Redfish®

Reference Guide

Revision 3.4

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Manual Revision 3.4
Release Date: August 16, 2023

Revision History

Date	Revision	Description
09/04/2023	3.4	1. Added DNS setting 2. Modified Available APIs 3. Modified RAID Configuration 4. Added support platform with Fixed Boot Order
04/06/2023	3.3	1. Added the FixedBootOder section 2. Modified the VirtualMedia section 3. Updated the API URI list 4. Added the Updated the NIC Firmware chapter 5. Adde support for activating via the Redfish API
11/01/2023	3.2	1. Fix uri to /redfish/v1/Registries/Base 2. Added 10.1.1 Check Task State 3. Deleted Section 6: AuthFailureLoggingThreshold: 4. Modified Section 8.3: Replacing a Certificate 5. Modified Section 9.4: SendTestEvent-> SubmitTestEvent 6. Modified Section17,18: Method, Response of Jsonschema 7. Delete SMTP section (deprecated in RF 1.9) 8. Modified SNMP 19.2.1 Section 9. Modified Available APIs ▪ /redfish/v1/Registries/BiosAttributeRegistry.v1_0_0 ▪ /redfish/v1/UpdateService/FirmwareInventory/Backup_BIOS ▪ /redfish/v1/UpdateService/FirmwareInventory/Backup_BMC

Contents

1 Applicable or Supported Platforms

The Redfish Reference Guide applies to following platforms.

- X12 and H12 platforms.
- X13, and H13 platforms.

2 Introduction

The Redfish Scalable Platforms Management API ("Redfish") uses RESTful interface semantics to access data defined in a model format to perform systems management. It is suitable for a wide range of servers, from stand-alone to rack mount, blade, and even cloud environments.

As a management standard, Redfish uses data model representation inside of a hypermedia RESTful interface. Being based on REST makes it easier to use and implement than many other solutions. Since it is model-oriented, it is capable of expressing the relationships between components in modern systems as well as the semantics of the services and components within them. It is also easily extensible. By using a hypermedia approach to REST, Redfish can express a large variety of systems from multiple vendors. Utilizing JSON (JavaScript Object Notation) data format, which is in plain text, allows many types of parameters to be available such that it enables scalability, human readability, and flexibility for most programming environments by easily interpreting payload.

The model is displayed in terms of an interoperable OData Schema with the payload of the messages being expressed in JSON following OData JSON conventions. The schema (available in both XML and JSON formats) includes annotations to facilitate the automatic translation of the schema to JSON Schema. The ability to externally host the schema definition of the resources in a machine-readable format allows the metadata to be associated with the data without encumbering Redfish services with the metadata, thus enabling more advanced client scenarios as found in many data centers and cloud environments.

Supermicro enables Redfish feature sets on Intel-based X10 and AMD-based H11 and later-generation platforms. These features are covered under SFT-OOB-LIC and SFT-DCMS-SINGLE licenses. This document provides you with an overview of Restful API services and describes how to receive Redfish API responses directly from a Supermicro BMC (Baseboard Management Controller).

3 HTTP Request Methods

The following HTTP methods are used to implement different actions:

Method	Action	Description
GET	Read Requests	The method requests a representation of a specified resource. The representation can be either a single resource or a collection.
PATCH	Update	The method applies partial modifications to a resource.
PUT	Replace	The method completely replaces a resource. Any properties omitted from the body of the request are reset to their default value.
POST	Create	The method creates a new resource. This request is submitted to the resource collection in which the new resource is meant to belong.
POST	Actions	The method initiates operations on the object (Actions). The POST operation may not be idempotent.
DELETE	Delete	The method removes a resource.

3.1 Responses

There are four types of responses:

Response	Description
Metadata	Resources and types are exposed by the service to generic clients.
Resource Responses	An individual resource is displayed in JSON format.
Resource Collection	JSON representation of a collection of resources.
Error	Top-level JSON response providing additional information in the case of an HTTP error.

3.2 HTTP Status Code Description

Status Code	Description
200	OK
201	Created
202	Accepted
204	No Content
301	Moved Permanently
302	Found
304	Not Modified
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
405	Method Not Allowed
406	Not Acceptable
409	Conflict
410	Gone
411	Length Required
412	Precondition Failed
415	Unsupported Media Type
500	Internal Server Error
501	Not Implemented
503	Service Unavailable
302	Found
304	Not Modified

4 Using RESTful APIs

To receive API responses through programming, install Postman or any other Rest API client application(s).

4.1 Authentication

You are required to have authentication to access certain resources. Redfish offers two methods for users to access Redfish URLs: “basic authentication” and “Redfish session login authentication.” The Service does not require you to create a session when Basic Authentication is used.

4.1.1 Basic Authentication

HTTP basic authentication uses compliant TLS connections to transport the data between any third-party authentication service and clients. Use local BMC credentials or remote protocols like LDAP, Active Directory, or RADIUS to log in with basic authentication.

4.1.2 Session Management

You can use session management to implement authentication. This includes orphaned session timeouts and several simultaneous open sessions. You can create up to 16 sessions.

Step 1: You can post the following username/password information in the payload field, which will create a new session.

```
{
"UserName": "<username>",
"Password": "<password>"
}
```

The user will receive the “201” message code with the X-AUTH token created.

Session lifetime: For Redfish sessions, as long as you send requests for the session within the session timeout period, the session will remain open and the session authentication token will remain valid. If the session times out, the session will be automatically terminated.

According to Redfish specification, a user can define session time from 30 to 86400 seconds. If you are not active in the defined time frame, the token will be rendered invalid. You can always patch the “SessionTimeout” value if needed

Example: [PATCH] https://BMC_IP/redfish/v1/SessionService Payload: {"SessionTimeout": 50}

Session termination or logout: A Redfish session is terminated when you log out. This is accomplished by performing the DELETE method on the session resource identified by the link returned in the location header either when the session is created or if the Session ID is returned in the response data. Using the DELETE method on a session by specifying the session resource ID allows an administrator with sufficient privilege to terminate other users’ sessions from a different session.

Example: [DELETE] https://BMC_IP/redfish/v1/SessionService/Sessions/[num]
->Send->Status Code: 200 OK

5 FirmwareInventory and UpdateService

5.1 FirmwareInventory

FirmwareInventory represents firmware version information for each component on the server.

URI: /redfish/v1/UpdateService/FirmwareInventory
Method: GET
Response: 200


```
{
"@odata.type": "#SoftwareInventoryCollection.SoftwareInventoryCollection", "@odata.id": "/redfish/v1/UpdateService/FirmwareInventory",
"Id": "UpdateService",
"Name": "Firmware Inventory Collection", "Members@odata.count": 19,
"Members": [
{
"@odata.id": "/redfish/v1/UpdateService/FirmwareInventory/BMC"
},
{
"@odata.id": "/redfish/v1/UpdateService/FirmwareInventory/Backup_BMC"
},
{
"@odata.id": "/redfish/v1/UpdateService/FirmwareInventory/Golden_BMC"
},
{
"@odata.id": "/redfish/v1/UpdateService/FirmwareInventory/Staging_BMC"
},
{
"@odata.id": "/redfish/v1/UpdateService/FirmwareInventory/BIOS"
},
{
"@odata.id": "/redfish/v1/UpdateService/FirmwareInventory/Backup_BIOS"
},
{
"@odata.id": "/redfish/v1/UpdateService/FirmwareInventory/Golden_BIOS"
},
{
"@odata.id": "/redfish/v1/UpdateService/FirmwareInventory/Staging_BIOS"
},
{
"@odata.id": "/redfish/v1/UpdateService/FirmwareInventory/Capsule_BIOS"
},
{
"@odata.id": "/redfish/v1/UpdateService/FirmwareInventory/Capsule_ME"
},
{
"@odata.id": "/redfish/v1/UpdateService/FirmwareInventory/Capsule_MCU"
},
{
"@odata.id": "/redfish/v1/UpdateService/FirmwareInventory/Golden_CPLD_Motherboard"
},
{
"@odata.id": "/redfish/v1/UpdateService/FirmwareInventory/CPLD_Motherboard"
},
{
"@odata.id": "/redfish/v1/UpdateService/FirmwareInventory/CPLD_Backplane_1"
},
{
"@odata.id": "/redfish/v1/UpdateService/FirmwareInventory/BIOS_ME"
},
{
"@odata.id": "/redfish/v1/UpdateService/FirmwareInventory/NIC1"
},
{
"@odata.id": "/redfish/v1/UpdateService/FirmwareInventory/NVMeController1"
},
{
"@odata.id": "/redfish/v1/UpdateService/FirmwareInventory/PowerSupply1"
},
{
"@odata.id": "/redfish/v1/UpdateService/FirmwareInventory/PowerSupply2"
}
],
"Oem": {
```

5.1.1 Firmware Resiliency Actions

Set the current active image as the golden template. If the current image is used as the golden image by the golden template under Supermicro's recommendation or the administrator's preference, then use this option to update the golden firmware image with the active firmware image.

Allowable values for Targets:
BMC: Use "/redfish/v1/Managers/1" to update golden firmware image for BMC.
BIOS: Use "/redfish/v1/Systems/1" to update golden firmware image for BIOS.

URI: /redfish/v1/UpdateService/Actions/Oem/SmcUpdateService.Install
Method: POST
Payload:

```
{
"Targets":[ "/redfish/v1/Managers/1"], "InstallOptions":["UpdateGolden"]
}
```

Response: 200

5.2 Updating BIOS Firmware

To perform BIOS firmware update, use the image file available on the local system:
Allowable values for @Redfish.OperationApplyTime:

- Immediate: Start BIOS firmware update immediately after POST action to /redfish/v1/UpdateService/upload
- OnStartUpdateRequest: upload firmware with POST action upload API and then BIOS firmware update will only start after POST action to /redfish/v1/UpdateService/Actions/UpdateService.StartUpdate

  StartUpdate API doesn't require any parameter in the payload.

URI: /redfish/v1/UpdateService/upload
Method: POST
Response: 202
UpdateParameters:
{"Targets": ["/redfish/v1/Systems/1/Bios"],
"@Redfish.OperationApplyTime":
"Immediate",
"Oem": {"Supermicro": { "BIOS": { "PreserveME": true, "PreserveNVRAM": true, "PreserveSMBIOS": true, "BackupBIOS": false }}}}
UpdateFile: <File>

Notes:

- On X12 (Whitley and Tatlow series), X13, and later platforms, only these commands are available for use when using this method: PreserveOA, PreserveSETUPCONF, PreserveSETUPPWD, PreserveSECBOOTKEY, PreserveBOOTCONF, and UpdateRollbackID (note that this only works for RoT).
- With RoT, only these commands are available for use when using this method: PreserveME, PreserveNVRAM, PreserveSMBIOS, and BackupBIOS.

Check BIOS update status in TaskService API.
URI: /redfish/v1/TaskService
Method: GET
Response: 200
When the update completes, check the BIOS version in UpdateService/FirmwareInventory.

5.3 Updating BMC Firmware

Use the image file available on the local system to update BMC firmware:
Allowable values for @Redfish.OperationApplyTime:

- **Immediate:** Start BMC firmware update immediately after POST action to /redfish/v1/UpdateService/upload
- **OnStartUpdateRequest:** upload firmware with POST action upload API and then BMC firmware update will only start after POST action to **/redfish/v1/UpdateService/Actions/UpdateService.StartUpdate**. StartUpdate API doesn't require any parameter in the payload.

URI: /redfish/v1/UpdateService/upload
Method: POST
Response: 202
UpdateParameters:
{"Targets": ["/redfish/v1/Managers/1"],
"@Redfish.OperationApplyTime": "Immediate",
"Oem": {"Supermicro": { "BMC": {"PreserveCfg":true, "PreserveSdr":true, "PreserveSsl":true,
"BackupBMC": true}}}
}

UpdateFile: <File>

Check BMC update status in TaskService API
URI: /redfish/v1/TaskService
Method: GET
Response: 200
When the update completes, check the BMC version in UpdateService/FirmwareInventory

5.4 Updating CPLD Firmware

There are two types of CPLD firmware to be updated:

- Use the image file available on the local system to update CPLD motherboard firmware:

URI: /redfish/v1/UpdateService/upload
Method: POST
Response: 202
UpdateParameters:
{"Targets":[“/redfish/v1/UpdateService/FirmwareInventory/CPLD_Motherb oard"],
"@Redfish.OperationApplyTime":"Immediate"}
UpdateFile: <File>

Note: After Motherboard CPLD update, it will trigger a BMC reset.

- Use the image file available on the local system to update CPLD backplane firmware:

URI: /redfish/v1/UpdateService/FirmwareInventory
Method: POST
Response: 202
UpdateParame
ters:
{"Targets":[/redfish/v1/UpdateService/FirmwareInventory/CPLD_Backplan
e_[id]"],"@Redfish.OperationApplyTime":"Immediate"}
UpdateFile: <File>

5.5 Simple Update

You can update the installed software component(s) as contained within a software image file located at a URI referenced by the ImageURI parameter, and preserve BMC config, SSL, SDR, and SMBIOS, BIOS BootConfg by default.

You are required to prepare the FTP, HTTP, or HTTPS file server to put BMC or BIOS firmware image file.

URI: /redfish/v1/UpdateService/Actions/UpdateService.SimpleUpdate
Method:POST
Response: 202
Payload:

```
{
"ImageURI": "<file
ip>/<path and
image file name>",
"TransferProtocol":
"FTP",
"Targets": ["/redfish/v1/Managers/1"]
}
```

Target value:
For BIOS Update, use "/redfish/v1/Systems/1".
For BMC Update use "/redfish/v1/Managers/1".

5.6 Updating Broadcom Storage Controller Firmware

You can check if the controller firmware update is supported or not under /redfish/v1/UpdateService/FirmwareInventory/Broadcom[num].

To update Broadcom firmware using the image file available on the local system:
URI: /redfish/v1/UpdateService/upload
Method: POST
Response: 202
UpdateParameters:
{"Targets":["/redfish/v1/Systems/1/Storage/HARAID#/StorageControllers/[num]"],"@Redfish.OperationApplyTime":"OnStartUpdateRequest"}
UpdateFile: <File>

Note: Currently, this is supported to update HA-RAID 3108, 38xxIR, 39xx ,and BCOM 3916. After the update, it needs a system reboot for the new firmware to take effect.

5.7 Updating Marvel Storage Controller Firmware

You can check if the controller firmware update is supported or not under /redfish/v1/UpdateService/FirmwareInventory/Marvell[num].

To update Marvell firmware using the image file on the local system:

URI: /redfish/v1/UpdateService/upload
Method: POST
Response: 202
UpdateParameters:
{"Targets":["/redfish/v1/Systems/1/Storage/MRVL.HARAID#/StorageControllers/[num]"],"@Redfish.OperationApplyTime": "OnStartUpdateRequest"}
UpdateFile: <File>

5.8 Updating AOC NIC Firmware

“NIC [num]” exists under the Redfish/v1 directory when your AOC NIC controller is supported. To ensure that you can update the AOC NIC controller firmware, check if “NIC [num]” exists in the URI.

/redfish/v1/UpdateService/FirmwareInventory/NIC[num].

To update AOC NIC firmware, use the image file on the local system:

URI: /redfish/v1/UpdateService/upload
Method: POST
Response: 202
UpdateParameters:
{"Targets":["//redfish/v1/UpdateService/FirmwareInventory/NIC[num]"],
"@Redfish.OperationApplyTime": "OnStartUpdateRequest"}
UpdateFile: <File>

5.9 Updating SSL Certificate and Key

Update the SSL certificate and key for a secure web server connection.

URI:
/redfish/v1/UpdateService/Oem/Supermicro/SSLCert/Actions/SmcSSLCert.Upload
Payload:

1. Change the type to “form-data”.
2. Select cert_file and key_file as keys, browse and select the respective files to upload

6 Account Service

You can perform the following operations under /redfish/v1/AccountService.

Available Methods: Get, Post, Patch, and Delete

6.1 Creating a User

You can use the API and payload to create a new account and delete the respective accounts.

URI: /redfish/v1/AccountService/Accounts
Method: POST
Payload:

```
{
"UserName": "User_Name", "Password":
"User_Password", "RoleId":" Administrator ",
"Enabled": true
}
```

Note that the allowed values for “RoleId” are “Administrator”, “Operator”, and “ReadOnly”. You can also verify the assigned privileges for different roles (“Administrator”, “Operator", and “ReadOnly”) under /redfish/v1/AccountService/Roles.

6.2 Configuring User Lockout

URI: /redfish/v1/AccountService
Method: PATCH
Payload:

```
{
"AccountLockoutThreshold": 2,
"AccountLockoutDuration": 300,
"AccountLockoutCounterResetAfter": 300
}
```

6.3 Active Directory

URI: /redfish/v1/AccountService
Method: PATCH
Payload:

```
{
"ActiveDirectory": {"ServiceEnabled": true,
"ServiceAddresses": ["ldap://<IP>:389"],
"RemoteRoleMapping":
[{"RemoteGroup":
"cn=ipmiswqa,dc=satc,dc=com",
"LocalRole": "Administrator"}]}
}
```

6.4 LDAP

URI: /redfish/v1/AccountService
Method: PATCH

Payload:

```
{
"LDAP":
 {"ServiceEnable
 d": true,
 "ServiceAddress
 es":
 ["ldap://<IP>:38
 9"],
 "Authentication": {"Username": "cn=Manager,
 dc=satc, dc=com", "Password": "secret"},
 "RemoteRoleMapping": [{"RemoteUser":
 "tester001", "LocalRole": "Administrator"}],
 "LDAPService": {"SearchSettings": {"BaseDistinguishedNames":["dc=satc, dc=com"], "UsernameAttribute": "cn"}
}
```

7 BIOS Configuration

Use BIOS APIs to configure properties related to BIOS. The Attribute Registry contains system-specific BIOS attributes and their dependent attributes.

Note: Changes in BIOS attributes require a system reboot to take effect.

7.1 Changing a Password

URI: /redfish/v1/Systems/1/Bios/Actions/Bios.ChangePassword
Method: POST
Payload:

```
{
 "PasswordName":"Adminis
 tratorPassword" or
 "UserPassword",
 "OldPassword":"",
 "NewPassword":"Password"
}
```

7.2 Configuring BIOS over Redfish

URI: /redfish/v1/Registries/BiosAttributeRegistry.v1_0_0
Method: GET
Response:

```
{
   "@odata.type":  "#AttributeRegistry.v1_3_0.AttributeRegistry",
   "Description": "This registry defines a representation of BIOS Attribute instances", "Id":
   "BiosAttributeRegistry.1_0_0",
   "Language": "en",
   "Name": "BIOS
   Attribute Registry",
   "OwningEntity":
   "Supermicro",
   "RegistryEntries": {
      "Attributes": [
         {
            "AttributeName": "QuietBoot_0027",
            "CurrentValue": true, "DefaultValue":
            true, "DisplayName": "Quiet Boot",
            "GrayOut": false,
            "HelpText": "Enables or
            disables Quiet Boot option",
            "Hidden": false,
            "MenuPath":
            ".\Advanced\Boot
            Feature",
            "ReadOnly": false,
            "Type": "Boolean"
         },
```

```
{
   "AttributeName": "OptionROMMessages_0028", "CurrentValue": "Force BIOS",
   "DefaultValue": "Force BIOS", "DisplayName": "Option ROM Messages",
   "GrayOut": false,
   "HelpText": "Set display
   mode for Option ROM",
   "Hidden": false,
   "MenuPath":
   ".\VAdvanced\VB
   oot Feature",
   "ReadOnly":
   false,
   "Type
   ":
   "Enu
   merati
   on",
   "Valu
   e": [
```


Attributes: Contains the attributes and their possible values

Menu: Contains the attributes menus and their hierarchy


```
"Menus":
    [
    {
            "DisplayName": "Main", "DisplayOrder": 1, "Hidden": false, "MenuName": "Main",
            "MenuPath": ".\/Main", "ReadOnly": false
        },
        {
            "DisplayName":
            "Advanced",
            "DisplayOrder": 2,
            "Hidden": false,
            "MenuName":
            "Advanced",
            "MenuPath":
            ".\/Advanced",
            "ReadOnly": false
        },
```


Dependencies: Lists dependencies of attributes on each component


```
"Dependencies": [
        {
           "Dependency": { "MapFrom": [
                 {
                    "MapFromAttribute":
                    "WatchDogFunction_002E",
                    "MapFromCondition": "EQU",
                    "MapFromProperty": "CurrentValue",
                    "MapFromValue": "Disabled"
                 }
              ],
              "MapToAttribute": "WatchDogAction_0030", "MapToProperty": "Hidden",
              "MapToValue": true
           },
           "DependencyFor": "WatchDogAction_0030", "Type": "Map"
        },
```


7.2.1 Modifying BIOS Attributes

You can GET the current setting and PATCH desired settings.

URI: /redfish/v1/Systems/1/Bios
Method: PATCH
Response: 202
Payload:


```
{
 "Attributes": { "QuietBoot":false,
 "PowerButtonFunction": "4 Seconds Override"}
}
```


Note: After PATCH, you need to reset the system to apply the values to BIOS.

7.2.2 Viewing Pending Settings

You can view any pending settings after PATCH.

URI: /redfish/v1/Systems/1/Bios/SD

Method: GET
Response: 200


```
{
  "@odata.type": "#Bios.v1_1_1.Bios", "@odata.id": "/redfish/v1/Systems/1/Bios/SD", "Id": "SD",
  "Name": "BIOS Configuration Pending Settings", "AttributeRegistry": "BiosAttributeRegistry.v1_0_0",
  "Description": "BIOS Configuration Pending Settings. These settings will be applied on
  <Font color=blue size=3>the</font> next system reboot.", "Attributes": {
    "PowerButtonFunction": "4 Seconds Override", "QuietBoot": false
  },
  "@odata.etag": "\"6a07297d92419e04dfbec096920288b5\""
}
```


7.3 Resetting BIOS

POST a reset of the BIOS attributes to default values. After POST, you need to reset the system to apply values to BIOS.

URI: /redfish/v1/Systems/1/Bios/Actions/Bios.ResetBios
Method: POST
Response: 200

7.4 Boot Options

7.4.1 Configuring the Boot Order in System BIOS

Use Redfish to change system boot order.

7.4.2 Configuring UefiBootNext

URI: /redfish/v1/Systems/1
Method: PATCH
Payload:

```
{
"Boot": {
"BootSourceOverrideTarget": "UefiBootNext", "BootNext": "Hdd"}
}
```

7.5 Secure Boot

UEFI Secure Boot was created to enhance security in the pre-boot environment. Secure Boot helps firmware, operating system and hardware providers cooperate to thwart the efforts of malware developers.

Note: Please use the supported BIOS to use this function.

7.5.1 Enabling Redfish Secure Boot by GET

URI: /redfish/v1/Systems/1/SecureBoot

Method: GET
Response: 200


```
{
 "@odata.type": "#SecureBoot.v1_0_5.SecureBoot", "@odata.id":
 "/redfish/v1/Systems/1/SecureBoot", "Id": "Security Boot",
 "Name": "SecureBoot",
 "SecureBootCurrentBoot":"Disabled",
 "SecureBootEnable": false,
 "SecureBootMode": "SetupMode",
 "Actions": {
  "Oem": {},
  "#SecureBoot.ResetKeys": {
   "target": "/redfish/v1/Systems/1/SecureBoot/Actions/SecureBoot.ResetKeys",
   "@Redfish.ActionInfo":
   "/redfish/v1/Systems/1/SecureBoot/ResetKeysActionInfo"
  }
 }
}
```


7.5.2 Enabling Redfish Secure Boot by PATCH

URI: /redfish/v1/Systems/1/SecureBoot
Method: PATCH
Payload:


```
{
"SecureBootEnable" : true
}
```


Response: 202

7.5.3 Confirming in Pending Settings

URI: /redfish/v1/Systems/1/Bios/SD
Method: GET

Response: 200


```
{
 "@odata.type": "#Bios.v1_1_1.Bios",
 "@odata.id": "/redfish/v1/Systems/1/Bios/SD", "Id": "SD",
 "Name": "BIOS Configuration Pending Settings",
 "AttributeRegistry": "BiosAttributeRegistry.v1_0_0",
 "Description": "BIOS Configuration Pending Settings. These
 settings will be applied on <Font color=blue size=3>the</font>
 next system reboot.",
  "Attributes": {
   "PowerButtonFunction": "4 Seconds Override", "QuietBoot": false
 },
 "@odata.etag": "\"6a07297d92419e04dfbec096920288b5\""
}
```


ResetKeyTypes URI: /redfish/v1/Systems/1/SecureBoot/Actions/SecureBoot.ResetKeys
Method: POST
Payload:

```
{
"ResetKeysType": "DeleteAllKeys"
}
```

ResetKeysType Allowable Values:

"ResetAllKeysToDefault" "DeleteAllKeys" "DeletePK"

7.5.4 Enabling Secureboot in BIOS

Set the three attributes below to BIOS to enable secureboot.

URI: /redfish/v1/Systems/1/Bios
Method: PATCH
Payload

```
{
"Attributes": { "SecureBoot" : "Enabled",
"SecureBootMode": "User",
"ResetKeysType":"Delete PK Key"}
}
```

SecureBoot allowable Values:
"Enabled",
"Disabled"

SecureBootMode allowable values:
"Setup",
"User",
"Audit",
"Deployed"

ResetKeyType allowable values:
"Disabled",
"Reset all keys to default",
"Delete all keys",
"Delete PK key"

7.6 FixedBootOrder

You can check and change the current boot order.

Support Platform	Support BMC Firmware	Redfish User guide Version
X13/H13	1.01.x	Ver.3.3

7.6.1 Changing the Boot Order Getting the Current Boot Order

URI: /redfish/v1/Systems/1/Oem/Supermicro/FixedBootOrder
Method: GET
Response: 200


```
{
   "@odata.type":
   "#SmcFixedBootOrder.v1_0_0.Smc
   FixedBootOrder", "@odata.id":
   "/redfish/v1/Systems/1/Oem/Superm
   icro/FixedBootOrder", "Id":
   "FixedBootOrder",
   "Name": "Fixed Boot Order", "BootModeSelected": "UEFI", "FixedBootOrder": [
      "UEFI USB CD/DVD:UEFI: ATEN Virtual CDROM YS0J",
      "UEFI Hard Disk",
      "UEFI AP:UEFI: Built-in EFI Shell", "UEFI Network",
      "UEFI USB Floppy", "UEFI CD/DVD",
      "UEFI
      USB
      Hard
      Disk",
      "UEFI
      USB
      Key",
      "UEFI USB Lan"
   ],
   "FixedBootOrde
      rDisabledItem
      ": [ "Disabled"
   ], "UEFIAP": [
      "UEFI: Built-in EFI Shell"
   ],
   "UEFIAPDisabledItem": [ "Disabled"
   ], "UEFIUSBCD/DVD": [
      "UEFI: ATEN Virtual CDROM YS0J"
   ],
   "UEFIUSBCD/DVDDisabledItem": [ "Disabled"
   ],
   "@odata.etag": "\"506cd4cf4c3409c7c1a8e90a53825cb6\""
}
```

7.6.2 Changing the Current Boot Order

For the property “FixedBootOrder,” the boot order arrangement is decided by the group.

URI: /redfish/v1/Systems/1/Oem/Supermicro/FixedBootOrder
Method: PATCH

Step 1. Set the boot order of device groups.

Payload:

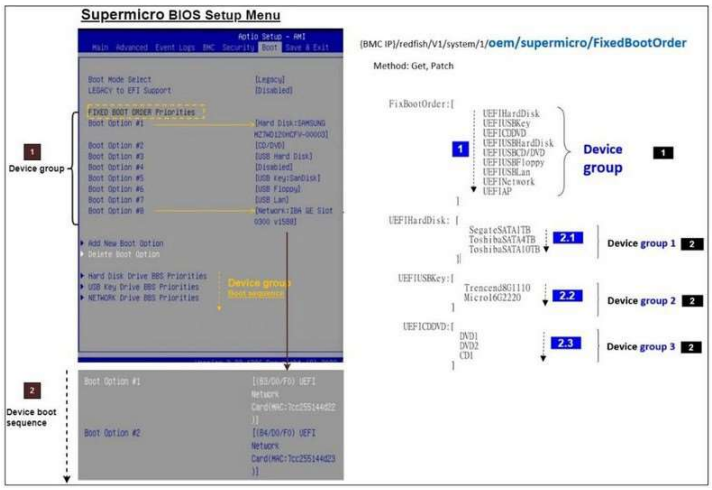
```
{
"FixedBootOrder":["UEFI Hard Disk",
"UEFI CD/DVD", "UEFI USB Hard
Disk", "UEFI USB Key:UEFI OS
(USB,Port:9)", "UEFI USB Floppy",
"UEFI USB Lan", "UEFI Network:(B3/D0/F0) UEFI PXE IPv4 Intel(R) I210 Gigabit Network
Connection(MAC:7cc255144d22)", "UEFI AP:UEFI: Built-in EFI Shell"]
}
```

Step 2. Set the boot order of devices in each device group.

Payload:

```
{
"UEFIUSBKey":["UEFI OS (USB,Port:9)”, "UEFI OS (USB,Port:6)”]
}
```

It is the same group setting as that in the Supermicro BIOS Setup Menu.



URI: /redfish/v1/Systems/1/Oem/Supermicro/FixedBootOrder **Method:** PATCH
Payload: Please refer to the notes below

Notes:

- The amount of Device Group of PATCH payload should be equal to that of the current fixed boot order setting.
- The fixed boot order cannot interlace different Device Groups.
- The amount of specific Device Group of PATCH payload should be equal to that of the current specific Device Group.
- For each Device Group, the first boot device in the order cannot be disabled. The disabled boot device must be after another enabled device.
- The Device Group and boot order of each Device Group should be changed if a user prefers to change both the Device Group and the specific Device Group boot order in the fix boot order setting.
- The new setting changes take effect after the system is reset.

Response: 202

8 CertificateService

The CertificateService describes a Certificate Service that represents the actions available to manage certificates and links to the certificates.

URI: /redfish/v1/CertificateService
Method: GET
Payload:

```
{
}
```

Response: 200


```
{
  "@odata.type": "#CertificateService.v1_0_1.CertificateService",
  "@odata.id": "/redfish/v1/CertificateService",
  "Id": "CertificateService", "Name": "Certificate Service",
  "CertificateLocations": {
    "@odata.id":  "/redfish/v1/CertificateService/CertificateLocations"
  },
  "Actions": {
    "Oem": {
    },
    "#CertificateService.GenerateCSR": {
      "target":
      "/redfish/v1/CertificateService/Actions/Certif
      icateService.GenerateCSR",
      "@Redfish.ActionInfo":
      "/redfish/v1/CertificateService/GenerateCS
      RActionInfo"
    },
    "#CertificateService.ReplaceCertificate": {
      "target":
      "/redfish/v1/CertificateService/Actions/Certificat
      eService.ReplaceCertificate",
      "@Redfish.ActionInfo":
      "/redfish/v1/CertificateService/ReplaceCertificat
      eActionInfo"
    }
  }
}
```

```
{
 "@odata.type": "#ActionInfo.v1_1_2.ActionInfo",
 "@odata.id":
 "/redfish/v1/CertificateService/Genera
 teCSRActionInfo", "Id":
 "GenerateCSRActionInfo",
 "Name":
 "Generate CSR
 Action Info",
 "Parameters": [
  {
   "Name": "CommonName", "Required": true, "DataType": "String"
  },
  {
   "Name": "AlternativeNames", "Required": false,
   "DataType": "StringArray"
  },
  {
   "Name": "Organization", "Required": true, "DataType": "String"
  },
  {
   "Name": "OrganizationalUnit", "Required": true,
   "DataType": "String"
  },
  {
   "Name": "City", "Required": true, "DataType": "String"
  },
  {
   "Name": "State", "Required": true, "DataType":
   "String"
  },
  {
   "Name": "Country", "Required": true, "DataType": "String"
  },
  {
   "Name": "Email", "Required": false, "DataType": "String"
  },
  {
   "Name": "KeyPairAlgorithm", "Required": false, "DataType":
   "String", "AllowableValues": [
    "TPM_ALG_RSA"
   ]
  },
  {
   "Name": "KeyBitLength", "Required": false, "DataType":
   "Number", "MinimumValue": 1024,
   "MaximumValue": 4096
  },
  {
   "Name": "CertificateCollection", "Required": true,
   "DataType": "Object"
  },
  {
   "Name": "KeyUsage", "Required": false, "DataType":
   "StringArray", "AllowableValues": [
    "ServerAuthentication"
   ]
  }
 ],
 "Oem":
```

8.1Generating CSR

Generate a certificate signing request (CSR) for the SSL certificate.

8.1.1 Generating CSR Action Info

View the list of supported and required parameters to generate CSR.

URI: /redfish/v1/CertificateService/GenerateCSRActionInfo
Method: GET
Response: 200

8.1.2 Generating a CSR Request

This action is used to perform a certificate signing request.

URI: /redfish/v1/CertificateService/Actions/CertificateService.Generate*CSR*
Method: POST
Payload:

```
{
"Country": "US" "State": "California", "City": "San Jose",
"Organization": "Supermicro
Computer", "OrganizationalUnit":
"PM", "CommonName":
"Supermicro.com",
"KeyPairAlgorithm":
"TPM_ALG_RSA",
"CertificateCollection": {"@odata.id": "/redfish/v1/Managers/1/NetworkProtocol/HTTPS/Certificates"}
}
```

Response: 200

8.1.3 Viewing Certificate Details

URI: /redfish/v1/Managers/1/NetworkProtocol/HTTPS/Certificates/1
Method: GET
Response: 200


```
{
 "@odata.type": "#Certificate.v1_1_0.Certificate",
 "@odata.id": "/redfish/v1/Managers/1/NetworkProtocol/HTTPS/Certificates/1", "Id": "1",
 "Name": "HTTPS Certificate",
 "CertificateString": "-----BEGIN CERTIFICATE-----
\nMIIE3TCCA8WgAwIBAgIUcdkJIAr/gSwrinFL4k+XbWBnlR0wDQYJKoZIhvcNAQEL\nBQAwgZ0xCzAJBgNVBAYTAlVTMRMwEQYDVQQIEwpD
YWxpZm9ybmlhMREwDwYDVQQH\nEwhTYW4gSm9zZTEdMBsGA1UEChMUU3VwZXIgTWljcm8gQ29tcHV0ZXIxETAPBgNV\nBAsTCFNvZnR3YXJl
MQ0wCwYDVQQDEwRJUE1JMSUwIw
YJKoZIhvcNAQkBFhZzdXBw\nb3J0QHN1cGVybWljcm8uY29tMB4XDTIzMDUyMzAwMDAwMFoXDTMzMDUyMzAwMDAw\nMFowgZ0xCzAJBgNVBA
YTAlVTMRMwEQYDVQQIEwpDYWxpZm9ybmlhMREwDwYDVQQH\nEwhTYW4gSm9zZTEdMBsGA1UEChMUU3VwZXIgTWljcm8gQ29tcHV0ZXIxETAP
BgNV\nBAsTCFNvZnR3YXJlMQ0w
CwYDVQQDEwRJUE1JMSUwIwYJKoZIhvcNAQkBFhZzdXBw\nb3J0QHN1cGVybWljcm8uY29tMIIBIjANBgkqhkiG9w0BAQEFAAOCAQ8AMIIBCg
KC\nAQEA3VUR7jUFM9R28bo4iXdTxxIsGgyNS50PMWud1LTIYN/U07ClLvkpOtHdFcDX\nak7Rr6SyDfcoBTA8pxVbnxJarwKLE0X6IWYTAl
5GGGydUL3RlZXqcVItx1GeXdTQ
\ngQkbjGcHAHXDNnpPpIGp0YSZhAaHXW8i6gGsU8kTKDLgiOVmF1+Ni6yOaxkJCNOa\nAVYH1Vi1UEwBdvmVF7FDdIVoYrL/3lXKWijEFy/c
y9WrloP0+kErf1TW9VB++gkH\nYhn7OLfVY9ao4ZugF3jOv3bnymF8Kf5UYXmvVkEwYo3qeUWk2/i+hw/FTYEGAWyn\nqRkR7T8+M5+KCB6C
/nF4ei8XRwIDAQABo4IBETCCAQ
0wHQYDVR0OBBYEFDNyIpBy\nqt3xgWWPYIzmTMMRue0xMIHdBgNVHSMEgdUwgdKAFDNyIpByqt3xgWWPYIzmTMMR\nue0xoYGjpIGgMIGdMQ
swCQYDVQQGEwJVUzETMBEGA1UECBMKQ2FsaWZvcm5pYTER\nMA8GA1UEBxMIU2FuIEpvc2UxHTAbBgNVBAoTFFN1cGVyIE1pY3JvIENvbXB1
dGVy\nMREwDwYDVQQLEwhTb2Z0
d2FyZTENMAsGA1UEAxMESVBNSTElMCMGCSqGSIb3DQEJ\nARYWc3VwcG9ydEBzdXBlcm1pY3JvLmNvbYIUcdkJIAr/gSwrinFL4k+XbWBnlR
0w\nDAYDVR0TBAUwAwEB/zANBgkqhkiG9w0BAQsFAAOCAQEAWgZ7y++TsCziQnbMq/PB\nKdD+fqT5vqYCBuW8oKrlTdLwq7JHd0KjXI3CXy
1g+AY454qxEwRC9dltaxaXlyTH
\neF6WRQ/7fwpfkDE6II++yY1LCwGtmgw2pqbMepxlCEkSh2Ievlh2fGz3lBMfKZLl\n/yIGKfyrslITUr3DdOQGoTU0/rh2rEcGHgkc7SOC
2bKoi3S01pAl/znhzGTqObar\n4OZiOYSJWhMRJCqJsuJ9BClfL7leCGqNx2u9YyWtveNMb6bdsYOqA3Vczuke6uIK\nysWtfiALcDr6RbZ1
kE9HZ3BTTDJVX8TV3nlvc6KCh6       KFNVYRKliMTWS9fZdIg5FR\nsQ==\n-----END       CERTIFICATE                ",
"CertificateType": "PEM", "Issuer"
 :
 {
  "Country": "US", "State": "California", "City": "San Jose",
  "Organization": "Super Micro Computer", "OrganizationalUnit": "Software",
  "CommonName": "IPMI",
  "Email": "support@supermicro.com"
 },
 "Subject": { "Country": "US",
  "State": "California", "City": "San Jose",
  "Organization": "Super Micro Computer", "OrganizationalUnit":
  "Software", "CommonName": "IPMI",
  "Email": "support@supermicro.com"
 },
 "ValidNotBefore": "2023-05-23T00:00:00+00:00", "ValidNotAfter":
 "2033-05-23T00:00:00+00:00",
 "KeyUsage": [ "ServerAuthentication"
 ],
 "Actions": { "Oem": {},
  "#Certificate.Rekey": {
   "target":
   "/redfish/v1/Managers/1/NetworkProtocol/
   HTTPS/Certificates/1/Actions/Certificate
   .Rekey", "@Redfish.ActionInfo":
   "/redfish/v1/Managers/1/NetworkProtocol/
   HTTPS/Certificates/1/RekeyActionInfo"
  },
  "#Certificate.Renew": {
   "target":   "/redfish/v1/Managers/1/NetworkProtocol/HTTPS/Certificates/1/Actions/Certificate.Renew"
  }
 }
}
```

8.2 Replacing a Certificate

You can replace an existing certificate. Note that the new file must be a signed certificate.

8.2.1 Replacing Certificate Action Info

View the list of supported and required parameters to generate CSR.

URI: /redfish/v1/CertificateService/ReplaceCertificateActionInfo
Method: GET
Payload:

```
{
}
```

Response:

```
{
 "@odata.type": "#ActionInfo.v1_1_2.ActionInfo",
 "@odata.id":
 "/redfish/v1/CertificateS
 ervice/ReplaceCertificate
 ActionInfo", "Id":
 "ReplaceCertificateAction
 Info",
 "Name": "Replace Certificate Action Info", "Parameters": [
  {
   "Name": "CertificateString", "Required": true,
   "DataType": "String"
  },
  {
   "Name": "CertificateType", "Required": true, "DataType":
   "String", "AllowableValues": [
    "PEM"
   ]
  },
  {
   "Name": "CertificateUri", "Required": true, "DataType": "Object"
  }
 ],
 "Oem": {}
}
```

8.2.2 Renewing a Certificate

URI: /redfish/v1/Managers/1/NetworkProtocol/HTTPS/Certificates/1/Actions/Certificate.Renew
Method: POST
Payload:


```
{
"CertificateString": "-----BEGIN CERTIFICATE REQUEST-----
\nMIICvjCCAaYCAQAweTELMAkGA1UEB
hMCVVMxEzARBgNVBAgTCkNhbGlmb3Ju
aWEx\nETAPBgNVBAcTCFNhbi
BKb3NlMRwwGgYDVQQKExNTdXBlcm1pY
3JvIENvbXB1dGVy\nMQswCQYDVQQLEw
JQTTEXMBUGA1UEAxMOU3VwZX
JtaWNyby5jb20wggEiMA0GCSqG\nSIb3DQEBAQUAA4IBDwAwggEKAoIBAQDHzmkX9rnVBenRS4OCAAbBN1JPXL
Sy5lUO\n8AYVzDAyBKsivNZSD9PTXRFYHketUwzihQk8Km3/DbFd2sF9ZIPCc8tiBlS+5dkb\np9g6qilv1Fjv
vVD0SYpYQl3km0JK1kh14AxEZARYfAI+j+RH/SA6+T6Nxzl2uB5K\nQQcMSdxjMJVF4Q7zMWVFP0NTN6oQkaXX
ATxh4o9G+SkdDCqVSXD47aYz+2Vfu8gR\nHCXptNYTElCDN62iDoHAcPQjEuvloJqcKwXczFLgefUgsEQ9YzxY
qx3lmpJrJYz/\nuUUbL1Flj7Tq91FfPNtmRhIAMY8fGBrpqjJr9CsL7zMUV1R7DlWVAgMBAAGgADAN\nBgkqhk
iG9w0BAQUFAAOCAQEAsnEznugI2+IZpjXiI7l+I3yDDQlv0jwtgx7hYCu4\n6F5qlDRzzAlZNvBOopynEzkmmM
q3vvpl2zdblEsYbLWcja+T1a+0UFgjILi1IIOM\nnJDk1pz34uzMAMQncAtJ1wtE3NWI6n6+Ni0lvwSqPv5svQ
+7zHITfwWbHR4KLyMF\nPM2+XA/47UIq4+SPDPSxSjaWkFRXGrQKzy+aVH28X/SCVXEArU8UFDFfuILAHYKa\n
oFDM3n3tbWcWVRyZdSPZVXYE9uWcZehlwIKh7t69gB6+WxjuONGCwviwNdX0x7A0\nLL8OdA5PISzKTGFESiEn
GP914qyovQ3QgtsZZNtFMAz66B==\n-----END CERTIFICATE REQUEST       \n",
"CertificateType": "PEM",
"@odata.id":  "/redfish/v1/Managers/1/NetworkProtocol/HTTPS/Certificates/1"
}
```


Response: 200

8.3 Replacing the Key Certificate

This action shall generate a new key pair for an existing certificate using the existing certificate data. The response shall contain a signing request that is to be signed by a certificate authority (CA). The service should retain the private key used for the generation of this request when the certificate is installed.
The private key should not be part of the response.

URI: /redfish/v1/Managers/1/NetworkProtocol/HTTPS/Certificates/1/Actions/Certificate.Rekey
Method: POST
Payload:

```
{
    KeyPairAlgorithm": "TPM_ALG_RSA"
}
```

Response: 200

9 Event Service

The event service is an alert mechanism for Redfish. This alert will be sent out through HTTP or HTTPS to a web service that is subscribed to the service.

9.1 Adding a Subscription

Edit a subscription to configure alerts/events.

URI: /redfish/v1/EventService/Subscriptions/[id]
Method: PATCH
Payload:

```
{
"Destination": "example@main.com", "Context": "user1_test",
"EventTypes":["Alert","StatusChange"], "Protocol": "SMTP",
"Oem":{"Supermicro":{ "Severity": "Information", "EnableSubscription": true}}
}
```

Response: 200

- **Destination:** Value shall contain a URI or email to the destination where the events will be sent.
- **Context:** Value is a client-supplied string that is stored with the event destination subscription.
- **EnableSubscription:** Enable or Disable subscription by setting the value to be true or false.
- **Protocol:** This property shall contain the protocol type that the event will use for sending the event to the destination. A value of Redfish shall be used to indicate that the event type shall adhere to that defined in the Redfish specification.

  Allowable values:
  - SNMPv1
  - SMTP
  - Redfish
  - SNMPv3

- **EventTypes:** This property shall contain the types of events you want to receive.
  Allowable values:
  - StatusChange
  - ResourceUpdated
  - ResourceAdded
  - ResourceRemoved
  - Alert”

- **Severity:** This property shall contain the severity of the event that you want to configure.

  Allowable values:

  - Information
  - Warning
  - Critical

9.2 Viewing All Subscriptions

To view all subscriptions, follow these steps.

URI: /redfish/v1/EventService/Subscriptions
Method: GET


```
{
  "@odata.type":
  "#EventDestinationCollection.EventDestinati
  onCollection", "@odata.id":
  "/redfish/v1/EventService/Subscriptions",
  "Name": "Event
  Subscriptions
  Collection",
  "Members": [
    {
      "@odata.id": "/redfish/v1/EventService/Subscriptions/1"
    },
    {
      "@odata.id": "/redfish/v1/EventService/Subscriptions/2"
    },
    {
      "@odata.id": "/redfish/v1/EventService/Subscriptions/3"
    },
    {
      "@odata.id": "/redfish/v1/EventService/Subscriptions/4"
    },
    {
      "@odata.id": "/redfish/v1/EventService/Subscriptions/5"
    },
    {
      "@odata.id": "/redfish/v1/EventService/Subscriptions/6"
    },
    {
      "@odata.id": "/redfish/v1/EventService/Subscriptions/7"
    },
    {
      "@odata.id": "/redfish/v1/EventService/Subscriptions/8"
    },
    {
      "@odata.id": "/redfish/v1/EventService/Subscriptions/9"
    },
    {
      "@odata.id": "/redfish/v1/EventService/Subscriptions/10"
    },
    {
      "@odata.id": "/redfish/v1/EventService/Subscriptions/11"
    },
    {
      "@odata.id": "/redfish/v1/EventService/Subscriptions/12"
    },
    {
      "@odata.id": "/redfish/v1/EventService/Subscriptions/13"
    },
    {
      "@odata.id": "/redfish/v1/EventService/Subscriptions/14"
    },
    {
      "@odata.id": "/redfish/v1/EventService/Subscriptions/15"
    },
    {
      "@odata.id": "/redfish/v1/EventService/Subscriptions/16"
    }
  ],
  "Members@odata.count": 16
}
```

9.3 Deleting a Subscription

You can delete or erase a subscription.

URI: /redfish/v1/EventService/Subscriptions/[num]
Method: DELETE

9.4 Testing an Event Subscription

You can send a test event with “SendTestEvent” or generate an event in the BMC, Redfish will then automatically send event alerts to the subscriber(s).

URI: /redfish/v1/EventService/Actions/EventService.SubmitTestEvent
Payload:

```
{
"EventType": "Alert"
}
```

You need to implement a RESTful event listener that can receive HTTP or HTTPS POST data that describes the Redfish event format. It can also subscribe to multiple services.

Refer to the Redfish-Event-Listener project page at GitHub to test Event Subscriptions or setup a Redfish Event Listener.

Example of data from Redfish Event Listener:

Time:Tue Feb 12 16:49:28 2019 Count:1
Host IP:('BMC_IP', 38486)
Event Details:{'@odata.context':
'/redfish/v1/$metadata#EventService/Members/Events/58', '@odata.id':
'/redfish/v1/EventService/Events/58', '@odata.type':
'#EventService.v1_0_0.Event', 'Id': '58', 'Name': 'Event Array',
'Events': [{'EventType': 'Alert', 'Severity': 'OK', 'EventTimestamp': '2019/02/13 00:49:04',
'Message': 'Submit Test Event', 'MessageArgs': ['/redfish/v1/EventService/Actions'],
'MessageId': '0', 'OriginOfCondition': {'@odata.id': '/redfish/v1/EventService'}, 'Context':
'Public'}]}

Time:Tue Feb 12 16:52:24 2019 Count:2
Host IP:('BMC_IP', 38500)
Event Details:{'@odata.context':
'/redfish/v1/$metadata#EventService/Members/Events/59', '@odata.id':
'/redfish/v1/EventService/Events/59', '@odata.type': '#EventService.v1_0_0.Event', 'Id':
'59', 'Name': 'Event Array',
'Events': [{'EventType': 'Alert', 'Severity': 'Info',
'EventTimestamp': '2019/02/13 00:52:00', 'Message': 'Web login was successful.',
'MessageArgs': [], 'MessageId': 'Alert.1.0.LoginWeb', *'OriginOfCondition': {}, 'Context':*
'Public'}]}

10 Virtual Media Management

10.1 Mounting and Configuring the Virtual Media Settings

URI: /redfish/v1/Managers/1/VirtualMedia/VirtualMedia[mounted dev num]/Actions/VirtualMedia.InsertMedia
Method: POST
Payload:

```
{
"Image": "<host>/<path>", "UserName":
"some_username", "Password":
"some_password"
}
```

Response: 202

10.1.1 Checking the Task State

URI: /redfish/v1/TaskService/Tasks/[TASK_NUM]
Method: Get

10.1.2 Verifying the ISO was Mounted by the Redfish Command

URI: /redfish/v1/Managers/1/VirtualMedia/VirtualMedia[mounted_dev_num]
Method: GET
Payload:

```
{
}
```

10.2 Unmounting the ISO

URI: /redfish/v1/Managers/1/VirtualMedia/VirtualMedia[mounted_dev_num]/Actions/VirtualMedia.EjectMedia
Method: POST
Payload: {}

10.2.1 Verifying the ISO was Unmounted by the Redfish Command

Verify whether the ISO was unmounted using the Redfish command; the node should be removed.

URI: /redfish/v1/Managers/1/VirtualMedia/VirtualMedia[mounted_dev_num]
Method: GET
Response: 200

11 Device Management

You can find details about all available network devices under /redfish/v1/Chassis/1/PCIeDevices

11.1 NIC Device

URI: /redfish/v1/Chassis/1/PCIeDevices/NIC1
Method: GET
Response: 200


```
{
  "@odata.type": "#PCIeDevice.v1_4_0.PCIeDevice",
  "@odata.id": "/redfish/v1/Chassis/1/PCIeDevices/NIC1", "Id":
  "NIC1",
  "Name": "PCIeDevices",
  "Description": "NIC device (riser: RSC-D-6G5)", "Manufacturer": "Supermicro",
  "Model": "",
  "SerialNumber": "",
  "PartNumber": "",  "DeviceType":
  "MultiFunction",
  "FirmwareVersion": "", "Status": {
    "State": "Disabled",
    "Health": "OK",
    "HealthRollup": "OK"
  },
  "PCIeInterface": { "PCIeType":
    "Gen1", "MaxPCIeType":
    "Gen5", "LanesInUse": 8,
    "MaxLanes": 8
  },
  "PCIeFunctions": {
    "@odata.id":  "/redfish/v1/Chassis/1/PCIeDevices/NIC1/PCIeFunctions"
  },
  "Links": {
    "Chassis": [
      {
        "@odata.id": "/redfish/v1/Chassis/1"
      }
    ]
  },
  "Oem": {}
}
```

11.2 GPU

URI: /redfish/v1/Chassis/1/PCIeDevices/GPU1
Method: GET
Response: 200

11.3 NVMeSSD

URI: /redfish/v1/Chassis/1/PCIeDevices/NVMeSSD1
Method: GET
Response: 200

11.4 PCIe Functions

URI: /redfish/v1/Chassis/1/PCIeDevices/GPU1/PCIeFunctions/1
Method: GET
Response: 200

12 RAID Management

You can manage RAID using storage subsystem schema and its properties. Storage APIs represent a set of controllers and its resources like volumes, drives, etc. For details about storage controller firmware update, see 4.6 Updating Broadcom Storage Controller Firmware or 4.7 Updating Marvel Storage Controller Firmware.

URI: /redfish/v1/Systems/1/Storage
Method: GET
Response: 200

12.1 Viewing Details of HA-RAID Controller, Drive, and Volume

URI: /redfish/v1/Systems/1/Storage/HA-RAID
Method: GET
Response: 200

```
{
   "@odata.type": "#Storage.v1_9_0.Storage",  "
   @odata.id": "/redfish/v1/Systems/1/Storage/HA-RAID", "Id": "HA-RAID",
   "Name": "HA Storage System", "StorageControllers": [
      {
         "@odata.id": "/redfish/v1/Systems/1/Storage/HA-
         RAID#/StorageControllers/0", "MemberId": "0",
         "Manufacturer": "Broadcom", "Model": "SAS 3908",
         "SerialNumber": "FW-00000000", "FirmwareVersion": "5.240.02-3768",
         "Status": {
            "State": "Enabled",
            "Health": "OK"
         },
         "Identifiers": [
            {
               "DurableName": null
            }
         ],
         "SupportedControllerProtocols": [ "I2C",
            "PCIe"
         ],
         "SupportedDeviceProtocols": [ "SATA",
           "SAS"
         ],
         "Oem
         ": {
            "Supermicro": {
               "@odata.type": "#SmcStorageExtensions.v1_0_0.StorageController", "BIOSBootMode": "PauseOnError",
               "JBODMode": "Disable", "BBU"
               : {
                  "Status": {
                     "State": "Enabled",
                     "Health": "OK"
                  },
                  "BBUStatus": "Not Install"
               }
            }
         }
      }
   ],
   "Controllers": {
      "@odata.id":  "/redfish/v1/Systems/1/Storage/HA-RAID/Controllers"
   },
   "Drives": [
      {
         "@odata.id":  "/redfish/v1/Chassis/HA-RAID.0.StorageEnclosure.0/Drives/Disk.Bay.1"
      },
      {
         "@odata.id":  "/redfish/v1/Chassis/HA-RAID.0.StorageEnclosure.0/Drives/Disk.Bay.5"
      }
   ],
   "Volumes": {
      "@odata.id":  "/redfish/v1/Systems/1/Storage/HA-RAID/Volumes"
   },
   "Links": {
      "Enclosures": [
         {
            "@odata.id": "/redfish/v1/Chassis/HA-RAID.0.StorageEnclosure.0"
         }
      ],
      "SimpleStorage": {
         "@odata.id": "/redfish/v1/Systems/1/SimpleStorage/1"
      }
   },
   "Actions": {
      "Oem": {
         "#SmcHARAIDController.Save": {
            "target": "/redfish/v1/Systems/1/Storage/HA-
            RAID/Actions/Oem/SmcHARAIDController.Save", "@Redfish.ActionInfo":
            "/redfish/v1/Systems/1/Storage/HA-RAID/Oem/Supermicro/SaveActionInfo"
         },
         "#SmcStorage.CreateVolume": {
            "target": "/redfish/v1/Systems/1/Storage/HA-
            RAID/Actions/Oem/SmcStorage.CreateVolume", "@Redfish.ActionInfo":
            "/redfish/v1/Systems/1/Storage/HA-
            RAID/Oem/Supermicro/CreateVolumeActionInfo"
         },
         "#SmcStorage.ClearVolumes": {
            "target":  "/redfish/v1/Systems/1/Storage/HA-RAID/Actions/Oem/SmcStorage.ClearVolumes",

            "@Redfish.ActionInfo":  "/redfish/v1/Systems/1/Storage/HA-RAID/Oem/Supermicro/ClearVolumesActionInfo"
         }
      }
   },  "Oem": {
   },
   "Description":
   "External RAID",
   "Status": {
      "State": "Enabled",
      "Health": "OK"
   },
   "@odata.etag": "\"55ae4cf460abfdb1c5fc50d7e434f83f\""
}
```

12.2 Viewing Details of HBA Controller, Drive and Volume

URI: /redfish/v1/Systems/1/Storage/HBA
Method: GET
Response: 200

```
{
   "@odata.type":
   "#Storage.v1_9_0.Storage",
   "@odata.id":
   "/redfish/v1/Systems/1/Storage/
   HBA", "Id": "HBA",
   "Name": "HBA Storage
   System",
   "StorageControllers": [
      {
         "@odata.id": "/redfish/v1/Systems/1/Storage/HBA#/StorageControllers/0", "MemberId": "0",
         "Manufacturer":
         "Broadcom",
         "Model":
         "SAS3808",
         "SerialNumber": "UA20CS003047R101",
         "FirmwareVersion":
         "23.00.00.00", "Status":
         {
            "State": "Enabled",
            "Health": "OK"
         },
         "Identifiers": [
            {
               "DurableName": null
            }
         ],
         "SupportedControllerP
            rotocols": [ "PCIe"
         ],
         "SupportedDevice
            Protocols":
            [ "SATA",
            "SAS"
         ],  "Oem": {
         }
      }
   ],
   "Controllers": {
      "@odata.id":  "/redfish/v1/Systems/1/Storage/HBA/Controllers"
   },
   "Drives": [
   ],
   "Volumes": {
      "@odata.id":  "/redfish/v1/Systems/1/Storage/HBA/Volumes"
   },
   "Links": {
      "Enclosures": [
      ],
      "SimpleStorage": {
         "@odata.id": "/redfish/v1/Systems/1/SimpleStorage/1"
      }
   },  "Oem": {
   },
   "Description":
   "External HBA",
   "Status": {
      "State": "Enabled",
      "Health": "OK"
   },
   "@odata.etag": "\"a1ff5f1e00a725b15fb667521d51b022\""
}
```

12.3 Creating LSI31XX/38XXIR/39XX Logical Volume

URI: /redfish/v1/Systems/1/Storage/HA-RAID/Actions/Oem/SmcStorage.CreateVolume
Method: POST

Payload:

```
{
 "ControllerId":0, "Raid": "RAID0",
 "Span": 1,
 "PhysicalDrives":["HA-RAID.0.Disk.0", "HA-
 RAID.0.Disk.1"], "UsePercentage":100,
 "LogicalDriveCount":1, "StripSizePerDDF":"256K", "LdReadPolicy":
 "NoReadAhead", "LdWritePolicy": "WriteBack", "LdIOPolicy": "DirectIO",
 "AccessPolicy": "ReadWrite", "DiskCachePolicy": "Unchanged",
 "InitState": "NoInit",  "VdName": "VD"
}
```

Response: 200

12.4 Locating Physical HDD

URI: /redfish/v1/Chassis/HA-RAID.[controller_num].StorageEnclosure.[enclosure_num]/Drives/Disk.Bay .[disk_num]/Actions/Oem/SmcDrive.Indicate
Method: POST
Payload:

```
{
"Active": true
}
```

Response: 200

12.5 Locating Logical Volume

URI: /redfish/v1/Systems/1/Storage/HA-RAID/Volumes/Controller.[controller_num].Volume.[volume_num]/Actions/Oem/SmcVolume.Indicate
Method: POST
Payload:

```
{
"Active": true
}
```

Response: 200

12.6 Deleting Logical Volume

URI: /redfish/v1/Systems/1/Storage/HA-RAID/Volumes/Controller.[controller_num].Volume.[volume_num]/Actions/Oem/SmcVolume
Method: POST
Payload:

```
{
}
```

Response: 200

12.7 Clearing All Logical Volumes

URI: /redfish/v1/Systems/1/Storage/HA-RAID/Volumes/Controller.[controller_num].Volume.[volume_num]/Actions/Oem/SmcVolume
Method: POST
Payload:

```
{
 "ControllerId":0
}
```

Response: 200

12.8 Saving HA-Raid Controller Configuration

URI: /redfish/v1/Systems/1/Storage/HA-RAID/Volumes/Controller.[controller_num].Volume.[volume_num]/Actions/Oem/SmcVolume
Method: PATCH
Payload:

```
{
"ControllerId":0,
"BIOSBootMode":"PauseOnError",
"JBODMode": "Enable"
}
```

Response: 200

12.9 Viewing Details of Marvell Controller, Drive, and Volume Details

URI: /redfish/v1/Systems/1/Storage/MRVL.HA-RAID
Method: GET
Response: 200

12.10 Creating a Virtual Drive for Marvell

URI: /redfish/v1/Systems/1/Storage/MRVL.HA-RAID/Actions/Oem/SmcStorage.CreateVD
Method: POST
Payload:

```
{
"PD":["MRVL.HA-
RAID.0.StorageModule/Drives/Disk.Bay.0","MRVL.HA-
RAID.0.StorageModule/Drives/Disk.Bay.1"],      "RaidLevel": "RAID1",
"StripeBlock":
"64K",
"VDName":
"SuperDrive"
}
```

12.11 Deleting a Virtual Drive for Marvell

URI: /redfish/v1/Systems/1/Storage/MRVL.HA-RAID/Volumes/Controller.[controller_num].Volume.[volume_num]/Actions/Oem/SmcVo lume.DeleteVD/

Method: POST
Payload:

```
{
}
```

12.12 Rebuilding a Virtual Drive for Marvell

URI: /redfish/v1/Systems/1/Storage/MRVL.HA-RAID/Volumes/Controller.[controller_num].Volume.[volume_num]/Actions/Oem/SmcVo lume.RebuildVD
Method: POST
Payload:

```
{
}
```

12.13 Importing a Virtual Drive for Marvell

Insert or import a VD and register its UUID to Marvell FW. Wait for the next system power-on, and this UUID will be registered at Marvell FW.

URI: /redfish/v1/Systems/1/Storage/MRVL.HA-RAID/Volumes/Controller.[controller_num].Volume.[volume_num]/Actions/Oem/SmcVo lume.ImportVD
Method: POST
Payload:

```
{
}
```

12.14 NVME SSD

View NVME storage details.
URI: /redfish/v1/Systems/1/Storage/NVMeSSD
Method: GET
Response: 200

13 Network Management

EthernetInterfaces resources are used to manage BMC network configuration.

13.1 Viewing Network Settings

URI: /redfish/v1/Managers/1/EthernetInterfaces/1
Method: GET
Response: 200


```
{
    "@odata.type":
    "#EthernetInterface.v1_6_3.EthernetInterfac
    e", "@odata.id":
    "/redfish/v1/Managers/1/EthernetInterfaces/1
    ", "Id": "1",
    "Name": "Manager Ethernet
    Interface", "Description":
    "Management Network Interface",
    "Status": {
        "State": "Enabled",
        "Health": "OK"
    },
    "InterfaceEnabled": true, "LinkStatus": "LinkUp", "MACAddress": "3C:EC:EF:3B:FF:FF",
    "SpeedMbps": 1000,
    "SpeedMbps@Redfish.Allow
    ableValues": [
        "100",
        "1000"
    ],
    "AutoNeg": true,
    "FullDuplex": true,
    "MTUSize": 1500,
    "HostName": "local",
    "FQDN":
    "local.supermicro.com",
    "MaxIPv6StaticAddress
    es": 5, "VLAN": {
        "VLANEnable"
        : false,
        "VLANId": 0
    },
    "DHCP
    v4": {
        "DHCPEnabled":
        true,
        "UseDNSServers":
        false,
```

```
    "UseGateway": true,
    "UseNTPServers":
    false,
    "UseStaticRoutes":
    false,
    "UseDomainName":
    false,
    "FallbackAddress":
    "None"
},
"DHCP
v6": {
    "OperatingMode": "Stateless", "UseDNSServers": false, "UseDomainName": false, "UseNTPServers": false, "UseRapidCommit": false
},
"IPv4Addresses": [
    {
        "Address": "10.10.10.221",
        "SubnetMask": "255.255.255.0",
        "AddressOrigin":
        "DHCP",
        "Gateway":
        "10.10.10.1"
    }
],
"StatelessAddressAutoConfig": { "IPv4AutoConfigEnabled": false, "IPv6AutoConfigEnabled": true
},
"IPv4StaticAddresses": [
    {
        "Address": null, "SubnetMask": null, "Gateway": null
    }
],
"IPv6StaticAddresses": [
    {
        "Address": "::", "PrefixLength": 64
    },
    {
        "Address": "::", "PrefixLength": 64
    },
    {
        "Address": "::", "PrefixLength": 64
    },
    {
        "Address": "::", "PrefixLength": 64
    },
    {
        "Address": "::", "PrefixLength": 64
    }
],
"IPv6StaticDefaultGateways": [
],
"IPv6DefaultGateway":
"fe80::37a8:5e61:4a0b:c0c7",
"IPv6Addresses": [
    {
        "Address":
        "2111:1111::3eec:efff:fe3b:e02f",
        "PrefixLength": 64,
        "AddressOrigin":
        "SLAAC",
        "AddressState":
        "Preferred"
    },
    {
        "Address":
        "fe80::3eec:efff:fe3b:e02f",
        "PrefixLength": 64,
        "AddressOrigin":
        "LinkLocal",
        "AddressState":
        "Preferred"
    }
],
"NameServers":
    [ "2111:1111::f
    d",
    "10.10.10.205"
],
"StaticNameServers":
    [ "10.10.10.205",
    "10.10.10.226",
    "2001:db8::fd"
],
"Oem
": {
    "Supermicro": {
        "@odata.type":
        "#SmcEthernetInterfaceExtensions.v1_0_1.EthernetInterfac
        e", "IPProtocolStatus": "Dual",
        "UDID":  "0E:00:00:01:00:01:2C:4A:A1:C3:3C:EC:EF:3B:E0:2F",
        "LANInterface": "Failover",
        "LANInterface@Redfish.Allo
        wableValues": [
            "Dedicat
            ed",
            "Shared",
            "Failover"
        ],
        "ActiveInterface": "Dedicated"
    }
}
```

13.2 IPv6 Configuration

URI: /redfish/v1/Managers/1/EthernetInterfaces/1
Method: PATCH
Payload:

```
{
  "IPv6StaticAddresses":[{"Address": "<IP>", "PrefixLength": 64}]
}
```

13.3 Host Interface

13.3.1 Enabling Host Interface

URI: /redfish/v1/Managers/1/HostInterfaces/1
Method: PATCH
Payload:

```
{
"InterfaceEnabled": true
}
```

Response:


```
{
 "@odata.type": "#HostInterface.v1_2_2.HostInterface", "@odata.id":
 "/redfish/v1/Managers/1/HostInterfaces/1", "Id": "1",
 "Name": "Host Interface",
 "Description": "Management Host Interface",
 "HostInterfaceType": "NetworkHostInterface", "Status": {
  "State": "Enabled",
  "Health": "OK"
 },
 "InterfaceEnabled": true, "ExternallyAccessible": false, "AuthenticationModes": [
  "BasicAuth", "RedfishSessionAuth"
 ],
 "HostEthernetInterfaces": {
  "@odata.id":  "/redfish/v1/Managers/1/HostInterfaces/1/HostEthernetInterfaces"
 },
 "ManagerEthernetInterface": {
  "@odata.id":  "/redfish/v1/Managers/1/EthernetInterfaces/ToHost"
 },
 "NetworkProtocol": {
  "@odata.id": "/redfish/v1/Managers/1/NetworkProtocol"
 },
 "Links": { "ComputerSystems": [
    {
     "@odata.id": "/redfish/v1/Systems/1"
    }
  ]
 },"Oem": {}
}
```

13.3.2 Editing a Host IP Address

URI: /redfish/v1/Systems/1/EthernetInterfaces/ToManager
Method: PATCH
Payload:

```
{
"IPv4StaticAddresses":[{"Address": "169.254.3.<num>"}]
}
```

14 TelemetryService

TelemetryService represents metrics collection and data logs for power consumption on the server. TelemetryService contains the below-collected resources.

URI: /redfish/v1/TelemetryService
Method: GET
Response: 200


```
{
  "@odata.type":
  "#TelemetryService.v1_2_0.TelemetrySer
  vice", "@odata.id":
  "/redfish/v1/TelemetryService",
  "Id":
  "TelemetryService
  ", "Name":
  "Telemetry
  Service", "Status":
  {
    "State": "Enabled",
    "Health": "OK"
  },
  "SupportedCollectionFuntions": [ "Average",
    "Minimum", "Maximum"
  ],
  "MetricDefinitions": {
    "@odata.id":  "/redfish/v1/TelemetryService/MetricDefinitions"
  },
  "MetricReportDefinitions": {
    "@odata.id":  "/redfish/v1/TelemetryService/MetricReportDefinitions"
  },
  "MetricReports": {
    "@odata.id":  "/redfish/v1/TelemetryService/MetricReports"
  }
}
```

14.1 Metric Definitions

Metric Definitions contain the definition, metadata, or characteristics of a metric.
URI: /redfish/v1/TelemetryService/MetricDefinitions
Method: GET
Response: 200


```
{
 "@odata.type":
 "#MetricDefinitionCollection.MetricDefinitionColl
 ection", "@odata.id":
 "/redfish/v1/TelemetryService/MetricDefinitions",
 "Id":
 "MetricDefinitions",
 "Name": "Metric
 Definitions",
 "Description": "Metric Definitions
 view", "Members@odata.count": 9,
 "Members": [
  {
   "@odata.id":  "/redfish/v1/TelemetryService/MetricDefinitions/AvgPowerConsumedHour"
  },
  {
   "@odata.id":  "/redfish/v1/TelemetryService/MetricDefinitions/MinPowerConsumedHour"
  },
  {
   "@odata.id":  "/redfish/v1/TelemetryService/MetricDefinitions/MaxPowerConsumedHour"
  },
  {
   "@odata.id":  "/redfish/v1/TelemetryService/MetricDefinitions/AvgPowerConsumedDay"
  },
  {
   "@odata.id":  "/redfish/v1/TelemetryService/MetricDefinitions/MinPowerConsumedDay"
  },
  {
   "@odata.id":  "/redfish/v1/TelemetryService/MetricDefinitions/MaxPowerConsumedDay"
  },
  {
   "@odata.id":  "/redfish/v1/TelemetryService/MetricDefinitions/AvgPowerConsumedWeek"
  },
  {
   "@odata.id":  "/redfish/v1/TelemetryService/MetricDefinitions/MinPowerConsumedWeek"
  },
  {
   "@odata.id":  "/redfish/v1/TelemetryService/MetricDefinitions/MaxPowerConsumedWeek"
  }
 ]
}
```

14.2 Metric Report Definitions

These definitions contain a descriptor of the metric report to be generated.
URI: /redfish/v1/TelemetryService/MetricReportDefinitions
Method: GET
Response: 200


```
{
  "@odata.type":
  "#MetricReportDefinitionCollection.MetricReportDefinitio
  nCollection", "@odata.id":
  "/redfish/v1/TelemetryService/MetricReportDefinitions",
  "Id":
  "MetricReportDefinition
  s", "Name": "Metric
  Report Definitions",
  "Description": "Metric Report
  Definitions view",
  "Members@odata.count": 9,
  "Members": [
    {
      "@odata.id":   "/redfish/v1/TelemetryService/MetricReportDefinitions/AvgPowerConsumptionHour"
    },
    {
      "@odata.id":   "/redfish/v1/TelemetryService/MetricReportDefinitions/MinPowerConsumptionHour"
    },
    {
      "@odata.id":   "/redfish/v1/TelemetryService/MetricReportDefinitions/MaxPowerConsumptionHour"
    },
    {
      "@odata.id":   "/redfish/v1/TelemetryService/MetricReportDefinitions/AvgPowerConsumptionDay"
    },
    {
      "@odata.id":   "/redfish/v1/TelemetryService/MetricReportDefinitions/MinPowerConsumptionDay"
    },
    {
      "@odata.id":   "/redfish/v1/TelemetryService/MetricReportDefinitions/MaxPowerConsumptionDay"
    },
    {
      "@odata.id":   "/redfish/v1/TelemetryService/MetricReportDefinitions/AvgPowerConsumptionWeek"
    },
    {
      "@odata.id":   "/redfish/v1/TelemetryService/MetricReportDefinitions/MinPowerConsumptionWeek"
    },
    {
      "@odata.id":   "/redfish/v1/TelemetryService/MetricReportDefinitions/MaxPowerConsumptionWeek"
    }
  ]
}
```

14.3 Metric Reports

Metric Reports contain the location for the report generated from a metric report definition.
URI: /redfish/v1/TelemetryService/MetricReports
Method: GET
Response: 200


```
{
  "@odata.type":
  "#MetricReportCollection.MetricReportColl
  ection", "@odata.id":
  "/redfish/v1/TelemetryService/MetricRepor
  ts",
  "Id":
  "MetricReports",
  "Name": "Metric
  Reports",
  "Description": "Metric Reports
  view", "Members@odata.count": 9,
  "Members": [
    {
      "@odata.id":   "/redfish/v1/TelemetryService/MetricReports/AvgPowerConsumptionHour"
    },
    {
      "@odata.id":   "/redfish/v1/TelemetryService/MetricReports/MinPowerConsumptionHour"
    },
    {
      "@odata.id":   "/redfish/v1/TelemetryService/MetricReports/MaxPowerConsumptionHour"
    },
    {
      "@odata.id":   "/redfish/v1/TelemetryService/MetricReports/AvgPowerConsumptionDay"
    },
    {
      "@odata.id":   "/redfish/v1/TelemetryService/MetricReports/MinPowerConsumptionDay"
    },
    {
      "@odata.id":   "/redfish/v1/TelemetryService/MetricReports/MaxPowerConsumptionDay"
    },
    {
      "@odata.id":   "/redfish/v1/TelemetryService/MetricReports/AvgPowerConsumptionWeek"
    },
    {
      "@odata.id":   "/redfish/v1/TelemetryService/MetricReports/MinPowerConsumptionWeek"
    },
    {
      "@odata.id":   "/redfish/v1/TelemetryService/MetricReports/MaxPowerConsumptionWeek"
    }
  ]
}
```

15 DumpService

DumpService APIs are used to dump and download debug information.

URI: /redfish/v1/Oem/Supermicro/DumpService
Method: GET
Response: 200


```
{
  "@odata.type": "#DumpService.v1_0_1.DumpService", "@odata.id":
  "/redfish/v1/Oem/Supermicro/DumpService", "Id": "DumpService",
  "Name": "Dump Service", "Dumps": {
    "@odata.id":  "/redfish/v1/Oem/Supermicro/DumpService/Dumps"
  },
  "Actions": { "Oem": {},
    "#SmcDumpService.CreateDump": {
      "target": "/redfish/v1/Oem/Supermicro/DumpService/Actions/SmcDumpService.CreateDump",
      "@Redfish.ActionInfo":   "/redfish/v1/Oem/Supermicro/DumpService/CreateDumpActionInfo"
    },
    "#SmcDumpService.DeleteAll": {
      "target":    "/redfish/v1/Oem/Supermicro/DumpService/Actions/SmcDumpService.DeleteAll"
    }
  }
}
```

15.1 CreateDump

URI: /redfish/v1/Oem/Supermicro/DumpService/Actions/SmcDumpService.CreateDump
Method: POST
Payload:

```
{
"DumpType": "Host Dump"
}
```

Response: 202 Accepted
Task: Task added under TaskService to create dump process and link added in response to navigate to task details

15.2 HostCrashDumps

When the host crash dump is created, you can download it from HostCrashDumpURI.

URI: /redfish/v1/Oem/Supermicro/DumpService/Dumps/HostCrashDump
Method: GET
Response: 200


```
{
   "@odata.type": "#Dump.v1_1_0.Dump",
   "@odata.id":
   "/redfish/v1/Oem/Supermicro/DumpService/Du
   mps/HostCrashDump", "Id": "HostCrashDump",
   "Description":
   "Host dump",
   "Size": 49139,
   "Reason": "Host
   failure",
   "Actions": {
      "Oem": {
      },
      "#SmcDump.Download": {
         "target":    "/redfish/v1/Oem/Supermicro/DumpService/Dumps/HostCrashDump/Actions/SmcDump.Download"
      }
   },
   "@odata.etag": "\"ae12d4647e32eb925f33eac0c038604b\""
}
```

15.3 Downloading Crash Dump

URI: /redfish/v1/Oem/Supermicro/DumpService/Dumps/HostCrashDump/Actions/SmcDump.Download
Method: POST
Payload:

```
{
}
```

Response: 200
Filename: CDump.txt

16 Log Service

This resource represents system health event logs and maintenance event logs.

16.1 System Health Event Log

URI: /redfish/v1/Systems/1/LogServices/[logservice id]
Method: GET
Response: 20


```
{
  "@odata.type": "#LogService.v1_1_0.LogService", "@odata.id":
  "/redfish/v1/Systems/1/LogServices/Log1", "Id": "Log1",
  "Name": "Health Event Log Service", "MaxNumberOfRecords": 4096, "OverWritePolicy":
  "WrapsWhenFull", "DateTime": "2023-07-03T00:26:24Z",
  "DateTimeLocalOffset": "+00:00", "ServiceEnabled": true,  "Status": {
    "State": "Enabled",
    "Health": "OK"
  },
  "LogEntryType": "SEL", "Oem": {
    "Supermicro": {
      "@odata.type": "#SmcLogService.v1_0_0.LogService", "ACPowerOnEventLog": true,
      "FIFOEventLog": true, "SmartPowerEventLog": true
    }
  },
  "Entries": {
    "@odata.id":  "/redfish/v1/Systems/1/LogServices/Log1/Entries"
  },
  "Actions": {
    "Oem": {
      "#SmcLogService.ClearAcknowledgements": {
        "target":    "/redfish/v1/Systems/1/LogServices/Log1/Actions/Oem/SmcLogService.ClearAcknowledgements"
      }
    },
    "#LogService.ClearLog": {
      "target":   "/redfish/v1/Systems/1/LogServices/Log1/Actions/LogService.ClearLog"
    }
  }
}
```

16.1.1 Supported Actions

16.1.1.1 Clearing Logs

Use this API to delete all system health event log entries.

URI: /redfish/v1/Systems/1/LogServices/Log1/Actions/LogService.ClearLog
Method: POST
Response: 200

16.1.1.2 Clearing Acknowledgements

Use this API to clear acknowledgements to all log entries.

URI: /redfish/v1/Systems/1/LogServices/Log1/Actions/Oem/SmcLogService.ClearAcknowledgements
Method: POST
Response: 200

16.1.2 Log Entry Collection

Navigate to view a collection of Log Entry resource instances.
/redfish/v1/Systems/1/LogServices

URI: /redfish/v1/Systems/1/LogServices/[logservice id]/Entries
Method: GET

Response: 200


```
{
   "@odata.type":
   "#LogEntryCollection.LogEntryCollection
   ", "@odata.id":
   "/redfish/v1/Systems/1/LogServices/Log1
   /Entries", "Name": "Health Event Log
   Service Collection",
   "Description": "Collection of
   Health Event Logs", "Members": [
      {
         "@odata.type": "#LogEntry.v1_7_0.LogEntry",
         "@odata.id":
         "/redfish/v1/Systems/1/LogServices/Log1/
         Entries/1", "Id": "1",
         "Name": "Health Event
         Log Entry 1",
         "EntryType": "SEL",
         "Severity": "Critical",
         "Created": "2023-08-14T22:06:39Z",
         "EntryCode": "Assert",
         "SensorType": "Physical
         Chassis Security",
         "SensorNumber": 170,
         "Message": "[SEC-0000] General
         chassis intrusion", "MessageId":
         "0x00FFFF",
         "Oem": {
            "Supermicro":
               { "MarkAsAcknowl
               edged": false,
               "@odata.type":
               "#SmcLogEntryExtensions.v1_0_1.L
               ogEntry", "RawEventData": {
                  "EventDirAndType":
                  "0x6F",
                  "SensorType":
                  "0x05",
                  "SensorName":
                  "Chassis Intru"
               }
            }
         }
      }
   ],
   "Members@odata.count": 1,
   "@odata.etag": "\"37923498b2bd37c38d9c1175d04bd122\""
}
```

16.1.2.1 Acknowledging an Event

URI: /redfish/v1/Systems/1/LogServices/Log1/Entries/[num]
Method: PATCH

16.2 Maintenance Event Log

URI: /redfish/v1/Managers/1/LogServices/[logservice id]
Method: GET
Response: 200

16.2.1 Supported Actions

16.2.1.1Clearing Logs

Use this API to delete all maintenance event log entries.

URI: /redfish/v1/Managers/1/LogServices/Log1/Actions/LogService.ClearLog
Method: GET
Response: 200

16.2.2 Log Entry Collection

Navigate to view the collection of Log Entry resource instances.

URI: /redfish/v1/Managers/1/LogServices/[logservice id]/Entries
Method: GET

Response: 200


```
{
   "@odata.type":
   "#LogEntryCollection.LogEntryCollectio
   n", "@odata.id":
   "/redfish/v1/Managers/1/LogServices/L
   og1/Entries", "Name": "Maintenance
   Event Log Service Collection",
   "Description": "Collection of
   Maintenance Event Logs", "Members":
   [
      {
         "@odata.type": "#LogEntry.v1_7_0.LogEntry",
         "@odata.id":
         "/redfish/v1/Managers/1/LogServices/Log1/
         Entries/1", "Id": "1",
         "Name": "Maintenance
         Event Log Entry 1",
         "EntryType": "Oem",
         "Severity": "OK",
         "Created": "2023-08-14T22:03:18Z",
         "OemRecordFormat": "SMC",
         "Message": "[MEL-0123] Maintenance event logs
         were cleared successfully.", "MessageId":
         "Event.1.0.BmcEvtCleared",
         "Oem": {
            "Supermicro": {
               "@odata.type":
               "#SmcLogEntryExtensions.v1_0_1.Log
               Entry", "Interface": "Redfish",
               "User":
               "ADMIN",
               "Source":
               "10.124.1.193",
               "Category": "Others"
            }
         }
      }
   ],
   "Members@odata.count": 1,
   "@odata.etag": "\"2dec7e96ae97a2a4208e182930a44753\""
}
```

17 Jsonschema

The JSON Schema File resource describes the location (URI) of a particular Redfish schema definition being implemented or referenced by a Redfish service.

URI: /redfish/v1/JsonSchemas
Method: GET
Response: 200

18 Registries

Registries define the messages for Redfish. Registries define the messages for Redfish, which in turn represents the registry properties. The Message ID is formed per the Redfish specification. It consists of the RegistryPrefix concatenated with the version concatenated with the unique identifier for the message registry entry.

URI:

/redfish/v1/Registries/Base
/redfish/v1/Registries/Event
/redfish/v1/Registries/SMC
/redfish/v1/Registries/BiosAttributeRegistry

Method: GET

Response: 200


```
{
  "@odata.type":
  "#MessageRegistryFileCollection.M
  essageRegistryFileCollection",
  "@odata.id": "/redfish/v1/Registries",
  "Name":
  "Registr
  y File
  Collectio
  n",
  "Descrip
  tion":
  "Registr
  y
  Reposito
  ry",
  "Membe
  rs": [
    {
      "@odata.id":  "/redfish/v1/Registries/BiosAttributeRegistry"
    },
    {
      "@odata.id": "/redfish/v1/Registries/Base"
    },
    {
      "@odata.id": "/redfish/v1/Registries/Event"
    },
    {
      "@odata.id": "/redfish/v1/Registries/SMC"
    }
  ],
  "Members@odata.count": 4,
  "@odata.etag": "\"2e96cc1f348b08e443619f3268361321\""
}
```

19 BMC Configuration Examples

You can integrate current APIs into their software and applications in order to receive all services provided by Redfish APIs.

19.1 System Reset

URI: /redfish/v1/Systems/1/Actions/ComputerSystem.Reset
Method: POST
ResetType:
AllowableValues:["On","ForceOff","GracefulShutdown","GracefulRestart","ForceRestart","Nmi","ForceOn", "PowerCycle"]
Response: 200


```
{
  "Success": {
    "code": "Base.v1_10_3.Success",
    "message": "Successfully Completed Request."
  }
}
```

19.2 Notifications

19.2.1 SNMP

URI: /redfish/v1/Managers/1/NetworkProtocol
Method: PATCH
Payload:

```
{
"SNMP": {"ProtocolEnabled": true}
}
```

19.2.1.1 SNMPv2

URI: /redfish/v1/Managers/1/NetworkProtocol
Method: PATCH
Payload:

```
{
"SNMP": {"EnableSNMPv2c": true}
}
```

19.2.1.2 SNMPv3

URI: /redfish/v1/Managers/1/NetworkProtocol
Method: PATCH
Payload:

```
{
"SNMP": {"EnableSNMPv3": true}
}
```

19.2.2 Syslog

URI: /redfish/v1/Managers/1/Oem/Supermicro/Syslog
Method: PATCH
Payl

```
{
"EnableSyslog": true,
"SyslogPortNumber": 514,
"SyslogServer": "10.136.176.16"
}
```

19.3 FanMode

URI: /redfish/v1/Managers/1/Oem/Supermicro/FanMode
Method: PATCH
Payload:

```
{
"Mode": "FullSpeed"
}
```

Mode Allowable Values: {"Standard", "FullSpeed", "Optimal", "PUE2","HeavyIO"}

19.4 NTP

URI: /redfish/v1/Managers/1/Oem/Supermicro/NTP
Method: PATCH
Payload:

```
{
"NTPEnable": true, "PrimaryNTPServer":"127.0.0.1",
"SecondaryNTPServer":"127.0.0.1", "DaylightSavingTime": false
}
```

Response: 202
Note: Check the task monitor to check the progress for NTP

19.5 RADIUS

URI: /redfish/v1/Managers/1/Oem/Supermicro/RADIUS
Method: PATCH
Payload:

```
{
"RadiusEnabled":true, "RadiusServerIP":"127.0.0.1",
"RadiusPortNumber":1812, "RadiusSecret":"SECRET"
}
```

19.6 Snooping

URI: /redfish/v1/Managers/1/Oem/Supermicro/Snooping
Method: GET

19.7 IP Access Control

URI: /redfish/v1/Managers/1/Oem/Supermicro/IPAccessControl
Method: PATCH
Payload:

```
{
"ServiceEnabled": true
}
```

19.7.1 Adding a Rule

URI: /redfish/v1/Managers/1/Oem/Supermicro/IPAccessControl/FilterRules
Method: POST
Payload:

```
{
"Address": "<IP>", "PrefixLength": 24, "Policy":
"Accept"
}
```

Policy Allowable Values: "Accept", "Drop"

19.7.2 Deleting a Rule

URI: /redfish/v1/Managers/1/Oem/Supermicro/IPAccessControl/FilterRules/[num]
Method: DELETE

19.8 SMCRAKP

URI: /redfish/v1/Managers/1/Oem/Supermicro/SMCRAKP
Method: PATCH
Payload:

```
{
"Mode": "Enabled"
}
```

19.9 iKVM

URI: /redfish/v1/Managers/1/Oem/Supermicro/IKVM
Method: GET
Response: {"Mode": "Relative"}

```
{
  "@odata.type": "#IKVM.v1_0_2.IKVM",
  "@odata.id":
  "/redfish/v1/Managers/1/Oem/Supermi
  cro/IKVM", "Id": "IKVM",
  "Name": "IKVM",
  "Current interface": "HTML 5",
  "URI": "/redfish/GyoehEnZlt76uco.IKVM"
}
```

Use response property, “URI”, above to prepend “https://${BMC_IP}“ and paste this complete URL in a browser to render HTML5 iKVM.

Example of launching URL: https://{BMC_IP}/redfish/Kk1D4UVATDja0Jw.IKVM

19.10 iKVM Mouse Mode

URI: /redfish/v1/Managers/1/Oem/Supermicro/MouseMode
Method: PATCH
Payload:

```
{
"Mode": "Relative"
}
```

Mode Allowable Values: "Absolute", "Relative", "Single"

19.11 KCS Channel Control

This API allows you to secure their environment by giving appropriate privileges to access the KCS interface.

URI: /redfish/v1/Managers/1/Oem/Supermicro/KCSInterface
Method: PATCH
Payload:

```
{
"Privilege": "Administrator"
}
```

Privilege Allowable Values:

- **Administrator:** Users accessing KCS interface will be able to do all the operations that the administrator user can do.
- **Operator:** Users accessing KCS interface will be able to do all the operations that users with Operator privileges can do.
- **User:** Users accessing the KCS interface will be able to do all the operations that users with User privileges can do.
- **Callback:** This may be considered the lowest privilege level. Only commands necessary to support initiating a Callback are allowed.

19.12 Getting MAC Addresses from System NICs

URI: /redfish/v1/Systems/1/EthernetInterfaces/1
Method: GET
Response:200

```
{
   "@odata.type": "#EthernetInterface.v1_5_2.EthernetInterface", "@odata.id":
   "/redfish/v1/Systems/1/EthernetInterfaces/1", "Id": "1",
   "Name": "AOC_NIC1",
   "Description": "AOC-
   GTG-i2T #1", "Status": {
      "State": "Enabled",
      "Health": "OK"
   },
   "MACAddress": "7c:c2:55:06:00:56",
   "SpeedMb
   ps": 0,
   "FQDN": ""
}
```

19.14 Chassis Intrusion

URI: /redfish/v1/Chassis/1
Method: GET/PATCH
Payload:

```
{
"PhysicalSecurity":{"IntrusionSensor": "Normal"}
}
```

19.15 Network DNS

Support Platform	Support BMC Firmware	Redfish User guide Version
X12/H12	1.3.3 or later	Ver.3.4

URI: /redfish/v1/Managers/1/EthernetInterfaces/1
Method: GET/PATCH
Payload:

```
{
 "StaticNameServers":[ "10.10.10.
 1",
 "10.10.10.2"
 ]
}
```

20 Activating via Redfish API

URI: /redfish/v1/Managers/1/LicenseManager/Actions/LicenseManager.ActivateLicense
Method: POST
Payload:


```
{
"ProductKey":{"Node":{"LicenseID":"2","LicenseName":"SFT-
DCMSSINGLE","CreateDate":"20230407"},"Signature":"Xe2bdYNKGkmPJ
/E5wgO5nQG8
aFgWrbZ8KRMngZwvB/gUDKu4dmtziB3BIgrOQ9BnmUbisCFIbtMYr9g0/t
CdzLEGslJVWbeoHTD5AeYnsUW8LGSLyVFd3YpaUAJz0HP5M2mOej9jl
PB6Cd7cK5oYJx3ILlpSOcR6ryB9
hC2X3/EfUByCJT12KAiwXLhJ7RCV2P2EFDJ0bDim38hLmst1sAiwK829
QtbLECftWOOyek
+CPZnS11QxoJ4mTlBXH+LbKGpdq1bDv9iZqWAIj1qWHkYdszH/FDhm
YaI12nOJZhJjj9TD
PoHLHYGXTpvW1ofou+0pzDbAtQ5KLUf2ZzoWQA=="}
}
```


Response: 200


```
{
  "Success": {
    "code": "Base.v1_10_3.Success",
    "message": "Successfully Completed Request."
  }
}
```

21 Available APIs

API List	License	Notes
/redfish	Standard	
/redfish/v1	Standard	Service root
/redfish/v1/SessionService	Standard	
/redfish/v1/Chassis	Standard	
/redfish/v1/AccountService	Standard	
/redfish/v1/Managers	Standard	
/redfish/v1/Systems	Standard	
/redfish/v1/EventService	Standard	
/redfish/v1/UpdateService	Standard	
/redfish/v1/Registries	Standard	
/redfish/v1/JsonSchemas	Standard	
/redfish/v1/TaskService	Standard	
/redfish/v1/CertificateService	SFT-DCMS-SINGLE	
/redfish/v1/TelemetryService	Standard	
/redfish/v1/Oem/Supermicro/DumpService	Standard	
/redfish/v1/SessionService/Sessions	Standard	
/redfish/v1/SessionService/Sessions/[session_num]	Standard	
/redfish/v1/Chassis/1	Standard	
/redfish/v1/Chassis/1/Thermal	Standard	
/redfish/v1/Chassis/1/Power	Standard	
/redfish/v1/Chassis/1/Sensors	Standard	
/redfish/v1/Chassis/1/Sensors/[sensor_num]	Standard	
/redfish/v1/Chassis/1/NetworkAdapters	Standard	BIOS-BMC joint feature BIOS FW update might be required
/redfish/v1/Chassis/1/NetworkAdapters/[adapter_num]	Standard	BIOS-BMC joint feature BIOS FW update might be required
/redfish/v1/Chassis/1/NetworkAdapters/[adapter_num]/Ports	Standard	BIOS-BMC joint feature BIOS FW update might be required
/redfish/v1/Chassis/1/NetworkAdapters/[adapter_num]/Ports/[np_num]	Standard	BIOS-BMC joint feature BIOS FW update might be required
/redfish/v1/Chassis/1/NetworkAdapters/[adapter_num]/NetworkPorts	Standard	BIOS-BMC joint feature BIOS FW update might be required
/redfish/v1/Chassis/1/NetworkAdapters/[adapter_num]/NetworkPorts/[np_num]	Standard	BIOS-BMC joint feature BIOS FW update might be required
/redfish/v1/Chassis/1/NetworkAdapters/[adapter_num]/NetworkDeviceFunctions	Standard	BIOS-BMC joint feature BIOS FW update might be required
/redfish/v1/Chassis/1/NetworkAdapters/[adapter_num]/NetworkDeviceFunctions/[ndf_num]	Standard	BIOS-BMC joint feature BIOS FW update might be required
/redfish/v1/Chassis/1/PCIeSlots	Standard	BIOS-BMC joint feature BIOS FW update might be required
/redfish/v1/Chassis/1/PCIeDevices	Standard	BIOS-BMC joint feature BIOS FW update might be required
/redfish/v1/Chassis/1/PCIeDevices/NIC[aoc_card_num]	Standard	Network AOC installation is required; Asset information of each AOC's NIC chip.
/redfish/v1/Chassis/1/PCIeDevices/NIC[aoc_card_num]/PCIeFunctions	Standard	Network AOC installation is required; Asset information of each AOC's NIC chip.
/redfish/v1/Chassis/1/PCIeDevices/NIC[aoc_card_num]/PCIeFunctions/[port_num]	Standard	Network AOC installation is required
/redfish/v1/Chassis/1/PCIeDevices/GPU[gpu_card_num]	Standard	GPU card installation is required, Asset information of GPU cards. (Model, P/N, S/N, FW ver, etc)
/redfish/v1/Chassis/1/PCIeDevices/GPU[gpu_card_num]/PCIeFunctions	Standard	GPU card installation is required
/redfish/v1/Chassis/1/PCIeDevices/GPU[gpu_card_num]/PCIeFunctions/[gpu_instance_num]	Standard	GPU card installation is required. Detailed information of GPU cards. (DeviceID, Capacity, location, etc)
/redfish/v1/Chassis/1/PCIeDevices/NVMeSSD[nvme_ssd_num]	Standard	Asset information of GPU cards. (Model, P/N, S/N, FW ver, etc)
/redfish/v1/Chassis/1/PCIeDevices/NVMeSSD[nvme_ssd_num]/PCIeFunctions	Standard	
/redfish/v1/Chassis/1/PCIeDevices/NVMeSSD[nvme_ssd_num]/PCIeFunctions/[nvme_ssd_instance_num]	Standard	Detail information of GPU cards. (DeviceID, Capacity, location, etc)
/redfish/v1/Chassis/HA-RAID.[controller_num].StorageEnclosure.[enclosure_num]	SFT-DCMS-SINGLE	● SAS3108, SAS3408, SAS39xx, SAS38xxIR ● https://www.supermicro.com/en/products/storage/cards
/redfish/v1/Chassis/HA-	SFT-DCMS-	● SAS3108, SAS3408, SAS39xx,

RAID.[controller_num].StorageEnclosure.[enclosure_num]/Drives/Disk.Bay.[disk_num]	SINGLE	SAS38xxIR ● https://www.supermicro.com/en/products/storage/cards
/redfish/v1/Chassis/HA-RAID.[controller_num].StorageEnclosure.[enclosure_num]/Drives/Disk.Bay.[disk_num]/Actions/Oem/SmcDrive.Indicate	SFT-DCMS-SINGLE	1) Light on physical drive LED indicator 2) SAS3108, SAS3408, SAS39xx, SAS38xxIR https://www.supermicro.com/zh_tw/products/storage/cards 3) This URI will be deprecated since X14/H14
/redfish/v1/Chassis/HA-RAID.[controller_num].StorageEnclosure.[enclosure_num]/Drives/Disk.Bay.[disk_num]/Actions/Drive.SecureErase	SFT-DCMS-SINGLE	● SAS3108, SAS3408, SAS39xx, SAS38xxIR ● https://www.supermicro.com/en/products/storage/cards
/redfish/v1/Chassis/HA-RAID.[controller_num].StorageEnclosure.[enclosure_num]/Drives/Disk.Bay.[disk_num]/Actions/Oem/SmcDrive.SecureEraseAbort	SFT-DCMS-SINGLE	● SAS3108, SAS3408, SAS39xx, SAS38xxIR ● https://www.supermicro.com/en/products/storage/cards
/redfish/v1/Chassis/HA-RAID.[controller_num].StorageEnclosure.[enclosure_num]/Drives/Disk.Bay.[disk_num]/Actions/Oem/SmcDrive.AssignSpare	SFT-DCMS-SINGLE	● SAS3108, SAS3408, SAS39xx, SAS38xxIR ● https://www.supermicro.com/en/products/storage/cards
/redfish/v1/Chassis/HA-RAID.[controller_num].StorageEnclosure.[enclosure_num]/Drives/Disk.Bay.[disk_num]/Actions/Oem/SmcDrive.DeleteSpare	SFT-DCMS-SINGLE	● SAS3108, SAS3408, SAS39xx, SAS38xxIR ● https://www.supermicro.com/en/products/storage/cards
/redfish/v1/Chassis/HA-RAID.[controller_num].StorageEnclosure.[enclosure_num]/Drives/Disk.Bay.[disk_num]/Oem/Supermicro/IndicateActionInfo	SFT-DCMS-SINGLE	● SAS3108, SAS3408, SAS39xx, SAS38xxIR ● https://www.supermicro.com/en/products/storage/cards
/redfish/v1/Chassis/HA-RAID.[controller_num].StorageEnclosure.[enclosure_num]/Drives/Disk.Bay.[disk_num]/Oem/Supermicro/AssignSpareActionInfo	SFT-DCMS-SINGLE	● SAS3108, SAS3408, SAS39xx, SAS38xxIR ● https://www.supermicro.com/en/products/storage/cards
/redfish/v1/Chassis/HBA.[controller_num].StorageEnclosure.[enclosure_num]	Standard	● For SAS3008, SAS32xx, SAS36xx, SAS38xxIT ● https://www.supermicro.com/en/products/storage/cards
/redfish/v1/Chassis/HBA.[controller_num].StorageEnclosure.[enclosure_num]/Drives/Disk.Bay.[disk_num]	SFT-DCMS-SINGLE	● For SAS3008, SAS32xx, SAS36xx, SAS38xxIT ● https://www.supermicro.com/en/products/storage/cards
/redfish/v1/Chassis/HBA.[controller_num].StorageEnclosure.[enclosure_num]/Drives/Disk.Bay. [disk_num]/Actions/Oem/SmcDrive.Indicate	SFT-DCMS-SINGLE	● Light on physical drive LED indicator ● SAS3008, SAS32xx, SAS36xx, SAS38xxIT ● https://www.supermicro.com/zh_tw/products/storage/cards ● This URI will be deprecated since X14/H14
/redfish/v1/Chassis/HBA.[controller_num].StorageEnclosure.[enclosure_num]/Drives/Disk.Bay.[disk_num]/IndicateActionInfo	SFT-DCMS-SINGLE	● Light on physical drive LED indicator ● SAS3008, SAS32xx, SAS36xx, SAS38xxIT ● https://www.supermicro.com/zh_tw/products/storage/cards ● This URI will be deprecated since X14/H14
/redfish/v1/Chassis/HBA.[controller_num].StorageEnclosure.[enclosure_num]/Drives/Disk.Bay. [disk_num]/Oem/Supermicro/IndicateActionInfo	SFT-DCMS-SINGLE	● Light on physical drive LED indicator ● SAS3008, SAS32xx, SAS36xx, SAS38xxIT ● https://www.supermicro.com/zh_tw/products/storage/cards
/redfish/v1/Chassis/StorageBackplane	SFT-DCMS-SINGLE	
/redfish/v1/Chassis/StorageBackplane/Drives/Disk.Bay.[disk_num]	SFT-DCMS-SINGLE	
/redfish/v1/Chassis/NVMeSSD.[pcie_controller_num].Group.[group_num].StorageBackplane	Standard	
/redfish/v1/Chassis/NVMeSSD.[pcie_controller_num].Group.[group_num].StorageBackplane/Drives/Disk.Bay.[disk_num]	SFT-DCMS-SINGLE	
/redfish/v1/Chassis/NVMeSSD.[pcie_controller_num].Group.[group_num].StorageBackplane/Drives/Disk.Bay. [disk_num]/Actions/Oem/SmcDrive.Indicate	SFT-DCMS-SINGLE	Light on physical drive LED indicator
/redfish/v1/Chassis/NVMeSSD.[pcie_controller_num].Group.[group_num].StorageBackplane/Drives/Disk.Bay. [disk_num]/Oem/Supermicro/IndicateActionInfo	SFT-DCMS-SINGLE	
/redfish/v1/Chassis/MRVL.HA-RAID.[controller_num].StorageModule	Standard	Marvell SE9230

/redfish/v1/Chassis/MRVL.HA-RAID.[controller_num].StorageModule/Drives/Disk.Bay.[disk_num]	SFT-DCMS-SINGLE	
/redfish/v1/AccountService/Roles	Standard	
/redfish/v1/AccountService/Roles/Administrator	Standard	
/redfish/v1/AccountService/Roles/Operator	Standard	
/redfish/v1/AccountService/Roles/ReadOnly	Standard	
/redfish/v1/AccountService/Accounts	Standard	
/redfish/v1/AccountService/Accounts/[account_num]	Standard	
/redfish/v1/Managers/1	Standard	
/redfish/v1/Managers/1/Actions/Manager.Reset	Standard	BMC cold reset
/redfish/v1/Managers/1/Actions/Oem/SmcManagerConfig.Reset	Standard	Set BMC to “factory default”
/redfish/v1/Managers/1/Oem/Supermicro/ResetActionInfo	Standard	

/redfish/v1/Managers/1/SerialInterfaces	SFT-OOB-LIC, SFT-DCMS-SINGLE	
/redfish/v1/Managers/1/SerialInterfaces/[service_num]	SFT-OOB-LIC, SFT-DCMS-SINGLE	
/redfish/v1/Managers/1/LogServices	Standard	
/redfish/v1/Managers/1/LogServices/Log1	Standard	
/redfish/v1/Managers/1/LogServices/Log1/Actions/LogService.ClearLog	Standard	
/redfish/v1/Managers/1/LogServices/Log1/Entries	Standard	
/redfish/v1/Managers/1/LogServices/Log1/Entries/[log_num]	Standard	
(redfish 1.8 supported VM APIs)	Standard	
/redfish/v1/Managers/1/VirtualMedia	Standard	Supported Mounting Method: HTTP/CIFS/SAMBA
/redfish/v1/Managers/1/VirtualMedia/CD[mounted_dev_num]	Standard	● User must mount image first ● This URI will be Deprecated since X14/H14
redfish/v1/Managers/1/VirtualMedia/CD[mounted_dev_num]/Actions/VirtualMedia.InsertMedia	Standard for Samba CIFS; SFT-OOB-LIC/SFT-DCMS-SINGLE for HTTP and HTTPS	● SFT-OOB-LIC or SFT-DCMS-SINGLE is required for http and https mount ● This URI will be Deprecated since X14/H14
/redfish/v1/Managers/1/VirtualMedia/CD[mounted_dev_num]/InsertMediaActionInfo	SFT-OOB-LIC, SFT-DCMS-SINGLE	This URI will be Deprecated since X14/H14
redfish/v1/Managers/1/VirtualMedia/CD[mounted_dev_num]/Actions/VirtualMedia.EjectMedia	Standard	This URI will be Deprecated since X14/H14
/redfish/v1/Managers/1/VirtualMedia/Floppy[mounted_dev_num]	Standard	● User must mount image before ● This URI will be Deprecated since X14/H14
/redfish/v1/Managers/1/VirtualMedia/VirtualMedia[mounted_dev_num]	Standard	● Support since Redfish 2020.3 ■X13/H13 (BMC FW 1.01.xx) ■X12/H12 (BMC FW 1.03.xx) ● User must mount image first
/redfish/v1/Managers/1/VirtualMedia/VirtualMedia[mounted_dev_num]/Actions/VirtualMedia.InsertMedia	Standard for Samba, CIFS; SFT-OOB-LIC/SFT-DCMS-SINGLE for HTTP and HTTPS	● Support since Redfish 2020.3 ■X13/H13 (BMC FW 1.01.xx) ■X12/H12 (BMC FW 1.03.xx) ● SFT-OOB-LIC or SFT-DCMS-SINGLE is required for http and https moun
/redfish/v1/Managers/1/VirtualMedia/VirtualMedia[mounted_dev_num]/InsertMediaActionInfo	SFT-OOB-LIC, SFT-DCMS-SINGLE	● Support since Redfish 2020.3 ■X13/H13 (BMC FW 1.01.xx) ■X12/H12 (BMC FW 1.03.xx)
/redfish/v1/Managers/1/VirtualMedia/VirtualMedia[mounted_dev_num]/Actions/VirtualMedia.EjectMedia	Standard	● Support since Redfish 2020.3 ■X13/H13 (BMC FW 1.01.xx) ■X12/H12 (BMC FW 1.03.xx)
/redfish/v1/Managers/1/EthernetInterfaces	Standard	
/redfish/v1/Managers/1/EthernetInterfaces/[eth_num]	Standard	
/redfish/v1/Managers/1/EthernetInterfaces/ToHost	Standard	
/redfish/v1/Managers/1/HostInterfaces	SFT-OOB-LIC, SFT-DCMS-SINGLE	
/redfish/v1/Managers/1/HostInterfaces/1	SFT-OOB-LIC, SFT-DCMS-SINGLE	
/redfish/v1/Managers/1/HostInterfaces/1/HostEthernetInterfaces	SFT-OOB-LIC, SFT-DCMS-SINGLE	
/redfish/v1/Managers/1/NetworkProtocol	Standard	

/redfish/v1/Managers/1/NetworkProtocol/HTTPS/Certificates	SFT-DCMS-SINGLE	
/redfish/v1/Managers/1/NetworkProtocol/HTTPS/Certificates/1	SFT-DCMS-SINGLE	
/redfish/v1/Managers/1/NetworkProtocol/HTTPS/Certificates/1/Actions/Certificate.Rekey	SFT-DCMS-SINGLE	
/redfish/v1/Managers/1/NetworkProtocol/HTTPS/Certificates/1/RekeyActionInfo	SFT-DCMS-SINGLE	
/redfish/v1/Managers/1/NetworkProtocol/HTTPS/Certificates/1/Actions/Certificate.Renew	SFT-DCMS-SINGLE	
/redfish/v1/Managers/1/Oem/Supermicro/FanMode	Standard	
/redfish/v1/Managers/1/Oem/Supermicro/MemoryPFA	SFT-DCMS-SINGLE	• This URI only can be supported on Intel platform • This feature can be supported on X13 and future platforms
/redfish/v1/Managers/1/Oem/Supermicro/MemoryHealthComp	SFT-DCMS-SINGLE	• This URI only can be supported on Intel platform • This feature can be supported on X13 and future platforms
/redfish/v1/Managers/1/Oem/Supermicro/MouseMode	Standard	
/redfish/v1/Managers/1/Oem/Supermicro/Snooping	Standard	
/redfish/v1/Managers/1/Oem/Supermicro/Syslog	Standard	
/redfish/v1/Managers/1/Oem/Supermicro/RADIUS	Standard	
/redfish/v1/Managers/1/Oem/Supermicro/SMCRAKP	Standard	
/redfish/v1/Managers/1/Oem/Supermicro/IPAccessControl	Standard	
/redfish/v1/Managers/1/Oem/Supermicro/IPAccessControl/FilterRules	Standard	
/redfish/v1/Managers/1/Oem/Supermicro/IPAccessControl/FilterRules/[rule_num]	Standard	
/redfish/v1/Managers/1/Oem/Supermicro/NTP	Standard	
/redfish/v1/Managers/1/Oem/Supermicro/LLDP	Standard	
/redfish/v1/Managers/1/Oem/Supermicro/SmartPower	Standard	
/redfish/v1/Managers/1/Oem/Supermicro/IKVM	Standard	iKVM over HTML5 can be supported
/redfish/v1/Managers/1/Oem/Supermicro/KCSInterface	Standard	
/redfish/v1/Managers/1/Oem/Supermicro/SysLockdown	SFT-DCMS-SINGLE for PATCH	
/redfish/v1/Managers/1/LicenseManager	Standard	
/redfish/v1/Managers/1/LicenseManager/Actions/LicenseManager.ActivateLicense	Standard	
/redfish/v1/Managers/1/LicenseManager/QueryLicense	Standard	
/redfish/v1/Managers/1/LicenseManager/Actions/LicenseManager.ClearLicense	Standard	
/redfish/v1/Managers/bmc	Standard	
/redfish/v1/Systems/1	SFT-DCMS-SINGLE for BootOption/Boot Next	• “BootOrder” property does not support PATCH method, since X13/H13 platform • To configure system boot device order should be via FixedBootOrder (/redfish/v1/Systems/1/Oem/Supermicro/FixedBootOrder)
/redfish/v1/Systems/1/Actions/ComputerSystem.Reset	Standard	System reset
/redfish/v1/Systems/1/ResetActionInfo	Standard	
/redfish/v1/Systems/1/Processors	Standard	
/redfish/v1/Systems/1/Processors/[processor_num]	Standard	
/redfish/v1/Systems/1/ProcessorSummary/ProcessorMetrics	SFT-DCMS-SINGLE	BIOS-BMC joint feature BIOS FW update might be required
/redfish/v1/Systems/1/Memory	Standard	
/redfish/v1/Systems/1/Memory/[memory_num]	Standard	
/redfish/v1/Systems/1/Memory/1/MemoryMetrics	SFT-DCMS-SINGLE	
redfish/v1/Systems/1/MemorySummary/MemoryMetrics	SFT-DCMS-SINGLE	BIOS-BMC joint feature BIOS FW update might be required
/redfish/v1/Systems/1/EthernetInterfaces	Standard	
/redfish/v1/Systems/1/EthernetInterfaces/[eth_num]	Standard	BIOS-BMC-TAS joint feature BIOS FW update might be required
/redfish/v1/Systems/1/EthernetInterfaces/[eth_num]/VLANs	Standard	
/redfish/v1/Systems/1/EthernetInterfaces/[eth_num]/VLANs/[vlan_instance]	Standard	
/redfish/v1/Systems/1/EthernetInterfaces/ToManager	Standard	
/redfish/v1/Systems/1/SimpleStorage	SFT-OOB-LIC, SFT-DCMS-SINGLE	
/redfish/v1/Systems/1/SimpleStorage/[controller_num]	SFT-OOB-LIC, SFT-DCMS-SINGLE	
/redfish/v1/Systems/1/Storage	SFT-OOB-LIC, SFT-DCMS-SINGLE	
/redfish/v1/Systems/1/Storage/HA-RAID	SFT-DCMS-SINGLE	Storage AOC installation is required SAS3108, SAS3408, SAS39xx, SAS38xxIR

/redfish/v1/Systems/1/Storage/HA-RAID/Volumes	SFT-DCMS-SINGLE	Storage AOC installation is required;
/redfish/v1/Systems/1/Storage/HA-RAID/Volumes/Controller.[controller_num].Volume.[volume_num]	SFT-DCMS-SINGLE	Storage AOC installation is required SAS3108, SAS3408, SAS39xx, SAS38xxIR
/redfish/v1/Systems/1/Storage/HA-RAID/Volumes/Controller.[controller_num].Volume.[volume_num]/Actions/Oem/SmcVolume.Indicate	SFT-DCMS-SINGLE	• Storage AOC installation is required • SAS3108, SAS3408, SAS39xx, SAS38xxIR • light on virtual drive LED indicator
/redfish/v1/Systems/1/Storage/HA-RAID/Volumes/Controller.[controller_num].Volume.[volume_num]/Oem/Supermicro/IndicateActionInfo	SFT-DCMS-SINGLE	Storage AOC installation is required.
/redfish/v1/Systems/1/Storage/HA-RAID/Volumes/Controller.[controller_num].Volume.[volume_num]/Actions/Oem/SmcVolume.Delete	SFT-DCMS-SINGLE	• Storage AOC installation is required • SAS3108, SAS3408, SAS39xx, SAS38xxIR • To delete specific virtual drive in logical view
/redfish/v1/Systems/1/Storage/HA-RAID/Actions/Oem/SmcStorage.CreateVolume	SFT-DCMS-SINGLE	• Storage AOC installation is required • SAS3108, SAS3408, SAS39xx, SAS38xxIR • create virtual drives
/redfish/v1/Systems/1/Storage/HA-RAID/Actions/Oem/SmcStorage.ClearVolumes	SFT-DCMS-SINGLE	• Storage AOC installation is required • SAS3108, SAS3408, SAS39xx, SAS38xxIR; To clear all configuration in logical view
/redfish/v1/Systems/1/Storage/HA-RAID/Oem/Supermicro/ClearVolumesActionInfo	SFT-DCMS-SINGLE	Storage AOC installation is required.
/redfish/v1/Systems/1/Storage/HA-RAID/Actions/Oem/SmcHARAIDController.Save	SFT-DCMS-SINGLE	• Storage AOC installation is required • For SAS3108, SAS3408, SAS39xx, SAS38xxIR • save controller's "BIOS Boot Mode"
/redfish/v1/Systems/1/Storage/HA-RAID/Oem/Supermicro/SaveActionInfo	SFT-DCMS-SINGLE	Storage AOC installation is required.
/redfish/v1/Systems/1/Storage/HBA	SFT-DCMS-SINGLE	Storage AOC installation is required.
/redfish/v1/Systems/1/Storage/HBA/Volumes	SFT-DCMS-SINGLE	Storage AOC installation is required.
/redfish/v1/Systems/1/Storage/RAIDIntegrated	SFT-DCMS-SINGLE	Storage AOC installation is required.
/redfish/v1/Systems/1/Storage/RAIDIntegrated/Volumes	SFT-DCMS-SINGLE	Storage AOC installation is required.
/redfish/v1/Systems/1/Storage/RAIDIntegrated/Volumes/[volume_num]	SFT-DCMS-SINGLE	Storage AOC installation is required.
/redfish/v1/Systems/1/Storage/SATAEmbedded	SFT-DCMS-SINGLE	Storage AOC installation is required.
/redfish/v1/Systems/1/Storage/SATAEmbedded/Volumes	SFT-DCMS-SINGLE	Storage AOC installation is required.
/redfish/v1/Systems/1/Storage/SATAEmbedded/Volumes/[volume_num]	SFT-DCMS-SINGLE	Storage AOC installation is required.
/redfish/v1/Systems/1/Storage/MRVL.HA-RAID	SFT-DCMS-SINGLE	Storage AOC installation is required Marvell SE9230
/redfish/v1/Systems/1/Storage/MRVL.HA-RAID/Volumes	SFT-DCMS-SINGLE	Storage AOC installation is required Marvell SE9230
/redfish/v1/Systems/1/Storage/MRVL.HA-RAID/Volumes/Controller.[controller_num].Volume.[volume_num]	SFT-DCMS-SINGLE	Storage AOC installation is required Marvell SE9230
/redfish/v1/Systems/1/Storage/MRVL.HA-RAID/Volumes/Controller.[controller_num].Volume.[volume_num]/Actions/Oem/SmcVolume.DeleteVD	SFT-DCMS-SINGLE	Storage AOC installation is required Marvell SE9230 To delete specific virtual drive in logical view
/redfish/v1/Systems/1/Storage/MRVL.HA-RAID/Volumes/Controller.[controller_num].Volume.[volume_num]/Actions/Oem/SmcVolume.RebuildVD	SFT-DCMS-SINGLE	Storage AOC installation is required Marvell SE9230 To rebuild specific virtual drive in logical view
/redfish/v1/Systems/1/Storage/MRVL.HA-RAID/Volumes/Controller.[controller_num].Volume.[volume_num]/Actions/Oem/SmcVolume.ImportVD	SFT-DCMS-SINGLE	Storage AOC installation is required Marvell SE9230 To import specific virtual drive in logical view
/redfish/v1/Systems/1/Storage/MRVL.HA-RAID/Actions/Oem/SmcStorage.CreateVD	SFT-DCMS-SINGLE	For Marvell SE9230; create virtual drives
/redfish/v1/Systems/1/Storage/NVMeSSD	SFT-DCMS-SINGLE	Storage AOC installation is required.
/redfish/v1/Systems/1/Bios	SFT-DCMS-SINGLE	BIOS current settings
/redfish/v1/Systems/1/Bios/SD	SFT-DCMS-SINGLE	BIOS pending settings
/redfish/v1/Systems/1/Bios/Actions/Bios.ResetBios	SFT-DCMS-	Reset BIOS settings to default

	SINGLE	
/redfish/v1/Systems/1/Bios/Actions/Bios.ChangePassword	SFT-DCMS-SINGLE	Change BIOS booting password
/redfish/v1/Systems/1/Bios/ChangePasswordActionInfo	SFT-DCMS-SINGLE	
/redfish/v1/Systems/1/LogServices	Standard	
/redfish/v1/Systems/1/LogServices/Log1	Standard	
/redfish/v1/Systems/1/LogServices/Log1/Actions/LogService.ClearLog	Standard	Clear system management logs
/redfish/v1/Systems/1/LogServices/Log1/Actions/Oem/SmcLogService.ClearAcknowledgements	SFT-DCMS-SINGLE	Clear acknowledgements of system management logs
/redfish/v1/Systems/1/LogServices/Log1/Entries	Standard	
/redfish/v1/Systems/1/LogServices/Log1/Entries/[log_num]	Standard	PATCH method for acknowledgement
/redfish/v1/Systems/1/SecureBoot	SFT-DCMS-SINGLE	BIOS SecureBoot settings
/redfish/v1/Systems/1/SecureBoot/SecureBootDatabases	SFT-DCMS-SINGLE	Supported since X13/H13
/redfish/v1/Systems/1/SecureBoot/SecureBootDatabases/dbt	SFT-DCMS-SINGLE	Supported since X13/H13
/redfish/v1/Systems/1/SecureBoot/SecureBootDatabases/dbr	SFT-DCMS-SINGLE	Supported since X13/H13
/redfish/v1/Systems/1/SecureBoot/SecureBootDatabases/dbx	SFT-DCMS-SINGLE	Supported since X13/H13
/redfish/v1/Systems/1/SecureBoot/SecureBootDatabases/PK	SFT-DCMS-SINGLE	Supported since X13/H13
/redfish/v1/Systems/1/SecureBoot/SecureBootDatabases/KEK	SFT-DCMS-SINGLE	Supported since X13/H13
/redfish/v1/Systems/1/SecureBoot/SecureBootDatabases/db	SFT-DCMS-SINGLE	Supported since X13/H13
/redfish/v1/Systems/1/SecureBoot/SecureBootDatabases/db/Certificates	SFT-DCMS-SINGLE	BIOS-BMC joint feature. ● BIOS FW update might be required. ● Redfish URI will be generated as signatures, or certificates or both of it. Supported since X13/H13.
/redfish/v1/Systems/1/SecureBoot/SecureBootDatabases/dbt/Certificates	SFT-DCMS-SINGLE	BIOS-BMC joint feature. ● BIOS FW update might be required. ● Redfish URI will be generated as signatures, or certificates or both of it. Supported since X13/H13.
/redfish/v1/Systems/1/SecureBoot/SecureBootDatabases/dbr/Certificates	SFT-DCMS-SINGLE	BIOS-BMC joint feature. ● BIOS FW update might be required. ● Redfish URI will be generated as signatures, or certificates or both of it. Supported since X13/H13.
/redfish/v1/Systems/1/SecureBoot/SecureBootDatabases/dbx/Certificates	SFT-DCMS-SINGLE	BIOS-BMC joint feature. ● BIOS FW update might be required. ● Redfish URI will be generated as signatures, or certificates or both of it. Supported since X13/H13.
/redfish/v1/Systems/1/SecureBoot/SecureBootDatabases/PK/Certificates	SFT-DCMS-SINGLE	BIOS-BMC joint feature. ● BIOS FW update might be required. ● Redfish URI will be generated as signatures, or certificates or both of it. Supported since X13/H13.
/redfish/v1/Systems/1/SecureBoot/SecureBootDatabases/KEK/Certificates	SFT-DCMS-SINGLE	BIOS-BMC joint feature. ● BIOS FW update might be required. ● Redfish URI will be generated as signatures, or certificates or both of it. Supported since X13/H13.
/redfish/v1/Systems/1/SecureBoot/SecureBootDatabases/db/Signatures	SFT-DCMS-SINGLE	BIOS-BMC joint feature. ● BIOS FW update might be required. ● Redfish URI will be generated as signatures, or certificates or both of it. Supported since X13/H13.
/redfish/v1/Systems/1/SecureBoot/SecureBootDatabases/dbt/Signatures	SFT-DCMS-SINGLE	BIOS-BMC joint feature. ● BIOS FW update might be required. ● Redfish URI will be generated as signatures, or certificates or both of it. Supported since X13/H13.
/redfish/v1/Systems/1/SecureBoot/SecureBootDatabases/dbr/Signatures	SFT-DCMS-SINGLE	BIOS-BMC joint feature. ● BIOS FW update might be required. ● Redfish URI will be generated as signatures, or certificates or both of it. Supported since X13/H13.

/redfish/v1/Systems/1/SecureBoot/SecureBootDatabases/dbx/Signatures	SFT-DCMS-SINGLE	BIOS-BMC joint feature. ● BIOS FW update might be required. ● Redfish URI will be generated as signatures, or certificates or both of it. Supported since X13/H13.
/redfish/v1/Systems/1/SecureBoot/SecureBootDatabases/PK/Signatures	SFT-DCMS-SINGLE	BIOS-BMC joint feature. ● BIOS FW update might be required. ● Redfish URI will be generated as signatures, or certificates or both of it. Supported since X13/H13.
/redfish/v1/Systems/1/SecureBoot/SecureBootDatabases/KEK/Signatures	SFT-DCMS-SINGLE	BIOS-BMC joint feature. ● BIOS FW update might be required. ● Redfish URI will be generated as signatures, or certificates or both of it. Supported since X13/H13.
/redfish/v1/Systems/1/SecureBoot/SecureBootDatabases/PK/Certificates/[num]	SFT-DCMS-SINGLE	BIOS-BMC joint feature. ● BIOS FW update might be required. ● Redfish URI will be generated as signatures, or certificates or both of it. Supported since X13/H13.
/redfish/v1/Systems/1/SecureBoot/SecureBootDatabases/KEK/Certificates/[num]	SFT-DCMS-SINGLE	BIOS-BMC joint feature. ● BIOS FW update might be required. ● Redfish URI will be generated as signatures, or certificates or both of it. Supported since X13/H13.
/redfish/v1/Systems/1/SecureBoot/SecureBootDatabases/db/Certificates/[num]	SFT-DCMS-SINGLE	BIOS-BMC joint feature. ● BIOS FW update might be required. ● Redfish URI will be generated as signatures, or certificates or both of it. Supported since X13/H13.
/redfish/v1/Systems/1/SecureBoot/SecureBootDatabases/dbr/Certificates/[num]	SFT-DCMS-SINGLE	BIOS-BMC joint feature. ● BIOS FW update might be required. ● Redfish URI will be generated as signatures, or certificates or both of it. Supported since X13/H13.
/redfish/v1/Systems/1/SecureBoot/SecureBootDatabases/dbx/Certificates/[num]	SFT-DCMS-SINGLE	BIOS-BMC joint feature. ● BIOS FW update might be required. ● Redfish URI will be generated as signatures, or certificates or both of it. Supported since X13/H13.
/redfish/v1/Systems/1/SecureBoot/SecureBootDatabases/dbt/Certificates/[num]	SFT-DCMS-SINGLE	BIOS-BMC joint feature. ● BIOS FW update might be required. ● Redfish URI will be generated as signatures, or certificates or both of it. Supported since X13/H13.
/redfish/v1/Systems/1/SecureBoot/SecureBootDatabases/PK/Signatures/[num]	SFT-DCMS-SINGLE	BIOS-BMC joint feature. ● BIOS FW update might be required. ● Redfish URI will be generated as signatures, or certificates or both of it. Supported since X13/H13.
/redfish/v1/Systems/1/SecureBoot/SecureBootDatabases/KEK/Signatures/[num]	SFT-DCMS-SINGLE	BIOS-BMC joint feature. ● BIOS FW update might be required. ● Redfish URI will be generated as signatures, or certificates or both of it. Supported since X13/H13.
/redfish/v1/Systems/1/SecureBoot/SecureBootDatabases/db/Signatures/[num]	SFT-DCMS-SINGLE	BIOS-BMC joint feature. ● BIOS FW update might be required. ● Redfish URI will be generated as signatures, or certificates or both of it. Supported since X13/H13.
/redfish/v1/Systems/1/SecureBoot/SecureBootDatabases/dbr/Signatures/[num]	SFT-DCMS-SINGLE	BIOS-BMC joint feature. ● BIOS FW update might be required. ● Redfish URI will be generated as signatures, or certificates or both of it. Supported since X13/H13.
/redfish/v1/Systems/1/SecureBoot/SecureBootDatabases/dbx/Signatures/[num]	SFT-DCMS-SINGLE	BIOS-BMC joint feature. ● BIOS FW update might be required. ● Redfish URI will be generated as signatures, or certificates or both of it. Supported since X13/H13.
/redfish/v1/Systems/1/SecureBoot/SecureBootDatabases/dbt/Signatures/[num]	SFT-DCMS-SINGLE	BIOS-BMC joint feature. ● BIOS FW update might be required. ● Redfish URI will be generated as signatures, or certificates or both of it. Supported since X13/H13.

/redfish/v1/Systems/1/SecureBoot/Actions/SecureBoot.ResetKeys	SFT-DCMS-SINGLE	Reset key for secure boot
/redfish/v1/Systems/1/SecureBoot/ResetKeysActionInfo	SFT-DCMS-SINGLE	
/redfish/v1/Systems/1/BootOptions	None	
/redfish/v1/Systems/1/BootOptions/num	None	• This URI does not support PATCH method, since X13/H13 platform • To configure system boot device order should be via FixedBootOrder (/redfish/v1/Systems/1/Oem/Supermicro/FixedBootOrder)
/redfish/v1/Systems/1/Oem/Supermicro/FixedBootOrder	SFT-DCMS-SINGLE	• To configure system boot device order via this URI • Supported since X13/H13 platforms
/redfish/v1/Systems/1/NetworkInterfaces	SFT-OOB-LIC, SFT-DCMS-SINGLE	
/redfish/v1/Systems/1/NetworkInterfaces/[ni_num]	SFT-OOB-LIC, SFT-DCMS-SINGLE	
/redfish/v1/Systems/1/NetworkInterfaces/[ni_num]/NetworkPorts	SFT-OOB-LIC, SFT-DCMS-SINGLE	
/redfish/v1/Systems/1/NetworkInterfaces/[ni_num]/NetworkDeviceFunctions	SFT-OOB-LIC, SFT-DCMS-SINGLE	
/redfish/v1/Systems/1/Certificates/	Standard	• RoT2.0 is required • This URI can be supported since X13/H13
/redfish/v1/Systems/1/Certificates/[num]	Standard	• RoT2.0 is required • This URI can be supported since X13/H13
/redfish/v1/Systems/1/Oem/Supermicro/NodeManager	SFT-OOB-LIC, SFT-DCMS-SINGLE	This Redfish API can only be supported on Intel Platform with Intel ME
/redfish/v1/Systems/1/Oem/Supermicro/NodeManager/Actions/SmcNodeManager.ClearAllPolicies	SFT-OOB-LIC, SFT-DCMS-SINGLE	This Redfish API can only be supported on Intel Platform with Intel ME
/redfish/v1/EventService/Subscriptions	SFT-OOB-LIC, SFT-DCMS-SINGLE for SNMPv3/redfish	
/redfish/v1/EventService/Subscriptions/[destination_num]	SFT-OOB-LIC, SFT-DCMS-SINGLE for SNMPv3/redfish	
/redfish/v1/EventService/Actions/EventService.SubmitTestEvent	Standard	
/redfish/v1/EventService/SubmitTestEventActionInfo	Standard	
/redfish/v1/UpdateService/upload	SFT-DCMS-SINGLE (HGX, PSU, Storage AOC, DCPMM DIMM, Network AOC)	Post Body with multipart/form-data for MultipartHttpPushUri
/redfish/v1/UpdateService/FirmwareInventory	Standard	
/redfish/v1/UpdateService/FirmwareInventory/BMC	Standard	
/redfish/v1/UpdateService/FirmwareInventory/Backup_BMC	Standard	
/redfish/v1/UpdateService/FirmwareInventory/Golden_BMC	Standard	
/redfish/v1/UpdateService/FirmwareInventory/Staging_BMC	Standard	
/redfish/v1/UpdateService/FirmwareInventory/BIOS	Standard	
/redfish/v1/UpdateService/FirmwareInventory/Backup_BIOS	Standard	
/redfish/v1/UpdateService/FirmwareInventory/Golden_BIOS	Standard	
/redfish/v1/UpdateService/FirmwareInventory/Staging_BIOS	Standard	
/redfish/v1/UpdateService/FirmwareInventory/CPLD_Motherboard	Standard	
/redfish/v1/UpdateService/FirmwareInventory/Golden_CPLD_Motherboard	Standard	
/redfish/v1/UpdateService/FirmwareInventory/Staging_CPLD_Motherboard	Standard	
/redfish/v1/UpdateService/FirmwareInventory/BIOS_ME	Standard	This URI can only be supported in Intel Platform
/redfish/v1/UpdateService/FirmwareInventory/Capsule_ME	Standard	This URI can only be supported in Intel Platform since X13
/redfish/v1/UpdateService/FirmwareInventory/Staging_Capsule_ME	Standard	This URI can only be supported in Intel Platform since X13
/redfish/v1/UpdateService/FirmwareInventory/Capsule_BIOS	Standard	This URI can only be supported in Intel Platform since X13

/redfish/v1/UpdateService/FirmwareInventory/Staging_Capsule_BIOS	Standard	This URI can only be supported in Intel Platform since X13
/redfish/v1/UpdateService/FirmwareInventory/Capsule_MCU	Standard	This URI can only be supported in Intel Platform since X13
/redfish/v1/UpdateService/FirmwareInventory/Staging_Capsule_MCU	Standard	This URI can only be supported in Intel Platform since X13
/redfish/v1/UpdateService/FirmwareInventory/StagingPMem	Standard	This URI can only be supported in Intel Platform since X13
/redfish/v1/UpdateService/FirmwareInventory/PowerSupply[power_supply_num]	Standard	
/redfish/v1/UpdateService/FirmwareInventory/NIC[aoc_card_num]	Standard	
/redfish/v1/UpdateService/FirmwareInventory/PMem[dcpmm_num]	Standard	This URI can only be supported in Intel Platform
/redfish/v1/UpdateService/FirmwareInventory/Broadcom[broadcom_num]	Standard	
/redfish/v1/UpdateService/FirmwareInventory/Marvell[marvell_num]	Standard	
/redfish/v1/UpdateService/FirmwareInventory/GPU[gpu_num]	Standard	
/redfish/v1/UpdateService/FirmwareInventory/HGX_A100	Standard	
/redfish/v1/UpdateService/Actions/UpdateService.SimpleUpdate	SFT-DCMS-SINGLE	
/redfish/v1/UpdateService/SimpleUpdateActionInfo	SFT-DCMS-SINGLE	
/redfish/v1/UpdateService/Actions/UpdateService.StartUpdate	Standard	
/redfish/v1/UpdateService/Actions/Oem/SmcUpdateService.Install	SFT-DCMS-SINGLE for FW Recovery	
/redfish/v1/UpdateService/Oem/Supermicro/InstallActionInfo	SFT-DCMS-SINGLE	
/redfish/v1/UpdateService/Oem/Supermicro/SSLCert	Standard	View current SSL certification information
/redfish/v1/UpdateService/Oem/Supermicro/SSLCert/Actions/SmcSSLCert.Upload	Standard	Upload new SSL certification file
/redfish/v1/UpdateService/Oem/Supermicro/IPMIConfig	Standard	View current SSL certification information
/redfish/v1/UpdateService/Oem/Supermicro/IPMIConfig/Actions/SmcIPMIConfig.Upload	Standard	Upload new BMC configuration file to set BMC
/redfish/v1/UpdateService/Oem/Supermicro/IPMIConfig/Actions/SmcIPMIConfig.Download	Standard	Download BMC configuration as a file
/redfish/v1/UpdateService/Oem/Supermicro/FirmwareInventory	SFT-DCMS-SINGLE	• Supported on X12/H12 • Deprecated since X13/H13
/redfish/v1/UpdateService/Oem/Supermicro/FirmwareInventory/BMC	SFT-DCMS-SINGLE	• Supported on X12/H12 • Deprecated since X13/H13
/redfish/v1/UpdateService/Oem/Supermicro/FirmwareInventory/BMC/Actions/SmcFirmwareInventory.EnterUpdateMode	SFT-DCMS-SINGLE	• Supported on X12/H12 • Deprecated since X13/H13
/redfish/v1/UpdateService/Oem/Supermicro/FirmwareInventory/BMC/Actions/SmcFirmwareInventory.Upload	SFT-DCMS-SINGLE	• Supported on X12/H12 • Deprecated since X13/H13
/redfish/v1/UpdateService/Oem/Supermicro/FirmwareInventory/BMC/Actions/SmcFirmwareInventory.Update	SFT-DCMS-SINGLE	• Supported on X12/H12 • Deprecated since X13/H13
/redfish/v1/UpdateService/Oem/Supermicro/FirmwareInventory/BMC/UpdateActionInfo	SFT-DCMS-SINGLE	• Supported on X12/H12 • Deprecated since X13/H13
/redfish/v1/UpdateService/Oem/Supermicro/FirmwareInventory/BMC/Actions/SmcFirmwareInventory.Cancel	SFT-DCMS-SINGLE	• Supported on X12/H12 • Deprecated since X13/H13
/redfish/v1/UpdateService/Oem/Supermicro/FirmwareInventory/BIOS	SFT-DCMS-SINGLE	• Supported on X12/H12 • Deprecated since X13/H13
/redfish/v1/UpdateService/Oem/Supermicro/FirmwareInventory/BIOS/Actions/SmcFirmwareInventory.EnterUpdateMode	SFT-DCMS-SINGLE	• Supported on X12/H12 • Deprecated since X13/H13
/redfish/v1/UpdateService/Oem/Supermicro/FirmwareInventory/BIOS/Actions/SmcFirmwareInventory.Upload	SFT-DCMS-SINGLE	• Supported on X12/H12 • Deprecated since X13/H13
/redfish/v1/UpdateService/Oem/Supermicro/FirmwareInventory/BIOS/Actions/SmcFirmwareInventory.Update	SFT-DCMS-SINGLE	• Supported on X12/H12 • Deprecated since X13/H13
/redfish/v1/UpdateService/Oem/Supermicro/FirmwareInventory/BIOS/UpdateActionInfo	SFT-DCMS-SINGLE	• Supported on X12/H12 • Deprecated since X13/H13
/redfish/v1/UpdateService/Oem/Supermicro/FirmwareInventory/BIOS/Actions/SmcFirmwareInventory.Cancel	SFT-DCMS-SINGLE	• Supported on X12/H12 • Deprecated since X13/H13
/redfish/v1/UpdateService/Oem/Supermicro/FirmwareInventory/HARAIDController.[controller_num]	SFT-DCMS-SINGLE	Once the HARAID upgrade has completed successfully. please reset the system • Supported on X12/H12 • Deprecated since X13/H13
/redfish/v1/UpdateService/Oem/Supermicro/FirmwareInventory/MRVL_HARAIDController.[controller_num]	SFT-DCMS-SINGLE	Once the HARAID upgrade has completed successfully. please reset the system • Supported on X12/H12 • Deprecated since X13/H13
/redfish/v1/Registries/Base	Standard	

/redfish/v1/Registries/BiosAttributeRegistry	Standard	
/redfish/v1/Registries/Event	Standard	
/redfish/v1/Registries/SMC	Standard	
/redfish/v1/JsonSchemas/[variety_of_services]	Standard	
/redfish/v1/TaskService/Tasks	Standard	
/redfish/v1/TaskService/Tasks/[task_num]	Standard	
/redfish/v1/TaskMonitor/[task_num]	Standard	
/redfish/v1/CertificateService/CertificateLocations/	SFT-DCMS-SINGLE	
/redfish/v1/CertificateService/Actions/CertificateService.GenerateCSR	SFT-DCMS-SINGLE	
/redfish/v1/CertificateService/GenerateCSRActionInfo	SFT-DCMS-SINGLE	
/redfish/v1/CertificateService/Actions/CertificateService.ReplaceCertificate	SFT-DCMS-SINGLE	
/redfish/v1/CertificateService/ReplaceCertificateActionInfo	SFT-DCMS-SINGLE	
/redfish/v1/Oem/Supermicro/DumpService/Dumps	Standard	ROT Is required.
/redfish/v1/Oem/Supermicro/DumpService/CreateDumpActionInfo	Standard	• ROT Is required • This URI can only be supported Intel Platform
/redfish/v1/Oem/Supermicro/DumpService/Actions/SmcDumpService.CreateDump	SFT-DCMS-SINGLE	• ROT Is required • This URI can only be supported Intel Platform
/redfish/v1/Oem/Supermicro/DumpService/Actions/SmcDumpService.DeleteAll	SFT-DCMS-SINGLE	ROT Is required.
/redfish/v1/Oem/Supermicro/DumpService/Dumps/HostCrashDump	SFT-DCMS-SINGLE	ROT Is required.
/redfish/v1/Oem/Supermicro/DumpService/Dumps/HostCrashDump/Actions/SmcDump.Download	SFT-DCMS-SINGLE	ROT Is required.
/redfish/v1/Oem/Supermicro/DumpService/Dumps/BMCEvidenceDump	Standard	ROT Is required.
/redfish/v1/Oem/Supermicro/DumpService/Dumps/BMCEvidenceDump/Actions/SmcBMCEvidenceDump.Download	Standard	ROT Is required.
/redfish/v1/Oem/Supermicro/DumpService/Dumps/BMCEvidenceDump/Actions/SmcBMCEvidenceDump.Generate	Standard	ROT Is required.
/redfish/v1/Oem/Supermicro/DumpService/Dumps/BIOSEvidenceDump	Standard	ROT Is required.
/redfish/v1/Oem/Supermicro/DumpService/Dumps/BIOSEvidenceDump/Actions/SmcBIOSEvidenceDump.Download	Standard	ROT Is required.
/redfish/v1/Oem/Supermicro/DumpService/Dumps/BIOSEvidenceDump/Actions/SmcBIOSEvidenceDump.Generate	Standard	ROT Is required.
/redfish/v1/Oem/Supermicro/DumpService/Dumps/AttestationDump/	Standard	ROT2.0 is required and supported since X13/H13
/redfish/v1/Oem/Supermicro/DumpService/Dumps/AttestationDump/Actions/SmcAttestationDump.Download	Standard	ROT2.0 is required and supported since X13/H13
/redfish/v1/Oem/Supermicro/DumpService/Dumps/AttestationDump/Actions/SmcAttestationDump.Generate	Standard	ROT2.0 is required and supported since X13/H13
/redfish/v1/Oem/Supermicro/DumpService/Dumps/AttestationDump/Actions/SmcAttestationDump.Delete	Standard	ROT2.0 is required and supported since X13/H13
/redfish/v1/Oem/Supermicro/DumpService/Dumps/DriveSmartDump/	Standard	
/redfish/v1/Oem/Supermicro/DumpService/Dumps/DriveSmartDump/Actions/SmcDriveSmartDump.Download	Standard	
/redfish/v1/Oem/Supermicro/DumpService/Dumps/DriveSmartDump/Actions/SmcDriveSmartDump.Generate	Standard	
/redfish/v1/TelemetryService/MetricDefinitions	Standard	
/redfish/v1/TelemetryService/MetricDefinitions/AvgPowerConsumedHour	Standard	
/redfish/v1/TelemetryService/MetricDefinitions/MinPowerConsumedHour	Standard	
/redfish/v1/TelemetryService/MetricDefinitions/MaxPowerConsumedHour	Standard	
/redfish/v1/TelemetryService/MetricDefinitions/AvgPowerConsumedDay	Standard	
/redfish/v1/TelemetryService/MetricDefinitions/MinPowerConsumedDay	Standard	
/redfish/v1/TelemetryService/MetricDefinitions/MaxPowerConsumedDay	Standard	
/redfish/v1/TelemetryService/MetricDefinitions/AvgPowerConsumedWeek	Standard	
/redfish/v1/TelemetryService/MetricDefinitions/MinPowerConsumedWeek	Standard	
/redfish/v1/TelemetryService/MetricDefinitions/MaxPowerConsumedWeek	Standard	
/redfish/v1/TelemetryService/MetricReportDefinitions	Standard	
/redfish/v1/TelemetryService/MetricReportDefinitions/AvgPowerConsumptionHour	Standard	
/redfish/v1/TelemetryService/MetricReportDefinitions/MinPowerConsumptionHour	Standard	
/redfish/v1/TelemetryService/MetricReportDefinitions/MaxPowerConsumptionHour	Standard	
/redfish/v1/TelemetryService/MetricReportDefinitions/AvgPowerConsumptionDay	Standard	
/redfish/v1/TelemetryService/MetricReportDefinitions/MinPowerConsumptionDay	Standard	
/redfish/v1/TelemetryService/MetricReportDefinitions/MaxPowerConsumptionDay	Standard	
/redfish/v1/TelemetryService/MetricReportDefinitions/AvgPowerConsumptionWeek	Standard	

/redfish/v1/TelemetryService/MetricReportDefinitions/MinPowerConsumptionWeek	Standard	
/redfish/v1/TelemetryService/MetricReportDefinitions/MaxPowerConsumptionWeek	Standard	

/redfish/v1/TelemetryService/MetricReports	Standard	
/redfish/v1/TelemetryService/MetricReports/AvgPowerConsumptionHour	Standard	
/redfish/v1/TelemetryService/MetricReports/MinPowerConsumptionHour	Standard	
/redfish/v1/TelemetryService/MetricReports/MaxPowerConsumptionHour	Standard	
/redfish/v1/TelemetryService/MetricReports/AvgPowerConsumptionDay	Standard	
/redfish/v1/TelemetryService/MetricReports/MinPowerConsumptionDay	Standard	
/redfish/v1/TelemetryService/MetricReports/MaxPowerConsumptionDay	Standard	
/redfish/v1/TelemetryService/MetricReports/AvgPowerConsumptionWeek	Standard	
/redfish/v1/TelemetryService/MetricReports/MinPowerConsumptionWeek	Standard	
/redfish/v1/TelemetryService/MetricReports/MaxPowerConsumptionWeek	Standard	
/redfish/v1/Systems/1/Storage/VROC	SFT-OOB-LIC, SFT-DCMS-SINGLE	Supported on X12/H12 Deprecated since X13/H13
/redfish/v1/Systems/1/Storage/VROC/Actions/Oem/SmcVROC.CreateVolume	SFT-OOB-LIC, SFT-DCMS-SINGLE	Supported on X12/H12 Deprecated since X13/H13
/redfish/v1/Systems/1/Storage/VROC/Oem/Supermicro/CreateVolumeActionInfo	SFT-OOB-LIC, SFT-DCMS-SINGLE	Supported on X12/H12 Deprecated since X13/H13
/redfish/v1/Systems/1/Storage/VROC/Actions/Oem/SmcVROC.VolumeDelete	SFT-OOB-LIC, SFT-DCMS-SINGLE	Supported on X12/H12 Deprecated since X13/H13
/redfish/v1/Systems/1/Storage/VROC/Oem/Supermicro/VolumeDeleteActionInfo	SFT-OOB-LIC, SFT-DCMS-SINGLE	Supported on X12/H12 Deprecated since X13/H13
/redfish/v1/Systems/1/Storage/VROC/Actions/Oem/SmcVROC.DriveMarkSpare	SFT-OOB-LIC, SFT-DCMS-SINGLE	Supported on X12/H12 Deprecated since X13/H13
/redfish/v1/Systems/1/Storage/VROC/Actions/Oem/SmcVROC.DriveUnmarkSpare	SFT-OOB-LIC, SFT-DCMS-SINGLE	Supported on X12/H12 Deprecated since X13/H13
/redfish/v1/Systems/1/Storage/VROC/Oem/Supermicro/DriveMakerSpareActionInfo	SFT-OOB-LIC, SFT-DCMS-SINGLE	Supported on X12/H12 Deprecated since X13/H13
/redfish/v1/Systems/1/Storage/VROC/Oem/Supermicro/DriveUnmarkSpareActionInfo	SFT-OOB-LIC, SFT-DCMS-SINGLE	Supported on X12/H12 Deprecated since X13/H13
/redfish/v1/Systems/1/Storage/VROC/Volumes	SFT-OOB-LIC, SFT-DCMS-SINGLE	Supported on X12/H12 Deprecated since X13/H13
/redfish/v1/Systems/1/Storage/VROC/Volumes/[volume_num]	SFT-OOB-LIC, SFT-DCMS-SINGLE	Supported on X12/H12 Deprecated since X13/H13

22 Reference Links

- **Supermicro Redfish:**

  https://www.supermicro.com/solutions/Redfish.cfm

- **Supermicro on YouTube:**

  https://www.youtube.com/SupermicroSoftware

- **DMTF Redfish:**
  http://www.dmtf.org/standards/redfish
  http://redfish.dmtf.org/

- **Mockups:**

  http://redfish.dmtf.org/redfish/v1

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