



Intel® Rack Scale Architecture Pod Manager

API Specification
Software v1.1

August 2015

Revision 002



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Revision History

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

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1 Introduction

1.1 Scope

This document contains information about the Intel® Rack Scale Architecture Pod Manager REST API, which was designed and implemented for the v1.1 release for the Bulldog Creek SDV.

1.2 Intended audience

The intended audiences for this document include designers and engineers working with the v1.1 release.

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	This document.
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	https://github.com/01org/RSA
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 PODM API

2.1 PODM API structure and relations

The PODM REST API provides the REST-based interface that allows full management of pod including asset discovery, configuration, and composed node assembly.

2.1.1 PODM API physical resource hierarchy

Figure 1 PODM REST API hierarchy

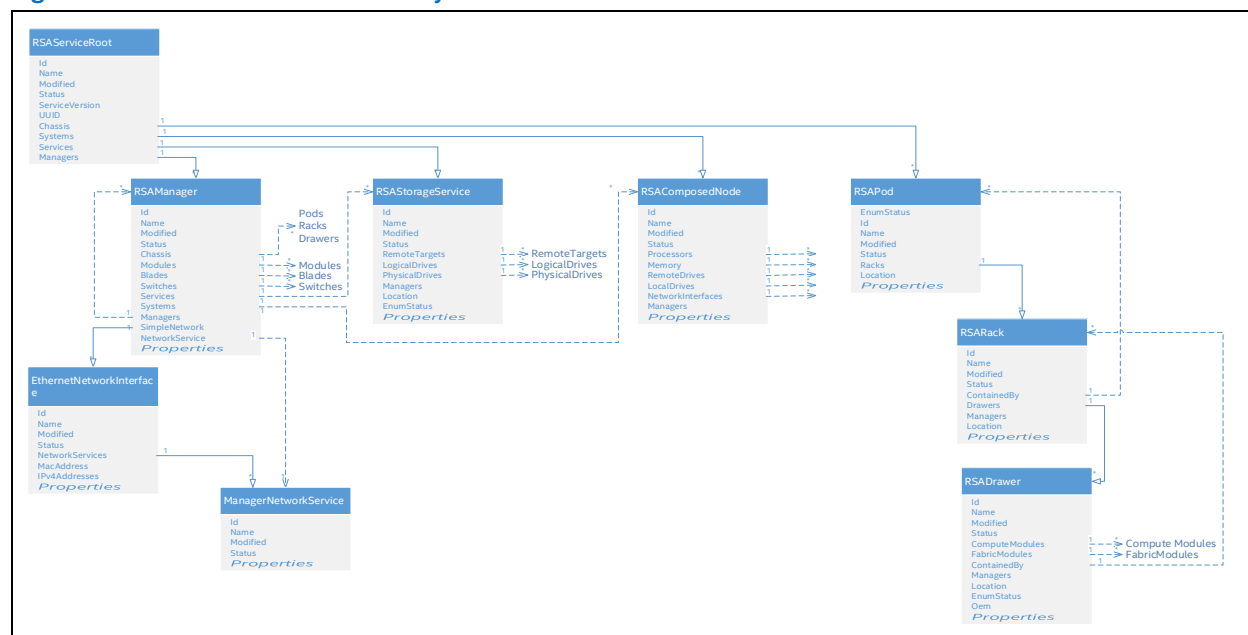


Table 3 Resources and URI

Resource	URI
Service Root	/rest/v1
PodCollection	/rest/v1/Pods
POD	/rest/v1/Pods/{podID}
Rack Collection	/rest/v1/Pods/{podID}/Racks
Rack	/rest/v1/Pods/{podID}/Racks/{rackID}
Drawer Collection	/rest/v1/Pods/{podID}/Racks/{rackID}/Drawers
Drawer	/rest/v1/Pods/{podID}/Racks/{rackID}/Drawers/{drawerID}
Compute Module Collection	/rest/v1/Pods/{podID}/Racks/{rackID}/Drawers/{drawerID}/ComputeModules
Compute Module	/rest/v1/Pods/{podID}/Racks/{rackID}/Drawers/{drawerID}/ComputeModules/{moduleID}
Blade Collection	/rest/v1/Pods/{podID}/Racks/{rackID}/Drawers/{drawerID}/ComputeModules/{moduleID}/Blades
Blade	/rest/v1/Pods/{podID}/Racks/{rackID}/Drawers/{drawerID}/ComputeModules/{moduleID}/Blades/{bladeID}
Processor Collection	/rest/v1/Pods/{podID}/Racks/{rackID}/Drawers/{drawerID}/ComputeModules/{moduleID}/Blades/{bladeID}/Processors
Processor	/rest/v1/Pods/{podID}/Racks/{rackID}/Drawers/{drawerID}/ComputeModules/{moduleID}/Blades/{bladeID}/Processors/{processorID}



Resource	URI
Memory collection	/rest/v1/Pods/{podID}/Racks/{rackID}/Drawers/{drawerID}/ComputeModules/{moduleID}/Blades/{bladeID}/Memory
Memory	/rest/v1/Pods/{podID}/Racks/{rackID}/Drawers/{drawerID}/ComputeModules/{moduleID}/Blades/{bladeID}/Memory/{memoryID}
Storage controller collection	/rest/v1/Pods/{podID}/Racks/{rackID}/Drawers/{drawerID}/ComputeModules/{moduleID}/Blades/{bladeID}/StorageControllers
Storage controller	/rest/v1/Pods/{podID}/Racks/{rackID}/Drawers/{drawerID}/ComputeModules/{moduleID}/Blades/{bladeID}/StorageControllers/{controllerID}
Drive collection	/rest/v1/Pods/{podID}/Racks/{rackID}/Drawers/{drawerID}/ComputeModules/{moduleID}/Blades/{bladeID}/StorageControllers/{controllerID}/Drives
Drive	/rest/v1/Pods/{podID}/Racks/{rackID}/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/Pods/{podID}/Racks/{rackID}/Drawers/{drawerID}/ComputeModules/{moduleID}/Blades/{bladeID}/EthernetInterfaces /rest/v1/Managers/{managerID}/EthernetInterfaces
Network interface	/rest/v1/Pods/{podID}/Racks/{rackID}/Drawers/{drawerID}/ComputeModules/{moduleID}/Blades/{bladeID}/EthernetInterfaces/{nicID} /rest/v1/Managers/{managerID}/EthernetInterfaces/{nicID}
Fabric Module Collection	/rest/v1/Pods/{podID}/Racks/{rackID}/Drawers/{drawerID}/FabricModules
Fabric Module	/rest/v1/Pods/{podID}/Racks/{rackID}/Drawers/{drawerID}/FabricModules/{moduleID}
Fabric Switch Collection	/rest/v1/Pods/{podID}/Racks/{rackID}/Drawers/{drawerID}/FabricModules/{moduleID}/Switches
Fabric Switch	/rest/v1/Pods/{podID}/Racks/{rackID}/Drawers/{drawerID}/FabricModules/{moduleID}/Switches/{switchID}
Fabric Switch Port Collection	/rest/v1/Pods/{podID}/Racks/{rackID}/Drawers/{drawerID}/FabricModules/{moduleID}/Switches/{switchID}/Ports
Fabric Switch Port	/rest/v1/Pods/{podID}/Racks/{rackID}/Drawers/{drawerID}/FabricModules/{moduleID}/Switches/{switchID}/Ports/{portID}
VLAN network interface collection	/rest/v1/Pods/{podID}/Racks/{rackID}/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/Pods/{podID}/Racks/{rackID}/Drawers/{drawerID}/FabricModules/{moduleID}/Switches/{switchID}/Ports/{portID}/VLANs/{vlanID} /rest/v1/Drawers/{drawerID}/ComputeModules/{moduleID}/Blades/{bladeID}/EthernetInterfaces/{nicID}/VLANs/{vlanID}
Storage Service Collection	/rest/v1/Services
Storage Service	/rest/v1/Services/{serviceID}
Remote Target Collection	/rest/v1/Services/{serviceID}/Targets
Remote target	/rest/v1/Services/{serviceID}/Targets/{targetID}
Logical Drive Collection	/rest/v1/Services/{serviceID}/LogicalDrives
Logical Drive	/rest/v1/Services/{serviceID}/LogicalDrives/{driveID}
Physical Drive Collection	/rest/v1/Services/{serviceID}/Drives
Physical Drive	/rest/v1/Services/{serviceID}/Drives/{driveID}
Composed Node Collection	/rest/v1/Systems
Composed Node	/rest/v1/Systems/{nodeID}





3 PODM REST API Error Codes

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

3.1 API error response

In the case of an error, PODM 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 determine the cause of an error. The PODM REST API returns extended error information as a JSON object with a single property named "error". The value of this property shall be the JSON object with the properties listed in Table 4.

Table 4 API error response

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
InvalidHttpMethod	Invalid HTTP request method.	405 Method Not Allowed
MalformedUri	Malformed URI.	400 Bad Request
BadAcceptHeader	Bad Accept field in request header.	406 Not Acceptable
InvalidPayload	Request payload is invalid or missing.	400 Bad Request

3.2.3 Node assembly error codes

Table 7 Node assembly error codes

Error code	Description	HTTP status code
NotSufficientResources	Not sufficient resources for creating machine.	500 Internal Server Error
UnsupportedCreationRequest	Unable to create machine due to error in machine template or bad creation request.	400 BadRequest
ResourcesStateMismatch	Conflict during allocation.	409 Conflict

3.2.4 Node action error codes

Table 8 Node disassembly error codes

Error code	Description	HTTP status code
ComposedNodeActionException	Unable to perform action on actual state of the composed node.	409 Conflict

Each resource available on REST API has its own list of properties that describe it. Properties can be mandatory, and in such case, they must be present in the resulting JSON. When a property is not mandatory, it may not be present in the JSON.





4 PODM REST API Definition

4.1 Pod Manager service root

This section provides resource information about the entry point of the Pod Manager service root. Table 9 lists Pod Manager service root attributes.

Table 9 Pod Manager service root attributes

Name	Pod Manager service root		
Type URI	/rest/v1/		
Attribute	Type	Mandatory	Description
Id	String	Yes	Provides an ID of this resource.
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.

4.1.1 Metadata

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
    },
    "Services": {
      "@odata.id": string
    },
    "Systems": {
      "@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#RSAPODMServiceRoot",
  "@odata.id": "/rest/v1",
  "@odata.type": "#RSAPODMServiceRoot.1.0.0.RSAPODMServiceRoot",
  "Id": "RootService",
  "Name": "RSA POD Manager Service Root",
  "Modified": "2015-02-20T14:44:00+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/Pods"
    },
    "Services": {
      "@odata.id": "/rest/v1/Services"
    },
    "Systems": {
      "@odata.id": "/rest/v1/Systems"
    },
    "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 Pod collection

This section provides resource information about the collection of all pods available. Table 10 lists pod collection attributes.

**Table 10 Pod collection attributes**

Name	Pod collection		
Type URI	/rest/v1/Pods		
Attribute	Type	Mandatory	Description
Name	String	Yes	Name of collection.
Modified	String	Yes	The date-time stamp that the object was last modified.

4.2.1 Metadata

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/Pods
Content-Type: application/json
```

Response:

```
{
  "@odata.context": "/rest/v1/$metadata#RSAPods",
  "@odata.id": "/rest/v1/Pods",
  "@odata.type": "#RSAPod.1.0.0.RSAPodCollection",
  "Name": "RSA POD Collection",
  "Modified": "2015-02-23T14:44:00+00:00",
  "Links": {
    "Members@odata.count": 1,
    "Members": [
      {
        "@odata.id": "/rest/v1/Pods/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 Pod

This section provides detailed resource information about single pods. Table 11 lists pod attributes.

Table 11 Pod attributes

Name	Pod																		
Type URI	/rest/v1/Pods/{PodId}																		
Attribute	Type	Mandatory	Description																
Id	String	Yes	Provides a ID of this resource																
Name	String	Yes	Name of pod																
Modified	String	Yes	The date-time stamp that the object was last modified																
ChassisType	String (enum)	Yes	Physical form factor of this resource																
Status	Object	Yes	Resource status represented by following object: <table><tr><td>Name</td><td>Type</td><td>Mandatory</td><td>Description</td></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, Null</td><td>No</td><td>Overall health state from the view of this resource</td></tr><tr><td>HealthRollup</td><td>String, Null</td><td>No</td><td>Health state of the resource and its dependent resources.</td></tr></table>	Name	Type	Mandatory	Description	State	String	Yes	Known state of the resource	Health	String, Null	No	Overall health state from the view of this resource	HealthRollup	String, Null	No	Health state of the resource and its dependent resources.
Name	Type	Mandatory	Description																
State	String	Yes	Known state of the resource																
Health	String, Null	No	Overall health state from the view of this resource																
HealthRollup	String, Null	No	Health state of the resource and its dependent resources.																
EnumStatus	String	Yes	Status of resource enumeration																
Location	Object	Yes	<table><tr><td>Name</td><td>Type</td><td>Mandatory</td><td>Description</td></tr><tr><td>Pod</td><td>Number</td><td>Yes</td><td>Pod number</td></tr></table>	Name	Type	Mandatory	Description	Pod	Number	Yes	Pod number								
Name	Type	Mandatory	Description																
Pod	Number	Yes	Pod number																
Oem	Object, Null	No	OEM defined object																

4.3.1 Metadata

4.3.2 JSON serialization

```
{
  "@odata.context": string,
  "@odata.id": string,
  "@odata.type": string,
  "Id": string,
  "Name": string,
  "Modified": string,
  "ChassisType": enum ("Pod"),
  "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
    },
    "Oem": object,
    "Links": {
        "Racks": {
            "@odata.id": string
        },
        "ManagedBy": [
            {
                "@odata.id": string
            }
        ],
        "Oem": object
    }
}

```

4.3.3 Operations

4.3.3.1 GET

Request:

```

GET /rest/v1/Pods/1
Content-Type: application/json

```

Response:

```

{
    "@odata.context":
"/rest/v1/$metadata#RSAPods/Links/Members/1/Links/$entity",
    "@odata.id": "/rest/v1/Pods/1",
    "@odata.type": "#RSAPod.1.0.0.RSAPod",
    "Id": "1",
    "Name": "RSA POD",
    "Modified": "2015-02-20T14:44:00+00:00",
    "ChassisType": "Pod",
    "Status": {
        "State": < { "Enabled", "Disabled", "Offline", "InTest",
"Starting", "Absent" } >
        "Health": < { "OK", "Warning", "Critical" } >
        "HealthRollup": < { "OK", "Warning",
"Critical" } >
    },
    "EnumStatus": "Enumerated",
    "Location": {
        "Pod": 1
    },
    "Links": {
        "Racks": {
            "@odata.id": "/rest/v1/Pods/1/Racks"

```



```
    },
    "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 Rack collection

This section provides resource information about the collection of all available racks. Table 12 lists rack collection attributes.

Table 12 Rack collection attributes

Name	Rack collection		
Type URI	/rest/v1/pods/1/racks		
Attribute	Type	Mandatory	Description
Name	String	Yes	Name of collection.
Modified	String	Yes	The date-time stamp that the object was last modified

4.4.1 Metadata

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/Pods/1/Racks
Content-Type: application/json
```

Response:

```
{
  "@odata.context": "/rest/v1/$metadata#RSAPods/Links/Members/1/Racks",
  "@odata.id": "/rest/v1/Pods/1/Racks",
  "@odata.type": "#RSARack.1.0.0.RSARackCollection",
  "Name": "RSA Rack Collection",
  "Modified": "2015-02-23T14:44:00+00:00",
  "Links": {
    "Members@odata.count": 1,
    "Members": [
      {
        "@odata.id": "/rest/v1/Pods/1/Racks/1"
      }
    ]
  }
}
```

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 Rack

This section provides detailed resource information about single racks, as shown in Table 13.

Table 13 Rack attributes

Name	Rack																																																		
Type URI	/rest/v1/Pods/1/racks/{RackId}																																																		
Attribute	Type	Mandatory	Description																																																
Id	String	Yes	Provides an ID of this resource.																																																
Name	String	Yes	Name of rack.																																																
Modified	String	Yes	The date-time stamp that the object was last modified.																																																
ChassisType	String (enum)	Yes	Physical form factor of this resource.																																																
Status	Object	Yes	Resource status represented by following object: <table> <tr> <th>Name</th><th>Type</th><th>Mandatory</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, Null</td><td>No</td><td>Overall health state from the view of this resource.</td></tr> <tr> <td>HealthRollup</td><td>String, Null</td><td>No</td><td>Health state of the resource and its dependent resources.</td></tr> </table>	Name	Type	Mandatory	Description	State	String	Yes	Known state of the resource.	Health	String, Null	No	Overall health state from the view of this resource.	HealthRollup	String, Null	No	Health state of the resource and its dependent resources.																																
Name	Type	Mandatory	Description																																																
State	String	Yes	Known state of the resource.																																																
Health	String, Null	No	Overall health state from the view of this resource.																																																
HealthRollup	String, Null	No	Health state of the resource and its dependent resources.																																																
EnumStatus	String	Yes	Status of resource enumeration																																																
Location	Object	Yes	<table> <tr> <th>Name</th><th>Type</th><th>Mandatory</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> </table>	Name	Type	Mandatory	Description	Pod	Number	Yes	Pod number.	Rack	Number	Yes	Rack number.																																				
Name	Type	Mandatory	Description																																																
Pod	Number	Yes	Pod number.																																																
Rack	Number	Yes	Rack number.																																																
RSARackAttributes	Object	Yes	<table> <tr> <th>Name</th><th>Type</th><th>Mandatory</th><th>Description</th></tr> <tr> <td>RMMPresent</td><td>Boolean</td><td>Yes</td><td>RMM present in rack status.</td></tr> <tr> <td>RackSupportsDisaggregatedPowerCooling</td><td>Boolean, Null</td><td>No</td><td>Disaggregated Power and Cooling rack capability – RMM.</td></tr> <tr> <td>AssetTag</td><td>String, Null</td><td>No</td><td>Customer settable asset tag.</td></tr> <tr> <td>RackUUID</td><td>String, Null</td><td>No</td><td>Rack UUID identifier.</td></tr> <tr> <td>GeoTag</td><td>String, Null</td><td>No</td><td>Geographical identification.</td></tr> <tr> <td>TrayPresent</td><td>Object</td><td>Yes</td><td>Object containing information about available trays.</td></tr> <tr> <td>FRUInfo</td><td>Object, Null</td><td>No</td><td>Object containing rack FRU details.</td></tr> <tr> <td>SerialNumber</td><td>String, Null</td><td>No</td><td>Rack serial number.</td></tr> <tr> <td>Manufacturer</td><td>String, Null</td><td>No</td><td>Rack manufacturer name.</td></tr> <tr> <td>ThermalZones</td><td>Array, Null</td><td>No</td><td>Array containing information about rack thermal zones (details in TBD).</td></tr> <tr> <td>PowerZones</td><td>Array, Null</td><td>No</td><td>Array containing information about rack power zones (details in TBD).</td></tr> </table>	Name	Type	Mandatory	Description	RMMPresent	Boolean	Yes	RMM present in rack status.	RackSupportsDisaggregatedPowerCooling	Boolean, Null	No	Disaggregated Power and Cooling rack capability – RMM.	AssetTag	String, Null	No	Customer settable asset tag.	RackUUID	String, Null	No	Rack UUID identifier.	GeoTag	String, Null	No	Geographical identification.	TrayPresent	Object	Yes	Object containing information about available trays.	FRUInfo	Object, Null	No	Object containing rack FRU details.	SerialNumber	String, Null	No	Rack serial number.	Manufacturer	String, Null	No	Rack manufacturer name.	ThermalZones	Array, Null	No	Array containing information about rack thermal zones (details in TBD).	PowerZones	Array, Null	No	Array containing information about rack power zones (details in TBD).
Name	Type	Mandatory	Description																																																
RMMPresent	Boolean	Yes	RMM present in rack status.																																																
RackSupportsDisaggregatedPowerCooling	Boolean, Null	No	Disaggregated Power and Cooling rack capability – RMM.																																																
AssetTag	String, Null	No	Customer settable asset tag.																																																
RackUUID	String, Null	No	Rack UUID identifier.																																																
GeoTag	String, Null	No	Geographical identification.																																																
TrayPresent	Object	Yes	Object containing information about available trays.																																																
FRUInfo	Object, Null	No	Object containing rack FRU details.																																																
SerialNumber	String, Null	No	Rack serial number.																																																
Manufacturer	String, Null	No	Rack manufacturer name.																																																
ThermalZones	Array, Null	No	Array containing information about rack thermal zones (details in TBD).																																																
PowerZones	Array, Null	No	Array containing information about rack power zones (details in TBD).																																																
Oem	Object, Null	No	OEM defined object.																																																

4.5.1.1 TrayPresent attributes

Table 14 TrayPresent attributes

Name	Type	Mandatory	Description
TraysNumber	Number	Yes	Number of trays installed in rack



Trays	Array	Yes	Array containing all installed trays ID			
			Name	Type	Mandatory	Description
			TrayRUID	Number, Null	No	Tray slot location within Rack

4.5.1.2 Thermal zone attributes

Table 15 Thermal zone attributes

Name	Type	Mandatory	Description			
ThermalzoneId	Number	Yes	Number identification of thermal zone.			
RackLocation	Object, Null	No	Name	Type	Mandatory	Description
			ULocation	Number	Yes	Location in rack in units.
			UHeight	Number	Yes	Height of zone in units.
			Unit	Enum	Yes	Units for location and height parameters.
PresentTemperatureDegC	Number, Null	No	Current temperature.			
MaxFansSupported	Number, Null	No	Maximum number of fans supported in thermal zone.			
NumberOfFansPresent	Number	Yes	Number of installed fans.			
Pwm	Number, Null	No	Percentage of max fan speed.			
Policy	Enum, Null	No	Type of thermal policy			
Fans	Array, Null	No	Name	Type	Mandatory	Description
			DesiredSpeedRPM	Number	Yes	Desired fan speed in rotations per minute.
			PresentTachMeterReading	Number	No	Current fan speed in RPM.
			HealthState	Number	Yes	Health status of fan.
			AssetTag	String	No	Customer settable tag.
			FRUInfo	Object	No	Object containing FRU information (i.e. serial number).
			MeterState	Enum	No	State of thermal zone meter.
			State	Enum	Yes	Thermal zone state.

4.5.1.3 Power zone attributes

Table 16 Power zone attributes

Name	Type	Mandatory	Description			
PowerzoneId	Number	Yes	Number identification of thermal zone.			
RackLocation	Object, Null	No	Name	Type	Mandatory	Description
			ULocation	Number	Yes	Location in rack in units.
			UHeight	Number	Yes	Height of zone in units.
			Unit	Enum	Yes	Units for location and height parameters.
PresentPowerOutputWatt	String, Null	No	Current power zone power output in watts.			
MaxPSUsSupported	Number, Null	No	Maximum number of PSUs supported in power zone.			
NumberOfPSUsPresent	Number	Yes	Number of installed PSUs.			



Name	Type	Mandatory	Description			
PSUs	Array, Null	No	Name	Type	Mandatory	Description
			Psuld	Number	Yes	Power Supply identity number.
			PresentPowerOutputWatt	String	No	Current PSU output power.
			State	Enum	Yes	State of PSU.
			FRUInfo	Object	No	Object containing FRU information (i.e. serial number).

4.5.2 Metadata

4.5.3 JSON serialization

```
{
  "@odata.context": string,
  "@odata.id": string,
  "@odata.type": string,
  "Id": string,
  "Name": string,
  "Modified": string,
  "ChassisType": enum ("Rack"),
  "Location": {
    "Pod": Number,
    "Rack": Number,
  },
  "Status": {
    "State": enum ("Enabled", "Disabled", "Offline", "InTest", "Starting", "Absent"),
    "Health": enum ("OK", "Warning", "Critical"),
    "HealthRollup": enum ("OK", "Warning", "Critical")
  },
  "EnumStatus": enum ( "Enumerated", "NotEnumerated")
  "RSARackAttributes": {
    "RMMPresent": boolean,
    "RackSupportsDisaggregatedPowerCooling": boolean,
    "RackUUID": string,
    "AssetTag": string,
    "GeoTag": string,
    "TrayPresent": {
      "TraysNumber": Number,
      "Trays": [
        {
          "TrayRUID": Number
        }
      ]
    }
  },
  "FRUInfo": {
    "SerialNumber": string,
    "Manufacturer": string
  },
  "ThermalZones": [
    {
      "ThermalzoneId": Number,
```



```

        "RackLocation": {
            "ULocation":      Number,
            "UHeight":       Number,
            "Unit":          enum ("RU",
"OU")
        },
        "PresentTemperatureDegC":      Number,
        "MaxFansSupported":            Number,
        "NumberOfFansPresent":         Number,
        "Pwm":                         Number,
        "Policy":                      enum ("normal",
"aggressive", "none")
        "Fans": [
            {
                "DesiredSpeedRPM":
                    Number,
                "PresentTachMeterReading":      Number,
                "HealthState":
                    Number,
                "AssetTag":
                    string,
                "FRUInfo": {
                    "SerialNumber":
                        string
                },
                "MeterState":
                    enum ("LowerNonCritical", "UpperNonCritical", "LowerCritical",
"UpperCritical", "Normal"),
                "State":
                    enum ("Unknown", "Enabled", "Disabled", "NA")
            }
        ],
        "PowerZones": [
            {
                "PowerzoneId":      Number,
                "RackLocation": {
                    "uLocation":
                        Number,
                    "uHeight":
                        Number,
                    "Units":
                        enum
("RU", "OU")
                },
                "PresentPowerOutputWatt":      string,
                "MaxPSUsSupported":           Number,
                "NumberOfPSUsPresent":         Number,
                "PSUs": [
                    {
                        "PsuId":
                            Number,
                        "PresentPowerOutputWatt": string,

```



```
        "State": enum
        ("Enabled", "Disabled", "NA", "Offline")
        "FRUInfo": {
            "SerialNumber":
                string
        },
    },
    ]
},
"Links": {
    "Drawers": {
        "@odata.id": string
    },
    "ManagedBy": [
        {
            "@odata.id": string
        },
    ],
    "Oem":
        object
    }
}
```

4.5.4 Operations

4.5.4.1 GET

Request:

```
GET /rest/v1/Pods/1/Racks/1
Content-Type: application/json
```

Response:

```
{
    "@odata.context":
        "/rest/v1/$metadata#RSAPods/Links/Members/1/Links/Racks/Links/Members/$entity",
    "@odata.id": "/rest/v1/Pods/1/Racks/1",
    "@odata.type": "#RSARack.1.0.0.RSARack",
    "Id": "1",
    "Name": "RSA Rack",
    "Modified": "2015-02-20T14:44:00+00:00",
    "ChassisType": "Rack",
    "Location": {
        "Pod": 1,
        "Rack": 1
    },
    "Status": {
        "State": < { "Enabled", "Disabled", "Offline", "InTest",
"Starting", "Absent" } >
        "Health": < { "OK", "Warning", "Critical" } >
        "HealthRollup": < { "OK", "Warning", "Critical" } >
    },
}
```



```

    "EnumStatus": "Enumerated",
    "RSARackAttributes": {
        "RMMPresent": true,
        "RackSupportsDisaggregatedPowerCooling": false,
        "RackUUID": "00000000-0000-0000-0000-000000000000",
        "AssetTag": "CustomerWritableThing",
        "GeoTag": "54.348103, 18.645172",
        "TrayPresent": {
            "TraysNumber": 1,
            "Trays": [
                {
                    "TrayRUID": 1
                }
            ]
        },
        "FRUInfo": {
            "SerialNumber": "12345678",
            "Manufacturer": "Foo Corp.",
        },
        "ThermalZones": [
            {
                "ThermalzoneId": 1,
                "RackLocation": {
                    "ULocation": 2,
                    "UHeight": 6,
                    "Unit": < { "RU", "OU" } >
                },
                "PresentTemperatureDegC": 22,
                "MaxFansSupported": 4,
                "NumberOfFansPresent": 2,
                "Pwm": 80,
                "Policy": < { "normal", "aggressive", "none" } >
            }
        ],
        "Fans": [
            {
                "DesiredSpeedRPM":
1200,
                "PresentTachMeterReading": 1200,
                "HealthState": 0,
                "AssetTag":
"CustomerWritableThing",
                "FRUInfo": {
                    "SerialNumber":
"12345678"
                },
                "MeterState": < {
"LowerNonCritical", "UpperNonCritical", "LowerCritical", "UpperCritical",
"Normal" } >,
                "State": < { "Unknown",
"Enabled", "Disabled", "NA" } >
            },
            {
                "DesiredSpeedRPM":
1200,

```



```
    "PresentTachMeterReading": 1200,
    "HealthState": 0,
    "AssetTag":
"CustomerWritableThingy",
    "FRUInfo": {
        "SerialNumber":
"12345678"
    },
    "MeterState": < {
"LowerNonCritical", "UpperNonCritical", "LowerCritical", "UpperCritical",
"Normal" } >,
    "State": < { "Unknown",
"Enabled", "Disabled", "NA" } >
    },
    ],
    "PowerZones": [
        {
            "PowerzoneId": 1,
            "RackLocation": {
                "uLocation": 2,
                "uHeight": 6,
                "Units": < { "RU", "OU" } >
            },
            "PresentPowerOutputWatt": "4500",
            "MaxPSUsSupported": 4,
            "NumberOfPSUsPresent": 2,
            "PSUs": [
                {
                    "PsuId": 1,
                    "PresentPowerOutputWatt": "1500",
                    "State": < { "Enabled",
"Disabled", "NA", "Offline" } >
                    "FRUInfo": {
                        "SerialNumber":
"12345678"
                    },
                },
                {
                    "PsuId": 2,
                    "PresentPowerOutputWatt": "1500",
                    "State": < { "Enabled",
"Disabled", "NA", "Offline" } >
                    "FRUInfo": {
                        "SerialNumber":
"87654321"
                    },
                }
            ]
        }
    ]
}
```



```

    },
    "Links": {
      "Drawers": {
        "@odata.id": "/rest/v1/Pods/1/Racks/1/Drawers"
      }
    },
    "ManagedBy": [
      {
        "@odata.id":
"/rest/v1/Pods/1/Racks/1/Managers/1"
      }
    ],
    "Oem": {}
  }
}

```

4.5.4.2 PUT

Operation is not allowed on this resource.

4.5.4.3 PATCH

Operation is not allowed on this resource.

4.5.4.4 POST

Operation is not allowed on this resource.

4.5.4.5 DELETE

Operation is not allowed on this resource.

4.6 Storage service collection

This section provides resource information about the collection of available storage services. Table 17 lists the attributes.

Table 17 Storage service collection attributes

Name	Storage service		
Type URI	/rest/v1/Services		
Attribute	Type	Mandatory	Description
Name	String	Yes	Name of service collection.
Modified	String	Yes	The date-time stamp that the object was last modified.

4.6.1 Metadata

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/Services
Content-Type: application/json
```

Response:

```
{
  "@odata.context": "/rest/v1/$metadata#RSASStorageServices",
  "@odata.id": "/rest/v1/Services",
  "@odata.type": "#RSASStorageService.1.0.0.RSASStorageServiceCollection",
  "Name": "Storage Services Collection",
  "Modified": "2015-02-23T14:44:00+00:00",
  "Links": {
    "Members@odata.count": 1,
    "Members": [
      {
        "@odata.id": "/rest/v1/Services/1"
      }
    ]
  }
}
```

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 Storage service

Refer to the *Intel® Rack Scale Architecture Storage Services API Specification*.

4.8 Remote target collection

Refer to the *Intel® Rack Scale Architecture Storage Services API Specification*.



4.9 Logical drive collection

Refer to the *Intel® Rack Scale Architecture Storage Services API Specification*.

4.10 Physical drive collection

Refer to the *Intel® Rack Scale Architecture Storage Services API Specification*.

4.11 Drawer collection

Refer to the *Intel® Rack Scale Architecture PSME API Specification*.

4.12 Drawer

Refer to the *Intel® Rack Scale Architecture PSME API Specification*.

4.13 Compute module collection

Refer to the *Intel® Rack Scale Architecture PSME API Specification*.

4.14 Compute module

Refer to the *Intel® Rack Scale Architecture PSME API Specification*.

4.15 Blade collection

Refer to the *Intel® Rack Scale Architecture PSME API Specification*.

4.16 Blade

Refer to the *Intel® Rack Scale Architecture PSME API Specification*.

4.17 Processor collection

Refer to the *Intel® Rack Scale Architecture PSME API Specification*.

4.18 Processor

Refer to the *Intel® Rack Scale Architecture PSME API Specification*.

4.19 Manager collection

Refer to the *Intel® Rack Scale Architecture PSME API Specification*.

4.20 Manager

This section provides detailed resource information about managers identified by {managerID}. Table 18 lists the attributes.



Table 18 Manager attributes

Name	Manager						
Type URI	/rest/v1/Managers/{managerID}						
Attribute	Type	Mandatory	Description				
Id	String	Yes	Provides an ID of this resource.				
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	Mandatory	Description.	
			State	String	Yes	Known state of the resource.	
			Health	String, Null	No	Overall health state from the view of this resource.	
			HealthRollup	String, Null	No	Health state of this resource in the absence of its dependent resources.	
Firmware	Object	No	Resource status represented by following object:				
			Name		Type	Mandatory	Description
			Current		String	Yes	Current firmware version
Oem	Object, Null	No	OEM defined object				
GraphicalConsole	Object	Yes	Name	Type	Mandatory	Description	
			Enabled	Boolean	Yes	Console availability.	
			MaxConcurrentSessions	Number, Null	No	Number of session that can be established at the same time.	
			ConnectTypesSupported	Array of enums	No	Supported types of connection.	
SerialConsole	Object	Yes	Name	Type	Mandatory	Description	
			Enabled	Boolean	Yes	Console availability.	
			MaxConcurrentSessions	Number, Null	No	Number of session that can be established at the same time.	
			ConnectTypesSupported	Array of enums	No	Supported types of connection.	
CommandShell	Object	Yes	Name	Type	Mandatory	Description	
			Enabled	Boolean	Yes	Console availability.	
			MaxConcurrentSessions	Number, Null	No	Number of session that can be established at the same time.	
			ConnectTypesSupported	Array of enums	No	Supported types of connection.	

4.20.1 Metadata

TBD

4.20.2 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
      }
    ],
    "ManagerForComposedNodes": [
      {
        "@odata.id": string
      }
    ],
    "NetworkService": {
      "@odata.id": string
    },
    "SimpleNetwork": {
      "@odata.id": string
    },
    "Oem": object
  }
}
```

4.20.3 Operation

4.20.3.1 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": [],
            "ManagerForComposedNodes": [],
            "NetworkService": {
                "@odata.id": "/rest/v1/Managers/1/NetworkService"
            },
            "SimpleNetwork": {
                "@odata.id": "/rest/v1/Managers/1/EthernetInterfaces"
            },
            "Oem": {}
        },
        "Actions": {},
    }

```

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 Storage manager

Refer to the *Intel® Rack Scale Architecture Storage Services API Specification*.

4.22 Composed node collection

This section provides resource information about composed collection of all logical nodes. Table 19 lists the attributes.

**Table 19 Composed node collection attributes**

Name	Composed node collection		
Type URI	/rest/v1/Systems		
Attribute	Type	Mandatory	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 Operation

4.22.3.1 GET

Request:

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

Response:

```
{
  "@odata.context": "/rest/v1/$metadata#RSAComposedNodes",
  "@odata.id": "/rest/v1/Systems",
  "@odata.type": "#RSAComposedNode.1.0.0.RSAComposedNodeCollection",
  "Name": "Composed Nodes Collection",
  "Modified": "2015-02-23T14:44:00+00:00",
  "Links": {
    "Members@odata.count": 1,
    "Members": [
      {
        "@odata.id": "/rest/v1/Systems/1"
      }
    ]
  }
}
```



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

POST request is the first step to assemble the logical server node required to allocate physical resources needed for node composition.

After a successful allocation, the link to the newly created logical node is returned. User can send a DELETE request to remove node and return components back to the pool, or POST with “Assembly” action without a parameter, to physically assemble node and power it on.

Both requests are available to many users at the same time (parallel allocation and assembly).

Every property in JSON used for this method is OPTIONAL. It's possible to send POST command with an empty JSON ({}) – in such case the Pod Manager will allocate any available resources to the requested node.

Note: Currently a user can request assembly of a single node with a single request. Node components—CPU, memory, local storage, network interface—must be located on a single physical blade. Remote storage can be located anywhere in the pod.

Request:

```
POST /rest/v1/Systems
Content-Type: application/json
{
  Systems: [{
    "Name": String,
    "Description": String,
    "Processors": [{
      "Quantity": Number,
      "Model": enum <"E3", "E5", "E7", "X3", "X5", "X7",
      "I3", "I5", "I7">,
      "TotalCores": Number,
      "MaxSpeedMHz": Number,
      "InstructionSet": enum <"x86", "x86-64">,
      "InstructionSetExtensions": [ enum <"x86:SSE2",
      "x86:VT-d", "x86:VT-x"> ],
      "Location": {
        "Pod": Number,
        "Rack": Number,
        "Drawer": Number,
        "Module": Number,
        "Blade": Number
      }
    }],
    "Memory": [{
      "SizeGB": Number,
      "Type": enum <"DDR-3", "DDR-4", "SXP">,
      "SpeedMHz": Number,
      "Location": {
        "Pod": Number,
        "Rack": Number,
        "Drawer": Number,
```

```

        "Module": Number,
        "Blade": Number
    },
    },
    "RemoteDrives": [{
        "CapacityGB": Number,
        "AddressType": enum <"iSCSI">,
        "Address": String,
        "Storage": enum <"Cold", "Hot">,
        "Master": {
            "Type": <"Snapshot", "Clone">,
            "AddressType": enum <"iSCSI">,
            "Address": String
        },
        "BootOrder": Number,
        "Location": Object
    }],
    "LocalDrives": [{
        "CapacityGB": Number,
        "Type": enum <"HDD", "SSD">,
        "BootOrder": Number,
        "Location": {
            "Pod": Number,
            "Rack": Number,
            "Drawer": Number,
            "Module": Number,
            "Blade": Number
        }
    }],
    "NetworkInterfaces": [{
        "SpeedMbps": number,
        "VLANs": [{
            "VlanId": Number,
            "Tagged" : Boolean
        }],
        "Location": {
            "Pod": Number,
            "Rack": Number,
            "Drawer": Number,
            "Module": Number,
            "Blade": Number
        }
    }],
    "Oem": {}
}

```

Response:

```

HTTP/1.1 201 Created
Location: http://<IP>:<Port>/rest/v1/Systems/2

```

4.22.3.5 DELETE

Operation is not allowed on this resource.



4.23 Composed node

This section provides detailed resource information about a composed logical node identified by {systemID}. Table 20 lists the attributes.

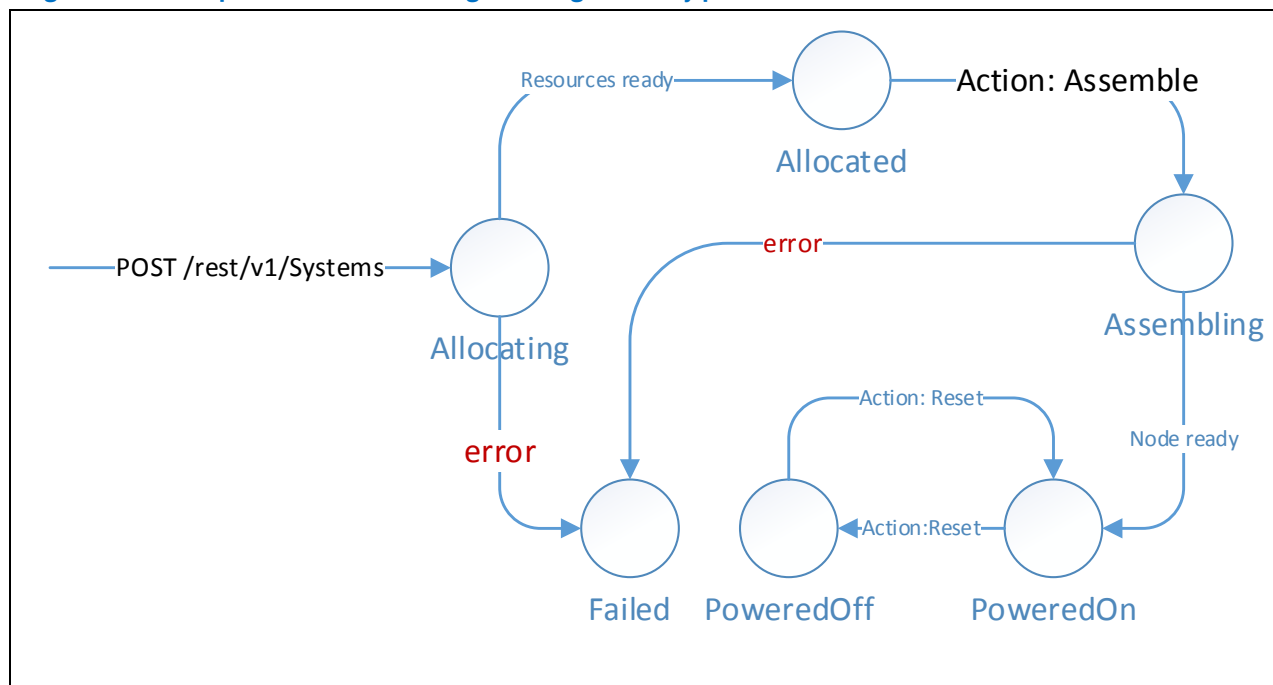
Table 20 Composed node attributes

Name	Composed node						
Type URI	/rest/v1/Systems/{systemID}						
Attribute	Type	Mandatory	Description				
Id	String	Yes	Provides an ID of this resource.				
Name	String	Yes	Name of composed node.				
Modified	String	Yes	The date-time stamp that the object was last modified.				
Description	String	No	User provided node description.				
SystemType	String (enum)	Yes	Type of computer system (physical, virtual).				
Processors	Object	Yes	Name	Type	Mandatory	Description	
			Count	Number	Yes	Number of CPUs.	
			ProcessorSockets	Number, Null	No	Number of available CPU sockets.	
			ProcessorFamily	String, Null	No	Basic information about processor type.	
			Status	Object	Yes	See Status property below.	
Memory	Object	Yes	Name	Type	Mandatory	Description	
			TotalSystemMemory GB	Number	Yes	Amount of installed memory in GB.	
			MemorySockets	Number, Null	No	Number of available memory sockets.	
			Status	Object	Yes	See Status property below.	
Status	Object	Yes	Resource status represented by following object:				
			Name	Type	Mandatory	Description	
			State	String	Yes	Known state of the resource.	
			Health	String, Null	No	Overall health state from the view of this resource.	
			HealthRollup	String, Null	No	Health state of this resource in the absence of its dependent resources.	
ComposedNodeState	String (enum)	Yes	Current state of assembly process for this node. - Allocating: Allocating resources for node is in progress. Next state can be Allocated or Failed. - Allocated: Node resources have been allocated, but assembly not started yet. After RSAComposedNode.Assemble action state will progress to Assembling. - Assembling: Assembly process initiated, but not finished yet. When assembly is done, it will change into PoweredOn. - PoweredOn: Node successfully assembled and powered on. - PoweredOff: Node successfully assembled and powered off. - Failed: Allocation or assembly process failed, or in runtime, one of composing components was removed or transitioned in error state.				
Oem	Object, Null	No	OEM defined object.				
Processors	Array	No	Array of references to Processor resources.				
Memory	Array	No	Array of references to Memory resources.				



RemoteDrives	Array	Yes	An array of references to the remote storage drives.
LocalDrives	Array	Yes	An array of references to the blade local storage drives.
EthernetInterfaces	Array	Yes	Array of links to Ethernet Interface collection associated with this Composed Node.
ManagedBy	Array	Yes	An array of references to Managers responsible for this Composed Node.
Actions	Object	Yes	Actions available for this node: - Reset action with following values: - On – Turn the system on. - ForceOff – Turn the system off immediately (non-graceful 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 Diagnostic Interrupt (usually an NMI on x86 systems) to cease normal operations, perform diagnostic actions and typically halt the system. - ForceOn – Turn the system on immediately. - PushPowerButton – Simulate the pressing of the physical power button on this system. - Assemble: Doesn't consume any parameters. Second step of creating a composed node (after POST on Systems collection). That action will assembly logical node – initiate ComposedNodeState change from <i>Allocated</i> state into <i>Assembling</i> state.

Figure 2 ComposedNodeState changes during assembly process



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,
  "Description":         string,
  "SystemType":          enum ("Physical");
  "Status": {
    "State":             enum ("Enabled", "Disabled", "Offline",
    "InTest", "Starting", "Absent")
    "Health":            enum ("OK", "Warning", "Critical"),
    "HealthRollup":      enum ("OK", "Warning", "Critical")
  },
  "ComposedNodeState":   enum ("Allocating", "Allocated", "Assembling",
  "PoweredOn", "PoweredOff", "Failed"),
  "Oem":                 object,
  "Processors": {
    "Count":             Number,
    "ProcessorSockets":  Number,
    "ProcessorFamily":   enum("E3", "E5", "E7", "X3",
    "X5", "X7", "I3", "I5", "I7"),
    "Status": {
      "State":           enum ("Enabled", "Disabled",
      "Offline", "InTest", "Starting", "Absent")
      "Health":          enum ("OK", "Warning",
      "Critical"),
      "HealthRollup":    enum ("OK", "Warning",
      "Critical")
    }
  },
  "Memory": {
    "TotalSystemMemoryGB": Number,
    "MemorySockets":       Number,
    "Status": {
      "State":           enum ("Enabled", "Disabled",
      "Offline", "InTest", "Starting", "Absent")
      "Health":          enum ("OK", "Warning",
      "Critical"),
      "HealthRollup":    enum ("OK", "Warning",
      "Critical")
    }
  },
  "Links": {
    "Processors" : [
      {
        "@odata.id":    string
      }
    ],
    "Memory": [
      {
        "@odata.id":    string
      }
    ]
  }
}
```

```

    },
    "RemoteDrives": [
      {
        "@odata.id": string
      }
    ],
    "LocalDrives": [
      {
        "@odata.id": string
      }
    ],
    "EthernetInterfaces": [
      {
        "@odata.id": string
      }
    ],
    "ManagedBy": [
      {
        "@odata.id": string
      }
    ],
    "Oem": object
  }
}

```

4.23.3 Operations

4.23.3.1 GET

Request:

```

GET /rest/v1/Systems/{systemID}
Content-Type: application/json

```

Response:

```

{
  "@odata.context":
"/rest/v1/$metadata#RSAComposedNode/Links/Members/$entity",
  "@odata.id": "/rest/v1/Systems/1",
  "@odata.type": "#RSAComposedNodes.1.0.0.RSAComposedNode",
  "Id": "1",
  "Name": "Xeon Compute Module",
  "Modified": "2015-02-20T14:44:11+00:00",
  "Description": "RSA Node #1",
  "SystemType": "Physical",
  "Status": {
    "State": < { "Enabled", "Disabled", "Offline", "InTest",
"Starting", "Absent" } >,
  },
  "Processors": {
    "Count": 2,
    "ProcessorSockets": 2,
    "ProcessorFamily": "E7",
    "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" } >
        }
    },
    "ComposedNodeState": "Allocated",
    "Oem": {},
    "Links": {
        "Processors" : [
            {
                "@odata.id":
    "/rest/v1/Pods/1/Racks/1/Drawers/1/ComputeModules/1/Blades/1/Processors/1"
            }
        ],
        "Memory": [
            {
                "@odata.id":
    "/rest/v1/Pods/1/Racks/1/Drawers/1/ComputeModules/1/Blades/1/Memory/1"
            }
        ],
        "RemoteDrives": [
            {
                "@odata.id": "/rest/v1/Services/1/Targets/1"
            }
        ],
        "LocalDrives": [
            {
                "@odata.id":
    "/rest/v1/Pods/1/Racks/1/Drawers/1/ComputeModules/1/Blades/1/StorageControlle
rs/1/Drives/1"
            }
        ],
        "EthernetInterfaces": [
            {
                "@odata.id":
    "/rest/v1/Pods/1/Racks/1/Drawers/1/ComputeModules/1/Blades/1/EthernetInterfac
es/1"
            }
        ],
        "ManagedBy": [
            {
                "@odata.id": "/rest/v1/Managers/2"
            }
        ]
    },

```



```
        "Oem": {}
    },
    "Actions": {
        "#RSAComposedNode.Reset": {
            "target":
"/rest/v1/Systems/1/Actions/RSAComposedNode.Reset",
            "ResetType@DMTF.AllowableValues": [
                "On",
                "ForceOff",
                "GracefulRestart",
                "ForceRestart",
                "Nmi",
                "ForceOn",
                "PushPowerButton"
            ]
        },
        "#RSAComposedNode.Assemble": {
            "target":
"/rest/v1/Systems/1/Actions/RSAComposedNode.Assemble",
        }
    }
}
```

4.23.3.2 PUT

Operation is not allowed on this resource.

4.23.3.3 PATCH

Operation is not allowed on this resource.

4.23.3.4 POST

Request:

```
POST /rest/v1/Systems/1/Actions/RSAComposedNode.Reset
Content-Type: application/json
{
    "ResetType": "On"
}
```

Response:

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

4.23.3.5 DELETE

Request:

```
DELETE /rest/v1/Systems/1
```

Response:

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



4.24 Network service

Refer to the *Intel® Rack Scale Architecture PSME API Specification*.

4.25 Network interface collection

Refer to the *Intel® Rack Scale Architecture PSME API Specification*.

4.26 Network interface

Refer to the *Intel® Rack Scale Architecture PSME API Specification*.

4.27 VLAN network interface collection

Refer to the *Intel® Rack Scale Architecture PSME API Specification*.

4.28 VLAN network interface

Refer to the *Intel® Rack Scale Architecture PSME API Specification*.

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