Intel® Rack Scale Architecture PSME

API Specification

Software v1.1

August 2015

Revision 002

Contents

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Revision History

Revision	Description	Date
001	Initial public release. Assigned document number 332873.	August 3, 2015
002	Minor updates.	August 17, 2015

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1 Introduction

1.1 Scope

This specification defines the interface to the PSME module to support the discovery, composability, and manageability of Intel® Rack Scale Architecture drawers.

The PSME API and schema has been built on top of the Redfish/SPMF API and schema version 0.94. Refer to *http://www.redfishspecification.org/* for details of Redfish.

Processor resource has been added to PSME API from Redfish Specification 0.96 version.

1.2 Intended audience

The intended audiences for this document include:

- Software vendors (ISVs) of pod management software, who make use of the PSME API to discover, compose and manager drawers, regardless of the hardware vendor and/or manage drawers in a multivendor environment.
- Software Vendors (OxMs) of PSME firmware that will implement of PSME firmware for their hardware platforms, providing Intel® Rack Scale Architecture compliant systems.

1.3 Terminology

Table 1   Terminology

Term	Definition
BMC	Baseboard management controller
CIMI	Cloud Infrastructure Management Interface
HTTP	Hypertext Transfer Protocol
JSON	JavaScript object notation
NIC	Network interface card
OCCI	Open Cloud Computing Interface
OData	Open Data Protocol
OVF	Open virtualization format
POD	A physical collection of multiple racks
PODM	POD Manager
PSME	Pooled System Management Engine
REST	Representational state transfer
SDV	Software development vehicle
URI	Uniform resource identifier
UUID	Universally unique identifier
XML	Extensible Markup Language

1.4   References

Table 2   Reference documents

Number	Title	Location
332971	Intel® Rack Scale Architecture Getting Started Guide	*https://github.com/01org/RSA*
332868	Intel® Rack Scale Architecture GAMI API Specification	*https://github.com/01org/RSA*
332869	Intel® Rack Scale Architecture Pod Manager API Specification	*https://github.com/01org/RSA*
332870	Intel® Rack Scale Architecture Pod Manager Release Notes	*https://github.com/01org/RSA*
332871	Intel® Rack Scale Architecture Pod Manager User Guide	*https://github.com/01org/RSA*
332872	Intel® Rack Scale Architecture PSME Release Notes	*https://github.com/01org/RSA*
332873	Intel® Rack Scale Architecture PSME API Specification	This document.
332874	Intel® Rack Scale Architecture PSME User Guide	*https://github.com/01org/RSA*
332875	Intel® Rack Scale Architecture RMM Installation Guide	*https://github.com/01org/RSA*
332876	Intel® Rack Scale Architecture RMM Release Notes	*https://github.com/01org/RSA*
332877	Intel® Rack Scale Architecture RMM API Specification	*https://github.com/01org/RSA*
332878	Intel® Rack Scale Architecture Storage Services API Specification	*https://github.com/01org/RSA*
	Scalable Platforms Management	*http://dmtf.org/standards/wip*
	Intel® Rack Scale Architecture System Manageability Architecture Specification	
	Intel® Rack Scale Architecture Platform Design Guide	

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2   PSME API

2.1   PSME API structure and relations

The PSME REST API provides the REST-based interface that allows full management of the PSME, including asset discovery and configuration.

2.1.1   PSME API physical resource hierarchy

Figure 1   PSME REST API hierarchy
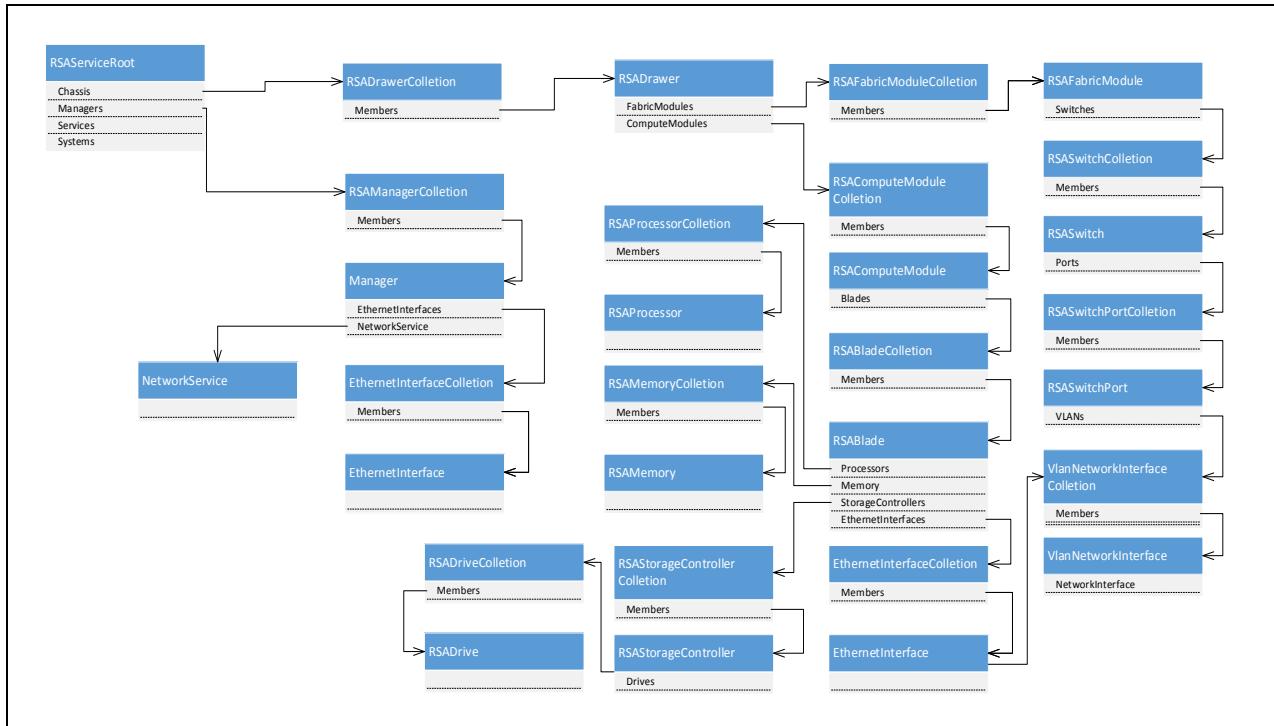
Table 3   Resources and URIs

Resource	URI
Service Root	/rest/v1
Drawer Collection	/rest/v1/Drawers
Drawer	/rest/v1/Drawers/{drawerID}
Compute Module Collection	/rest/v1/Drawers/{drawerID}/ComputeModules
Compute Module	/rest/v1/Drawers/{drawerID}/ComputeModules/{moduleID}
Blade Collection	/rest/v1/Drawers/{drawerID}/ComputeModules/{moduleID}/Blades
Blade	/rest/v1/Drawers/{drawerID}//ComputeModules/{moduleID}/Blades/{bladeID}
Processors Collection	/rest/v1/Drawers/{drawerID}/ComputeModules/{moduleID}/Blades/{bladeID}/Processors
Processor	/rest/v1/Drawers/{drawerID}/ComputeModules/{moduleID}/Blades/{bladeID}/Processors/{processorID}
Memory Collection	/rest/v1/Drawers/{drawerID}/ComputeModules/{moduleID}/Blades/{bladeID}/Memory
Memory	/rest/v1/Drawers/{drawerID}/ComputeModules/{moduleID}/Blades/{bladeID}/Memory/{memoryID}
Storage Controllers Collection	/rest/v1/Drawers/{drawerID}/ComputeModules/{moduleID}/Blades/{bladeID}/StorageControllers
Storage Controller	/rest/v1/Drawers/{drawerID}/ComputeModules/{moduleID}/Blades/{bladeID}/StorageControllers/{controllerID}
Drives Collection	/rest/v1/Drawers/{drawerID}/ComputeModules/{moduleID}/Blades/{bladeID}/StorageControllers/{controllerID}/Drives
Drive	/rest/v1/Drawers/{drawerID}/ComputeModules/{moduleID}/Blades/{bladeID}/StorageControllers/{controllerID}/Drives/{driveID}
Manager Collection	/rest/v1/Managers
Manager	/rest/v1/Managers/{managerID}
Network Service	/rest/v1/Managers/{managerID}/NetworkService
Network Interface Collection	/rest/v1/Drawers/{drawerID}/ComputeModules/{moduleID}/Blades/{bladeID}/EthernetInterfaces /rest/v1/Managers/{managerID}/EthernetInterfaces
Network Interface	/rest/v1/Drawers/{drawerID}/ComputeModules/{moduleID}/Blades/{bladeID}/EthernetInterfaces/{nicID} /rest/v1/Managers/{managerID}/EthernetInterfaces/{nicID}
Fabric Module Collection	/rest/v1/Drawers/{drawerID}/FabricModules
Fabric Module	/rest/v1/Drawers/{drawerID}/FabricModules/{moduleID}
Fabric Switch Collection	/rest/v1/Drawers/{drawerID}/FabricModules/{moduleID}/Switches
Fabric Switch	/rest/v1/Drawers/{drawerID}/FabricModules/{moduleID}/Switches/{switchID}
Fabric Switch Port Collection	/rest/v1/Drawers/{drawerID}/FabricModules/{moduleID}/Switches/{switchID}/Ports
Fabric Switch Port	/rest/v1/Drawers/{drawerID}/FabricModules/{moduleID}/Switches/{switchID}/Ports/{portID}
VLAN Network Interface Collection	/rest/v1/Drawers/{drawerID}/FabricModules/{moduleID}/Switches/{switchID}/Ports/{portID}/VLANs /rest/v1/Drawers/{drawerID}/ComputeModules/{moduleID}/Blades/{bladeID}/EthernetInterfaces/{nicID}/VLANs
VLAN Network Interface	/rest/v1/Drawers/{drawerID}/FabricModules/{moduleID}/Switches/{switchID}/Ports/{portID}/VLANs/{vlanID} /rest/v1/Drawers/{drawerID}/ComputeModules/{moduleID}/Blades/{bladeID}/EthernetInterfaces/{nicID}VLANs/{vlanID}

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3   PSME REST API Error Codes

This chapter contains descriptions of all error codes that may be returned by the REST calls implemented in the PSME REST API of the Intel® Rack Scale Architecture software v1.1 release.

3.1   API error response

In the case of an error, the PSME REST API responds with an HTTP status code, as defined by the HTTP 1.1 specification and constrained by additional requirements defined in this specification.

HTTP response status codes alone often do not provide enough information to enable deterministic error semantics. PSME REST API return extended error information as a JSON object with single property named "error". The value of this property shall be a JSON object with the properties shown in Table 4.

Table 4   API error response attributes

Attribute	Description
code	String indicating a specific error or message (not to be confused with the HTTP status code).
message	A human readable error message indicating the semantics associated with the error.
target	An optional string defining the target of the particular error.
details	An optional array of JSON objects with code, message, target, severity, and resolution properties, providing more detailed information about the error.
message.parameters	An optional array of strings representing the substitution parameter values for the message. The Severity attribute is an annotation specified in the DMTF namespace and shall be prefixed with the alias "message".
message.severity	An optional string representing the severity of the error. The Severity attribute is an annotation specified in the DMTF namespace and shall be prefixed with the alias "message".
message.resolution	An optional string describing recommended action(s) to take to resolve the error. The Resolution attribute is an annotation specified in the DMTF namespace and shall be prefixed with the alias "message".

3.1.1   Example error JSON object

```
{
      "error": {
              "code": "Base.1.0.InvalidEndpoint",
              "message": "Invalid endpoint in /rest/v1 namespace",
              "details": [
                      {
                      }
              ]
      }
}
```

3.2 API error codes

In general, if an error is not described in any of the following tables, it is to be mapped into HTTP 500 Internal Error code.

3.2.1 General error codes

Table 5 **General error codes**

Error code	Description	HTTP status code
UnknownException	A generic error message, given when an unexpected condition was encountered and no more specific message is suitable.	500 Internal Error

3.2.2 Request error codes

Table 6 **Request error codes**

Error code	Description	HTTP status code
InvalidEndpoint	Invalid endpoint in /rest/v1 namespace	404 Not Found
InvalidPayload	Request payload is invalid or missing	400 Bad Request
MalformedUri	Malformed URI	400 Bad Request

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4   PSME REST API Definition

4.1   Service root

Service root resource – entry point.

Table 7   Service root attributes

Name	Service root		
Type URI	/rest/v1/		
Attribute	**Type**	**Required**	**Description**
Id	String	Yes	Resource identifier
Name	String	Yes	Name of service root
Modified	String	Yes	The date-time stamp that the object was last modified
Time	String	No	The current time as reported by the owner of this SPMA Service
ServiceVersion	String	Yes	Version of Redfish service in majorversion.minorversion.errata format.
UUID	String	Yes	Unique identifier for a service instance – must be constant for particular drawer.
Chassis	Link	Yes	Link to chassis collection (Drawers)
Systems	Link	No	Link to Computer Systems collection (logical server nodes)
Services	Link	No	Link to services collection
Managers	Link	Yes	Link to Managers collection

Note: Link sections Systems and Services are empty for PSME.

4.1.1   Metadata

TBD.

4.1.2   JSON serialization

```
{
        "@odata.context": string,
        "@odata.id": string,
        "@odata.type": string,
        "Id":                    string,
        "Name":         string,
        "Modified":     string,
        "Time":         string,
        "ServiceVersion" : string,
        "UUID":         string,
        "Links": {
                "Chassis":      {
                        "@odata.id": string
                },
                "Systems":      {
                        "@odata.id": string
                },
                "Services":     {
                        "@odata.id": string
                },
                "Managers": {
                        "@odata.id": string
```

```
            },
       }
}
```

4.1.3   Operations

4.1.3.1   GET

Request:

```
GET /rest/v1
Content-Type: applicaton/json
```

Response:

```
{
        "@odata.context": "/rest/v1/$metadata#ServiceRoot",
        "@odata.id": "/rest/v1",
        "@odata.type": "#RSAServiceRoot.1.0.0.RSAServiceRoot",
        "Id": "RootService",
        "Name": "RSA Service Root",
        "Modified": "2015-02-20T14:44:01+00:00",
        "Time": "2015-03-04T13:45:04+00:00",
        "ServiceVersion" : "1.0.0",
        "UUID": ""00000000-0000-0000-0000-000000000000",
        "Links": {
                "Chassis":       {
                        "@odata.id": "/rest/v1/Drawers"
                },
                "Managers": {
                                "@odata.id": "/rest/v1/Managers"
                },
        }
}
```

4.1.3.2   PUT

Operation is not allowed on this resource.

4.1.3.3   PATCH

Operation is not allowed on this resource.

4.1.3.4   POST

Operation is not allowed on this resource.

4.1.3.5   DELETE

Operation is not allowed on this resource.

4.2   Drawers collection

Drawers collection resource – provides collection of all drawers available.

Table 8   Drawers collection attributes

Name	Drawers		
Type URI	/rest/v1/Drawers		
Attribute	**Type**	**Required**	**Description**
Name	String	Yes	Name of collection
Modified	String	Yes	The date-time stamp that the object was last modified

4.2.1   Metadata

TBD.

4.2.2   JSON serialization

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

4.2.3   Operations

4.2.3.1   GET

Request:

```
GET /rest/v1/Drawers
Content-Type: application/json
```

Response:

```
{
        "@odata.context": "/rest/v1/$metadata#RSADrawers",
        "@odata.id": "/rest/v1/Drawers",
        "@odata.type": "#RSADrawer.1.0.0.RSADrawersCollection",
        "Name": "Drawers Collection",
        "Modified": "2015-02-23T14:44:01+00:00",
        "Links": {
                "Members@odata.count": 1,
                "Members": [
                        {
                                "@odata.id": "/rest/v1/Drawers/1"
                        }
                ]
        }
}
```

4.2.3.2 PUT

Operation is not allowed on this resource.

4.2.3.3 PATCH

Operation is not allowed on this resource.

4.2.3.4 POST

Operation is not allowed on this resource.

4.2.3.5 DELETE

Operation is not allowed on this resource.

4.3 Drawer

Drawer (aka. tray) resource – provides detailed information about a single drawer.

Table 9   Drawer attributes

Name	Drawer			
Type URI	/rest/v1/Drawers/{DrawerId}			
Attribute	**Type**	**Required**	**Description**	
Id	String	Yes	Resource identifier	
Name	String	Yes	Name of the drawer	
Modified	String	Yes	The date-time stamp that the object was last modified	
ChassisType	String	Yes	Physical form factor of this resource	
Manufacturer	String	No	Manufacturer name	
Model	String	No	Drawer model	
SerialNumber	String	No	Drawer serial number	
Status	Object	Yes	Resource status represented by following object:	
			Name	**Type**	**Required**	**Description**
			State	String	Yes	Known state of the resource
			Health	String	No	Overall health state from the view of this resource
			HealthRollup	String	No	Health state of this resource in the absence of its dependent resources
EnumStatus	String	Yes	Status of resource enumeration	
Location	Object	Yes	**Name**	**Type**	**Required**	**Description**
			Pod	Number	Yes	Pod number
			Rack	Number	Yes	Rack number
			Drawer	Number	Yes	Drawer number
Oem	Object	No	OEM defined object	
ComputeModules	Link	Yes	Link to Compute Modules collection	
FabricModules	Link	Yes	Link to Fabric Modules collection	
ManagedBy	Array	Yes	Array of links to Managers of that Drawer	

4.3.1 Metadata

TBD.

4.3.2 JSON serialization

```
{
        "@odata.context":        string,
        "@odata.id":                          string,
        "@odata.type":                        string,
        "Id":                                 string,
        "Name":                          string,
        "Modified":                      string,
        "ChassisType":                   string,
        "Manufacturer":                  string,
        "Model":                              string,
        "SerialNumber":                  string,
        "Status": {
                "State":                              enum ("Enabled",
"Disabled", "Offline", "InTest", "Starting", "Absent")
                "Health":                             enum ("OK", "Warning",
"Critical")
        },
        "EnumStatus":          enum ( "Enumerated", "NotEnumerated")
        "Location": {
                        "Pod":                    Number,
                        "Rack":                   Number,
                        "Drawer":                 Number
        },
        "Oem":                                object,
        "Links": {
                "ComputeModules": {
                                "@odata.id": string
                },
                "FabricModules": {
                                "@odata.id": string
                },
                "ManagedBy": [
                        {
                                "@odata.id": string
                        }
                ],
                "Oem" :        object
        }
}
```

4.3.3 Operations

4.3.3.1 GET

Request:

```
GET /rest/v1/Drawers/1
Content-Type: applicaton/json
```

Response:

```
{
        "@odata.context":
"/rest/v1/$metadata#RSADrawers/Links/Members/$entity",
        "@odata.id": "/rest/v1/Drawers/1",
        "@odata.type": "#RSADrawer.1.0.0.RSADrawer",
        "Id": "1",
        "Name": "RSA Drawer",
        "Modified": "2015-02-20T14:44:00+00:00",
        "ChassisType": "Shelf",
        "Manufacturer": "Intel Corporation",
        "Model": "BDC-A",
        "SerialNumber": "",
        "Status": {
                "State": < { "Enabled", "Disabled", "Offline", "InTest",
"Starting", "Absent" } >
                "Health": < {"OK", "Warning", "Critical" } >
        },
        "EnumStatus": < { "Enumerated", "NotEnumerated" } >
        "Location": {
                        "Pod": 1,
                        "Rack": 1,
                        "Drawer": 1
        },
        "Oem": {},
        "Links": {
                "ComputeModules": {
                                "@odata.id":
"/rest/v1/Drawers/1/ComputeModules"
                },
                "FabricModules": {
                                "@odata.id": "/rest/v1/Drawers/1/FabricModules"
                },
                "ManagedBy": [
                        {
                                "@odata.id": "/rest/v1/Managers/1"
                        }
                ],
                "Oem" : {}
        }
}
```

4.3.3.2 PUT

Operation is not allowed on this resource.

4.3.3.3 PATCH

Operation is not allowed on this resource.

4.3.3.4 POST

Operation is not allowed on this resource.

4.3.3.5 DELETE

Operation is not allowed on this resource.

4.4 Compute module collection

Compute module collection resource – provides collection of all compute modules available in a drawer.

Table 10   Modules collection attributes

Name	Compute modules		
Type URI	/rest/v1/Drawers/1/ComputeModules		
Attribute	**Type**	**Required**	**Description**
Name	String	Yes	Name of collection
Modified	String	Yes	The date-time stamp that the object was last modified

4.4.1 Metadata

TBD

4.4.2 JSON serialization

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

4.4.3 Operations

4.4.3.1 GET

Request:

```
GET /rest/v1/Drawers/1/ComputeModules
Content-Type: application/json
```

Response:

```
{
        "@odata.context": "/rest/v1/$metadata#
RSADrawers/Links/Members/1/ComputeModules",
        "@odata.id": "/rest/v1/Drawers/1/ComputeModules",
        "@odata.type": "#RSAComputeModule.1.0.0.RSAComputeModuleCollection",
        "Name": "Compute Module Collection",
        "Modified": "2015-02-23T14:44:00+00:00",
        "Links": {
                "Members@odata.count": 3,
                "Members": [
                        {
                                "@odata.id":
"/rest/v1/Drawers/1/ComputeModules/1"
                        },
                        {
                                "@odata.id":
"/rest/v1/Drawers/1/ComputeModules/2"
                        },
                        {
                                "@odata.id":
"/rest/v1/Drawers/1/ComputeModules/3"
                        }
                ]
        }
}
```

4.4.3.2 PUT

Operation is not allowed on this resource.

4.4.3.3 PATCH

Operation is not allowed on this resource.

4.4.3.4 POST

Operation is not allowed on this resource.

4.4.3.5 DELETE

Operation is not allowed on this resource.

4.5 Compute module

Compute module resource – provides detailed information about a single module identified by {moduleID}.

Table 11   Module attributes

Name	Compute module		
Type URI	/rest/v1/Drawers/1/ComputeModules/{moduleID}		
Attribute	**Type**	**Required**	**Description**
Id	String	Yes	Resource identifier
Name	String	Yes	Name of module
Modified	String	Yes	The date-time stamp that the object was last modified
ChassisType	String (enum)	Yes	Physical form factor of this resource

Name	Compute module		
Type URI	/rest/v1/Drawers/1/ComputeModules/{moduleID}		
Attribute	**Type**	**Required**	**Description**
Manufacturer	String	No	Manufacturer name
Model	String	No	Compute module model
SerialNumber	String	No	Module serial number
Status	Object	Yes	Resource status represented by following object:

				Name	Type	Required	Description
				State	String	Yes	Known state of the resource
				Health	String	No	Overall health state from the view of this resource
				HealthRollup	String	No	Health state of this resource in the absence of its dependent resources

EnumStatus	String	Yes	Status of resource enumeration
Location	Object	Yes	

			Name	Type	Required	Description
			Pod	Number	Yes	Pod number
			Rack	Number	Yes	Rack number
			Drawer	Number	Yes	Drawer number
			Module	Number	Yes	Module number

Oem	Object	No	OEM defined object
Blades	Link	Yes	Link to Blades collection
ContainedBy	Link	Yes	Link to entity containing this module
ManagedBy	Array	Yes	Array of links to manager of this module

4.5.1 Metadata

4.5.2 JSON serialization

```
{
        "@odata.context":                      string,
        "@odata.id":                           string,
        "@odata.type":                         string,
        "Id":                                  string,
        "Name":                                string,
        "Modified":                            string,
        "ChassisType":                         string,
        "Manufacturer":                        string
        "Model":                               string,
        "SerialNumber":                        string,
        "Status": {
                "State":                       enum ("Enabled",
"Disabled", "Offline", "InTest", "Starting", "Absent")
                "Health":                      enum ("OK", "Warning",
"Critical")
        },
        "EnumStatus":                          enum ( "Enumerated",
"NotEnumerated")
        "Location": {
                "Pod":                         Number,
                "Rack":                        Number,
                "Drawer":                      Number,
                "Module":                      Number,
```

```
        },
        "Oem":                                    object,
        "Links": {
                "Blades": {
                        "@odata.id":      string
                },
                "ContainedBy": {
                        "@odata.id":              string
                },
                "ManagedBy": [
                        {
                                "@odata.id":      string
                        }
                ],
                "Oem":                                     object
        }
}
```

4.5.3   Operations

4.5.3.1   GET

Request:

```
GET /rest/v1/Drawers/1/ComputeModules/{moduleID}
Content-Type: application/json
```

Response:

```
{
        "@odata.context": "/rest/v1/$metadata#
RSADrawers/Links/Members/1/ComputeModules/1/Links/Members/$entity",
        "@odata.id": "/rest/v1/Drawers/1/ComputeModules/1",
        "@odata.type": "#RSAComputeModule.1.0.0.RSAComputeModule",
        "Id": "1",
        "Name": "Avoton SLED",
        "Modified": "2015-02-20T14:44:00+00:00",
        "ChassisType": "Sled",
        "Manufacturer": "Intel Corporation",
        "Model": "BDC Avoton",
        "SerialNumber": "",
        "Status": {
                "State": < { "Enabled", "Disabled", "Offline", "InTest",
"Starting", "Absent" } >
                "Health": < {"OK", "Warning", "Critical" } >
        },
        "Location": {
                        "Pod": 1,
                        "Rack": 1,
                        "Drawer": 1,
                        "Module": 1
        },
        "EnumStatus: < { "Enumerated", "NotEnumerated" } >
        "Oem": {},
        "Links": {
                "Blades": {
```

```
                         "@odata.id":
"/rest/v1/Drawers/1/ComputeModules/1/Blades"
                },
                "ContainedBy": {
                        "@odata.id": "/rest/v1/Drawers/1"
                },
                "ManagedBy": [
                        {
                                "@odata.id": "/rest/v1/Managers/2"
                        }
                ],
                "Oem": {}
        }
}
```

4.5.3.2 PUT

Operation is not allowed on this resource.

4.5.3.3 PATCH

Operation is not allowed on this resource.

4.5.3.4 POST

Operation is not allowed on this resource.

4.5.3.5 DELETE

Operation is not allowed on this resource.

4.6 Blade collection

Blade collection resource – provides collection of all blades available in a drawer.

Table 12 Blade collection attributes

Name	Blades		
Type URI	/rest/v1/Drawers/1/ComputeModules/1/Blades		
Attribute	Type	Required	Description
Name	String	Yes	Name of collection
Modified	String	Yes	The date-time stamp that the object was last modified

4.6.1 Metadata

TBD

4.6.2 JSON serialization

```
{
        "@odata.context":       string,
        "@odata.id":                            string,
        "@odata.type":                          string,
        "Name":                                 string,
        "Modified":                             string,
        "Links": {
                "Members@odata.count":Number,
                "Members": [
```

```
                {
                        "@odata.id": string
                }
        ]
    }
}
```

4.6.3   Operations

4.6.3.1   GET

Request:

```
GET /rest/v1/Drawers/1/ComputeModules/1/Blades
Content-Type: application/json
```

Response:

```
{
        "@odata.context": "/rest/v1/$metadata#
RSADrawers/Links/Members/1/ComputeModules/1/Blades",
        "@odata.id": "/rest/v1/Drawers/1/ComputeModules/1/Blades",
        "@odata.type": #RSABlade.1.0.0.RSABladeCollection",
        "Name": "Blade Collection",
        "Modified": "2015-02-23T14:44:00+00:00",
        "Links": {
                "Members@odata.count": 3,
                "Members": [
                        {
                                "@odata.id":
"/rest/v1/Drawers/1/ComputeModules/1/Blades/1"
                        },
                        {
                                "@odata.id":
"/rest/v1/Drawers/1/ComputeModules/1/Blades/2"
                        },
                        {
                                "@odata.id":
"/rest/v1/Drawers/1/ComputeModules/1/Blades/3"
                        }
                ]
        }
}
```

4.6.3.2   PUT

Operation is not allowed on this resource.

4.6.3.3   PATCH

Operation is not allowed on this resource.

4.6.3.4   POST

Operation is not allowed on this resource.

4.6.3.5   DELETE

Operation is not allowed on this resource.

4.7 Blade

Blade resource – provides detailed information about a blade identified by {bladeID}.

Table 13   Blade attributes

Name	Blade		
Type URI	/rest/v1/Drawers/1/ComputeModules/1/Blades/{bladeID}		
Attribute	**Type**	**Required**	**Description**
Id	String	Yes	Resource identifier
Name	String	Yes	Name of module
Modified	String	Yes	The date-time stamp when the object was last modified
SystemType	String (enum)	Yes	Type of computer system (physical, virtual)
Manufacturer	String	No	Manufacturer name
Model	String	No	Computer system model
SerialNumber	String	No	Module serial number
Power	String (enum). null	No	System power state
Bios	Object	No	BIOS version
StorageCapable	Boolean	Yes	Storage controller available on blade.
StorageControllers Count	Number	No	Number of storage controllers present.
Processors	Object	Yes	<table><tr><th>Name</th><th>Type</th><th>Required</th><th>Description</th></tr><tr><td>Count</td><td>Number</td><td>Yes</td><td>Number of CPUs</td></tr><tr><td>ProcessorSockets</td><td>Number</td><td>No</td><td>Number of available CPU sockets</td></tr><tr><td>ProcessorFamily</td><td>String</td><td>No</td><td>Basic information about processor type</td></tr><tr><td>Status</td><td>Object</td><td>Yes</td><td>See Status property below</td></tr></table>
Memory	Object	Yes	<table><tr><th>Name</th><th>Type</th><th>Required</th><th>Description</th></tr><tr><td>TotalSystemMemoryGB</td><td>Number</td><td>Yes</td><td>Amount of installed memory in GB</td></tr><tr><td>MemorySockets</td><td>Number</td><td>No</td><td>Number of available memory sockets</td></tr><tr><td>Status</td><td>Object</td><td>Yes</td><td>See Status property below</td></tr></table>
Status	Object	Yes	Resource status represented by following object: <table><tr><th>Name</th><th>Type</th><th>Required</th><th>Description</th></tr><tr><td>State</td><td>String</td><td>Yes</td><td>Known state of the resource</td></tr><tr><td>Health</td><td>String</td><td>No</td><td>Overall health state from the view of this resource</td></tr><tr><td>HealthRollup</td><td>String</td><td>No</td><td>Health state of this resource in the absence of its dependent resources</td></tr></table>
EnumStatus	String	Yes	Status of resource enumeration
Location	Object	Yes	<table><tr><th>Name</th><th>Type</th><th>Required</th><th>Description</th></tr><tr><td>Pod</td><td>Number</td><td>Yes</td><td>Pod number</td></tr><tr><td>Rack</td><td>Number</td><td>Yes</td><td>Rack number</td></tr><tr><td>Drawer</td><td>Number</td><td>Yes</td><td>Drawer number</td></tr><tr><td>Module</td><td>Number</td><td>Yes</td><td>Module number</td></tr><tr><td>Blade</td><td>Number</td><td>Yes</td><td>Blade number</td></tr></table>

Name	Blade		
Type URI	/rest/v1/Drawers/1/ComputeModules/1/Blades/{bladeID}		
Attribute	**Type**	**Required**	**Description**

Attribute	Type	Required	Description			
`Boot`	Object, Null	No	**Name**	**Type**	**Required**	**Description**
			`BootSourceOverrideEnabled`	String, Null	No	State of the Boot Source Override feature. Proper values: "Disabled" "Once" "Continuous"
			`BootSourceOverrideTarget`	String, Null	No	The current boot source to be used at next boot instead of the normal boot device, if BootSourceOverrideEnabled is true. Can be set to value listed in BootSourceOverrideSupported property.
			`BootSourceOverrideSupported`	Array	No	Array of sources from which this system can be booted, overriding the normal boot order. Available values listed in appendix **Error! Reference source not found.**
			`UefiTargetBootSourceOverride`	String, Null	No	Uefi Device Path of the device to boot from when BootSourceOverrideSupported is UefiTarget.
`Oem`	Object	No	OEM defined object			
`Processors`	Link	No	Link to Processors collection			
`Memory`	Link	No	Link to Memory collection			
`Chassis`	Array	Yes	An array of references to the chassis in which this blade is contained			
`StorageControllers`	Link	Yes	Link to Storage Controllers collection			
`EthernetInterfaces`	Link	Yes	Link to Ethernet Interface collection associated with this system			
`ManagedBy`	Array	Yes	An array of links to Managers responsible for this blade			

`Actions`	Object	Yes	Actions available for this blade.
			• *Reset* action with following values:
			   o On - Turn the system on
			   o ForceOff - Turn the system off immediately (non-graceful) shutdown
			   o GracefulRestart - Perform a graceful system shutdown followed by a restart of the system
			   o ForceRestart - Perform an immediate (non-graceful) shutdown, followed by a restart of the system
			   o Nmi - Generate a Diagnostic Interrupt (usually an NMI on x86 systems) to cease normal operations, perform diagnostic actions and typically halt the system.
			   o ForceOn - Turn the system on immediately
			   o PushPowerButton - Simulate the pressing of the physical power button on this system
			   o SoftShutdown – initiate a soft-shutdown of OS via ACPI			

4.7.1 Metadata

TBD

4.7.2 JSON serialization

```
{
        "@odata.context":       string,
        "@odata.id":                            string,
        "@odata.type":                          string,
        "Id":                                   string,
        "Name":                         string,
        "Modified":                     string,
   "SystemType":                string,
        "Manufacturer":                         string,
        "Model":                                string,
        "SerialNumber":                 string,
        "Status": {
                "State":                                enum ("Enabled",
"Disabled", "Offline", "InTest", "Starting", "Absent")
                "Health":                               enum ("OK", "Warning",
"Critical"),
                "HealthRollup":                 enum ("OK", "Warning",
"Critical")

        },
        "EnumStatus":           enum ( "Enumerated", "NotEnumerated")
        "Location": {
                "Pod":                          Number,
                "Rack":                         Number,
                "Drawer":                       Number,
                "Blade":                        Number,
        },
        "Oem":                                  object,
        "Power":                                enum ("On", "Off",
"Unknown", "Reset")
        "Bios": {
                "Current": {
                        "VersionString":        string,
                }
        },
        "Processors": {
                "Count":                                Number,
                "ProcessorSockets"              Number,
                "ProcessorFamily":              string,
                "Status": {
                        "State":                                enum ("Enabled",
"Disabled", "Offline", "InTest", "Starting", "Absent")
                        "Health":                               enum ("OK", "Warning",
"Critical"),
                        "HealthRollup":         enum ("OK", "Warning",
"Critical")
                }
        },
        "Memory": {
                "TotalSystemMemoryGB":          string,
```

```
                "MemorySockets":                        Number,
                "Status": {
                        "State":                        enum ("Enabled",
"Disabled", "Offline", "InTest", "Starting", "Absent")
                        "Health":                       enum ("OK", "Warning",
"Critical"),
                        "HealthRollup":         enum ("OK", "Warning",
"Critical")
                }
        },
        "StorageCapable":                       boolean,
        "StorageControllersCount": Number,
        "Boot": {
                "BootSourceOverrideEnabled":    string enum < { "Disabled",
"Once", "Continuous" } >,
                "BootSourceOverrideTarget":           string,
                "BootSourceOverrideSupported": [
        string enum < { "None", "Pxe", "Floppy", "Cd", "Usb", "Hdd",
"BiosSetup", "Utilities", "Diags", "UefiTarget" } >,
                },
                "UefiTargetBootSourceOverride": string
        },
        "Links": {
                "Processors": {
                                "@odata.id":    string
                },
                "Memory": {
                                "@odata.id":    string
                },
                "Chassis": [
                        {
                                "@odata.id": string
                        }
                ],
                "StorageControllers": {
                                "@odata.id": string
                },
                "EthernetInterfaces": {
                                "@odata.id": string
                }
                "ManagedBy": [
                        {
                                "@odata.id": string
                        }
                ],
                "Oem":                                  object
    "Actions": {
        "#RSABlade.Reset": {
            "target":
"/rest/v1/Drawers/1/ComputeModules/1/Blades/1/Actions/RSABlade.Reset ",
            "ResetType@DMTF.AllowableValues": [
            "On",
            "ForceOff",
            "GracefulRestart",
            "ForceRestart",
```

```
        "Nmi",
        "GracefulRestart",
        "ForceOn",
        "PushPowerButton",
                                        "SoftShutdown"
    ]
  }
 }
}
```

4.7.3   Operations

4.7.3.1   GET

Request:

```
GET /rest/v1/Drawers/1/ComputeModules/1/Blades/{bladeID}
Content-Type: application/json
```

Response:

```
{
        "@odata.context": "/rest/v1/$$metadata#RSABlades",
        "@odata.id": "/rest/v1/Drawers/1/ComputeModules/1/Blades/1",
        "@odata.type": "#RSABlade.1.0.0.RSABlade",
        "Id": "1",
        "Name": "Xeon Compute Module",
        "Modified": "2015-02-20T14:44:11+00:00",
        "SystemType":  "Physical",
        "Manufacturer": "Intel Corporation",
        "Model": "Dual socket Xeon Server",
        "SerialNumber": "",
        "Status": {
                "State": < { "Enabled", "Disabled", "Offline", "InTest",
"Starting", "Absent" } >,
                "Health": < {"OK", "Warning", "Critical" } >,
                "HealthRollup": < {"OK", "Warning", "Critical" } >
        },
        "Location": {
                "Pod": 1
                "Rack": 1
                "Drawer": 1
                "Module": 1
                "Blade": 1
        },
        "Power": < {"On", "Off", "Unknown", "Reset" } >,
        "Bios": {
                "Current": {
                        "VersionString": "P79 v1.00 (09/20/2013)"
                }
        },
        "Processors": {
                "Count": 2,
                "ProcessorSockets": 2,
                "ProcessorFamily": "Multi-Core Intel(R) Xeon(R) processor 7xxx
Series",
                "Status": {
```

```
                        "State": < { "Enabled", "Disabled", "Offline",
"InTest", "Starting", "Absent" } >,
                        "Health": < {"OK", "Warning", "Critical" } >,
                        "HealthRollup": < {"OK", "Warning", "Critical" } >
                }
        },
        "Memory": {
                "TotalSystemMemoryGB": 32.0,
                "MemorySockets": 8,
                "Status": {
                        "State": < { "Enabled", "Disabled", "Offline",
"InTest", "Starting", "Absent" } >,
                        "Health": < {"OK", "Warning", "Critical" } >,
                        "HealthRollup": < {"OK", "Warning", "Critical" } >
                }
        },
        "EnumStatus": < { "Enumerated", "NotEnumerated" } >
        "StorageCapable": true,
        "StorageControllersCount": 1,
        "Boot": {
                "BootSourceOverrideEnabled": < { "Disabled", "Once",
"Continuous" } >
                "BootSourceOverrideTarget": < { "None", "Pxe", "Floppy", "Cd",
"Usb", "Hdd", "BiosSetup", "Utilities", "Diags", "UefiTarget" } >,
                "BootSourceOverrideSupported": [
                        < { "None", "Pxe", "Floppy", "Cd", "Usb", "Hdd",
"BiosSetup", "Utilities", "Diags", "UefiTarget" } >,
                        ],
                "UefiTargetBootSourceOverride": "uefi device path"
        },
        "Oem": {},
        "Links": {
                "Processors": {
                                "@odata.id":
"/rest/v1/Drawers/1/ComputeModules/1/Blades/1/Processors"
                },
                "Memory": {
                                "@odata.id":
"/rest/v1/Drawers/1/ComputeModules/1/Blades/1/Memory"
                },
                "Chassis": [
                        {
                                "@odata.id":
"/rest/v1/Drawers/1/ComputeModule/1"
                        }
                ],
                "StorageControllers": {
                                "@odata.id":
"/rest/v1/Drawers/1/ComputeModules/1/Blades/1/StorageControllers"
                },
                "EthernetInterfaces": {
                        "@odata.id":
"/rest/v1/Drawers/1/ComputeModules/1/Blades/1/EthernetInterfaces"
                },
                "ManagedBy": [
```

```
                    {
                            "@odata.id": "/rest/v1/Managers/2"
                    }
            ],
            "Oem": {}
     }
     "Actions": {
            "#RSABlade.Reset": {
                    "target":
"/rest/v1/Drawers/1/ComputeModules/1/Blades/1/Actions/RSABlade.Reset ",
                    "ResetType@DMTF.AllowableValues": [
                            "On",
                            "ForceOff",
                            "GracefulRestart",
                            "ForceRestart",
                            "Nmi",
                            "ForceOn",
                            "PushPowerButton",
             "SoftShutdown"
                            ]
            },
     }
}
```

4.7.3.2   PUT

Operation is not allowed on this resource.

4.7.3.3   PATCH

Request:

```
PATCH /rest/v1/Drawers/1/ComputeModules/1/Blades/1
Content-Type: application/json
{
     "Boot": {
            "BootSourceOverrideEnabled": "Once",
            "BootSourceOverrideTarget": "Pxe"
     }
}
```

Response:

```
HTTP/1.1 200 OK
```

4.7.3.4   POST

Request:

```
POST /rest/v1/Drawers/1/ComputeModules/1/Blades/1/Actions/RSABlade.Reset
Content-Type: application/json
{
     "ResetType": "On"
}
```

Response:

```
HTTP/1.1 200 OK
```

4.7.3.5 DELETE

Operation is not allowed on this resource.

4.8 Processor collection

Processor collection resource – provides collection of all processors available in a blade.

Table 14   Processor collection attributes

Name	Processors		
Type URI	/rest/v1/Drawers/1/ComputeModules/1/Blades/{bladeID}/Processors		
Attribute	**Type**	**Required**	**Description**
Name	String	Yes	Name of collection
Modified	String	Yes	The date-time stamp that the object was last modified

4.8.1 Metadata

TBD.

4.8.2 JSON serialization

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

4.8.3 Operations

4.8.3.1 GET

Request:

```
GET /rest/v1/Drawers/1/ComputeModules/1/Blades/{bladeID}/Processors
Content-Type: application/json
```

Response:

```
{
        "@odata.context": "/rest/v1/$metadata#RSAProcessors",
        "@odata.id":
"/rest/v1/Drawers/1/ComputeModules/1/Blades/1/Processors",
        "@odata.type": #RSAProcessor.1.0.0.RSAProcessorCollection",
        "Name": "Processor Collection",
        "Modified": "2015-02-23T14:44:00+00:00",
        "Links": {
```

```
            "Members@odata.count": 2,
            "Members": [
                {
                        "@odata.id":
"/rest/v1/Drawers/1/ComputeModules/1/Blades/1/Processors/1"
                },
                {
                        "@odata.id":
"/rest/v1/Drawers/1/ComputeModules/1/Blades/1/Processors/2"
                }
            ]
        }
}
```

4.8.3.2   PUT

Operation is not allowed on this resource.

4.8.3.3   PATCH

Operation is not allowed on this resource.

4.8.3.4   POST

Operation is not allowed on this resource.

4.8.3.5   DELETE

Operation is not allowed on this resource.

4.9 Processor

Processor resource – provides detailed information about a single processor identified by {ProcessorID}.

Table 15   Processor attributes

Name	Processor			
Type URI	/rest/v1/Drawers/1/ComputeModules/1/Blades/{bladeID}/Processors/ {ProcessorID}			
Attribute	**Type**	**Required**	**Description**	
Id	String	Yes	Resource identifier	
Name	String	Yes	Name of module	
Modified	String	Yes	The date-time stamp that the object was last modified	
Socket	String	No	Socket identifier where processor is installed	
Manufacturer	String	No	Manufacturer name	
Model	String (enum), null	Yes	Processor model (based on CPUID) Xeon family: E3, E5, E7 SoC/Atom family: X3 (Avoton), X5 (Broadwell-DE), X7 Core family: I3, I5, I7 "Unknown" – discovered processor is unknown	
ProcessorType	String	Yes	Module serial number	
ProcessorArchitecture	String	No	CPU architecture	
InstructionSet	String (enum), null	No	Supported CPU instruction set	
InstructionSetExtensions	Array	No	Array of CPU instruction set extensions such as: • X86:SSE • X86:SSE2 • X86:SSE3 • X86:SSE4 • X86:SSE5 • X86:AVX • X86:AVX2 • X86:VT-d • X86:VT-x • X86:AES • X86:MMX • X86:EM64T	
ProcessorId	Object	No	**Name** / **Type** / **Required** / **Description** (see below)	

ProcessorId object	**Name**	**Type**	**Required**	**Description**
	VendorId	String	No	Numeric vendor id
	NumericId	Number	No	cpuid.1.eax[31:0]
	Family	Number	No	CPU family
	Model	Number	No	CPU model
	Step	Number	No	CPU stepping
	MicrocodeInfo	Number (64bit)	No	Microcode version

Attribute	Type	Required	Description	
MaxSpeedMHz	Number	No	Maximum supported frequency of CPU	
TotalCores	Number	No	Number of available cores	
EnabledCores	Number	No	Number of enabled cores	
TotalThreads	Number	No	Number of available threads	
EnabledThreads	Number	No	Number of enabled threads	
Status	Object	Yes	Resource status represented by following object: **Name** / **Type** / **Required** / **Description**	

Name	Processor						
Type URI	/rest/v1/Drawers/1/ComputeModules/1/Blades/{bladeID}/Processors/ {ProcessorID}						
Attribute	**Type**	**Required**	**Description**				
			State	String	Yes	Known state of the resource	
			Health	String	No	Overall health state from the view of this resource	
			HealthRollup	String	No	Health state of this resource in the absence of its dependent resources	
Location	Object	Yes	**Name**	**Type**	**Required**	**Description**	
			Pod	Number	Yes	Pod number	
			Rack	Number	Yes	Rack number	
			Drawer	Number	Yes	Drawer number	
			Module	Number	Yes	Module number	
			Blade	Number	Yes	Blade number	
Oem	Object	No	OEM defined object				
ContainedBy	Link	Yes	Link to a blade containing this processor				

4.9.1 Metadata

TBD

4.9.2 JSON serialization

```
{
        "@odata.context":                      string,
        "@odata.id":                           string,
        "@odata.type":                         string,
        "Id":                                  string,
        "Name":                                string,
        "Modified":                            string,
        "Socket":                              string,
        "Model":                               enum (<"E3", "E5",
"E7", "X3", "X5", "X7", "I3", "I5", "I7", "Unknown"),
        "Manufacturer":                        string,
        "SerialNumber":                        string,
        "Status": {
                "State":                       enum ("Enabled",
"Disabled", "Offline", "InTest", "Starting", "Absent")
                "Health":                      enum ("OK", "Warning",
"Critical"),
                "HealthRollup":                enum ("OK", "Warning",
"Critical")
        },
        "EnumStatus":         enum ( "Enumerated", "NotEnumerated")
        "Location": {
                "Pod":                         Number,
                "Rack":                        Number,
                "Drawer":                      Number,
                "Module":                      Number,
                "Blade":                       Number,
        },
```

```
        "Oem":                                            object,
        "ProcessorType":                          string,
        "ProcessorArchitecture":                  string,
        "InstructionSet":                         enum ("x86", "x86-64")
        "InstructionSetExtensions":               [
                        { enum <"x86:SSE", "x86:SSE2", "x86:SSE3", "x86:SSE4",
"x86:SSE5", "x86:MMX", "x86:AVX", "x86:AVX2", "x86:MMX", "x86:VT-d", "x86:VT-
x", "x86:AES", "x86:EM64T" > }
        ],
        "ProcessorId": {
                "VendorId":                               string,
                "NumericId"                               Number,
                "Family":                                 Number,
                "Model":                                  Number,
                "Step":                                   Number,
                "MicrocodeInfo":                  int64,
        },
        "MaxSpeedMHz":                            Number,
        "TotalCores":                         Number,
        "EnabledCores":                           Number,
        "TotalThreads":                           Number,
        "EnabledThreads":                     Number,
        "Links": {
                "ContainedBy": {
                                "@odata.id":      string
                },
                "Oem":                                    object
        }
}
```

4.9.3   Operations

4.9.3.1   GET

Request:

```
GET
/rest/v1/Drawers/1/ComputeModules/1/Blades/{bladeID}/Processor/{ProcessorID}
Content-Type: application/json
```

Response:

```
{
        "@odata.context":
"/rest/v1/$metadata#RSAProcessors/Links/Members/$entity",
        "@odata.id":
"/rest/v1/Drawers/1/ComputeModules/1/Blades/1/Processor/1",
        "@odata.type": "#RSAProcessor.1.0.0.RSAProcessor",
        "Id": "1",
        "Name": "Intel Xeon CPU",
        "Modified": "2015-02-20T14:44:21+00:00",
        "Socket": "1",
        "Model": "E7",
        "Manufacturer": "Intel Corporation",
        "ProcessorType": "CPU",
        "ProcessorArchitecture": "x86",
        "InstructionSet": < { "x86", "x86-64" } >,
```

```
        "InstructionSetExtensions": [
                "x86:SSE2", "x86:VT-d", "x86:AES"
        ],
        "ProcessorId": {
                "VendorId": "GenuineIntel",
                "NumericId" 329442,
                "Family": 6,
                "Model": 14,
                "Step": 2,
                "MicrocodeInfo": 11,
        },
        "MaxSpeedMHz": 3700,
        "TotalCores": 8,
        "EnabledCores": 4,
        "TotalThreads": 4,
        "EnabledThreads": 2,
        "Status": {
                "State": < { "Enabled", "Disabled", "Offline", "InTest",
"Starting", "Absent" } >,
                "Health": < {"OK", "Warning", "Critical" } >,
                "HealthRollup": < {"OK", "Warning", "Critical" } >
        },
        "Location": {
                    "Pod": 1
                    "Rack": 1
                    "Drawer": 1
                    "Module": 1
                    "Blade": 1
        },
        "Oem": {},
        "Links": {
                "ContainedBy": {
                                "@odata.id":
"/rest/v1/Drawers/1/ComputeModules/1/Blades/1"
                },
                "Oem": {}
        }
}
```

4.9.3.2 PUT

Operation is not allowed on this resource.

4.9.3.3 PATCH

Operation is not allowed on this resource.

4.9.3.4 POST

Operation is not allowed on this resource.

4.9.3.5 DELETE

Operation is not allowed on this resource.

4.10 Memory collection

Memory collection resource – provides collection of all memory modules installed in a blade.

Table 16   Memory collection attributes

Name	Memory		
Type URI	/rest/v1/Drawers/1/ComputeModules/1/Blades/{bladeID}/Memory		
Attribute	**Type**	**Required**	**Description**
Name	String	Yes	Name of collection
Modified	String	Yes	The date-time stamp that the object was last modified

4.10.1 Metadata

TBD

4.10.2 JSON serialization

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

4.10.3 Operations

4.10.3.1 GET

Request:

```
GET /rest/v1/Drawers/1/ComputeModules/1/Blades/{bladeID}/Memory
Content-Type: application/json
```

Response:

```
{
        "@odata.context": "/rest/v1/$metadata#RSAMemory",
        "@odata.id": "/rest/v1/Drawers/1/ComputeModules/1/Blades/1/Memory",
        "@odata.type": #RSAMemory.1.0.0.RSAMemoryCollection",
        "Name": "Memory Collection",
        "Modified": "2015-02-23T14:44:11+00:00",
        "Links": {
                "Members@odata.count": 2,
                "Members": [
                        {
                                "@odata.id":
"/rest/v1/Drawers/1/ComputeModules/1/Blades/1/Memory/1"
```

```
                },
                {
                        "@odata.id":
"/rest/v1/Drawers/1/ComputeModules/1/Blades/1/Memory/2"
                }
            ]
        }
}
```

4.10.3.2   PUT

Operation is not allowed on this resource.

4.10.3.3   PATCH

Operation is not allowed on this resource.

4.10.3.4   POST

Operation is not allowed on this resource.

4.10.3.5   DELETE

Operation is not allowed on this resource.

4.11   Memory

Memory resource – provides detailed information about a single memory module identified by {memoryID}.

Table 17   Memory attributes

Name	Memory		
Type URI	/rest/v1/Drawers/1/ComputeModules/1/Blades/{bladeID}/Memory/{memoryID }		
Attribute	**Type**	**Required**	**Description**
Id	String	Yes	Resource identifier
Name	String	Yes	Name of module
Modified	String	Yes	The date-time stamp that the object was last modified
Manufacturer	String	No	Manufacturer name
Socket	String	Yes	String that identifies the physically-labeled socket or board position where the memory device is located
Bank	String	No	String that identifies the physically labeled bank where the memory device is located
Type	String (enum), null	No	Type of memory
SizeGB	Number	Yes	Size of memory in GB
SpeedMHz	Number	No	Maximum memory module supported speed
VoltageVolt	Number	No	Typical memory voltage
DataWidthBits	Number	No	Data width, in bits, of this memory device A Data Width of 0 and a Total Width of 8 indicates that the device is being used solely to provide 8 error-correction bits
TotalWidthBits	Number	No	Total width, in bits, of this memory device, including any check or error-correction bits If there are no error-correction bits, this value should be equal to Data Width.
FormFactor	Enum	No	Implementation form factor for this memory device
SerialNumber	String	No	String number for the serial number of this memory device
AssetTag	String	No	String number for the asset tag of this memory device

Name	Memory		
Type URI	/rest/v1/Drawers/1/ComputeModules/1/Blades/{bladeID}/Memory/{memoryID }		
Attribute	**Type**	**Required**	**Description**
PartNumber	String	No	String number for the part number of this memory device
Rank	String	No	Memory rank
ConfiguredSpeedMHz	Number	No	Identifies the configured clock speed to the memory device, in megahertz (MHz)
MinimumVoltageVolt	Number	No	Minimum operating voltage for this device, in volts
MaximumVoltageVolt	Number	No	Maximum operating voltage for this device, in volts
Status	Object	Yes	Resource status represented by following object:
			Name	**Type**	**Required**	**Description**
			State	String	Yes	Known state of the resource
			Health	String	No	Overall health state from the view of this resource
			HealthRollup	String	No	Health state of this resource in the absence of its dependent resources
Location	Object	Yes	**Name**	**Type**	**Required**	**Description**
			Pod	Number	Yes	Pod number
			Rack	Number	Yes	Rack number
			Drawer	Number	Yes	Drawer number
			Module	Number	Yes	Module number
			Blade	Number	Yes	Blade number
Oem	Object	No	OEM defined object
ContainedBy	Link	Yes	Link to a blade containing this memory

4.11.1 Metadata

TBD

4.11.2 JSON serialization

```
{
     "@odata.context":                    string,
     "@odata.id":                         string,
     "@odata.type":                       string,
     "Id":                                string,
     "Name":                              string,
     "Modified":                          string,
     "Manufacturer":                      string,
     "Socket":                            string,
     "Bank":                              string,
     "Type":                              enum ("DDR3", "DDR4",
"SXP"),
     "SizeGB":                            Number,
     "SpeedMHz":                          Number,
     "VoltageVolt":                       Number,
     "DataWidthBits":                     Number,
     "TotalWidthBits":                    Number,
     "FormFactor":                        enum ("DIMM", "SODIMM", "FB-
DIMM", "Chip", "Card", "Unknown")
     "SerialNumber":                      string,
```

```
        "AssetTag":                                    string,
        "PartNumber":                       string,
        "Rank":                                string,
        "ConfiguredSpeedMHz":   Number,
        "MinimumVoltageVolt":   Number,
        "MaximumVoltageVolt":   Number,
        "Status": {
                "State":                                enum ("Enabled",
"Disabled", "Offline", "InTest", "Starting", "Absent")
                "Health":                              enum ("OK", "Warning",
"Critical"),
                "HealthRollup":                    enum ("OK", "Warning",
"Critical")
        },
        "Location": {
                "Pod":                          Number,
                "Rack":                         Number,
                "Drawer":                       Number,
                "Module":                       Number,
                "Blade":                        Number,
        },
        "Oem":                                  object,
        "Links": {
                "ContainedBy": {
                        "@odata.id":        string
                },
                "Oem":                                  object
        }
}
```

4.11.3   Operations

4.11.3.1   GET

Request:

```
GET /rest/v1/Drawers/1/ComputeModules/1/Blades/1/Memory/{MemoryID}
Content-Type: application/json
```

Response:

```
{
        "@odata.context":
"/rest/v1/$metadata#RSAMemory/Links/Members/$entity",
        "@odata.id": "/rest/v1/Drawers/1/ComputeModules/1/Blades/1/Memory/1",
        "@odata.type": "#RSAMemory.1.0.0.RSAMemory",
        "Id": "1",
        "Name": "DDR3MemoryModule",
        "Modified": "2015-02-20T14:44:23+00:00",
        "Manufacturer": "Intel Corporation",
        "Socket": "0x2",
        "Bank": "Bank0",
        "Type": "DDR-3 ",
        "SizeGB": 16.0,
        "SpeedMHz": 1600,
        "VoltageVolt": 1.35,
        "DataWidthBits":         32,
```

```
        "TotalWidthBits": 32,
        "FormFactor": { < "DIMM", "SODIMM", "FB-DIMM", "Chip", "Card",
"Unknown" > }
        "SerialNumber": "1234XYZ",
        "AssetTag": "undefined",
        "PartNumber": "0",
        "Rank": "2",
        "ConfiguredSpeedMHz": 1333,
        "MinimumVoltageVolt": 1.35,
        "MaximumVoltageVolt": 1.35,
        "Status": {
                "State": < { "Enabled", "Disabled", "Offline", "InTest",
"Starting", "Absent" } >,
                "Health": < {"OK", "Warning", "Critical" } >,
                "HealthRollup": < {"OK", "Warning", "Critical" } >
        },
        "Location": {
                        "POD": 1
                        "Rack": 1
                        "Drawer": 1
                        "Module": 1
                        "Blade": 1
        },
        "Oem": {},
        "Links": {
                "ContainedBy": {
                                "@odata.id":
"/rest/v1/Drawers/1/ComputeModules/1/Blades/1"
                },
                "Oem": {}
        }
}
```

4.11.3.2 PUT

Operation is not allowed on this resource.

4.11.3.3 PATCH

Operation is not allowed on this resource.

4.11.3.4 POST

Operation is not allowed on this resource.

4.11.3.5 DELETE

Operation is not allowed on this resource.

4.12 Storage controller collection

Storage controllers collection resource – provides collection of all storage controllers available in a blade.

Table 18   Storage controllers collection attributes

Name	Storage controllers		
Type URI	/rest/v1/Drawers/1/ComputeModules/1/Blades/{bladeID}/StorageControllers		
Attribute	**Type**	**Required**	**Description**
Name	String	Yes	Name of collection
Modified	String	Yes	The date-time stamp that the object was last modified

4.12.1 Metadata

TBD.

4.12.2 JSON serialization

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

4.12.3 Operations

4.12.3.1 GET

Request:

```
GET /rest/v1/Drawers/1/ComputeModules/1/Blades/{bladeID}/StorageControllers
Content-Type: application/json
```

Response:

```
{
        "@odata.context": "/rest/v1/$metadata#RSAStorageControllers ",
        "@odata.id":
"/rest/v1/Drawers/1/ComputeModules/1/Blades/1/StorageControllers ",
        "@odata.type":
#RSAStorageController.1.0.0.RSAStorageControllersCollection",
        "Name": "StorageControllers Collection",
        "Modified": "2015-03-17T12:44:00+00:00",
        "Links": {
                "Members@odata.count": 1,
                "Members": [
                        {
```

```
                                    "@odata.id":
"/rest/v1/Drawers/1/ComputeModules/1/Blades/1/StorageControllers/1"
                        }
                ]
        }
}
```

4.12.3.2 PUT

Operation is not allowed on this resource.

4.12.3.3 PATCH

Operation is not allowed on this resource.

4.12.3.4 POST

Operation is not allowed on this resource.

4.12.3.5 DELETE

Operation is not allowed on this resource.

4.13 Storage controller

Storage Controller resource – provides detailed information about a single storage controller identified by {controllerID}.

Table 19   Storage controller attributes

Name	Storage controller			
Type URI	/rest/v1/Drawers/1/ComputeModules/1/Blades/{bladeID}/StorageControllers/{controllerID}			
Attribute	**Type**	**Required**	**Description**	
Id	String	Yes	Resource identifier	
Name	String	Yes	Name of module	
Modified	String	Yes	The date-time stamp that the object was last modified	
Interface	String (enum)	Yes	Controller interface	
DriveCount	Number	Yes	Number of connected drives	
Status	Object	Yes	Resource status represented by following object: <table><tr><th>Name</th><th>Type</th><th>Required</th><th>Description</th></tr><tr><td>State</td><td>String</td><td>Yes</td><td>Known state of the resource</td></tr><tr><td>Health</td><td>String</td><td>No</td><td>Overall health state from the view of this resource</td></tr><tr><td>HealthRollup</td><td>String</td><td>No</td><td>Health state of this resource in the absence of its dependent resources</td></tr></table>			
Location	Object	Yes	<table><tr><th>Name</th><th>Type</th><th>Required</th><th>Description</th></tr><tr><td>Pod</td><td>Number</td><td>Yes</td><td>Pod number</td></tr><tr><td>Rack</td><td>Number</td><td>Yes</td><td>Rack number</td></tr><tr><td>Drawer</td><td>Number</td><td>Yes</td><td>Drawer number</td></tr><tr><td>Module</td><td>Number</td><td>Yes</td><td>Module number</td></tr><tr><td>Blade</td><td>Number</td><td>Yes</td><td>Blade number</td></tr></table>			
Oem	Object	No	OEM defined object	
ContainedBy	Link	Yes	Link to Blade containing this storage controller	
Drives	Link	Yes	Link to drive collection connected to this controller	

4.13.1 Metadata

TBD

4.13.2 JSON serialization

```
{
        "@odata.context":                       string,
        "@odata.id":                            string,
        "@odata.type":                          string,
        "Id":                                   string,
        "Name":                                 string,
        "Modified":                             string,
        "Interface":                            enum ("PCIe", "SAS",
"SATA")
        "DriveCount":                           Number,
        "Status": {
                "State":                                enum ("Enabled",
"Disabled", "Offline", "InTest", "Starting", "Absent")
                "Health":                               enum ("OK", "Warning",
"Critical"),
                "HealthRollup":                         enum ("OK", "Warning",
"Critical")
        },
        "Location": {
                        "Pod":                  Number,
                        "Rack":                 Number,
                        "Drawer":               Number,
                        "Module":               Number,
                        "Blade":                Number,
        },
        "Oem":                                  object,
        "Links": {
                "ContainedBy": {
                                "@odata.id":    string
                }
                "Drives": {
                                "@odata.id":    string
                },
                "Oem":                                  object
        }
}
```

4.13.3 Operations

4.13.3.1 GET

Request:

```
GET
/rest/v1/Drawers/1/ComputeModules/1/Blades/{bladeID}/StorageControllers/{cont
rollerID}
Content-Type: application/json
```

Response:

```
{
        "@odata.context":
"/rest/v1/$metadata#RSAStorageControllers/Links/Members/$entity",
        "@odata.id":
"/rest/v1/Drawers/1/ComputeModules/1/Blades/1/StorageControllers/1",
        "@odata.type": "#RSAStorageController.1.0.0.RSAStorageController",
        "Id": "1",
        "Name": "StorageController",
        "Modified": "2015-02-20T14:44:00+00:00",
        "Interface": < { "PCIe", "SAS", "SATA" } >
        "DriveCount": 1,
        "Status": {
                "State": < { "Enabled", "Disabled", "Offline", "InTest",
"Starting", "Absent" } >,
                "Health": < {"OK", "Warning", "Critical" } >,
                "HealthRollup": < {"OK", "Warning", "Critical" } >
        },
        "Location": {
                        "POD": 1
                        "Rack": 1
                        "Drawer": 1
                        "Module": 1
                        "Blade": 1
        },
        "Oem": {},
        "Links": {
                "ContainedBy": {
                                "@odata.id":
"/rest/v1/Drawers/1/ComputeModules/1/Blades/1"
                }
                "Drives": {
                                "@odata.id":
"/rest/v1/Drawers/1/ComputeModules/1/Blades/1/StorageControllers/1/Drives"
                },
                "Oem": {}
        }
}
```

4.13.3.2 PUT

Operation is not allowed on this resource.

4.13.3.3 PATCH

Operation is not allowed on this resource.

4.13.3.4 POST

Operation is not allowed on this resource.

4.13.3.5 DELETE

Operation is not allowed on this resource.

4.14   Drive collection

Drive collection resource – provides collection of all storage drives available in a storage controller.

Table 20   Drive collection attributes

Name	Drives		
Type URI	/rest/v1/Drawers/1/ComputeModules/1/Blades/{bladeID}/StorageControllers/ {controllerID}/Drives		
Attribute	**Type**	**Required**	**Description**
Name	String	Yes	Name of collection
Modified	String	Yes	The date-time stamp that the object was last modified

4.14.1   Metadata

4.14.2   JSON serialization

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

4.14.3   Operations

4.14.3.1   GET

Request:

```
GET
/rest/v1/Drawers/1/ComputeModules/1/Blades/{bladeID}/StorageControllers/{cont
rollerID}/Drives
Content-Type: application/json
```

Response:

```
{
        "@odata.context": "/rest/v1/$metadata#Drives ",
        "@odata.id":
"/rest/v1/Drawers/1/ComputeModules/1/Blades/1/StorageControllers/{controllerI
D}/Drives",
        "@odata.type": #Drive.1.0.0.DrivesCollection",
        "Name": "Drives Collection",
        "Modified": "2015-03-17T12:44:00+00:00",
        "Links": {
                "Members@odata.count": 1,
                "Members": [
```

```
                    {
                        "@odata.id":
"/rest/v1/Drawers/1/ComputeModules/1/Blades/1/StorageControllers/1/{controlle
rID}/Drives/1"
                    }
                ]
        }
}
```

4.14.3.2 PUT

Operation is not allowed on this resource.

4.14.3.3 PATCH

Operation is not allowed on this resource.

4.14.3.4 POST

Operation is not allowed on this resource.

4.14.3.5 DELETE

Operation is not allowed on this resource.

4.15 Drive

Drive resource – provides detailed information about a single drive identified by {driveID}.

Table 21   Drive attributes

Name	Drive		
Type URI	/rest/v1/Drawers/1/ComputeModules/1/Blades/{bladeID}/StorageControllers/ {controllerID}/Drives/{driveID}		
Attribute	**Type**	**Required**	**Description**
Id	String	Yes	Resource identifier
Name	String	Yes	Name of module
Modified	String	Yes	The date-time stamp that the object was last modified
Interface	String (enum)	Yes	Controller interface
CapacityGB	Number	Yes	Drive capacity in GB
Type	String	No	Drive type
RPM	Number	No	For traditional drive, rotation per minute
Manufacturer	String	No	Drive manufacturer name
Model	String	No	Drive model
SerialNumber	String	No	Drive serial number
Status	Object	Yes	Resource status represented by following object:
			Name	**Type**	**Required**	**Description**
			State	String	Yes	Known state of the resource
			Health	String	No	Overall health state from the view of this resource
			HealthRollup	String	No	Health state of this resource in the absence of its dependent resources
Location	Object	Yes	**Name**	**Type**	**Required**	**Description**
			Pod	Number	Yes	Pod number
			Rack	Number	Yes	Rack number

Name	Drive			
Type URI	/rest/v1/Drawers/1/ComputeModules/1/Blades/{bladeID}/StorageControllers/{controllerID}/Drives/{driveID}			
Attribute	Type	Required	Description	
			Drawer	Number	Yes	Drawer number
			Module	Number	Yes	Module number
			Blade	Number	Yes	Blade number
Oem	Object	No	OEM defined object	
ContainedBy	Link	Yes	Link to storage controller under which this drive is contained	

4.15.1　Metadata

TBD

4.15.2　JSON serialization

```
{
        "@odata.context":                               string,
        "@odata.id":                                        string,
        "@odata.type":                                      string,
        "Id":                                                   string,
        "Name":                                             string,
        "Modified":                                         string,
        "Interface":                                        enum ("PCIe", "SAS",
"SATA")
        "CapacityGB":                               Number,
        "Type":                                             enum ("HDD", "SSD")
        "RPM":                                          Number,
        "Manufacturer":                             string,
        "Model":                                                string,
        "SerialNumber":                             string,
        "Location": {
                        "Pod":                          Number,
                        "Rack":                         Number,
                        "Drawer":                       Number,
                        "Module":                       Number,
                        "Blade":                        Number,
        },
        "Status": {
                "State":                                        enum ("Enabled",
"Disabled", "Offline", "InTest", "Starting", "Absent")
                "Health":                                       enum ("OK", "Warning",
"Critical"),
                "HealthRollup":                             enum ("OK", "Warning",
"Critical")
        },
        "Oem":                                          object,
        "Links": {
                "ContainedBy": {
                                "@odata.id":        string
                },
                "Oem":                                      object
        }
}
```

4.15.3   Operations

4.15.3.1   GET

Request:

```
GET
/rest/v1/Drawers/1/ComputeModules/1/Blades/{bladeID}/StorageControllers/{cont
rollerID}/{controllerID}/Drives/{driveID}
Content-Type: application/json
```

Response:

```
{
        "@odata.context": "/rest/v1/$metadata#Drive/Links/Members/$entity",
        "@odata.id":
"/rest/v1/Drawers/1/ComputeModules/1/Blades/1/StorageControllers/1/Drives/1",
        "@odata.type": "#Drive.1.0.0.Drive",
        "Id": "1",
        "Name": "Simple drive"
        "Modified": "2015-03-17T12:44:00+00:00",
        "Interface": < { "PCIe", "SAS", "SATA" } >
        "CapacityGB": 500,
        "Type": < { "HDD", "SSD" } >,
        "RPM": 0,
        "Manufacturer": "Intel",
        "Model": "S3710",
        "SerialNumber": "XYZ123456789",
        "Location": {
                        "Pod": 1,
                        "Rack": 1,
                        "Drawer": 1,
                        "Module": 1,
                        "Blade": 1
        },
        "Status": {
                "State": < { "Enabled", "Disabled", "Offline", "InTest",
"Starting", "Absent" } >,
                "Health": < {"OK", "Warning", "Critical" } >,
                "HealthRollup": < {"OK", "Warning", "Critical" } >
        },
        "Oem": {},
        "Links": {
                "ContainedBy": {
                                "@odata.id":
"/rest/v1/Drawers/1/ComputeModules/1/Blades/1/StorageControllers/1"
                },
                "Oem": {}
        }
}
```

4.15.3.2   PUT

Operation is not allowed on this resource.

4.15.3.3 PATCH

Operation is not allowed on this resource.

4.15.3.4 POST

Operation is not allowed on this resource.

4.15.3.5 DELETE

Operation is not allowed on this resource.

4.16 Manager collection

Manager collection resource – provides collection of all managers available in a drawer.

Table 22 Manager collection attributes

Name	Managers		
Type URI	/rest/v1/Managers		
Attribute	**Type**	**Required**	**Description**
Name	String	Yes	Name of collection
Modified	String	Yes	The date-time stamp that the object was last modified

4.16.1 Metadata

4.16.2 JSON serialization

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

4.16.3 Operations

4.16.3.1 GET

Request:

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

Response:

```
{
        "@odata.context": "/rest/v1/$metadata#RSAManagers",
        "@odata.id": "/rest/v1/Managers",
```

```
        "@odata.type": #RSAManager.1.0.0.RSAManagerCollection",
        "Name": "Manager Collection",
        "Modified": "2015-02-23T14:44:00+00:00",
        "Links": {
                "Members@odata.count": 3,
                "Members": [
                        {
                                "@odata.id": "/rest/v1/Managers/1"
                        },
                        {
                                "@odata.id": "/rest/v1/Managers/2"
                        },
                        {
                                "@odata.id": "/rest/v1/Managers/3"
                        }
                ]
        }
}
```

4.16.3.2   PUT

Operation is not allowed on this resource.

4.16.3.3   PATCH

Operation is not allowed on this resource.

4.16.3.4   POST

Operation is not allowed on this resource.

4.16.3.5   DELETE

Operation is not allowed on this resource.

4.17   Manager

Manager resource – provides detailed information about a manager identified by {managerID}.

Table 23   Manager attributes

Name	Manager		
Type URI	/rest/v1/Managers/{managerID}		
Attribute	**Type**	**Required**	**Description**
Id	String	Yes	Resource identifier
Name	String	Yes	Name of resource
Modified	String	Yes	The date-time stamp that the object was last modified
ManagerType	String (enum)	Yes	Type of manager
Model	String, Null	No	Manager model
Status	Object	Yes	Resource status represented by following object: **Name** / **Type** / **Required** / **Description** State / String / Yes / Known state of the resource Health / String / No / Overall health state from the view of this resource HealthRollup / String / No / Health state of this resource in the absence of its dependent

Name	Manager				
Type URI	/rest/v1/Managers/{managerID}				
Attribute	**Type**	**Required**	**Description**		
					resources

Firmware	Object	No	Resource status represented by following object:		
			Name	**Type**	**Mandatory**	**Description**

Firmware	Object	No	Name	Type	Mandatory	Description
			Current	String	Yes	Current firmware version

Oem	Object	No	OEM defined object			
GraphicalConsole	Object	Yes	**Name**	**Type**	**Required**	**Description**
			Enabled	Boolean	Yes	Console availability
			MaxConcurrent Sessions	Number	No	Number of session that can be established at the same time
			ConnectTypes Supported	Enum	No	Supported types of connection
SerialConsole	Object	Yes	**Name**	**Type**	**Required**	**Description**
			Enabled	Boolean	Yes	Console availability
			MaxConcurrent Sessions	Number	No	Number of session that can be established at the same time
			ConnectTypes Supported	Enum	No	Supported types of connection
CommandShell	Object	Yes	**Name**	**Type**	**Required**	**Description**
			Enabled	Boolean	Yes	Console availability
			MaxConcurrent Sessions	Number	No	Number of session that can be established at the same time
			ConnectTypes Supported	Enum	No	Supported types of connection
ManagerForChassis	Array	No	Array containing links to chassis (Pod, Drawer) managed by this manager			
ManagerForCompute Modules	Array	No	Array containing links to computer modules managed by this manager			
ManagerForFabric Modules	Array	No	Array containing links to fabric modules managed by this manager			
ManagerForBlades	Array	No	Array containing links to Blades managed by this manager			
ManagerForSwitches	Array	No	Array containing links to switches managed by this manager			
SimpleNetwork	Link	Yes	Link to collection of Ethernet interfaces			
NetworkService	Link	Yes	Link to Network Protocol object containing list of all protocols supported by this manager			

4.17.1 Metadata

TBD.

4.17.2 JSON serialization

```
{
    "@odata.context":                    string,
    "@odata.id":                         string,
    "@odata.type":                       string,
    "Id":                                string,
    "Name":                              string,
    "Modified":                          string,
```

```
        "ManagerType":                              enum ("ManagementController",
"EnclosureManager", "BMC")
        "Model":                                           string,
        "Status": {
                "State":                                   enum ("Enabled",
"Disabled", "Offline", "InTest", "Starting", "Absent")
                "Health":                                  enum ("OK", "Warning",
"Critical"),
        },
        "Oem":                                          object,
        "GraphicalConsole": {
                "Enabled":                                 boolean,
                "MaxConcurrentSessions" Number,
                "ConnectTypesSupported" enum ("KVMIP", "Oem")
        },
        "SerialConsole": {
                "Enabled":                                 boolean,
                "MaxConcurrentSessions" Number,
                "ConnectTypesSupported" enum ("SSH", "Telnet", "IPMI", "Oem")
        },
        "CommandShell": {
                "Enabled":                                 boolean,
                "MaxConcurrentSessions" Number,
                "ConnectTypesSupported" enum ("SSH", "Telnet", "IPMI", "Oem")
        },
        "Firmware": {
                "Current": {
                        "VersionString":        string
                }
        },
        "Links": {
                "ManagerForChassis": [
                        {
                                "@odata.id":    string
                        }
                ],
                "ManagerForComputeModules": [
                        {
                                "@odata.id":    string
                        }
                ],
                "ManagerForFabricModules": [
                        {
                                "@odata.id":    string
                        }
                ],
                "ManagerForBlades": [
                        {
                                "@odata.id":    string
                        }
                ],
                "ManagerForSwitches": [
                        {
                                "@odata.id":    string
                        }
```

```
        ],
        "NetworkService": {
                "@odata.id":                    string
        },
        "SimpleNetwork": {
                "@odata.id":                    string
        },
        "Oem":                                  object
    }
}
```

4.17.3 Operations

4.17.3.1 GET

Request:

```
GET /rest/v1/Managers/{managerID}
Content-Type: application/json
```

Response:

```
{
        "@odata.context":
"/rest/v1/$metadata#RSAManagers/Links/Members/$entity",
        "@odata.id": "/rest/v1/Managers/1",
        "@odata.type": "#RSAManager.1.0.0.RSAManager",
        "Id": "1",
        "Name": "Drawer Manager",
        "Modified": "2015-02-23T14:44:22+00:00",
        "ManagerType": < { "ManagementController", "EnclosureManager", "BMC" }
>
        "Model": "Avoton CPP",
        "Status": {
                "State": < { "Enabled", "Disabled", "Offline", "InTest",
"Starting", "Absent" } >,
                "Health": < {"OK", "Warning", "Critical" } >
        },
        "GraphicalConsole": {
                "Enabled": false,
        },
        "SerialConsole": {
                "Enabled": false,
        },
        "CommandShell": {
                "Enabled": false,
        },
        "Firmware": {
                "Current": {
                        "VersionString": "1.1.2.24.0 (debug build Feb 16 2015
16:46:33)"
                }
        },
        "Oem": {},
        "Links": {
                "ManagerForChassis": [],
                "ManagerForComputeModules": [],
```

```
                “ManagerForFabricModules”: [],
                “ManagerForBlades”: [
                        {
                                “@odata.id”: “/rest/v1/Blades/1”
                        }
                ],
                “ManagerForSwitches”: [],
                “NetworkService”: {
                        “@odata.id”: “/rest/v1/Managers/1/NetworkService”
                },
                “SimpleNetwork”: {
                        “@odata.id”: “/rest/v1/Managers/1/EthernetInterfaces”
                },
                “Oem”: {}
        },
        “Actions”: {},
}
```

4.17.3.2 PUT

Operation is not allowed on this resource.

4.17.3.3 PATCH

Operation is not allowed on this resource.

4.17.3.4 POST

Operation is not allowed on this resource.

4.17.3.5 DELETE

Operation is not allowed on this resource.

4.18   Fabric module collection

Fabric module collection resource – provides collection of all fabric modules available in a drawer.

Table 24   Fabric module collection attributes

Name	Fabric module		
Type URI	/rest/v1/Drawers/1/FabricModules		
Attribute	**Type**	**Required**	**Description**
Name	String	Yes	Name of collection
Modified	String	Yes	The date-time stamp that the object was last modified

4.18.1 Metadata

TBD.

4.18.2 JSON serialization

```
{
        “@odata.context”:        string,
        “@odata.id”:                          string,
        “@odata.type”:                        string,
        “Name”:                               string,
        “Modified”:                           string,
```

```
          "Links": {
                  "Members@odata.count":Number,
                  "Members": [
                          {
                                  "@odata.id": string
                          }
                  ]
          }
}
```

4.18.3   Operations

4.18.3.1   GET

Request:

```
GET /rest/v1/Drawers/1/FabricModules
Content-Type: application/json
```

Response:

```
{
          "@odata.context": "/rest/v1/$metadata#RSAFabricModules",
          "@odata.id": "/rest/v1/Drawers/1/FabricModules",
          "@odata.type": #RSAFabricModule.1.0.0.RSAFabricModuleCollection",
          "Name": "Fabric Modules Collection",
          "Modified": "2015-02-23T14:44:00+00:00",
          "Links": {
                  "Members@odata.count": 1,
                  "Members": [
                          {
                                  "@odata.id":
"/rest/v1/Drawers/1/FabricModule/1"
                          }
                  ]
          }
}
```

4.18.3.2   PUT

Operation is not allowed on this resource.

4.18.3.3   PATCH

Operation is not allowed on this resource.

4.18.3.4   POST

Operation is not allowed on this resource.

4.18.3.5   DELETE

Operation is not allowed on this resource.

4.19   Fabric module

Fabric module resource – provides detailed information about a fabric module identified by {moduleID}.

Table 25   Fabric module attributes

Name	Fabric module		
Type URI	/rest/v1/Drawers/1/FabricModules/{moduleID}		
Attribute	**Type**	**Required**	**Description**
Id	String	Yes	Resource identifier
Name	String	Yes	Name of module
Modified	String	Yes	The date-time stamp that the object was last modified
Status	Object	Yes	Resource status represented by following object: <table><tr><th>Name</th><th>Type</th><th>Required</th><th>Description</th></tr><tr><td>State</td><td>String</td><td>Yes</td><td>Known state of the resource</td></tr><tr><td>Health</td><td>String</td><td>No</td><td>Overall health state from the view of this resource</td></tr><tr><td>HealthRollup</td><td>String</td><td>No</td><td>Health state of this resource in the absence of its dependent resources</td></tr></table>
Location	Object	Yes	<table><tr><th>Name</th><th>Type</th><th>Required</th><th>Description</th></tr><tr><td>Pod</td><td>Number</td><td>Yes</td><td>Pod number</td></tr><tr><td>Rack</td><td>Number</td><td>Yes</td><td>Rack number</td></tr><tr><td>Drawer</td><td>Number</td><td>Yes</td><td>Drawer number</td></tr><tr><td>Module</td><td>Number</td><td>Yes</td><td>Module number</td></tr></table>
Oem	Object	No	OEM defined object
Switches	Link	Yes	Link to Switches collection
ContainedBy	Link	Yes	Link to chassis containing this module
ManagedBy	Array	Yes	Array of links to managers of this module

4.19.1   Metadata

TBD.

4.19.2   JSON serialization

```
{
      "@odata.context":                      string,
      "@odata.id":                            string,
      "@odata.type":                          string,
      "Id":                                      string,
      "Name":                                 string,
      "Modified":                            string,
      "Status": {
            "State":                              enum ("Enabled",
"Disabled", "Offline", "InTest", "Starting", "Absent")
            "Health":                             enum ("OK", "Warning",
"Critical"),
      },
      "Location": {
                  "Pod":                        Number,
                  "Rack":                       Number,
                  "Drawer":                     Number,
                  "Module":                        Number,
      },
      "Oem":                                   object,
      "Links": {
            "Switches": {
```

```
                            "@odata.id":        string
                },
                "ContainedBy": {
                        "@odata.id":                    string
                },
                "ManagedBy": [
                        {
                                "@odata.id":        string
                        }
                ],
                "Oem":                                  string
        },
}
```

4.19.3   Operations

4.19.3.1   GET

Request:

```
GET /rest/v1/Drawers/1/FabricModules/{moduleID}
Content-Type: application/json
```

Response:

```
{
        "@odata.context":
"/rest/v1/$metadata#RSAFabricModules/Links/Members/$entity",
        "@odata.id": "/rest/v1/Drawers/1/FabricModules/1",
        "@odata.type": "#RSAFabricModules.1.0.0.RSAFabricModule",
        "Id": "1",
        "Name": "Fabric Module",
        "Modified": "2015-02-23T14:44:00+00:00",
        "Status": {
                "State": < { "Enabled", "Disabled", "Offline", "InTest",
"Starting", "Absent" } >,
                "Health": < {"OK", "Warning", "Critical" } >
        },
        "Location": {
                "Pod": 1,
                "Rack": 1,
                "Drawer": 1,
                "Module": 1
        },
        "Oem": {},
        "Links": {
                "Switches": {
                        "@odata.id":
"/rest/v1/Drawers/1/FabricModules/1/Switches"
                },
                "ContainedBy": {
                        "@odata.id": "/rest/v1/Drawers/1"
                },
                "ManagedBy": [
                        {
                                "@odata.id": "/rest/v1/Managers/2"
                        }
```

```
        ],
        "Oem": {}
    },
    "Actions": {},
}
```

4.19.3.2 PUT

Operation is not allowed on this resource.

4.19.3.3 PATCH

Operation is not allowed on this resource.

4.19.3.4 POST

Operation is not allowed on this resource.

4.19.3.5 DELETE

Operation is not allowed on this resource.

4.20 Switch collection

Switch collection resource – provides collection of all switches available in a fabric module.

Table 26   Switch collection attributes

Name	Switch collection		
Type URI	/rest/v1/Drawers/1/FabricModules/1/Switches		
Attribute	**Type**	**Required**	**Description**
Name	String	Yes	Name of collection
Modified	String	Yes	The date-time stamp that the object was last modified

4.20.1 Metadata

4.20.2 JSON serialization

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

4.20.3　Operations

4.20.3.1　GET

Request:

```
GET /rest/v1/Drawers/1/FabricModules/1/Switches
Content-Type: application/json
```

Response:

```
{
        "@odata.context": "/rest/v1/$metadata#RSASwitches",
        "@odata.id": "/rest/v1/Drawers/1/FabricModules/1/Switches",
        "@odata.type": #RSASwitch.1.0.0.RSASwitchesCollection",
        "Name": "RSA Switches Collection",
        "Modified": "2015-02-23T14:44:00+00:00",
        "Links": {
                "Members@odata.count": 1,
                "Members": [
                        {
                                "@odata.id":
"/rest/v1/Drawers/1/FabricModule/1/Switches/1"
                        }
                ]
        }
}
```

4.20.3.2　PUT

Operation is not allowed on this resource.

4.20.3.3　PATCH

Operation is not allowed on this resource.

4.20.3.4　POST

Operation is not allowed on this resource.

4.20.3.5　DELETE

Operation is not allowed on this resource.

4.21   Switch

Switch resource – provides detailed information about a switch identified by {switchID}.

Table 27   Switch attributes

Name	Switch			
Type URI	/rest/v1/Drawers/1/FabricModules/{moduleID}/Switches/{switchID}			
Attribute	**Type**	**Required**	**Description**	
Id	String	Yes	Resource identifier	
Name	String	Yes	Resource name	
Modified	String	Yes	The date-time stamp that the object was last modified	
Status	Object	Yes	Resource status represented by following object:	
			Name	**Type**	**Required**	**Description**
			State	String	Yes	Known state of the resource
			Health	String	No	Overall health state from the view of this resource
			HealthRollup	String	No	Health state of this resource in the absence of its dependent resources
Location	Object	Yes	**Name**	**Type**	**Required**	**Description**
			Pod	Number	Yes	Pod number
			Rack	Number	Yes	Rack number
			Drawer	Number	Yes	Drawer number
			Module	Number	Yes	Module number
			Switch	Number	Yes	Switch number
Oem	Object	No	OEM defined object	
SwitchPorts	Link	Yes	Link to collection of Switch Ports	
ContainedBy	Link	Yes	Link to Fabric Module containing this switch	
ManagedBy	Array	Yes	Array of links to manager for this switch	

4.21.1   Metadata

TBD.

4.21.2   JSON serialization

```
{
      "@odata.context":                        string,
      "@odata.id":                             string,
      "@odata.type":                           string,
      "Id":                                    string,
      "Name":                                  string,
      "Modified":                              string,
      "Status": {
              "State":                                 enum ("Enabled",
"Disabled", "Offline", "InTest", "Starting", "Absent")
              "Health":                                enum ("OK", "Warning",
"Critical"),
      },
      "Location": {
                "Pod":                            Number,
                "Rack":                           Number,
                "Drawer":                         Number,
```

```
                         "Module":                              Number,
                         "Switch":                              Number,
             },
             "Oem":                                   object,
             "Links": {
                    "SwitchPorts": {
                                  "@odata.id":      string
                    },
                    "ContainedBy": {
                            "@odata.id":            string
                    },
                    "ManagedBy": [
                            {
                                  "@odata.id":      string
                            }
                    ],
                    "Oem":                                 object
             },
}
```

4.21.3 Operations

4.21.3.1 GET

Request:

```
GET /rest/v1/Drawers/1/FabricModules/{moduleID}/Switches/{switchID}
Content-Type: application/json
```

Response:

```
{
       "@odata.context":
"/rest/v1/$metadata#RSASwitches/Links/Members/$entity",
       "@odata.id": "/rest/v1/Drawers/1/FabricModules/1/Switches/1",
       "@odata.type": "#RSASwitch.1.0.0.RSASwitch",
       "Id": "1",
       "Name": "RSA Switch",
       "Modified": "2015-02-23T14:44:00+00:00",
       "Status": {
               "State": < { "Enabled", "Disabled", "Offline", "InTest",
"Starting", "Absent" } >,
               "Health": < {"OK", "Warning", "Critical" } >
       },
       "Location": {
                    "Pod": 1,
                    "Rack": 1,
                    "Drawer": 1,
                    "Module": 1,
                    "Switch": 1
       },
       "Oem": {},
       "Links": {
               "SwitchPorts": {
                            "@odata.id":
"/rest/v1/Drawers/1/FabricModules/1/Switches/1/Ports"
               },
```

```
                    "ContainedBy": {
                            "@odata.id": "/rest/v1/Drawers/1/FabricModules/1"
                    },
                    "ManagedBy": [
                            {
                                    "@odata.id": "/rest/v1/Managers/2"
                            }
                    ],
                    "Oem": {}
            },
            "Actions": {},
}
```

4.21.3.2 PUT

Operation is not allowed on this resource.

4.21.3.3 PATCH

Operation is not allowed on this resource.

4.21.3.4 POST

Operation is not allowed on this resource.

4.21.3.5 DELETE

Operation is not allowed on this resource.

4.22 Switch port collection

Switch port collection resource – provides collection of all switch port available in a switch.

Table 28   Switch ports collection attributes

Name	Switch port collection		
Type URI	/rest/v1/Drawers/1/FabricModules/1/Switches/1/Ports		
Attribute	Type	Required	Description
Name	String	Yes	Name of collection
Modified	String	Yes	The date-time stamp that the object was last modified

4.22.1 Metadata

TBD.

4.22.2 JSON serialization

```
{
        "@odata.context":        string,
        "@odata.id":                             string,
        "@odata.type":                           string,
        "Name":                                  string,
        "Modified":                              string,
        "Links": {
                "Members@odata.count":Number,
                "Members": [
                        {
                                "@odata.id": string
```

```
                }
            ]
        }
}
```

4.22.3   Operations

4.22.3.1   GET

Request:

```
GET /rest/v1/Drawers/1/FabricModules/1/Switches/1/Ports
Content-Type: application/json
```

Response:

```
{
        "@odata.context": "/rest/v1/$metadata#RSASwitchPorts",
        "@odata.id": "/rest/v1/Drawers/1/FabricModules/1/Switches/1/Ports",
        "@odata.type": #RSASwitchPort.1.0.0.RSASwitchPortsCollection",
        "Name": "RSA Switch Ports Collection",
        "Modified": "2015-02-23T14:44:00+00:00",
        "Links": {
                "Members@odata.count": 8,
                "Members": [
                        {
                                "@odata.id":
"/rest/v1/Drawers/1/FabricModule/1/Switches/1/Ports/1"
                        },
                        {
                                "@odata.id":
"/rest/v1/Drawers/1/FabricModule/1/Switches/1/Ports/2"
                        },
                        {
                                "@odata.id":
"/rest/v1/Drawers/1/FabricModule/1/Switches/1/Ports/3"
                        },
                        {
                                "@odata.id":
"/rest/v1/Drawers/1/FabricModule/1/Switches/1/Ports/4"
                        },
                        {
                                "@odata.id":
"/rest/v1/Drawers/1/FabricModule/1/Switches/1/Ports/5"
                        },
                        {
                                "@odata.id":
"/rest/v1/Drawers/1/FabricModule/1/Switches/1/Ports/6"
                        },
                        {
                                "@odata.id":
"/rest/v1/Drawers/1/FabricModule/1/Switches/1/Ports/7"
                        },
                        {
                                "@odata.id":
"/rest/v1/Drawers/1/FabricModule/1/Switches/1/Ports/8"
                        }
```

```
                ]
        }
}
```

4.22.3.2 PUT

Operation is not allowed on this resource.

4.22.3.3 PATCH

Operation is not allowed on this resource.

4.22.3.4 POST

Operation is not allowed on this resource.

4.22.3.5 DELETE

Operation is not allowed on this resource.

4.23 Switch port

Switch port resource – provides detailed information about a switch port identified by {portID}.

Table 29   Switch port attributes

Name	Switch port		
Type URI	/rest/v1/Drawers/1/FabricModules/{moduleID}/Switches/{switchID}/Ports/{portID}		
Attribute	**Type**	**Required**	**Description**
Id	String	Yes	Resource identifier
Name	String	Yes	Resource name
Modified	String	Yes	The date-time stamp that the object was last modified
LinkType	String (enum)	Yes	Type of port link
Operational State	String (enum)	Yes	Port link operational state
AdministrativeState	String (enum)	Yes	Port link state forced by user.
LinkSpeedGbps	Number	No	Port speed
NeighborPort	String	No	TBD
Status	Object	Yes	Resource status represented by following object: <table><tr><th>Name</th><th>Type</th><th>Required</th><th>Description</th></tr><tr><td>State</td><td>String</td><td>Yes</td><td>Known state of the resource</td></tr><tr><td>Health</td><td>String</td><td>No</td><td>Overall health state from the view of this resource</td></tr><tr><td>HealthRollup</td><td>String</td><td>No</td><td>Health state of this resource in the absence of its dependent resources</td></tr></table>

Name	Switch port				
Type URI	/rest/v1/Drawers/1/FabricModules/{moduleID}/Switches/{switchID}/Ports/{portID}				
Attribute	**Type**	**Required**	**Description**		
Location	Object	Yes	**Name**	**Type**	**Required**	**Description**
			Pod	Number	Yes	Pod number
			Rack	Number	Yes	Rack number
			Drawer	Number	Yes	Drawer number
			Module	Number	Yes	Module number
			Switch	Number	Yes	Switch number
Oem	Object	No	OEM defined object		
ContainedBy	Link	Yes	Link to Switch containing this switch port		
VLANs	Link	Yes	Link to VLANs collection for this switch port		

4.23.1 Metadata

TBD.

4.23.2 JSON serialization

```
{
        "@odata.context":                          string,
        "@odata.id":                                 string,
        "@odata.type":                               string,
        "Id":                                            string,
        "Name":                                      string,
        "Modified":                                  string,
        "Status": {
                "State":                                       enum ("Enabled",
"Disabled", "Offline", "InTest", "Starting", "Absent")
                "Health":                                      enum ("OK", "Warning",
"Critical"),
        },
        "LinkType":                                    enum ("Ethernet",
"PCIe", "Unknown")
        "OperationalState":                              enum ("Up",
"Down", "Unknown")
        "AdministrativeState"   enum ("Up", "Down", "None")
        "LinkSpeedGbps":                          Number,
        "NeighborPort":                            string,
        "Location": {
                "Pod":                                 Number,
                "Rack":                                Number,
                "Drawer":                              Number,
                "Module":                                Number,
                "Switch":                                Number,
        },
        "Oem":                                       object,
        "Links": {
                "ContainedBy": {
                        "@odata.id":                        string
                },
                "VLANs":{
                        "@odata.id":       string
```

```
            }
            "Oem":                                                    object
      },
}
```

4.23.3   Operations

4.23.3.1   GET

Request:

```
GET
/rest/v1/Drawers/1/FabricModules/{moduleID}/Switches/{switchID}/Ports/{portID
}
Content-Type: application/json
```

Response:

```
{
      "@odata.context": "/rest/v1/$metadata#RSAPorts/Links/Members/$entity",
      "@odata.id": "/rest/v1/Drawers/1/FabricModules/1/Switches/1/Ports/1",
      "@odata.type": "#RSASwitchPort.1.0.0.RSASwitchPort",
      "Id": "1",
      "Name": "RSA Switch Port",
      "Modified": "2015-02-23T14:44:00+00:00",
      "Status": {
            "State": < { "Enabled", "Disabled", "Offline", "InTest",
"Starting", "Absent" } >,
            "Health": < {"OK", "Warning", "Critical" } >
      },
      "LinkType": < { "Ethernet", "PCIe", "Unknown"} >
      "OperationalState": < { "Up", "Down", "Unknown" } >
      "AdministrativeState": < { "Up", "Down", "None" } >
      "LinkSpeedGbps": 10,
      "NeighborPort": "",
      "Location": {
                  "Pod": 1,
                  "Rack": 1,
                  "Drawer": 1,
                  "Module": 1,
                  "Switch": 1
      },
      "Oem": {},
      "Links": {
            "ContainedBy": {
                  "@odata.id":
"/rest/v1/Drawers/1/FabricModules/1/Switches/1"
            },
            "VLANs": {
                        "@odata.id":
      "/rest/v1/Drawers/1/FabricModules/1/Switches/1/Ports/1/VLANs"
            }
            "Oem": {}
      },
}
```

4.23.3.2 PUT

Operation is not allowed on this resource.v

4.23.3.3 PATCH

Request:

```
PATCH /rest/v1/Drawers/1/FabricModules/1/Switches/1/Ports/1
Content-Type: application/json
{
      "AdministrativeState": "Up",
      "LinkSpeedGbps": 1,
}
```

Response:

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

4.23.3.4 POST

Operation is not allowed on this resource.

4.23.3.5 DELETE

Operation is not allowed on this resource.

4.24 Network service

Network service resource – provides detailed information about all network services supported by a manager identified by {managerID}.

Table 30   Network service attributes

Name	Network service			
Type URI	/rest/v1/Managers/{managerID}/NetworkService			
Attribute	**Type**	**Required**	**Description**	
Id	String	Yes	Resource identifier	
Name	String	Yes	Resource name	
Modified	String	Yes	The date-time stamp that the object was last modified	
Description	String	Yes	Resource description	
Status	Object	Yes	Resource status represented by following object:	
			Name	**Type**	**Required**	**Description**
			State	String	Yes	Known state of the resource
			Health	String	No	Overall health state from the view of this resource
			HealthRollup	String	No	Health state of this resource in the absence of its dependent resources
Oem	Object	No	OEM defined object	
HostName	String	No	Provides information about host name	
FQDN	String	No	Fully Qualified Domain Name	
HTTP	Object	Yes	**Name**	**Type**	**Required**	**Description**
			Enabled	Boolean	Yes	Availability of protocol
			Port	Number	No	Indicates the protocol port
HTTPS	Object	Yes	**Name**	**Type**	**Required**	**Description**
			Enabled	Boolean	Yes	Availability of protocol

Name	Network service			
Type URI	/rest/v1/Managers/{managerID}/NetworkService			
Attribute	**Type**	**Required**	**Description**	

Attribute	Type	Required	Description			
			Port	Number	No	Indicates the protocol port
`SNMP`	Object	Yes	**Name**	**Type**	**Required**	**Description**
			`Enabled`	Boolean	Yes	Availability of protocol
			`Port`	Number	No	Indicates the protocol port
`VirtualMedia`	Object	Yes	**Name**	**Type**	**Required**	**Description**
			`Enabled`	Boolean	Yes	Availability of protocol
			`Port`	Number	No	Indicates the protocol port
`Telnet`	Object	Yes	**Name**	**Type**	**Required**	**Description**
			`Enabled`	Boolean	Yes	Availability of protocol
			`Port`	Number	No	Indicates the protocol port
`SSDP`	Object	Yes	**Name**	**Type**	**Required**	**Description**
			`Enabled`	Boolean	Yes	Availability of protocol
			`Port`	Number	No	Indicates the protocol port
`IPMI`	Object	Yes	**Name**	**Type**	**Required**	**Description**
			`Enabled`	Boolean	Yes	Availability of protocol
			`Port`	Number	No	Indicates the protocol port
`SSH`	Object	Yes	**Name**	**Type**	**Required**	**Description**
			`Enabled`	Boolean	Yes	Availability of protocol
			`Port`	Number	No	Indicates the protocol port
`KVMIP`	Object	Yes	**Name**	**Type**	**Required**	**Description**
			`Enabled`	Boolean	Yes	Availability of protocol
			`Port`	Number	No	Indicates the protocol port

4.24.1　Metadata

TBD.

4.24.2　JSON serialization

```
{
     "@odata.context":                      string,
     "@odata.id":                           string,
     "@odata.type":                         string,
     "Id":                                  string,
     "Name":                                string,
     "Modified":                            string,
     "Description":                         string,
     "Status": {
             "State":                               enum ("Enabled",
"Disabled", "Offline", "InTest", "Starting", "Absent")
             "Health":                              enum ("OK", "Warning",
"Critical"),
     },
     "HostName":                            string,
     "FQDN":                                string,
     "HTTP": {
             "Enabled":                             boolean,
```

```
                   "Port":                              Number,
        },
        "HTTPS": {
                   "Enabled":                           boolean,
                   "Port":                              Number,
        },
        "IPMI": {
                   "Enabled":                           boolean,
                   "Port":                              Number,
        },
        "SSH": {
                   "Enabled":                           boolean,
                   "Port":                              Number,
        },
        "SNMP": {
                   "Enabled":                           boolean,
                   "Port":                              Number,
        },
        "VirtualMedia": {
                   "Enabled":                           boolean,
                   "Port":                              Number,
        },
        "SSDP": {
                   "Enabled":                           boolean,
                   "Port":                              Number,
        },
        "Telnet": {
                   "Enabled":                           boolean,
                   "Port":                              Number,
        },
        "KVMIP": {
                   "Enabled":                           boolean,
                   "Port":                              Number,
        }
}
```

4.24.3   Operations

4.24.3.1   GET

Request:

```
GET /rest/v1/Managers/{managerID}/NetworkService
Content-Type: application/json
```

Response:

```
{
        "@odata.context":
"/rest/v1/$metadata#RSAManagers/Links/Members/$entity/Links/Members/$entity",
        "@odata.id": "/rest/v1/Managers/1/NetworkService",
        "@odata.type": "#ManagerNetworkService.1.0.0.ManagerNetworkService",
        "Id": "NetworkService",
        "Name": "Manager Network Service",
        "Modified": "2015-02-23T14:44:00+00:00",
        "Description": "Manager Network Service Status",
        "Status": {
```

```
                        "State": < { "Enabled", "Disabled", "Offline", "InTest",
"Starting", "Absent" } >,
                        "Health": < {"OK", "Warning", "Critical" } >
            },
            "HostName": "",
            "FQDN": "",
            "HTTP": {
                        "Enabled": true,
                        "Port": 80
            },
            "HTTPS": {
                        "Enabled": false
            },
            "IPMI": {
                        "Enabled": false
            },
            "SSH": {
                        "Enabled": false
            },
            "SNMP": {
                        "Enabled": false
            },
            "VirtualMedia": {
                        "Enabled": false
            },
            "SSDP": {
                        "Enabled": false
            },
            "Telnet": {
                        "Enabled": false,
            },
            "KVMIP": {
                        "Enabled": false
            }
}
```

4.24.3.2 PUT

Operation is not allowed on this resource.

4.24.3.3 PATCH

Operation is not allowed on this resource.

4.24.3.4 POST

Operation is not allowed on this resource.

4.24.3.5 DELETE

Operation is not allowed on this resource.

4.25 Network interface collection

Network interface collection resource – provides collection of all network interfaces supported by a manager identified by {managerID} or included in a blade identified by {bladeID}.

Table 31   Network interface collection attributes

Name	Network interfaces		
Type URI	/rest/v1/Drawers/{drawerID}/ComputeModules/{moduleID}/Blades/{bladeID}/EthernetInterfaces /rest/v1/Managers/{managerID}/EthernetInterfaces		
Attribute	**Type**	**Required**	**Description**
Name	String	Yes	Name of collection
Modified	String	Yes	The date-time stamp that the object was last modified

4.25.1 Metadata

4.25.2 JSON serialization

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

4.25.3 Operations

4.25.3.1 GET

Request:

```
GET /rest/v1/Managers/{managerID}/EthernetInterfaces
Content-Type: application/json
```

Response:

```
{
        "@odata.context": "/rest/v1/$metadata#EthernetInterfaces",
        "@odata.id": "/rest/v1/Managers/1/EthernetInterfaces",
        "@odata.type":
"#EthernetNetworkInterface.1.0.0.EthernetNetworkInterfaceCollection",
        "Name": "Ethernet Network Interface Collection",
        "Modified": "2015-02-23T14:44:00+00:00",
        "Links": {
                "Members@odata.count": 1,
                "Members": [
                        {
```

```
            "@odata.id":
"/rest/v1/Managers/1/EthernetInterfaces/1"
                }
            ]
        }
}
```

4.25.3.2 PUT

Operation is not allowed on this resource.

4.25.3.3 PATCH

Operation is not allowed on this resource.

4.25.3.4 POST

Operation is not allowed on this resource.

4.25.3.5 DELETE

Operation is not allowed on this resource.

4.26 Network interface

Network Interface resource – provides detailed information about a network interface identified by {nicID} .

Table 32   Network interface attributes

Name			Network Interface		
Type URI			/rest/v1/Drawers/{drawerID}/ComputeModules/{moduleID}/Blades/{bladeID}/EthernetInterfaces/{nicID} /rest/v1/Managers/{managerID}/EthernetInterfaces/{nicID}		
Attribute	**Type**	**Required**	**Description**		
Id	String	Yes	Resource identifier		
Name	String	Yes	Resource name		
Modified	String	Yes	The date-time stamp that the object was last modified		
Description	String	Yes	Resource description		
Status	Object	Yes	Resource status represented by following object:		
			Name	**Type**	**Required**	**Description**
			State	String	Yes	Known state of the resource
			Health	String	No	Overall health state from the view of this resource
			HealthRollup	String	No	Health state of this resource in the absence of its dependent resources
Oem	Object	No	OEM defined object		
FactoryMacAddress	String	No	This is the MAC address assigned to this NIC at the factory		
MacAddress	String	Yes	This is the currently assigned MAC address for this NIC		
LinkTechnology	String (enum), null	No	This is link technology, such as Ethernet, for this NIC.		
SpeedMbps	Number	No	This is the current speed in Mbps of this NIC.		
Autosense	Boolean	No	Indicates if the speed and duplex is automatically configured by the NIC		
FullDuplex	Boolean	No	Indicates if the NIC is in Full Duplex mode or not		
FrameSize	Number	No	MAC Frame size in bytes		
HostName	String	No	DNS Host Name, without any domain information		

Name	Network Interface
Type URI	/rest/v1/Drawers/{drawerID}/ComputeModules/{moduleID}/Blades/{bladeID}/EthernetInterfaces/{nicID} /rest/v1/Managers/{managerID}/EthernetInterfaces/{nicID}

Attribute	Type	Required	Description			
`FQDN`	String	No	Fully qualified domain name obtained by DNS for this interface			
`MaxIPv6StaticAddresses`	Number	No	Indicates the maximum number of Static IPv6 addresses that can be configured on this interface			
`VLANEnable`	Boolean	Yes	Indicates if VLANs are enabled			
`VLANId`	Number	No	VLAN identifier for this NIC			
`IPv4Addresses`	Object	No	**Name**	**Type**	**Required**	**Description**
			`Address`	String	Yes	IP address
			`SubnetMask`	String	Yes	IP subnet mask
			`AddressOrigin`	String	No	Indicates how address was determined
			Gateway	String	No	IPv4 gateway for this address
`IPv6AddressPolicyTable`	Object	No	**Name**	**Type**	**Required**	**Description**
			`Prefix`	String	Yes	IPv6 Address Prefix for this table entry
			`Precedence`	Number	Yes	Precedence value for this table entry
			`Label`	Number	No	Label value for this table entry
`IPv6StaticAddresses`	Object	No	**Name**	**Type**	**Required**	**Description**
			`Address`	String	Yes	IPv6 address
			`PrefixLength`	Number	No	IPv6 Address Prefix Length
			`AddressOrigin`	String	No	Indicates how the address was determined
			`AddressState`	String (enum), null	No	Current state of this address
`IPv6Addresses`	Object	No	**Name**	**Type**	**Required**	**Description**
			`Address`	String	Yes	IPv6 address
			`PrefixLength`	Number	No	IPv6 Address Prefix Length
			`AddressOrigin`	String	No	Indicates how address was determined
			`AddressState`	String (enum), null	No	Current state of this address
`IPv6DefaultGateway`	String	No	default gateway address that is currently in use on this interface			
`NameServers`	String array	No	DNS name servers for this interface			

4.26.1 Metadata

TBD.

4.26.2 JSON serialization

```
{
    "@odata.context":               string,
    "@odata.id":                     string,
    "@odata.type":                   string,
    "Id":                               string,
    "Name":                          string,
    "Modified":                      string,
```

```
        "Description":                          string,
        "Status": {
                "State":                                enum ("Enabled",
"Disabled", "Offline", "InTest", "Starting", "Absent")
                "Health":                               enum ("OK", "Warning",
"Critical"),
        },
        "FactoryMacAddress":    string,
        "MacAddress":                           string,
        "LinkTechnology":                       enum ("Ethernet")
        "SpeedMbps":                            Number,
        "Autosense":                            boolean,
        "FullDuplex":                       boolean,
        "FrameSize":                            Number,
        "HostName":                             string,
        "FQDN":                                 string,
        "MaxIPv6StaticAddresses":  Number,
        "VLANEnable":                           boolean,
        "VLANId":                               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":         enum ("Preferred",
"Deprecated", "Tentative", "Failed"),
                        "Oem":                          object
                }
        ],
        "IPv6DefaultGateway":   string,
        "IPv6Addresses": [
                {
                        "Address":                      string,
                        "PrefixLength":         Number,
                        "AddressOrigin":        string,
                        "AddressState":         enum ("Preferred",
"Deprecated", "Tentative", "Failed"),
                        "Oem":                          object
                }
        ],
```

```
        "NameServers": [
                                                                string
        ],
        "Links": {
                "Oem":                                          object
        }
}
```

4.26.3   Operations

4.26.3.1   GET

Request:

```
GET /rest/v1/Managers/{managerID}/EthernetInterfaces/{nicID}
Content-Type: application/json
```

Response:

```
{
        "@odata.context":
"/rest/v1/$metadata#EthernetInterfaces/Links/Members/$entity",
        "@odata.id": "/rest/v1/Managers/1/EthernetInterfaces/1",
        "@odata.type":
"#EthernetNetworkInterface.1.0.0.EthernetNetworkInterface",
        "Id": "1",
        "Name": "Manager NIC",
        "Modified": "2015-02-23T14:44:00+00:00",
        "Description": "Management Network Interface",
        "Status": {
                "State": < { "Enabled", "Disabled", "Offline", "InTest",
"Starting", "Absent" } >,
                "Health": < {"OK", "Warning", "Critical" } >
        },
        "FactoryMacAddress": "AA:BB:CC:DD:EE:FF",
        "MacAddress": "AA:BB:CC:DD:EE:FF",
        "LinkTechnology": < { "Ethernet" } >
        "SpeedMbps": 100,
        "Autosense": true,
        "FullDuplex": true,
        "FrameSize": 1500,
        "HostName": "",
        "FQDN": "",
        "MaxIPv6StaticAddresses": 1,
        "VLANEnable": true,
        "VLANId": 101,
        "IPv4Addresses": [
                {
                        "Address": "192.168.0.10",
                        "SubnetMask": "255.255.252.0",
                        "AddressOrigin": "DHCP",
                        "Gateway": "192.168.0.1",
                }
        ],
        "IPv6AddressPolicyTable": [],
        "IPv6StaticAddresses": [],
        "IPv6DefaultGateway": "",
```

```
        "IPv6Addresses": [],
        "NameServers": [],
        "Links": {
                "Oem": { }
        }
}
```

4.26.3.2   PUT

Operation is not allowed on this resource.

4.26.3.3   PATCH

Operation is not allowed on this resource.

4.26.3.4   POST

Operation is not allowed on this resource.

4.26.3.5   DELETE

Operation is not allowed on this resource.

4.27   VLAN network interface collection

VLAN Network Interface collection resource – provides collection of all VLAN network interfaces existing on a switch port identified by {portID} or network interface identified by {nicID}.

Table 33   VLAN network interface collection attributes

Name	VLAN network interfaces		
Type URI	/rest/v1/Drawers/1/FabricModules/{moduleID}/Switches/{switchID}/Ports/{portID}/ VLANs /rest/v1/Drawers/{drawerID}/ComputeModules/{moduleID}/Blades/{bladeID}/EthernetInterfaces/{nicID}/VLANs		
Attribute	**Type**	**Required**	**Description**
Name	String	Yes	Name of collection
Modified	String	Yes	The date-time stamp that the object was last modified

4.27.1   Metadata

TBD.

4.27.2   JSON serialization

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

4.27.3 Operations

4.27.3.1 GET

Request:

```
GET /rest/v1/Drawers/1/FabricModules/1/Switches/1/Ports/1/VLANs
Content-Type: application/json
```

Response:

```
{
        "@odata.context": "/rest/v1/$metadata#RSAVLANs",
        "@odata.id":
"/rest/v1/Drawers/1/FabricModules/1/Switches/1/Ports/1/VLANs",
        "@odata.type": "#VLanNetworkInterface.1.0.0.VLANNetworkInterfaces",
        "Name": "VLAN Network Interface Collection",
        "Modified": "2015-02-23T14:44:00+00:00",
        "Links": {
                "Members@odata.count": 1,
                "Members": [
                        {
                                "@odata.id":
"/rest/v1/Drawers/1/FabricModules/1/Switches/1/Ports/1/Network/1/VLANs/1"
                        }
                ]
        }
}
```

4.27.3.2 PUT

Operation is not allowed on this resource.

4.27.3.3 PATCH

Operation is not allowed on this resource.

4.27.3.4 POST

Request:

```
POST /rest/v1/Drawers/1/FabricModules/1/Switches/1/Ports/1/VLANs
Content-Type: application/json
{
        "Name": "VLAN",
        "Description": "VLAN Network Interface",
        "VLANEnable": true,
        "VLANId": 101,
        "IPv4Address": [
                {
                        "Address": "16.84.245.117",
                        "SubnetMask": "255.255.252.0",
                        "AddressOrigin": "Static",
                        "Gateway": "16.84.244.1",
                        "HostName": "myserver",
                        "FQDN": "myserver.mycorp.com"
                }
        ],
        "IPv6Address": [
```

```
                       {
                               "Address": "fe80::1ec1:deff:fe6f:1e24",
                               "PrefixLength": 64,
                               "AddressOrigin": "Static",
                               "Scope": "Site",
                               "Gateway": "fe80::3ed9:2bff:fe34:600",
                               "HostName": "myserver",
                               "FQDN": "myserver.mycorp.com"
                       }
              ],
              "Links": {
                       "NetworkInterface": [
                               {
                                       "@odata.id":
"/rest/v1/Drawers/1/ComputeModules/1/Blades/1/EthernetInterfaces/1"
                               }
                       ]
              }
}
```

Response:

```
HTTP/1.1 201 Created
Location: /rest/v1/Drawers/1/FabricModules/1/Switches/1/Ports/1/VLANs/2
```

4.27.3.5   DELETE

Operation is not allowed on this resource.

4.28   VLAN network interface

VLAN Network Interface resource – provides detailed information about a VLAN network interface identified by {vlanID}.

Table 34   VLAN network interface attributes

Name	VLAN Network Interface		
Type URI	/rest/v1/Drawers/1/FabricModules/{moduleID}/Switches/{switchID}/Ports/{portID}/VLANs/{vlanID} /rest/v1/Drawers/{drawerID}/ComputeModules/{moduleID}/Blades/{bladeID}/EthernetInterfaces/{nicID}VLANs/{vlanID}		
Attribute	**Type**	**Required**	**Description**
Id	String	Yes	Resource identifier
Name	String	Yes	Resource name
Modified	String	Yes	The date-time stamp that the object was last modified
Description	String	Yes	Resource description
Status	Object	Yes	Resource status represented by following object:

Status sub-object:

Name	Type	Required	Description
State	String	Yes	Known state of the resource
Health	String	No	Overall health state from the view of this resource
HealthRollup	String	No	Health state of this resource in the absence of its dependent resources

Attribute	Type	Required	Description
Oem	Object	No	OEM defined object
VLANEnable	Boolean	Yes	Indicates if this VLAN is enabled
VLANId	Number	No	VLAN identifier for this NIC

Name	VLAN Network Interface			
Type URI	/rest/v1/Drawers/1/FabricModules/{moduleID}/Switches/{switchID}/Ports/{portID}/VLANs/{vlanID} /rest/v1/Drawers/{drawerID}/ComputeModules/{moduleID}/Blades/{bladeID}/EthernetInterfaces/{nicID}VLANs/{vlanID}			
Attribute	**Type**	**Required**	**Description**	
IPv4Address	Object	No	**Name**	**Type**	**Required**	**Description**
			Address	String	Yes	IP address
			SubnetMask	String	Yes	IP subnet mask
			AddressOrigin	String	No	indicates how the address was determined
			Gateway	String	No	IPv4 gateway for this address
			HostName	String	No	Host name
			FQDN	String	No	Fully Qualified Domain Name
IPv6Address	Object	No	**Name**	**Type**	**Required**	**Description**
			Address	String	Yes	IPv6 address
			PrefixLength	Number	No	IPv6 Address Prefix Length
			AddressOrigin	String	No	Indicates how the address was determined
			Scope	String	No	Scope of this address
			Gateway	String	No	IPv6 gateway for this address
			HostName	String	No	Host name
			FQDN	String	No	Fully Qualified Domain Name

4.28.1   Metadata

TBD.

4.28.2   JSON serialization

```
{
        "@odata.context":                       string,
        "@odata.id":                            string,
        "@odata.type":                          string,
        "Id":                                   string,
        "Name":                                 string,
        "Modified":                             string,
        "Description":                          string,
        "Status": {
                "State":                                enum ("Enabled",
"Disabled", "Offline", "InTest", "Starting", "Absent")
                "Health":                               enum ("OK", "Warning",
"Critical"),
        },
        "VLANEnable":                           boolean,
        "VLANId":                               Number,
        "IPv4Address": [
                {
                        "Address":                      string,
                        "SubnetMask":           string,
                        "AddressOrigin":        string
                        "Gateway":                      string
                        "HostName":             string,
                        "FQDN":                 string

                }
        ],
```

```
        "IPv6Address": [
                {
                        "Address":                      string,
                        "PrefixLength":         Number,
                        "AddressOrigin":        string
                        "Scope":                        string,
                        "Gateway":                      string,
                        "HostName":             string,
                        "FQDN":                 string
                }
        ],
        "Links": {
                "NetworkInterface": [
                        {
                                "@odata.id":    string
                        }
                ]
        }
}
```

4.28.3   Operations

4.28.3.1   GET

Request:

```
GET /rest/v1/Drawers/1/FabricModules/1/Switches/1/Ports/1/VLANs/{vlanID}
Content-Type: application/json
```

Response:

```
{
        "@odata.context": "/rest/v1/$metadata#RSAVLANs/Links/Members/$entity",
        "@odata.id":
"/rest/v1/Drawers/1/FabricModules/1/Switches/1/Ports/1/VLANs/1",
        "@odata.type": "#VLANNetworkInterface.1.0.0.VLANNetworkInterface",
        "Id": "1",
        "Name": "VLAN",
        "Modified": "2015-02-23T14:44:44+00:00",
        "Description": "VLAN Network Interface",
        "Status": {
                "State": < { "Enabled", "Disabled", "Offline", "InTest",
"Starting", "Absent" } >,
                "Health": < {"OK", "Warning", "Critical" } >
        },
        "VLANEnable": true,
        "VLANId": 101,
        "IPv4Address": [
                {
                        "Address": "16.84.245.117",
                        "SubnetMask": "255.255.252.0",
                        "AddressOrigin": "Static",
                        "Gateway": "16.84.244.1",
                        "HostName": "myserver",
                        "FQDN": "myserver.mycorp.com"
                }
        ],
```

```
        "IPv6Address": [
                {
                        "Address": "fe80::1ec1:deff:fe6f:1e24",
                        "PrefixLength": 64,
                        "AddressOrigin": "Static",
                        "Scope": "Site",
                        "Gateway": "fe80::3ed9:2bff:fe34:600",
                        "HostName": "myserver",
                        "FQDN": "myserver.mycorp.com"
                }
        ],
        "Links": {
                "NetworkInterface": [
                        {
                                "@odata.id":
"/rest/v1/Drawers/1/ComputeModules/1/Blades/1/EthernetInterfaces/1"
                        }
                ]
        }
}
```

4.28.3.2 PUT

Operation is not allowed on this resource.

4.28.3.3 PATCH

Operation is not allowed on this resource.

4.28.3.4 POST

Operation is not allowed on this resource.

4.28.3.5 DELETE

Request:

```
DELETE /rest/v1/Drawers/1/FabricModules/1/Switches/1/Ports/1/VLANs/2
```

Response:

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

§

A   Common Property Description

Status -> State

- Enabled: This function or resource has been enabled
- Disabled: This function or resource has been disabled
- Offline: This function or resource is enabled, but currently unavailable
- InTest: This function or resource is under doing testing
- Starting: This function or resource is starting
- Absent: This function or resource is not installed

Status -> Health

- OK: Normal
- Warning: A condition exists that requires attention
- Critical: A critical condition exists that requires immediate attention

RSABlade.Reset

- On: Turn the system on
- ForceOff: Turn the system off immediately (nongraceful) shutdown
- GracefulRestart: Perform a graceful system shutdown followed by a restart of the system
- ForceRestart: Perform an immediate (non-graceful) shutdown, followed by a restart of the system
- Nmi: Generate a nonmaskable interrupt to cause an immediate system halt
- ForceOn: Turn the system on immediately
- PushPowerButton: Simulate the pressing of the physical power button on this system

BootSourceOverrideTarget/Supported

- None: Boot from the normal boot device
- Pxe: Boot from the preboot execution (PXE) environment
- Floppy: Boot from the floppy disk drive
- Cd: Boot from the CD/DVD disc
- Usb: Boot from a USB device as specified by the system BIOS
- Hdd: Boot from a hard drive
- BiosSetup - Boot to the BIOS Setup Utility
- Utilities: Boot the manufacturer's Utilities programs
- Diags: Boot the manufacturer's Diagnostics program
- UefiShell: Boot to the UEFI Shell
- UefiTarget: Boot to the UEFI Device specified in the UefiTargetBootSourceOverride property

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