueName": "2-way Interleave",
                        "ValueDisplayName": "2-way Interleave"
                    }
                ],
                "ReadOnly": false,
                "MinLength": 1,
                "MaxLength": 64,
                "Type": "String"
            },
  <SNIP>
        ]
    },
    "RegistryVersion": "1.0.0",
    "Language": "en"
}
```


Using Platform-Default to Configure BIOS Parameters to Default Values

Request

```
curl -k -u admin:password https://10.10.10.10/redfish/v1/Systems/< SerialNumber>/
Bios -XPATCH -d '{"SelectMemoryRAS":"default"}'
```

Response


```
{
 "Id": "BiosToken",
 "AttributeRegistry": "CiscoBiosAttributeRegistry.v1_0_0",
 "Attributes": {
  "ProcessorCMCI": "Enabled",
  "IMCInterleave": "1-way Interleave",
  "OSBootWatchdogTimerTimeout": "10 minutes",
  "MemorySizeLimit": "00000",
  "pSATA": "LSI SW RAID",
  "NUMAOptimize": "Enabled",
  "cdnEnable": "Enabled",
  "UsbPortFront": "Enabled",
  "PartialMirrorValue2": "0000",
  "PcieSlotMLOMLinkSpeed": "Auto",
  "CPUPerformance": "Custom",
  "PCIeRASSupport": "Enabled",
  "UsbPortRear": "Enabled",
  "IntelHyperThread": "Enabled",
  "SataModeSelect": "AHCI",
  "PcieSlot1LinkSpeed": "Auto",
```

```
"SelectMemoryRAS": "Mirror Mode 1LM",
"CoherencySupport": "Disabled",
"CoreMultiProcessing": "All",
"PartialMirrorModeConfig": "Disabled",
"FRB_2": "Enabled",
"FlowCtrl": "None",
"PcieSlotN1OptionROM": "Enabled",
"PwrPerfTuning": "OS",
"VMDEnable": "Disabled",
"PatrolScrub": "Enabled",
"BootPerformanceMode": "Max Performance",
"WorkLdConfig": "Balanced",
"PcieSlot1OptionROM": "Enabled",
"DcuIpPrefetch": "Enabled",
"PsdCoordType": "HW ALL",
"ProcessorC6Report": "Disabled",
"IPV4PXE": "Enabled",
"PcieSlot2LinkSpeed": "Auto",
"NetworkStack": "Enabled",
"PartialMirrorValue4": "0000",
"PcieSlotMRAIDLinkSpeed": "Auto",
"PartialMirrorValue1": "0000",
"PcieSlotN2OptionROM": "Enabled",
"ATS": "Enabled",
"OSBootWatchdogTimerPolicy": "Reset",
"PartialMirrorPercent": "00.00",
"UsbPortSdCard": "Enabled",
"UsbPortInt": "Enabled",
"DCPMMFirmwareDowngrade": "Disabled",
"UsbPortKVM": "Enabled",
"KTIPrefetch": "Enabled",
"BmeDmaMitigation": "Disabled",
"PcieSlot2OptionROM": "Enabled",
"IntelTurboBoostTech": "Enabled",
"EPPProfile": "Balanced Performance",
"AutoCCState": "Disabled",
"EnergyEfficientTurbo": "Disabled",
"ProcessorC1E": "Disabled",
"SNC": "Enabled",
"AdjacentCacheLinePrefetch": "Enabled",
"CpuHWPM": "HWPM Native Mode",
"BaudRate": "19.2k",
"MemoryMappedIOAbove4GB": "Enabled",
"CpuEngPerfBias": "Balanced Performance",
"TPMControl": "Enabled",
"LomOpromControlPort0": "Enabled",
"IPV6PXE": "Disabled",
"LLCPrefetch": "Disabled",
"CiscoAdaptiveMemTraining": "Disabled",
"PackageCstateLimit": "C0 C1 State",
"PcieSlotMLOMOptionROM": "Enabled",
"LomOpromControlPort1": "Enabled",
"XPTPrefetch": "Disabled",
"DcuStreamerPrefetch": "Disabled",
"IntelVT": "Enabled",
"PartialMirrorValue3": "0000",
"TXTSupport": "Disabled",
"TerminalType": "VT100",
"ConsoleRedir": "COM 0",
"CiscoDebugLevel": "Maximum",
"PcieSlotFrontNvme1LinkSpeed": "Auto",
"ExecuteDisable": "Enabled",
"CiscoOpromLaunchOptimization": "Enabled",
"IntelVTD": "Enabled",
```

```
  "AllLomPortControl": "Enabled",
  "PcieSlotMRAIDOptionROM": "Enabled",
  "IntelSpeedSelect": "Base",
  "VgaPriority": "Onboard",
  "UsbLegacySupport": "Enabled",
  "PowerOnPassword": "Disabled",
  "SelectPprType": "Hard PPR",
  "PcieSlotFrontNvme2LinkSpeed": "Auto",
  "LocalX2Apic": "Disabled",
  "HardwarePrefetch": "Enabled",
  "OSBootWatchdogTimer": "Enabled",
  "EnhancedIntelSpeedStep": "Enabled"
 },
 "Name": "BiosToken",
 "Description": "BIOS Configuration Current Settings",
 "Actions": {
  "#Bios.ResetBios": {
   "target": "/redfish/v1/Systems/WZP21330G5B/Bios/Actions
/Bios.ResetBios"
  }
 }
}
```

Using TFTP to Export Cisco IMC Configuration Data

Request to export CIMC Configuration using TFTP

```
curl -k -u admin:password https://10.10.10.10/redfish/v1/Managers/CIMC/
Actions/Oem/CiscoUCSExtensions.ExportBmcConfig -XPOST -d '{
"Protocol":"TFTP",
"RemoteHostname":"10.10.10.10",
"RemotePath":"Config.xml",
"Passphrase":"Cisco"
}'
```

Response

Response is a link to the async task created:

```
{
 "Messages": [],
 "Id": "55",
 "Name": "Export CIMC Configuration",
 "StartTime": "05/28/2020 15:24:52 IST",
 "TaskState": "Running",
 "@odata.id": "/redfish/v1/TaskService/Tasks/55",
 "@odata.type": "#Task.v1_4_0.Task"
}
```

Request to Check the Status of the Export Config Task

```
curl -k -u admin:password https://10.10.10.10/redfish/v1/TaskService/Tasks/55
```

Response

```
{
 "@odata.id": "/redfish/v1/TaskService/Tasks/55",
 "@odata.context": "/redfish/v1/$metadata#TaskService/Tasks/Members/$entity",
 "@odata.type": "#Task.v1_4_0.Task",
 "Id": "55",
 "Name": "Export CIMC Configuration",
```

```
 "StartTime": "05/28/2020 15:24:52 IST",
 "EndTime": "05/28/2020 15:25:03 IST",
 "PercentComplete": 100,
 "TaskState": "Completed",
 "TaskStatus": "OK",
 "Messages": [{
   "MessageId": "Base.1.4.Success",
   "Message": "Successfully Completed Request"
  }],
 "TaskMonitor": "/redfish/v1/TaskService/Oem/TaskMonitor/55"
}
```


Using TFTP to Import Cisco IMC Configuration Data

Request to import CIMC Configuration using TFTP

```
curl -k -u admin:password https://10.10.10.10/redfish/v1/Managers/
CIMC/Actions/Oem/CiscoUCSExtensions.ImportBmcConfig -XPOST -d '{
"Protocol":"TFTP",
"RemoteHostname":"10.10.10.10",
"RemotePath":"Config.xml",
"Passphrase":"Cisco"
}
```

Response


```
{
 "Messages": [],
 "Id": "57",
 "Name": "Import CIMC Configuration",
 "StartTime": "05/28/2020 15:35:26 IST",
 "TaskState": "Running",
 "@odata.id": "/redfish/v1/TaskService/Tasks/57",
 "@odata.type": "#Task.v1_4_0.Task"
}
```


Request to Check Status of Import Config Task

```
curl -k -u admin:password https://10.10.10.10/redfish/v1/TaskService/Tasks/57
```

Response


```
{
 "@odata.id": "/redfish/v1/TaskService/Tasks/57",
 "@odata.context": "/redfish/v1/$metadata#TaskService/Tasks/Members/$entity",
 "@odata.type": "#Task.v1_4_0.Task",
 "Id": "57",
 "Name": "Import CIMC Configuration",
 "StartTime": "05/28/2020 15:35:26 IST",
 "PercentComplete": 6,
 "TaskState": "Running",
 "Messages": [],
 "TaskMonitor": "/redfish/v1/TaskService/Oem/TaskMonitor/57"
}
```

Using TFTP to Export Cisco IMC Technical Support Data

Request to export CIMC Tech-support Data using TFTP

```
curl -k -u admin:password https://10.10.10.10/redfish/v1/Managers/
CIMC/Actions/Oem/CiscoUCSExtensions.BmcTechSupportExport -XPOST -d '{
"Protocol":"TFTP",
"RemoteHostname":"10.10.10.10",
"RemotePath":"TechSupport.tar.gz"
}'
```

Response

```
{
 "Messages": [],
 "Id": "59",
 "Name": "Technical Support Collection",
 "StartTime": "05/28/2020 15:47:59 IST",
 "TaskState": "Running",
 "@odata.id": "/redfish/v1/TaskService/Tasks/59",
 "@odata.type": "#Task.v1_4_0.Task"
}
```

Request to Check Status of Export Tech-support Task

```
curl -k -u admin:password https://10.10.10.10/redfish/v1/TaskService/Tasks/59
```

Response

```
{
 "@odata.id": "/redfish/v1/TaskService/Tasks/59",
 "@odata.context": "/redfish/v1/$metadata#TaskService/Tasks/Members/$entity",
 "@odata.type": "#Task.v1_4_0.Task",
 "Id": "59",
 "Name": "Technical Support Collection",
 "StartTime": "05/28/2020 15:47:59 IST",
 "PercentComplete": 3,
 "TaskState": "Running",
 "Messages": [],
 "TaskMonitor": "/redfish/v1/TaskService/Oem/TaskMonitor/59"
}
```

Retrieving CPU Product ID Details

Request to Retrieve the Different CPUs on a Server

```
curl -k -u admin:password https://10.10.10.10/redfish/v1/Systems/ WZP21330G5B/Processors
```

Response

```
{
 "@odata.id": "/redfish/v1/Systems/WZP21330G5B/Processors",
 "@odata.context": "/redfish/v1/$metadata#Systems/Members/$entity/Processors",
 "@odata.type": "#ProcessorCollection.ProcessorCollection",
 "Description": "Collection of Processors for this system",
 "Name": "Processors Collection",
 "Members": [{
   "@odata.id": "/redfish/v1/Systems/WZP21330G5B/Processors/CPU2"
```

```
  }, {
   "@odata.id": "/redfish/v1/Systems/WZP21330G5B/Processors/CPU1"
  }],
 "Members@odata.count": 2
}
```

Request to Retrieve Details for each CPU

```
curl -k -u admin:password https://10.10.10.10/redfish/v1/Systems/WZP21330G5B/Processors/CPU1
```

Response

```
{
 "@odata.id": "/redfish/v1/Systems/WZP21330G5B/Processors/CPU1",
 "@odata.context": "/redfish/v1/$metadata#Systems/Members/$entity/Processors/
Members/$entity",
 "@odata.type": "#Processor.v1_5_0.Processor",
 "InstructionSet": "x86-64",
 "TotalThreads": 10,
 "ProcessorArchitecture": "x86",
 "Status": {
  "State": "Enabled",
  "Health": "OK"
 },
 "ProcessorType": "CPU",
 "Name": "CPU1",
 "ProcessorId": {
  "Step": "4",
  "VendorId": "Intel(R) Corporation",
  "EffectiveModel": "85",
  "EffectiveFamily": "6"
 },
 "TotalEnabledCores": 10,
 "TotalCores": 10,
 "Id": "1",
 "Description": "Intel(R) Xeon(R) Silver 4114 2.20 GHz 85W 10C 13.75MB Cache
DDR4 2400MHz 768GB",
 "Manufacturer": "Intel(R) Corporation",
 "MaxSpeedMHz": 4000,
 "Model": "Intel(R) Xeon(R) Silver 4114 CPU @ 2.20GHz",
 "Socket": "CPU1"
}
```

Retrieving IMM/ Memory Unit Product ID Details

Request to Retrieve all Memory Units

```
curl -k -u admin:password https://10.10.10.10/redfish/v1/Systems/<SerialNumber>/Memory/
```

Response

```
{
 "@odata.id": "/redfish/v1/Systems/WZP21330G5B/Memory",
 "@odata.context": "/redfish/v1/$metadata#Systems/Members/$entity/Memory",
 "@odata.type": "#MemoryCollection.MemoryCollection",
 "Description": "Collection of Memory resource instances for this system",
 "Name": "Memory Collection",
 "Members": [{
   "@odata.id": "/redfish/v1/Systems/WZP21330G5B/Memory/DIMM_A1"
  }, {
   "@odata.id": "/redfish/v1/Systems/WZP21330G5B/Memory/DIMM_H1"
```

```
  }, {
   "@odata.id": "/redfish/v1/Systems/WZP21330G5B/Memory/DIMM_G1"
  }, {
   "@odata.id": "/redfish/v1/Systems/WZP21330G5B/Memory/DIMM_B1"
  }],
 "Members@odata.count": 4
}
```


Request to get Details of a Particular Memory Unit

```
curl -k -u admin:password https://10.10.10.10/redfish/v1/Systems/<SerialNumber>/
Memory/DIMM_G1
```

Response


```
{
 "@odata.id": "/redfish/v1/Systems/WZP21330G5B/Memory/DIMM_G1",
 "@odata.context": "/redfish/v1/$metadata#Systems/Members/$entity/Memory/Members/$entity",
 "@odata.type": "#Memory.v1_7_0.Memory",
 "Description": "Computer Memory",
 "Links": {
  "Chassis": {
   "@odata.id": "/redfish/v1/Chassis/1"
  }
 },
 "SerialNumber": "3612D2AF",
 "MemoryType": "DRAM",
 "MemoryDeviceType": "DDR4",
 "Id": "13",
 "DeviceLocator": "DIMM_G1",
 "SecurityCapabilities": {
  "PassphraseCapable": false
 },
 "DataWidthBits": 64,
 "Status": {
  "State": "Enabled",
  "Health": "OK"
 },
 "Name": "DIMM_G1",
 "OperatingMemoryModes": ["Volatile"],
 "MemoryMedia": ["DRAM"],
 "PartNumber": "M393A2G40EB2-CTD    ",
 "Manufacturer": "0xCE00",
 "OperatingSpeedMhz": 2666,
 "CapacityMiB": 16384,
 "MemoryLocation": {
  "Channel": 0,
  "Slot": 0,
  "Socket": 1
 }
}
```


Retrieving PCI Adapter Product ID Details

Request to Get List of PCI Adapters

```
curl -k -u admin:password https://10.10.10.10/redfish/v1/Systems/<SerialNumber>
```

Response

```
{
 "@odata.id": "/redfish/v1/Systems/WZP21330G5B",
 "@odata.context": "/redfish/v1/$metadata#Systems/Members/$entity",
 "@odata.type": "#ComputerSystem.v1_7_0.ComputerSystem",
 "Processors": {
  "@odata.id": "/redfish/v1/Systems/WZP21330G5B/Processors"
 },
 "SimpleStorage": {
  "@odata.id": "/redfish/v1/Systems/WZP21330G5B/SimpleStorage"
 },
 "Storage": {
  "@odata.id": "/redfish/v1/Systems/WZP21330G5B/Storage"
 },
 "Memory": {
  "@odata.id": "/redfish/v1/Systems/WZP21330G5B/Memory"
 },
 "MemoryDomains": {
  "@odata.id": "/redfish/v1/Systems/WZP21330G5B/MemoryDomains"
 },
 "NetworkInterfaces": {
  "@odata.id": "/redfish/v1/Systems/WZP21330G5B/NetworkInterfaces"
 },
 "Bios": {
  "@odata.id": "/redfish/v1/Systems/WZP21330G5B/Bios"
 },
 "SecureBoot": {
  "@odata.id": "/redfish/v1/Systems/WZP21330G5B/SecureBoot"
 },
 "EthernetInterfaces": {
  "@odata.id": "/redfish/v1/Systems/WZP21330G5B/EthernetInterfaces"
 },
 "LogServices": {
  "@odata.id": "/redfish/v1/Systems/WZP21330G5B/LogServices"
 },
 "Links": {
  "Chassis": [{
    "@odata.id": "/redfish/v1/Chassis/1"
   }],
  "CooledBy": [{
    "@odata.id": "/redfish/v1/Chassis/1/Thermal"
   }],
  "ManagedBy": [{
    "@odata.id": "/redfish/v1/Managers/CIMC"
   }],
  "PoweredBy": [{
    "@odata.id": "/redfish/v1/Chassis/1/Power"
   }]
 },
 "SerialNumber": "WZP21330G5B",
 "Boot": {
  "BootSourceOverrideTarget": "None",
  "BootSourceOverrideTarget@Redfish.AllowableValues": ["None", "Pxe",
"Floppy", "Cd", "Hdd", "BiosSetup", "Diags"],
  "BootSourceOverrideEnabled@Redfish.AllowableValues": ["Once", "Continuous",
"Disabled"],
  "BootSourceOverrideEnabled": "Disabled"
 },
 "Id": "WZP21330G5B",
 "AssetTag": "Test assetTagRedfish",
 "PowerState": "On",
 "SystemType": "Physical",
 "ProcessorSummary": {
  "Model": "Intel(R) Xeon(R) Silver 4114 CPU @ 2.20GHz",
  "Count": 2
```

```
},
"HostName": "test-hostname-kr-webcimc",
"MemorySummary": {
 "TotalSystemMemoryGiB": 64,
 "Status": {
  "HealthRollup": "OK",
  "Health": "OK"
 }
},
"PCIeDevices@odata.count": 6,
"PCIeFunctions@odata.count": 6,
"Description": "PatchName",
"UUID": "1C61EBC6-8E10-4A9B-90CE-A4C03913EA56",
"Status": {
 "State": "Enabled",
 "Health": "OK"
},
"PCIeDevices": [{
  "@odata.id": "/redfish/v1/Systems/WZP21330G5B/PCIeDevices/1"
 }, {
  "@odata.id": "/redfish/v1/Systems/WZP21330G5B/PCIeDevices/2"
 }, {
  "@odata.id": "/redfish/v1/Systems/WZP21330G5B/PCIeDevices/FRONT-NVME-2"
 }, {
  "@odata.id": "/redfish/v1/Systems/WZP21330G5B/PCIeDevices/MLOM"
 }, {
  "@odata.id": "/redfish/v1/Systems/WZP21330G5B/PCIeDevices/MRAID"
 }, {
  "@odata.id": "/redfish/v1/Systems/WZP21330G5B/PCIeDevices/L"
 }],
"Name": "UCS C220 M5L",
"HostWatchdogTimer": {
 "Status": {
  "State": "Enabled"
 },
 "WarningAction": "None",
 "FunctionEnabled": true,
 "TimeoutAction": "ResetSystem"
},
"PCIeFunctions": [{
  "@odata.id": "/redfish/v1/Systems/WZP21330G5B/PCIeFunctions/1"
 }, {
  "@odata.id": "/redfish/v1/Systems/WZP21330G5B/PCIeFunctions/2"
 }, {
  "@odata.id": "/redfish/v1/Systems/WZP21330G5B/PCIeFunctions/FRONT-NVME-2"
 }, {
  "@odata.id": "/redfish/v1/Systems/WZP21330G5B/PCIeFunctions/MLOM"
 }, {
  "@odata.id": "/redfish/v1/Systems/WZP21330G5B/PCIeFunctions/MRAID"
 }, {
  "@odata.id": "/redfish/v1/Systems/WZP21330G5B/PCIeFunctions/L"
 }],
"Oem": {
 "Cisco": {
  "PostCompletionStatus": true,
  "SystemEffectiveMemory": 64,
  "SystemEffectiveSpeed": 2400
 }
},
"TrustedModules": [{
  "InterfaceType": "TPM2_0",
  "InterfaceTypeSelection": "BiosSetting",
  "FirmwareVersion": "2.0",
```

```
   "Status": {
    "Health": "OK"
   }
  }],
 "PowerRestorePolicy": "LastState",
 "Manufacturer": "Cisco Systems Inc",
 "IndicatorLED": "Off",
 "Model": "UCSC-C220-M5L",
 "BiosVersion": "C220M5.4.1.1.61.0504202214",
 "Actions": {
  "#ComputerSystem.Reset": {
   "target": "/redfish/v1/Systems/WZP21330G5B/Actions/
ComputerSystem.Reset",
   "ResetType@Redfish.AllowableValues": ["On", "ForceOff",
"GracefulShutdown", "GracefulRestart", "ForceRestart", "Nmi", "PowerCycle"]
  }
 }
}
```


Request to Get Information on Each PCI Adapter

```
curl -k -u admin:password https://10.10.10.10/redfish/v1/Systems/<SerialNumber>/
PCIeFunctions/MLOM
```

Response


```
{
 "@odata.id": "/redfish/v1/Systems/WZP21330G5B/PCIeFunctions/MLOM",
 "@odata.context": "/redfish/v1/$metadata#Systems/Members/$entity/PCIeFunctions/
Members/$entity",
 "@odata.type": "#PCIeFunction.v1_2_1.PCIeFunction",
 "Links": {
  "PCIeDevice": {
   "@odata.id": "/redfish/v1/Systems/WZP21330G5B/PCIeDevices/MLOM"
  },
  "EthernetInterfaces@odata.count": 0,
  "StorageControllers@odata.count": 0,
  "Drives@odata.count": 0,
  "NetworkDeviceFunctions": [{
    "@odata.id": "/redfish/v1/Chassis/1/NetworkAdapters/MLOM/
NetworkDeviceFunctions/eth0"
   }, {
    "@odata.id": "/redfish/v1/Chassis/1/NetworkAdapters/MLOM/
NetworkDeviceFunctions/eth1"
   }, {
    "@odata.id": "/redfish/v1/Chassis/1/NetworkAdapters/MLOM/
NetworkDeviceFunctions/fc0"
   }, {
    "@odata.id": "/redfish/v1/Chassis/1/NetworkAdapters/MLOM/
NetworkDeviceFunctions/fc1"
   }],
  "NetworkDeviceFunctions@odata.count": 4
 },
 "VendorId": "0x1137",
 "Description": "This gives information of PCIeFunctions on the system",
 "DeviceId": "0x0042",
 "Id": "MLOM",
 "SubsystemId": "0x0218",
 "Name": "Cisco UCS VIC 1457 MLOM",
 "SubsystemVendorId": "0x1137"
}
```

Updating Cisco IMC Firmware

Request to Start CIMC Firmware Update

```
curl -k -u admin:password https://10.10.10.10/redfish/v1/UpdateService/
Actions/UpdateService.SimpleUpdate -XPOST -d '{
"Targets":["/redfish/v1/UpdateService/FirmwareInventory/CIMC"],
"TransferProtocol":"SCP",
"ImageURI":"10.10.10.10:/path/to/bin/file.bin",
"Username":"username",
"Password":"password"
}'
```

Response

Response is a link to the async task created:

```
{
 "Messages": [],
 "Id": "53",
 "Name": "BMC Firmware Update",
 "StartTime": "05/28/2020 14:29:39 IST",
 "TaskState": "Running",
 "@odata.id": "/redfish/v1/TaskService/Tasks/53",
 "@odata.type": "#Task.v1_4_0.Task"
}
```

Request to Check Firmware Update Status

```
curl -k -u admin:password https://10.10.10.10/redfish/v1/TaskService/Tasks/53
```

Response

```
{
 "@odata.id": "/redfish/v1/TaskService/Tasks/53",
 "@odata.context": "/redfish/v1/$metadata#TaskService/Tasks/Members/$entity",
 "@odata.type": "#Task.v1_4_0.Task",
 "Id": "53",
 "Name": "BMC Firmware Update",
 "StartTime": "05/28/2020 14:29:39 IST",
 "PercentComplete": 5,
 "TaskState": "Running",
 "Messages": [],
 "TaskMonitor": "/redfish/v1/TaskService/Oem/TaskMonitor/53"
}
```

Updating BIOS Firmware

Request to Start BIOS Firmware Update

```
curl -k -u admin:password https://10.10.10.10/redfish/v1/UpdateService/
Actions/UpdateService.SimpleUpdate -XPOST -d '{
"Targets":["/redfish/v1/UpdateService/FirmwareInventory/BIOS"],
"TransferProtocol":"SCP",
"ImageURI":"10.10.10.10:/path/to/Bios/file/bios.cap",
"Username":"username",
"Password":"password"
}'
```

Response

```
{
 "Messages": [],
 "Id": "54",
 "Name": "BIOS Firmware Update",
 "StartTime": "05/28/2020 14:39:14 IST",
 "TaskState": "Running",
 "@odata.id": "/redfish/v1/TaskService/Tasks/54",
 "@odata.type": "#Task.v1_4_0.Task"
}
```

Request to Check Status of Firmware Update

```
curl -k -u admin:password https://10.10.10.10/redfish/v1/TaskService/Tasks/54
```

Response

```
{
 "@odata.id": "/redfish/v1/TaskService/Tasks/54",
 "@odata.context": "/redfish/v1/$metadata#TaskService/Tasks/Members/$entity",
 "@odata.type": "#Task.v1_4_0.Task",
 "Id": "54",
 "Name": "BIOS Firmware Update",
 "StartTime": "05/28/2020 14:39:14 IST",
 "PercentComplete": 29,
 "TaskState": "Running",
 "Messages": [],
 "TaskMonitor": "/redfish/v1/TaskService/Oem/TaskMonitor/54"
}
```

Configuring VIC Adapter Parameters

Get Network Adapter of a VIC

Note This request is not supported for Cisco UCS C220 M4, C240 M4, C460 M4, and S3X60 servers.

VIC 13XX cards are supported from 4.1(3b) release onwards.

Request

```
curl   -k -u admin:Password https://10.10.10.10/redfish/v1/Chassis/1
/NetworkAdapters/UCSC-PCIE-C25Q-04_FCH233770L7
```

Response

```
{
        "Id":   "UCSC-PCIE-C25Q-04_FCH233770L7",
        "Name": "UCS VIC 1455",
        "Manufacturer": "Cisco Systems Inc",
        "SerialNumber": "FCH233770L7",
        "Model":        "UCSC-PCIE-C25Q-04",
        "PartNumber":   "73-18418-06",
        "Actions":      {
                "#NetworkAdapter.ResetSettingsToDefault":       {
                        "target":       "/redfish/v1/Chassis/1/NetworkAdapters/
UCSC-PCIE-C25Q-04_FCH233770L7/Actions/NetworkAdapter.ResetSettingsToDefault"
                }
```

```
        },
        "Controllers":  [{
                        "FirmwarePackageVersion":       "5.1(2.30)",
                        "Links":        {
                                "NetworkPorts": [{
                                                "@odata.id":    "/redfish/v1/Chassis/1/
NetworkAdapters/UCSC-PCIE-C25Q-04_FCH233770L7/NetworkPorts/Port-1"
                                        }, {
                                                "@odata.id":    "/redfish/v1/Chassis/1/
NetworkAdapters/UCSC-PCIE-C25Q-04_FCH233770L7/NetworkPorts/Port-2"
                                        }, {
                                                "@odata.id":    "/redfish/v1/Chassis/1/
NetworkAdapters/UCSC-PCIE-C25Q-04_FCH233770L7/NetworkPorts/Port-3"
                                        }, {
                                                "@odata.id":    "/redfish/v1/Chassis/1/
NetworkAdapters/UCSC-PCIE-C25Q-04_FCH233770L7/NetworkPorts/Port-4"
                                        }],
                                "NetworkPorts@odata.count":     4,
                                "NetworkDeviceFunctions":       [{
                                                "@odata.id":    "/redfish/v1/Chassis/1/
NetworkAdapters/UCSC-PCIE-C25Q-04_FCH233770L7/NetworkDeviceFunctions/eth0"
                                        }, {
                                                "@odata.id":    "/redfish/v1/Chassis/1/
NetworkAdapters/UCSC-PCIE-C25Q-04_FCH233770L7/NetworkDeviceFunctions/eth1"
                                        }, {
                                                "@odata.id":    "/redfish/v1/Chassis/1/
NetworkAdapters/UCSC-PCIE-C25Q-04_FCH233770L7/NetworkDeviceFunctions/fc0"
                                        }, {
                                                "@odata.id":    "/redfish/v1/Chassis/1/
NetworkAdapters/UCSC-PCIE-C25Q-04_FCH233770L7/NetworkDeviceFunctions/fc1"
                                        }],
                                "NetworkDeviceFunctions@odata.count":   4
                        },
                        "ControllerCapabilities":       {
                                "NetworkPortCount":     4,
                                "NetworkDeviceFunctionCount":   4
                        },
                        "Location":     {
                                "PartLocation": {
                                        "LocationType": "Slot",
                                        "ServiceLabel": "SlotID:1"
                                }
                        }
                }],
        "Oem":  {
                "Cisco":        {
                        "@odata.type":  "#CiscoUCSExtensions.v1_0_0.CiscoUCSExtensions",
                        "BaseMac":      "5C:71:0D:04:44:B4",
                        "VicConfiguration":     {
                                "LldpEnabled":  true,
                                "NivEnabled":   false,
                                "FipEnabled":   true,
                                "PhysicalNicModeEnabled":       false,
                                "AzureQosEnabled":      false,
                                "PortChannelEnabled":   true,
                                "ConfigurationPending": false
                        }
                }
        },
       "@odata.id":    "/redfish/v1/Chassis/1/NetworkAdapters/UCSC-PCIE-C25Q-04_FCH233770L7",

        "@odata.type":  "#NetworkAdapter.v1_2_0.NetworkAdapter",
        "@odata.context":       "/redfish/v1/$metadata#NetworkAdapter.NetworkAdapter",
        "NetworkDeviceFunctions":       {
```

```
                "@odata.id":    "/redfish/v1/Chassis/1/NetworkAdapters/
UCSC-PCIE-C25Q-04_FCH233770L7/NetworkDeviceFunctions"
        },
        "NetworkPorts": {
                "@odata.id":    "/redfish/v1/Chassis/1/NetworkAdapters/
UCSC-PCIE-C25Q-04_FCH233770L7/NetworkPorts"
        },
        "Assembly":     {
                "@odata.id":    "/redfish/v1/Chassis/1/NetworkAdapters/
UCSC-PCIE-C25Q-04_FCH233770L7/Assembly"
        }
}
```

Configuring Network Adapter settings

```
curl -X PATCH -k -u admin:password https://10.10.10.10/redfish/v1/Chassis/1/
NetworkAdapters/UCSC-PCIE-C25Q-04_FCH233770L7/ -d '{"Oem":{"Cisco":
{"VicConfiguration":{"LldpEnabled":false}}}}

curl -X PATCH -k -u admin:password https://10.10.10.10/redfish/v1/Chassis/1/
NetworkAdapters/UCSC-PCIE-C25Q-04_FCH233770L7/ -d '{"Oem":{"Cisco":
{"VicConfiguration":{"FipEnabled":false}}}}

 curl -X PATCH -k -u admin:password https://10.10.10.10/redfish/v1/Chassis/1/
NetworkAdapters/UCSC-PCIE-C25Q-04_FCH233770L7/ -d '{"Oem":{"Cisco":
{"VicConfiguration":{"PortChannelEnabled":false}}}}

curl -X PATCH -k -u admin:password https://10.10.10.10/redfish/v1/Chassis/1/
NetworkAdapters/UCSC-PCIE-C25Q-04_FCH233770L7/ -d '{"Oem":{"Cisco":
{"VicConfiguration":{"NivEnabled":true}}}}

curl -X PATCH -k -u admin:password https://10.10.10.10/redfish/v1/Chassis/1/
NetworkAdapters/UCSC-PCIE-C25Q-04_FCH233770L7/ -d '{"Oem":{"Cisco":
{"VicConfiguration":{"PhysicalNicModeEnabled":       true }}}}

curl -X PATCH -k -u admin:password https://10.10.10.10/redfish/v1/Chassis/1/
NetworkAdapters/UCSC-PCIE-C25Q-04_FCH233770L7/ -d '{"Oem":{"Cisco":
{"VicConfiguration":{"AzureQosEnabled":      false }}}}

curl -X PATCH -k -u admin:password https://10.10.10.10/redfish/v1/Chassis/1/
NetworkAdapters/UCSC-PCIE-C25Q-04_FCH233770L7/ -d '{"Oem":
{"Cisco":{"VicConfiguration":{ "GeneveOptionsEnabled": false }}}}
```

Retrieving VIC Adapter Uplink Port Details

Note This request is not supported for Cisco UCS C220 M4, C240 M4, C460 M4 and S3X60 servers.

VIC 13XX cards are supported from 4.1(3b) release onwards.

Get NetworkPort Collection

```
curl -k -u admin:password https://10.10.10.10/redfish/v1/Chassis/1
/NetworkAdapters/UCSC-PCIE-C25Q-04_FCH233770L7/NetworkPorts
{
        "Members":      [{
                        "@odata.id":    "/redfish/v1/Chassis/1/NetworkAdapters/
UCSC-PCIE-C25Q-04_FCH233770L7/NetworkPorts/Port-1"
```

```
                }, {
                        "@odata.id":    "/redfish/v1/Chassis/1/NetworkAdapters/
UCSC-PCIE-C25Q-04_FCH233770L7/NetworkPorts/Port-2"
                }, {
                        "@odata.id":    "/redfish/v1/Chassis/1/NetworkAdapters/
UCSC-PCIE-C25Q-04_FCH233770L7/NetworkPorts/Port-3"
                }, {
                        "@odata.id":    "/redfish/v1/Chassis/1/NetworkAdapters/
UCSC-PCIE-C25Q-04_FCH233770L7/NetworkPorts/Port-4"
                }],
        "Members@odata.count":  4,
        "@odata.id":    "/redfish/v1/Chassis/1/NetworkAdapters/
UCSC-PCIE-C25Q-04_FCH233770L7/NetworkPorts",
        "@odata.type":  "#NetworkPortCollection.NetworkPortCollection",
        "@odata.context":       "/redfish/v1/$metadata#NetworkPortCollection.
NetworkPortCollection",
        "Description":  "Collection of NetworkPort resource instances for this system",
        "Name": "NetworkPort Collection"
}
```

Get Individual Network Port Details

```
curl -k -u admin:password https://10.10.10.10/redfish/v1/Chassis/1/
NetworkAdapters/UCSC-PCIE-C25Q-04_FCH233770L7/NetworkPorts/Port-1
{
        "Id":   "Port-1",
        "Name": "Port-1",
        "PhysicalPortNumber":   "1",
        "LinkStatus":   "Down",
        "AssociatedNetworkAddresses":   ["5C:71:0D:04:44:B8"],
        "Oem":  {
                "Cisco":        {
                        "@odata.type":  "#CiscoUCSExtensions.v1_0_0.CiscoUCSExtensions",
                        "VicPort":      {
                                "AdminFecMode": "cl91",
                                "OperFecMode":  "Off",
                                "ConnectorPresent":     false,
                                "ConnectorType":        "N/A",
                                "ConnectorVendorName":  "N/A",
                                "ConnectorPartNumber":  "N/A",
                                "ConnectorPartRevision":        "N/A",
                                "ConnectorVendorPid":   "N/A"
                        }
                }
        },
        "@odata.id":    "/redfish/v1/Chassis/1/NetworkAdapters/
UCSC-PCIE-C25Q-04_FCH233770L7/NetworkPorts/Port-1",
        "@odata.type":  "#NetworkPort.v1_2_0.NetworkPort",
        "@odata.context":       "/redfish/v1/$metadata#NetworkPort.NetworkPort"
}
```

Modify Network Port Settings

```
curl -XPATCH -k -u admin:password https://10.10.10.10/redfish/v1/Chassis/1/
NetworkAdapters/ UCSC-PCIE-C25Q-04_FCH233770L7/NetworkPorts/Port-1 -d '{"Oem":
{"Cisco":{"VicPort":{"AdminFecMode”:"Off"}}}}'
```

Retrieving Adapter Ethernet Interface Details

Note This request is not supported for Cisco UCS C220 M4, C240 M4, C460 M4, and S3X60 servers.

VIC 13XX cards are supported from 4.1(3b) release onwards.

Get NetworkDeviceFunctions Collection to list all Ethernet Interfaces and Adapter Fiber Channel Interfaces

```
curl -k -u admin:password https://10.10.10.10/redfish/v1/Chassis/1/
NetworkAdapters/UCSC-PCIE-C25Q-04_FCH233770L7/NetworkDeviceunctions
{
        "Members":      [{
                        "@odata.id":    "/redfish/v1/Chassis/1/NetworkAdapters/
UCSC-PCIE-C25Q-04_FCH233770L7/NetworkDeviceFunctions/eth0"
                }, {
                        "@odata.id":    "/redfish/v1/Chassis/1/NetworkAdapters/
UCSC-PCIE-C25Q-04_FCH233770L7/NetworkDeviceFunctions/eth1"
                }, {
                        "@odata.id":    "/redfish/v1/Chassis/1/NetworkAdapters/
UCSC-PCIE-C25Q-04_FCH233770L7/NetworkDeviceFunctions/fc0"
                }, {
                        "@odata.id":    "/redfish/v1/Chassis/1/NetworkAdapters/
UCSC-PCIE-C25Q-04_FCH233770L7/NetworkDeviceFunctions/fc1"
                }],
        "Members@odata.count":  4,
        "@odata.id":    "/redfish/v1/Chassis/1/NetworkAdapters/
UCSC-PCIE-C25Q-04_FCH233770L7/NetworkDeviceFunctions",
       "@odata.type":  "#NetworkDeviceFunctionCollection.NetworkDeviceFunctionCollection",

        "@odata.context":       "/redfish/v1/$metadata#NetworkDeviceFunctionCollection.
NetworkDeviceFunctionCollection",
        "Description":  "Collection of NetworkDeviceFunction resource instances for this
system",
        "Name": "NetworkDeviceFunction Collection"
}
```

Retrieve Individual Ethernet Interface Details

```
curl -k -u admin:password https://10.10.10.10/redfish/v1/Chassis/1/
NetworkAdapters/UCSC-PCIE-C25Q-04_FCH233770L7/NetworkDeviceFunctions/eth0
{
        "Id":   "eth0",
        "Name": "eth0",
        "NetDevFuncType":       "Ethernet",
        "NetDevFuncCapabilities":       ["Ethernet", "iSCSI"],
        "Ethernet":     {
                "MACAddress":   "5C:71:0D:04:44:C0",
                "MTUSize":      1500,
                "VLAN": {
                        "VLANEnable":   false
                }
        },
        "BootMode":     "Disabled",
        "AssignablePhysicalPorts":      [{
                        "@odata.id":    "/redfish/v1/Chassis/1/NetworkAdapters/
UCSC-PCIE-C25Q-04_FCH233770L7/NetworkPorts/Port-1"
                }, {
```

```
                        "@odata.id":    "/redfish/v1/Chassis/1/NetworkAdapters/
UCSC-PCIE-C25Q-04_FCH233770L7/NetworkPorts/Port-3"
                }],
        "AssignablePhysicalPorts@odata.count":  2,
        "Links":        {
                "PhysicalPortAssignment":       {
                        "@odata.id":    "/redfish/v1/Chassis/1/NetworkAdapters/
UCSC-PCIE-C25Q-04_FCH233770L7/NetworkPorts/Port-1"
                }
        },
        "Oem":  {
                "Cisco":        {
                        "@odata.type":  "#CiscoUCSExtensions.v1_0_0.CiscoUCSExtensions",
                        "VnicConfiguration":    {
                                "UplinkPort":   0,
                                "PCIOrder":     "0.0",
                                "InterruptMode":        "Any",
                                "VlanMode":     "Trunk",
                                "Vif":  {
                                        "VifId":        0,
                                        "VifCookie":    0
                                },
                                "EthConfiguration":     {
                                        "Cdn":  "VIC-1-eth0",
                                        "TrustedClassOfServiceEnabled": false,
                                        "CompQueueCount":       5,
                                        "StandByRecoveryDly":   5,
                                        "StandByVif":   {
                                                "VifId":        0,
                                                "VifCookie":    0
                                        },
                                        "WorkQueue":    {
                                                "Count":        1,
                                                "RingSize":     256
                                        },
                                        "RecvQueue":    {
                                                "Count":        4,
                                                "RingSize":     512
                                        },
                                        "InterruptProfile":     {
                                                "Count":        8,
                                                "CoalescingTime":       125,
                                                "CoalescingType":       "Min"
                                        },
                                        "Features":     {
                                                "AdvancedFilterEnabled":        false,
                                                "ArfsEnabled":  false,
                                                "NvgreEnabled": false,
                                                "GroupInterruptEnabled":        false,
                                                "VxlanEnabled": false,
                                                "Rocev2Enabled":        false,
                                                "VmqEnabled":   false,
                                                "MultiQueueEnabled":    false,
                                                "GeneveEnabled":        false
                                        },
                                        "OffloadProfile":       {
                                                "TcpLargeReceiveEnabled":       true,
                                                "TcpSegmentEnabled":    true,
                                                "TcpRxChecksumEnabled": true,
                                                "TcpTxChecksumEnabled": true
                                        },
                                        "RssProfile":   {
                                                "RssEnabled":   true,
                                                "RssIpv4HashEnabled":   true,
```

```
                                                    "RssTcpIpv4HashEnabled":        true,
                                                    "RssIpv6HashEnabled":   true,
                                                    "RssTcpIpv6HashEnabled":        true,
                                                    "RssIpv6ExHashEnabled": false,
                                                    "RssTcpIpv6ExHashEnabled":      false,
                                                    "RssUdpIpv4HashEnabled":        false,
                                                    "RssUdpIpv6HashEnabled":        false
                                                }
                                            }
                                        }
                                    }
                                },
                                "@odata.id":    "/redfish/v1/Chassis/1/NetworkAdapters/
UCSC-PCIE-C25Q-04_FCH233770L7/NetworkDeviceFunctions/eth0",
                                "@odata.type":  "#NetworkDeviceFunction.v1_3_0.NetworkDeviceFunction",
                                "@odata.context":       "/redfish/v1/$metadata#NetworkDeviceFunction.
NetworkDeviceFunction"
                                }
```


Creating Adapter Ethernet Interface

Note This request is not supported for Cisco UCS C220 M4, C240 M4, C460 M4, and S3X60 servers.

VIC 13XX cards are supported from 4.1(3b) release onwards.

Request

```
curl -k -u admin:password  https://10.10.10.10/redfish/v1/Chassis/1/
NetworkAdapters/UCSC-PCIE-C25Q-04_FCH233770L7/NetworkDeviceFunctions -d '{"Id": "eth4",
"NetDevFuncType": "Ethernet", "Oem": {"Cisco": {"VnicConfiguration":
{"PCIOrder": "0.6"}}}}' -XPOST
```

Note PCIOrder is a string of the format x.y, where x is the PCI device number (0 to 255, the upper limit depends upon maximum number of PCI buses supported by the platform), and y is the PCI function number (0 to 7)

Modifying Properties of Ethernet Interface

Note This request is not supported for Cisco UCS C220 M4, C240 M4, C460 M4, and S3X60 servers.

VIC 13XX cards are supported from 4.1(3b) release onwards.

```
curl -XPATCH -k -u admin:password https://10.10.10.10/redfish/v1/Chassis/1/
NetworkAdapters/ UCSC-MLOM-C100-04_FCH224172K8/NetworkDeviceFunctions/eth0 -d '{"Ethernet":
{"MACAddress":"10:12:23:00:00:02","MTUSize": 1600,"VLAN":{"VLANEnable":true}}}'

curl -XPATCH -k -u admin:password https://10.10.10.10/redfish/v1/Chassis/1/
NetworkAdapters/ UCSC-MLOM-C100-04_FCH224172K8/NetworkDeviceFunctions/eth0 -d '{"BootMode":
```

```
"PXE"}'

curl -XPATCH -k -u admin:password https://10.10.10.10/redfish/v1/Chassis/1/
NetworkAdapters/ UCSC-MLOM-C100-04_FCH224172K8/NetworkDeviceFunctions/eth0 -d '{"Oem":
{"Cisco": {"VnicConfiguration":{"UplinkPort":1,"PCIOrder":"0.6","InterruptMode":"Msi",
"VlanMode":"Trunk"}}}}'
```

Note **PCIOrder** is a string of the format x.y, where x is the PCI device number(0 to 255, the upper limit depends upon maximum number of PCI buses supported by the platform) and y is the PCI function number (0 to 7).

```
curl -XPATCH -k -u admin:password https://10.10.10.10/redfish/v1/Chassis/1/
NetworkAdapters/ UCSC-MLOM-C100-04_FCH224172K8/NetworkDeviceFunctions/eth0 -d '{"Oem":
{"Cisco": {"VnicConfiguration":{"EthConfiguration":{"Cdn":"VIC-MLOM-eth5",
"TrustedClassOfServiceEnabled":true,"CompQueueCount":11,"StandByRecoveryDly":123}}}}}}'


curl -XPATCH -k -u admin:password https://10.10.10.10/redfish/v1/Chassis/1/
NetworkAdapters/ UCSC-MLOM-C100-04_FCH224172K8/NetworkDeviceFunctions/eth0 -d '{"Oem":
{"Cisco":
{"VnicConfiguration":{"EthConfiguration":{"WorkQueue":{"Count":11,"RingSize":65}}}}}}'

curl -XPATCH -k -u admin:password https://10.10.10.10/redfish/v1/Chassis/1/
NetworkAdapters/ UCSC-MLOM-C100-04_FCH224172K8/NetworkDeviceFunctions/eth0 -d '{"Oem":
{"Cisco":
{"VnicConfiguration":{"EthConfiguration":{"RecvQueue":{"Count":11,"RingSize":65}}}}}}'

curl -XPATCH -k -u admin:password https://10.10.10.10/redfish/v1/Chassis/1/
NetworkAdapters/ UCSC-MLOM-C100-04_FCH224172K8/NetworkDeviceFunctions/eth0 -d '{"Oem":
{"Cisco": {"VnicConfiguration":{"EthConfiguration":{"InterruptProfile":
{"Count":11,"CoalescingTime":65,"CoalescingType":"Min"}}}}}}'

curl -XPATCH -k -u admin:password https://10.10.10.10/redfish/v1/Chassis/1/
NetworkAdapters/ UCSC-MLOM-C100-04_FCH224172K8/NetworkDeviceFunctions/eth0 -d '{"Oem":
{"Cisco": {"VnicConfiguration":{"EthConfiguration":{"Features":
{"AdvancedFilterEnabled":true,"ArfsEnabled":true,"NvgreEnabled":true,
"VxlanEnabled":true,"Rocev2Enabled":false,"VmqEnabled":false}}}}}}'

curl -XPATCH -k -u admin:password https://10.10.10.10/redfish/v1/Chassis/1/
NetworkAdapters/ UCSC-MLOM-C100-04_FCH224172K8/NetworkDeviceFunctions/eth0 -d '{"Oem":
{"Cisco": {"VnicConfiguration":{"EthConfiguration":{"OffloadProfile":
{"TcpLargeReceiveEnabled":true,"TcpSegmentEnabled":true,"TcpRxChecksumEnabled":true,
"TcpTxChecksumEnabled":true}}}}}}'

curl -XPATCH -k -u admin:password https://10.10.10.10/redfish/v1/Chassis/1/
NetworkAdapters/ UCSC-MLOM-C100-04_FCH224172K8/NetworkDeviceFunctions/eth0 -d '{"Oem":
{"Cisco": {"VnicConfiguration":{"EthConfiguration":{"RssProfile":{"RssEnabled":true,
"RssIpv4HashEnabled":true,"RssTcpIpv4HashEnabled":true,"RssIpv6HashEnabled":true,
"RssTcpIpv6HashEnabled":true,"RssIpv6ExHashEnabled":true,"RssTcpIpv6ExHashEnabled":true,
"RssUdpIpv4HashEnabled":true,"RssUdpIpv6HashEnabled":true}}}}}}'
```

Deleting Ethernet Interface

Note This request is not supported for Cisco UCS C220 M4, C240 M4, C460 M4, and S3X60 servers.

VIC 13XX cards are supported from 4.1(3b) release onwards.

Request

```
curl -XDELETE -k -u admin:password https://10.10.10.10/redfish/v1/Chassis/1/
NetworkAdapters/ UCSC-MLOM-C100-04_FCH224172K8/NetworkDeviceFunctions/eth4
```

Retrieving Adapter Fibre Channel Interface Details

Note This request is not supported for Cisco UCS C220 M4, C240 M4, C460 M4, and S3X60 servers.

VIC 13XX cards are supported from 4.1(3b) release onwards.

Request

```
curl  -k -u admin:Password https://10.10.10.10/redfish/v1/Chassis/1
/NetworkAdapters/UCSC-PCIE-C25Q-04_FCH233770L7/NetworkDeviceFunctions/fc0
```

Response


```
{
        "Id":   "fc0",
        "Name": "fc0",
        "NetDevFuncType":       "FibreChannelOverEthernet",
        "NetDevFuncCapabilities":       ["FibreChannelOverEthernet"],
        "Ethernet":     {
                "MACAddress":   "5C:71:0D:04:44:C2",
                "VLAN": {
                        "VLANEnable":   false
                }
        },
        "FibreChannel": {
                "WWNN": "10:00:5C:71:0D:04:44:C2",
                "WWPN": "20:00:5C:71:0D:04:44:C2",
                "WWNSource":    "ConfiguredLocally"
        },
        "BootMode":     "Disabled",
        "AssignablePhysicalPorts":      [{
                        "@odata.id":    "/redfish/v1/Chassis/1/NetworkAdapters/
UCSC-PCIE-C25Q-04_FCH233770L7/NetworkPorts/Port-1"
                }, {
                        "@odata.id":    "/redfish/v1/Chassis/1/NetworkAdapters/
UCSC-PCIE-C25Q-04_FCH233770L7/NetworkPorts/Port-3"
                }],
        "AssignablePhysicalPorts@odata.count":  2,
        "Links":        {
                "PhysicalPortAssignment":       {
                        "@odata.id":    "/redfish/v1/Chassis/1/NetworkAdapters/
UCSC-PCIE-C25Q-04_FCH233770L7/NetworkPorts/Port-1"
                }
        },
        "Oem":  {
                "Cisco":        {
                        "@odata.type":  "#CiscoUCSExtensions.v1_0_0.CiscoUCSExtensions",
                        "VnicConfiguration":    {
                                "UplinkPort":   0,
                                "PCIOrder":     "0.2",
                                "InterruptMode":        "Any",
                                "ClassOfService":       3,
```

```
                                "Vif":  {
                                        "VifId":        0,
                                        "VifCookie":    0
                                },
                                "VHBAConfiguration":    {
                                        "FcWorkQueueRingSize":  64,
                                        "FcRecvQueueRingSize":  64,
                                        "MaxDataFieldSize":     2112,
                                        "PersistentLunBindEnabled":     false,
                                        "VHBAType":     ["FcInitiator"],
                                        "CdbWorkQueue": {
                                                "Count":        1,
                                                "RingSize":     512
                                        },
                                        "PortFLogi":    {
                                                "RetryCount":   -1,
                                                "Timeout":      2000
                                        },
                                        "PortPLogi":    {
                                                "RetryCount":   8,
                                                "Timeout":      2000
                                        },
                                        "ErrorRecoveryProfile": {
                                                "FcpErrorRecoveryEnabled":      false,
                                                "LinkDownTimeout":      30000,
                                                "PortDownTimeout":      10000,
                                                "IoTimeoutRetry":       5,
                                                "PortDownIoRetryCount": 8,
                                                "ErrorDetectTimeout":   2000,
                                                "ResourceAllocationTimeout":    10000
                                        },
                                        "FcPortProfile":        {
                                                "IoThrottleCount":      512,
                                                "LunsPerTarget":        256,
                                                "LunQueueDepth":        20
                                        },
                                        "BootTable":    []
                                }
                        }
                }
        },
        "@odata.id":    "/redfish/v1/Chassis/1/NetworkAdapters/
UCSC-PCIE-C25Q-04_FCH233770L7/NetworkDeviceFunctions/fc0",
        "@odata.type":  "#NetworkDeviceFunction.v1_3_0.NetworkDeviceFunction",
        "@odata.context":       "/redfish/v1/$metadata#NetworkDeviceFunction.
NetworkDeviceFunction"
}
```


Creating Boot Entry for a Fibre Channel Interface

Note This request is not supported for Cisco UCS C220 M4, C240 M4, C460 M4, and S3X60 servers.

VIC 13XX cards are supported from 4.1(3b) release onwards.

Creating a New Fibre Channel Interface

```
curl -X POST -k -u admin:password https://10.10.10.10/redfish/v1/Chassis/1/
NetworkAdapters/ UCSC-PCIE-C25Q-04_FCH233770L7/NetworkDeviceFunctions -d '{"Id"
```

```
:"ec2""NetDevFuncType": "FibreChannelOverEthernet", "Oem": {"Cisco":{"VnicConfiguration":
{"PCIOrder": "0.5", "NivCfg": {"ChannelNumber":10}}}} }'
```

Note To use FC interface, VNTAG/NIV mode has to be enabled.

Set BootMode to FibreChannelOverEthernet

```
curl -XPATCH -k -u admin:password https://10.10.10.10/redfish/v1/Chassis/1
/NetworkAdapters/ UCSC-PCIE-C25Q-04_FCH233770L7/NetworkDeviceFunctions/fc1 -d
'{"BootMode":"FibreChannelOverEthernet"}'
```

Delete Fibre Channel Interterface

```
curl -XDELETE -k -u admin:password https://10.10.10.10/redfish/v1/Chassis/1
/NetworkAdapters/ UCSC-PCIE-C25Q-04_FCH233770L7/NetworkDeviceFunctions/fc6
```

Mounting/Unmounting Share to the VMedia with Username

Request to Mount vMedia

```
curl -k -u admin:password https://10.10.10.10/redfish/v1/Managers/CIMC/
VirtualMedia/1/Actions/VirtualMedia.InsertMedia -XPOST -d '{
"Image":"http://10.10.10.10/readwrite.img",
"WriteProtected":true,
"TransferProtocolType":"HTTP",
"TransferMethod":"Stream",
"Inserted":true,
"UserName":"username",
"Password":"password"
}'
```

No response in case of success. Error message is displayed in case of failure.

Request to Retrieve Details After Mount

```
curl -k -u admin:password https://10.10.10.10/redfish/v1/Managers/CIMC/VirtualMedia/1
```

Response

```
{
 "@odata.id": "/redfish/v1/Managers/CIMC/VirtualMedia/1",
 "@odata.context": "/redfish/v1/$metadata#Managers/Members/$entity/
VirtualMedia/Members/$entity",
 "@odata.type": "#VirtualMedia.v1_3_0.VirtualMedia",
 "ConnectedVia": "URI",
 "Id": "1",
 "MediaTypes": ["Floppy", "USBStick"],
 "Name": "Virtual Removable Disk",
 "Inserted": true,
 "Image": "http://10.104.236.41/readwrite1.img",
 "ImageName": "readwrite1.img",
 "WriteProtected": true,
 "Description": "Virtual Media Settings",
 "TransferMethod": "Stream",
 "TransferProtocolType": "HTTP",
 "UserName": "wwwuser",
```

```
 "Actions": {
  "#VirtualMedia.EjectMedia": {
   "target": "/redfish/v1/Managers/CIMC/VirtualMedia/1/Actions/
VirtualMedia.EjectMedia"
  },
  "#VirtualMedia.InsertMedia": {
   "Image@Redfish.AllowableValues": ["This parameter shall specify
the string URI of the remote media to be attached to the virtual media. (Required)"],
   "UserName@Redfish.AllowableValues": ["This parameter shall contain
a string representing the username to be used when accessing the URI specified by the Image

parameter."],
   "Password@Redfish.AllowableValues": ["This parameter shall contain a
string representing the password to be used when accessing the URI specified by the Image
parameter."],
   "WriteProtected@Redfish.AllowableValues": ["true"],
   "TransferProtocolType@Redfish.AllowableValues": ["CIFS", "HTTP",
"HTTPS", "NFS"],
   "TransferMethod@Redfish.AllowableValues": ["Stream"],
   "Inserted@Redfish.AllowableValues": ["true"],
   "target": "/redfish/v1/Managers/CIMC/VirtualMedia/1/Actions/
VirtualMedia.InsertMedia"
  }
 }
}
```

Request to Un-mount vMedia

```
curl -k -u admin:password https://10.10.10.10/redfish/v1/Managers/CIMC/VirtualMedia/1/Actions/
VirtualMedia.EjectMedia -XPOST
```

No response in case of success. Error message is displayed in case of failure.

Request to Retrieve Un-mount

```
curl -k -u admin:password https://10.10.10.10/redfish/v1/Managers/CIMC/VirtualMedia/1
```

Response

```
{
 "@odata.id": "/redfish/v1/Managers/CIMC/VirtualMedia/1",
 "@odata.context": "/redfish/v1/$metadata#Managers/Members/$entity/
VirtualMedia/Members/$entity",
 "@odata.type": "#VirtualMedia.v1_3_0.VirtualMedia",
 "ConnectedVia": "NotConnected",
 "Id": "1",
 "MediaTypes": ["Floppy", "USBStick"],
 "Name": "Virtual Removable Disk",
 "Inserted": false,
 "WriteProtected": true,
 "Description": "Virtual Media Settings",
 "Actions": {
  "#VirtualMedia.EjectMedia": {
   "target": "/redfish/v1/Managers/CIMC/VirtualMedia/1/Actions/
VirtualMedia.EjectMedia"
  },
  "#VirtualMedia.InsertMedia": {
   "Image@Redfish.AllowableValues": ["This parameter shall specify the
string URI of the remote media to be attached to the virtual media. (Required)"],
   "UserName@Redfish.AllowableValues": ["This parameter shall contain a
 string representing the username to be used when accessing the URI specified by the Image

parameter."],
   "Password@Redfish.AllowableValues": ["This parameter shall contain a
```

```
string representing the password to be used when accessing the URI specified by the Image
parameter."],
   "WriteProtected@Redfish.AllowableValues": ["true"],
   "TransferProtocolType@Redfish.AllowableValues": ["CIFS", "HTTP",
"HTTPS", "NFS"],
   "TransferMethod@Redfish.AllowableValues": ["Stream"],
   "Inserted@Redfish.AllowableValues": ["true"],
   "target": "/redfish/v1/Managers/CIMC/VirtualMedia/1/Actions/
VirtualMedia.InsertMedia"
  }
 }
}
```

Mounting Share to the VMedia Without the Username

Request to Mount vMedia

```
curl -k -u admin:password https://10.10.10.10/redfish/v1/Managers/CIMC/
VirtualMedia/1/Actions/VirtualMedia.InsertMedia -XPOST -d '{
"Image":"http://10.10.10.10/readwrite.img",
"WriteProtected":true,
"TransferProtocolType":"HTTP",
"TransferMethod":"Stream",
"Inserted":true
}'
```

No response in case of success. Error message is displayed in case of failure.

Request to Retrieve Details of the Mount

```
curl -k -u admin:password https://10.10.10.10/redfish/v1/Managers/CIMC/VirtualMedia/1
```

Response

```
{
 "@odata.id": "/redfish/v1/Managers/CIMC/VirtualMedia/1",
 "@odata.context": "/redfish/v1/$metadata#Managers/Members/$entity/VirtualMedia/
Members/$entity",
 "@odata.type": "#VirtualMedia.v1_3_0.VirtualMedia",
 "ConnectedVia": "URI",
 "Id": "1",
 "MediaTypes": ["Floppy", "USBStick"],
 "Name": "Virtual Removable Disk",
 "Inserted": true,
 "Image": "http://10.104.236.41/readwrite1.img",
 "ImageName": "readwrite1.img",
 "WriteProtected": true,
 "Description": "Virtual Media Settings",
 "TransferMethod": "Stream",
 "TransferProtocolType": "HTTP",
 "Actions": {
  "#VirtualMedia.EjectMedia": {
   "target": "/redfish/v1/Managers/CIMC/VirtualMedia/1/Actions/
VirtualMedia.EjectMedia"
  },
  "#VirtualMedia.InsertMedia": {
   "Image@Redfish.AllowableValues": ["This parameter shall specify the
string URI of the remote media to be attached to the virtual media. (Required)"],
   "UserName@Redfish.AllowableValues": ["This parameter shall contain
a string representing the username to be used when accessing the URI specified by the Image
```

```
parameter."],
   "Password@Redfish.AllowableValues": ["This parameter shall contain
a string representing the password to be used when accessing the URI specified by the Image

parameter."],
   "WriteProtected@Redfish.AllowableValues": ["true"],
   "TransferProtocolType@Redfish.AllowableValues": ["CIFS", "HTTP",
"HTTPS", "NFS"],
   "TransferMethod@Redfish.AllowableValues": ["Stream"],
   "Inserted@Redfish.AllowableValues": ["true"],
   "target": "/redfish/v1/Managers/CIMC/VirtualMedia/1/Actions/
VirtualMedia.InsertMedia"
  }
 }
}
```

Setting Remote syslog Primary Server

Request to Configure Remote syslog Primary Server

Note This request is not supported in Cisco UCS C220M4, C240M4, C460M4 and S3X60 Servers.

```
curl -k -u admin:password https://10.10.10.10/redfish/v1/Managers/CIMC/
LogServices/CIMC -XPATCH -d
'{
"Oem":{
"Cisco":{
"MinimumSeverityLevel":"Notice",
"SyslogConnectionInfo":[{
"DestinationServer":"10.10.10.10",
"Enabled":true,
"Port":500,
"Protocol":"TCP"
}]
}
}
}'
```

Response

```
{
 "ServiceEnabled": true,
 "OverWritePolicy": "WrapsWhenFull",
 "Id": "CIMC",
 "Name": "CIMC Log Service",
 "LogEntryType": "OEM",
 "Description": "CIMC Log Service",
 "DateTime": "Thu May 28 07:40:01 2020",
 "DateTimeLocalOffset": "+05:30",
 "MaxNumberOfRecords": 10000,
 "Oem": {
  "Cisco": {
   "MinimumSeverityLevel": "Debug",
   "SyslogConnectionInfo": [{
     "Protocol": "TCP",
     "Enabled": true,
     "DestinationServer": "10.10.10.10",
```

```
     "Port": 500
    }, {
     "Protocol": "UDP",
     "Enabled": false,
     "DestinationServer": "0.0.0.0",
     "Port": 514
    }]
  }
 },
 "Actions": {
  "#LogService.ClearLog": {
   "target": "/redfish/v1/Managers/CIMC/LogServices/CIMC/Actions/
LogService.ClearLog"
  },
  "Oem": {
   "#CiscoUCSExtensions.TestRemoteSyslogCfg": {
    "target": "/redfish/v1/Managers/CIMC/LogServices/CIMC/
Actions/Oem/CiscoUCSExtensions.TestRemoteSyslogCfg"
   }
  }
 }
}
```

Setting Remote syslog Secondary Server

Request to Set the Remote syslog Secondary Server

Note This request is not supported in Cisco UCS C220M4, C240M4, C460M4 and S3X60 Servers.

```
curl -k -u admin:password https://10.10.10.10/redfish/v1/Managers/CIMC/
LogServices/CIMC -XPATCH -d
'{
"Oem":{
"Cisco":{
"MinimumSeverityLevel":"Debug",
"SyslogConnectionInfo":[{},
{
"DestinationServer":"10.13.12.14",
"Enabled":true,
"Port":501,
"Protocol":"TCP"
}]
}
}
}'
```

Response

```
{
 "ServiceEnabled": true,
 "OverWritePolicy": "WrapsWhenFull",
 "Id": "CIMC",
 "Name": "CIMC Log Service",
 "LogEntryType": "OEM",
 "Description": "CIMC Log Service",
 "DateTime": "Thu May 28 07:46:56 2020",
 "DateTimeLocalOffset": "+05:30",
```

```
 "MaxNumberOfRecords": 10000,
 "Oem": {
  "Cisco": {
   "MinimumSeverityLevel": "Notice",
   "SyslogConnectionInfo": [{
     "Protocol": "TCP",
     "Enabled": true,
     "DestinationServer": "10.10.10.10",
     "Port": 500
    }, {
     "Protocol": "TCP",
     "Enabled": true,
     "DestinationServer": "10.13.12.14",
     "Port": 501
    }]
  }
 },
 "Actions": {
  "#LogService.ClearLog": {
   "target": "/redfish/v1/Managers/CIMC/LogServices/CIMC/Actions/
LogService.ClearLog"
  },
  "Oem": {
   "#CiscoUCSExtensions.TestRemoteSyslogCfg": {
    "target": "/redfish/v1/Managers/CIMC/LogServices/CIMC/Actions/
Oem/CiscoUCSExtensions.TestRemoteSyslogCfg"
   }
  }
 }
}
```


Retrieving Syslog Client-Server Details

Note This request is not supported for Cisco UCS C220 M4, C240 M4, C460 M4 and S3X60 Servers.

Request

```
curl -k -u admin:password https://10.10.10.10/redfish/v1
/Managers/CIMC/LogServices/CIMC
```

Response


```
{
 "@odata.id": "/redfish/v1/Managers/CIMC/LogServices/CIMC",
 "@odata.context": "/redfish/v1/$metadata#Managers/Members/$entity
/LogServices/Members/$entity",
 "@odata.type": "#LogService.v1_1_1.LogService",
 "Entries": {
  "@odata.id": "/redfish/v1/Managers/CIMC/LogServices/CIMC/Entries"
 },
 "ServiceEnabled": true,
 "OverWritePolicy": "WrapsWhenFull",
 "Id": "CIMC",
 "Name": "CIMC Log Service",
 "LogEntryType": "OEM",
 "Description": "CIMC Log Service",
 "DateTime": "Thu May 28 07:17:53 2020",
```

```
 "DateTimeLocalOffset": "+05:30",
 "MaxNumberOfRecords": 10000,
 "Oem": {
  "Cisco": {
   "MinimumSeverityLevel": "Debug",
   "SyslogConnectionInfo": [{
     "Protocol": "UDP",
     "Enabled": true,
     "DestinationServer": "10.104.236.59",
     "Port": 514
    }, {
     "Protocol": "UDP",
     "Enabled": false,
     "DestinationServer": "0.0.0.0",
     "Port": 514
    }]
  }
 },
 "Actions": {
  "#LogService.ClearLog": {
   "target": "/redfish/v1/Managers/CIMC/LogServices/CIMC/Actions
/LogService.ClearLog"
  },
  "Oem": {
   "#CiscoUCSExtensions.TestRemoteSyslogCfg": {
    "target": "/redfish/v1/Managers/CIMC/LogServices/CIMC
/Actions/Oem/CiscoUCSExtensions.TestRemoteSyslogCfg"
   }
  }
 }
}
```


Retrieving MAC Address of Individual Ports of Network Controllers

Request to Retrieve List of network Adapters with their Ports

```
curl -k -u admin:password https://10.10.10.10/redfish/v1/Systems/<SerialNumber>/
EthernetInterfaces/
```

Response


```
{
 "@odata.id": "/redfish/v1/Systems/WZP21330G5B/EthernetInterfaces",
 "@odata.context": "/redfish/v1/$metadata#Systems/Members/$entity/
EthernetInterfaces",
 "@odata.type": "#EthernetInterfaceCollection.EthernetInterfaceCollection",
 "Name": "Ethernet Interfaces Collection",
 "Members": [{
   "@odata.id": "/redfish/v1/Systems/WZP21330G5B/EthernetInterfaces/1.1"
  }, {
   "@odata.id": "/redfish/v1/Systems/WZP21330G5B/EthernetInterfaces/2.1"
  }, {
   "@odata.id": "/redfish/v1/Systems/WZP21330G5B/EthernetInterfaces/1.0"
  }, {
   "@odata.id": "/redfish/v1/Systems/WZP21330G5B/EthernetInterfaces/2.2"
  }, {
   "@odata.id": "/redfish/v1/Systems/WZP21330G5B/EthernetInterfaces/3.1"
  }, {
```

```
   "@odata.id": "/redfish/v1/Systems/WZP21330G5B/EthernetInterfaces/L.1"
  }, {
   "@odata.id": "/redfish/v1/Systems/WZP21330G5B/EthernetInterfaces/L.2"
  }, {
   "@odata.id": "/redfish/v1/Systems/WZP21330G5B/EthernetInterfaces/3.3"
  }, {
   "@odata.id": "/redfish/v1/Systems/WZP21330G5B/EthernetInterfaces/3.2"
  }, {
   "@odata.id": "/redfish/v1/Systems/WZP21330G5B/EthernetInterfaces/3.0"
  }],
 "Members@odata.count": 10,
 "Description": "Collection of EthernetInterfaces for this System"
}
```


Request to Retrieve MAC Address for Each Third Party Network Adapter Port

```
curl -k -u admin:password https://10.10.10.10/redfish/v1/Systems/
<SerialNumber>/EthernetInterfaces/L.2
```

Response


```
{
 "@odata.id": "/redfish/v1/Systems/WZP21330G5B/EthernetInterfaces/L.2",
 "@odata.context": "/redfish/v1/$metadata#Systems/Members/$entity/
EthernetInterfaces/Members/$entity",
 "@odata.type": "#EthernetInterface.v1_4_1.EthernetInterface",
 "Links": {
  "Chassis": {
   "@odata.id": "/redfish/v1/Chassis/1"
  }
 },
 "Id": "L.2",
 "Name": "Ethernet Interface",
 "MACAddress": "70:df:2f:86:f3:73",
 "PermanentMACAddress": "70:df:2f:86:f3:73",
 "Description": "Network Interface"
}
```


Retrieving LSI Storage Adapter Summary Properties Installed on C-Series

Note This request is not supported for Cisco UCS C220 M4, C240 M4, C460 M4, and S3X60 servers.

Request to Get Storage Controller Collection

```
curl -k -u admin:Password https://10.10.10.10/redfish/v1/Systems/WZP21460GPQ/Storage
```

Response


```
{
        "@odata.id":    "/redfish/v1/Systems/WZP21460GPQ/Storage",
        "@odata.context":       "/redfish/v1/$metadata#Systems/Members/$entity/Storage",
        "@odata.type":  "#StorageCollection.StorageCollection",
        "Description":  "Collection of storage resource instances for this system",
        "Name": "Storage Collection",
        "Members":      [{
```

```
                        "@odata.id":    "/redfish/v1/Systems/WZP21460GPQ/Storage/MRAID"
                }, {
                       "@odata.id":    "/redfish/v1/Systems/WZP21460GPQ/Storage/FlexFlash"

                }, {
                        "@odata.id":    "/redfish/v1/Systems/WZP21460GPQ/Storage/FlexUtil"
                }],
        "Members@odata.count":  3
}
```

Request to Get a Particular Storage Controller Details

```
curl -k -u admin:Password https://10.10.10.10/redfish/v1/Systems/WZP21460GPQ
/Storage/MRAID
```

Response

```
{
        "@odata.id":    "/redfish/v1/Systems/WZP21460GPQ/Storage/MRAID",
       "@odata.context":      "/redfish/v1/$metadata#Systems/Members/$entity/Storage/Members
/$entity",
        "@odata.type":  "#Storage.v1_7_0.Storage",
        "Description":  "Storage Controller",
        "Drives":       [{
                        "@odata.id":
"/redfish/v1/Systems/WZP21460GPQ/Storage/MRAID/Drives/1"
                }, {
                        "@odata.id":
"/redfish/v1/Systems/WZP21460GPQ/Storage/MRAID/Drives/5"
                }, {
                        "@odata.id":
"/redfish/v1/Systems/WZP21460GPQ/Storage/MRAID/Drives/9"
                }, {
                        "@odata.id":
"/redfish/v1/Systems/WZP21460GPQ/Storage/MRAID/Drives/10"
                }, {
                        "@odata.id":
"/redfish/v1/Systems/WZP21460GPQ/Storage/MRAID/Drives/13"
                }, {
                        "@odata.id":
"/redfish/v1/Systems/WZP21460GPQ/Storage/MRAID/Drives/14"
                }],
        "Volumes":      {
                "@odata.id":    "/redfish/v1/Systems/WZP21460GPQ/Storage/MRAID/Volumes"
        },
        "Links":        {
                "Oem":  {
                        "Cisco":        {
                                "PCIeInfo":     [{
                                                "@odata.id":
"/redfish/v1/Systems/WZP21460GPQ
/PCIeFunctions/MRAID"
                                        }]
                        }
                }
        },
        "Id":   "MRAID",
        "Name": "MRAID",
        "StorageControllers":   [{
                        "@odata.id":    "/redfish/v1/Systems/WZP21460GPQ/Storage/MRAID",
                        "SupportedControllerProtocols": ["PCIe"],
                        "SupportedDeviceProtocols":     ["SATA", "SAS"],
                        "MemberId":     "MRAID",
                        "Model":        "UCSC-RAID-M5",
```

```
                        "Name": "Cisco 12G Modular Raid Controller with 2GB cache (max 16
drives)",
                        "FirmwareVersion":      "51.10.0-2978",
                        "Manufacturer": "Cisco Systems Inc",
                        "SerialNumber": "SK81166472",
                        "CacheSummary": {
                                "PersistentCacheSizeMiB":       1374,
                                "TotalCacheSizeMiB":    2048
                        },
                        "Oem":  {
                                "Cisco":        {
                                        "StorageControllerBiosVersion":
"7.10.03.1_0x070A0402",
                                        "PCIeSlot":     "MRAID",
                                        "ChipRevision": "08003",
                                        "StorageInstanceId":    8,
                                        "ControllerInterfaceType":      "Sas",
                                        "ControllerStatus":     "Optimal",
                                        "HasForeignConfig":     false,
                                        "DefaultStripeSizeKiBytes":     64,
                                       "SupportedStripeSizesKiBytes":  [64, 128, 256, 512,
 1024],
                                       "RaidLevelsSupported":  ["RAID0", "RAID1", "RAID5",
 "RAID6",
"RAID10", "RAID50", "RAID60"],
                                        "JbodMode":     true,
                                        "MaximumVolumesPerController":  64,
                                        "ControllerType":       "Raid",
                                        "FullDiskEncryptionCapable":    true,
                                        "ControllerEncryptionEnabled":  false,
                                        "EccBucketLeakRate":    1440,
                                        "ConnectedSasExpander": true,
                                        "MemoryCorrectableErrors":      0,
                                        "PinnedCacheState":     0,
                                        "RebuildRatePercent":   30,
                                        "SubOEMId":     2,
                                        "BootDevices":
["/redfish/v1/Systems/WZP21460GPQ/Storage
/MRAID/Volumes/1"],
                                        "Bbu":  {
                                                "BbuVendor":    "",
                                                "BbuManufacturingDate": "2048-00-00",
                                                "BbuModuleVersion":     "",
                                                "BbuSerialNumber":      0,
                                                "BbuType":      "None",
                                                "BbuStatus":    "NotPresent",
                                                "BbuChargingState":     "Unknown",
                                                "IsCapacitor":  false,
                                                "BbuDesignVoltageInVolts":      0,
                                                "BbuVoltageInVolts":    0,
                                                "BbuCurrentInAmps":     0,
                                                "IsTemperatureHigh":    false,
                                                "IsBatteryPresent":     false,
                                                "LearnMode":    "Auto",
                                                "LearnCycleProgressStatus":     "Success",
                                                "LearnCycleProgressStartTimeStamp":
"0",
                                                "LearnCycleProgressEndTimeStamp":
"0",
                                                "NextLearnCycleTimeStamp":      "N/A",
                                                "IsLearnCycleRequested":        false,
                                                "CapacitanceInPercent": 0,
                                                "DesignCapacityInJoules":       0,
                                                "PackEnergyInJoules":   0
```

```
                                        }
                                }
                        },
                        "Status":       {
                                "State":        "Enabled",
                                "Health":       "OK",
                                "HealthRollup": "OK"
                        },
                        "Location":     {
                                "PartLocation": {
                                        "LocationType": "Slot",
                                        "ServiceLabel": "MRAID"
                                }
                        }
                }],
        "Actions":      {
                "Oem":  {
                        "#Cisco.ClearConfig":   {
                                "target":       "/redfish/v1/Systems/WZP21460GPQ/Storage
/MRAID/Actions/Oem/Cisco.ClearConfig",
                                "@odata.type":  "#CiscoUCSExtensions.v1_0_0.ClearConfig"
                        },
                        "#Cisco.DoForeignConfig":       {
                                "target":       "/redfish/v1/Systems/WZP21460GPQ/Storage
/MRAID/Actions/Oem/Cisco.DoForeignConfig",
                             "@odata.type":  "#CiscoUCSExtensions.v1_0_0.DoForeignConfig",

                               "ForeignCfgOp@Redfish.AllowableValues": ["Clear", "Import"]

                        },
                        "#Cisco.ResetToFactoryDefaults":        {
                                "target":       "/redfish/v1/Systems/WZP21460GPQ/Storage
/MRAID/Actions/Oem/Cisco.ResetToFactoryDefaults",
                                "@odata.type":
"#CiscoUCSExtensions.v1_0_0.ResetToFactoryDefaults"
                        }
                }
        }
}
```

Retrieving Detailed Information of Local Disks (HDD)

Note This request is not supported for Cisco UCS C220 M4, C240 M4, C460 M4, and S3X60 servers.

Request

```
curl -k -u admin:Password https://10.10.10.10/redfish/v1
/Systems/WZP21460GPQ/Storage/MRAID/Drives/1
```

Response

```
{
        "@odata.id":    "/redfish/v1/Systems/WZP21460GPQ/Storage/MRAID/Drives/1",
        "@odata.context":       "/redfish/v1/$metadata#Systems/Members/$entity/Storage
/Members/$entity/Drives/Members/$entity",
        "@odata.type":  "#Drive.v1_5_0.Drive",
        "Id":   "1",
```

```
        "Name": "1",
        "Model":        "ST1000NM0045",
        "Revision":     "CN04",
        "Protocol":     "SAS",
        "MediaType":    "HDD",
        "Manufacturer": "SEAGATE",
        "SerialNumber": "ZBS118DD0000R805A5K7",
        "BlockSizeBytes":       512,
        "CapableSpeedGbs":      12,
        "HotspareType": "None",
        "PredictedMediaLifeLeftPercent":        0,
        "IndicatorLED": "Off",
        "CapacityBytes":        1000204140544,
        "FailurePredicted":     false,
        "EncryptionAbility":    "None",
        "Oem":  {
                "Cisco":        {
                        "DriveState":   "Online",
                        "DrivePowerState":      "Active",
                        "DisabledForRemoval":   false,
                        "Bootable":     false,
                        "PredictiveFailureCount":       0,
                        "MediaErrorCount":      0,
                        "StorageInstanceId":    1,
                        "CoercedSizeBytes":     998999326720,
                        "NonCoercedSizeBytes":  999667269632,
                        "SmartData":    {
                                "PercentLifeLeft":      0,
                                "PercentReservedCapacityConsumed":      0,
                                "PowerCycleCount":      0,
                                "PowerOnHours": 0,
                                "ThresholdOperatingTemperature":        60,
                                "WearStatusInDays":     0
                        }
                }
        },
        "Status":       {
                "Health":       "OK",
                "State":        "Enabled"
        },
        "StatusIndicator":      "OK",
        "PhysicalLocation":     {
                "PartLocation": {
                        "LocationType": "Slot",
                        "ServiceLabel": "1"
                }
        },
        "Actions":      {
                "#Drive.SecureErase":   {
                     "target":      "/redfish/v1/Systems/WZP21460GPQ/Storage/MRAID/Drives
/1/Actions/Drive.SecureErase"
                },
                "Oem":  {
                        "#Cisco.AddHotspare":   {
                                "target":       "/redfish/v1/Systems/WZP21460GPQ/Storage
/MRAID/Drives/1/Actions/Oem/Cisco.AddHotspare",
                                "@odata.type":  "#CiscoUCSExtensions.v1_0_0.AddHotSpare",
                                "HotSpareType@Redfish.AllowableValues": ["Global",
"Dedicated"]
                        },
                        "#Cisco.RemoveHotspare":        {
                                "target":       "/redfish/v1/Systems/WZP21460GPQ/Storage
/MRAID/Drives/1/Actions/Oem/Cisco.RemoveHotspare",
                               "@odata.type":  "#CiscoUCSExtensions.v1_0_0.RemoveHotSpare"
```

```
                        },
                        "#Cisco.PrepareForRemoval":     {
                                "target":       "/redfish/v1/Systems/WZP21460GPQ/Storage
/MRAID/Drives/1/Actions/Oem/Cisco.PrepareForRemoval",
                             "@odata.type":  "#CiscoUCSExtensions.v1_0_0.PrepareForRemoval"

                        },
                        "#Cisco.UndoPrepareForRemoval": {
                                "target":       "/redfish/v1/Systems/WZP21460GPQ/Storage
/MRAID/Drives/1/Actions/Oem/Cisco.UndoPrepareForRemoval",
                                "@odata.type":
"#CiscoUCSExtensions.v1_0_0.UndoPrepareForRemoval"
                        }
                }
        }
}
```

Assign Local Disk as Hotspare

Note This request is not supported for Cisco UCS C220 M4, C240 M4, C460 M4, and S3X60 Servers.

Add Global HotSpare

```
curl -X POST -k -u admin:Password https://10.10.10.10/redfish/v1/Systems/
WZP211704JZ/Storage/MRAID/Drives/13/Actions/Oem/CiscoUCSExtensions.AddHotspare -d
'{"Oem":{"Cisco":{"HotSpareType":"Global" }}}'
```

Add a Dedicatd HostSpare

```
curl  -X POST -k -u admin:Password https://10.10.10.10/redfish/v1/Systems
/WZP211704JZ/Storage/MRAID/Drives/12/Actions/Oem/CiscoUCSExtensions.AddHotspare -d
'{"Oem":{"Cisco":{"HotSpareType":"Dedicated","VolumeID":"/redfish/v1/Systems
/WZP211704JZ/Storage/MRAID/Volumes/0" }}}'
```

Remove a HotSpare

```
curl  -X POST -k -u admin:Password https://10.10.10.10/redfish/v1/Systems/WZP211704JZ
/Storage/MRAID/Drives/12/Actions/Oem/CiscoUCSExtensions.RemoveHotspare
```

Prepare Drive for Removal

Note This request is not supported for Cisco UCS C220 M4, C240 M4, C460 M4, and S3X60 servers.

Prepare Drive for Removal

```
curl   -k -u admin:Password https://10.10.10.10/redfish/v1/Systems/WZP211704JZ/
Storage/MRAID/Drives/10/Actions/Oem/Cisco.PrepareForRemoval -XPOST
```

POST Undo Prepare Drive For Removal

```
curl   -k -u admin:Password https://10.10.10.10/redfish/v1/Systems/
/WZP211704JZ/Storage/MRAID/Drives/10/Actions/Oem/Cisco.UndoPrepareForRemoval -XPOST
```

Change a Local Drive state

Note This request is not supported for Cisco UCS C220 M4, C240 M4, C460 M4, and S3X60 servers.

This requset is not applicable for MSTOR-RAID/M.2 Storage Controller.

Set a DriveState to Jbod

```
curl -XPATCH -k -u admin:Password https://10.10.10.10/redfish/v1/Systems
/WZP211704JZ/Storage/MRAID/Drives/2 -d '{"Oem":{"Cisco":{"DriveState":"Jbod"}}}'
```

Set a DriveState to UnconfiguredGood

```
curl -XPATCH -k -u admin:Password https://10.10.10.10/redfish/v1/Systems
/WZP211704JZ/Storage/MRAID/Drives/2 -d '{"Oem":{"Cisco":{"DriveState":"UnConfiguredGood"}}}'
```

Retrieving Details of All Virtual Drives Configured in LSI Adapters

Note This request is not supported for Cisco UCS C220 M4, C240 M4, C460 M4, and S3X60 servers.

Get the Details of Volume Collection

```
curl -k -u admin:Password https://10.10.10.10/redfish/v1/Systems
/WZP21460GPQ/Storage/MRAID/Volumes
```

Response

```
{
        "@odata.id":    "/redfish/v1/Systems/WZP21460GPQ/Storage/MRAID/Volumes",
       "@odata.context":      "/redfish/v1/$metadata#Systems/Members/$entity/Storage/Members
/$entity/Volumes",
        "@odata.type":  "#VolumeCollection.VolumeCollection",
        "Description":  "Collection of Volumes for this system",
        "Name": "Volume Collection",
        "Members@odata.count":  13,
        "Members":      [{
                        "@odata.id":
"/redfish/v1/Systems/WZP21460GPQ/Storage/MRAID/Volumes/0"
                }, {
                        "@odata.id":
"/redfish/v1/Systems/WZP21460GPQ/Storage/MRAID/Volumes/1"
                }, {
                        "@odata.id":
```

```
"/redfish/v1/Systems/WZP21460GPQ/Storage/MRAID/Volumes/2"
                }, {
                        "@odata.id":
"/redfish/v1/Systems/WZP21460GPQ/Storage/MRAID/Volumes/3"
                }, {
                        "@odata.id":
"/redfish/v1/Systems/WZP21460GPQ/Storage/MRAID/Volumes/4"
                }, {
                        "@odata.id":
"/redfish/v1/Systems/WZP21460GPQ/Storage/MRAID/Volumes/5"
                }, {
                        "@odata.id":
"/redfish/v1/Systems/WZP21460GPQ/Storage/MRAID/Volumes/6"
                }, {
                        "@odata.id":
"/redfish/v1/Systems/WZP21460GPQ/Storage/MRAID/Volumes/7"
                }, {
                        "@odata.id":
"/redfish/v1/Systems/WZP21460GPQ/Storage/MRAID/Volumes/8"
                }, {
                        "@odata.id":
"/redfish/v1/Systems/WZP21460GPQ/Storage/MRAID/Volumes/9"
                }, {
                        "@odata.id":
"/redfish/v1/Systems/WZP21460GPQ/Storage/MRAID/Volumes/10"
                }, {
                        "@odata.id":
"/redfish/v1/Systems/WZP21460GPQ/Storage/MRAID/Volumes/11"
                }, {
                        "@odata.id":
"/redfish/v1/Systems/WZP21460GPQ/Storage/MRAID/Volumes/12"
                }]
}
```

Get the Details of Individual Volume

```
curl -k -u admin:Password https://10.10.10.10/redfish/v1/Systems
/WZP21460GPQ/Storage/MRAID/Volumes/0
```

Response

```
{
        "@odata.id":    "/redfish/v1/Systems/WZP21460GPQ/Storage/MRAID/Volumes/0",
        "@odata.context":       "/redfish/v1/$metadata#Systems/Members/$entity/Storage
/Members/$entity/Volumes/Members/$entity",
        "@odata.type":  "#Volume.v1_3_1.Volume",
        "Description":  "Volume",
        "Links":        {
                "Oem":  {
                        "Cisco":        {
                                "Spans":        [{
                                                "DrivesList":   [{
                                                                "@odata.id":    "/redfish/v1
/Systems/WZP21460GPQ/Storage/MRAID/Drives/1"
                                                        }],
                                                "DrivesList@odata.count":       1,
                                                "SpanId":       0
                                        }],
                                "Spans@odata.count":    1
                        }
                },
                "DedicatedSpareDrives": [],
                "SpareResourceSets":    [],
                "DedicatedSpareDrives@odata.count":     0,
```

```
                "SpareResourceSets@odata.count":        0
        },
        "Id":   "0",
        "Name": "RAID0_1",
        "Operations":   [{
                        "OperationName":        "No operation in progress",
                        "PercentageComplete":   0
                }],
        "Encrypted":    false,
        "CapacityBytes":        214748364800,
        "BlockSizeBytes":       512,
        "OptimumIOSizeBytes":   65536,
        "Identifiers":  [{
                        "DurableNameFormat":    "UUID",
                        "DurableName":  "6cc167e972c8ab4025df649d1f22cc1e"
                }],
        "RAIDType":     "RAID0",
        "Status":       {
                "Health":       "OK",
                "State":        "Enabled"
        },
        "Oem":  {
                "Cisco":        {
                        "VolumeAccessPolicy":   "ReadWrite",
                        "RequestedWriteCachePolicy":    "WriteThrough",
                        "ConfiguredWriteCachePolicy":   "WriteThrough",
                        "VolumeDriveCachePolicy":       "NoChange",
                        "VolumeReadAheadPolicy":        "NoReadAhead",
                        "VolumeIoPolicy":       "DirectIo",
                        "VolumeState":  "Optimal",
                        "AvailableSizeMiBytes": 726920,
                        "Bootable":     false,
                        "FullDiskEncryptionCapable":    false
                }
        },
        "Actions":      {
                "#Volume.Initialize":   {
                        "target":       "/redfish/v1/Systems/WZP21460GPQ/Storage/MRAID
/Volumes/0/Actions/Volume.Initialize",
                        "InitializeType@Redfish.AllowableValues":       ["Fast", "Slow"]
                }
        }
}
```


Enabling Self-encryption on Controllers

Note This request is not supported for Cisco UCS C220 M4, C240 M4, C460 M4, and S3x60 servers.

Enable Security with Local Key Management

```
curl -k -u admin:password https://10.10.10.10/redfish/v1/
Systems/WZP23391JPJ/Storage/MRAID/Actions/Oem/Cisco.EncryptionOp -d '{"Oem":
{"Cisco":{"EnOpName":"Enable","KeyId":"password","Remote":false,
"EncryptionKey":"12345"}}}' -XPOST
```

Enable Security with Remote Key Management

To enable Controller on security, KMIP has to be configured.

Configure KMIP Settings

```
curl -k -u admin:password https://10.10.10.10/redfish/v1/Managers/CIMC -d
'{"Oem":{"Cisco":{"CiscoKMIPClient":{"KMIPServerSettings":{"KMIPServers":[{"IPAddress":
"10.10.10.10", "Port": 5696, "TimeOut":5}, {"IPAddress": "10.10.10.10", "Port": 5696,
"TimeOut":5}], "UserName": "StorageQA", "Password": "password"
"Disable":false }}}}}' -XPATCH
```

Download KMIP Root Certificate

```
curl -k -u admin:password https://10.10.10.10/redfish/v1/CertificateService/Actions/C
ertificateService.ReplaceCertificate d '{"CertificateType":"PEM","CertificateUri":"/redfi
sh/v1/Managers/CIMC/Oem/Cisco/CiscoKMIPClient/Certificates/KMIPServer", "CertificateStrin
g":"-----BEGIN CERTIFICATE-----\nMIIEgjCCA2qgAwIBAgIBADANBgkqhkiG9w0BAQsFADCBjDELMAkGA1UE
BhMCSU4xEjAQBgNVBAgTCUthcm5hdGFrYTESMBAGA1UEBxMJQmVuZ2FsdXJ1MQ4wDAYDVQQKEwVDaXNjbzESMBAGA
1UECxMJU3RvcmFnZVFBMQ4wDAYDVQQDEwVMQ0EtMTEhMB8GCSqGSIb3DQEJARYSc2FtYmVrYXJAY2lzY28uY29tMB
4XDTE2MTAyNjA3MjIwMVoXDTI2MTAyNTA3MjIwMVowgYwxCzAJBgNVBAYTAklOMRIwEAYDVQQIEwlLYXJuYXRha2E
xEjAQBgNVBAcTCUJlbmdhbHVydTEOMAwGA1UEChMFQ2lzY28xEjAQBgNVBAsTCVN0b3JhZ2VRQTEOMAwGA1UEAxMF
TENBLTExITAfBgkqhkiG9w0BCQEWEnNhbWJla2FyQGNpc2NvLmNvbTCCASIwDQYJKoZIhvcNAQEBBQADggEPADCCA
QoCggEBAOzH2bUgrU5qJioCppJn9ic9DwkXlOBUU8fWu5F02W9rz653wgkwrnQ6/i2zTGuCd2WFNyNcjZgVFMtwd6
+OSj/NIni6QZK73gDYOAk3GO9rCBLiK6NXJVkK3uHOIhPwWk3+hpheWWn4P7VVx0FGo3uGxBl6JtrRj1ct7J33iVA
zpkTPWLTqpefeZUa8DPDx+qOeTNK4+Ymis/3cOE1QcwYSey6CP/TNPSBk1PRKggZyV08ceiP/T47oVNTShd3NVvOG
iKbwAC7IjZpvTOsjIu0kTfkFJ4HJ1uONn7M1G6y+/gCy7M0vA+4yyHwaxdfX/0tlsKIpIid+Y6dnJgoJ7VkCAwEAA
aOB7DCB6TAdBgNVHQ4EFgQUbhGQoZ3pWp1jCeT4e4j4N5Wwpx0wgbkGA1UdIwSBsTCBroAUbhGQoZ3pWp1jCeT4e4
j4N5Wwpx2hgZKkgY8wgYwxCzAJBgNVBAYTAklOMRIwEAYDVQQIEwlLYXJuYXRha2ExEjAQBgNVBAcTCUJlbmdhbHV
ydTEOMAwGA1UEChMFQ2lzY28xEjAQBgNVBAsTCVN0b3JhZ2VRQTEOMAwGA1UEAxMFTENBLTExITAfBgkqhkiG9w0B
CQEWEnNhbWJla2FyQGNpc2NvLmNvbYIBADAMBgNVHRMEBTADAQH/MA0GCSqGSIb3DQEBCwUAA4IBAQBc8017msZF0
k+/3pUduwJdZw7b/FNLRZI4L+joiHumCycA9lwagjHIY1dfahJkwURAYtmsPh13DBPSE1LCnPm366J6RkMyhwmVuf
iJc6NzKUVhHYrtcoJtrWe7l7nEXTNrceHKwV1ugnMhvspjFGD+WiF+PnyXCi8PAP8TFmf6oYKl1LVEtj7rBRNvX+6
zxIDKSWLE8T3OGsB3yxx/jZqvdUIqtDU35mzqEQm5z6jynOZKg4H11XXCLLizSFTXbjl8WwGZji5dgHxZxYzbqxkV
moclHtmFYP7qX6S3MzAYtCQeN/W1nX0uLp4ITgxZhya5fL7tcQ31ldxVYLe9i+LW\n-----END CERTIFICATE---
--"}' -XPOST
```

Download KMIP Client Certificate

```
curl -k -u admin:password https://10.104.236.156/redfish/v1/CertificateService/Actions/C
ertificateService.ReplaceCertificate -d '{"CertificateType":"PEM","CertificateUri":"/redf
ish/v1/Managers/CIMC/Oem/Cisco/CiscoKMIPClient/Certificates/KMIPClient", "CertificateStri
ng":"-----BEGIN CERTIFICATE-----\nMIIDszCCApugAwIBAgIDDeKoMA0GCSqGSIb3DQEBCwUAMIGMMQswCQY
DVQQGEwJJTjESMBAGA1UECBMJS2FybmF0YWthMRIwEAYDVQQHEwlCZW5nYWx1cnUxDjAMBgNVBAoTBUNpc2NvMRIw
EAYDVQQLEwlTdG9yYWdlUUExDjAMBgNVBAMTBUxDQS0xMSEwHwYJKoZIhvcNAQkBFhJzYW1iZWthckBjaXNjby5jb
20wHhcNMTkwNTEyMDYwMTE2WhcNMjYxMDI0MDYwMTE2WjCBiDELMAkGA1UEBhMCSU4xEjAQBgNVBAgMCUthcm5hdG
FrYTESMBAGA1UEBwwJQmVuZ2FsdXJ1MQ4wDAYDVQQKDAVDaXNjbzESMBAGA1UECwwJU3RvcmFnZVFBMQowCAYDVQQ
DDAExMSEwHwYJKoZIhvcNAQkBFhJzYW1iZWthckBjaXNjby5jb20wggEiMA0GCSqGSIb3DQEBAQUAA4IBDwAwggEK
AoIBAQDYUAOu98t/3ZZU5JvXQRyaoJbZLa3ladFC7xOEShek+dhLOMPTnk2PmDoi4woCeelHtfh9X3UcB/OQBDfte
o2cfS+aHNXr0ZwHHvpw9M8Vnlpb1RvalPME/PRH2+f4D3zJ+uGfz7TQHYHnc9ZhsM/52MsFM7ong0HJzTEL72DwG2
tpvTWcfyOH35BwPitTdm5/sxS/VsL/ps0e+pBlEQ9s5KEUpwrOfMzvhlvuarzNGO4b6p2xjs/KUl7n4qqwFKfl850
fdvHT6Ytr+CsoroMxeLbpdLpoZTokieR+aRIS3SFzXxplkOes5t1TF5jOKbnD7dN+Kb3/4+WDJ3mTg2y7AgMBAAGj
IDAeMAkGA1UdEwQCMAAwEQYJYIZIAYb4QgEBBAQDAgeAMA0GCSqGSIb3DQEBCwUAA4IBAQC8SyUwERO8jBSdkaWZ4
zkP2T6z+f5vdBQIuQTBdCnQ7MX3dId71T/UkQsQIyc6dgNYWOj70fvo8ZmKqZM5k1TuqwpWdmpCHSD4C/cRDgBtKz
7MAYsNFx+ARf9rBqw1M8KntCNzFc/deVTxmIeUTtKECTiRexrojlg/vuwJhR/zGTn2A0Dw/QIkyAs/N9m/IBA/7j4
GMZxCjKq7VVeEJXWwxyyvPwz1a6jxwMI1oTGmxEpB2WNfNyB/UoY/TrMobf22vigRzTBt8oQp/E3rDXiroctoSa29
YbzquiNqe+OgqoP61c+HjLpN6dhaJBIXN8kCAUpIo4a6dOLRndUxSVuW\n-----END CERTIFICATE-----\n----
-BEGIN RSA PRIVATE KEY-----\nMIIEpAIBAAKCAQEA2FADrvfLf92WVOSb10EcmqCW2S2t5WnRQu8ThEoXpPnY
SzjD055Nj5g6IuMKAnnpR7X4fV91HAfzkAQ37XqNnH0vmhzV69GcBx76cPTPFZ5aW9Ub2pTzBPz0R9vn+A98yfrhn
8+00B2B53PWYbDP+djLBTO6J4NByc0xC+9g8Btrab01nH8jh9+QcD4rU3Zuf7MUv1bC/6bNHvqQZREPbOShFKcKzn
zM74Zb7mq8zRjuG+qdsY7PylJe5+KqsBSn5fOdH3bx0+mLa/grKK6DMXi26XS6aGU6JInkfmkSEt0hc18aZZDnrOb
dUxeYzim5w+3Tfim9/+Plgyd5k4NsuwIDAQABAoIBAD922l3PXelZ/e1SVVbGR7omO5vkhwy0Cy10L2m0w1Mn6onH
Uc0YuPDUXNo3eoxXcFYV0Z4XD6j1vEQYuL/4IOw03m5831ac3QZJ1Hinmspg92nSEKYE5XglLxaWMmzZPmeUL/ZPX
mFhBuf9WHy4/4vySz5vesJ1BCxNA4LY7LwFBQR2X8SyxE9GwlSoP6+gprSJkdUmpmvQ9Fm/oMYQFW85KAwLXXeU8q
SNCbPet5dEaXkolWLuO/9uZsZni2WopdFyZRfficisicyD9fpaIhMWZnOIjhBvlWXKGW1QU3V1taxtNQFDAN/qOa0
RM2GUh5TP+uIgjQ6HfIDm67VJQiECgYEA/JUxzbCENBea5NfCz/KkJhvkmjwOFFghRCRTJ9iOm7JSBTu4TGqiDz4a
```

```
D1G0BhqiEWuLXVRQA4hTjCioNWvi+sB9o4w5wEfj9eWgItCHih+D+6ev0Ri9SwFJWEjuIOzO5i+IYPYQp3vNi/Sew
BJt56IzjKyF77IKV6X30BvK7F8CgYEA2z0zNiPdaxItiTNDAgRP1B3udCOhW88ZUTzZ3HbFFOPCEb1M/HJqE1yJqp
ipJAEtF9XIjqgTFtjIlF+1xjLwSQ0RIMtcsubzmp+QSmdhwvI1k45B7zWXj2tCsDexkm+xT9i0CS3/E8p8uZmMLCX
fl9ooadVEzwI4M82ySj5nnSUCgYBhy+aHrKPTg5w+pOfSGjHCa6Rcr4oICIOA3cuwruGwmR+21QOr2tG6syHl8o2Q
m3lK42gHj+CXLY6jww41+Preee9rhpzJvUwfZnRVZoZETaWNp8SkYj7QrsPWQg6pguctKxRT7pJONtpEKUfaOIiDW
kM5YYdOYpIsk59a3Zf5YwKBgQCJ+BKxYJKoHhFwBUWHEGWYbJmylvWlzEf3et7zwf627bok5cd8GxisRJESPe47jU
3ucQg81oLk3tojnbPMHiRfJI0B4Vjd8T+esAni+Ppp73lN+bl+q3BMvkiCkxn5uLaSNCLgoASlVMl3F61B3ze93Xm
PWLprt87csvcfh/Q2zQKBgQCMd1HdpzYv0f7hk4kq28Php8OYAGek0yE6HQRw6+w2zmgBFvRkccmLVOZc9cCYSyqZ
AL4Ur/sbXzAgYCTQ+e184q1kT7Zze8KMfq+ecea8pbd+Ppu0ghum6/CPw8QcX7Hy7V1vgm3zVrdRsfzLnvZmsvbT5
FVEZwpkGabGBHurow==\n-----END RSA PRIVATE KEY-----\n"}'
```

Enable security with Remote Key management

```
curl -k -u admin:password https://10.10.10.10/redfish/v1/
Systems/WZP23391JPJ/Storage/MRAID/Actions/Oem/Cisco.EncryptionOp -d '{"Oem":
{"Cisco":{"EnOpName":"Enable","Remote":true}}}' -XPOST
```

Enabling Self-encryption on Physical Drives

Note This request is not supported for Cisco UCS C220 M4, C240 M4, C460 M4, and S3x60 servers.

```
curl -k -u admin:password https://10.10.10.10/redfish/v1/
Systems/WZP23391JPJ/Storage/MRAID/Drives/8/Actions/Oem/Cisco.EncryptinOp -d '{"Oem":
{"Cisco": { "EncryptionOperation":"Enable" }}}' -XPOSTCreating Secured
```

Unlocking Secure Drives on Controllers

Note This request is not supported for Cisco UCS C220 M4, C240 M4, C460 M4, and S3x60 servers.

Unlock Secure Drives When Local Key Management is Enabled in Controller

```
curl -k -u admin:password https://10.10.10.10/redfish/v1/Systems/
WZP23391JPJ/Storage/MRAID/Actions/Oem/Cisco.EncryptionOp -d '{"Oem":{"Cisco":
{"EnOpName":"Unlock", "EncryptionKey":"password",
"DriveEncryptionModeRemote":false}}}' -XPOST
```

Unlock Secure Drives When Local Remote Key Management is Enabled in Controller

```
curl -k -u admin:password https://10.10.10.10/redfish/v1/Systems/
WZP23391JPJ/Storage/MRAID/Actions/Oem/Cisco.EncryptionOp -d '"Oem":{"Cisco":
{"EnOpName":"Unlock", "DriveEncryptionModeRemote":true}}}' -XPOST
```

Erasing Data on Secure Unconfigured Good Drives

Note This request is not supported for Cisco UCS C220 M4, C240 M4, C460 M4, and S3x60 servers.

```
curl -k -u admin:password https://10.10.10.10/redfish/v1/
Systems/WZP23391JPJ/Storage/MRAID/Drives/7/Actions/Drive.SecureErase -XPOST
```

Note The option works only on drives when Security is enabled and it is in **Unconfigured Good** state or **Unlocked Secure foreign** mode.

Modifying the Controller Security Key

Note This request is not supported for Cisco UCS C220 M4, C240 M4, C460 M4, and S3x60 servers.

```
curl -k -u admin:password https://10.10.10.10/redfish/v1/Systems
/WZP23391JPJ/Storage/MRAID/Actions/Oem/Cisco.EncryptionOp -d '{"Oem":{"Cisco":
{"EnOpName":"Modify","Remote":false,"KeyId":"Cisco@123","EncryptionKey":
"CurrentKey","NewEncryptionKey":"NewKey"}}}' -XPOST
```

Create a Virtual Drive

Note This request is not supported for Cisco UCS C220 M4, C240 M4, C460 M4, and S3X60 servers.

Request to create RAID 1

For storage controller type **MSTOR-RAID**:

Request to create RAID 1

```
curl -k -u admin:password
https://10.10.10.10/redfish/v1/Systems/WZP25130PVM/Storage/MSTOR-RAID/Volumes -d
'{"RAIDType":"RAID1","Name":"boot-dsk253_254","Oem":{"Cisco":{"Spans":[{"DrivesList":[{"@odata.id":"/redfish/v1/
Systems/WZP25130PVM/Storage/MSTOR-RAID/Drives/253"},

{"@odata.id":"/redfish/v1/Systems/WZP25130PVM/Storage/MSTOR-RAID/Drives/254"}],"SpanId":0}]}},"Oem":

{"Cisco":{"VolumeAccessPolicy":"Read-Write","VolumeReadAheadPolicy":"None","RequestedWriteCachePolicy":

"WriteThrough"}}}' -XPOST
```

Response

```
{
        "@odata.id":    "/redfish/v1/TaskService/Tasks/88",
        "@odata.type":  "#Task.v1_5_0.Task",
        "@odata.context":       "/redfish/v1/$metadata#Task.Task",
        "Id":   "88",
        "Name": "Storage:MSTOR-RAID, Operation:Volume Create",
        "StartTime":    "2021-08-06T09:42:59+00:00",
        "EndTime":      "2021-08-06T09:43:15+00:00",
        "PercentComplete":      100,
        "TaskState":    "Completed",
```

```
        "TaskStatus":   "OK",
        "Messages":     [{
                        "@odata.type":  "#Message.v1_1_1.Message",
                        "MessageId":    "Base.1.4.0.Success",
                        "Message":      "Successfully Completed Request",
                        "MessageArgs":  [],
                        "Severity":     "OK"
                }],
        "TaskMonitor":  "/redfish/v1/TaskService/Oem/TaskMonitor/88"
}
```

For any other storage controller type:

Request to create RAID 1

```
curl -k -u admin:password https://10.10.10.10/redfish/v1/Systems/FCH2144W00W/Storage
/RAID/Volumes -XPOST -d
'{"RAIDType":"RAID1","Name":"Raid0-vd","CapacityBytes":"10000000","Oem":
{"Cisco":{"Spans":[{"DrivesList":[{"@odata.id":"/redfish/v1/Systems/FCH2144W00W/Storage/
RAID/Drives/7"},
{"@odata.id":"/redfish/v1/Systems/FCH2144W00W/Storage/RAID/Drives/6"}],"SpanId":"0"}]}},"Oem":
{"Cisco":{"VolumeAccessPolicy":"ReadOnly","VolumeReadAheadPolicy":"ReadAhead","RequestedWriteCachePolicy":
"WriteThrough"}}}'
```

Response

```
{
        "@odata.id":    "/redfish/v1/TaskService/Tasks/88",
        "@odata.type":  "#Task.v1_5_0.Task",
        "@odata.context":       "/redfish/v1/$metadata#Task.Task",
        "Id":   "88",
        "Name": "Storage:RAID, Operation:Volume Create",
        "StartTime":    "2021-08-06T09:42:59+00:00",
        "EndTime":      "2021-08-06T09:43:15+00:00",
        "PercentComplete":      100,
        "TaskState":    "Completed",
        "TaskStatus":   "OK",
        "Messages":     [{
                        "@odata.type":  "#Message.v1_1_1.Message",
                        "MessageId":    "Base.1.4.0.Success",
                        "Message":      "Successfully Completed Request",
                        "MessageArgs":  [],
                        "Severity":     "OK"
                }],
        "TaskMonitor":  "/redfish/v1/TaskService/Oem/TaskMonitor/88"
}
```

Request to Carve a VD

```
curl -k -u admin:password https://10.10.10.10/redfish/v1/Systems/FCH2144W00W/Storage
/RAID/Volumes -XPOST -d
'{"RAIDType":"RAID1","Name":"Raid0-vd-carved","CapacityBytes":"500000",
"Oem":{"Cisco":{"Spans":[{"DrivesList":[{"@odata.id":"/redfish/v1/Systems/FCH2144W00W/Storage
/RAID/Drives/7"},
{"@odata.id":"/redfish/v1/Systems/FCH2144W00W/Storage/RAID/Drives/6"}],"SpanId":"0"}]}},"Oem":
{"Cisco":{"VolumeAccessPolicy":"ReadOnly","VolumeReadAheadPolicy":"ReadAhead","RequestedWriteCachePolicy"
:"WriteThrough"}}}'
```

Note While creating a VD, ensure that the **CapacityBytes** value is based on free space available on the DriveGroup.

Volume Create with two spans, example (RAID 10)

```
curl -k -u admin:Cisco@123 https://10.104.236.148/redfish/v1/Systems/FCH2144W00W
/Storage/RAID/Volumes -XPOST -d '{"RAIDType":"RAID10","Name":"Raid0-vd","Capacityytes":
"10000000","Oem":{"Cisco":{"Spans":[{"DrivesList":[{"@odata.id":"/redfish/v1/Systems
/FCH2144W00W/Storage/RAID/Drives/5"},{"@odata.id":"/redfish/v1/Systems/FCH2144W00W/Storage
/RAID/Drives/3"}],"SpanId":"0"},{"DrivesList":[{"@odata.id":"/redfish/v1/Systems/FCH2144W00W
/Storage/RAID/Drives/7"},{"@odata.id":"/redfish/v1/Systems/FCH2144W00W/Storage/RAID/Drives/6"}],
"SpanId":"1"}]}},"Oem":{"Cisco":{"VolumeAccessPolicy":"ReadOnly","VolumeReadAheadPolicy":
"ReadAhead","RequestedWriteCachePolicy":"WriteThrough"}}}'
```

Volume Deletion

```
curl -k -g -u admin:Password https://10.10.10.10/redfish/v1/Systems
/WZP21460GPQ/Storage/MRAID/Volumes/10 -XDELETE
```

Volume Initialization

```
curl -k -g -u admin:Password https://10.10.10.10/redfish/v1/Systems/WZP21460GPQ/Storage
/MRAID/Volumes/10/Actions/Volume.Initilize -d '{"InitializeType":"Fast"}' -XPOST
```

Retrieving Network Time Protocol (NTP) Properties

Request

```
curl -k -u admin:password https://10.10.10.10/redfish/v1
/Managers/CIMC/NetworkProtocol
```

Response

```
{
 "@odata.id": "/redfish/v1/Managers/CIMC/NetworkProtocol",
 "@odata.context": "/redfish/v1/$metadata#Managers/Members/$entity
/NetworkProtocol",
 "@odata.type": "#ManagerNetworkProtocol.v1_4_1.ManagerNetworkProtocol",
 "KVMIP": {
  "ProtocolEnabled": true,
  "Port": 2068
 },
 "SNMP": {
  "ProtocolEnabled": true,
  "Port": 161
 },
 "Id": "ManagerNetworkProtocol",
 "Oem": {
  "Cisco": {
   "KVMConfiguration": {
    "VideoEncryption": "Enabled",
    "LocalServerVideo": "Enabled",
    "MaxConcurrentSessions": 4
   }
  }
 },
 "NTP": {
  "ProtocolEnabled": true,
  "Port": 123,
  "NTPServers": ["ntp.esl.com", "10.10.10.10", "", ""]
 },
 "Name": "Manager Network Protocol",
 "DHCPv6": {
```

```
  "ProtocolEnabled": false,
  "Port": null
 },
 "HTTPS": {
  "ProtocolEnabled": true,
  "Port": 443,
  "Certificates": {
   "@odata.id": "/redfish/v1/Managers/CIMC/NetworkProtocol/HTTPS
/Certificates/1"
  }
 },
 "HostName": "test-hostname-kr-webcimc",
 "DHCP": {
  "ProtocolEnabled": false,
  "Port": null
 },
 "SSH": {
  "ProtocolEnabled": true,
  "Port": 22
 },
 "IPMI": {
  "ProtocolEnabled": true,
  "Port": 623
 },
 "HTTP": {
  "ProtocolEnabled": true,
  "Port": 80
 },
 "VirtualMedia": {
  "ProtocolEnabled": true,
  "Port": 2068
 },
 "Description": "Manager Network Service"
}
```

Configuring Network Time Protocol (NTP) Properties

Request

```
 curl -k -u admin:password https://10.10.10.10/redfish/v1/Managers/CIMC
/NetworkProtocol -XPATCH -d
'{
"NTP" : {
"ProtocolEnabled":false,
"NTPServers" : ["1.1.1.1", "abc.com", "testHostname", "10.2.3.4"]
}
}'
```

Response

```
{
 "@odata.id": "/redfish/v1/Managers/CIMC/NetworkProtocol",
 "@odata.context": "/redfish/v1/$metadata#Managers/Members/$entity
/NetworkProtocol",
 "@odata.type": "#ManagerNetworkProtocol.v1_4_1.ManagerNetworkProtocol",
 "KVMIP": {
  "ProtocolEnabled": true,
  "Port": 2068
 },
 "SNMP": {
```

```
  "ProtocolEnabled": true,
  "Port": 161
 },
 "Id": "ManagerNetworkProtocol",
 "Oem": {
  "Cisco": {
   "KVMConfiguration": {
    "VideoEncryption": "Enabled",
    "LocalServerVideo": "Enabled",
    "MaxConcurrentSessions": 4
   }
  }
 },
 "NTP": {
  "ProtocolEnabled": false,
  "Port": 123,
  "NTPServers": ["1.1.1.1", "abc.com", "testHostname", "10.2.3.4"]
 },
 "Name": "Manager Network Protocol",
 "DHCPv6": {
  "ProtocolEnabled": false,
  "Port": null
 },
 "HTTPS": {
  "ProtocolEnabled": true,
  "Port": 443,
  "Certificates": {
   "@odata.id": "/redfish/v1/Managers/CIMC/NetworkProtocol/HTTPS
/Certificates/1"
  }
 },
 "HostName": "test-hostname-kr-webcimc",
 "DHCP": {
  "ProtocolEnabled": false,
  "Port": null
 },
 "SSH": {
  "ProtocolEnabled": true,
  "Port": 22
 },
 "IPMI": {
  "ProtocolEnabled": true,
  "Port": 623
 },
 "HTTP": {
  "ProtocolEnabled": true,
  "Port": 80
 },
 "VirtualMedia": {
  "ProtocolEnabled": true,
  "Port": 2068
 },
 "Description": "Manager Network Service"
}
```


Retrieving all Cisco IMC Users

Request

```
curl -k -u admin:password https://10.10.10.10/redfish/v1
/AccountService/Accounts/
```

Response


```
{
 "@odata.id": "/redfish/v1/AccountService/Accounts",
 "@odata.context": "/redfish/v1/$metadata#AccountService/Accounts",
 "@odata.type": "#ManagerAccountCollection.ManagerAccountCollection",
 "Description": "Collection of Accounts",
 "Name": "Account Collection",
 "Members": [{
   "@odata.id": "/redfish/v1/AccountService/Accounts/1"
  }, {
   "@odata.id": "/redfish/v1/AccountService/Accounts/2"
  }, {
   "@odata.id": "/redfish/v1/AccountService/Accounts/3"
  }],
 "Members@odata.count": 3
}
```


Setting up ID 11 Cisco IMC User With Username and Password and Enabling Login Access

Request

```
curl -k -u admin:password https://10.10.10.10/redfish/v1/AccountService
/Accounts -XPOST -d '{"Id":"11","UserName":"test11","Password":"password","RoleId":
"admin","Enabled":true}'
```

Response

No response in case of success. Error message is displayed in case of failure.

Enabling Strong Password Policy and Password Expiration

Note This request is not supported in Cisco UCS C220 M4, C240 M4, C460 M4 and S3X60 servers.

Request

```
curl -XPATCH -k -u admin:password https://10.10.10.10/redfish/v1/AccountService -d '
{
    "Oem" : {
        "Cisco" : {
            "StrongPasswordPolicyEnabled" : true,
  "PasswordHistory":    5,
            "PasswordExpiry":    {
                "GracePeriod":    5,
                "Enabled":    true,
                "NotificationPeriod":    15,
                "ExpiryDuration":    30
            }
        }
    }
}'
```

Response


```
{
 "AccountLockoutThreshold": 0,
 "Id": "AccountService",
 "LDAP": {
  "LDAPService": {
   "Oem": {
    "Cisco": {
     "LDAPGroupAuthorizationEnabled": false
    }
   },
   "SearchSettings": {
    "BaseDistinguishedNames": [],
    "UsernameAttribute": "CiscoAvPair",
    "GroupsAttribute": "memberOf"
   }
  },
  "Authentication": {
   "AuthenticationType": "UsernameAndPassword"
  },
  "Certificates": {
   "@odata.id": "/redfish/v1/AccountService/LDAP/Certificates"
  },
  "RemoteRoleMapping": [],
  "ServiceAddresses": [],
  "AccountProviderType": "LDAPService",
  "ServiceEnabled": false
 },
 "AccountLockoutDuration": 0,
 "Name": "Account Service",
 "MaxPasswordLength": 20,
 "LocalAccountAuth": "Fallback",
 "MinPasswordLength": 8,
 "AuthFailureLoggingThreshold": 0,
 "AccountLockoutCounterResetEnabled": true,
 "Oem": {
  "Cisco": {
   "PasswordHistory": 5,
   "StrongPasswordPolicyEnabled": true,
   "PasswordExpiry": {
    "GracePeriod": 5,
    "Enabled": true,
    "NotificationPeriod": 15,
    "ExpiryDuration": 30
   }
  }
 },
 "AccountLockoutCounterResetAfter": 0,
 "ServiceEnabled": true,
 "Description": "Account Service"
}
```


Retrieving iSCSI Parameter

Note This request is not supported for Cisco UCS C220 M4, C240 M4, C460 M4, and S3X60 servers.

VIC 13XX cards are supported from 4.1(3b) release onwards.

Request

```
curl -k -u admin:password https://10.10.10.10/redfish/v1/Chassis/1/NetworkAdapters
/UCSC-PCIE-C25Q-04_FCH233770TY/NetworkDeviceFunctions/eth1
```

Response

```
{
        "Id":   "eth1",
        "Name": "eth1",
        "NetDevFuncType":       "Ethernet",
        "NetDevFuncCapabilities":       ["Ethernet", "iSCSI"],
        "Ethernet":     {
                "MACAddress":   "5C:71:0D:04:49:E5",
                "MTUSize":      1500,
                "VLAN": {
                        "VLANEnable":   false
                }
        },
        "BootMode":     "iSCSI",
        "iSCSIBoot":    {
                "IPAddressType":        "IPv4",
                "IPMaskDNSViaDHCP":     false,
                "TargetInfoViaDHCP":    false,
                "AuthenticationMethod": "None",
                "InitiatorName":        "i.iqn.com",
                "InitiatorIPAddress":   "1.1.1.1",
                "InitiatorNetmask":     "255.255.255.0",
                "InitiatorDefaultGateway":      null,
                "PrimaryDNS":   null,
                "SecondaryDNS": null,
                "MutualCHAPUsername":   null,
                "MutualCHAPSecret":     null,
                "PrimaryTargetName":    "t.iqn.com",
                "PrimaryTargetIPAddress":       "10.10.10.11",
                "PrimaryTargetTCPPort": 5000,
                "PrimaryLUN":   0,
                "SecondaryTargetName":  "t2.iqn.com",
                "SecondaryTargetIPAddress":     "10.10.10.12",
                "SecondaryTargetTCPPort":       5000,
                "SecondaryLUN": 0,
                "CHAPUsername": null,
                "CHAPSecret":   null
        },
        "AssignablePhysicalPorts":      [{
                        "@odata.id":    "/redfish/v1/Chassis/1/NetworkAdapters/
UCSC-PCIE-C25Q-04_FCH233770TY/NetworkPorts/Port-1"
                }, {
                        "@odata.id":    "/redfish/v1/Chassis/1/NetworkAdapters/
UCSC-PCIE-C25Q-04_FCH233770TY/NetworkPorts/Port-3"
                }],
        "AssignablePhysicalPorts@odata.count":  2,
        "Links":        {
                "PhysicalPortAssignment":       {
                        "@odata.id":    "/redfish/v1/Chassis/1/NetworkAdapters/
UCSC-PCIE-C25Q-04_FCH233770TY/NetworkPorts/Port-3"
                }
        },
        "Oem":  {
                "Cisco":        {
                        "@odata.type":  "#CiscoUCSExtensions.v1_0_0.CiscoUCSExtensions",
                        "VnicConfiguration":    {
                                "UplinkPort":   1,
                                "PCIOrder":     "0.1",
```

```
"InterruptMode":        "Any",
"VlanMode":     "Trunk",
"NivCfg":       {
        "ChannelNumber":        2
},
"Vif":  {
        "VifId":        0,
        "VifCookie":    0
},
"EthConfiguration":     {
        "Cdn":  "VIC-2-eth1",
        "TrustedClassOfServiceEnabled": false,
        "CompQueueCount":       5,
        "StandByRecoveryDly":   5,
        "StandByVif":   {
                "VifId":        0,
                "VifCookie":    0
        },
        "WorkQueue":    {
                "Count":        1,
                "RingSize":     256
        },
        "RecvQueue":    {
                "Count":        4,
                "RingSize":     512
        },
        "InterruptProfile":     {
                "Count":        8,
                "CoalescingTime":       125,
                "CoalescingType":       "Min"
        },
        "Features":     {
                "UplinkFailOverEnabled":        false,
                "AdvancedFilterEnabled":        false,
                "ArfsEnabled":  false,
                "NvgreEnabled": false,
                "GroupInterruptEnabled":        false,
                "VxlanEnabled": false,
                "Rocev2Enabled":        false,
                "VmqEnabled":   false,
                "MultiQueueEnabled":    false,
                "GeneveEnabled":        false
        },
        "OffloadProfile":       {
                "TcpLargeReceiveEnabled":       true,
                "TcpSegmentEnabled":    true,
                "TcpRxChecksumEnabled": true,
                "TcpTxChecksumEnabled": true
        },
        "RssProfile":   {
                "RssEnabled":   true,
                "RssIpv4HashEnabled":   true,
                "RssTcpIpv4HashEnabled":        true,
                "RssIpv6HashEnabled":   true,
                "RssTcpIpv6HashEnabled":        true,
                "RssIpv6ExHashEnabled": false,
                "RssTcpIpv6ExHashEnabled":      false,
                "RssUdpIpv4HashEnabled":        false,
                "RssUdpIpv6HashEnabled":        false
        },
        "iSCSIBootUcs": {
                "PrimaryEnabled":       true,
                "DHCPId":
"NetworkDeviceFunctionNetworkDeviceFunctionNetwork",
```

```
                                                "DHCPTimeout":  60,
                                                "LinkTimeout":  255,
                                                "LinkBusyRetryCount":   255,
                                                "TCPTimeout":   255
                                        }
                                }
                        }
                }
        },
        "Status":       {
                "State":        "Enabled",
                "Health":       "OK"
        },
       "@odata.id":    "/redfish/v1/Chassis/1/NetworkAdapters/UCSC-PCIE-C25Q-04_FCH233770TY/
NetworkDeviceFunctions/eth1",
        "@odata.type":  "#NetworkDeviceFunction.v1_3_0.NetworkDeviceFunction",
        "@odata.context":       "/redfish/v1/$metadata#NetworkDeviceFunction.
NetworkDeviceFunction"
}
```

Removing iSCSI Boot

Note This request is not supported for Cisco UCS C220 M4, C240 M4, C460 M4, and S3X60 servers.

VIC 13XX cards are supported from 4.1(3b) release onwards.

Request

```
curl -k -u admin:password https://10.10.10.10/redfish/v1/Chassis/1/
NetworkAdapters/UCSC-PCIE-C25Q-04_FCH233770TY/NetworkDeviceFunctions/eth1 -d
'{ "BootMode":"Disabled"}' -XPATCH
```

Response

```
{
        "Id":   "eth1",
        "Name": "eth1",
        "NetDevFuncType":       "Ethernet",
        "NetDevFuncCapabilities":       ["Ethernet", "iSCSI"],
        "Ethernet":     {
                "MACAddress":   "5C:71:0D:04:49:E5",
                "MTUSize":      1500,
                "VLAN": {
                        "VLANEnable":   false
                }
        },
        "BootMode":     "Disabled",
        "AssignablePhysicalPorts":      [{
                        "@odata.id":    "/redfish/v1/Chassis/1/NetworkAdapters
/UCSC-PCIE-C25Q-04_FCH233770TY/NetworkPorts/Port-1"
                }, {
                        "@odata.id":    "/redfish/v1/Chassis/1/NetworkAdapters
/UCSC-PCIE-C25Q-04_FCH233770TY/NetworkPorts/Port-3"
                }],
        "AssignablePhysicalPorts@odata.count":  2,
        "Links":        {
                "PhysicalPortAssignment":       {
```

```
                        "@odata.id":    "/redfish/v1/Chassis/1/NetworkAdapters
/UCSC-PCIE-C25Q-04_FCH233770TY/NetworkPorts/Port-3"
                }
        },
        "Oem":  {
                "Cisco":        {
                        "@odata.type":  "#CiscoUCSExtensions.v1_0_0.CiscoUCSExtensions",
                        "VnicConfiguration":    {
                                "UplinkPort":   1,
                                "PCIOrder":     "0.1",
                                "InterruptMode":        "Any",
                                "VlanMode":     "Trunk",
                                "NivCfg":       {
                                        "ChannelNumber":        2
                                },
                                "Vif":  {
                                        "VifId":        0,
                                        "VifCookie":    0
                                },
                                "EthConfiguration":     {
                                        "Cdn":  "VIC-2-eth1",
                                        "TrustedClassOfServiceEnabled": false,
                                        "CompQueueCount":       5,
                                        "StandByRecoveryDly":   5,
                                        "StandByVif":   {
                                                "VifId":        0,
                                                "VifCookie":    0
                                        },
                                        "WorkQueue":    {
                                                "Count":        1,
                                                "RingSize":     256
                                        },
                                        "RecvQueue":    {
                                                "Count":        4,
                                                "RingSize":     512
                                        },
                                        "InterruptProfile":     {
                                                "Count":        8,
                                                "CoalescingTime":       125,
                                                "CoalescingType":       "Min"
                                        },
                                        "Features":     {
                                                "UplinkFailOverEnabled":        false,
                                                "AdvancedFilterEnabled":        false,
                                                "ArfsEnabled":  false,
                                                "NvgreEnabled": false,
                                                "GroupInterruptEnabled":        false,
                                                "VxlanEnabled": false,
                                                "Rocev2Enabled":        false,
                                                "VmqEnabled":   false,
                                                "MultiQueueEnabled":    false,
                                                "GeneveEnabled":        false
                                        },
                                        "OffloadProfile":       {
                                                "TcpLargeReceiveEnabled":       true,
                                                "TcpSegmentEnabled":    true,
                                                "TcpRxChecksumEnabled": true,
                                                "TcpTxChecksumEnabled": true
                                        },
                                        "RssProfile":   {
                                                "RssEnabled":   true,
                                                "RssIpv4HashEnabled":   true,
                                                "RssTcpIpv4HashEnabled":        true,
                                                "RssIpv6HashEnabled":   true,
```

```
                                                "RssTcpIpv6HashEnabled":        true,
                                                "RssIpv6ExHashEnabled": false,
                                                "RssTcpIpv6ExHashEnabled":      false,
                                                "RssUdpIpv4HashEnabled":        false,
                                                "RssUdpIpv6HashEnabled":        false
                                        }
                                }
                        }
                }
        },
        "Status":       {
                "State":        "Enabled",
                "Health":       "OK"
        },
        "@odata.id":    "/redfish/v1/Chassis/1/NetworkAdapters
/UCSC-PCIE-C25Q-04_FCH233770TY/NetworkDeviceFunctions/eth1",
        "@odata.context":       "/redfish/v1/$metadata#Chassis/Members/$entity
/NetworkAdapters/Members/$entity/NetworkDeviceFunctions/Members/$entity",
        "@odata.type":  "#NetworkDeviceFunction.v1_3_0.NetworkDeviceFunction"
}
```


Retrieving LDAP Server Details

Request

```
curl -k -u admin:password https://10.10.10.10/redfish/v1/AccountService/
```

Response


```
{
 "@odata.id": "/redfish/v1/AccountService",
 "@odata.context": "/redfish/v1/$metadata#AccountService",
 "@odata.type": "#AccountService.v1_5_0.AccountService",
 "Accounts": {
  "@odata.id": "/redfish/v1/AccountService/Accounts"
 },
 "Roles": {
  "@odata.id": "/redfish/v1/AccountService/Roles"
 },
 "PrivilegeMap": {
  "@odata.id": "/redfish/v1/AccountService/PrivilegeMap"
 },
 "AccountLockoutThreshold": 0,
 "Id": "AccountService",
 "LDAP": {
  "LDAPService": {
   "SearchSettings": {
    "BaseDistinguishedNames": [],
    "UsernameAttribute": "CiscoAvPair",
    "GroupsAttribute": "memberOf"
   }
  },
  "Authentication": {
   "AuthenticationType": "UsernameAndPassword"
  },
  "RemoteRoleMapping": [{
    "LocalRole": "readonly",
    "RemoteGroup": "ldap-test"
   }],
  "ServiceAddresses": [],
```

```
 "AccountProviderType": "LDAPService",
 "ServiceEnabled": true
},
"AccountLockoutDuration": 0,
"Name": "Account Service",
"MaxPasswordLength": 20,
"LocalAccountAuth": "Fallback",
"MinPasswordLength": 1,
"AuthFailureLoggingThreshold": 0,
"AccountLockoutCounterResetEnabled": true,
"Oem": {
 "Cisco": {
  "PasswordHistory": 0,
  "StrongPasswordPolicyEnabled": false,
  "PasswordExpiry": {
   "GracePeriod": 0,
   "Enabled": false,
   "NotificationPeriod": 15,
   "ExpiryDuration": 0
  }
 }
},
"AccountLockoutCounterResetAfter": 0,
"ServiceEnabled": true,
"Description": "Account Service"
}
```

Configuring LDAP Server IP Address and Port Numbers

Request

```
curl -k -u admin:password https://10.10.10.10/redfish/v1/AccountService/ -XPATCH -d
'{
"LDAP" :{
"ServiceAddresses":["ldap://10.1.1.1:389","ldap://10.1.1.1:389"]
}
}'
```

Response

```
{
 "@odata.id": "/redfish/v1/AccountService",
 "@odata.context": "/redfish/v1/$metadata#AccountService",
 "@odata.type": "#AccountService.v1_5_0.AccountService",
 "Accounts": {
  "@odata.id": "/redfish/v1/AccountService/Accounts"
 },
 "Roles": {
  "@odata.id": "/redfish/v1/AccountService/Roles"
 },
 "PrivilegeMap": {
  "@odata.id": "/redfish/v1/AccountService/PrivilegeMap"
 },
 "AccountLockoutThreshold": 0,
 "Id": "AccountService",
 "LDAP": {
  "LDAPService": {
   "SearchSettings": {
    "BaseDistinguishedNames": [],
    "UsernameAttribute": "CiscoAvPair",
```

```
    "GroupsAttribute": "memberOf"
   }
  },
  "Authentication": {
   "AuthenticationType": "UsernameAndPassword"
  },
  "RemoteRoleMapping": [{
    "LocalRole": "readonly",
    "RemoteGroup": "ldap-test"
   }],
  "ServiceAddresses": ["ldap://10.2.37.79:389", "ldap://10.2.37.77:389"],
  "AccountProviderType": "LDAPService",
  "ServiceEnabled": true
 },
 "AccountLockoutDuration": 0,
 "Name": "Account Service",
 "MaxPasswordLength": 20,
 "LocalAccountAuth": "Fallback",
 "MinPasswordLength": 1,
 "AuthFailureLoggingThreshold": 0,
 "AccountLockoutCounterResetEnabled": true,
 "Oem": {
  "Cisco": {
   "PasswordHistory": 0,
   "StrongPasswordPolicyEnabled": false,
   "PasswordExpiry": {
    "GracePeriod": 0,
    "Enabled": false,
    "NotificationPeriod": 15,
    "ExpiryDuration": 0
   }
  }
 },
 "AccountLockoutCounterResetAfter": 0,
 "ServiceEnabled": true,
 "Description": "Account Service"
}
```

Configuring LDAP Parameters

Request

```
curl -k -u admin:password https://10.10.10.10/redfish/v1/
AccountService/ -XPATCH -d
'{
"LDAP":{
"ServiceEnabled":true,
"ServiceAddresses":["ldap://10.1.1.1:389","ldap://10.1.1.1:389"],
"LDAPService":{
"SearchSettings":{
"GroupsAttribute":"memberGroup",
"UsernameAttribute":"CiscoUsername",
"BaseDistinguishedNames":["test"]
   },
"Oem" : {
                  "Cisco" : {
                      "LDAPGroupAuthorizationEnabled" : true
                  }
            }
},
"RemoteRoleMapping" : [
```

```
        {
"LocalRole" : "admin",
"RemoteGroup" : "group1",
"Oem" : {
"Cisco" : {
  "LDAPRemoteGroupDomain":"test.com"
}
}
 }
]
}
}'
```

Response

```
{
 "@odata.id": "/redfish/v1/AccountService",
 "@odata.context": "/redfish/v1/$metadata#AccountService",
 "@odata.type": "#AccountService.v1_5_0.AccountService",
 "Accounts": {
  "@odata.id": "/redfish/v1/AccountService/Accounts"
 },
 "Roles": {
  "@odata.id": "/redfish/v1/AccountService/Roles"
 },
 "PrivilegeMap": {
  "@odata.id": "/redfish/v1/AccountService/PrivilegeMap"
 },
 "AccountLockoutThreshold": 0,
 "Id": "AccountService",
 "LDAP": {
  "LDAPService": {
   "SearchSettings": {
    "BaseDistinguishedNames": ["testDN"],
    "UsernameAttribute": "CiscoUsername",
    "GroupsAttribute": "memberGroup"
   },
"Oem" : {
                  "Cisco" : {
                      "LDAPGroupAuthorizationEnabled" : true
                  }
             }
  },
  "Authentication": {
   "AuthenticationType": "UsernameAndPassword"
  },
  "RemoteRoleMapping": [{
    "LocalRole": "admin",
    "RemoteGroup": "group1",
"Oem" : {
"Cisco" : {
  "LDAPRemoteGroupDomain":"test.com"
}
}
],
  "ServiceAddresses": ["ldap://10.10.10.10", "ldap://10.10.10..10"],
  "AccountProviderType": "LDAPService",
  "ServiceEnabled": false
 },
 "AccountLockoutDuration": 0,
 "Name": "Account Service",
 "MaxPasswordLength": 20,
 "LocalAccountAuth": "Fallback",
```

```
 "MinPasswordLength": 1,
 "AuthFailureLoggingThreshold": 0,
 "AccountLockoutCounterResetEnabled": true,
 "Oem": {
  "Cisco": {
   "PasswordHistory": 0,
   "StrongPasswordPolicyEnabled": false,
   "PasswordExpiry": {
    "GracePeriod": 0,
    "Enabled": false,
    "NotificationPeriod": 15,
    "ExpiryDuration": 0
   }
  }
 },
 "AccountLockoutCounterResetAfter": 0,
 "ServiceEnabled": true,
 "Description": "Account Service"
}
```


Retrieving the Existing Fault Events on a Server

Request to Retrieve a List of Existing Faults

```
curl -k -u admin:password https://10.10.10.10/redfish/v1/Managers/CIMC/
LogServices/Fault/Entries
```

Response


```
{
 "@odata.id": "/redfish/v1/Managers/CIMC/LogServices/Fault/Entries",
 "@odata.context": "/redfish/v1/$metadata#Managers/Members/$entity/LogServices
/Members/$entity/Entries",
 "@odata.type": "#LogEntryCollection.LogEntryCollection",
 "Name": "Log Service Collection",
 "Members": [{
   "@odata.id": "/redfish/v1/Managers/CIMC/LogServices/Fault/Entries/1",
   "Id": "1",
   "EventId": "1",
   "EntryType": "Event",
   "Name": "Log Entry 1",
   "Description": "Log Entry 1",
   "Message": "TEMP_SENS_FRONT: Front Panel Thermal Threshold at upper
non recoverable levels: Check Cooling ",
   "EventType": "Alert",
   "Created": "2020-05-28T10:14:35",
   "EventTimestamp": "2020-05-28T10:14:35",
   "MessageId": "F0411"
  }],
 "Members@odata.count": 1
}
```


Request to Retrieve Details on Each Fault

```
curl -k -u admin:password https://10.10.10.10/redfish/v1/Managers/CIMC/LogServices/
Fault/Entries/1
```

Response


```
{
 "@odata.id": "/redfish/v1/Managers/CIMC/LogServices/Fault/Entries/1",
 "@odata.context": "/redfish/v1/$metadata#Managers/Members/$entity/LogServices
/Members/$entity/Entries/Members/$entity",
 "@odata.type": "#LogEntry.v1_4_0.LogEntry",
 "Id": "1",
 "EventId": "1",
 "EntryType": "Event",
 "Name": "Log Entry 1",
 "Description": "Log Entry 1",
 "Message": "TEMP_SENS_FRONT: Front Panel Thermal Threshold at upper non
recoverable levels: Check Cooling ",
 "EventType": "Alert",
 "Created": "2020-05-28T10:14:35",
 "EventTimestamp": "2020-05-28T10:14:35",
 "MessageId": "F0411",
 "Severity": "Critical"
}
```


Retrieving TPM Information

Request

```
curl -k -u admin:password https://10.10.10.10/redfish/v1/Systems/<SerialNumber>
```

Response


```
{
 "@odata.id": "/redfish/v1/Systems/WZP21330G5B",
 "@odata.context": "/redfish/v1/$metadata#Systems/Members/$entity",
 "@odata.type": "#ComputerSystem.v1_7_0.ComputerSystem",
 "Processors": {
  "@odata.id": "/redfish/v1/Systems/WZP21330G5B/Processors"
 },
 "SimpleStorage": {
  "@odata.id": "/redfish/v1/Systems/WZP21330G5B/SimpleStorage"
 },
 "Storage": {
  "@odata.id": "/redfish/v1/Systems/WZP21330G5B/Storage"
 },
 "Memory": {
  "@odata.id": "/redfish/v1/Systems/WZP21330G5B/Memory"
 },
 "MemoryDomains": {
  "@odata.id": "/redfish/v1/Systems/WZP21330G5B/MemoryDomains"
 },
 "NetworkInterfaces": {
  "@odata.id": "/redfish/v1/Systems/WZP21330G5B/NetworkInterfaces"
 },
 "Bios": {
  "@odata.id": "/redfish/v1/Systems/WZP21330G5B/Bios"
 },
 "SecureBoot": {
  "@odata.id": "/redfish/v1/Systems/WZP21330G5B/SecureBoot"
 },
 "EthernetInterfaces": {
  "@odata.id": "/redfish/v1/Systems/WZP21330G5B/EthernetInterfaces"
 },
 "LogServices": {
```

```
  "@odata.id": "/redfish/v1/Systems/WZP21330G5B/LogServices"
 },
 "Links": {
  "Chassis": [{
    "@odata.id": "/redfish/v1/Chassis/1"
   }],
  "CooledBy": [{
    "@odata.id": "/redfish/v1/Chassis/1/Thermal"
   }],
  "ManagedBy": [{
    "@odata.id": "/redfish/v1/Managers/CIMC"
   }],
  "PoweredBy": [{
    "@odata.id": "/redfish/v1/Chassis/1/Power"
   }]
 },
 "SerialNumber": "WZP21330G5B",
 "Boot": {
  "BootSourceOverrideTarget": "None",
  "BootSourceOverrideTarget@Redfish.AllowableValues": ["None", "Pxe",
"Floppy", "Cd", "Hdd", "BiosSetup", "Diags"],
  "BootSourceOverrideEnabled@Redfish.AllowableValues": ["Once", "Continuous",
"Disabled"],
  "BootSourceOverrideEnabled": "Disabled"
 },
 "Id": "WZP21330G5B",
 "AssetTag": "Test assetTagRedfish",
 "PowerState": "On",
 "SystemType": "Physical",
 "ProcessorSummary": {
  "Model": "Intel(R) Xeon(R) Silver 4114 CPU @ 2.20GHz",
  "Count": 2
 },
 "HostName": "test-hostname-kr-webcimc",
 "MemorySummary": {
  "TotalSystemMemoryGiB": 64,
  "Status": {
   "HealthRollup": "OK",
   "Health": "OK"
  }
 },
 "PCIeDevices@odata.count": 6,
 "PCIeFunctions@odata.count": 6,
 "Description": "PatchName",
 "UUID": "1C61EBC6-8E10-4A9B-90CE-A4C03913EA56",
 "Status": {
  "State": "Enabled",
  "Health": "OK"
 },
 "PCIeDevices": [{
   "@odata.id": "/redfish/v1/Systems/WZP21330G5B/PCIeDevices/1"
  }, {
   "@odata.id": "/redfish/v1/Systems/WZP21330G5B/PCIeDevices/2"
  }, {
   "@odata.id": "/redfish/v1/Systems/WZP21330G5B/PCIeDevices/FRONT-NVME-2"
  }, {
   "@odata.id": "/redfish/v1/Systems/WZP21330G5B/PCIeDevices/MLOM"
  }, {
   "@odata.id": "/redfish/v1/Systems/WZP21330G5B/PCIeDevices/MRAID"
  }, {
   "@odata.id": "/redfish/v1/Systems/WZP21330G5B/PCIeDevices/L"
  }],
 "Name": "UCS C220 M5L",
 "HostWatchdogTimer": {
```

```
  "Status": {
   "State": "Enabled"
  },
  "WarningAction": "None",
  "FunctionEnabled": true,
  "TimeoutAction": "ResetSystem"
 },
 "PCIeFunctions": [{
   "@odata.id": "/redfish/v1/Systems/WZP21330G5B/PCIeFunctions/1"
  }, {
   "@odata.id": "/redfish/v1/Systems/WZP21330G5B/PCIeFunctions/2"
  }, {
   "@odata.id": "/redfish/v1/Systems/WZP21330G5B/PCIeFunctions
/FRONT-NVME-2"
  }, {
   "@odata.id": "/redfish/v1/Systems/WZP21330G5B/PCIeFunctions/MLOM"
  }, {
   "@odata.id": "/redfish/v1/Systems/WZP21330G5B/PCIeFunctions/MRAID"
  }, {
   "@odata.id": "/redfish/v1/Systems/WZP21330G5B/PCIeFunctions/L"
  }],
 "Oem": {
  "Cisco": {
   "PostCompletionStatus": true,
   "SystemEffectiveMemory": 64,
   "SystemEffectiveSpeed": 2400
  }
 },
 "TrustedModules": [{
   "InterfaceType": "TPM2_0",
   "InterfaceTypeSelection": "BiosSetting",
   "FirmwareVersion": "2.0",
   "Status": {
    "Health": "OK"
   }
  }],
 "PowerRestorePolicy": "LastState",
 "Manufacturer": "Cisco Systems Inc",
 "IndicatorLED": "Off",
 "Model": "UCSC-C220-M5L",
 "BiosVersion": "C220M5.4.1.1.61.0504202214",
 "Actions": {
  "#ComputerSystem.Reset": {
   "target": "/redfish/v1/Systems/WZP21330G5B/Actions
/ComputerSystem.Reset",
   "ResetType@Redfish.AllowableValues": ["On", "ForceOff",
"GracefulShutdown", "GracefulRestart", "ForceRestart", "Nmi", "PowerCycle"]
  }
 }
}
```


Retrieving PCI Slot Information

Request

```
curl -k -u admin:password https://10.10.10.10/redfish/v1/Systems
/<SerialNumber>
```

Response


```
{
 "@odata.id": "/redfish/v1/Systems/WZP21330G5B",
 "@odata.context": "/redfish/v1/$metadata#Systems/Members/$entity",
 "@odata.type": "#ComputerSystem.v1_7_0.ComputerSystem",
 "Processors": {
  "@odata.id": "/redfish/v1/Systems/WZP21330G5B/Processors"
 },
 "SimpleStorage": {
  "@odata.id": "/redfish/v1/Systems/WZP21330G5B/SimpleStorage"
 },
 "Storage": {
  "@odata.id": "/redfish/v1/Systems/WZP21330G5B/Storage"
 },
 "Memory": {
  "@odata.id": "/redfish/v1/Systems/WZP21330G5B/Memory"
 },
 "MemoryDomains": {
  "@odata.id": "/redfish/v1/Systems/WZP21330G5B/MemoryDomains"
 },
 "NetworkInterfaces": {
  "@odata.id": "/redfish/v1/Systems/WZP21330G5B/NetworkInterfaces"
 },
 "Bios": {
  "@odata.id": "/redfish/v1/Systems/WZP21330G5B/Bios"
 },
 "SecureBoot": {
  "@odata.id": "/redfish/v1/Systems/WZP21330G5B/SecureBoot"
 },
 "EthernetInterfaces": {
  "@odata.id": "/redfish/v1/Systems/WZP21330G5B/EthernetInterfaces"
 },
 "LogServices": {
  "@odata.id": "/redfish/v1/Systems/WZP21330G5B/LogServices"
 },
 "Links": {
  "Chassis": [{
    "@odata.id": "/redfish/v1/Chassis/1"
   }],
  "CooledBy": [{
    "@odata.id": "/redfish/v1/Chassis/1/Thermal"
   }],
  "ManagedBy": [{
    "@odata.id": "/redfish/v1/Managers/CIMC"
   }],
  "PoweredBy": [{
    "@odata.id": "/redfish/v1/Chassis/1/Power"
   }]
 },
 "SerialNumber": "WZP21330G5B",
 "Boot": {
  "BootSourceOverrideTarget": "None",
  "BootSourceOverrideTarget@Redfish.AllowableValues": ["None",
"Pxe", "Floppy", "Cd", "Hdd", "BiosSetup", "Diags"],
  "BootSourceOverrideEnabled@Redfish.AllowableValues": ["Once",
"Continuous",
"Disabled"],
  "BootSourceOverrideEnabled": "Disabled"
 },
 "Id": "WZP21330G5B",
 "AssetTag": "Test assetTagRedfish",
 "PowerState": "On",
 "SystemType": "Physical",
```

```
 "ProcessorSummary": {
  "Model": "Intel(R) Xeon(R) Silver 4114 CPU @ 2.20GHz",
  "Count": 2
 },
 "HostName": "test-hostname-kr-webcimc",
 "MemorySummary": {
  "TotalSystemMemoryGiB": 64,
  "Status": {
   "HealthRollup": "OK",
   "Health": "OK"
  }
 },
 "PCIeDevices@odata.count": 6,
 "PCIeFunctions@odata.count": 6,
 "Description": "PatchName",
 "UUID": "1C61EBC6-8E10-4A9B-90CE-A4C03913EA56",
 "Status": {
  "State": "Enabled",
  "Health": "OK"
 },
 "PCIeDevices": [{
   "@odata.id": "/redfish/v1/Systems/WZP21330G5B/PCIeDevices/1"
  }, {
   "@odata.id": "/redfish/v1/Systems/WZP21330G5B/PCIeDevices/2"
  }, {
   "@odata.id": "/redfish/v1/Systems/WZP21330G5B/PCIeDevices/FRONT-NVME-2"
  }, {
   "@odata.id": "/redfish/v1/Systems/WZP21330G5B/PCIeDevices/MLOM"
  }, {
   "@odata.id": "/redfish/v1/Systems/WZP21330G5B/PCIeDevices/MRAID"
  }, {
   "@odata.id": "/redfish/v1/Systems/WZP21330G5B/PCIeDevices/L"
  }],
 "Name": "UCS C220 M5L",
 "HostWatchdogTimer": {
  "Status": {
   "State": "Enabled"
  },
  "WarningAction": "None",
  "FunctionEnabled": true,
  "TimeoutAction": "ResetSystem"
 },
 "PCIeFunctions": [{
   "@odata.id": "/redfish/v1/Systems/WZP21330G5B/PCIeFunctions/1"
  }, {
   "@odata.id": "/redfish/v1/Systems/WZP21330G5B/PCIeFunctions/2"
  }, {
   "@odata.id": "/redfish/v1/Systems/WZP21330G5B/PCIeFunctions
/FRONT-NVME-2"
  }, {
   "@odata.id": "/redfish/v1/Systems/WZP21330G5B/PCIeFunctions/MLOM"
  }, {
   "@odata.id": "/redfish/v1/Systems/WZP21330G5B/PCIeFunctions/MRAID"
  }, {
   "@odata.id": "/redfish/v1/Systems/WZP21330G5B/PCIeFunctions/L"
  }],
 "Oem": {
  "Cisco": {
   "PostCompletionStatus": true,
   "SystemEffectiveMemory": 64,
   "SystemEffectiveSpeed": 2400
  }
 },
 "TrustedModules": [{
```

```
   "InterfaceType": "TPM2_0",
   "InterfaceTypeSelection": "BiosSetting",
   "FirmwareVersion": "2.0",
   "Status": {
    "Health": "OK"
   }
  }],
 "PowerRestorePolicy": "LastState",
 "Manufacturer": "Cisco Systems Inc",
 "IndicatorLED": "Off",
 "Model": "UCSC-C220-M5L",
 "BiosVersion": "C220M5.4.1.1.61.0504202214",
 "Actions": {
  "#ComputerSystem.Reset": {
   "target": "/redfish/v1/Systems/WZP21330G5B/Actions
/ComputerSystem.Reset",
   "ResetType@Redfish.AllowableValues": ["On", "ForceOff",
"GracefulShutdown", "GracefulRestart", "ForceRestart", "Nmi", "PowerCycle"]
  }
 }
}
```

Retrieving DIMM Blacklisting Status

Request to Retrieve DIMM Blacklisting Status

```
curl -k -u admin:password https://10.10.10.10/redfish/v1/Systems/<SerialNumber>
```

Response

```
{
        "@odata.id":    "/redfish/v1/Systems/WZP220607R1",
        "@odata.type":  "#ComputerSystem.v1_9_0.ComputerSystem",
        "@odata.context":       "/redfish/v1/$metadata#ComputerSystem.ComputerSystem",
        "Description":  "Represents general resources for the overall system",
        "Processors":   {
                "@odata.id":    "/redfish/v1/Systems/WZP220607R1/Processors"
        },
"Oem":  {
                "Cisco":        {
                        "DimmBlacklistingEnabled":      true,
                        "SystemEffectiveMemory":        48,
                        "SystemEffectiveSpeed": 2400,
                        "PostCompletionStatus": true
                }
        },
"Manufacturer": "Cisco Systems Inc"
<SNIP>
}
```

Retrieving Network Settings

Request

```
curl -k -u admin:password https://10.10.10.10/redfish/v1/Managers
/CIMC/EthernetInterfaces/NICs
```

Response


```
{
 "@odata.id": "/redfish/v1/Managers/CIMC/EthernetInterfaces/NICs",
 "@odata.context": "/redfish/v1/$metadata#Managers/Members/$entity
/EthernetInterfaces/Members/$entity",
 "@odata.type": "#EthernetInterface.v1_4_1.EthernetInterface",
 "Links": {
  "Chassis": {
   "@odata.id": "/redfish/v1/Chassis/1"
  }
 },
 "IPv6DefaultGateway": "3002::3001",
 "Id": "NICs",
 "NameServers": ["11.11.11.11", "12.12.12.12", "3003::3002"],
 "AutoNeg": false,
 "SpeedMbps": 1024,
 "HostName": "test-hostname-kr-webcimc",
 "IPv6Addresses": [{
   "Address": "3002::3003",
   "PrefixLength": 64,
   "AddressOrigin": "Static"
  }],
 "FullDuplex": true,
 "StaticNameServers": ["11.11.11.11", "12.12.12.12", "3003::3002"],
 "DHCPv4": {
  "UseDNSServers": false,
  "UseGateway": false,
  "UseNTPServers": false,
  "UseDomainName": false,
  "DHCPEnabled": false,
  "UseStaticRoutes": false
 },
 "IPv4Addresses": [{
   "Gateway": "10.10.10.1",
   "Address": "10.10.10.10",
   "SubnetMask": "255.255.255.0",
   "AddressOrigin": "Static"
  }],
 "VLAN": {
  "VLANId": 5,
  "VLANEnable": false
 },
 "IPv6StaticDefaultGateways": [{
   "Address": "3002::3001"
  }],
 "InterfaceEnabled": true,
 "MACAddress": "70:DF:2F:86:F3:6C",
 "Name": "Manager Ethernet Interface",
 "DHCPv6": {
  "OperatingMode": "Disabled",
  "UseDNSServers": false,
  "UseDomainName": false,
  "UseNTPServers": false
 },
 "MaxIPv6StaticAddresses": 1,
 "StatelessAddressAutoConfig": {
  "IPv4AutoConfigEnabled": false,
  "IPv6AutoConfigEnabled": true
 },
 "MTUSize": 1500,
 "PermanentMACAddress": "70:DF:2F:86:F3:6C",
 "Description": "Manager Network Interface"
}
```

Enabling Auto-Negotiation

Request

```
curl -k -u admin:password https://10.10.10.10/redfish/v1
/Managers/CIMC/EthernetInterfaces/NICs -XPATCH -d '{"AutoNeg":true}'
```

Response


```
{
 "IPv6DefaultGateway": "3002::3001",
 "Id": "NICs",
 "NameServers": ["11.11.11.11", "12.12.12.12", "3003::3002"],
 "AutoNeg": true,
 "SpeedMbps": 1024,
 "HostName": "test-hostname-kr-webcimc",
 "IPv6Addresses": [{
   "Address": "3002::3003",
   "PrefixLength": 64,
   "AddressOrigin": "Static"
  }],
 "FullDuplex": true,
 "StaticNameServers": ["11.11.11.11", "12.12.12.12", "3003::3002"],
 "DHCPv4": {
  "UseDNSServers": false,
  "UseGateway": false,
  "UseNTPServers": false,
  "UseDomainName": false,
  "DHCPEnabled": false,
  "UseStaticRoutes": false
 },
 "IPv4Addresses": [{
   "Gateway": "10.10.10.1",
   "Address": "10.10.10.10",
   "SubnetMask": "255.255.255.0",
   "AddressOrigin": "Static"
  }],
 "VLAN": {
  "VLANId": 5,
  "VLANEnable": false
 },
 "IPv6StaticDefaultGateways": [{
   "Address": "3002::3001"
  }],
 "InterfaceEnabled": true,
 "MACAddress": "70:DF:2F:86:F3:6C",
 "Name": "Manager Ethernet Interface",
 "DHCPv6": {
  "OperatingMode": "Disabled",
  "UseDNSServers": false,
  "UseDomainName": false,
  "UseNTPServers": false
 },
 "MaxIPv6StaticAddresses": 1,
 "StatelessAddressAutoConfig": {
  "IPv4AutoConfigEnabled": false,
  "IPv6AutoConfigEnabled": true
 },
 "MTUSize": 1500,
 "PermanentMACAddress": "70:DF:2F:86:F3:6C",
```

```
 "Description": "Manager Network Interface"
}
```

Disabling Auto-Negotiation

Request

```
curl -k -u admin:password https://10.10.10.10/redfish/v1/Managers/CIMC
/EthernetInterfaces/NICs -XPATCH -d '{"AutoNeg":false}'
```

Response

```
{
 "IPv6DefaultGateway": "3002::3001",
 "Id": "NICs",
 "NameServers": ["11.11.11.11", "12.12.12.12", "3003::3002"],
 "AutoNeg": false,
 "SpeedMbps": 100,
 "HostName": "test-hostname-kr-webcimc",
 "IPv6Addresses": [{
   "Address": "3002::3003",
   "PrefixLength": 64,
   "AddressOrigin": "Static"
  }],
 "FullDuplex": true,
 "StaticNameServers": ["11.11.11.11", "12.12.12.12", "3003::3002"],
 "DHCPv4": {
  "UseDNSServers": false,
  "UseGateway": false,
  "UseNTPServers": false,
  "UseDomainName": false,
  "DHCPEnabled": false,
  "UseStaticRoutes": false
 },
 "IPv4Addresses": [{
   "Gateway": "10.10.10.1",
   "Address": "10.10.10.10",
   "SubnetMask": "255.255.255.0",
   "AddressOrigin": "Static"
  }],
 "VLAN": {
  "VLANId": 5,
  "VLANEnable": false
 },
 "IPv6StaticDefaultGateways": [{
   "Address": "3002::3001"
  }],
 "InterfaceEnabled": true,
 "MACAddress": "70:DF:2F:86:F3:6C",
 "Name": "Manager Ethernet Interface",
 "DHCPv6": {
  "OperatingMode": "Disabled",
  "UseDNSServers": false,
  "UseDomainName": false,
  "UseNTPServers": false
 },
 "MaxIPv6StaticAddresses": 1,
 "StatelessAddressAutoConfig": {
  "IPv4AutoConfigEnabled": false,
  "IPv6AutoConfigEnabled": true
```

```
 },
 "MTUSize": 1500,
 "PermanentMACAddress": "70:DF:2F:86:F3:6C",
 "Description": "Manager Network Interface"
}
```

Configuring Network Port Speed and Duplex With Auto-negotiation in Disabled State

Request

```
curl -k -u admin:password https://10.10.10.10/redfish/v1
/Managers/CIMC/EthernetInterfaces/NICs -XPATCH -d
'{
"SpeedMbps":10,
"FullDuplex":false
}'
```

Response

```
{
 "IPv6DefaultGateway": "3002::3001",
 "Id": "NICs",
 "NameServers": ["11.11.11.11", "12.12.12.12", "3003::3002"],
 "AutoNeg": false,
 "SpeedMbps": 10,
 "HostName": "test-hostname-kr-webcimc",
 "IPv6Addresses": [{
   "Address": "3002::3003",
   "PrefixLength": 64,
   "AddressOrigin": "Static"
  }],
 "FullDuplex": false,
 "StaticNameServers": ["11.11.11.11", "12.12.12.12", "3003::3002"],
 "DHCPv4": {
  "UseDNSServers": false,
  "UseGateway": false,
  "UseNTPServers": false,
  "UseDomainName": false,
  "DHCPEnabled": false,
  "UseStaticRoutes": false
 },
 "IPv4Addresses": [{
   "Gateway": "10.10.10.1",
   "Address": "10.10.10.10",
   "SubnetMask": "10.10.10.10",
   "AddressOrigin": "Static"
  }],
 "VLAN": {
  "VLANId": 5,
  "VLANEnable": false
 },
 "IPv6StaticDefaultGateways": [{
   "Address": "3002::3001"
  }],
 "InterfaceEnabled": true,
 "MACAddress": "70:DF:2F:86:F3:6C",
 "Name": "Manager Ethernet Interface",
 "DHCPv6": {
```

```
  "OperatingMode": "Disabled",
  "UseDNSServers": false,
  "UseDomainName": false,
  "UseNTPServers": false
 },
 "MaxIPv6StaticAddresses": 1,
 "StatelessAddressAutoConfig": {
  "IPv4AutoConfigEnabled": false,
  "IPv6AutoConfigEnabled": true
 },
 "MTUSize": 1500,
 "PermanentMACAddress": "70:DF:2F:86:F3:6C",
 "Description": "Manager Network Interface"
}
```

Creating PXE Boot Device

Note This request is not supported for Cisco UCS C220 M4, C240 M4, C460 M4 and S3X60 servers.

VIC 13XX cards are supported from 4.1(3b) release onwards.

Request

```
curl -k -u admin:Password  https://10.10.10.10/redfish/v1/Chassis
/1/NetworkAdapters/UCSC-MLOM-C100-04_FCH224172K8/NetworkDeviceFunctions/ -d
'{"Id": "eth4", "NetDevFuncType": "Ethernet", "BootMode": "PXE", "Oem":
{"Cisco": {"VnicConfiguration": {"PCIOrder": "0.5", "NivCfg":
{"ChannelNumber":14}}}}}' -XPOST
```

Deleting PXE Boot Device

Request

Note This request is not supported for Cisco UCS C220 M4, C240 M4, C460 M4 and S3X60 servers.

VIC 13XX cards are supported from 4.1(3b) release onwards.

```
curl -k -u admin:password https://10.10.10.10/redfish/v1/Chassis/1/
NetworkAdapters/UCSC-MLOM-C100-04_FCH224172K8/NetworkDeviceFunctions/eth4 -XDELETE
```

Modifying PXE Boot Device

Request

Note This request is not supported for Cisco UCS C220 M4, C240 M4, C460 M4 and S3X60 servers.

VIC 13XX cards are supported from 4.1(3b) release onwards.

```
curl -k -u admin:Password  https://10.104.236.126/redfish/v1
/Chassis/1/NetworkAdapters/UCSC-MLOM-C100-04_FCH224172K8/NetworkDeviceFunctions/eth4 -d
'{ "BotMode": "Disabled"}'
-XPATCH
```

Creating ISCSI Boot Device

Note This request is not supported for Cisco UCS C220 M4, C240 M4, C460 M4, and S3X60 servers.

VIC 13XX cards are supported from 4.1(3b) release onwards.

Request

```
curl -k -u admin:Password  https://10.10.10.10/redfish
/v1/Chassis/1/NetworkAdapters/UCSC-MLOM-C100-04_FCH224172K8/NetworkDeviceFunctions -d
'{"Id":"eth11","NetDevFuncType":"Ethernet","BootMode":"iSCSI","iSCSIBoot":{"InitiatorName":
"iqn.initiator.com","InitiatorIPAddress":"192.168.0.1","InitiatorNetmask":
"255.255.255.0","PrimaryTargetName":"iqn.target0.com","PrimaryTargetIPAddress":
"192.168.0.2","PrimaryLUN":0,"AuthenticationMethod":"MutualCHAP","CHAPSecret":
"Chapsecret","CHAPUsername":"chapname" ,"MutualCHAPUsername":"mutualname",
"MutualCHAPSecret":"msecret","IPAddressType":"IPv4" },"Oem":{"Cisco":
{"VnicConfiguration":{"PCIOrder":"1.2","NivCfg":{"ChannelNumber":12} }}}}'  -XPOST
```

Modifying ISCSI Boot Device

Note This request is not supported for Cisco UCS C220 M4, C240 M4, C460 M4, and S3X60 servers.

VIC 13XX cards are supported from 4.1(3b) release onwards.

Set/Modify iSCSI properties with static configuration

```
curl -k -u admin:password  https://10.10.10.10/redfish/v1/Chassis/1/
NetworkAdapters/ UCSC-PCIE-C25Q-04_FCH233770L7/NetworkDeviceFunctions/eth0 -XPATCH -d
'{"BootMode":"iSCSI","iSCSIBoot":{"InitiatorName":"in.initiator.com","InitiatorIPAddress":
"192.168.0.1","InitiatorNetmask":"255.255.255.0","PrimaryTargetName":"iqn.target0.com",
```

```
"PrimaryTargetIPAddress":"192.168.1.1", "PrimaryTargetTCPPort":5000,
"SecondaryTargetTCPPort":5000 }}'
```

Set/Modify iSCSI Properties with DHCP Configuration

```
curl -k -u admin:password  https://10.10.10.10/redfish/v1/Chassis/1/
NetworkAdapters/ UCSC-PCIE-C25Q-04_FCH233770L7/NetworkDeviceFunctions/eth0 -XPATCH -d
'{"BootMode":"iSCSI","iSCSIBoot":{"InitiatorName":"in.initiator.com","IPMaskDNSViaDHCP":
true,"TargetInfoViaDHCP":true}}'
```

Set iSCSI Properties for Both Primary Targets, Secondary Target, and Authentication Settings

```
curl -k -u admin:password  https://10.10.10.10/redfish/v1/Chassis/1/
NetworkAdapters/ UCSC-PCIE-C25Q-04_FCH233770L7/NetworkDeviceFunctions/eth0 -XPATCH -d
'{"BootMode":"iSCSI","iSCSIBoot":{"InitiatorName":"in.initiator.com","AuthenticationMethod":
"MutualCHAP","CHAPSecret":"Chapsecret","CHAPUsername":"chapname","IPAddressType":"IPv4",
"InitiatorDefaultGateway":"1.1.1.1","InitiatorIPAddress":"1.1.1.1","InitiatorNetmask":
"255.255.255.0","MutualCHAPSecret":"msecret","MutualCHAPUsername":"mutualname",
"PrimaryDNS":"1.2.2.2","PrimaryLUN":3,"PrimaryTargetIPAddress":"1.1.1.1",
"PrimaryTargetName":"qweq", "SecondaryDNS":"1.1.1.1","SecondaryLUN":4,
"SecondaryTargetIPAddress":"12.23.34.4","SecondaryTargetName":"qwrqwrwq",
"TargetInfoViaDHCP":false}}'
```

Set AuthenticationMethod as no CHAP, no MutualCHAP

```
curl -k -u admin:password  https://10.10.10.10/redfish/v1/Chassis/1/
NetworkAdapters/ UCSC-PCIE-C25Q-04_FCH233770L7/NetworkDeviceFunctions/et1 -XPATCH -d
'{"iSCSIBoot":{"InitiatorName":"in.initiator.com","AuthenticationMethod":"None",
"CHAPSecret":"","CHAPUsername":"","IPAddressType":"IPv4","InitiatorDefaultGateway":
"1.1.1.1","InitiatorIPAddress":"1.1.1.1","InitiatorNetmask":"255.255.255.0",
"MutualCHAPSecret":"","MutualCHAPUsername":""}}'
```

Note No CHAP/MutualCHAP properties should be accepted when setting **None**. If the properties already exists, it should be mentioned with null value as in below request.

AuthenticationMethod as CHAP with CHAP Name/Secret

```
curl -k -u admin:password  https://10.10.10.10/redfish/v1/Chassis/1/
NetworkAdapters/ UCSC-PCIE-C25Q-04_FCH233770L7/NetworkDeviceFunctions/eth0 -XPATCH -d
'{"iSCSIBoot":{"InitiatorName":"in.initiator.com","AuthenticationMethod":"CHAP",
"IPAddressType":"IPv4","InitiatorDefaultGateway":"1.1.1.1","InitiatorIPAddress":
"1.1.1.1","InitiatorNetmask":"255.255.255.0","PrimaryDNS":"1.2.2.2","PrimaryLUN":333,
"PrimaryTargetIPAddress":"1.1.1.1","PrimaryTargetName":"qweq","CHAPSecret":"Chapsecret",
"CHAPUsername":"chapname"}}'
```

Note If authenticationMethod is CHAP, Only CHAP name/secret should be accepted in the request. If mutualCHAP attributes already exists, MutualCHAP properties should be set with Null value as below. "MutualCHAPSecret":"","MutualCHAPUsername":""

AuthenticationMethod as MutualCHAP

```
curl -k -u admin:password  https://10.10.10.10/redfish/v1/Chassis/1/
NetworkAdapters/ UCSC-PCIE-C25Q-04_FCH233770L7/NetworkDeviceFunctions/eth1 -XPATCH -d
'{"iSCSIBoot":{"InitiatorName":"i.initiator.com","AuthenticationMethod":"MutualCHAP",
```

```
"IPAddressType":"IPv4","InitiatorDefaultGateway":"1.1.1.1","InitiatorIPAddress":"1.1.1.1",
"InitiatorNetmask":"255.255.255.0","MutualCHAPSecret":"msecret","MutualCHAPUsername":
"mutualname","PrimaryDNS":"1.2.2.2","PrimaryLUN":333,"PrimaryTargetIPAddress":"1.1.1.1",
"PrimaryTargetName":"qweq","CHAPSecret":"Chapsecret","CHAPUsername":"chapname"}}'
```

Note For MutualCHAP both CHAP and MutualCHAP credentials should be mentioned.

Configure iSCSIBootUcs Configurations

```
curl -k -u admin:password https://10.10.10.10/redfish/v1/Chassis/1/
NetworkAdapters/UCSC-PCIE-C25Q-04_FCH233770TY/NetworkDeviceFunctions/eth1 -d
'{"BootMode":"iSCSI", "Oem":{"Cisco":{"VnicConfiguration":{"EthConfiguration":
{"iSCSIBootUcs":{"PrimaryEnabled":true,"DHCPTimeout":60,"LinkTimeout":255,
"LinkBusyRetryCount":255,"TCPTimeout":255,"DHCPId":
"NetworkDeviceFunctionNetworkDeviceFunctionNetwork"}}}}}}
```

Creating SAN Boot Device

Note This request is not supported for Cisco UCS C220 M4, C240 M4, C460 M4, and S3X60 servers.

VIC 13XX cards are supported from 4.1(3b) release onwards.

To use FC interface, VNTAG/NIV mode should be enabled.

Add Bootable Entries

```
curl -XPATCH -k -u admin:Password https://10.10.10.10/redfish/v1
/Chassis/1/NetworkAdapters/UCSC-MLOM-C100-04_FCH224172K8/NetworkDeviceFunctions/fc1 -d
'{"Oem":{"Cisco":{"VnicConfiguration":{"VHBAConfiguration":{"BootTable":[{"WWPN":
"01:02:03:04:05:09:09:08","Lun":5}]}}}}}'
```

Add Multiple BootTable Entries

```
curl -XPATCH -k -u admin:Password https://10.10.10.10/redfish/v1
/Chassis/1/NetworkAdapters/UCSC-MLOM-C100-04_FCH224172K8/NetworkDeviceFunctions/fc0
-d '{"Oem":{"Cisco":{"VnicConfiguratio":{"VHBAConfiguration":{"BootTable":
[{"WWPN":"21:22:33:44:55:66:77:22","Lun":6 }, {"WWPN":"21:22:33:44:55:66:77:23","Lun":7},
{"WWPN":"21:22:33:44:55:66:77:24","Lun":8}, {"WWPN":"21:22:33:44:55:66:77:25","Lun":9}]}}}}}'
```

Deleting SAN Boot Device

Note This request is not supported for Cisco UCS C220 M4, C240 M4, C460 M4, and S3X60 servers.

VIC 13XX cards are supported from 4.1(3b) release onwards.

Request

```
curl -k -u admin:Password  https://10.10.10.10/redfish/v1
/Chassis/1/NetworkAdapters/UCSC-PCIE-C25Q-04_FCH233770L7/NetworkDeviceFunctions/fc3 -d
'{"Oem"{"Cisco":{"VnicConfiguration":{"VHBAConfiguration":{"BootTable":
[null, null, null, null]}}}}}' -XPATCH
```

Modifying SAN Boot Device

Note This request is not supported for Cisco UCS C220 M4, C240 M4, C460 M4, and S3X60 servers.

VIC 13XX cards are supported from 4.1(3b) release onwards.

To use FC interface, VNTAG/NIV mode should be enabled.

Request

```
curl -XPATCH -k -u admin:password https://10.10.10.10/redfish/v1/Chassis/1/
NetworkAdapters/ UCSC-PCIE-C25Q-04_FCH233770L7/NetworkDeviceFunctions/fc0 -d
'{"Oem":{"Cisco":{"VnicConfiguratio":{"VHBAConfiguration":{"BootTable":
[{"WWPN":"21:22:33:44:55:66:77:30","Lun":6 }, {}, null, {"WWPN":"21:22:33:44:55:66:77:31",
"Lun":9}]}}}}}'
```

Note Here, First BootTable Entry is modified. Second entry is not modified. Third entry is deleted and fourth entry is modified.

BootTable entry is a array of 4 values. BootTable: [{},{},{},{}], where

- {} - does not modify the value of that index in array
- null - Delete the value of that index in array
- new value- Modifies the existing value in that index

Creating and Uploading SSL certificate

Request

```
curl -XPOST -k -u admin:password https://10.10.10.10/redfish/v1
/CertificateService/Actions/CertificateService.GenerateCSR -d '
{
    "CommonName" : "CNValue",
    "Organization" : "OrgValue",
    "OrganizationalUnit" : "OUValue",
    "City" : "CityName",
    "State" : "StateName",
    "Country" : "IN",
    "KeyPairAlgorithm" : "TPM_ALG_SHA512",
    "Email" : "Redfish@redfish.com",
    "CertificateCollection" :
```

```
"/redfish/v1/Managers/CIMC/NetworkProtocol/HTTPS/Certificates/1",
    "ChallengePassword" : "password",
   "AlternativeNames" : ["no-one@cisco.com", "10.10.10.10","cisco.com","https://10.10.10.10
/login.html"]
}'
```

Response

```
{
 "CertificateCollection": "/redfish/v1/Managers/CIMC/NetworkProtocol/HTTPS/Certificates/1",

 "CSRString": "-----BEGIN CERTIFICATE REQUEST-----
     <REDACTED_CERTIFICATE_STRING>
                        -----END CERTIFICATE REQUEST-----\n"
}

After the certificate is signed from the CA, it can be uploaded to CIMC using below request:
curl -XPOST -k -u admin:password https://10.10.10.10/redfish/v1/ CertificateService/
Actions/CertificateService.ReplaceCertificate -d '
{
"CertificateString" : <SIGNED CERTIFICATE CONTENT>
"CertificateType" : "PEM",
"CertificateUri" : "/redfish/v1/Managers/CIMC/NetworkProtocol/HTTPS/Certificates/1"
}
```

HSU Discovery and Update

Note This request is not supported in C220M4, C240M4, C460M4 and S3X60 Servers.

Triggering HSU Deep Discovery

Request

```
curl -k -u admin:Password https://10.10.10.10/redfish/v1
/Managers/CIMC/Actions/Oem/CiscoUCSExtensions.HostOSBootManagement -XPOST -d
'{"BootOption":"Immediate","ImageRepository":"10.10.10.10/nfsshare
/hsu1s53mad/","Mode":"Discovery","TransferProtocol":"VMEDIA-NFS"}'
```

Note **BootOption**: **Immediate** or **OnNextBoot**

ImageRepository: <specify hsu tar file extracted path in remote share>

TransferProtocol: VMEDIA-NFS or VMEDIA-CIFS orVMEDIA-HTTPS or NFS or CIFS or HTTPS

To use NFS or CIFS or HTTPS, FlexUtil SD card has to be populated in the system.

Mode: Discovery

Response

```
{
        "Messages":     [],
        "Id":   "401",
        "Name": "HSU-inventory",
        "StartTime":    "01/15/2020 12:01:07 IST",
```

```
        "TaskState":    "New",
        "PercentComplete":      0,
        "@odata.id":    "/redfish/v1/TaskService/Tasks/401",
        "@odata.type":  "#Task.v1_4_0.Task"
}
```

Get Task to Find HSU Deep Discovery Status

Request

```
curl -k -u admin:Password https://10.10.10.10/redfish/v1/TaskService/Tasks/401
```

Response

```
{
        "@odata.id":    "/redfish/v1/TaskService/Tasks/401",
        "@odata.context":       "/redfish/v1/$metadata#TaskService/Tasks/Members/$entity",
        "@odata.type":  "#Task.v1_4_0.Task",
        "Id":   "401",
        "Name": "HSU-inventory",
        "StartTime":    "01/15/2020 12:01:07 IST",
        "EndTime":      "01/15/2020 12:15:45 IST",
        "PercentComplete":      100,
        "TaskState":    "Completed",
        "Messages":     [{
                        "MessageId":    "Base.1.4.Success",
                        "Message":      "Successfully Completed Request"
                }],
        "TaskMonitor":  "/redfish/v1/TaskService/Oem/TaskMonitor/401"
}
```

Get Firmware Inventory to Find the List of Updatable Items Discovered

Request

```
curl -k -u admin:Password https://10.10.10.10/redfish/v1/UpdateService/FirmwareInventory
```

Response

```
{
        "@odata.id":    "/redfish/v1/UpdateService/FirmwareInventory",
        "@odata.context":       "/redfish/v1/$metadata#UpdateService/FirmwareInventory",
        "@odata.type":  "#SoftwareInventoryCollection.SoftwareInventoryCollection",
        "Description":  "Inventory of Firmware components",
        "Name": "Firmware Inventory",
        "Members":      [{
                        "@odata.id":
"/redfish/v1/UpdateService/FirmwareInventory/Board_Controller"
                }, {
                        "@odata.id":    "/redfish/v1/UpdateService/FirmwareInventory/BIOS"
                }, {
                        "@odata.id":    "/redfish/v1/UpdateService/FirmwareInventory/CIMC"
                }, {
                        "@odata.id":    "/redfish/v1/UpdateService/FirmwareInventory
/HDD-model-MTFDDAV960TCB-serial-174619C268DF"
                }, {
                        "@odata.id":    "/redfish/v1/UpdateService/FirmwareInventory
/UCSC-NVMELW-I500-slot-FRONT-NVME-11"
                }, {
                        "@odata.id":
"/redfish/v1/UpdateService/FirmwareInventory/X550-LOM-slot-L"
                }, {
                        "@odata.id":    "/redfish/v1/UpdateService/FirmwareInventory
/HDD-model-MTFDDAV960TCB-serial-174619C26BA5"
                }, {
```

```
                    "@odata.id":    "/redfish/v1/UpdateService/FirmwareInventory/SasExpM5"

                }, {
                        "@odata.id":    "/redfish/v1/UpdateService/FirmwareInventory
/UCSC-NVMELW-I500-slot-FRONT-NVME-3"
                }, {
                        "@odata.id":
"/redfish/v1/UpdateService/FirmwareInventory/UCSC-RAID-M5HD-slot-RAID"
                }, {
                        "@odata.id":
"/redfish/v1/UpdateService/FirmwareInventory/P40-24GB-slot-10"
                }, {
                     "@odata.id":    "/redfish/v1/UpdateService/FirmwareInventory/mswitch1"

                }, {
                        "@odata.id":    "/redfish/v1/UpdateService/FirmwareInventory
/UCSC-NVMELW-I500-slot-FRONT-NVME-12"
                }, {
                        "@odata.id":    "/redfish/v1/UpdateService/FirmwareInventory
/UCSC-NVMELW-I500-slot-FRONT-NVME-2"
                }, {
                        "@odata.id":
"/redfish/v1/UpdateService/FirmwareInventory/FirePro-slot-2"
                }, {
                        "@odata.id":    "/redfish/v1/UpdateService/FirmwareInventory
/UCSC-NVMELW-I500-slot-FRONT-NVME-1"
                }, {
                        "@odata.id":    "/redfish/v1/UpdateService/FirmwareInventory
/UCSC-NVMELW-I500-slot-FRONT-NVME-6"
                }, {
                        "@odata.id":
"/redfish/v1/UpdateService/FirmwareInventory/UCSC-SAS9460-8i-slot-12"
                }, {
                        "@odata.id":    "/redfish/v1/UpdateService/FirmwareInventory
/UCSC-NVMELW-I500-slot-FRONT-NVME-4"
                }, {
                        "@odata.id":    "/redfish/v1/UpdateService/FirmwareInventory
/UCSC-NVMELW-I500-slot-FRONT-NVME-5"
                }, {
                     "@odata.id":    "/redfish/v1/UpdateService/FirmwareInventory/mswitch2"

                }],
        "Members@odata.count":  21
}
```

Triggering HSU Firmware Update on “All” Discovered Components

Request

```
curl -k -u admin:Password https://10.10.10.10/redfish/v1
/UpdateService/Actions/Oem/CiscoUCSExtensions.UCSUpdate -d '{ "Targets":[],
"ApplyTime":"Immediate",
"ForceUpdate":true, "ImageRepository":"10.10.10.10/nfsshare/hsu1s53mad/",  "TransferProtocol"
:"VMEDIA-NFS" , "Username”:”<share_username>”, "Password”:”<share_password>” }' -XPOST
```

Note **TransferProtocol**: **VMEDIA-NFS** or **VMEDIA-CIFS** or **VMEDIA-HTTPS** or **NFS** or **CIFS** or **HTTPS**

ApplyTime: **Immediate** or **OnNextBoot**

- Immediate- HSU iso booting will happen immediately to update some components
- OnNextBoot- HSU iso booting to update some components will take place only in host next power cycle/power on

ImageRepository : <specify hsu tar file extracted path in remote share>

ForceUpdate: true or false

Targets: To trigger update on all the discovered components

["Array of Software/Firmware Inventory URIs indicating where the image is to be applied."]

To trigger update on specific component, Targets of individual one or more components can be specified. For find Targets of individual components, refer this command

Response

```
{
        "Messages":     [],
        "Id":   "402",
        "Name": "HSU-update",
        "StartTime":    "01/15/2020 12:58:59 IST",
        "TaskState":    "New",
        "PercentComplete":      0,
        "@odata.id":    "/redfish/v1/TaskService/Tasks/402",
        "@odata.type":  "#Task.v1_4_0.Task"
}
```

Get Task ID to Get Status of Firmware Update

```
curl -k -u admin:Password https://10.10.10.10/redfish/v1/TaskService/Tasks/402
```

Response

```
{
        "@odata.id":    "/redfish/v1/TaskService/Tasks/402",
        "@odata.context":       "/redfish/v1/$metadata#TaskService/Tasks/Members/$entity",
        "@odata.type":  "#Task.v1_4_0.Task",
        "Id":   "402",
        "Name": "HSU-update",
        "StartTime":    "01/15/2020 12:58:59 IST",
        "EndTime":      "01/15/2020 13:48:20 IST",
        "PercentComplete":      100,
        "TaskState":    "Completed",
        "Messages":     [{
                        "MessageId":    "CiscoUcsHsu.1.0.0.UpdateSuccess",
                        "Message":      "Successfully updated the software inventory at
'UCSC-NVMELW-I500-slot-FRONT-NVME-11'.",
                        "Resolution":   "NULL"
                }, {
                        "MessageId":    "CiscoUcsHsu.1.0.0.UpdateSuccess",
                        "Message":      "Successfully updated the software inventory at
'X550-LOM-slot-L'.",
                        "Resolution":   "NULL"
                }, {
                        "MessageId":    "CiscoUcsHsu.1.0.0.UpdateSuccess",
```

```
                        "Message":      "Successfully updated the software inventory at
'SasExpM5'.",
                        "Resolution":   "NULL"
                }, {
                        "MessageId":    "CiscoUcsHsu.1.0.0.UpdateSuccess",
                        "Message":      "Successfully updated the software inventory at
'UCSC-NVMELW-I500-slot-FRONT-NVME-3'.",
                        "Resolution":   "NULL"
                }, {
                        "MessageId":    "CiscoUcsHsu.1.0.0.UpdateSuccess",
                        "Message":      "Successfully updated the software inventory at
'CIMC'.",
                        "Resolution":   "NULL"
                }, {
                        "MessageId":    "CiscoUcsHsu.1.0.0.UpdateSuccess",
                        "Message":      "Successfully updated the software inventory at
'UCSC-RAID-M5HD-slot-RAID'.",
                        "Resolution":   "NULL"
                }, {
                        "MessageId":    "CiscoUcsHsu.1.0.0.UpdateSuccess",
                        "Message":      "Successfully updated the software inventory at
'P40-24GB-slot-10'.",
                        "Resolution":   "NULL"
                }, {
                        "MessageId":    "CiscoUcsHsu.1.0.0.UpdateSuccess",
                        "Message":      "Successfully updated the software inventory at
'mswitch1'.",
                        "Resolution":   "NULL"
                }, {
                        "MessageId":    "CiscoUcsHsu.1.0.0.UpdateSuccess",
                        "Message":      "Successfully updated the software inventory at
'UCSC-NVMELW-I500-slot-FRONT-NVME-12'.",
                        "Resolution":   "NULL"
                }, {
                        "MessageId":    "CiscoUcsHsu.1.0.0.UpdateSuccess",
                        "Message":      "Successfully updated the software inventory at
'UCSC-NVMELW-I500-slot-FRONT-NVME-2'.",
                        "Resolution":   "NULL"
                }, {
                        "MessageId":    "CiscoUcsHsu.1.0.0.UpdateSuccess",
                        "Message":      "Successfully updated the software inventory at
'FirePro-slot-2'.",
                        "Resolution":   "NULL"
                }, {
                        "MessageId":    "CiscoUcsHsu.1.0.0.UpdateSuccess",
                        "Message":      "Successfully updated the software inventory at
'UCSC-NVMELW-I500-slot-FRONT-NVME-1'.",
                        "Resolution":   "NULL"
                }, {
                        "MessageId":    "CiscoUcsHsu.1.0.0.UpdateSuccess",
                        "Message":      "Successfully updated the software inventory at
'UCSC-NVMELW-I500-slot-FRONT-NVME-6'.",
                        "Resolution":   "NULL"
                }, {
                        "MessageId":    "CiscoUcsHsu.1.0.0.UpdateSuccess",
                        "Message":      "Successfully updated the software inventory at
'UCSC-SAS9460-8i-slot-12'.",
                        "Resolution":   "NULL"
                }, {
                        "MessageId":    "CiscoUcsHsu.1.0.0.UpdateSuccess",
                        "Message":      "Successfully updated the software inventory at
'UCSC-NVMELW-I500-slot-FRONT-NVME-4'.",
                        "Resolution":   "NULL"
                }, {
```

```
                        "MessageId":    "CiscoUcsHsu.1.0.0.UpdateSuccess",
                        "Message":      "Successfully updated the software inventory at
'UCSC-NVMELW-I500-slot-FRONT-NVME-5'.",
                        "Resolution":   "NULL"
                }, {
                        "MessageId":    "CiscoUcsHsu.1.0.0.UpdateSuccess",
                        "Message":      "Successfully updated the software inventory at
'mswitch2'.",
                        "Resolution":   "NULL"
                }, {
                        "MessageId":    "CiscoUcsHsu.1.0.0.UpdateSuccess",
                        "Message":      "Successfully updated the software inventory at
'Board_Controller'.",
                        "Resolution":   "NULL"
                }, {
                        "MessageId":    "CiscoUcsHsu.1.0.0.UpdateSuccess",
                        "Message":      "Successfully updated the software inventory at
'BIOS'.",
                        "Resolution":   "NULL"
                }, {
                        "MessageId":    "Base.1.4.Success",
                        "Message":      "Successfully Completed Request"
                }],
        "TaskMonitor":  "/redfish/v1/TaskService/Oem/TaskMonitor/402"
}
```

Terminate HSU Update Task trigger with ApplyTime as OnNextBoot before Power Cycle/Power On

```
curl -k -u admin:Password https://10.10.10.10/redfish/v1
/UpdateService/Actions/Oem/CiscoUCSExtensions.UCSUpdate
-d '{ "Targets":[], "ApplyTime":"OnNextBoot",  "ForceUpdate":true,  "ImageRepository":
"10.10.10.10/nfsshare/hsu1s53mad/",  "TransferProtocol":"VMEDIA-NFS"  }' -XPOST
```

Response

```
{
        "Messages":     [],
        "Id":   "405",
        "Name": "HSU-update",
        "StartTime":    "01/15/2020 17:10:26 IST",
        "TaskState":    "New",
        "PercentComplete":      0,
        "@odata.id":    "/redfish/v1/TaskService/Tasks/405",
        "@odata.type":  "#Task.v1_4_0.Task"
}
```

Get the Task Status

```
curl   -k -u admin:Password https://10.10.10.10/redfish/v1/TaskService/Tasks/405
```

Response

```
{
        "@odata.id":    "/redfish/v1/TaskService/Tasks/405",
        "@odata.context":       "/redfish/v1/$metadata#TaskService/Tasks/Members/$entity",
        "@odata.type":  "#Task.v1_4_0.Task",
        "Id":   "405",
        "Name": "HSU-update",
        "StartTime":    "01/15/2020 17:10:26 IST",
        "PercentComplete":      0,
        "TaskState":    "Running",
        "Messages":     [],
        "TaskMonitor":  "/redfish/v1/TaskService/Oem/TaskMonitor/405"
}
```

Use the taskMonitor URI in the above command to terminate the Update Task

```
curl   -k -u admin:Password https://10.10.10.10/redfish/v1/TaskService/Oem
/TaskMonitor/405 -XDELETE
```

Retrieving the HTTP Detail

```
curl -k -u admin:password https://10.10.10.10/redfish/v1/Managers/CIMC
/NetworkProtocol
```

Response

```
{
 "@odata.id": "/redfish/v1/Managers/CIMC/NetworkProtocol",
 "@odata.type": "#ManagerNetworkProtocol.v1_5_0.ManagerNetworkProtocol",
 "@odata.context": "/redfish/v1/$metadata#ManagerNetworkProtocol.ManagerNetworkProtocol",
 "HTTP": {
  "ProtocolEnabled": true,
  "Port": 80
 },
 "HTTPS": {
  "ProtocolEnabled": true,
  "Port": 443
  }
 }
 <SNIP>
}
```

Modifying HTTP Mode

```
curl -k -u admin:password https://10.10.10.10/redfish/v1/Managers/CIMC
/NetworkProtocol -XPATCH -d
'{
 "HTTP":{
  "ProtocolEnabled":false
 }
        }'

{
 "@odata.id": "/redfish/v1/Managers/CIMC/NetworkProtocol",
 "@odata.type": "#ManagerNetworkProtocol.v1_5_0.ManagerNetworkProtocol",
 "@odata.context": "/redfish/v1/$metadata#ManagerNetworkProtocol.ManagerNetworkProtocol",
 "HTTP": {
  "ProtocolEnabled": false,
  "Port": 80
 },
 "HTTPS": {
  "ProtocolEnabled": true,
  "Port": 443
  }
 }
 <SNIP>
}
```

Configuring SMTP Email Recipient

Note Severity is not part of standard schema. An OEM property is defined which is configurable per recipient.

```
curl -XPOST -k -u admin:$PASSWORD https://$IP/redfish/v1/EventService
/Subscriptions -d '{
    "Protocol" : "SMTP",
    "Oem":{
        "Cisco" : {
            "SMTPMinimumSeverityToReport" : "Warning"
        }
    },
    "Destination":"mailto:username@cisco.com"
}'
```

```
curl -XPATCH -k -u admin:$PASSWORD https://$IP/redfish/v1/EventService
/Subscriptions/SMTP_1 -d '{
    "Oem" : {
        "Cisco":{
            "SMTPMinimumSeverityToReport": "Informational"
        }
    }
}'
```

Retrieving Local Logging Severity

Request

```
Request to retireive Local logging Severity:
curl -k -u admin:password https://10.10.10.10/redfish/v1/Managers/CIMC/LogServices/CIMC
```

Response

```
{
 "@odata.id": "/redfish/v1/Managers/CIMC/LogServices/CIMC",
 "@odata.type": "#LogService.v1_2_0.LogService",
 "@odata.context": "/redfish/v1/$metadata#LogService.LogService",
 "Entries": {
  "@odata.id": "/redfish/v1/Managers/CIMC/LogServices/CIMC/Entries"
 },
 "ServiceEnabled": true,
 "OverWritePolicy": "WrapsWhenFull",
 "Id": "CIMC",
 "Name": "CIMC Log Service",
 "LogEntryType": "OEM",
 "Description": "CIMC Log Service",
 "DateTimeLocalOffset": "+05:30",
 "DateTime": "2020-12-22T14:01:38+05:30",
 "MaxNumberOfRecords": 10000,
 "SyslogFilters": [{
   "LowestSeverity": "Debug"
  }],
 "Oem": {
  "Cisco": {
   "MinimumSeverityLevel": "Debug",
```

```
   "SyslogConnectionInfo": [{
     "Protocol": "TCP",
     "Enabled": false,
     "DestinationServer": "10.10.10.11",
     "Port": 678
    }, {
     "Protocol": "UDP",
     "Enabled": false,
     "DestinationServer": "10.10.10.12",
     "Port": 689
    }]
  }
 },
 "Actions": {
  "#LogService.ClearLog": {
   "target": "/redfish/v1/Managers/CIMC/LogServices/CIMC
/Actions/LogService.ClearLog"
  },
  "Oem": {
   "#CiscoUCSExtensions.TestRemoteSyslogCfg": {
    "target": "/redfish/v1/Managers/CIMC/LogServices
/CIMC/Actions/Oem/CiscoUCSExtensions.TestRemoteSyslogCfg"
   }
  }
 }
```

Configuring Local Logging Severity

Request

```
curl -k -u admin:password https://10.10.10.10/redfish/v1/Managers/CIMC
/LogServices/CIMC -XPATCH -d
'{
"SyslogFilters" : [{
"LowestSeverity" : "Error"
    }]
}'
```

Response

```
{
 "@odata.id": "/redfish/v1/Managers/CIMC/LogServices/CIMC",
 "@odata.type": "#LogService.v1_2_0.LogService",
 "@odata.context": "/redfish/v1/$metadata#LogService.LogService",
 "Entries": {
  "@odata.id": "/redfish/v1/Managers/CIMC/LogServices/CIMC/Entries"
 },
 "ServiceEnabled": true,
 "OverWritePolicy": "WrapsWhenFull",
 "Id": "CIMC",
 "Name": "CIMC Log Service",
 "LogEntryType": "OEM",
 "Description": "CIMC Log Service",
 "DateTimeLocalOffset": "+05:30",
 "DateTime": "2020-12-22T14:01:38+05:30",
 "MaxNumberOfRecords": 10000,
 "SyslogFilters": [{
   "LowestSeverity": "Error"
  }],
 "Oem": {
```

```
  "Cisco": {
   "MinimumSeverityLevel": "Debug",
   "SyslogConnectionInfo": [{
     "Protocol": "TCP",
     "Enabled": false,
     "DestinationServer": "10.10.10.11",
     "Port": 678
    }, {
     "Protocol": "UDP",
     "Enabled": false,
     "DestinationServer": "10.10.10.12”,
     "Port": 689
    }]
  }
 },
 "Actions": {
  "#LogService.ClearLog": {
   "target": "/redfish/v1/Managers/CIMC/LogServices
/CIMC/Actions/LogService.ClearLog"
  },
  "Oem": {
   "#CiscoUCSExtensions.TestRemoteSyslogCfg": {
    "target": "/redfish/v1/Managers/CIMC/LogServices
/CIMC/Actions/Oem/CiscoUCSExtensions.TestRemoteSyslogCfg"
   }
  }
 }
```

Clear BIOS CMOS

Request

```
curl -k -u admin:password https://10.10.10.10/redfish/
v1/Systems/SERIAL/ Actions/Oem/ComputerSystem.ResetBIOSCMOS-XPOST -d '{}'
```

Response

No response in case of success. Error message is displayed in case of failure.

Drive Diagnostics

Request to Start HDD Diagnostics on a Particular Drive

```
curl -k -u admin:password https://10.10.10.10/redfish/v1/Systems/
WZP211704JZ/Storage/MRAID/Drives/10/Actions/Oem/Cisco.StartDiagnostics -XPOST -d '{}'
```

Response

```
{
        "Messages":     [],
        "Id":   "1170",
        "Name": "Storage:MRAID, Operation:Get Diagnostics Status",
        "StartTime":    "11/29/2020 10:34:49 SAST",
        "TaskState":    "Running",
       "@odata.id":    "/redfish/v1/TaskService/Tasks/1170",
        "@odata.type":  "#Task.v1_4_0.Task"
}
```

Request to Get the Status of HDD Diagnostic Self Test of a Particular HDD

```
curl -k -u admin:password https://10.10.10.10/redfish/v1/TaskService/Tasks/1170
```

Response

```
{
        "@odata.id":    "/redfish/v1/TaskService/Tasks/1170",
        "@odata.type":  "#Task.v1_4_0.Task",
        "@odata.context":       "/redfish/v1/$metadata#Task.Task",
        "Id":   "1170",
        "Name": "Storage:MRAID, Operation:Get Diagnostics Status",
        "StartTime":    "11/29/2020 10:34:49 SAST",
        "EndTime":      "11/29/2020 10:36:53 SAST",
        "PercentComplete":      100,
        "TaskState":    "Completed",
        "TaskStatus":   "OK",
        "Messages":     [{
                        "MessageId":    "Base.1.4.0.Success",
                        "Message":      "Successfully Completed Request"
                }],
        "TaskMonitor":  "/redfish/v1/TaskService/Oem/TaskMonitor/1170"
}
```

Cancel HDD Diagnostic Self Test of a Particular HDD when Self Test is in Progress

```
curl -k -u admin:password https://10.10.10.10/redfish/v1Systems/
WZP23391JPJ/Storage/MRAID/Drives/1/Actions/Oem/Cisco.CancelDiag -d '{}' -XPOST
```

Status of Diagnostic Self Test After Canceling the Self Test

Request

```
curl -k -u admin:password https://10.10.10.10/redfish/v1/TaskService
/Tasks/856
```

Response

```
{
        "@odata.id":    "/redfish/v1/TaskService/Tasks/856",
        "@odata.type":  "#Task.v1_4_0.Task",
        "@odata.context":       "/redfish/v1/$metadata#Task.Task",
        "Id":   "856",
        "Name": "Storage:MRAID, Operation:Get Diagnostics Status",
        "StartTime":    "12/22/2020 14:37:44 IST",
        "EndTime":      "12/22/2020 14:38:04 IST",
        "PercentComplete":      100,
        "TaskState":    "Completed",
        "TaskStatus":   "Warning",
        "Messages":     [{
                        "MessageId":    "Base.1.4.0.InternalError",
                        "Message":      "Diagnostics job aborted!"
                }],
        "TaskMonitor":  "/redfish/v1/TaskService/Oem/TaskMonitor/856"
}
```

Configuring SNMP Users

SNMP user can be created using the following authentication protocols:

- HMAC_SHA96

- HMAC128_SHA224
- HMAC192_SHA256
- HMAC256_SHA384
- HMAC384_SHA512

Create SNMP user with Authentication Protocol value HMAC_SHA512

Request

```
curl -k -u admin:password https://10.10.10.10/redfish/v1/AccountService/Accounts/
-XPOST -d '{"Id":"12","AccountTypes":["SNMP"],"UserName":"SHA512","RoleId":"SNMPOnly",
"Enabled":true,"SNMP":{"AuthenticationProtocol":"HMAC384_SHA512","AuthenticationKey":
"password","EncryptionProtocol":"CFB128_AES128","EncryptionKey":"password"}}'
```

Response

```
{
        "Id":   "12",
        "UserName":     "SHA512",
        "RoleId":       "SNMPOnly",
        "Enabled":      true,
        "@odata.id":    "/redfish/v1/AccountService/Accounts/12",
        "@odata.type":  "#ManagerAccount.v1_7_0.ManagerAccount",
        "Name": "User Account",
        "AccountTypes": [null, "SNMP"],
        "SNMP": {
                "AuthenticationProtocol":       "HMAC384_SHA512",
                "AuthenticationKey":    null,
                "EncryptionProtocol":   "CFB128_AES128",
                "EncryptionKey":        null
        }
```

Configuring MCTP Fault Alert Setting

Request to Configure Fault Alert Setting to *Partial*

Note This request is not supported for Cisco UCS C245 M6 server.

```
curl -k -u admin:password https://10.10.10.10/redfish/v1/Systems/SERIAL
-XPATCH -d
'{
  "Oem": {
    "Cisco": {
      "MCTP": {
        "FaultAlertSetting": "Disabled"
      }
    }
  }
}'
```

Response

```
{
        "SerialNumber": "WZP24160R9G",
```

```
        "Boot": {
                "BootSourceOverrideTarget":     "None",
                "BootSourceOverrideTarget@Redfish.AllowableValues":     ["None", "Pxe",
"Floppy", "Cd", "Hdd", "BiosSetup", "Diags"],
             "BootSourceOverrideEnabled@Redfish.AllowableValues":    ["Once", "Continuous",

"Disabled"],
                "BootSourceOverrideEnabled":    "Disabled"
        },
        "Id":   "WZP24160R9G",
        "AssetTag":     "Unknown",
        "PowerState":   "Off",
        "SystemType":   "Physical",
        "ProcessorSummary":     {
                "Model":        "Genuine Intel(R) CPU $0000%@",
                "Count":        2
        },
        "HostName":     "C240-WZP24160R9G",
        "PowerRestorePolicy":   "AlwaysOff",
        "PCIeDevices@odata.count":      3,
        "PCIeFunctions@odata.count":    3,
        "UUID": "7ABEAAEE-7F0E-A049-AAB1-914FFB52BEFF",
        "Name": "UCS C240 M6N\n",
        "HostWatchdogTimer":    {
                "Status":       {
                        "State":        "Disabled"
                },
                "WarningAction":        "None",
                "FunctionEnabled":      false,
                "TimeoutAction":        "PowerDown"
        },
        "PCIeFunctions":        [{
                        "@odata.id":    "/redfish/v1/Systems/WZP24160R9G/PCIeDevices
/MLOM/PCIeFunctions/0"
                }, {
                        "@odata.id":    "/redfish/v1/Systems/WZP24160R9G/PCIeDevices
/FRONT-NVME-1/PCIeFunctions/0"
                }, {
                        "@odata.id":    "/redfish/v1/Systems/WZP24160R9G/PCIeDevices/L
/PCIeFunctions/0"
                }],
        "Oem":  {
                "Cisco":        {
                        "DimmBlacklistingEnabled":      true,
                        "SystemEffectiveMemory":        512,
                        "SystemEffectiveSpeed": 3200,
                        "PostCompletionStatus": false,
                        "FrontPanelButtonsLocked":      false,
                        "MCTP": {
                                "FaultAlertSetting":    "Partial",
                                "SPDMHandShakeStatus":  "Completed"
                        }
                }
        },
        "PCIeDevices":  [{
                        "@odata.id":    "/redfish/v1/Systems/WZP24160R9G/PCIeDevices/MLOM"
                }, {
                        "@odata.id":
"/redfish/v1/Systems/WZP24160R9G/PCIeDevices/FRONT-NVME-1"
                }, {
                        "@odata.id":    "/redfish/v1/Systems/WZP24160R9G/PCIeDevices/L"
                }],
        "BiosVersion":  "C240M6.4.2.0.321.0311210937",
        "Manufacturer": "Cisco Systems Inc",
```

```
        "MemorySummary":        {
                "TotalSystemMemoryGiB": 512,
                "Status":       {
                        "HealthRollup": "OK",
                        "Health":       "OK"
                }
        },
        "Model":        "UCSC-C240-M6N",
        "IndicatorLED": "Off",
        "TrustedModules":       [{
                        "FirmwareVersion":      null,
                        "Status":       {
                                "State":        "Absent"
                        },
                        "Oem":  {
                                "Cisco":        {
                                        "TPM":  null
                                }
                        }
                }],
        "Status":       {
                "State":        "Enabled",
                "Health":       "OK",
                "HealthRollup": "OK"

        }
}
```


Adding SPDM Authority Certificate

Request to Add a SPDM Authority Certificate

Note This request is not supported for Cisco UCS C245 M6 server.

```
Curl -XPOST
http://10.10.10.10/redfish/v1/Managers/CIMC/Oem/Cisco/SPDMTrustStore/Certificates -d
'{
    "CertificateType" : "PEM",
    "CertificateString" : "<CERTIFICATE_STRING>"
}'
```

Response


```
{
        "@odata.id" : "/redfish/v1/Managers/CIMC/Oem/Cisco/SPDMTrustStore/Certificates/1",
        "Id" : "1",
        "Name" : "Certificate"
}
```

Viewing Endpoint SPDM Certificate

Request to View the Endpoint SPDM Certificate Collection

Note This request is not supported for Cisco UCS C245 M6 server.

```
curl -k -u admin:password https://10.10.10.10/redfish/v1/Systems/SERIAL
/Oem/Cisco/SPDMDevice/Certificates
```

Response

```
{
       "@odata.id":    "/redfish/v1/Systems/WZP2412176A/Oem/Cisco/SPDMDevice/Certificates",

        "@odata.type":  "#CertificateCollection.CertificateCollection",
        "@odata.context":
"/redfish/v1/$metadata#CertificateCollection.CertificateCollection",
        "Description":  "A Collection of Certificate resource instances.",
        "Name": "Certificate Collection",
        "Members":      [{
                        "@odata.id":    "/redfish/v1/Systems/SERIAL/Oem/Cisco/SPDMDevice
/Certificates/MRAID1_0"
                }, {
                        "@odata.id":    "/redfish/v1/Systems/SERIAL/Oem/Cisco/SPDMDevice
/Certificates/MRAID2_0"
                }],
        "Members@odata.count":  2
}
```

Request to View the Individual Endpoint SPDM Certificate

```
curl -k -u admin:password https://10.10.10.10/redfish/v1/Systems/SERAIL/Oem/Cisco
/SPDMDevice/Certificates/MRAID1_0
```

Response

```
{
        "@odata.id":
"/redfish/v1/Systems/SERIAL/Oem/Cisco/SPDMDevice/Certificates/MRAID1_0",
        "@odata.type":  "#Certificate.v1_0_1.Certificate",
        "@odata.context":       "/redfish/v1/$metadata#Certificate.Certificate",
        "Id":   "Certificate",
        "Name": "Certificate",
       "Description":  "The Certificate resource describes a certificate used to prove the

identify of a component, account, or service.",
        "CertificateType":      "PEM",
        "Subject":      {
                "Country":      "IN",
                "City": "Bengaluru",
                "State":        "Karnataka",
                "Organization": "Cisco",
                "OrganizationalUnit":   "CSPG",
                "CommonName":   "SAS3916"
        },
        "Issuer":       {
                "Country":      "IN",
                "State":        "Karnataka",
```

```
                "Organization": "Cisco",
                "OrganizationalUnit":   "CSPG",
                "CommonName":   "SAS3916"
        },
        "Oem":  {
                "Cisco":        {
                        "CertificateSerialNumber":      "10:05",
                        "IssuerCertificate":    {
                                "@odata.id":    "/redfish/v1/Systems/WZP2412176A/Oem/Cisco
/SPDMDevice/Certificates/MRAID1_1"
                        }
                }
        },
        "ValidNotBefore":       "Nov  2 19:20:59 2020 GMT",
        "ValidNotAfter":        "Aug  6 19:20:59 2075 GMT",
        "KeyUsage":     ["ServerAuthentication"]
}
```

Activate Backup BIOS Firmware

Request

```
curl -k -u admin:password https://10.10.10.10/
redfish/v1/Managers/CIMC/Actions/Oem/CiscoUCSExtensions.BiosFwActivate -XPOST -d '{}'
```

Response

No response in case of success. Appropriate error message is displayed in case of failure.

Cisco IMC Syslog Configuration

Configuring Secure Syslog Setting to One of the Servers

Request

```
curl -XPOST -k -u admin:password https://10.10.10.10/redfish/v1/EventService/Subscriptions
 -d
'{ "Protocol":"SyslogTLS", "Destination":"syslog://10.10.10.10.55:6514", "SyslogFilters":
[{
"LowestSeverity": "Warning" }], "SubscriptionType" : "Syslog" }'
```

Response

```
{
        "Id":   "SyslogServer_1",
        "Name": "EventSubscription SyslogServer_1",
        "Protocol":     "SyslogTLS",
        "Destination":  "syslog://10.10.10.55:6514",
        "@odata.type":  "#EventDestination.v1_10_1.EventDestination",
        "@odata.id":    "/redfish/v1/EventService/Subscriptions/SyslogServer_1",
        "SubscriptionType":     "Syslog"
}
```

Adding Secure Syslog Server Certificate

Request

```
curl -v -XPOST -k -u admin:password https://10.10.10.10/redfish/v1/EventService/Subscriptions/
SyslogServer_1/Certificates -d '{     "CertificateType" : "PEM",  "CertificateString" :
"-----BEGIN
CERTIFICATE-----\nMIIDTDCCAjSgAwIBAgIQPRZOPtyIS7BAn2z5bG9WFjANBgkqhkiG9w0BAQ0FADAm\
nMSQwIgYDVQQDExtibHJxYS1zYW0tbGFiLVZBSS1XSU4tVk0tQ0EwHhcNMTUwMTE5\
nMDYwOTMyWhcNMjAxMTE2MjM0NTI1WjAmMSQwIgYDVQQDExtibHJxYS1zYW0tbGFi
\nLVZBSS1XSU4tVk0tQ0EwggEiMA0GCSqGSIb3DQEBAQUAA4IBDwAwggEKAoIBAQDt\
npASz0Rt3BtbBcPgHYZ0JDjnRp6yvdYOmgEIagRLTDbsnRZPBd5e8PywDPMzRS1t2\
nmoLv3qeL49r5urcF6yxPZiAhhz2TusYBujACXpkRYUCO5e4H451mmqJynTGgloDC\nxHrt0cw27cr/
6Wxa1RgpDGqXl4iBtDQPezvkTD5bvB6YQW9rmA8s7b6tspcCSMsd\
n4RDB0buWr96+n2R+sYeM5VHAVAJN+Dj6fQs70bUic3fUDcErUrvmOnhPiPM9cOpk\
nnkjmlkdP+SMJPJ6wxaJjWJiOQPrbtqsuXWAN6bCqn1xgWAVnmgCSCZN+uWQEDzNG\
nMP11Sk5fBdzQxIE4IgSrAgMBAAGjdjB0MAsGA1UdDwQEAwIBhjAPBgNVHRMBAf8E\
nBTADAQH/MB0GA1UdDgQWBBTWC9AK1GJhVr+uLC88U7yjIOcU5jAQBgkrBgEEAYI3\
nFQEEAwIBATAjBgkrBgEEAYI3FQIEFgQUJ84v4we7bUEnToMxmsY5TPdkmmEwDQYJ\
nKoZIhvcNAQENBQADggEBAI5+rPX/WdGdbl2YrS1lRua/D6UyXgv9bS7MysU046DU\
nY8rfI7xf8MLNN6RkESxB/L1Ot+l3YQbPCxc8XAjGm/vSdSFFw4sSjIvtOH8qUFEY\
nHvj8SWH4Rf/zVZfN4kQQ6dIa7qNSOGCmBOce3delNpcIArb7vk7mVBWdE/4G62W1\
nGP1vinhzmHPUjOuu4uT9Qz4WebGfic2gk2s+9PCRfHVTK1w7FMq+wgiv5dJpjZvl\
nTMYun944KugrN1esHAU1u+Ys0pf9uJPF2ob0U9HWGRe+NiUOO2unDWlGAA1jr0w5\
nIJtrtCvKVuAouoPLeocCxRD6yWAeyCu1TcHmuWFPBXs=\
n-----END CERTIFICATE-----\n" }'
```

Response

```
{
        "@odata.id":
"/redfish/v1/EventService/Subscriptions/SyslogServer_1/Certificates/1",
        "Id":   "1",
        "Name": "Certificate"
}
```

Viewing Secure Syslog Certificate of one of the Servers

Request

```
curl -k -u admin:password https://10.10.10.10/redfish/v1/EventService/Subscriptions/
SyslogServer_1/Certificates/1
```

Response

```
{
        "@odata.id":
"/redfish/v1/EventService/Subscriptions/SyslogServer_1/Certificates/1",
        "@odata.type":  "#Certificate.v1_3_0.Certificate",
        "@odata.context":       "/redfish/v1/$metadata#Certificate.Certificate",
        "Id":   "Certificate",
        "Name": "Certificate",
       "Description":  "The Certificate resource describes a certificate used to prove the
 identify of a
component, account, or service.",
        "CertificateType":      "PEM",
        "CertificateString":
"-----BEGIN
CERTIFICATE-----\nMIIDTDCCAjSgAwIBAgIQPRZOPtyIS7BAn2z5bG9WFjANBgkqhkiG9w0BAQ0FADAm\
nMSQwIgYDVQQDExtibHJxYS1zYW0tbGFiLVZBSS1XSU4tVk0tQ0EwHhcNMTUwMTE5\
```

```
nMDYwOTMyWhcNMjAxMTE2MjM0NTI1WjAmMSQwIgYDVQQDExtibHJxYS1zYW0tbGFi\
nLVZBSS1XSU4tVk0tQ0EwggEiMA0GCSqGSIb3DQEBAQUAA4IBDwAwggEKAoIBAQDt\
npASz0Rt3BtbBcPgHYZ0JDjnRp6yvdYOmgEIagRLTDbsnRZPBd5e8PywDPMzRS1t2\
nmoLv3qeL49r5urcF6yxPZiAhhz2TusYBujACXpkRYUCO5e4H451mmqJynTGgloDC\
nxHrt0cw27cr/6Wxa1RgpDGqXl4iBtDQPezvkTD5bvB6YQW9rmA8s7b6tspcCSMsd\
n4RDB0buWr96+n2R+sYeM5VHAVAJN+Dj6fQs70bUic3fUDcErUrvmOnhPiPM9cOpk\
nnkjmlkdP+SMJPJ6wxaJjWJiOQPrbtqsuXWAN6bCqn1xgWAVnmgCSCZN+uWQEDzNG\
nMP11Sk5fBdzQxIE4IgSrAgMBAAGjdjB0MAsGA1UdDwQEAwIBhjAPBgNVHRMBAf8E\
nBTADAQH/MB0GA1UdDgQWBBTWC9AK1GJhVr+uLC88U7yjIOcU5jAQBgkrBgEEAYI3\
nFQEEAwIBATAjBgkrBgEEAYI3FQIEFgQUJ84v4we7bUEnToMxmsY5TPdkmmEwDQYJ\
nKoZIhvcNAQENBQADggEBAI5+rPX/WdGdbl2YrS1lRua/D6UyXgv9bS7MysU046DU\
nY8rfI7xf8MLNN6RkESxB/L1Ot+l3YQbPCxc8XAjGm/vSdSFFw4sSjIvtOH8qUFEY\
nHvj8SWH4Rf/zVZfN4kQQ6dIa7qNSOGCmBOce3delNpcIArb7vk7mVBWdE/4G62W1\
nGP1vinhzmHPUjOuu4uT9Qz4WebGfic2gk2s+9PCRfHVTK1w7FMq+wgiv5dJpjZvl\
nTMYun944KugrN1esHAU1u+Ys0pf9uJPF2ob0U9HWGRe+NiUOO2unDWlGAA1jr0w5\
nIJtrtCvKVuAouoPLeocCxRD6yWAeyCu1TcHmuWFPBXs=\n-----END CERTIFICATE-----\n",
        "KeyUsage":     ["ServerAuthentication"]
}
```

Configuring Syslog Setting to One of the Servers in Non-Secure Mode

Request

```
curl -XPOST -k -u admin:password https://10.10.10.10/redfish/v1/EventService/Subscriptions
 -d '
{ "Protocol":"SyslogTCP", "Destination":"syslog://10.10.10.10.56:6514", "SyslogFilters":
[{        "LowestSeverity": "Warning" }], "SubscriptionType" : "Syslog" }'
```

Response

```
{
        "Id":   "SyslogServer_2",
        "Name": "EventSubscription SyslogServer_2",
        "Protocol":     "SyslogTCP",
        "Destination":  "syslog://10.10.10.10.56:6514",
        "@odata.type":  "#EventDestination.v1_10_1.EventDestination",
        "@odata.id":    "/redfish/v1/EventService/Subscriptions/SyslogServer_2",
        "SubscriptionType":     "Syslog"
}
```

Modify the Syslog Server Settings

Request

```
curl -XPATCH -k -u admin:password https://10.10.10.10/redfish/v1/EventService/Subscriptions/
SyslogServer_2 -d '{ "Protocol":"SyslogTLS",  "Destination":"syslog://10.10.10.10",
"SyslogFilters":
[{  "LowestSeverity": "Critical"  }],  "SubscriptionType" : "Syslog" }'
```

Delete the Syslog Server Configuration

Request

```
curl -k -u admin:password
https://10.10.10.10/redfish/v1/EventService/Subscriptions/SyslogServer_1 -XDELETE
```

FlexMMC Configurations

Get Cisco Internal Storage (FlexMMC)

Request

```
curl -k -u admin:password
https://10.10.10.10/redfish/v1/Managers/CIMC/Oem/CiscoInternalStorage
```

Response

```
{
        "@odata.id":    "/redfish/v1/Managers/CIMC/Oem/CiscoInternalStorage",
        "@odata.type":  "#CiscoInternalStorageCollection.CiscoInternalStorageCollection",
        "@odata.context":
"/redfish/v1/$metadata#CiscoInternalStorageCollection.CiscoInternalStorageCollection",
        "Description":  "Collection of Cisco Internal Storge resources",
        "Name": "Cisco Internal Storage Collections",
        "Members":      [{
                        "@odata.id":
"/redfish/v1/Managers/CIMC/Oem/CiscoInternalStorage/FlexMMC"
                }],
        "Members@odata.count":  1
}
```

Request

```
curl -k -u admin:password
https://10.10.10.10/redfish/v1/Managers/CIMC/Oem/CiscoInternalStorage/FlexMMC
```

Response

```
{
        "@odata.id":    "/redfish/v1/Managers/CIMC/Oem/CiscoInternalStorage/FlexMMC",
        "@odata.type":  "#CiscoInternalStorage.v1_0_0.CiscoInternalStorage",
        "@odata.context":
"/redfish/v1/$metadata#CiscoInternalStorage.CiscoInternalStorage",
        "Partitions":   [{
                        "@odata.id":
"/redfish/v1/Managers/CIMC/Oem/CiscoInternalStorage/FlexMMC/
CiscoPartition/IMCImages"
                }, {
                        "@odata.id":
"/redfish/v1/Managers/CIMC/Oem/CiscoInternalStorage/FlexMMC/
CiscoPartition/UserFiles"
                }],
        "Partitions@odata.count":       2,
        "Id":   "FlexMMC",
        "Name": "FlexMMC",
        "Description":  "FlexMMC Details",
        "Actions":      {
                "#CiscoInternalStorage.ResetToDefault": {
                        "target":
"/redfish/v1/Managers/CIMC/Oem/CiscoInternalStorage/FlexMMC/
Actions/CiscoInternalStorage.ResetToDefault"
                }
        }
}
```

FlexMMC–IMCImage Partition

Request

```
curl -k -u admin:password
https://10.10.10.10/redfish/v1/Managers/CIMC/Oem/CiscoInternalStorage/
FlexMMC/CiscoPartition/IMCImages
```

Response

```
{
        "@odata.id":
"/redfish/v1/Managers/CIMC/Oem/CiscoInternalStorage/FlexMMC/CiscoPartition/IMCImages",
        "@odata.type":  "#CiscoPartition.v1_0_0.CiscoPartition",
        "@odata.context":       "/redfish/v1/$metadata#CiscoPartition.CiscoPartition",
        "CiscoFile":    {
                "@odata.id":
"/redfish/v1/Managers/CIMC/Oem/CiscoInternalStorage/FlexMMC/CiscoPartition/IMCImages/CiscoFile"

        },
        "Id":   "IMCImages",
        "Name": "IMCImages",
        "Description":  "Cisco IMC Images",
        "TotalSpaceMiB":        1536,
        "AvailableSpaceMiB":    1132,
        "Actions":      {
                "#CiscoPartition.UploadFile":   {
                        "target":
"/redfish/v1/Managers/CIMC/Oem/CiscoInternalStorage/FlexMMC/CiscoPartition/IMCImages/
Actions/CiscoPartition.UploadFile"
                }
        }
}
```

Request

```
curl -k -u admin:password
https://10.10.10.10/redfish/v1/Managers/CIMC/Oem/CiscoInternalStorage/
FlexMMC/CiscoPartition/UserFiles
```

Response

```
{
        "@odata.id":
"/redfish/v1/Managers/CIMC/Oem/CiscoInternalStorage/FlexMMC/CiscoPartition/UserFiles",
        "@odata.type":  "#CiscoPartition.v1_0_0.CiscoPartition",
        "@odata.context":       "/redfish/v1/$metadata#CiscoPartition.CiscoPartition",
        "CiscoFile":    {
              "@odata.id":    "/redfish/v1/Managers/CIMC/Oem/CiscoInternalStorage/FlexMMC/
CiscoPartition/UserFiles/CiscoFile"
        },
        "Id":   "UserFiles",
        "Name": "UserFiles",
        "Description":  "User Uploaded Files",
        "TotalSpaceMiB":        6656,
        "AvailableSpaceMiB":    6600,
        "Actions":      {
                "#CiscoPartition.UploadFile":   {
                        "target":
"/redfish/v1/Managers/CIMC/Oem/CiscoInternalStorage/FlexMMC/
CiscoPartition/UserFiles/Actions/CiscoPartition.UploadFile"
```

```
                }
        }
}
```

FlexMMC–Map Image to IMCImage Partition

Request

```
curl -XPOST -k -u admin:password
https://10.10.10.10/redfish/v1/Managers/CIMC/Oem/CiscoInternalStorage/
FlexMMC/CiscoPartition/IMCImages/Actions/CiscoPartition.UploadFile -d '
{"File":"NFS://10.10.10.10/nfsshare/rebooter.iso"}'
```

Response

```
{
        "Messages":     [],
        "Id":   "138",
        "Name": "FlexMMc File Upload Monitor",
        "StartTime":    "2022-05-23T13:15:32+00:00",
        "TaskState":    "Running",
        "@odata.id":    "/redfish/v1/TaskService/Tasks/138",
        "@odata.type":  "#Task.v1_4_0.Task"
}
```

Getting the Image Upload Status in IMCImage Partition

Request

```
curl -k -u admin:password https://10.10.10.10/redfish/v1/TaskService/Tasks/138
```

Response

```
{
        "@odata.id":    "/redfish/v1/TaskService/Tasks/138",
        "@odata.type":  "#Task.v1_5_0.Task",
        "@odata.context":       "/redfish/v1/$metadata#Task.Task",
        "Id":   "138",
        "Name": "FlexMMc File Upload Monitor",
        "StartTime":    "2022-05-23T13:15:32+00:00",
        "EndTime":      "2022-05-23T13:15:35+00:00",
        "PercentComplete":      100,
        "TaskState":    "Completed",
        "TaskStatus":   "OK",
        "Messages":     [{
                        "@odata.type":  "#Message.v1_1_1.Message",
                        "MessageId":    "Base.1.4.0.Success",
                        "Message":      "Successfully Completed Request",
                        "MessageArgs":  [],
                        "Severity":     "OK"
                }],
        "TaskMonitor":  "/redfish/v1/TaskService/Oem/TaskMonitor/138"
}
```

Note Use the following data for CIFS file share:

{"File":"CIFS://10.10.10.10/nfsshare/ucs-c220m4-huu-4.1.2fS5.iso"}

Use following data for HTTPS file share:

{"File":"HTTPS://10.10.10.10/huu/ucs-c220m4-huu-4.1.2fS5.iso"}

Use following data for HTTP file share

{"File":"HTTP://10.10.10.10/huu/ucs-c220m4-huu-4.1.2fS5.iso"}

Read the IMCImage Partition Details

Request

```
curl -k -u admin:password https://10.10.10.10/redfish/v1/Managers/CIMC/Oem/
CiscoInternalStorage/FlexMMC/CiscoPartition/IMCImages/CiscoFile
```

Response

```
{
        "@odata.id":
"/redfish/v1/Managers/CIMC/Oem/CiscoInternalStorage/FlexMMC/CiscoPartition/
IMCImages/CiscoFile",
        "@odata.type":  "#CiscoFileCollection.CiscoFileCollection",
        "@odata.context":
"/redfish/v1/$metadata#CiscoFileCollection.CiscoFileCollection",
        "Description":  "Collection of Cisco Internal Storge Partition resources",
        "Name": "Cisco Internal Storage Partition Collections",
        "Members":      [{
                        "@odata.id":
"/redfish/v1/Managers/CIMC/Oem/CiscoInternalStorage/FlexMMC/
CiscoPartition/IMCImages/CiscoFile/rebooter.iso"
                }],
        "Members@odata.count":  1
}
```

Request

```
curl -k -u admin:password https://10.10.10.10/redfish/v1/Managers/CIMC/Oem/
CiscoInternalStorage/FlexMMC/CiscoPartition/IMCImages/CiscoFile/rebooter.iso
```

Response

```
{
        "@odata.id":
"/redfish/v1/Managers/CIMC/Oem/CiscoInternalStorage/FlexMMC/CiscoPartition/
IMCImages/CiscoFile/rebooter.iso",
        "@odata.type":  "#CiscoFile.v1_0_0.CiscoFile",
        "@odata.context":       "/redfish/v1/$metadata#CiscoFile.CiscoFile",
        "Description":  "A file in the partition of the Internal Storage",
        "Id":   "rebooter.iso",
        "Name": "rebooter.iso",
        "Type": "ISO",
        "SizeMiB":      0,
        "SpaceOccupiedMiB":     0,
```

```
        "HostVisible":  false
}
```

Modify Host Visible Setting for File Mapped in IMCImage Partition

Request

```
curl -k -u admin:password
https://10.10.10.10/redfish/v1/Managers/CIMC/Oem/CiscoInternalStorage/
FlexMMC/CiscoPartition/IMCImages/CiscoFile/rebooter.iso -d '{"HostVisible":true}' -XPATCH
```

Response

```
{
        "Id":   "rebooter.iso",
        "Name": "rebooter.iso",
        "Type": "ISO",
        "SizeMiB":      0,
        "SpaceOccupiedMiB":     0,
        "HostVisible":  true,
        "@odata.id":
"/redfish/v1/Managers/CIMC/Oem/CiscoInternalStorage/FlexMMC/CiscoPartition/
IMCImages/CiscoFile/rebooter.iso"
}
```

Delete the Image Mapped in IMCImage Partition

Request

```
curl -k -u admin:password https://10.10.10.10/redfish/v1/Managers/CIMC/Oem/
CiscoInternalStorage/FlexMMC/CiscoPartition/IMCImages/CiscoFile/rebooter.iso -XDELETE
```

FlexMMC–Map image to UserFiles Partition

Request

```
curl -XPOST -k -u admin:password https://10.10.10.10/redfish/v1/Managers/CIMC/Oem/
CiscoInternalStorage/FlexMMC/CiscoPartition/UserFiles/Actions/CiscoPartition.UploadFile -d
 '
{"File":"NFS://10.104.236.41/nfsshare/rebooter.iso"}'
```

Response

```
{
        "@odata.id":    "/redfish/v1/TaskService/Tasks/139",
        "@odata.type":  "#Task.v1_5_0.Task",
        "@odata.context":       "/redfish/v1/$metadata#Task.Task",
        "Id":   "138",
        "Name": "UserFile File Upload Monitor",
        "StartTime":    "2022-05-23T13:15:32+00:00",
        "EndTime":      "2022-05-23T13:15:35+00:00",
        "PercentComplete":      100,
        "TaskState":    "Completed",
        "TaskStatus":   "OK",
        "Messages":     [{
                        "@odata.type":  "#Message.v1_1_1.Message",
                        "MessageId":    "Base.1.4.0.Success",
                        "Message":      "Successfully Completed Request",
```

```
                        "MessageArgs":  [],
                        "Severity":     "OK"
                }],
        "TaskMonitor":  "/redfish/v1/TaskService/Oem/TaskMonitor/139"
}
```

Note Use following data for CIFS file share:

{"File":"CIFS://10.10.10.10/nfsshare/ucs-c220m4-huu-4.1.2fS5.iso"}

Use following data for HTTPS file share:

{"File":"HTTPS://10.10.10.10/huu/ucs-c220m4-huu-4.1.2fS5.iso"}

Use following data for HTTP file share:

{"File":"HTTP://10.10.10.10/huu/ucs-c220m4-huu-4.1.2fS5.iso"}

Getting the Image Upload status in UserFiles Partition

Request

```
curl  -k -u admin:password https://10.10.10.10/redfish/v1/TaskService/Tasks/139
```

Response

```
{
        "@odata.id":    "/redfish/v1/TaskService/Tasks/139",
        "@odata.type":  "#Task.v1_5_0.Task",
        "@odata.context":       "/redfish/v1/$metadata#Task.Task",
        "Id":   "139",
        "Name": "FlexMMc File Upload Monitor",
        "StartTime":    "2022-05-23T22:19:06+00:00",
        "EndTime":      "2022-05-23T22:19:09+00:00",
        "PercentComplete":      100,
        "TaskState":    "Completed",
        "TaskStatus":   "OK",
        "Messages":     [{
                        "@odata.type":  "#Message.v1_1_1.Message",
                        "MessageId":    "Base.1.4.0.Success",
                        "Message":      "Successfully Completed Request",
                        "MessageArgs":  [],
                        "Severity":     "OK"
                }],
        "TaskMonitor":  "/redfish/v1/TaskService/Oem/TaskMonitor/139"
}
```

Read the UserFile Partition Details

Request

```
curl -k -u admin:password https://10.10.10.10/redfish/v1/Managers/CIMC/Oem/
CiscoInternalStorage/FlexMMC/CiscoPartition/UserFiles/CiscoFile
```

Response

```
{
        "@odata.id":    "/redfish/v1/Managers/CIMC/Oem/CiscoInternalStorage/FlexMMC/
```

```
CiscoPartition/UserFiles/CiscoFile",
        "@odata.type":  "#CiscoFileCollection.CiscoFileCollection",
        "@odata.context":
"/redfish/v1/$metadata#CiscoFileCollection.CiscoFileCollection",
        "Description":  "Collection of Cisco Internal Storge Partition resources",
        "Name": "Cisco Internal Storage Partition Collections",
        "Members":      [{
                        "@odata.id":    "/redfish/v1/Managers/CIMC/Oem/CiscoInternalStorage/
FlexMMC/CiscoPartition/UserFiles/CiscoFile/rebooter.iso"
                }],
        "Members@odata.count":  1
}
```

Request

```
curl -k -u admin:password https://10.10.10.10/redfish/v1/Managers/CIMC/Oem/
CiscoInternalStorage/FlexMMC/CiscoPartition/UserFiles/CiscoFile/rebooter.iso
```

Response

```
{
        "@odata.id":    "/redfish/v1/Managers/CIMC/Oem/CiscoInternalStorage/FlexMMC/
CiscoPartition/UserFiles/CiscoFile/rebooter.iso",
        "@odata.type":  "#CiscoFile.v1_0_0.CiscoFile",
        "@odata.context":       "/redfish/v1/$metadata#CiscoFile.CiscoFile",
        "Description":  "A file in the partition of the Internal Storage",
        "Id":   "rebooter.iso",
        "Name": "rebooter.iso",
        "Type": "ISO",
        "SizeMiB":      0,
        "SpaceOccupiedMiB":     0,
        "HostVisible":  false
}
```

Modify Host Visible Setting for File Mapped in UserFiles Partition

Request

```
curl -k -u admin:password https://10.10.10.10/redfish/v1/Managers/CIMC/Oem/
CiscoInternalStorage/FlexMMC/CiscoPartition/UserFiles/CiscoFile/rebooter.iso -d '
{"HostVisible":true}' -XPATCH
```

Response

```
{
        "Id":   "rebooter.iso",
        "Name": "rebooter.iso",
        "Type": "ISO",
        "SizeMiB":      0,
        "SpaceOccupiedMiB":     0,
        "HostVisible":  true,
        "@odata.id":    "/redfish/v1/Managers/CIMC/Oem/CiscoInternalStorage/FlexMMC/
CiscoPartition/UserFiles/CiscoFile/rebooter.iso"
}
```

Delete the Image Mapped in IMCImage UserFiles Partition

Request

```
curl -k -u admin:password https://10.10.10..10/redfish/v1/Managers/CIMC/Oem/
CiscoInternalStorage/FlexMMC/CiscoPartition/UserFiles/CiscoFile/rebooter.iso -XDELETE
```

Reset FlexMMC to Factory Defaults

Request

```
curl -XPOST -k -u admin:password https://10.10.10.10/redfish/v1/Managers/CIMC/Oem/
CiscoInternalStorage/FlexMMC/Actions/CiscoInternalStorage.ResetToDefault
```

Password Change

Verifying PasswordChangeRequired Property After Restore Factory Default

Request

```
$ curl -k -u admin:password https://10.10.10.10/redfish/v1/AccountService/Accounts/1
```

Response

```
{
"@odata.id": "/redfish/v1/AccountService/Accounts/1",
"@odata.type": "#ManagerAccount.v1_5_0.ManagerAccount",
"@odata.context": "/redfish/v1/$metadata#ManagerAccount.ManagerAccount",
"Name": "User Account",
"Description": "User Account",
"Links": {
"Role": {
"@odata.id": "/redfish/v1/AccountService/Roles/admin"
}
},
"AccountTypes": ["Redfish", null],
"Id": "1",
"Description": "User Account",
"Enabled": true,
"Name": "User Account",
"UserName": "admin",
"RoleId": "admin",
"PasswordChangeRequired": true
}
```

Changing Password with PATCH Property After Restore Factory Default

Request

```
$ curl -k -u admin:password https://10.10.10.10/redfish/v1/AccountService/Accounts/1 -XPATCH
 -
d '{"Password" : "New_Password"}'
```

Response

```
{
"AccountTypes": ["Redfish", null],
"Id": "1",
"Description": "User Account",
"Enabled": true,
"Name": "User Account",
"UserName": "admin",
"RoleId": "admin",
"PasswordChangeRequired": false,
"@odata.id": "/redfish/v1/AccountService/Accounts/1"
}
```

Configuring LDAP Server with NULL Address

Request

```
curl -k -u admin:password https://10.10.10.10/redfish/v1/AccountService -XPATCH -
d '{"LDAP": {"ServiceAddresses": [null]} }'
```

Response

```
"LDAP": {
…
"ServiceEnabled": true,
"ServiceAddresses": [],
},
```

DDNS and Domain Name Properties Support Under NIC

GET

Request

```
curl -k -u admin:password https://10.10.10.10/redfish/v1/Managers/CIMC/EthernetInterfaces/NICs
```

Response

```
{
"@odata.id":    "/redfish/v1/Managers/CIMC/EthernetInterfaces/NICs",
"@odata.type":  "#EthernetInterface.v1_4_1.EthernetInterface",
"@odata.context":       "/redfish/v1/$metadata#EthernetInterface.EthernetInterface",
"Links":        {
"Chassis":      {
"@odata.id":    "/redfish/v1/Chassis/1"
}
},
"HostName":     "C220-WZP26330KVU",
"IPv4Addresses":        [{
"AddressOrigin":        "Static",
"Address":      "10.10.10.10",
"SubnetMask":   "255.255.255.0",
"Gateway":      "10.10.10.1"
}],
"MaxIPv6StaticAddresses":       1,
"VLAN": {
"VLANEnable":   false,
```

```
"VLANId":       1
},
"DHCPv4":       {
"DHCPEnabled":  false,
"UseDNSServers":        false,
"UseGateway":   false,
"UseDomainName":        false,
"UseNTPServers":        false,
"UseStaticRoutes":      false
},
"DHCPv6":       {
"OperatingMode":        "Stateful",
"UseNTPServers":        false,
"UseDNSServers":        true,
"UseDomainName":        false
},
"Name": "Manager Ethernet Interface",
"IPv6Addresses":        [{
"AddressOrigin":        "DHCPv6",
"PrefixLength": 64,
"Address":      "::"
}],
"Description":  "Manager Network Interface",
"IPv6DefaultGateway":   "::",
"InterfaceEnabled":     true,
"PermanentMACAddress":  "EC:F4:0C:1C:12:A4",
"NameServers":  [],
"MTUSize":      1500,
"AutoNeg":      false,
"StatelessAddressAutoConfig":   {
"IPv4AutoConfigEnabled":        false,
"IPv6AutoConfigEnabled":        true
},
"StaticNameServers":    [],
"Id":   "NICs",
"Oem":  {
"Cisco":        {
"DynamicDNS":   {
"RefreshInterval":      0,
"Enabled":      true
}
}
},
"MACAddress":   "EC:F4:0C:1C:12:A4"
}
```


SET

Request

```
curl -k -u admin:password https://10.10.10.10/redfish/v1/Managers/CIMC/EthernetInterfaces/
NICs -XATCH -d '{ "Oem": {"Cisco": {"DynamicDNS": {"RefreshInterval": 100, "Enabled": true,

"DomainName": "Domain_Name"} } } }'
```

Response


```
{
"MTUSize":      1500,
"AutoNeg":      false,
"StaticNameServers":    [],
"Oem":  {
"Cisco":        {
"DynamicDNS":   {
```

```
"Enabled":      true,
"RefreshInterval":      100,
"DomainName":   "Domain_Name"
}
}
},
"HostName":     "C220-WZP26330KVU",
"IPv4Addresses":        [{
"AddressOrigin":        "Static",
"Address":      "10.10.10.10",
"SubnetMask":   "255.255.255.0",
"Gateway":      "10.10.10.1"
}],
"MaxIPv6StaticAddresses":       1,
"VLAN": {
"VLANId":       1,
"VLANEnable":   false
},
"IPv6Addresses":        [{
"AddressOrigin":        "DHCPv6",
"PrefixLength": 64,
"Address":      "::"
}],
"DHCPv4":       {
"DHCPEnabled":  false,
"UseDNSServers":        false,
"UseGateway":   false,
"UseNTPServers":        false,
"UseStaticRoutes":      false,
"UseDomainName":        false
},
"MACAddress":   "EC:F4:0C:1C:12:A4",
"DHCPv6":       {
"OperatingMode":        "Stateful",
"UseNTPServers":        false,
"UseDomainName":        false,
"UseDNSServers":        true
},
"Id":   "NICs",
"Name": "Manager Ethernet Interface",
"StatelessAddressAutoConfig":   {
"IPv4AutoConfigEnabled":        false,
"IPv6AutoConfigEnabled":        true
},
"IPv6DefaultGateway":   "::",
"PermanentMACAddress":  "EC:F4:0C:1C:12:A4",
"InterfaceEnabled":     true,
"NameServers":  [],
"Description":  "Manager Network Interface",
"@odata.id":    "/redfish/v1/Managers/CIMC/EthernetInterfaces/NICs"
}
```


Enabling SMTP Service with Allowable Port from 1 to 65535

Note Port 0 is not supported. You may see the following error message for port 0:

```
Choose a value within the range that the implementation can support and resubmit
the request if the operation failed.
```

Request

```
curl -XPATCH -k -u admin:password https://10.10.10.10/redfish/v1/EventService -
d '{"SMTP": {"ServiceEnabled": true, "ServerAddress": "1.1.1.1", "Port": 1}}'
```

Response

```
{
"Status":       {
"State":        "Disabled",
"Health":       "OK"
},
"ServiceEnabled":       false,
"DeliveryRetryAttempts":        3,
"DeliveryRetryIntervalSeconds": 30,
"EventTypesForSubscription":    ["Alert"],
"SMTP": {
"ServerAddress":        "1.1.1.1",
"FromAddress":  "ucs-server@cisco.com",
"Port": 1,
"ServiceEnabled":       true
},
"Actions":      {
"#EventService.SubmitTestEvent":        {
"target":       "/redfish/v1/EventService/Actions/EventService.SubmitTestEvent"
}
},
"@odata.id":    "/redfish/v1/EventService"
}
```

Setting COM Port for Serial Over LAN Policy

GET

Request

```
curl -k -u admin:password https://10.10.10.10/redfish/v1/Managers/CIMC/SerialInterfaces/TTY0
```

Response

```
"InterfaceEnabled": true,
"BitRate": "115200",
"Oem": {
"Cisco": { "SerialOverLanComPort": "com1",
"SerialOverLanSSHPort": 2400
}
}
```

SET

Request

```
curl -k -u admin:password https://10.10.10.10/redfish/v1/Managers/CIMC/SerialInterfaces/TTY0
 -XPATCH -
d '{"Oem":{"Cisco":{"SerialOverLanComPort":"com1", "SerialOverLanSSHPort": 2200}}}'
```

Response

```
{
"@odata.id": "/redfish/v1/Managers/BMC2/SerialInterfaces/TTY0",
"@odata.type": "#SerialInterface.v1_1_3.SerialInterface",
```

```
"@odata.context": "/redfish/v1/$metadata#SerialInterface.SerialInterface",
"Description": "Management for Serial Interface",
"SignalType": "Rs232",
"Id": "TTY0",
"InterfaceEnabled": true,
"Name": "Manager Serial Interface 1",
"PinOut": "Cisco",
"BitRate": "115200",
"DataBits": "8",
"FlowControl": "None",
"StopBits": "1",
"ConnectorType": "DB9 Female",
"Parity": "None",
"Description": "Management for Serial Interface",
"Oem": {
"Cisco": {
"SerialOverLanComPort": "com0",
"SerialOverLanSSHPort": 2400
}
}
}
```


Setting Privilege and Encryption Key

GET

Request

```
curl -k -u admin:password https://10.10.10.10/redfish/v1/Managers/CIMC/NetworkProtocol
```

Response


```
{
"@odata.id":    "/redfish/v1/Managers/CIMC/NetworkProtocol",
"@odata.type":  "#ManagerNetworkProtocol.v1_5_0.ManagerNetworkProtocol",
"@odata.context":      "/redfish/v1/$metadata#ManagerNetworkProtocol.ManagerNetworkProtocol",
"Id":   "ManagerNetworkProtocol",
"Name": "Manager Network Protocol",
"SSH":  {
"ProtocolEnabled":      true,
"Port": 22
},
"Description":  "Manager Network Service",
"VirtualMedia": {
"ProtocolEnabled":      true,
"Port": 2068
},
"HostName":     "C220-WZP26330KVU",
"HTTP": {
"ProtocolEnabled":      false,
"Port": 80
},
"KVMIP":        {
"ProtocolEnabled":      true,
"Port": 2068
},
"DHCP": {
"ProtocolEnabled":      false,
"Port": null
},
"HTTPS":        {
```

```
"ProtocolEnabled":      true,
"Port": 443,
"Certificates": {
"@odata.id":    "/redfish/v1/Managers/CIMC/NetworkProtocol/HTTPS/Certificates"
}
},
"NTP":  {
"ProtocolEnabled":      false,
"Port": 123,
"NTPServers":   []
},
"DHCPv6":       {
"ProtocolEnabled":      true,
"Port": null
},
"Oem":  {
"Cisco":        {
"KVMConfiguration":     {
"LocalServerVideo":     "Enabled",
"MaxConcurrentSessions":        4
},
"KVMVendor":    {
"Vendor":       "Cisco"
},
"SSHTimeout":   1800,
"IPMIOverLan":  {
"ChannelSecurityKey":   "0000000000000000000000000000000000000000",
"PrivilegeLevelLimit":  "admin"
}
}
},
"IPMI": {
"ProtocolEnabled":      false,
"Port": 623
},
"SNMP": {
"ProtocolEnabled":      false,
"EnableSNMPv2c":        false,
"EnableSNMPv3": false,
"CommunityStrings":     [{
"AccessMode":   null,
"CommunityString":      ""
}],
"HideCommunityStrings": false,
"Port": 161,
"EnableSNMPv1": false
},
"Actions":      {
"Oem":  {
"#CiscoUCSExtensions.ResetKVM": {
"target":
"/redfish/v1/Managers/CIMC/NetworkProtocol/Actions/Oem/CiscoUCSExtensions.ResetKVM",
"@odata.type":  "#CiscoUCSExtensions.v1_0_0.ResetKVM"
}
}
}
}
```


SET

Request

```
curl -k -u admin:password https://10.10.10.10/redfish/v1/Managers/CIMC/NetworkProtocol
-XPATCH -
```

```
d '{"IPMI": {"ProtocolEnabled": false}, "Oem": {"Cisco": {"SSHTimeout": 2500, "IPMIOverLan":
 {"ChannelSecurityKey": "055
DDDE537EF5F50C6593B199BBB4D3429102222", "PrivilegeLevelLimit": "read-only" } } } }'
```

Response


```
{
"@odata.id":    "/redfish/v1/Managers/CIMC/NetworkProtocol",
"@odata.type":  "#ManagerNetworkProtocol.v1_5_0.ManagerNetworkProtocol",
"@odata.context":      "/redfish/v1/$metadata#ManagerNetworkProtocol.ManagerNetworkProtocol",
"Id":   "ManagerNetworkProtocol",
"Name": "Manager Network Protocol",
"SSH":  {
"ProtocolEnabled":      true,
"Port": 22
},
"Description":  "Manager Network Service",
"VirtualMedia": {
"ProtocolEnabled":      true,
"Port": 2068
},
"HostName":     "C220-WZP26330KVU",
"HTTP": {
"ProtocolEnabled":      false,
"Port": 80
},
"KVMIP":        {
"ProtocolEnabled":      true,
"Port": 2068
},
"DHCP": {
"ProtocolEnabled":      false,
"Port": null
},
"HTTPS":        {
"ProtocolEnabled":      true,
"Port": 443,
"Certificates": {
"@odata.id":    "/redfish/v1/Managers/CIMC/NetworkProtocol/HTTPS/Certificates"
}
},
"NTP":  {
"ProtocolEnabled":      false,
"Port": 123,
"NTPServers":   []
},
"DHCPv6":       {
"ProtocolEnabled":      true,
"Port": null
},
"Oem":  {
"Cisco":        {
"KVMConfiguration":     {
"LocalServerVideo":     "Enabled",
"MaxConcurrentSessions":        4
},
"KVMVendor":    {
"Vendor":       "Cisco"
},
"SSHTimeout":   2500,
"IPMIOverLan":  {
"ChannelSecurityKey":   "055DDDE537EF5F50C6593B199BBB4D3429102222",
"PrivilegeLevelLimit":  "read.only"
}
}
```

```
},
"IPMI": {
"ProtocolEnabled":      false,
"Port": 623
},
"SNMP": {
"ProtocolEnabled":      false,
"EnableSNMPv2c":        false,
"EnableSNMPv3": false,
"CommunityStrings":     [{
"AccessMode":   null,
"CommunityString":      ""
}],
"HideCommunityStrings": false,
"Port": 161,
"EnableSNMPv1": false
},
"Actions":      {
"Oem":  {
"#CiscoUCSExtensions.ResetKVM": {
"target":
"/redfish/v1/Managers/CIMC/NetworkProtocol/Actions/Oem/CiscoUCSExtensions.ResetKVM",
"@odata.type":  "#CiscoUCSExtensions.v1_0_0.ResetKVM"
}
}
}
}
```


Setting Session Timeout for SSH Protocol

GET

Request

```
curl -k -u admin:password https://10.10.10.10/redfish/v1/Managers/CIMC/NetworkProtocol/
```

Response


```
[root@LNX-IPV6-236-41 ~]# curl -k -u admin:password
https://10.10.10.10/redfish/v1/Managers/CIMC/NetworkProtocol/

RESPONSE
{
"@odata.id":    "/redfish/v1/Managers/CIMC/NetworkProtocol",
"@odata.type":  "#ManagerNetworkProtocol.v1_5_0.ManagerNetworkProtocol",
"@odata.context":      "/redfish/v1/$metadata#ManagerNetworkProtocol.ManagerNetworkProtocol",
"Id":   "ManagerNetworkProtocol",
"Name": "Manager Network Protocol",
"SSH":  {
"ProtocolEnabled":      true,
"Port": 22
},
"Description":  "Manager Network Service",
"VirtualMedia": {
"ProtocolEnabled":      true,
"Port": 2068
},
"HostName":     "C220-WZP26330KVU",
"HTTP": {
"ProtocolEnabled":      false,
"Port": 80
```

```
},
"KVMIP":        {
"ProtocolEnabled":      true,
"Port": 2068
},
"DHCP": {
"ProtocolEnabled":      false,
"Port": null
},
"HTTPS":        {
"ProtocolEnabled":      true,
"Port": 443,
"Certificates": {
"@odata.id":    "/redfish/v1/Managers/CIMC/NetworkProtocol/HTTPS/Certificates"
}
},
"NTP":  {
"ProtocolEnabled":      false,
"Port": 123,
"NTPServers":   []
},
"DHCPv6":       {
"ProtocolEnabled":      true,
"Port": null
},
"Oem":  {
"Cisco":        {
"KVMConfiguration":     {
"LocalServerVideo":     "Enabled",
"MaxConcurrentSessions":        4
},
"KVMVendor":    {
"Vendor":       "Cisco"
},
"SSHTimeout":   1800,
"IPMIOverLan":  {
"ChannelSecurityKey":   "0000000000000000000000000000000000000000",
"PrivilegeLevelLimit":  "admin"
}
}
},
"IPMI": {
"ProtocolEnabled":      false,
"Port": 623
},
"SNMP": {
"ProtocolEnabled":      false,
"EnableSNMPv2c":        false,
"EnableSNMPv3": false,
"CommunityStrings":     [{
"AccessMode":   null,
"CommunityString":      ""
}],
"HideCommunityStrings": false,
"Port": 161,
"EnableSNMPv1": false
},
"Actions":      {
"Oem":  {
"#CiscoUCSExtensions.ResetKVM": {
"target":
"/redfish/v1/Managers/CIMC/NetworkProtocol/Actions/Oem/CiscoUCSExtensions.ResetKVM",
"@odata.type":  "#CiscoUCSExtensions.v1_0_0.ResetKVM"
}
```

```
}
}
}
```

SET

Request

```
curl -k -u admin:password https://10.10.10.10/redfish/v1/Managers/CIMC/NetworkProtocol/
-XPATCH -
d '{"Oem": {"Cisco": {"SSHTimeout": 1500 } } }'
```

Response

```
[root@LNX-IPV6-236-41 ~]# curl -k -u admin:password
https://10.10.10.10/redfish/v1/Managers/CIMC/NetworkProtocol/

RESPONSE
{
"@odata.id":    "/redfish/v1/Managers/CIMC/NetworkProtocol",
"@odata.type":  "#ManagerNetworkProtocol.v1_5_0.ManagerNetworkProtocol",
"@odata.context":      "/redfish/v1/$metadata#ManagerNetworkProtocol.ManagerNetworkProtocol",
"Id":   "ManagerNetworkProtocol",
"Name": "Manager Network Protocol",
"SSH":  {
"ProtocolEnabled":      true,
"Port": 22
},
"Description":  "Manager Network Service",
"VirtualMedia": {
"ProtocolEnabled":      true,
"Port": 2068
},
"HostName":     "C220-WZP26330KVU",
"HTTP": {
"ProtocolEnabled":      false,
"Port": 80
},
"KVMIP":        {
"ProtocolEnabled":      true,
"Port": 2068
},
"DHCP": {
"ProtocolEnabled":      false,
"Port": null
},
"HTTPS":        {
"ProtocolEnabled":      true,
"Port": 443,
"Certificates": {
"@odata.id":    "/redfish/v1/Managers/CIMC/NetworkProtocol/HTTPS/Certificates"
}
},
"NTP":  {
"ProtocolEnabled":      false,
"Port": 123,
"NTPServers":   []
},
"DHCPv6":       {
"ProtocolEnabled":      true,
"Port": null
},
"Oem":  {
"Cisco":        {
```

```
"KVMConfiguration":     {
"LocalServerVideo":     "Enabled",
"MaxConcurrentSessions":        4
},
"KVMVendor":    {
"Vendor":       "Cisco"
},
"SSHTimeout":   1500,
"IPMIOverLan":  {
"ChannelSecurityKey":   "0000000000000000000000000000000000000000",
"PrivilegeLevelLimit":  "admin"
}
}
},
"IPMI": {
"ProtocolEnabled":      false,
"Port": 623
},
"SNMP": {
"ProtocolEnabled":      false,
"EnableSNMPv2c":        false,
"EnableSNMPv3": false,
"CommunityStrings":     [{
"AccessMode":   null,
"CommunityString":      ""
}],
"HideCommunityStrings": false,
"Port": 161,
"EnableSNMPv1": false
},
"Actions":      {
"Oem":  {
"#CiscoUCSExtensions.ResetKVM": {
"target":
"/redfish/v1/Managers/CIMC/NetworkProtocol/Actions/Oem/CiscoUCSExtensions.ResetKVM",
"@odata.type":  "#CiscoUCSExtensions.v1_0_0.ResetKVM"
}
}
}
}
```


Data Sanitization

- Data Sanitization - Beginning with release 4.2(3d), Cisco IMC supports data sanitization feature. Using the data sanitization process, Cisco IMC erases all sensitive data, thus making extraction or recovery of customer data impossible. As Cisco IMC progresses through the erase process, the status report is updated. You can check the status and progress of the data sanitization process for each individual device erase from the report, identify and rectify any issues, if required.

Note

- You must perform data sanitization on the components that contain customer data.
- This feature is supported on the following servers:
  - Cisco UCS C220 M5, C240 M5, C480 M5, C125 M5 servers
  - Cisco UCS C220 M6, C240 M6, C225 M6, C245 M6 servers

Erase process for data sanitization is performed in the following order on the server components:

- Storage
- VIC
- BIOS
- Cisco IMC

You can choose to either perform data sanitization on all the server components or select only VIC and Storage components for data sanitization. Cisco IMC reboots when the data sanitization process is completed and generates a report.

After the process is complete, the password is reset to default. You can change the password and perform a full component firmware update using the latest firmware.

Issuing the Command to Perform Data Sanitization

Command to issue data sanitization on all components:

```
curl -k -u admin:password
https://10.10.10.10/redfish/v1/Managers/CIMC/Actions/Oem/CiscoUCSExtensions.DataSanitize
-XPOST -d '{"SanitizeTargets":[ "HostDomainComponents","BoardDomainComponents"]}'
```

Command to issue data sanitization only on VIC, Storage components:

```
curl -k -u admin:password
https://10.10.10.10/redfish/v1/Managers/CIMC/Actions/Oem/CiscoUCSExtensions.DataSanitize
-XPOST -d '{"SanitizeTargets":["HostDomainComponents"]}'
```

Request

```
curl -k -u admin:password
https://10.10.10.10/redfish/v1/Managers/CIMC/Actions/Oem/CiscoUCSExtensions.DataSanitize
-XPOST -d '{"SanitizeTargets":["BoardDomainComponents","HostDomainComponents"]}'
```

Response

```
{
"Messages":
[{
"@odata.type": "#Message.v1_1_1.Message",
"MessageId": "CiscoUCS.1.2.0.DataSanitizationOK",
"Message": "Performing data sanitization of targets Storage, VIC, BIOS, CIMC.",
"MessageArgs": ["Performing data sanitization of targets Storage, VIC, BIOS, CIMC."],
"Severity": "OK",
"Resolution": "Indicates that data sanitization is proceeding successfully." },
{
"@odata.type": "#Message.v1_1_1.Message",
"MessageId": "CiscoUCS.1.2.0.DataSanitizationWarning",
"Message": "Storage data sanitization is not yet supported.",
"MessageArgs": ["Storage data sanitization is not yet supported."],
"Severity": "Warning",
"Resolution": "Data sanitization status message should be inspected to determine if this
condition
 is expected or a problem requiring resolution." },
{
"@odata.type": "#Message.v1_1_1.Message",
"MessageId": "CiscoUCS.1.2.0.DataSanitizationOK",
"Message": "VIC is preparing to initiate data sanitization.",
```

```
"MessageArgs": ["VIC is preparing to initiate data sanitization."],
"Severity": "OK",
"Resolution": "Indicates that data sanitization is proceeding successfully." }],
 "Id": "19",
"Name": "Data Sanitization",
"StartTime": "2012-03-11T05:37:00+09:00",
"TaskState": "Running",
"PercentComplete": 90,
"@odata.id": "/redfish/v1/TaskService/Tasks/19",
 "@odata.type": "#Task.v1_4_0.Task"
}
```

Issuing the Command to View the Status of Data Sanitization

The Redfish command to view the status of data sanitization is as follows.

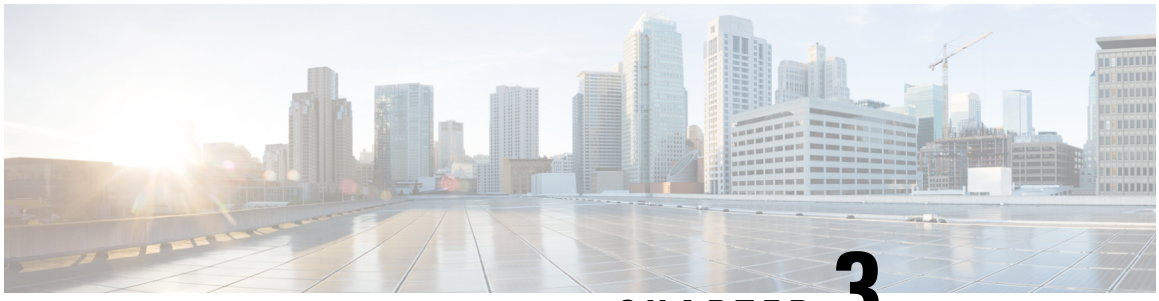
Note You can use the task id from the data sanitization command issued.

Request

```
curl -k -u admin:password https://10.10.10.10/redfish/v1/TaskService/Tasks/task-id -XGET
```

Response

```
{
"@odata.id": "/redfish/v1/TaskService/Tasks/19",
"@odata.type": "#Task.v1_5_0.Task",
"@odata.context": "/redfish/v1/$metadata#Task.Task",
"Id": "19",
"Name": "Data Sanitization",
"StartTime": "2012-03-11T05:37:00+09:00",
"EndTime": "1970-01-01T00:07:11+00:00",
"PercentComplete": 100,
"TaskState": "Completed",
"TaskStatus": "Warning",
"Messages":
    [{
    "@odata.type": "#Message.v1_1_1.Message",
    "MessageId": "CiscoUCS.1.2.0.DataSanitizationOK",
    "Message": "Performing data sanitization of targets Storage, VIC, BIOS, CIMC.",
    "MessageArgs": ["Performing data sanitization of targets Storage, VIC, BIOS, CIMC."],
    "Severity": "OK",
    "Resolution": "Indicates that data sanitization is proceeding successfully."
}
```



CHAPTER 3

Cisco IMC REST API Examples for Supported S-Series Servers in Release 4.2

Verify GET Fabric URI

Request

```
curl -k -u admin:password https://10.10.10.10/redfish/v1/Fabrics
```

Response

```
{
        "@odata.id":    "/redfish/v1/Fabrics",
        "@odata.type":  "#FabricCollection.FabricCollection",
        "@odata.context":       "/redfish/v1/$metadata#FabricCollection.FabricCollection",
        "Description":  "Collection of Fabrics",
        "Name": "Fabric Collection",
        "Members@odata.count":  1,
        "Members":      [{
                        "@odata.id":    "/redfish/v1/Fabrics/SASFabric"
                }]
}
```

Verify SAS Fabric URI

Request

```
curl -k -u admin:password https://10.10.10.10/redfish/v1/Fabrics/SASFabric
```

Response

```
{
        "@odata.id":    "/redfish/v1/Fabrics/SASFabric",
        "@odata.type":  "#Fabric.v1_1_0.Fabric",
        "@odata.context":       "/redfish/v1/$metadata#Fabric.Fabric",
        "Description":  "SAS Fabric Description",
        "Switches":     {
                "@odata.id":    "/redfish/v1/Fabrics/SASFabric/Switches"
        },
        "Zones":        {
                "@odata.id":    "/redfish/v1/Fabrics/SASFabric/Zones"
        },
        "Endpoints":    {
                "@odata.id":    "/redfish/v1/Fabrics/SASFabric/Endpoints"
        },
        "Id":   "SASFabric",
        "Name": "SASFabric",
        "FabricType":   "SAS",
        "MaxZones":     10,
        "Status":       {
                "State":        "Enabled",
                "Health":       "OK"
        },
        "Oem":  {
                "Cisco":        {
                        "DrivePowerPolicy":     "active",
                        "DualEnclosureStatus":  "Disabled"
                }
        }
}
```

Verify GET Switches URI

Request

```
curl -k -u admin:password https://10.10.10.10/redfish/v1/Fabrics/SASFabric/Switches
```

Response

```
https://10.10.10.10/redfish/v1/Fabrics/SASFabric/Switches
Response:
{
        "@odata.id":    "/redfish/v1/Fabrics/SASFabric/Switches",
        "@odata.type":  "#SwitchCollection.SwitchCollection",
        "@odata.context":       "/redfish/v1/$metadata#SwitchCollection.SwitchCollection",
        "Description":  "Collection of Switches",
        "Name": "Switch Collection",
        "Members@odata.count":  2,
        "Members":      [{
                        "@odata.id":    "/redfish/v1/Fabrics/SASFabric/Switches/SASEXP1"
                }, {
                        "@odata.id":    "/redfish/v1/Fabrics/SASFabric/Switches/SASEXP2"
                }]
}
```

Verify GET Switch Expander

Request

```
curl -k -u admin:password https://10.10.10.10/redfish/v1/Fabrics/SASFabric/Switches/SASEXP1
```

Response

```
{
        "@odata.id":    "/redfish/v1/Fabrics/SASFabric/Switches/SASEXP1",
        "@odata.type":  "#Switch.v1_3_0.Switch",
        "@odata.context":       "/redfish/v1/$metadata#Switch.Switch",
        "Description":  "Switch Information",
        "Id":   "SASEXP1",
        "Name": "SASEXP1",
        "SwitchType":   "SAS",
        "Manufacturer": "Microsemi",
        "Model":        "Microsemi",
        "PowerState":   "On",
        "Oem":  {
                "Cisco":        {
                        "SasAddress":   "55897BD75945EA00",
                        "EnclosureLogicalId":   "55897BD75945E000",
                        "ActiveFirmwareRevision":       "04.08.01 B082",
                        "BackupFirmwareRevision":       "04.08.01 B083",
                        "ExecutingFirmwarePartition":   "2",
                        "MixedSpeedModeEnabled":        true
                }
        }
}
```

Verify GET Zones

Request

```
curl -k -u admin:password https://10.10.10.10/redfish/v1/Fabrics/SASFabric/Zones
```

Response

```
{
        "@odata.id":    "/redfish/v1/Fabrics/SASFabric/Zones",
        "@odata.type":  "#ZoneCollection.ZoneCollection",
        "@odata.context":       "/redfish/v1/$metadata#ZoneCollection.ZoneCollection",
        "Description":  "Collection of Zones",
        "Name": "Zone Collection",
        "Members":      [{
                        "@odata.id":    "/redfish/v1/Fabrics/SASFabric/Zones/Server1SBMezz1"

                }, {
                        "@odata.id":    "/redfish/v1/Fabrics/SASFabric/Zones/Server1SBMezz2"

                }, {
                        "@odata.id":    "/redfish/v1/Fabrics/SASFabric/Zones/Server2SBMezz1"

                }, {
                        "@odata.id":    "/redfish/v1/Fabrics/SASFabric/Zones/Server2SBMezz2"

                }, {
                          "@odata.id":    "/redfish/v1/Fabrics/SASFabric/Zones/Unassigned"
                }, {
                          "@odata.id":
"/redfish/v1/Fabrics/SASFabric/Zones/ChassisWideHotspare"
                }],
        "Members@odata.count":  6
}
```

Verify GET Controller - List all for All Endpoints

Request

```
curl -k -u admin:password https://10.10.10.10.10/redfish/v1/Fabrics/SASFabric/
Zones/Server1SBMezz1
```

Response

```
{
        "@odata.id":    "/redfish/v1/Fabrics/SASFabric/Zones/Server1SBMezz1",
        "@odata.type":  "#Zone.v1_5_0.Zone",
        "@odata.context":       "/redfish/v1/$metadata#Zone.Zone",
        "Description":  "Zone Description",
        "Links":        {
                "Endpoints":    [{
                                 "@odata.id":
"/redfish/v1/Fabrics/SASFabric/Endpoints/Server1SBMezz1"
                        }, {
                               "@odata.id":    "/redfish/v1/Fabrics/SASFabric/Endpoints/4"

                        }, {
```

```
        "@odata.id":    "/redfish/v1/Fabrics/SASFabric/Endpoints/5"
    }, {
        "@odata.id":    "/redfish/v1/Fabrics/SASFabric/Endpoints/6"
    }, {
        "@odata.id":    "/redfish/v1/Fabrics/SASFabric/Endpoints/7"
    }, {
        "@odata.id":    "/redfish/v1/Fabrics/SASFabric/Endpoints/8"
    }, {
        "@odata.id":    "/redfish/v1/Fabrics/SASFabric/Endpoints/9"
    }, {
       "@odata.id":    "/redfish/v1/Fabrics/SASFabric/Endpoints/10"
    }, {
       "@odata.id":    "/redfish/v1/Fabrics/SASFabric/Endpoints/11"
    }, {
       "@odata.id":    "/redfish/v1/Fabrics/SASFabric/Endpoints/12"
    }, {
       "@odata.id":    "/redfish/v1/Fabrics/SASFabric/Endpoints/13"
    }, {
       "@odata.id":    "/redfish/v1/Fabrics/SASFabric/Endpoints/14"
    }, {
       "@odata.id":    "/redfish/v1/Fabrics/SASFabric/Endpoints/15"
    }, {
       "@odata.id":    "/redfish/v1/Fabrics/SASFabric/Endpoints/16"
    }, {
       "@odata.id":    "/redfish/v1/Fabrics/SASFabric/Endpoints/17"
    }, {
       "@odata.id":    "/redfish/v1/Fabrics/SASFabric/Endpoints/18"
    }, {
       "@odata.id":    "/redfish/v1/Fabrics/SASFabric/Endpoints/19"
    }, {
       "@odata.id":    "/redfish/v1/Fabrics/SASFabric/Endpoints/20"
    }, {
       "@odata.id":    "/redfish/v1/Fabrics/SASFabric/Endpoints/21"
    }, {
       "@odata.id":    "/redfish/v1/Fabrics/SASFabric/Endpoints/22"
    }, {
       "@odata.id":    "/redfish/v1/Fabrics/SASFabric/Endpoints/23"
    }, {
       "@odata.id":    "/redfish/v1/Fabrics/SASFabric/Endpoints/24"
    }, {
       "@odata.id":    "/redfish/v1/Fabrics/SASFabric/Endpoints/25"
    }, {
       "@odata.id":    "/redfish/v1/Fabrics/SASFabric/Endpoints/26"
```

```
                        }, {
                                "@odata.id":    "/redfish/v1/Fabrics/SASFabric/Endpoints/27"

                        }, {
                                "@odata.id":    "/redfish/v1/Fabrics/SASFabric/Endpoints/28"

                        }, {
                                "@odata.id":    "/redfish/v1/Fabrics/SASFabric/Endpoints/44"

                        }, {
                                "@odata.id":    "/redfish/v1/Fabrics/SASFabric/Endpoints/45"

                        }, {
                                "@odata.id":    "/redfish/v1/Fabrics/SASFabric/Endpoints/46"

                        }, {
                                "@odata.id":    "/redfish/v1/Fabrics/SASFabric/Endpoints/47"

                        }, {
                                "@odata.id":    "/redfish/v1/Fabrics/SASFabric/Endpoints/48"

                        }, {
                                "@odata.id":    "/redfish/v1/Fabrics/SASFabric/Endpoints/49"

                        }]
        },
        "Id":   "Server1SBMezz1",
        "Name": "Server1SBMezz1",
        "ZoneType":     "ZoneOfEndpoints",
        "Status":       {
                "State":        "Enabled",
                "Health":       "OK"
        },
        "Actions":      {
                "#Zone.AddEndpoint":    {
                        "target":
"/redfish/v1/Fabrics/SASFabric/Zones/Server1SBMezz1/Actions/Zone.AddEndpoint",
                        "EndPoint@Redfish.AllowableValues":     ["Valid URI of the Endpoint
 ID"]
                },
                "#Zone.RemoveEndpoint": {
                        "target":
"/redfish/v1/Fabrics/SASFabric/Zones/Server1SBMezz1/Actions/Zone.RemoveEndpoint",
                        "EndPoint@Redfish.AllowableValues":     ["Valid URI of the Endpoint
 ID"]
                }
        }
}
```

Add Drives to Controller Component with AddEndpoint Operation

Request

```
$curl -k
http://10.10.10.10/redfish/v1/Fabrics/SASFabric/Zones/Server1SBMezz1/Actions/Zone.AddEndpoint-

'{"EndPoint":[{"@odata.id":"/redfish/v1/Fabrics/SASFabric/Endpoints/11"},
{"@odata.id":"/redfish/v1/Fabrics/SASFabric/Endpoints/12"}]}' -XPOST
```

Response

POST operation should assign the drives to the associated server without any error message.

Verify GET Controller to Ensure Drives Added in Respective Components

Request

```
curl -k -u admin:password
https://10.10.10.10/redfish/v1/Fabrics/SASFabric/Zones/Server1SBMezz1
```

Response

```
{
        "@odata.id":    "/redfish/v1/Fabrics/SASFabric/Zones/Server1SBMezz1",
        "@odata.type":  "#Zone.v1_5_0.Zone",
        "@odata.context":       "/redfish/v1/$metadata#Zone.Zone",
        "Description":  "Zone Description",
        "Links":        {
                "EndPoints":    [{
                                 "@odata.id":
"/redfish/v1/Fabrics/SASFabric/Endpoints/Server1SBMezz1"
                        }, {
                                "@odata.id":    "/redfish/v1/Fabrics/SASFabric/Endpoints/1"

                        }, {
                                "@odata.id":    "/redfish/v1/Fabrics/SASFabric/Endpoints/2"

                        }, {
                                "@odata.id":    "/redfish/v1/Fabrics/SASFabric/Endpoints/8"

                        }]
        },
        "Id":   "Server1SBMezz1",
        "Name": "Server1SBMezz1",
        "ZoneType":     "ZoneOfEndpoints",
        "Status":       {
                "State":        "Enabled",
                "Health":       "OK"
        },
        "Actions":      {
                "#Zone.AddEndpoint":    {
                        "target":
"/redfish/v1/Fabrics/SASFabric/Zones/Server1SBMezz1/Actions
/Zone.AddEndpoint",
                        "EndPoint@Redfish.AllowableValues":     ["Valid URI of the Endpoint
 ID"]
                },
                "#Zone.RemoveEndpoint": {
                        "target":
"/redfish/v1/Fabrics/SASFabric/Zones/Server1SBMezz1/Actions
/Zone.RemoveEndpoint",
                        "EndPoint@Redfish.AllowableValues":     ["Valid URI of the Endpoint
 ID"]
                }
        }
}
```

Add Drives to Controller with AddEndpoint Operation with Admin Privilege Configured in LDAP User

Request

Using POST operation, assign the drives to the controllers listed under Zones

```
$curl -k -u LDAPUser:Password https://10.10.10.10/redfish/v1/Fabrics/SASFabric/Zones/
Server1SBMezz1/Actions/Zone.AddEndpoint -d '{"EndPoint":[{"@odata.id":"/redfish/v1/Fabrics/
SASFabric/Endpoints/11"}' -XPOST
```

Response

POST operation should assign the drives to the associated server without any error message.

Add Drives to Controller Component - with AddEndpoint Operation with Admin Privilege Configured in TACACS User

Request

Using POST operation, assign the drives to the controllers listed under Zones

```
$curl -k -u TACACSUser:Password https://10.10.10.10/redfish/v1/Fabrics/SASFabric/Zones/
Server1SBMezz1/Actions/Zone.AddEndpoint -d '{"EndPoint":[{"@odata.id":"/redfish/v1/Fabrics/
SASFabric/Endpoints/11"}' -XPOST
```

Response

POST operation should assign the drives to the associated server without any error message.

Remove Drives from the Controller Component with RemoveEndpoint operation

Request

```
$curl -k -u admin:password https://10.10.10.10/redfish/v1/Fabrics/SASFabric/Zones/
Server1SBMezz1/Actions/Zone.RemoveEndpoint -d '{"EndPoint":[{"@odata.id":"/redfish/v1/Fabrics/
SASFabric/Endpoints/11"}' -XPOST
```

Response

Drive should get removed without any error message .

Add Drives via AddEndpoint Operation and Make Drive as ChassisWideHotspare

Request

```
$curl -k -u admin:password https://10.10.10.10/redfish/v1/Fabrics/SASFabric/Zones/
ChassisWideHotspare/Actions/Zone.AddEndpoint -d
'{"EndPoint":[{"@odata.id":"/redfish/v1/Fabrics/
SASFabric/Endpoints/11"}' -XPOST
```

Response

POST operation should be a success and make the drives as Hotspare without any error message.

Remove Drives via RemoveEndpoint Operation which is Assigned as a ChassisWideHotspare

Request

```
$curl -k -u admin:password https://10.10.10.10/redfish/v1/Fabrics/SASFabric/Zones/
ChassisWideHotspare/Actions/Zone.RemoveEndpoint -d '{"EndPoint":[{"@odata.id":"/redfish/v1/
Fabrics/SASFabric/Endpoints/11"}' -XPOST
```

Response

Drive should be removed without any error message.

Verify Unassigned URI under Zones

Request

```
curl -k -u admin:password https://10.10.10.10/redfish/v1/Fabrics/SASFabric/Zones/Unassigned
```

Response

It should list the number of unassigned drives present in the server.

```
"@odata.id":    "/redfish/v1/Fabrics/SASFabric/Zones/Unassigned",
        "@odata.type":  "#Zone.v1_5_0.Zone",
        "@odata.context":       "/redfish/v1/$metadata#Zone.Zone",
        "Description":  "Zone Description",
        "Links":        {
                "Endpoints":    [{
                                "@odata.id":    "/redfish/v1/Fabrics/SASFabric/Endpoints/3"

                        }, {
                                "@odata.id":    "/redfish/v1/Fabrics/SASFabric/Endpoints/7"

                        }, {
```

```
                "@odata.id":    "/redfish/v1/Fabrics/SASFabric/Endpoints/9"

            }, {
                "@odata.id":    "/redfish/v1/Fabrics/SASFabric/Endpoints/10"

            }, {
                "@odata.id":    "/redfish/v1/Fabrics/SASFabric/Endpoints/11"

            }, {
                "@odata.id":    "/redfish/v1/Fabrics/SASFabric/Endpoints/12"

            }, {
                "@odata.id":    "/redfish/v1/Fabrics/SASFabric/Endpoints/13"

            }, {
                "@odata.id":    "/redfish/v1/Fabrics/SASFabric/Endpoints/21"

            }, {
                "@odata.id":    "/redfish/v1/Fabrics/SASFabric/Endpoints/28"

            }, {
                "@odata.id":    "/redfish/v1/Fabrics/SASFabric/Endpoints/30"

            }, {
                "@odata.id":    "/redfish/v1/Fabrics/SASFabric/Endpoints/32"

            }, {
                "@odata.id":    "/redfish/v1/Fabrics/SASFabric/Endpoints/34"

            }, {
                "@odata.id":    "/redfish/v1/Fabrics/SASFabric/Endpoints/41"

            }, {
                "@odata.id":    "/redfish/v1/Fabrics/SASFabric/Endpoints/42"

            }, {
                "@odata.id":    "/redfish/v1/Fabrics/SASFabric/Endpoints/44"

            }, {
                "@odata.id":    "/redfish/v1/Fabrics/SASFabric/Endpoints/56"

            }]
    },
    "Id":   "Unassigned",
    "Name": "Unassigned",
    "ZoneType":     "ZoneOfEndpoints",
    "Status":       {
            "State":        "Enabled",
            "Health":       "OK"
    }
```


Verify Endpoints URI under SASFabric Component

Request

```
curl -k -u admin:password https://10.10.10.10/redfish/v1/Fabrics/SASFabric/Endpoints/
```

Response


```
{
        "@odata.id":    "/redfish/v1/Fabrics/SASFabric/Endpoints",
        "@odata.type":  "#EndpointCollection.EndpointCollection",
       "@odata.context":      "/redfish/v1/$metadata#EndpointCollection.EndpointCollection",

        "Description":  "Collection of Endpoint",
        "Name": "Endpoint Collection",
        "Members":      [{
                        "@odata.id":
"/redfish/v1/Fabrics/SASFabric/Endpoints/Server1SBMezz1"
                }, {
                        "@odata.id":
"/redfish/v1/Fabrics/SASFabric/Endpoints/Server1SBMezz2"
                }, {
                        "@odata.id":    "/redfish/v1/Fabrics/SASFabric/Endpoints/1"
                }, {
                        "@odata.id":    "/redfish/v1/Fabrics/SASFabric/Endpoints/2"
                }, {
                        "@odata.id":    "/redfish/v1/Fabrics/SASFabric/Endpoints/3"
                }, {
                        "@odata.id":    "/redfish/v1/Fabrics/SASFabric/Endpoints/4"
                }, {
                        "@odata.id":    "/redfish/v1/Fabrics/SASFabric/Endpoints/5"
                }, {
                        "@odata.id":    "/redfish/v1/Fabrics/SASFabric/Endpoints/6"
                }, {
                        "@odata.id":    "/redfish/v1/Fabrics/SASFabric/Endpoints/7"
                }, {
                        "@odata.id":    "/redfish/v1/Fabrics/SASFabric/Endpoints/8"
                }, {
                        "@odata.id":    "/redfish/v1/Fabrics/SASFabric/Endpoints/9"
                }, {
                        "@odata.id":    "/redfish/v1/Fabrics/SASFabric/Endpoints/10"
                }, {
                        "@odata.id":    "/redfish/v1/Fabrics/SASFabric/Endpoints/11"
                }, {
                        "@odata.id":    "/redfish/v1/Fabrics/SASFabric/Endpoints/12"
                }, {
                        "@odata.id":    "/redfish/v1/Fabrics/SASFabric/Endpoints/13"
                }, {
                        "@odata.id":    "/redfish/v1/Fabrics/SASFabric/Endpoints/14"
                }, {
                        "@odata.id":    "/redfish/v1/Fabrics/SASFabric/Endpoints/15"
                }, {
                        "@odata.id":    "/redfish/v1/Fabrics/SASFabric/Endpoints/16"
                }, {
                        "@odata.id":    "/redfish/v1/Fabrics/SASFabric/Endpoints/17"
                }, {
                        "@odata.id":    "/redfish/v1/Fabrics/SASFabric/Endpoints/18"
                }, {
                        "@odata.id":    "/redfish/v1/Fabrics/SASFabric/Endpoints/19"
                }, {
                        "@odata.id":    "/redfish/v1/Fabrics/SASFabric/Endpoints/20"
                }, {
                        "@odata.id":    "/redfish/v1/Fabrics/SASFabric/Endpoints/21"
                }, {
                        "@odata.id":    "/redfish/v1/Fabrics/SASFabric/Endpoints/22"
                }, {
                        "@odata.id":    "/redfish/v1/Fabrics/SASFabric/Endpoints/23"
                }, {
                        "@odata.id":    "/redfish/v1/Fabrics/SASFabric/Endpoints/24"
                }, {
```

```
            "@odata.id":    "/redfish/v1/Fabrics/SASFabric/Endpoints/25"
        }, {
            "@odata.id":    "/redfish/v1/Fabrics/SASFabric/Endpoints/26"
        }, {
            "@odata.id":    "/redfish/v1/Fabrics/SASFabric/Endpoints/27"
        }, {
            "@odata.id":    "/redfish/v1/Fabrics/SASFabric/Endpoints/28"
        }, {
            "@odata.id":    "/redfish/v1/Fabrics/SASFabric/Endpoints/29"
        }, {
            "@odata.id":    "/redfish/v1/Fabrics/SASFabric/Endpoints/30"
        }, {
            "@odata.id":    "/redfish/v1/Fabrics/SASFabric/Endpoints/31"
        }, {
            "@odata.id":    "/redfish/v1/Fabrics/SASFabric/Endpoints/32"
        }, {
            "@odata.id":    "/redfish/v1/Fabrics/SASFabric/Endpoints/33"
        }, {
            "@odata.id":    "/redfish/v1/Fabrics/SASFabric/Endpoints/34"
        }, {
            "@odata.id":    "/redfish/v1/Fabrics/SASFabric/Endpoints/35"
        }, {
            "@odata.id":    "/redfish/v1/Fabrics/SASFabric/Endpoints/36"
        }, {
            "@odata.id":    "/redfish/v1/Fabrics/SASFabric/Endpoints/37"
        }, {
            "@odata.id":    "/redfish/v1/Fabrics/SASFabric/Endpoints/38"
        }, {
            "@odata.id":    "/redfish/v1/Fabrics/SASFabric/Endpoints/39"
        }, {
            "@odata.id":    "/redfish/v1/Fabrics/SASFabric/Endpoints/40"
        }, {
            "@odata.id":    "/redfish/v1/Fabrics/SASFabric/Endpoints/41"
        }, {
            "@odata.id":    "/redfish/v1/Fabrics/SASFabric/Endpoints/42"
        }, {
            "@odata.id":    "/redfish/v1/Fabrics/SASFabric/Endpoints/43"
        }, {
            "@odata.id":    "/redfish/v1/Fabrics/SASFabric/Endpoints/44"
        }, {
            "@odata.id":    "/redfish/v1/Fabrics/SASFabric/Endpoints/45"
        }, {
            "@odata.id":    "/redfish/v1/Fabrics/SASFabric/Endpoints/46"
        }, {
            "@odata.id":    "/redfish/v1/Fabrics/SASFabric/Endpoints/47"
        }, {
            "@odata.id":    "/redfish/v1/Fabrics/SASFabric/Endpoints/48"
        }, {
            "@odata.id":    "/redfish/v1/Fabrics/SASFabric/Endpoints/49"
        }, {
            "@odata.id":    "/redfish/v1/Fabrics/SASFabric/Endpoints/50"
        }, {
            "@odata.id":    "/redfish/v1/Fabrics/SASFabric/Endpoints/51"
        }, {
            "@odata.id":    "/redfish/v1/Fabrics/SASFabric/Endpoints/52"
        }, {
            "@odata.id":    "/redfish/v1/Fabrics/SASFabric/Endpoints/53"
        }, {
            "@odata.id":    "/redfish/v1/Fabrics/SASFabric/Endpoints/54"
        }, {
            "@odata.id":    "/redfish/v1/Fabrics/SASFabric/Endpoints/55"
        }, {
            "@odata.id":    "/redfish/v1/Fabrics/SASFabric/Endpoints/56"
        }, {
```

```
                        "@odata.id":    "/redfish/v1/Fabrics/SASFabric/Endpoints/57"
                }, {
                        "@odata.id":    "/redfish/v1/Fabrics/SASFabric/Endpoints/60"
                }],
        "Members@odata.count":  60
}
```

Verify Endpoints URI under SASFabric Component for Controllers

Request

```
curl -k -u admin:password https://10.10.10.10/redfish/v1/Fabrics/SASFabric/Endpoints
/Server1SBMezz1
```

Response

```
{
        "@odata.id":    "/redfish/v1/Fabrics/SASFabric/Endpoints/Server1SBMezz1",
        "@odata.type":  "#Endpoint.v1_1_0.Endpoint",
        "@odata.context":       "/redfish/v1/$metadata#Endpoint.Endpoint",
        "Description":  "Endpoint Description",
        "Id":   "Server1SBMezz1",
        "Name": "Server1SBMezz1",
        "ConnectedEntities":    [{
                        "EntityType":   "StorageInitiator",
                        "EntityRole":   "Initiator",
                        "Identifiers":  [{
                                        "DurableNameFormat":    "NAA",
                                        "DurableName":  "55897bd75945fb00"
                                }]
                }],
        "EndpointProtocol":     "SAS",
        "EndpointType": "EndpointOfEndpoints",
        "Status":       {
                "State":        "Enabled",
                "Health":       "OK"
        }
}
```

Verify Endpoints URI for the Drives 1 to 60 Lists Proper Data

Request

```
curl -k -u admin:password https://10.10.10.10/redfish/v1/Fabrics/SASFabric/Endpoints
/(Drives 1 to 60)
```

Response

```
{
        "@odata.id":    "/redfish/v1/Fabrics/SASFabric/Endpoints//1",
        "@odata.type":  "#Endpoint.v1_1_0.Endpoint",
        "@odata.context":       "/redfish/v1/$metadata#Endpoint.Endpoint",
        "Description":  "Endpoint Description",
        "Id":   "1",
        "Name": "1",
        "ConnectedEntities":    [{
                        "EntityType":   "Drive",
```

```
                        "EntityRole":   "Target",
                        "Identifiers":  [{
                                        "DurableNameFormat":    "NAA",
                                        "DurableName":  "5000c50062767fa1"
                                }]
                }],
        "EndpointProtocol":     "SAS",
        "EndpointType": "EndpointOfEndpoints",
        "Status":       {
                "State":        "Enabled",
                "Health":       "OK"
        },
        "Links":        {
                "Ports":        [{
                                "@odata.id":
"/redfish/v1/Fabrics/SASFabric/Switches/SASEXP1/Ports/1"
                        }]
        }
}
```


Add Drives to Controller Component in HBA ROCK Controller

Request

```
$curl -k -u admin:password https://10.10.10.10/redfish/v1/Fabrics/SASFabric/Zones/
Server1SBMezz1/Actions/Zone.AddEndpoint -d '{"EndPoint":[{"@odata.id":"/redfish/v1/Fabrics/
SASFabric/Endpoints/XX"}' -XPOST
```

Response

POST operation should assign the drives to the associated server without any error message.

Remove Drives from the Controller with RemoveEndpoint Operation in HBA ROCK Controller

Request

```
$curl -k -u admin:password https://10.10.10.10/redfish/v1/Fabrics/SASFabric/Zones/
Server1SBMezz1/Actions/Zone.RemoveEndpoint -d '{"EndPoint":[{"@odata.id":"/redfish/v1/Fabrics/
SASFabric/Endpoints/xx"}' -XPOST
```

Response

Drives should be removed without any error message.

Addition of Drives succeeds with AddEndpoint operation for Both Paths

Request

This API is valid only when HBA controller is attached with the server.

1. Navigate to below URI and ensure that the drives are in **Unassigned** state.

```
curl -k -u admin:password
https://10.10.10.10/redfish/v1/Fabrics/SASFabric/Zones/Unassigned
```

2. Pick the drives listed under **Unassigned** URI.
3. Using POST operation, assign the drives to the controllers lists under Zones.

```
$curl -k -u admin:password https://10.10.10.10/redfish/v1/Fabrics/SASFabric/Zones/
Server1SBMezz1/Actions/Zone.AddEndpoint -d
'{"EndPoint":[{"@odata.id":"/redfish/v1/Fabrics/
SASFabric/Endpoints/xx"}' -XPOST
```

Response

POST operation should assign the drives to the associated server without any error message.

Verify Patch operation

Request

```
curl -k -u admin:password https://10.10.10.10/redfish/v1/Fabrics/SASFabric/Switches
/SASEXP1 - d '{"MixedSpeedModeEnabled":"Enabled"}' -XPATCH
```

Response

PATCH operation should be success and the mode change should be displayed:

```
{
        "@odata.id":    "/redfish/v1/Fabrics/SASFabric/Switches/SASEXP1",
        "@odata.type":  "#Switch.v1_3_0.Switch",
        "@odata.context":       "/redfish/v1/$metadata#Switch.Switch",
        "Description":  "Switch Information",
        "Ports":        {
                "@odata.id":    "/redfish/v1/Fabrics/SASFabric/Switches/SASEXP1/Ports"
        },
        "Id":   "SASEXP1",
        "Name": "SASEXP1",
        "SwitchType":   "SAS",
        "Manufacturer": "Microsemi",
        "Model":        "Microsemi",
        "PowerState":   "On",
        "Oem":  {
                "Cisco":        {
                        "SasAddress":   "55897BD75945EA00",
                        "EnclosureLogicalId":   "55897BD75945E000",
                        "ConnectionMgetStatus": "Unreachable",
```

```
                        "ActiveFirmwareRevision":       "04.08.01 B082",
                        "BackupFirmwareRevision":       "04.08.01 B083",
                        "ExecutingFirmwarePartition":   "2",
                        "MixedSpeedModeEnabled":   "Enabled"
                }
        }
}
```

Retrieving LDAP Server Details

Request

```
curl -k -u admin:password https://10.10.10.10/redfish/v1/AccountService/
```

Response

```
{
 "@odata.id": "/redfish/v1/AccountService",
 "@odata.context": "/redfish/v1/$metadata#AccountService",
 "@odata.type": "#AccountService.v1_5_0.AccountService",
 "Accounts": {
  "@odata.id": "/redfish/v1/AccountService/Accounts"
 },
 "Roles": {
  "@odata.id": "/redfish/v1/AccountService/Roles"
 },
 "PrivilegeMap": {
  "@odata.id": "/redfish/v1/AccountService/PrivilegeMap"
 },
 "AccountLockoutThreshold": 0,
 "Id": "AccountService",
 "LDAP": {
  "LDAPService": {
   "SearchSettings": {
    "BaseDistinguishedNames": [],
    "UsernameAttribute": "CiscoAvPair",
    "GroupsAttribute": "memberOf"
   }
  },
  "Authentication": {
   "AuthenticationType": "UsernameAndPassword"
  },
  "RemoteRoleMapping": [{
    "LocalRole": "readonly",
    "RemoteGroup": "ldap-test"
   }],
  "ServiceAddresses": [],
  "AccountProviderType": "LDAPService",
  "ServiceEnabled": true
 },
 "AccountLockoutDuration": 0,
 "Name": "Account Service",
 "MaxPasswordLength": 20,
 "LocalAccountAuth": "Fallback",
 "MinPasswordLength": 1,
 "AuthFailureLoggingThreshold": 0,
 "AccountLockoutCounterResetEnabled": true,
 "Oem": {
  "Cisco": {
   "PasswordHistory": 0,
```

```
   "StrongPasswordPolicyEnabled": false,
   "PasswordExpiry": {
    "GracePeriod": 0,
    "Enabled": false,
    "NotificationPeriod": 15,
    "ExpiryDuration": 0
   }
  }
 },
 "AccountLockoutCounterResetAfter": 0,
 "ServiceEnabled": true,
 "Description": "Account Service"
}
```

Configuring LDAP Server IP Address and Port Numbers

Request

```
curl -k -u admin:password https://10.10.10.10/redfish/v1/AccountService/ -XPATCH -d
'{
"LDAP" :{
"ServiceAddresses":["ldap://10.1.1.1:389","ldap://10.1.1.1:389"]
}
}'
```

Response

```
{
 "@odata.id": "/redfish/v1/AccountService",
 "@odata.context": "/redfish/v1/$metadata#AccountService",
 "@odata.type": "#AccountService.v1_5_0.AccountService",
 "Accounts": {
  "@odata.id": "/redfish/v1/AccountService/Accounts"
 },
 "Roles": {
  "@odata.id": "/redfish/v1/AccountService/Roles"
 },
 "PrivilegeMap": {
  "@odata.id": "/redfish/v1/AccountService/PrivilegeMap"
 },
 "AccountLockoutThreshold": 0,
 "Id": "AccountService",
 "LDAP": {
  "LDAPService": {
   "SearchSettings": {
    "BaseDistinguishedNames": [],
    "UsernameAttribute": "CiscoAvPair",
    "GroupsAttribute": "memberOf"
   }
  },
  "Authentication": {
   "AuthenticationType": "UsernameAndPassword"
  },
  "RemoteRoleMapping": [{
    "LocalRole": "readonly",
    "RemoteGroup": "ldap-test"
   }],
  "ServiceAddresses": ["ldap://10.2.37.79:389", "ldap://10.2.37.77:389"],
  "AccountProviderType": "LDAPService",
  "ServiceEnabled": true
```

```
 },
 "AccountLockoutDuration": 0,
 "Name": "Account Service",
 "MaxPasswordLength": 20,
 "LocalAccountAuth": "Fallback",
 "MinPasswordLength": 1,
 "AuthFailureLoggingThreshold": 0,
 "AccountLockoutCounterResetEnabled": true,
 "Oem": {
  "Cisco": {
   "PasswordHistory": 0,
   "StrongPasswordPolicyEnabled": false,
   "PasswordExpiry": {
    "GracePeriod": 0,
    "Enabled": false,
    "NotificationPeriod": 15,
    "ExpiryDuration": 0
   }
  }
 },
 "AccountLockoutCounterResetAfter": 0,
 "ServiceEnabled": true,
 "Description": "Account Service"
}
```

Configuring LDAP Parameters

Request

```
curl -k -u admin:password https://10.10.10.10/redfish/v1/
AccountService/ -XPATCH -d
'{
"LDAP":{
"ServiceEnabled":true,
"ServiceAddresses":["ldap://10.1.1.1:389","ldap://10.1.1.1:389"],
"LDAPService":{
"SearchSettings":{
"GroupsAttribute":"memberGroup",
"UsernameAttribute":"CiscoUsername",
"BaseDistinguishedNames":["test"]
   },
"Oem" : {
                  "Cisco" : {
                      "LDAPGroupAuthorizationEnabled" : true
                  }
             }
},
"RemoteRoleMapping" : [
        {
"LocalRole" : "admin",
"RemoteGroup" : "group1",
"Oem" : {
"Cisco" : {
  "LDAPRemoteGroupDomain":"test.com"
}
}
 }
]
}
}'
```

Response


```
{
 "@odata.id": "/redfish/v1/AccountService",
 "@odata.context": "/redfish/v1/$metadata#AccountService",
 "@odata.type": "#AccountService.v1_5_0.AccountService",
 "Accounts": {
  "@odata.id": "/redfish/v1/AccountService/Accounts"
 },
 "Roles": {
  "@odata.id": "/redfish/v1/AccountService/Roles"
 },
 "PrivilegeMap": {
  "@odata.id": "/redfish/v1/AccountService/PrivilegeMap"
 },
 "AccountLockoutThreshold": 0,
 "Id": "AccountService",
 "LDAP": {
  "LDAPService": {
   "SearchSettings": {
    "BaseDistinguishedNames": ["testDN"],
    "UsernameAttribute": "CiscoUsername",
    "GroupsAttribute": "memberGroup"
   },
"Oem" : {
                  "Cisco" : {
                      "LDAPGroupAuthorizationEnabled" : true
                  }
              }
  },
  "Authentication": {
   "AuthenticationType": "UsernameAndPassword"
  },
  "RemoteRoleMapping": [{
    "LocalRole": "admin",
    "RemoteGroup": "group1",
"Oem" : {
"Cisco" : {
  "LDAPRemoteGroupDomain":"test.com"
}
}
],
  "ServiceAddresses": ["ldap://10.10.10.10", "ldap://10.10.10..10"],
  "AccountProviderType": "LDAPService",
  "ServiceEnabled": false
 },
 "AccountLockoutDuration": 0,
 "Name": "Account Service",
 "MaxPasswordLength": 20,
 "LocalAccountAuth": "Fallback",
 "MinPasswordLength": 1,
 "AuthFailureLoggingThreshold": 0,
 "AccountLockoutCounterResetEnabled": true,
 "Oem": {
  "Cisco": {
   "PasswordHistory": 0,
   "StrongPasswordPolicyEnabled": false,
   "PasswordExpiry": {
    "GracePeriod": 0,
    "Enabled": false,
    "NotificationPeriod": 15,
    "ExpiryDuration": 0
   }
```

```
  }
 },
 "AccountLockoutCounterResetAfter": 0,
 "ServiceEnabled": true,
 "Description": "Account Service"
}
```

Setting COM Port for Serial Over LAN Policy - Cisco UCS S-Series

GET

Request

```
curl -k -u admin:passwored https://10.10.10.10/redfish/v1/Managers/BMC2/SerialInterfaces/TTY0
```

Note For Cisco UCS S-Series Dual Node configuration, you must execute the request two times, one for BMC1 and another for BMC2.

Response

```
"InterfaceEnabled": true,
"BitRate": "115200",
"Oem": {
"Cisco": { "SerialOverLanComPort": "com1",
"SerialOverLanSSHPort": 2400
}
}
```

SET

Request

```
curl -k -u admin:password https://10.10.10.10/redfish/v1/Managers/BMC1/SerialInterfaces/TTY0
 -XPATCH -
d '{"InterfaceEnabled": true, "BitRate": "115200", "Oem": {"Cisco": {"SerialOverLanSSHPort":
 2400, "SerialOverLanComPort
": "com0"} }}'
```

Response

```
{
"@odata.id": "/redfish/v1/Managers/BMC1/SerialInterfaces/TTY0",
"@odata.type": "#SerialInterface.v1_1_3.SerialInterface",
"@odata.context": "/redfish/v1/$metadata#SerialInterface.SerialInterface",
"Description": "Management for Serial Interface",
"SignalType": "Rs232",
"Id": "TTY0",
"InterfaceEnabled": true,
"Name": "Manager Serial Interface 1",
"PinOut": "Cisco",
"BitRate": "115200",
"DataBits": "8",
"FlowControl": "None",
"StopBits": "1",
"ConnectorType": "DB9 Female",
```

```
"Parity": "None",
"Description": "Management for Serial Interface",
"Oem": {
"Cisco": {
"SerialOverLanComPort": "com0",
"SerialOverLanSSHPort": 2400
}
}
}
```


Setting Privilege and Encryption Key - Cisco UCS S-Series Servers

GET

Request

```
curl -k -u admin:password https://10.10.10.10/redfish/v1/Managers/BMC1/NetworkProtocol
```

Note For Cisco UCS S-Series Dual Node configuration, you must execute the request two times, one for BMC1 and another for BMC2.

Response


```
{
"@odata.id":    "/redfish/v1/Managers/BMC1/NetworkProtocol",
"@odata.type":  "#ManagerNetworkProtocol.v1_5_0.ManagerNetworkProtocol",
"@odata.context":      "/redfish/v1/$metadata#ManagerNetworkProtocol.ManagerNetworkProtocol",
"Id":   "ManagerNetworkProtocol",
"Name": "Manager Network Protocol",
"SSH":  {
"ProtocolEnabled":      true,
"Port": 22
},
"Description":  "Manager Network Service",
"VirtualMedia": {
"ProtocolEnabled":      true,
"Port": 2068
},
"HostName":     "C220-WZP26330KVU",
"HTTP": {
"ProtocolEnabled":      false,
"Port": 80
},
"KVMIP":        {
"ProtocolEnabled":      true,
"Port": 2068
},
"DHCP": {
"ProtocolEnabled":      false,
"Port": null
},
"HTTPS":        {
"ProtocolEnabled":      true,
"Port": 443,
"Certificates": {
```

```
"@odata.id":    "/redfish/v1/Managers/BMC1/NetworkProtocol/HTTPS/Certificates"
}
},
"NTP":  {
"ProtocolEnabled":      false,
"Port": 123,
"NTPServers":   []
},
"DHCPv6":       {
"ProtocolEnabled":      true,
"Port": null
},
"Oem":  {
"Cisco":        {
"KVMConfiguration":     {
"LocalServerVideo":     "Enabled",
"MaxConcurrentSessions":        4
},
"KVMVendor":    {
"Vendor":       "Cisco"
},
"SSHTimeout":   1800,
"IPMIOverLan":  {
"ChannelSecurityKey":   "00000000000000000000000000000000000000000000",
"PrivilegeLevelLimit":  "admin"
}
}
},
"IPMI": {
"ProtocolEnabled":      false,
"Port": 623
},
"SNMP": {
"ProtocolEnabled":      false,
"EnableSNMPv2c":        false,
"EnableSNMPv3": false,
"CommunityStrings":     [{
"AccessMode":   null,
"CommunityString":      ""
}],
"HideCommunityStrings": false,
"Port": 161,
"EnableSNMPv1": false
},
"Actions":      {
"Oem":  {
"#CiscoUCSExtensions.ResetKVM": {
"target":
"/redfish/v1/Managers/BMC1/NetworkProtocol/Actions/Oem/CiscoUCSExtensions.ResetKVM",
"@odata.type":  "#CiscoUCSExtensions.v1_0_0.ResetKVM"
}
}
}
}
```


SET

Request

```
curl -k -u admin:password https://10.10.10.10/redfish/v1/Managers/BMC1/NetworkProtocol
-XPATCH -
d '{"IPMI": {"ProtocolEnabled": false}, "Oem": {"Cisco": {"IPMIOverLan":
{"ChannelSecurityKey": "055DDDE537EF5F50C659
3B199BBB4D3429102222", "PrivilegeLevelLimit": "read-only" } } } }'
```

Note For Cisco UCS S-Series Dual Node configuration, you must execute the request two times, one for BMC1 and another for BMC2.

Response


```
{
"@odata.id":    "/redfish/v1/Managers/BMC1/NetworkProtocol",
"@odata.type":  "#ManagerNetworkProtocol.v1_5_0.ManagerNetworkProtocol",
"@odata.context":      "/redfish/v1/$metadata#ManagerNetworkProtocol.ManagerNetworkProtocol",
"Id":   "ManagerNetworkProtocol",
"Name": "Manager Network Protocol",
"SSH":  {
"ProtocolEnabled":      true,
"Port": 22
},
"Description":  "Manager Network Service",
"VirtualMedia": {
"ProtocolEnabled":      true,
"Port": 2068
},
"HostName":     "C220-WZP26330KVU",
"HTTP": {
"ProtocolEnabled":      false,
"Port": 80
},
"KVMIP":        {
"ProtocolEnabled":      true,
"Port": 2068
},
"DHCP": {
"ProtocolEnabled":      false,
"Port": null
},
"HTTPS":        {
"ProtocolEnabled":      true,
"Port": 443,
"Certificates": {
"@odata.id":    "/redfish/v1/Managers/BMC1/NetworkProtocol/HTTPS/Certificates"
}
},
"NTP":  {
"ProtocolEnabled":      false,
"Port": 123,
"NTPServers":   []
},
"DHCPv6":       {
"ProtocolEnabled":      true,
"Port": null
},
"Oem":  {
"Cisco":        {
"KVMConfiguration":     {
"LocalServerVideo":     "Enabled",
"MaxConcurrentSessions":        4
},
"KVMVendor":    {
"Vendor":       "Cisco"
},
"SSHTimeout":   2500,
"IPMIOverLan":  {
"ChannelSecurityKey":   "055DDDE537EF5F50C6593B199BBB4D3429102222",
```

```
"PrivilegeLevelLimit":  "read.only"
}
}
},
"IPMI": {
"ProtocolEnabled":      false,
"Port": 623
},
"SNMP": {
"ProtocolEnabled":      false,
"EnableSNMPv2c":        false,
"EnableSNMPv3": false,
"CommunityStrings":     [{
"AccessMode":   null,
"CommunityString":      ""
}],
"HideCommunityStrings": false,
"Port": 161,
"EnableSNMPv1": false
},
"Actions":      {
"Oem":  {
"#CiscoUCSExtensions.ResetKVM": {
"target":
"/redfish/v1/Managers/BMC1/NetworkProtocol/Actions/Oem/CiscoUCSExtensions.ResetKVM",
"@odata.type":  "#CiscoUCSExtensions.v1_0_0.ResetKVM"
}
}
}
}
```