

Intel® Rack Scale Design Rack Management Module (RMM)

API Specification

RESTFul API

December 2016

Revision 007



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Revision History

Revision	Description	Date
1.2.3.0	Changed API version number to 1.2.3 to be aligned with release versioning. Changed OEM property name from Intel:RackScale to Intel_RackScale. Property name DeliveryRetryIntervalInSeconds changed to DeliveryRetryIntervalSeconds. PATCH method is now not allowed for Description property. Moved ManagerForMBP property from Links to Links:Oem:Intel_Rackscale. Moved ContainedBy property from Links to Links:Oem:Intel_Rackscale. Moved Vlan Status property to Oem:Intel_Rackscale. Added odata.id property to Subscriptions collection.	September 6, 2016
1.2.1.01	Add manager info to NetworkProtocol	June 22, 2016
1.2.1.00	Updated to 1.2.1.00 version	April 5, 2016
1.2.0.92	Add support for Vlan	March 23, 2016
1.2.0.91	Fixed mismatch for Event Subscription	March 11, 2016
1.2.0.90	Fixed typo for Rack Scale Design	March 2, 2016
1.2.0.85	Replaced all RSA with Rack Scale Design or Rack Scale	February 19, 2016
1.2.0.80	Fix error in ThermalZone set desired PWM action	January 29, 2016
1.2.0.70	Add "Intel:RackScale" attribute for OEM	January 26, 2016
1.2.0.65	Add Contains/Contained by attributes for Rack and Drawer	January 22, 2016
1.2.0.60	Fix error in VLAN attribute	January 18, 2016
1.2.0.50	Updated Chinook extensions to Redfish. Address comments from architects, PODM and PSME engineering team.	January 8, 2016
1	Fix minor issues	December 17, 2015
0.9	Add VLANs Fix minor issues	December 11, 2015
0.8	Add max length for input string Align with redfish 1.0 spec for EthernetInterfaces and RMC/PSU/Fan Status	November 18, 2015
0.7	Add network service. Add EthernetInterface. Align Event service to PSME 0.95 Fix minor issues.	October 29, 2015
0.6	Update for redfish 1.0 schemas/rules/conventions: a. ServiceRoot and Manager schema b. Collection Schema c. Odata properties	September 8, 2015
0.59	Change Camel Case to Pascal Case	June 23, 2015
0.58	Correct some key words	June 15, 2015
0.57	Add URL prefix "v1"	June 4, 2015
0.56	Correct some key words	May 28, 2015
0.55	Correct some wrong name	May 20, 2015
0.54	Update RESTful API key to Camel-Case format.	May 13, 2015
0.53	Add REST API OData	May 7, 2015
0.52	Updated with review comments.	November 29, 2014
0.5	1. Update action with redfish format. 2. Add management plane as platform specific API, like CM in BDC-A. 3. Add RMM and MBP remote upgrade interface	October 15, 2014
0.4	Added convention part	September 25, 2014



	Added PZ_RUID, P_ZUID, TZ_RUID, F_ZUID	
0.3	Updated with RMM development team review comments	September 17, 2014
0.2	Align URI, collection, formats with RackScale-SW convention Add placeholder for actions and events	August 29, 2014
0.1	Draft – initial revision based on China Rack and BDC-A requirements on rack management module	July 1, 2014

§



1 Introduction

1.1 Scope

This document defines Intel® Rack Scale Design Rack Management Module (RMM) REST API—Intel® Rack Scale Design RMM REST API.

1.2 Intended audience

The intended audience for this document is Intel architects and engineers who are responsible for defining and implementing rack management architectures.

This document is not intended for external audiences, since it contains details and references that are internal to Intel.

1.3 Reference documents

Table 1 Reference documents

Doc ID	Title	Location
332868	Intel® Rack Scale Design GAMI API Specification	http://intel.com/intelRSD
332869	Intel® Rack Scale Design Pod Manager REST API Specification	http://intel.com/intelRSD
332870	Intel® Rack Scale Design Pod Manager Release Notes	http://intel.com/intelRSD
332871	Intel® Rack Scale Design Pod Manager User Guide	http://intel.com/intelRSD
332873	Intel® Rack Scale Design PSME REST API Specification	http://intel.com/intelRSD
332872	Intel® Rack Scale Design PSME Release Notes	http://intel.com/intelRSD
332874	Intel® Rack Scale Design PSME User Guide	http://intel.com/intelRSD
332877	Intel® Rack Scale Design RMM REST API Specification	http://intel.com/intelRSD
332876	Intel® Rack Scale Design RMM Release Notes	http://intel.com/intelRSD
332875	Intel® Rack Scale Design RMM User Guide	http://intel.com/intelRSD
332878	Intel® Rack Scale Design Storage Services API Specification	http://intel.com/intelRSD
332936	Intel® Rack Scale Design BIOS/BMC Tech Guide	http://intel.com/intelRSD
332937	Intel® Rack Scale Design Architectural Requirements Specification	http://intel.com/intelRSD
334611	Intel® Rack Scale Design Getting Started Guide	http://intel.com/intelRSD
n/a	Scalable Platforms Management API	http://dmtf.org/standards/redfish

1.4 Definition of terms

Table 2 Terminology

Term	Definition
BMC	Baseboard Management Controller



Term	Definition
CIMI	Cloud Infrastructure Management Interface
POD	A physical collection of multiple racks
PODM	POD Manager aka RCPM
RCPM	Rack Controller Plane Manager aka PODM
SMC	Shared Memory Controller. Pooled and Shared NVM Controller: Implementation may be with multiple devices.
TMC	Tray Management Controller
RUID	Rack unique id.
RMC	Rack Management Controller
RMM	Rack Management Module
RUID	Rack unique id.
PZ_RUID	Power zone rack unique id
PZ_UUID	Power zone unique id
TZ_RUID	Thermal/Cooling zone rack unique id
TZ_UUID	Thermal/Cooling zone unique id
ZUID	Zone unique id
P_ZUID	PSU zone unique id
PSU_UUID	PSU unique id
F_ZUID	FAN zone unique id
FAN_UUID	FAN unique id
CM	Control Module
MBP	Management Backplane
MBP_RUID	Management Backplane rack unique id
MBP_UUID	Management Backplane unique id
PUID	POD wide unique id. E.g. RackPUID
DCUID	Datacenter wide unique id.
DR_UUID	Drawer unique id
DR_RUID	Drawer rack unique id

1.5 Notes and symbol convention

Symbol and note convention are similar to typographical conventions used in the CIMI specification.

The following notation is used in JSON serialization descriptions:

- Values in *italics* indicate data types instead of literal values.
- Characters are appended to items to indicate cardinality:
 - "?" (0 or 1)
 - "*" (0 or more)
 - "+" (1 or more)
- Vertical bars, "|", denote choice. For example, "a|b" means a choice between "a" and "b".
- Parentheses, "(" and ")", are used to indicate the scope of the operators "?", "*", "+" and "|".
- Ellipses (i.e., "...") indicate points of extensibility. Note that the lack of an ellipses does not mean no extensibility point exists, rather it is just not explicitly called out - usually for the sake of brevity.

1.6 JSON serialization convention

An object is an unordered set of name/value pairs. An object begins with { (left brace) and ends with } (right brace). Each name is followed by : (colon) and the name/value pairs are separated by , (comma).

An array is an ordered collection of values. An array begins with [(left bracket) and ends with] (right bracket). Values are separated by , (comma).

A value can be a string in double quotes; or a number; or true or false or null; or an object or an array. These structures can be nested.

A string is a sequence of zero or more Unicode characters, wrapped in double quotes, using backslash escapes. A character is represented as a single character string. A string is very much like a C or Java string.

A number is very much like a C or Java number, except that the octal and hexadecimal formats are not used.

1.7 HTTP response codes

See Section 6.5.2 in http://www.dmtf.org/sites/default/files/standards/documents/DSP0266_1.0.0.pdf

1.8 UUID

- The UUID (Universally Unique Identifier) is used to indicate *one component instance* within its lifecycle.
 - The component can be either physical component (e.g. RMM, MBP, PSU, Fan) or virtual component (e.g. thermal/cooling zone, power zone). Or part of physical component – no such case in RMM so far, but I assume switch port can be one case like this.
 - The component instance is created while the component is inserted into rack system and/or is detected by RMM.
 - The component instance will be destroyed while the component is removed/reset/shutdown.
 - The special case is RMM reset/shutdown will trigger destroy of all its owned component instance and release of all these instance UUIDs.
 - The external software can use instance UUID to track one component instance only under that instance's lifecycle, but if this component is removed, or replaced or exchanged to other slot. The original instance will be destroyed and the instance UUID will be invalid.

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2 Overview

This section shows general structure of the RMM API.

2.1 API structure and relation

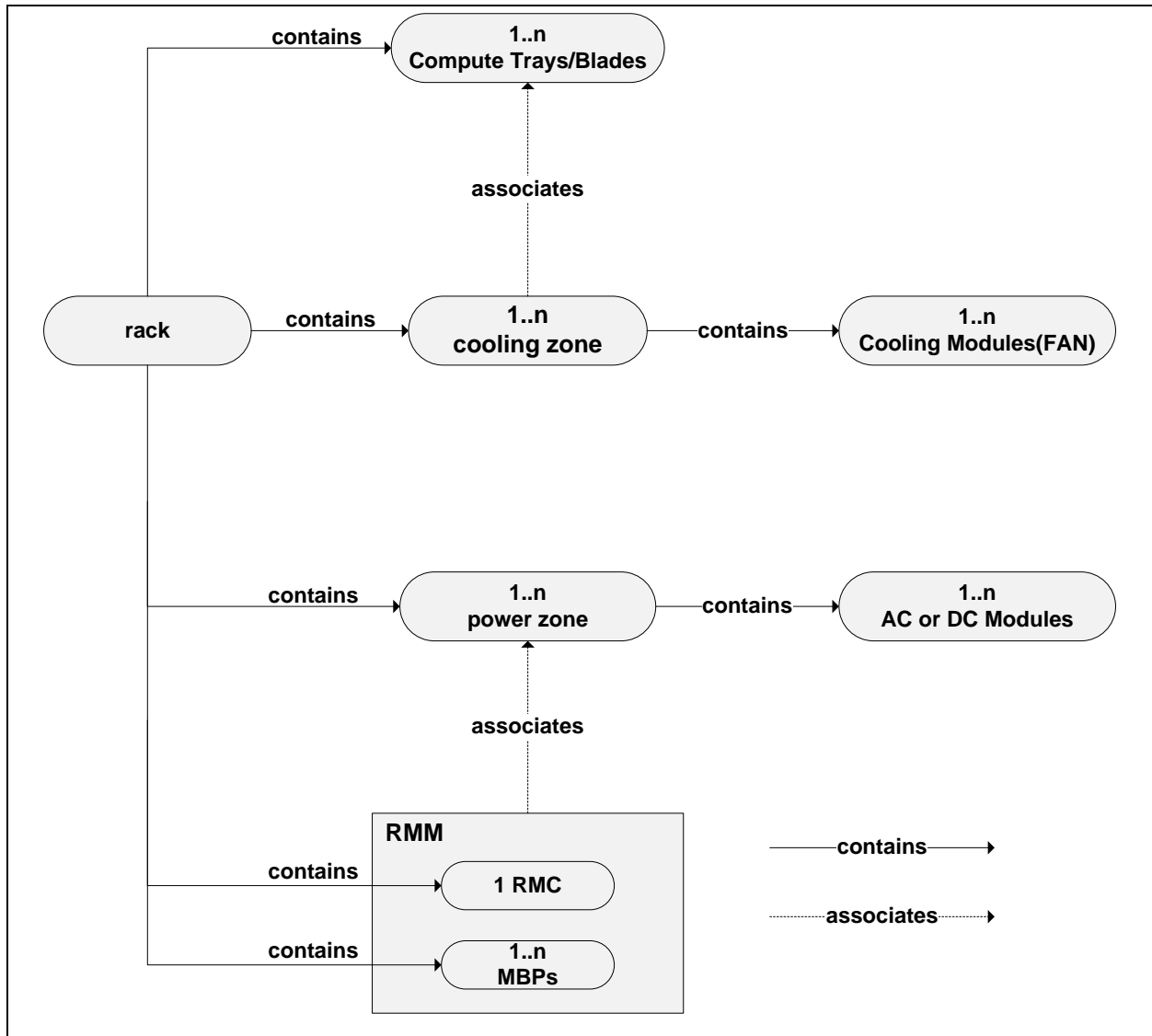
Table 3 Resources and URI

Resource	URI
Service root	/redfish/v1
Rack Managers	/redfish/v1/Managers
Event Service	/redfish/v1/EventService
Message Registry	/redfish/v1/MessageRegistry
Rack Container Collection	/redfish/v1/Chassis
Rack Container	/redfish/v1/Chassis/{id} example: /redfish/v1/Chassis/Rack
All power zones in a rack	/redfish/v1/Chassis/Rack/PowerZones
A specific power zone on a rack	/redfish/v1/Chassis/Rack/PowerZones/{PZ_RUID}
All thermal zones in a rack	/redfish/v1/Chassis/Rack/ThermalZones
A specific thermal zone on a rack	/redfish/v1/Chassis/Rack/ThermalZones/{TZ_RUID}
All management backplanes in a rack	/redfish/v1/Chassis/Rack/MBPs
A specific management backplane in a rack	/redfish/v1/Chassis/Rack/MBPs/{MBP_RUID}
A specific drawer in a rack	/redfish/v1/Chassis/Drawer{DR_RUID}

2.2 Rack management model and terminologies

Figure 1 and Table 3 illustrate and describe the terms used in the rack management hierarchy.

Figure 1 Rack management hierarchy model



**Table 4** **Rack management terminologies**

Term	Definition
Rack	Includes 1 or multiple Power Zones.
Power Zone	The Power Zone is one power management domain; the servers in a power zone share the same PSUs, including a power shelf (or PSUs) and a number of trays powered by that power shelf.
Thermal Zone	The Thermal Zone is one thermal management domain; the servers in a thermal zone share the same thermal modules, including thermal modules (Fans) and a number of trays cooled by that thermal module.
Tray/Drawer	Includes 1 or multiple server modules, and may also include the pooled resources.
RMM	Rack Management Module. RMM is the concept cover mgmt. controller, mgmt. topologies, management backplanes, as shown in Figure 1. The rack contains 1 RMM.
RMC	Rack Management Controller. RMC is only for rack management controller's data properties, including HW & mgmt. SW properties. The RMM contains 1 RMC.
CM or MBP	Controller Module or Management Backplane. The RMM contains 0..n CM/MBP.

§

3 Rack Management Module

3.1 Service root

The Service Root of Rack Management Module, following the schema definition in redfish serviceroot.1.0.0.

Table 5 Service root

Name	Service Root For Rack Management Module
Type URI	/redfish/v1

Attribute	Type	Description
@odata.context	String	Context URL: /redfish/v1/\$metadata#ServiceRoot
@odata.id	String	Resource identifier: "/redfish/v1"
@odata.type	String	Type URL: "#ServiceRoot.1.0.0.ServiceRoot"
Id	String	"RootService"
Name	String	"Root Service"
UUID	String	Unique identifier for a service instance. When SSDP is used, this value should be an exact match of the UUID value returned in a 200 OK from an SSDP M-SEARCH request during discovery.
RedfishVersion	String	The version of the Redfish service : "1.0.0"
Chassis	Object	Rack Container Collection
Managers	Object	Managers information
EventService	Object	It represents the properties for the service itself and has links to the actual list of subscriptions. See Chapter 7.
MessageRegistry	Object	It represents the properties for the message registry See Chapter 8.

3.1.1 JSON serialization

```
{
  "@odata.context": String,
  "@odata.id": String,
  "@odata.type": String,
  "Id": String,
  "UUID": String,
  "Name": String,
  "RedfishVersion": String,
  "Chassis": Object,
  "Managers": Collection,
  "EventService": Object,
  "MessageRegistry": Object
}
```

3.1.2 Operations

This resource supports the GET operations.



3.1.2.1 GET

Table 6 GET operation: list rack management module service root

Method	URI	Description	Response code
GET	/redfish/v1	List detail information of rack management module service root	See Section 1.7 HTTP response codes.

Request:

```
GET /redfish/v1/  
Content-Type: application/json
```

Response:

```
{  
  "@odata.context": "/redfish/v1/$metadata#ServiceRoot",  
  "@odata.id": "/redfish/v1",  
  "@odata.type": "#ServiceRoot.1.0.0.ServiceRoot",  
  "Id": "RootService",  
  "UUID": "25892e17-80f6-415f-9c65-3395632f2123",  
  "Name": "Root Service",  
  "RedfishVersion": "1.0.0",  
  "Chassis": {  
    "@odata.id": "/redfish/v1/Chassis",  
  },  
  "Managers": {  
    "@odata.id": "/redfish/v1/Managers"  
  },  
  "EventService": {  
    "@odata.id": "/redfish/v1/EventService"  
  },  
  "MessageRegistry": {  
    "@odata.id": "/redfish/v1/MessageRegistry"  
  }  
}
```

3.2 Rack container collection

Rack Container Collection resource provides collection of to all Rack Container.

Table 7 Rack container collection

Name	Collection of Rack Container
Type URI	/redfish/v1/Chassis/

Attribute	Type	Description
@odata.context	String	Context URL: /redfish/v1/\$metadata#Chassis
@odata.id	String	Resource identifier: "/redfish/v1/Chassis"



Attribute	Type	Description
@odata.type	String	Type URL: "#ChassisCollection.1.0.0.ChassisCollection"
Name	String	"Chassis Collection"
Members@odata.count	Number	Number of the member of this collection
Members	Array	Contains the members of this collection

3.2.1 JSON serialization

```
{
  "@odata.context": String,
  "@odata.id": String,
  "@odata.type": String,
  "Name": String,
  "Members@odata.count": Number,
  "Members": Array
}
```

3.2.2 Operations

This resource supports the GET operation.

3.2.2.1 GET

Table 8 GET operation: list collections of rack container

Method	URI	Description	Response code
GET	/redfish/v1/Chassis	List collection of rack container	See Section 1.7 HTTP response codes.

Request:

```
GET /redfish/v1/Chassis/
Content-Type: application/json
```

Response:

```
{
  "@odata.context": "/redfish/v1/$metadata#Chassis",
  "@odata.id": "/redfish/v1/Chassis",
  "@odata.type": "#ChassisCollection.1.0.0.ChassisCollection",
  "Name": "Chassis Collection",
  "Members@odata.count": 2,
  "Members": [
    {
      "@odata.id": "/redfish/v1/Chassis/Rack"
    },
    {
      "@odata.id": "/redfish/v1/Chassis/Drawer1"
    }
  ]
}
```



3.3 Rack container

The Rack Management Module, which contains basic information of the Rack Management Module, also provides top level resource collections of the rack.

Table 9 Rack management module

Name	Rack
Type URI	/redfish/v1/Chassis/Rack

Attribute	Type	Description
@odata.context	String	Context URL "/redfish/v1/\$metadata#Chassis/Rack"
@odata.id	String	Resource identifier "/redfish/v1/Chassis/Rack"
@odata.type	String	Type URL "#Chassis.1.0.0.Chassis"
Id	String	Uniquely identifies the resource within the collection of like resources.
Name	String	Human readable name for the rack.
Description	String	Editable. The description of the rack.
ChassisType	String	Type of chassis,"Rack"
Oem	Object	See Table 10.
SerialNumber	String	The serial number of the device
Manufacturer	String	Manufacturer information
Model	String	Model Information
PartNumber	String	The part number
AssetTag	String	Editable. The user assigned asset tag for this chassis.
Links	Object	The links object contains the links to other resources that are related to this resource.
Actions	Object	Supported actions

**Table 10 Rack module Oem**

Name	Oem
------	-----

Attribute	Type	Description
@odata.type	String	"#Intel.Oem.RmmRackChassis"
UUID	String	Unique identifier for the rack. UUID Pattern.
CreatedDate	String	Timestamp when rack was created (ISO* 8601) ISO 8601: YYYY-MM-DDThh:mm:ss.SSS'Z' Year, Month, Date (UTC) 1134 Hour, Minute, Second 1135 Relative Time Zone Shift (Hour and Minute) Ex: "2013-01-10T01:09:57+08:00".
UpdatedDate	String	Timestamp when Rack Scale rack status was changed.
ApiVersion	String	RMM REST API version Example: "v0.9"
RackPUID	Number	Editable. Rack Pod Unique ID. We will use the ordered Rack Index within the Pod.
PODDCUID	String	Editable. Pod Datacenter Unique ID = Pod Fully Qualified Host Name. e.g. pod1.jf5.intel.com
PODAddress	String	Editable. Host name or IP address of PODM.
GeoTag	String	Editable. Unique User Defined string for a Geo Location.
RackDCUID	String	PODDCUID-RackPUID. "none-0": default value.
PowerZones	Object	This is a link to a collection of PowerZones. e.g. "@odata.id": "/redfish/v1/Chassis/Rack/PowerZones"
ThermalZones	Object	This is a link to a collection of ThermalZones. e.g. "@odata.id": "/redfish/v1/Chassis/Rack/ThermalZones"
MBPs	Object	This is a link to a collection of MBPs. e.g. "@odata.id": "/redfish/v1/Chassis/Rack/MBPs"
RackSupportsDisaggregatedPowerCooling	Boolean	true or false
DrawerPresence	String	Each bit identify one drawer
MBPPresence	String	Each bit identify one CM

3.3.1 JSON serialization

```
{
  "@odata.context": String,
  "@odata.id": String,
  "@odata.type": String,
  "Id": String,
  "Name": String,
  "Description": String,
  "ChassisType": String,
  "Oem": {
    "Intel_RackScale": {
      "@odata.type": String,
      "UUID": String,
```



```
    "CreatedDate": String,
    "UpdatedDate": String,
    "ApiVersion": String,
    "RackPUID": Number,
    "PODMAddress": String,
    "PODDCUID": String,
    "GeoTag": String,
    "RackDCUID": String,
    "RackSupportsDisaggregatedPowerCooling": Boolean,
    "PowerZones": Object,
    "ThermalZones": Object,
    "MBPs": Object,
    "DrawerPresence": String,
    "MBPPresence": String
  },
  "Manufacturer": String,
  "Model": String,
  "SerialNumber": String,
  "PartNumber": String,
  "AssetTag": String,
  "Links": {
    "ManagedBy@odata.count": Number,
    "ManagedBy": [
      {
        "@odata.id": String
      }
    ],
    "Contains@odata.count": Number,
    "Contains": [
      {
        "@odata.id": String
      }
    ]
  },
  "Actions": {
    "Oem": {
      "Intel_RackScale": {
        "#DrawerChassis.Reset": {
          "target": String,
          "TargetIndex@AllowableValues": Array,
          "ResetType@AllowableValues": Array
        }
      }
    }
  }
}
```

3.3.2 Operations

This resource supports the GET and PATCH operations.



3.3.2.1 GET

Table 11 GET operation: list rack detail information

Method	URI	Description	Response code
GET	/redfish/v1/Chassis/Rack	List detail information of rack	See Section 1.7 HTTP response codes.

Request:

```
GET /redfish/v1/Chassis/Rack
Content-Type: application/json
```

Response:

```
{
  "@odata.context": "/redfish/v1/$metadata#Chassis/Rack",
  "@odata.id": "/redfish/v1/Chassis/Rack",
  "@odata.type": "#Chassis.1.0.0.Chassis",
  "Id": "1",
  "Name": "ChassisRack",
  "Description": "Rack 1",
  "ChassisType": "Rack",
  "Oem": {
    "Intel_RackScale": {
      "@odata.type": "#Intel.Oem.RmmRackChassis",
      "UUID": "25892e17-80f6-415f-9c65-7395632f0223",
      "CreatedDate": "2014-09-10T01:09:26+08:00",
      "UpdatedDate": "2014-09-11T02:19:17+08:00",
      "ApiVersion": "1.0",
      "RackPUID": 1,
      "PODDCUID": "pod1.jf5.intel.com",
      "PODAddress": "podm1.pod1.jf5.intel.com",
      "GeoTag": "Oregon-JF5",
      "RackDCUID": "pod1.jf5.intel.com-1",
      "RackSupportsDisaggregatedPowerCooling": false,
      "DrawerPresence": "01010000",
      "MBPPresence": "10",
      "PowerZones": {
        "@odata.id": "/redfish/v1/Chassis/Rack/PowerZones/"
      },
      "ThermalZones": {
        "@odata.id": "/redfish/v1/Chassis/Rack/ThermalZones/"
      },
      "MBPs": {
        "@odata.id": "/redfish/v1/Chassis/Rack/MBPs/"
      }
    }
  },
  "Manufacturer": "",
  "Model": "",
  "SerialNumber": "",
  "PartNumber": "",
  "AssetTag": "Rack for test",
}
```



```
"Links": {
  "ManagedBy@odata.count": 1,
  "ManagedBy": [
    {
      "@odata.id": "/redfish/v1/Managers/RMC"
    }
  ],
  "Contains@odata.count": 2,
  "Contains": [
    {
      "@odata.id": "/redfish/v1/Chassis/Drawer5"
    },
    {
      "@odata.id": "/redfish/v1/Chassis/Drawer7"
    }
  ]
},
"Actions": {
  "Oem": {
    "Intel_RackScale": {
      "target":
"/redfish/v1/Chassis/Rack/Actions/Oem/RackChassis.DrawerReset",
      "#RackChassis.DrawerReset": {
        "TargetIndex@AllowableValues": [
          5,7
        ],
        "ResetType@AllowableValues": [
          "Soft",
          "Hard"
        ]
      }
    }
  }
}
```

3.3.2.2 PATCH

Table 12 PATCH operation: update editable properties

Name	Editable Properties
------	---------------------

Attribute	Type	Description
RackPUID	Number	Optional. Rack Pod Unique ID. We will use the ordered Rack Index within the Pod.
PODDCUID	String	Optional. Pod Datacenter Unique ID = Pod Fully Qualified Host Name. e.g. pod1.jf5.intel.com (Max length: 128bytes)
GeoTag	String	Optional. Unique User Defined string for a Geo Location. (Max length: 128bytes)
PODAddress	String	Optional. Hostname or IP address of PODM. (Max length: 128bytes)
AssetTag	String	Optional. String number of the asset tag of rack. Generally, this value is set by the rack user for inventory management purpose. (Max length: 128bytes)



Method	URI	Description	Response code
PATCH	/redfish/v1/Chassis/Rack	Update editable properties	See Section 1.7 HTTP response codes.

Request:

```
PATCH /redfish/v1/Chassis/Rack
Content-Type: application/json
{
  "AssetTag": "Rack for test",
  "Oem": {
    "Intel_RackScale": {
      "RackPUID": 1,
      "PODDCUID": "pod2.jf5.intel.com",
      "GeoTag": "Oregon-JF4",
      "PODMAddress": "podm2.pod1.jf5.intel.com"
    }
  }
}
```

Response:

```
{
  "@odata.context": "/redfish/v1/$metadata#Chassis/Rack",
  "@odata.id": "/redfish/v1/Chassis/Rack",
  "@odata.type": "#Chassis.1.0.0.Chassis",
  "Id": "1",
  "Name": "ChassisRack",
  "Description": "storage rack",
  "ChassisType": "Rack",
  "Oem": {
    "Intel_RackScale": {
      "@odata.type": "#Intel.Oem.RmmRackChassis",
      "UUID": "25892e17-80f6-415f-9c65-7395632f0223",
      "CreatedDate": "2014-09-10T01:09:26+08:00",
      "UpdatedDate": "2014-09-11T02:19:17+08:00",
      "ApiVersion": "v0.9",
      "RackPUID": 1,
      "PODDCUID": "pod1.jf5.intel.com",
      "PODMAddress": "podm2.pod1.jf5.intel.com",
      "GeoTag": "Oregon-JF4",
      "RackDCUID": "pod1.jf5.intel.com-1",
      "RackSupportsDisaggregatedPowerCooling": false,
      "POD": "1234567890-abcde",
      "DrawerPresence": "01010000",
      "MBPPresence": "10",
      "PowerZones": {
        "@odata.id": "/redfish/v1/Chassis/Rack/PowerZones/"
      },
      "ThermalZones": {
        "@odata.id": "/redfish/v1/Chassis/Rack/ThermalZones/"
      }
    }
  }
}
```



```
    },
    "MBPs": {
      "@odata.id": "/redfish/v1/Chassis/Rack/MBPs/"
    }
  },
  "Manufacturer": "",
  "Model": "",
  "SerialNumber": "",
  "PartNumber": "",
  "AssetTag": "Rack for test",
  "Links": {
    "ManagedBy@odata.count": 1,
    "ManagedBy": [
      {
        "@odata.id": "/redfish/v1/Managers/RMC"
      }
    ],
    "Contains@odata.count": 2,
    "Contains": [
      {
        "@odata.id": "/redfish/v1/Chassis/Drawer5"
      },
      {
        "@odata.id": "/redfish/v1/Chassis/Drawer7"
      }
    ]
  },
  "Actions": {
    "Oem": {
      "Intel_RackScale": {
        "target":
"/redfish/v1/Chassis/Rack/Actions/Oem/RackChassis.DrawerReset",
        "#RackChassis.DrawerReset": {
          "TargetIndex@AllowableValues": [
            5, 7
          ],
          "ResetType@AllowableValues": [
            "Soft",
            "Hard"
          ]
        }
      }
    }
  }
}
```




3.3.2.3 POST

3.3.2.3.1 Reset

Table 13 Reset action

Name	Reset Action
------	--------------

Attribute	Type	Description
TargetIndex	Number	Target index of drawer
ResetType	String	The type of reset. Allowable values: "Soft": "Hard"

Method	URI	Description	Response code
POST	/redfish/v1/Chassis/Rack/Actions/Oem/RackChassis.DrawerReset	Reset specific drawer.	See Section 1.7 HTTP response codes.

Request:

```
POST /redfish/v1/Chassis/Rack/Actions/Oem/RackChassis.DrawerReset
Content-Type: application/json
{
  "TargetIndex": 1,
  "ResetType": "Soft"
}
```

Response:

200 Success.

```
{
  "Result": "Success"
}
```

3.4 Drawer

Table 14 Drawer attributes

Name	Drawer (a.k.a Tray)
Type URI	/redfish/v1/Chassis/Drawer{DR_RUID}



Attribute	Type	Description
@odata.context	String	Context URL: /redfish/v1/\$metadata#Chassis/Drawer{DR_RUID}
@odata.id	String	Resource identifier: "/redfish/v1/Chassis/Drawer{DR_RUID}"
@odata.type	String	Type URL: "#Chassis.1.0.0.Chassis"
Oem	Object	This contains oem attributes for Drawer. See Table 15.
ChassisType	String	Type of the chassis, "Drawer", hard coded with drawer, probably not consistent with drawer data
Links	Object	The links object contains the links to other resources that are related to this resource.

Table 15 Drawer Oem

Name	Drawer Oem
------	------------

Attribute	Type	Description
@odata.type	String	"#Intel.Oem.RmmDrawerChassis"
DrawerRUID	Number	Drawer (Compute system) unique id within rack.
Location	Object	Location info of the Drawer

Table 16 Drawer location

Name	Location
------	----------

Attribute	Type	Description
RackUnits	String	RackScaleRack.Units: indicates the Rack unit.
ULocation	Number	The index of the top-most U of the component, from top to bottom(1..MAXIMUM) 0 indicates not available
UHeight	Number	The height of managed zone, e.g. 8 for 8U, 16 for 16U
XLocation	Number	The horizontal location within uLocation, from left to right(1.. MAXIMUM) 0 indicates not available.

1.1.1 JSON serialization

```
{
  "@odata.context": String,
  "@odata.id": String,
  "@odata.type": String,
```

```

"ChassisType": String,
"Oem": {
  "Intel_RackScale": {
    "@odata.type": String,
    "DrawerRUID": Number,
    "Location": {
      "RackUnits": String,
      "XLocation": Number,
      "ULocation": Number,
      "UHeight": Number
    }
  }
},
"Links": {
  "Oem": {
    "Intel_RackScale": {
      "ContainedBy": {
        "@odata.id": String
      }
    }
  }
}
}

```

3.4.1 Operations

This resource supports the GET operations.

3.4.1.1 GET

Query information of specific drawer.

Table 17 GET operation: query information for a specific drawer

Method	URI	Description	Response code
GET	/redfish/v1/Chassis/Drawer{DR_RUID}	Query information of a drawer.	See Section 1.7 HTTP response codes.

Request:

```

GET /redfish/v1/Chassis/Drawer1
Content-Type: application/json

```

Response:

```

{
  "@odata.context": "/redfish/v1/$metadata#Chassis/Drawer1",
  "@odata.id": "/redfish/v1/Chassis/Drawer1",
  "@odata.type": "#Chassis.1.0.0.Chassis",
  "ChassisType": "Drawer",
  "Oem": {
    "Intel_RackScale": {
      "@odata.type": "#Intel.Oem.RmmDrawerChassis",
      "DrawerRUID": 1,

```



```
    "Location": {
      "RackUnits": "OU",
      "XLocation": 0,
      "ULocation": 3,
      "UHeight": 2
    }
  },
  "Links": {
    "Oem": {
      "Intel_RackScale": {
        "ContainedBy": {
          "@odata.id": "/redfish/v1/Chassis/Rack"
        }
      }
    }
  }
}
```

3.5 Rack managers

Rack Managers resource provides collection of to all rack managers that belong to the rack.

Table 18 Rack Managers

Name	Collection of Rack Manager
Type URI	/redfish/v1/Managers/

Attribute	Type	Description
@odata.context	String	Context URL: /redfish/v1/\$metadata#Managers
@odata.id	String	Resource identifier: "/redfish/v1/Managers"
@odata.type	String	Type URL: "#ManagerCollection.1.0.0.ManagerCollection"
Name	String	"Manager Collection"
Members@odata.count	Number	Number of the member of this collection
Members	Array	Contains the members of this collection

3.5.1 JSON serialization

```
{
  "@odata.context": String,
  "@odata.id": String,
  "@odata.type": String,
  "Name": String,
  "Members@odata.count": Number,
  "Members": Array,
}
```



3.5.2 Operations

This resource supports the GET operation.

3.5.2.1 GET

Table 19 GET operation: list collection of manager in a specific rack

Method	URI	Description	Response code
GET	/redfish/v1/Managers	List collection of rack manager	See Section 1.7 HTTP response codes.

Request:

```
GET /redfish/v1/Managers
Content-Type: application/json
```

Response:

```
{
  "@odata.context": "/redfish/v1/$metadata#Managers",
  "@odata.id": "/redfish/v1/Managers",
  "@odata.type": "#ManagerCollection.1.0.0.ManagerCollection",
  "Name": "Manager Collection",
  "Members@odata.count": 3,
  "Members": [
    {
      "@odata.id": "/redfish/v1/Managers/RMC"
    },
    {
      "@odata.id": "/redfish/v1/Managers/MBPC1"
    },
    {
      "@odata.id": "/redfish/v1/Managers/MBPC2"
    }
  ]
}
```

3.6 Rack management controller

The schema of rack management controller (RMC), following the schema definition in redfish Manager.1.0.0.

Table 20 Rack management controller

Name	Rack Management Controller
Type URI	/redfish/v1/Managers/RMC

Attribute	Type	Description
@odata.context	String	Context URL: /redfish/v1/\$metadata#Managers/Members/\$entity
@odata.id	String	Resource identifier: "/redfish/v1/Managers/RMC"



Attribute	Type	Description
@odata.type	String	Type URL: "#Manager.1.0.0.Manager"
Id	String	Unique Identifier for the rack manager in the collection.
Name	String	Predefined value - "Manager"
ManagerType	String	Refer to #/definitions/ManagerType "RackManager" for RackScale RMM
Description	String	Provides a description of this resource.
ServiceEntryPointUUID	String	UUID of the service entry of RMM service(service root)
UUID	String	UUID for this rack manager.
Model	String	The model information of this manager defined by the manufacturer.
DateTime	String	The current DateTime (with offset) for the manager
DateTimeLocalOffset	String	The time offset from UTC that the DateTime property is set to in format: +6:00.
FirmwareVersion	String	The firmware version of the Manager- RMM service version.
Status	Object	Refer to http://redfish.dmtf.org/schemas/redfish/v1/Resource.json#/definitions/Status Required properties: { "State": ["Enabled", "Disabled", "Starting"] "Health": ["OK", "Warning", "Critical"] }
Actions	Object	Supported Actions
NetworkProtocol	Object	It represents the properties for the service itself and has links to the network service.
EthernetInterfaces	Object	It represents the properties for the service itself and has links to the Ethernet interfaces.
Links	Object	The links object contains the links to other resources that are related to this resource.

1.1.2 JSON serialization

```
{
  "@odata.context": String,
  "@odata.id": String,
  "@odata.type": String,
  "Id": String,
  "UUID": String,
  "Name": String,
  "ManagerType": String,
  "Description": String,
  "ServiceEntryPointUUID": String,
  "Model": String,
  "DateTime": String,
  "DateTimeLocalOffset": String,
  "FirmwareVersion": String,
  "Actions": {
    "Oem": {
      "Intel_RackScale": {
        "#RMC.Update": {
          "target": String,
          "ComponentType@AllowableValues": Array,
          "Image@AllowableValues": Array
        },
        "#RMC.LoadFactoryDefault": {
          "target": String,
        },
      },
    },
    "#Manager.Reset": {
      "target": String,
    },
  },
  "Status": {
    "State": String,
    "Health": String,
  },
  "NetworkProtocol": {
    "@odata.id": String
  },
  "EthernetInterfaces": {
    "@odata.id": String
  },
  "Links": {
    "ManagerForChassis@odata.count": Number,
    "ManagerForChassis": [
      {
        "@odata.id": String
      }
    ]
  }
}
```



3.6.1 Operations

This resource supports the GET operations.

3.6.1.1 GET

Table 21 GET operation: list rack management module service root

Method	URI	Description	Response code
GET	/redfish/v1/Managers/RMC	List detail information of rack manager	See Section 1.7 HTTP response codes.

Request:

```
GET /redfish/v1/Managers/RMC
Content-Type: application/json
```

Response:

```
{
  "@odata.context": "/redfish/v1/$metadata#Managers/Members/$entity",
  "@odata.id": "/redfish/v1/Managers/RMC",
  "@odata.type": "#Manager.1.0.0.Manager",
  "Id": "1",
  "UUID": "23384634-2137-3323-1720-147392915243",
  "Name": "Manager",
  "ManagerType": "RackManager",
  "Description": "RackScale RMC",
  "ServiceEntryPointUUID": "92384634-2938-2342-8820-489239905423",
  "Model": "RackScale RMC 1.0",
  "DateTime": "2015-07-12T03:12:33+06:00",
  "DateTimeLocalOffset": "+06:00",
  "FirmwareVersion": "1.03.01",
  "Actions": {
    "Oem": {
      "Intel_RackScale": {
        "#RMC.Update": {
          "target": "/redfish/v1/Managers/RMC/Actions/Oem/RMC.Update",
          "ComponentType@AllowableValues": [
            "rmm-base"
          ],
          "Image@AllowableValues": []
        },
        "#RMC.LoadFactoryDefault": {
          "target":
"/redfish/v1/Managers/RMC/Actions/Oem/RMC.LoadFactoryDefault"
        }
      },
      "#Manager.Reset": {
        "target": "/redfish/v1/Managers/RMC/Actions/Manager.Reset"
      }
    },
    "Status": {
```



```

    "State": "Enabled",
    "Health": "OK",
  },
  "NetworkProtocol": {
    "@odata.id": "/redfish/v1/Managers/RMC/NetworkProtocol"
  },
  "EthernetInterfaces": {
    "@odata.id": "/redfish/v1/Managers/RMC/EthernetInterfaces"
  },
  "Links": {
    "ManagerForChassis@odata.count": 1,
    "ManagerForChassis": [
      {
        "@odata.id": "/redfish/v1/Chassis/Rack"
      }
    ]
  }
}

```

3.6.1.2 POST

3.6.1.2.1 Reset

Table 22 Reset action

Name	Reset Action
------	--------------

Method	URI	Description	Response code
POST	/redfish/v1/Managers/RMC/Actions/Manager.Reset	Reset RMC	See Section 1.7 HTTP response codes.

Request:

```

POST /redfish/v1/Managers/RMC/Actions/Manager.Reset
Content-Type: application/json
{
}

```

Response:

200 Success.

```

{
  "Result": "Success"
}

```

3.6.1.2.2 **Update****Table 23 Update action**

Name	Update Action
------	---------------

Attribute	Type	Description
ComponentType	String	The component of RMC to be upgraded: "rmm-base" – Install all RMC Deb files.
Image	String	RMC component package content encoded with base64

Method	URI	Description	Response code
POST	/redfish/v1/Managers/RMC/Actions/Oem/RMC.Update	Remotely update RMC components	See Section 1.7 HTTP response codes.



Request:

```
POST /redfish/v1/Managers/RMC/Actions/Oem/RMC.Update
Content-Type: application/json
{
  "ComponentType": "rmm-base",
  "Image": "XAXX111ddxx###....."
}
```

Response:

```
302 Redirect
Location: /redfish/v1/Managers/RMC/Actions/Oem/RMC.Update
```

3.6.1.2.3 FactoryDefault

Table 24 LoadFactoryDefault action

Name	LoadFactoryDefault Action		
Method	URI	Description	Response code
POST	/redfish/v1/Managers/RMC/Actions/Oem/RMC.LoadFactoryDefault	Restore RMC configuration into factory default	See Section 1.7 HTTP response codes.

Request:

```
POST /redfish/v1/Managers/RMC/Actions/Oem/RMC.LoadFactoryDefault
Content-Type: application/json
{
}
```

Response:

200 Success.

```
{
  "Result": "Success"
}
```



3.7 Management backplane controller

Table 25 Management backplane attributes

Name	Management Backplane Controller
Type URI	/redfish/v1/Managers/MBPC\${index}

Attribute	Type	Description
@odata.context	String	Context URL: /redfish/v1/\$metadata#Managers/Members/\$entity
@odata.id	String	Resource identifier: "/redfish/v1/Managers/MBPC\${index}"
@odata.type	String	Type URL: "#Manager.1.0.0.Manager"
Id	String	Unique Identifier for the rack manager in the collection.
Name	String	Predefined value - "MBPC"
Description	String	Description of Manager: "Management Backplane Controller"
ManagerType	String	Refer to #/definitions/ManagerType "ManagementController" for RackScale MBP
UUID	String	UUID for this rack manager.
FirmwareVersion	String	The firmware version of the Manager- MBP version.
Status	Object	Refer to http://redfish.dmtf.org/schemas/redfish/v1/Resource.json#/definitions/Status Required properties: { "State": ["Enabled", "Disabled", "Starting"] "Health": ["OK", "Warning", "Critical"] }
Actions	Object	Supported actions
Links	Object	The links object contains the links to other resources that are related to this resource.

3.7.1 JSON serialization

```
{
  "@odata.context": String,
  "@odata.id": String,
  "@odata.type": String,
  "Id": String,
  "Name": String,
  "Description": String,
  "ManagerType": String,
  "UUID": String,
  "FirmwareVersion": String,
  "Status": Object,
  "Actions" {
    "#Manager.Reset": {
      "target": String
    }
  },
  "Links": {
```

```

    "Oem": {
      "Intel_RackScale": {
        "ManagerForMBP@odata.count": Number,
        "ManagerForMBP": [
          {
            "@odata.id": String
          }
        ]
      }
    }
  }
}

```

3.7.2 Operations

This resource supports the GET operation.

3.7.2.1 GET

Table 26 GET operation: query information of specific management backplane

Method	URI	Description	Response code
GET	/redfish/v1/Managers/MBPC\${index}	Query information of a specific management backplane.	See Section 1.7 HTTP response codes.

Request:

```

GET /redfish/v1/Managers/MBPC1
Content-Type : application/json

```

Response :

```

{
  "@odata.context": "/redfish/v1/$metadata#Managers/Members/$entity",
  "@odata.id": "/redfish/v1/Managers/MBPC1",
  "@odata.type": "#Manager.1.0.0.Manager",
  "Id": "1",
  "Name": "MBPC",
  "Description": "Management Backplane Controller",
  "ManagerType": "ManagementController",
  "UUID": "23384634-2137-3323-1720-147392915243",
  "FirmwareVersion": "1.05",
  "Status": {
    "State": "Enabled",
    "Health": "OK",
  },
  "Actions" {
    "#Manager.Reset": {
      "target": "/redfish/v1/Managers/MBPC1/Actions/Manager.Reset"
    }
  },
  "Links": {

```



```
"Oem": {
  "Intel_RackScale": {
    "ManagerForMBP@odata.count": 1,
    "ManagerForMBP": [
      {
        "@odata.id": "/redfish/v1/Chassis/Rack/MBPs/1"
      }
    ]
  }
}
```

3.7.2.2 POST

3.7.2.2.1 Reset action

Table 27 Reset action

Name	Reset Action
------	--------------

Method	URI	Description	Response code
POST	/redfish/v1/Managers/ MBPC\${index}/Actions/Manager.Reset	Reset management back plane.	See Section 1.7 HTTP response codes.



Request:

```
POST /redfish/v1/Managers/MBPC1/Actions/Manager.Reset
Content-Type: application/json
{
}
```

Response:

200 Success.

```
{
  "Result": "Success"
}
```

3.8 Network protocol

Network protocol resource – provides detailed information about all network protocol supported by a manager identified by RMC.

Table 28 Network protocol attributes

Name	Network protocol
Type URI	/redfish/v1/Managers/RMC/NetworkProtocol

Attribute	Type	Description
@odata.context	String	Context URL: /redfish/v1/\$metadata#Managers/RMC/NetworkProtocol/\$entity
@odata.id	String	Resource identifier: "/redfish/v1/Managers/RMC/NetworkProtocol"
@odata.type	String	Type URL: "#ManagerNetworkProtocol.1.0.0. ManagerNetworkProtocol"
Id	String	Unique Identifier for the NetworkProtocol.
Name	String	Predefined value: "Manager NetworkProtocol"
Description	String	Description of NetworkProtocol
Status	Object	See Table 29.
HostName	String	Optional. Provides information about host name.
FQDN	String	Optional. Full Qualified Domain Name.
HTTP	Object	Required properties: { "ProtocolEnabled": Boolean "Port": Number }
HTTPS	Object	Required properties: { "ProtocolEnabled": Boolean "Port": Number }
SSH	Object	Required properties: { "ProtocolEnabled": Boolean "Port": Number }



		}
--	--	---

Table 29 **Status**

Name	Status
------	--------

Attribute	Type	Description
State	String	Known state of the resource, allowable values: "Enabled", "Disabled", "Offline", "InTest", "Starting", "Absent"
Health	String	Optional. Overall health state from the view of this resource, allowable values: "OK", "Warning", "Critical".

3.8.1 JSON serialization

```
{
  "@odata.context": String,
  "@odata.id": String,
  "@odata.type": String,
  "Id": String,
  "Name": String,
  "Description": String,
  "Status": {
    "State": String,
    "Health": String
  },
  "HostName": String,
  "FQDN": String,
  "HTTP": {
    "ProtocolEnabled": Boolean,
    "Port": Number,
  },
  "HTTPS": {
    "ProtocolEnabled": Boolean,
    "Port": Number,
  },
  "SSH": {
    "ProtocolEnabled": Boolean,
    "Port": Number,
  }
}
```

3.8.2 Operations

This resource supports the GET operations.

3.8.2.1 GET

Table 30 GET operation: list rack management module NetworkProtocol

Method	URI	Description	Response code
GET	/redfish/v1/Managers/RMC/NetworkProtocol	List detail information of NetworkProtocol	See Section 1.7 HTTP response codes.

Request:

```
GET /redfish/v1/Manager/RMC/NetworkProtocol
Content-Type: application/json
```

Response:

```
{
  "@odata.context":
"/redfish/v1/$metadata#Managers/RMC/NetworkProtocol/$entity",
  "@odata.id": "/redfish/v1/Managers/RMC/NetworkProtocol",
  "@odata.type": "#ManagerNetworkProtocol.1.0.0.ManagerNetworkProtocol",
  "Id": "NetworkProtocol",
  "Name": "Manager Network Protocol",
  "Description": "Manager Network Service",
  "Status": {
    "State": "Enabled",
    "Health": "OK"
  },
  "HostName": "",
  "FQDN": "",
  "HTTP": {
    "ProtocolEnabled": true,
    "Port": 8090
  },
  "HTTPS": {
    "ProtocolEnabled": true,
    "Port": 8091
  },
  "SSH": {
    "ProtocolEnabled": false,
    "Port": 22
  }
}
```

3.9 Ethernet interfaces

Ethernet interfaces resource – provides information about the Ethernet interfaces

**Table 31 Ethernet interfaces attributes**

Name	Ethernet Interfaces
Type URI	/redfish/v1/Managers/RMC/EthernetInterfaces

Attribute	Type	Description
@odata.context	String	Context URL: /redfish/v1/\$metadata#Managers/RMC/EthernetInterfaces
@odata.id	String	Resource identifier: "/redfish/v1/Managers/RMC/EthernetInterfaces"
@odata.type	String	Type URL: "#EthernetInterfaceCollection.1.0.0.EthernetInterfaceCollection"
Name	String	The name of the resource or array element.
Description	String	Provides a description of this resource and is used for commonality in the schema definitions.
Members@odata.count	Number	Number of the member of this collection
Members	Array	Contains the members of this collection

3.9.1 JSON serialization

```
{
  "@odata.context": String,
  "@odata.id": String,
  "@odata.type": String,
  "Name": String,
  "Description": String,
  "Members@odata.count": Number,
  "Members": Array
}
```

3.9.2 Operations

This resource supports the GET operation.

3.9.2.1 GET

Table 32 GET operation: list collections of Ethernet interfaces in a specific rack

Method	URI	Description	Response code
GET	/redfish/v1/Managers/RMC/EthernetInterfaces	List collection of Ethernet interface	See Section 1.7 HTTP response codes.

Request:

```
GET /redfish/v1/Managers/RMC/EthernetInterfaces
Content-Type: application/json
```

Response:

```
{
  "@odata.context": "/redfish/v1/$metadata#Managers/RMC/EthernetInterfaces",
```



```

"@odata.id": "/redfish/v1/Managers/RMC/EthernetInterfaces",
"@odata.type":
#EthernetInterfaceCollection.1.0.0.EthernetInterfaceCollection",
  "Name": "Ethernet Network Interface Collection",
  "Description": "Collection of EthernetInterfaces for this Manager",
  "Members@odata.count": 2,
  "Members": [
    {
      "@odata.id": "/redfish/v1/Managers/RMC/EthernetInterfaces/1"
    },
    {
      "@odata.id": "/redfish/v1/Managers/RMC/EthernetInterfaces/2"
    }
  ]
}

```

3.10 Ethernet interface

Ethernet interface resource – provides detailed information about the Ethernet interface

Table 33 Ethernet Interface attributes

Name	Ethernet Interface
Type URI	/redfish/v1/Managers/RMC/EthernetInterfaces/\${index}

Attribute	Type	Description
@odata.context	String	Context URL: /redfish/v1/\$metadata#Managers/RMC/EthernetInterfaces/Members/\$entity
@odata.id	String	Resource identifier: "/redfish/v1/Managers/RMC/EthernetInterfaces/\${index}"
@odata.type	String	Type URL: "#EthernetInterface.1.0.0.EthernetInterface"
Id	String	Unique Identifier for the EthernetInterface.
Name	String	Predefined value: "Manager Ethernet Interface"
Description	String	Description of EthernetInterface: "Management Network Interface"
Status	Object	See Table 29.
PermanentMACAddress	String	Optional. This is the MAC address assigned to the NIC at the factory.
MACAddress	String	This is the currently assigned MAC address for the NIC
SpeedMbps	Number	Optional. This is the current speed in Mbps of the NIC.
AutoNeg	Boolean	Optional. Indicates if the speed and duplex is automatically configured by the NIC.
FullDuplex	Boolean	Optional. Indicates if the NIC is in Full Duplex mode or not.
MTUSize	Number	Optional. MAC Frame size in bytes.
HostName	String	Optional. DNS host Name, without any domain information.
FQDN	String	Optional. Fully qualified domain name obtained by DNS for this interface.
MaxIPv6StaticAddresses	Number	Indicates the maximum number of Static IPv6 addresses that can be configured on this interface.



Attribute	Type	Description
IPv4Addresses	Object	Optional. Properties: { "Address": String, "SubnetMask": String, "AddressOrigin": String, Optional "Gateway": String Optional }
IPv6AddressPolicyTable	Object	Optional. Properties: { "Prefix": String, "Precedence": Number, "Label": Number Optional }
IPv6StaticAddresses	Object	Optional. Properties: { "Address": String "PrefixLength": Number, Optional "AddressOrigin": String, Optional "AddressState": ["Preferred", "Deprecated", "Tentative", "Failed"] Optional }
IPv6Addresses	Object	Optional. Properties: { "Address": String, "PrefixLength": Number, Optional "AddressOrigin": String, Optional "AddressState": ["Preferred", "Deprecated", "Tentative", "Failed"] Optional }
IPv6DefaultGateway	String	Optional. Default gateway address that is currently in use on the interface.
NameServers	Array	Optional. DNS name servers for the interface.
VLANs	Object	Optional. Reference to a collection of VLANs and is only used if the interface supports more than one VLANs.

3.10.1 JSON serialization

```
{  
  "@odata.context": String,  
  "@odata.id": String,  
  "@odata.type": String,  
  "Id": String,  
  "Name": String,  
  "Description": String,  
  "Status": {  
    "State": String,  
    "Health": String  
  },  
  "PermanentMACAddress": String,  
  "MACAddress": String,  
  "SpeedMbps": Number,  
}
```

```

"AutoNeg": Boolean,
"FullDuplex": Boolean,
"MTUSize": Number,
"HostName": String,
"FQDN": String,
"MaxIPv6StaticAddresses": Number,
"IPv4Addresses": [
  {
    "Address": String,
    "SubnetMask": String,
    "AddressOrigin": String,
    "Gateway": String,
  }
],
"IPv6AddressPolicyTable": [
  {
    "Prefix": String,
    "Precedence": Number,
    "Label": Number
  }
],
"IPv6StaticAddresses": [
  {
    "Address": String,
    "PrefixLength": Number,
    "AddressOrigin": String,
    "AddressState": String,
  }
],
"IPv6DefaultGateway": String,
"IPv6Addresses": [
  {
    "Address": String,
    "PrefixLength": Number,
    "AddressOrigin": String,
    "AddressState": String,
    "Oem": object
  }
],
"NameServers": Array,
"VLANs": {
  "@odata.id": String
}
}

```

3.10.2 Operations

This resource supports the GET operations.

3.10.2.1 GET

Table 34 GET operation: list rack management module EthernetInterface

Method	URI	Description	Response code
GET	/redfish/v1/Managers/RMC/EthernetInterfaces/\${index}	List detail information of EthernetInterface	See Section 1.7 HTTP response codes.

**Request:**

```
GET /redfish/v1/Manager/RMC/EthernetInterfaces/1
Content-Type: application/json
```

Response:

```
{
  "@odata.context":
"/redfish/v1/$metadata#Managers/RMC/EthernetInterfaces/Members/$entity",
  "@odata.id": "/redfish/v1/Managers/RMC/EthernetInterfaces/1",
  "@odata.type": "#EthernetInterface.1.0.0.EthernetInterface",
  "Id": "1",
  "Name": "Manager Ethernet Interface",
  "Description": "Management Network Interface",
  "Status": {
    "State": "Enabled",
    "Health": "OK"
  },
  "PermanentMACAddress": "AA:BB:CC:DD:EE:FF",
  "MACAddress": "AA:BB:CC:DD:EE:FF",
  "SpeedMbps": 100,
  "AutoNeg": true,
  "FullDuplex": true,
  "MTUSize": 1500,
  "HostName": "",
  "FQDN": "",
  "MaxIPv6StaticAddresses": 1,
  "IPv4Addresses": [
    {
      "Address": "192.168.0.10",
      "SubnetMask": "255.255.252.0",
      "AddressOrigin": "DHCP",
      "Gateway": "192.168.0.1",
    }
  ],
  "IPv6AddressPolicyTable": [],
  "IPv6StaticAddresses": [],
  "IPv6DefaultGateway": "",
  "IPv6Addresses": [],
  "NameServers": [],
  "VLANs": {
    "@odata.id": "/redfish/v1/Managers/RMC/EthernetInterface/1/VLANs"
  }
}
```

3.11 VLANs

VLANs resource – provides information about the VLANs

**Table 35 VLANs attributes**

Name	VLANs
Type URI	/redfish/v1/Managers/RMC/EthernetInterfaces/\${index}/VLANs

Attribute	Type	Description
@odata.context	String	Context URL: /redfish/v1/\$metadata#Managers/RMC/EthernetInterfaces/\${index}/VLANs
@odata.id	String	Resource identifier: "/redfish/v1/Managers/RMC/EthernetInterfaces/\${index}/VLANs"
@odata.type	String	Type URL: "#VlanNetworkInterfaceCollection.1.0.0.VlanNetworkInterfaceCollection"
Name	String	Predefined value - "VLAN Collection"
Members@odata.count	Number	Number of the member of this collection
Members	Array	Contains the members of this collection

3.11.1 JSON serialization

```
{
  "@odata.context": String,
  "@odata.id": String,
  "@odata.type": String,
  "Name": String,
  "Members@odata.count": Number,
  "Members": Array
}
```

3.11.2 Operations

This resource supports the GET operation.

3.11.2.1 GET

Table 36 GET Operation: List Collections of VLANs in a Specific EthernetInterface

Method	URI	Description	Response code
GET	/redfish/v1/Managers/RMC/EthernetInterfaces/\${index}/VLANs	List collection of VLANs	See Section 1.7 HTTP response codes.

Request:

```
GET /redfish/v1/Managers/RMC/EthernetInterfaces/1/VLANs
Content-Type: application/json
```

Response:



```
{
  "@odata.context":
"/redfish/v1/$metadata#Managers/RMC/EthernetInterfaces/1/VLANs",
  "@odata.id": "/redfish/v1/Managers/RMC/EthernetInterfaces/1/VLANs",
  "@odata.type":
"#VlanNetworkInterfaceCollection.1.0.0.VlanNetworkInterfaceCollection",
  "Name": "VLAN Collection",
  "Members@odata.count": 0,
  "Members": []
}
```

3.12 VLAN

VLAN resource – provides information about the VLAN

Table 37 VLAN attributes

Name	VLANs
Type URI	/redfish/v1/Managers/RMC/EthernetInterfaces/\${index}/VLANs/\${index}

Attribute	Type	Description
@odata.context	String	Context URL: /redfish/v1/\$metadata#Managers/RMC/EthernetInterfaces/\${index}/VLANs/\${index}
@odata.id	String	Resource identifier: "/redfish/v1/Managers/RMC/EthernetInterfaces/\${index}/VLANs/\${index}"
@odata.type	String	"#VlanNetworkInterface.1.0.0.VlanNetworkInterface"
Id	String	Resource Identifier
Name	String	Resource name
Description	String	Description for resource
Oem	Object	OEM defined object
VLANEnable	Boolean	Indicates if this VLAN is enabled
VLANId	Number	VLAN identifier for this NIC

3.12.1 JSON serialization

```
{
  "@odata.id": String,
  "@odata.context": String,
  "@odata.type": String,
  "Id": String,
  "Name": String,
  "Description": String,
  "VLANEnable": Boolean,
  "VLANId": Number,
  "Oem": {
    "Intel_RackScale": {
      "@odata.type": String,
      "Tagged": Boolean,
      "Status": {
```



```

        "State": String,
        "Health": String
    }
}
}
}
}

```

3.12.2 Operations

This resource supports the GET operation.

3.12.2.1 GET

Table 38 GET operation: list collections of VLANS in a specific EthernetInterface

Method	URI	Description	Response code
GET	/redfish/v1/Managers/RMC/EthernetInterfaces/\${index}/VLANs	List collection of VLANs	See Section 1.7 HTTP response codes.

Request:

```

GET /redfish/v1/Managers/RMC/EthernetInterfaces/1/VLANs
Content-Type: application/json

```

Response:

```

{
  "@odata.id":
"/redfish/v1/EthernetSwitches/Switch1/Ports/Port1/VLANs/VLAN1",
  "@odata.context":
"/redfish/v1/$metadata#VlanNetworkInterface.VlanNetworkInterface",
  "@odata.type": "#VlanNetworkInterface.1.0.0.VlanNetworkInterface",
  "Id": "VLAN1",
  "Name": "VLAN Network Interface",
  "Description": "System NIC 1 VLAN",
  "VLANEnable": true,
  "VLANId": 101,
  "Oem": {
    "Intel_RackScale": {
      "@odata.type": "#VlanNetworkInterface.1.0.0.VlanNetworkInterface",
      "Tagged": false,
      "Status": {
        "State": "Enabled",
        "Health": "OK"
      }
    }
  }
}

```



4 Power

4.1 PowerZones

PowerZones resource provides collection of to all power zones that belong to the rack.

Table 39 PowerZones

Name	Collection of PowerZone
Type URI	/redfish/v1/Chassis/Rack/PowerZones/

Attribute	Type	Description
@odata.context	String	Context URL: /redfish/v1/\$metadata#Chassis/Rack/PowerZones
@odata.id	String	Resource identifier: "/redfish/v1/Chassis/Rack/PowerZones"
@odata.type	String	#Intel.Oem.RmmPowerZoneCollection"
Name	String	"PowerZone Collection"
Members@odata.count	Number	Number of the member of this collection
Members	Array	Contains the members of this collection

4.1.1 JSON serialization

```
{
  "@odata.context": String,
  "@odata.id": String,
  "@odata.type": String,
  "Name": String,
  "Members@odata.count": Number,
  "Members": Array
}
```

4.1.2 Operations

This resource supports the GET operation.

4.1.2.1 GET

Table 40 GET operation: list collections of power zones in a specific rack

Method	URI	Description	Response code
GET	/redfish/v1/Chassis/Rack/PowerZones	List collection of power zone	See Section 1.7 HTTP response codes.



Request:

```
GET /redfish/v1/Chassis/Rack/PowerZones
Content-Type: application/json
```

Response:

```
{
  "@odata.context": "/redfish/v1/$metadata#Chassis/Rack/PowerZones",
  "@odata.id": "/redfish/v1/Chassis/Rack/PowerZones",
  "@odata.type": "#Intel.Oem.RmmPowerZoneCollection",
  "Name": "PowerZone Collection",
  "Members@odata.count": 2,
  "Members": [
    {
      "@odata.id": "/redfish/v1/Chassis/Rack/PowerZones/1"
    },
    {
      "@odata.id": "/redfish/v1/Chassis/Rack/PowerZones/2"
    }
  ]
}
```

4.2 PowerZone

Table 41 PowerZone

Name	PowerZone
Type URI	/redfish/v1/Chassis/Rack/PowerZones/{PZ_RUID} or /redfish/v1/Chassis/Rack/PowerZones/{ PZ_UUID} - alias resource URI

Attribute	Type	Description
@odata.context	String	Context URL: /redfish/v1/\$metadata#Chassis/Rack/PowerZones/Members/\$entity
@odata.id	String	Resource identifier: "/redfish/v1/Chassis/Rack/PowerZones/{PZ_RUID}"
@odata.type	String	#Intel.Oem.RmmPowerZone
Id	String	Index of power zone within the rack, equal to PZ_RUID.
Name	String	Human readable name for the PowerZone.
Description	String	Editable. Description of the PowerZone
Status	Object	See Table 29.
UUID	String	Unique identifier for the power zone. UUID Pattern.
CreatedDate	String	A time/date stamp for when the PowerZone is created
UpdatedDate	String	A time/date stamp for when the PowerZone status is changed



Attribute	Type	Description
RackLocation	Object	PowerZone Location. See Table 43.
MaxPSUsSupported	Number	The maximum number of Power Supply Unit supported by PowerZone.
Presence	String	Indicates the aggregated Power Supply Unit presence information Aggregated Power Supply Unit presence format: Length of string indicate total slot of Power Supply Units in PowerZone. For each byte the string: "1" means present "0" means not present
NumberOfPSUsPresent	Number	Indicates the number of existing Power Supply Unit in PowerZone.
PowerConsumedWatts	Number	The total power consumption of PowerZone, sum of trays' power consumption
PowerOutputWatts	Number	The total power production of PowerZone, sum of PSUs' output
PowerCapacityWatts	Number	The maximum power capacity supported by PowerZone.
Actions	Object	Supported Actions by Power Zone.
PowerSupplies	Array	This is the Power Supplies definition.

Table 42 Power supply

Name	Power Supply
-------------	--------------

Attribute	Type	Description
@odata.id	String	Resource identifier: "/redfish/v1/Chassis/Rack/PowerZones/{PZ_RUID}/PowerZone#/PowerSupplies/{P_ZUID}"
@odata.type	String	"#RmmPowerZone.PowerSupply"
Name	String	The name of the Power Supply
Status	Object	See Table 29.
UUID	String	Unique Identifier for the Power Supply Unit. UUID Pattern.
RackLocation	Object	PSU Location within rack. See Table 43.
SerialNumber	String	The serial number of the device
Manufacturer	String	Manufacturer information
Model	String	Model Information
PartNumber	String	The part number
FirmwareVersion	String	The firmware version
PowerCapacityWatts	Number	The maximum power capacity of the Power Supply Unit, using watts as unit.



Attribute	Type	Description
LastPowerOutputWatts	Number	Power out of this power supply

Table 43 Rack location

Name	RackLocation
------	--------------

Attribute	Type	Description
RackUnits	String	RackScaleRack.Units: indicates the rack unit type. "RU": rack unit, each RU 44.5mm "OU": openU, each OU 48mm
ULocation	Number	The index of the top-most U of the component, from top to bottom(1..MAXIMUM) 0 indicate not available
UHeight	Number	The height of managed zone, e.g. 8 for 8U, 16 for 16U
XLocation	Number	The horizontal location within uLocation, from left to right(1.. MAXIMUM) 0 indicate not available.

4.2.1 JSON serialization

JSON media type: application/json

PowerZone's JSON serialization

```
{
  "@odata.context": String,
  "@odata.id": String,
  "@odata.type": String,
  "Id": String,
  "Name": String,
  "Description": String,
  "Status": {
    "State": String,
    "Health": String
  },
  "UUID": String,
  "CreatedDate": String,
  "UpdatedDate": String,
  "RackLocation": {
    "RackUnits" : String,
    "XLocation": Number,
    "ULocation" : Number,
    "UHeight": Number,
  },
  "MaxPSUsSupported": Number,
```



```
"Presence": String,
"NumberOfPSUsPresent": Number,
"PowerConsumedWatts": Number,
"PowerOutputWatts": Number,
"PowerCapacityWatts": Number,
"Actions": {
  "#PowerZone.RequestStateChange": {
    "target": String,
    "TargetIndex@AllowableValues": Array,
    "EnabledState@AllowableValues": Array
  }
},
"PowerSupplies": Array
}
```

Power supply's JSON serialization

```
{
  "@odata.id": String,
  "@odata.type": String,
  "Name": String,
  "Status": {
    "State": String,
    "Health": String
  },
  "UUID": String,
  "RackLocation": {
    "RackUnits": String,
    "XLocation": Number,
    "ULocation": Number,
    "UHeight": Number,
  },
  "SerialNumber": String,
  "Manufacturer": String,
  "Model": String,
  "PartNumber": String,
  "FirmwareVersion": String,
  "PowerCapacityWatts": Number,
  "LastPowerOutputWatts": Number
}
```

4.2.2 Operations

This resource supports GET and POST operations.

4.2.2.1 GET

Table 44 GET operation: list information of specific power zone

Method	URI	Description	Response code
GET	/redfish/v1/Chassis/Rack/PowerZones/{PZ_RUID}	List detail information of specific power zone	See Section 1.7 HTTP response codes.

Request:

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```
GET /redfish/v1/Chassis/Rack/PowerZones/{PZ_RUID}
Content-Type: application/json
```

Response:

```
{
  "@odata.context":
"/redfish/v1/$metadata#Chassis/Rack/PowerZones/Members/$entity",
  "@odata.id": "/redfish/v1/Chassis/Rack/PowerZones/1",
  "@odata.type": "#Intel.Oem.RmmPowerZone",
  "UUID": "25892e17-80f6-415f-9c65-7395632e0223",
  "CreatedDate": "2014-09-11T01:15:16+08:00",
  "UpdatedDate": "2014-09-11T01:15:16+08:00",
  "RackLocation": {
    "RackUnits": "OU",
    "XLocation": 0,
    "ULocation": 1,
    "UHeight": 8,
  },
  "MaxPSUsSupported": 6,
  "Presence": "111111",
  "NumberOfPSUsPresent": 6,
  "PowerConsumedWatts": 2000,
  "PowerOutputWatts": 2000,
  "PowerCapacityWatts": 3000,
  "Id": "1",
  "Name": "PowerZone",
  "Description": "Power Zone 1",
  "Status": {
    "State": "Enabled",
    "Health": "OK"
  },
  "Actions": {
    "#PowerZone.RequestStateChange": {
      "target":
"/redfish/v1/Chassis/Rack/PowerZones/1/Actions/PowerZone.RequestStateChange",
      "TargetIndex@AllowableValues": [
        1,2,3,4,5,6
      ],
      "EnabledState@AllowableValues": [
        "Enabled",
        "Disabled"
      ]
    }
  },
  "PowerSupplies": [
    {
      "@odata.id":
"/redfish/v1/Chassis/Rack/PowerZones/1/PowerZone#/PowerSupplies/1",
      "@odata.type": "#Intel.Oem.RmmPowerSupply",
      "Name": "Power supply 1",
      "Status": {
        "State": "Enabled",
        "Health": "OK"
      },
      "UUID": "25892e17-80f6-415f-9c65-7395632d0223",
    }
  ]
}
```



```
    "RackLocation": {
      "RackUnits": "OU",
      "XLocation": 0,
      "YLocation": 1,
      "UHeight": 8,
    },
    "SerialNumber": "",
    "Manufacturer": "",
    "Model": "",
    "PartNumber": "",
    "FirmwareVersion": "",
    "PowerCapacityWatts": 300,
    "LastPowerOutputWatts": 48,
  }
]
```

4.2.2.2 POST

Table 45 RequestStateChange

Name	RequestStateChange Action
------	---------------------------

Attribute	Type	Description
TargetIndex	Number	The index of PSU which is to take action
EnabledState	String	The desired EnabledState. Allowable values: Supported states: "Enabled", "Disabled",

Method	URI	Description	Response code
POST	/redfish/v1/Chassis/Rack/PowerZones/{PZ_RUID}/Actions/PowerZone.RequestStateChange	Request enabledState change for a specific Power Supply Unit.	See Section 1.7 HTTP response codes.

Request:

```
POST
/redfish/v1/Chassis/Rack/PowerZones/1/Actions/PowerZone.RequestStateChange
Content-Type: application/json
{
  "TargetIndex": 1,
  "EnabledState": "Enabled"
}
```

Response:

200 Success.


```
{  
  "Result": "Success"  
}
```

§



5 Thermal

5.1 ThermalZones

The ThermalZones resource provides collection of to all thermal zones that belong to the rack.

Table 46 ThermalZone collection

Name	Collection of thermal zone
Type URI	/redfish/v1/Chassis/Rack/ThermalZones/

Attribute	Type	Description
@odata.context	String	Context URL: /redfish/v1/ \$metadata#Chassis/Rack/ThermalZones
@odata.id	String	Resource identifier: "/redfish/v1/Chassis/Rack/ThermalZones"
@odata.type	String	Type URL: "#Intel.Oem.RmmThermalZoneCollection"
Name	String	"ThermalZone Collection"
Members@odata.count	Number	Number of the member of this collection
Members	Array	Contains the members of this collection

5.2 JSON serialization

```
{
  "@odata.context": String,
  "@odata.id": String,
  "@odata.type": String,
  "Name": String,
  "Members@odata.count": Number,
  "Members": Array
}
```

5.2.1 Operations

This resource supports the GET operation.



5.2.1.1 GET

Table 47 GET operation: list collection of ThermalZone in a specific rack

Method	URI	Description	Response code
GET	/redfish/v1/Chassis/Rack/ThermalZones	List collection of rack ThermalZone	See Section 1.7 HTTP response codes.

Request:

```
GET /redfish/v1/Chassis/Rack/Thermalzones
Content-Type: application/json
```

Response:

```
{
  "@odata.context": "/redfish/v1/$metadata#Chassis/Rack/ThermalZones",
  "@odata.id": "/redfish/v1/Chassis/Rack/ThermalZones",
  "@odata.type": "#Intel.Oem.RmmThermalZoneCollection",
  "Name": "ThermalZone Collection",
  "Members@odata.count": 2,
  "Members": [
    {
      "@odata.id": "/redfish/v1/Chassis/Rack/ThermalZones/1"
    },
    {
      "@odata.id": "/redfish/v1/Chassis/Rack/ThermalZones/2"
    }
  ]
}
```

5.3 ThermalZone

Table 48 ThermalZone

Name	Thermal Zone
Type URI	/redfish/v1/Chassis/Rack/ThermalZones/{TZ_RUID} or /redfish/v1/Chassis/Rack/ThermalZones/{TZ_UUID}

Attribute	Type	Description
@odata.context	String	Context URL: "/redfish/v1/\$metadata#Chassis/Rack/ThermalZones/Members/\$entity"
@odata.id	String	Resource identifier: "/redfish/v1/Chassis/Rack/ThermalZones/{TZ_RUID}"
@odata.type	String	"#Intel.Oem.RmmThermalZone"
Id	String	Index of ThermalZone within one rack, equal to TZ_RUID. TZ_RUID stands for ThermalZone unique index within rack. It starts from 1.



Attribute	Type	Description
Name	String	Human readable name for the ThermalZone.
Description	String	Editable. Description of the ThermalZone
UUID	String	Unique identifier for the ThermalZone. UUID Pattern.
CreatedDate	String	A time/date stamp for when the ThermalZone created
UpdatedDate	String	A time/date stamp for when the ThermalZone last changed status
RackLocation	Object	Location of the ThermalZone
Presence	String	Indicates the aggregated Fan presence information Aggregated Fan presence format: Length of string indicate total slot of Fan component. For each byte the string: "1" means present "0" means not present
DesiredSpeedPWM	Number	The desired FAN speed in current ThermalZone present in PWM unit.
DesiredSpeedRPM	Number	The desired FAN speed in current ThermalZone present in RPM unit.
MaxFansSupported	Number	The maximum supported number of Fan in current ThermalZone.
NumberOfFansPresent	Number	The existing number of Fan in current ThermalZone.
VolumetricAirflow	Number	Rack Level PTAS Telemetry – Volumetric airflow in current ThermalZone.
Temperatures	Array	See Table 50.
Status	Object	See Table 29.
Fans	Array	This is the definition for fans.
Actions	Object	Supported Actions by Thermal Zone.

Table 49 Fans

Name	Fans
------	------

Attribute	Type	Description
@odata.id	String	Resource identifier: "/redfish/v1/Chassis/Rack/ThermalZones/{TZ_UUID}/ThermalZone#/Fans/{F_UUID}"
Name	String	The name of the Fan
Status	String	See Table 29.
ReadingRPM	Number	Fan rpm reading
UUID	String	Unique Identifier for the Fan. UUID Pattern.
CreatedDate	String	A time/date stamp for when the Fan created status
UpdatedDate	String	A time/date stamp for when the Fan last changed status
RackLocation	Object	Fan Location within rack.



Table 50 **Temperatures**

Name	Temperatures
------	--------------

Attribute	Type	Description
@odata.id	String	Type URL "/redfish/v1/Chassis/Rack/ThermalZones/{TZ_RUID}/ThermalZone#/Temperatures/\${index}"
Name	String	The name of the Temperature
Status	String	See Table 29.
ReadingCelsius	Number	Temperature reading in Celsius
PhysicalContext	String	Indicates the type of the temperature reading
RelatedItem	Array	The source of the temperature reading

5.3.1 **JSON serialization**

JSON media type: application/json

ThermalZone's JSON serialization

```
{
  "@odata.context": String,
  "@odata.id": String,
  "@odata.type": String,
  "Id": String,
  "Name": String,
  "Description": String,
  "@odata.type": String,
  "UUID": String,
  "CreatedDate": String,
  "UpdatedDate": String,
  "RackLocation": {
    "RackUnits": Number,
    "XLocation": Number,
    "ULocation": Number,
    "UHeight": Number
  },
  "Presence": String,
  "DesiredSpeedPWM": Number,
  "DesiredSpeedRPM": Number,
  "MaxFansSupported": Number,
  "NumberOfFansPresent": Number,
  "VolumetricAirflow": Number,
  "Temperatures": [
    {
      "@odata.type": String,
      "Name": String,
      "Status": {
        "State": String
        "Health": String
      }
    }
  ],
}
```



```
    "ReadingCelsius": Number
    "PhysicalContext": String
    "RelatedItem": Array
  },
  "Status": {
    "State": String,
    "Health": String
  },
  "Actions": {
    "#ThermalZone.SetDesiredSpeedPWM": {
      "target": String,
      "DesiredSpeedPWM@AllowableValues": Array
    }
  }
  Fans: Array
}
```

Fan's JSON serialization

```
{
  "@odata.id": String,
  "Name": String,
  "Status": {
    "State": String,
    "Health": String
  },
  "ReadingRPM": Number,
  "UUID": String,
  "CreatedDate": String,
  "UpdatedDate": String,
  "RackLocation": {
    "RackUnits": String,
    "XLocation": Number,
    "ULocation": Number,
    "UHeight": Number,
  }
}
```

5.3.2 Operations

This resource supports the GET and POST operations.

5.3.2.1 GET

Table 51 GET operation

Method	URI	Description	Response code
GET	/redfish/v1/Chassis/Rack/ThermalZones/{TZ_RUID}	List detailed information of a specific thermal/cooling zone.	See Section 1.7 HTTP response codes.

Request:



```
GET /redfish/v1/Chassis/Rack/ThermalZones/1
Content-Type: application/json
```

Response:

```
{
  "@odata.context":
"/redfish/v1/$metadata#Chassis/Rack/ThermalZones/Members/$entity",
  "@odata.id": "/redfish/v1/Chassis/Rack/ThermalZones/1",
  "@odata.type": "#Intel.Oem.RmmThermalZone",
  "Id": "1",
  "Name": "ThermalZone",
  "Description": "Thermal Zone 1",
  "UUID": "25892e17-80f6-415f-9c65-7395632f0232",
  "CreatedDate": "2014-09-11T01:15:16+08:00",
  "UpdatedDate": "2014-09-11T02:15:11+08:00",
  "RackLocation": {
    "RackUnits": "OU",
    "XLocation": 0,
    "ULocation": 1,
    "UHeight": 8
  },
  "Presence": "111111",
  "DesiredSpeedPWM": 50,
  "DesiredSpeedRPM": 3000,
  "MaxFansSupported": 6,
  "NumberOfFansPresent": 6,
  "VolumetricAirflow": 80,
  "Temperatures": [
    {
      "@odata.id":
"/redfish/v1/Chassis/Rack/ThermalZones/1/ThermalZone#/Temperatures/1",
      "Name": "Inlet Temperature",
      "Status": {
        "State": "Enabled",
        "Health": "OK"
      },
      "ReadingCelsius": 21,
      "PhysicalContext": "Intake",
      "RelatedItem": [
        {
          "@odata.id": "/redfish/v1/Chassis/Rack/ThermalZones/1"
        }
      ]
    },
    {
      "@odata.id":
"/redfish/v1/Chassis/Rack/ThermalZones/1/ThermalZone#/Temperatures/2",
      "Name": "Outlet Temperature",
      "Status": {
        "State": "Enabled",
        "Health": "OK"
      },
      "ReadingCelsius": 35,
      "PhysicalContext": "Exhaust",
    }
  ]
}
```



```
    "RelatedItem": [
      {
        "@odata.id": "/redfish/v1/Chassis/Rack/ThermalZones/1"
      }
    ]
  },
  "Status": {
    "State": "Enabled",
    "Health": "OK"
  },
  "Actions" {
    "#ThermalZone.SetDesiredSpeedPWM": {
      "target":
"/redfish/v1/Chassis/Rack/ThermalZones/1/Actions/ThermalZone.SetDesiredSpeedP
WM",
      "DesiredSpeedPWM@AllowableValues": []
    }
  },
  Fans: [
    {
      "@odata.id":
"/redfish/v1/Chassis/Rack/ThermalZones/1/ThermalZone#/Fans/1",
      "Name": "Fan1",
      "Status": {
        "State": "Enabled",
        "Health": "OK"
      },
      "ReadingRPM": 0,
      "UUID": "25892e17-80f6-415f-9c65-7395632d0223",
      "CreatedDate": "2014-09-11T01:15:16+08:00",
      "UpdatedDate": "2014-09-15T03:12:16+08:00",
      "RackLocation": {
        "RackUnits": "OU",
        "XLocation": 0,
        "ULocation": 1,
        "UHeight": 8,
      }
    }
  ]
}
```

5.3.2.2 POST

5.3.2.2.1 SetDesiredSpeedPWM

Table 52 SetDesiredSpeedPWM

Name	SetDesiredSpeedPWM Action
------	---------------------------



Attribute	Type	Description
PWM	Number	The desired speed of all the FANs in current thermal zone. (0 ~ 100)

Method	URI	Description	Response code
POST	/redfish/v1/Chassis/Rack/ThermalZones/{TZ_RUID}/Actions/ThermalZone.SetDesiredSpeedPWM	Request to set pwm of all the FANs.	See Section 1.7 HTTP response codes.

Request:

```
POST
/redfish/v1/Chassis/Rack/ThermalZones/1/Actions/ThermalZone.SetDesiredSpeedPWM
Content-Type: application/json
{
  "DesiredSpeedPWM": 60
}
```

Response:

200 Success.

```
{
  "Result": "Success"
}
```

§



6 Management Backplane

The management backplane is part of the RMM. This component is platform-specific, like the Control Module (CM) defined in the BDC-A management backplane.

6.1 Management backplanes

The Intel® Rack Scale Design management backplane collection resource provides collection of all management backplanes that belong to the rack.

Table 53 Management backplanes attributes

Name	Collection of management backplanes
Type URI	/redfish/v1/Chassis/Rack/MBPs/

Attribute	Type	Description
@odata.context	String	Context URL: /redfish/v1/\$metadata#Chassis/Rack/MBPs
@odata.id	String	Resource identifier: "/redfish/v1/Chassis/Rack/MBPs"
@odata.type	String	"#Intel.Oem.MBPCollection"
Name	String	"Manager Backplane Collection"
Members@odata.count	Number	Number of the member of this collection
Members	Array	Contains the members of this collection

6.1.1 JSON serialization

```
{
  "@odata.context": String,
  "@odata.id": String,
  "@odata.type": String,
  "Name": String,
  "Members@odata.count": Number,
  "Members": Array
}
```

6.1.2 Operations

This resource supports the GET operation.



6.1.2.1 GET

Table 54 GET operation: list collection of management backplanes

Method	URI	Description	Response code
GET	/redfish/v1/Chassis/Rack/MBPs	List collection of management backplanes	See Section 1.7 HTTP response codes.

Request:

```
GET /redfish/v1/Chassis/Rack/MBPs
Content-Type: application/json
```

Response:

```
{
  "@odata.context": "/redfish/v1/$metadata#Chassis/Rack/MBPs",
  "@odata.id": "/redfish/v1/Chassis/Rack/MBPs",
  "@odata.type": "#Intel.Oem.MBPCollection",
  "Name": "Manager Backplane Collection",
  "Members@odata.count": 2,
  "Members": [
    {
      "@odata.id": "/redfish/v1/Chassis/Rack/MBPs/1"
    },
    {
      "@odata.id": "/redfish/v1/Chassis/Rack/MBPs/2"
    }
  ]
}
```

6.2 Management backplane

Table 55 Management backplane attributes

Name	Management Backplane
Type URI	/redfish/v1/Chassis/Rack/MBPs/{MBP_RUID}/ or /redfish/v1/Chassis/Rack/MBPs/{MBP_UUID}

Attribute	Type	Description
@odata.context	String	Context URL: /redfish/v1/\$metadata#Chassis/Rack/MBPs/Members/\$entity
@odata.id	String	Resource identifier: "/redfish/v1/Chassis/Rack/MBPs/{MBP_RUID}"
@odata.type	String	"#Intel.Oem.MBP"



Attribute	Type	Description
Id	String	The index of the management backplane that is unique within the rack. Generally, it equals the Backplane ID (mbp_id), starting from 1.
UUID	String	Unique identifier for the management backplane system. UUID Pattern.
Name	String	Human readable name for the management backplane system.
Description	String	Editable. Description of the management backplane system.
CreatedDate	String	Timestamp when the management backplane entry was created (ISO 8601). ISO 8601: YYYY-MM-DDThh:mm:ss.SSS'Z' Year, Month, Date (UTC) 1134 Hour, Minute, Second 1135 Relative Time Zone Shift (Hour and Minute) Ex: "2013-01-10T01:09:57+08:00".
UpdatedDate	String	Timestamp when the management backplane status was changed (ISO 8601).
MBPHWAddress	String	The physical address of the management backplane. The format is as follows: "physical_protocol:physical_address" BDC-A uses USB slot to indicate physical address of the management backplane. E.g. "usb:2-1" indicates usb device address is 2, and the usb port is 1. E.g. "ipmb:1-20" indicates ipmb channel 1, smbus device address 20.
MBPIPAddress	String	The IP address of the management backplane.
FirmwareState	String	"Up","Down","Updating"
RackLocation	Object	The location information of the management backplane.
AssetTag	String	Editable. String number of the asset tag of the management back plane. Generally, this value is set by the rack user for inventory management purposes.
SerialNumber	String	The serial number of the device
Manufacturer	String	Manufacturer information
Model	String	Model Information
PartNumber	String	The part number
Actions	Object	Supported actions
Links	Object	The links object contains the links to other resources that are related to this resource.

6.2.1 JSON serialization

```
{
  "@odata.context": String,
  "@odata.id": String,
  "@odata.type": String,
  "Id": String,
  "UUID": String,
  "Name": String,
  "Description": String,
  "CreatedDate": String,
```

```

    "UpdatedDate": String,
    "MBPHWAddress": String,
    "MBPIPAAddress": String,
    "FirmwareState": String,
    "RackLocation": {
        "RackUnits": String,
        "Xlocation": Number,
        "Ulocation": Number,
        "Uheight": Number
    },
    "AssetTag": String
    "SerialNumber": String,
    "Manufacturer": String,
    "Model": String,
    "PartNumber": String,
    "Actions" {
        "#MBP.SetUartTarget": {
            "target": String,
            "TargetTray@AllowableValues": Array,
            "TargetComponent@AllowableValues": Array
        },
        "#MBP.Update": {
            "target": String,
            "Image@AllowableValues": Array
        }
    },
    "Links": {
        "ManagedBy@odata.count": Number,
        "ManagedBy": [
            {
                "@odata.id": String
            }
        ]
    }
}

```

6.2.2 Operations

This resource supports the GET, PATCH, and POST operations.

6.2.2.1 GET

Table 56 GET operation: query information of specific management backplane

Method	URI	Description	Response code
GET	/redfish/v1/Chassis/Rack/MBPs/{MBP_RUID}	Query information of a specific management backplane.	See Section 1.7 HTTP response codes.

Request:

```

GET /redfish/v1/Chassis/Rack/MBPs/1
Content-Type : application/json

```



Response :

```
{
  "@odata.context":
"/redfish/v1/$metadata#Chassis/Rack/MBPs/Members/$entity",
  "@odata.id": "/redfish/v1/Chassis/Rack/MBPs/1",
  "@odata.type": "#Intel.Oem.MBP",
  "Id": "1",
  "UUID": "25892e17-80f6-415f-9c65-7395632f0223",
  "Name": "Management Backplane",
  "Description": "Management Backplane 1",
  "CreatedDate": "2014-09-10T01:09:26+08:00",
  "UpdatedDate": "2014-09-11T11:11:16+08:00",
  "MBPHWAddress": "usb:2-1",
  "MBPIPAddress": "192.168.1.120",
  "FirmwareState": "up",
  "RackLocation": {
    "RackUnits": "OU",
    "Xlocation": 0,
    "Ulocation": 8,
    "Uheight": 8,
  },
  "AssetTag": "",
  "SerialNumber": "",
  "Manufacturer": "",
  "Model": "",
  "PartNumber": "",
  "Actions" {
    "#MBP.SetUartTarget": {
      "target":
"/redfish/v1/Chassis/Rack/MBPs/1/Actions/MBP.SetUartTarget",
      "TargetTray@AllowableValues": [1,2,3,4],
      "TargetComponent@AllowableValues": ["MMP", "SLED1", "SLED2",
"SLED3", "SLED4", "CPP"]
    },
    "#MBP.Update": {
      "target": "/redfish/v1/Chassis/Rack/MBPs/1/Actions/MBP.Update",
      "Image@AllowableValues": []
    }
  },
  "Links": {
    "ManagedBy@odata.count": 1,
    "ManagedBy": [
      {
        "@odata.id": "/redfish/v1/Managers/MBPC1"
      }
    ]
  }
}
```



6.2.2.2 PATCH

Table 57 PATCH operation: update editable properties of specific management backplane

Name	Editable Properties
------	---------------------

Attribute	Type	Description
AssetTag	String	Optional. String number of the asset tag of the management back plane. Generally, this value is set by the rack user for inventory management purposes. (Max length: 128bytes)

Method	URI	Description	Response code
PATCH	/redfish/v1/Chassis/Rack/MBPs/{MBP_RUID}	Update editable properties of a specific management backplane.	See Section 1.7 HTTP response codes.



Request:

```
PATCH /redfish/v1/Chassis/Rack/MBPs/1
Content-Type: application/json
{
  "AssetTag": "11223344"
}
```

Response:

```
{
  "@odata.context":
"/redfish/v1/$metadata#Chassis/Rack/MBPs/Members/$entity",
  "@odata.id": "/redfish/v1/Chassis/Rack/MBPs/1",
  "@odata.type": "#Intel.Oem.MBP",
  "Id": "1",
  "UUID": "25892e17-80f6-415f-9c65-7395632f0223",
  "Name": "Management Backplane",
  "Description": "Rack Management Plane 1",
  "CreatedDate": "2014-09-10T01:09:26+08:00",
  "UpdatedDate": "2014-09-11T11:11:16+08:00",
  "MBPHWAddress": "usb:2-1",
  "MBPIPAAddress": "192.168.1.120",
  "FirmwareState": "up",
  "RackLocation": {
    "RackUnits": "OU",
    "Xlocation": 0,
    "Ulocation": 8,
    "Uheight": 8,
  },
  "AssetTag": "11223344",
  "SerialNumber": "",
  "Manufacturer": "",
  "Model": "",
  "PartNumber": "",
  "Actions" {
    "#MBP.SetUartTarget": {
      "target":
"/redfish/v1/Chassis/Rack/MBPs/1/Actions/MBP.SetUartTarget",
      "TargetTray@AllowableValues": [1,2,3,4],
      "TargetComponent@AllowableValues": ["MMP", "SLED1", "SLED2",
"SLED3", "SLED4", "CPP"]
    },
    "#MBP.Update": {
      "target": "/redfish/v1/Chassis/Rack/MBPs/1/Actions/MBP.Update",
      "Image@AllowableValues": []
    }
  },
  "Links": {
    "ManagedBy@odata.count": 1,
    "ManagedBy": [
      {
        "@odata.id": "/redfish/v1/Managers/MBPC1"
      }
    ]
  }
}
```



```
}
}
```

6.2.2.3 POST

6.2.2.3.1 SetUartTarget

Table 58 SetUartTarget

Name	SetUartTarget Action
------	----------------------

Attribute	Type	Description
TargetTray	Number	The target tray index
TargetComponent	String	Allowable values: "MMP" "SLED1", "SLED2", "SLED3", "SLED4". "CPP"

Method	URI	Description	Response code
POST	/redfish/v1/Chassis/Rack/MBPs/{MBP_RUID}/Actions/MBP.SetUartTarget	Set UART Target of the management back plane.	See Section 1.7 HTTP response codes.

Request:

```
POST /redfish/v1/Chassis/Rack/MBPs/1/Actions/MBP.SetUartTarget
Content-Type: application/json
{
  "TargetTray": 1,
  "TargetComponent": "MMP"
}
```

Response:

200 Success.

```
{
  "Result": "Success"
}
```

6.2.2.3.2 Update action

Table 59 Update

Name	Update Action
------	---------------



Attribute	Type	Description
Action	String	Action type. "Update"
Image	String	CM/MBP FW package content encoded with base64.

Method	URI	Description	Response code
POST	/redfish/v1/Chassis/Rack/MBPs/{MBP_RUID}/Actions/MBP.Update	Update CM FW.	See Section 1.7 HTTP response codes.

Request:

```
POST /redfish/v1/Chassis/Rack/MBPs/1/Actions/MBP.Update
Content-Type: application/json
{
  "Image": "XAXX111ddxx###....."
}
```

302 Redirect

Location: /redfish/v1/Chassis/Rack/MBPs/1/Actions/MBP.Update



7 Event Service

7.1 EventService

Table 60 EventService

Name	EventService
Type URI	/redfish/v1/EventService/

Attribute	Type	Description
@odata.context	String	/redfish/v1/\$metadata#EventService
@odata.id	String	/redfish/v1/EventService
@odata.type	String	Type URL: "#EventService.1.0.0.EventService"
Id	String	Uniquely identifies the resource within the collection of like resources.
Name	String	The name of the resource or array element.
Status	Object	See Table 62.
ServiceEnabled	Boolean	This indicates whether this service is enabled.
DeliveryRetryAttempts	Number	This is the number of attempts an event posting is retried before the subscription is terminated.
DeliveryRetryIntervalSeconds	Number	This represents the number of seconds between retry attempts for sending any given Event.
EventTypesForSubscription	Array	See Table 61.
Subscriptions	Object	/redfish/v1/EventService/Subscriptions

Table 61 Available event types

Event Type
StatusChange
ResourceUpdated
ResourceAdded
ResourceRemoved
Alert
RackStatusChange
RackResourceUpdated
PowerZoneResourceAdded
PowerZoneResourceRemoved
PSUStatusChange
PSUResourceAdded
PSUResourceRemoved
ThermalZoneResourceAdded
ThermalZoneResourceRemoved
ThermalZoneResourceUpdated
FanStatusChange
FanResourceAdded
FanResourceRemoved
DrawerStatusChange
DrawerResourceAdded



DrawerResourceRemoved
DrawerAlert
MBPStatusChange
MBPResourceAdded
MBPResourceRemoved

Table 62 **Status**

Name	Type	Description
State	String	This indicates the known state of the resource, such as if it is enabled. Valid values: Enabled: This function or resource has been enabled Disabled: This function or resource has been disabled StandbyOffline: This function or resource is enabled, but awaiting an external action to activate it StandbySpare: This function or resource is part of a redundancy set and is awaiting a failover or other external action to activate it. InTest: This function or resource is undergoing testing Starting: This function or resource is starting Absent: This function or resource is not present or not detected
Health	String	This represents the health state of this resource in the absence of its dependent resources. Valid values: OK: Normal Warning: A condition exists that requires attention Critical: A critical condition exists that requires immediate attention

7.1.1 JSON serialization

```
{
  "@odata.context": String,
  "@odata.id": String,
  "@odata.type": String,
  "Id": String,
  "Name": String,
  "Status": {
    "State": String
    "Health": String
  },
  "ServiceEnabled": Boolean,
  "DeliveryRetryAttempts": Number,
  "DeliveryRetryIntervalSeconds": Number
  "EventTypesForSubscription": Array,
  "Subscriptions": {
    "@odata.id": String
  }
}
```



7.1.2 Operations

7.1.2.1 GET

List Event Service of rack

Table 63 Get option

Method	URI	Description	Response code
GET	/redfish/v1/EventService	List Event service information	Normal: 200 Error: See Section 1.7 HTTP response codes.

Request:

```
GET ${URI}
Content-Type: application/json
```

Response:

```
{
  "@odata.context": "/redfish/v1/$metadata#EventService",
  "@odata.id": "/redfish/v1/EventService",
  "@odata.type": "#EventService.1.0.0.EventService",
  "Id": "EventService",
  "Name": "Event Service",
  "Status": {
    "State": "Enabled",
    "Health": "OK"
  },
  "ServiceEnabled": true,
  "DeliveryRetryAttempts": 0,
  "DeliveryRetryIntervalSeconds": 30,
  "EventTypesForSubscription": [
    "StatusChange",
    "ResourceUpdated"
  ],
  "Subscription": {
    "@odata.id": "/redfish/v1/Chassis/Rack/EventService/Subscriptions"
  }
}
```

7.2 Subscriptions

Subscriptions resource – provides subscriptions information

Table 64 Subscriptions

Name	Subscriptions
Type URI	/redfish/v1/EventService/Subscriptions

Attribute	Type	Description
@odata.context	String	/redfish/v1/\$metadata#EventService/Members/Events/\$entity



Attribute	Type	Description
@odata.id	String	/redfish/v1/EventService/Subscriptions/
@odata.type	String	Type URL: "#EventDestinationCollection.EventDestinationCollection"
Name	String	The name of the resource or array element.
Members@odata.count	Number	The total count of subscriptions
Members	Array	List of subscriptions, /redfish/v1/Chassis/Rack/EventService/Subscriptions/\${Index}

7.2.1 JSON serialization

```
{
  "@odata.context": String,
  "@odata.id": String,
  "@odata.type": String,
  "Name": String,
  "Members@odata.count": Number,
  "Members": [
    {
      "@odata.id": String
    }
  ]
}
```

7.2.2 Operations

7.2.2.1 GET

Table 65 Get subscriptions

Method	URI	Description	Response code
GET	/redfish/v1/EventService/Subscriptions	List Subscriptions information	Normal: 200 Error: See Section 1.7 HTTP response codes.

Request:

```
GET ${URI}
Content-Type: application/json
```

Response:

```
{
  "@odata.context":
"/redfish/v1/$metadata#EventService/Members/Events/$entity",
  "@odata.id": "/redfish/v1/EventService/Subscriptions/",
  "@odata.type": "#EventDestinationCollection.EventDestinationCollection",
  "Name": "Event Subscription Collection",
  "Members@odata.count": 2,
  "Members": [
    {
      "@odata.id": "/redfish/v1/EventService/Subscriptions/1"
    },
    {

```

```

    "@odata.id": "/redfish/v1/EventService/Subscriptions/2"
  }
]
}

```

7.2.2.2 POST

Table 66 Subscribe actions

Name	Subscribe actions
------	-------------------

Attribute	Type	Description
Name	String	The name of the resource or array element.
Description	String	Description of the subscription.
Destination	String	URL of listener destination (Max length: 1024 bytes)
EventTypes	Array	See Table 61.
Context	String	A context can be supplied at subscription time. This property is the context value supplied by the subscriber. (Max length: 256 bytes)
Protocol	String	Protocol of subscription, allowable value: "Redfish"

Request:

```

POST /redfish/v1/EventService/Subscriptions
Content-Type: application/json
{
  "Name": "Event Subscription",
  "Description": "Subscribed by PodM",
  "Destination": "http://localhost:8092/${listener}",
  "EventTypes": [
    "PowerZoneResourceAdded",
    "ResourceRemoved"
  ],
  "Context": "HotSwap events",
  "Protocol": "Redfish"
}

```

Response:

```

HTTP/1.1 201 Created
Location:
http://<IP>:<Port>/redfish/v1/Chassis/Rack/EventService/Subscriptions/1

```

7.3 Subscription

Table 67 Subscription

Name	Subscription
Type URI	/redfish/v1/EventService/Subscriptions/\${Index}



Attribute	Type	Description
@odata.context	String	/redfish/v1/\$metadata#EventService/Members/ Subscriptions/Members/\$entity
@odata.id	String	/redfish/v1/EventService/Subscriptions/\${Index}
@odata.type	String	Type URL: "#EventDestination.1.0.0.EventDestination"
Id	String	Index of subscription
Name	String	The name of the resource or array element.
Description	String	Description of the subscription.
Destination	String	URL of subscription
EventTypes	Array	See Table 61.
Context	String	A context can be supplied at subscription time. This property is the context value supplied by the subscriber.
Protocol	String	Protocol of subscription, allowable values: "Redfish"

7.3.1 JSON serialization

```
{
  "@odata.context": String,
  "@odata.id": String,
  "@odata.type": String,
  "Id": String,
  "Name": String,
  "Description": String,
  "Destination": String,
  "EventTypes": Array,
  "Context": String,
  "Protocol": String
}
```

7.3.2 Operations

7.3.2.1 GET

Get specific subscription

Table 68 Get subscription

Method	URI	Description	Response code
GET	/redfish/v1/EventService/Subscriptions/\${Index}	Get subscription	Normal: 200 Error: See Section 1.7 HTTP response codes.

Request:

```
GET /redfish/v1/EventService/Subscriptions/1
Content-Type: application/json
```

Response:

```
{
```




```
"@odata.context":
"/redfish/v1/$metadata#EventService/Members/Subscriptions/Members/$entity",
"@odata.id": "/redfish/v1/EventService/Subscriptions/1",
"@odata.type": "#EventDestination.1.0.0.EventDestination",
"Id": "1",
"Name": "EventSubscription 1",
"Description": "Subscribed by PodM",
"Destination": "http://10.239.56.4:8092/redfish/v1/Chassis/Rack",
"EventTypes": [
  "MBPStatusChange",
  "DrawerAlert"
],
"Context": "RackScale Event",
"Protocol": "Redfish"
}
```

7.3.2.2 DELETE

Request:

```
DELETE /redfish/v1/EventService/Subscriptions/1
```

Response:

```
HTTP/1.1 204 No Content
```



7.4 Event array

Table 69 Event array

Name	Event array
------	-------------

Attribute	Type	Description
@odata.context	String	/redfish/v1/\$metadata#EventService/Members/Events/Members/\$entity
@odata.id	String	/redfish/v1/EventService/Events/\${Index}
@odata.type	String	Type: "#EventService.1.0.0.Event"
Id	String	Index of events
Events	Array	See Table 70.

Table 70 Event attributes

Attribute	Type	Description
EventType	String	Event type
MessageId	String	This is the key for this message which can be used to look up the message in a message registry.
MessageArgs	Array	This array of message arguments are substituted for the arguments in the message when looked up in the message registry.
Context	String	A context can be supplied at subscription time. This property is the context value supplied by the subscriber.
OriginOfCondition	Object	This indicates the resource that originated the condition that caused the event to be generated.

7.4.1 JSON serialization

```
{
  "@odata.context": String,
  "@odata.id": String,
  "@odata.type": String,
  "Id": String,
  "Events": [
    {
      "EventType": String,
      "MessageId": String,
      "MessageArgs": [
        String
      ],
      "Context": String,
      "OriginOfCondition": Object,
    }
  ]
}
```

7.4.2 Event example

```
{
  "@odata.context":
"/redfish/v1/$metadata#EventService/Members/Events/Members/$entity",
  "@odata.id": "/redfish/v1/EventService/Events/1",
}
```

```
"@odata.type": "#EventService.1.0.0.Event",
"Id": "1",
"Events": [
  {
    "EventType": "ResourceRemoved",
    "MessageId": "RMM1.0.0MSGResourceRemoved",
    "MessageArgs": [
      "Drawer",
      "2"
    ],
    "Context": "RackScale HotSwap event",
    "OriginOfCondition": {
      "@odata.id": "/redfish/v1/Drawers/2/"
    }
  }
]
}
```

§



8 Message Registry

8.1 Message registry

Table 71 Message registry

Name	Message Registry
Type URI	/redfish/v1/MessageRegistry

Attribute	Type	Description
@odata.context	String	Context URL: /redfish/v1/\$metadata#MessageRegistry
@odata.id	String	Resource identifier: /redfish/v1/MessageRegistry
@odata.type	String	Type URL: "#MessageRegistry.1.0.0.MessageRegistry"
Language	String	This is the RFC 5646 compliant language code for the registry.
RegistryPrefix	String	This is the single word prefix used to form a messageID structure.
RegistryVersion	String	This is the message registry version which is used in the middle portion of a messageID.
OwningEntity	String	This is the organization or company that publishes this registry
Messages	Object	This is the unique identifier for the message within the registry

8.1.1 JSON serialization

```
{
  "@odata.context": String,
  "@odata.id": String,
  "@odata.type": String,
  "Language": String,
  "RegistryPrefix": String,
  "RegistryVersion": String,
  "OwningEntity": String,
  "Messages": Object
}
```

8.1.2 Operations

8.1.2.1 GET

Get Message Registry

Table 72 Get MessageRegistry

Method	URI	Description	Response code
GET	/redfish/v1/MessageRegistry	Get MessageRegistry	Normal: 200 Error: See Section 1.7 HTTP response codes.

Request:

```
GET /redfish/v1/MessageRegistry
```



Content-Type: application/json

Response:

```
{
  "@odata.context": "/redfish/v1/$metadata#MessageRegistry",
  "@odata.id": "/redfish/v1/MessageRegistry",
  "@odata.type": "#MessageRegistry.1.0.0.MessageRegistry",
  "Language": "en_US",
  "RegistryPrefix": "RMM",
  "RegistryVersion": "1.0.0",
  "OwningEntity": "Intel",
  "Messages": {
    "MSGRackStatusChange": {
      "Description": "Rack Status Change",
      "Message": "Rack status change [%string]\n",
      "Severity": "N/A",
      "NumberOfArgs": 1,
      "ParamTypes": ["string"]
    },
    "MSGRackResourceUpdated": {
      "Description": "Rack Info Update",
      "Message": "Rack updated [%string].\n",
      "Severity": "N/A",
      "NumberOfArgs": 1,
      "ParamTypes": ["string"]
    },
    "MSGPsuStatusChange": {
      "Description": "PSU Status Change",
      "Severity": "N/A",
      "NumberOfArgs": 2,
      "ParamTypes": ["string", "string"]
    },
    ...
  }
}
```

§