# Table of Contents

1 Introduction ................................................................................................................................. 9  
1.1 Scope.................................................................................................................................................. 9  
1.2 Intended audience .............................................................................................................................. 9  
1.3 Conventions ...................................................................................................................................... 9  
1.4 Terminology ..................................................................................................................................... 9  
1.5 Document References ...................................................................................................................... 10  
1.6 Notes and Symbol Convention ........................................................................................................ 10  

2 PSME API ......................................................................................................................................... 11  
2.1 PSME API structure and relations .................................................................................................. 11  
2.1.1 PSME API physical resource hierarchy ......................................................................................... 11  

3 PSME REST API Error Codes ........................................................................................................ 16  
3.1 API error response ........................................................................................................................... 16  
3.1.1 Message Object ............................................................................................................................ 16  
3.1.2 Example error JSON object ......................................................................................................... 16  
3.2 API error codes ............................................................................................................................... 17  
3.2.1 General error codes ..................................................................................................................... 17  
3.2.2 PATCH method error codes ....................................................................................................... 18  

4 PSME REST API Definition ........................................................................................................... 19  
4.1 OData support ................................................................................................................................ 19  
4.2 Asynchronous operations ............................................................................................................... 19  
4.3 Protocol version .............................................................................................................................. 19  
4.3.1 Operations ................................................................................................................................ 20  
4.4 OData service document .................................................................................................................. 20  
4.4.1 Operations ................................................................................................................................ 20  
4.5 Intel® Rack Scale Design OEM extensions ...................................................................................... 21  
4.6 Service root ................................................................................................................................... 21  
4.6.1 Operations ................................................................................................................................ 21  
4.7 Chassis collection ............................................................................................................................ 23  
4.7.1 Operations ................................................................................................................................ 24  
4.8 Chassis .......................................................................................................................................... 24  
4.8.1 Operations ................................................................................................................................ 25  
4.9 Computer Systems collection ....................................................................................................... 27  
4.9.1 Operations ................................................................................................................................ 27  
4.10 Computer system ............................................................................................................................ 28  
4.10.1 Operations ................................................................................................................................ 28  
4.11 Computer System Metrics .......................................................................................................... 38  
4.11.1 Operations ................................................................................................................................ 38  
4.12 Processor collection ....................................................................................................................... 38  
4.12.1 Operations ................................................................................................................................ 39  
4.13 Processor ...................................................................................................................................... 40  
4.13.1 Operations ................................................................................................................................ 40  
4.14 Processor Metrics ......................................................................................................................... 43  
4.14.1 Operations ................................................................................................................................ 43  
4.15 Memory collection ......................................................................................................................... 44  
4.15.1 Operations ................................................................................................................................ 44

Intel® Rack Scale Design PSME REST  
API Specification Software v2.2  
December 19, 2017  
Document Number: 336855-001
4.16 Memory.................................................................................................................................................... 45
  4.16.1 Operations........................................................................................................................................ 46
4.17 Memory Metrics........................................................................................................................................ 47
  4.17.1 Operations........................................................................................................................................ 47
4.18 Storage subsystem collection ................................................................................................................ 87
  4.18.1 Operations........................................................................................................................................ 48
4.19 Storage subsystem...................................................................................................................................... 49
  4.19.1 Operations........................................................................................................................................ 49
4.20 Volume collection ..................................................................................................................................... 50
  4.20.1 Operations........................................................................................................................................ 50
4.21 Drive......................................................................................................................................................... 51
  4.21.1 Operations........................................................................................................................................ 51
4.22 System Network interface...................................................................................................................... 54
  4.22.1 Operations........................................................................................................................................ 54
4.23 Manager collection ................................................................................................................................. 56
  4.23.1 Operations........................................................................................................................................ 56
4.24 Manager .................................................................................................................................................. 57
  4.24.1 Operations........................................................................................................................................ 57
4.25 Ethernet Switch collection ..................................................................................................................... 58
  4.25.1 Operations........................................................................................................................................ 59
4.26 Ethernet Switch ......................................................................................................................................... 59
  4.26.1 Operations........................................................................................................................................ 59
4.27 Ethernet Switch Metrics......................................................................................................................... 61
  4.27.1 Operations........................................................................................................................................ 61
4.28 Ethernet Switch port collection ............................................................................................................... 61
  4.28.1 Operations........................................................................................................................................ 61
4.29 Ethernet Switch port ............................................................................................................................... 63
  4.29.1 Operations........................................................................................................................................ 63
4.30 Ethernet Switch Port Metrics ................................................................................................................. 67
  4.30.1 Operations........................................................................................................................................ 67
4.31 Ethernet Switch ACL collection ............................................................................................................ 68
  4.31.1 Operations........................................................................................................................................ 68
4.32 Ethernet Switch ACL ............................................................................................................................... 69
  4.32.1 Operations........................................................................................................................................ 69
4.33 Ethernet Switch ACL rule collection ..................................................................................................... 71
  4.33.1 Operations........................................................................................................................................ 71
4.34 Ethernet Switch ACL rule ....................................................................................................................... 75
  4.34.1 Operations........................................................................................................................................ 75
4.35 Ethernet Switch port static MAC collection .......................................................................................... 80
  4.35.1 Operations........................................................................................................................................ 80
4.36 Ethernet Switch port static MAC ........................................................................................................... 81
  4.36.1 Operations........................................................................................................................................ 81
4.37 Network protocol ................................................................................................................................. 83
  4.37.1 Operations........................................................................................................................................ 84
4.38 Ethernet interface collection ................................................................................................................. 86
  4.38.1 Operations........................................................................................................................................ 86
4.39 Ethernet interface ................................................................................................................................. 86
4.40 VLAN network interface collection ..................................................................................................... 87
  4.40.1 Operations........................................................................................................................................ 87
4.41 VLAN network interface ....................................................................................................................... 88

Intel® Rack Scale Design PSME REST
API Specification Software v2.2

December 19, 2017
Document Number: 336855-001
<table>
<thead>
<tr>
<th>Section</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.41.1</td>
<td>Operations</td>
</tr>
<tr>
<td>4.42</td>
<td>Event service</td>
</tr>
<tr>
<td>4.42.1</td>
<td>Operations</td>
</tr>
<tr>
<td>4.43</td>
<td>Event subscription collection</td>
</tr>
<tr>
<td>4.43.1</td>
<td>Metadata</td>
</tr>
<tr>
<td>4.43.2</td>
<td>Operations</td>
</tr>
<tr>
<td>4.44</td>
<td>Event subscription</td>
</tr>
<tr>
<td>4.44.1</td>
<td>Metadata</td>
</tr>
<tr>
<td>4.44.2</td>
<td>Operations</td>
</tr>
<tr>
<td>4.45</td>
<td>Event array</td>
</tr>
<tr>
<td>4.45.1</td>
<td>Metadata</td>
</tr>
<tr>
<td>4.45.2</td>
<td>Operations</td>
</tr>
<tr>
<td>4.46</td>
<td>Fabric collection</td>
</tr>
<tr>
<td>4.46.1</td>
<td>Operations</td>
</tr>
<tr>
<td>4.47</td>
<td>Fabric</td>
</tr>
<tr>
<td>4.47.1</td>
<td>Operations</td>
</tr>
<tr>
<td>4.48</td>
<td>Switch collection</td>
</tr>
<tr>
<td>4.48.1</td>
<td>Operations</td>
</tr>
<tr>
<td>4.49</td>
<td>Switch</td>
</tr>
<tr>
<td>4.49.1</td>
<td>Operations</td>
</tr>
<tr>
<td>4.50</td>
<td>Port Collection</td>
</tr>
<tr>
<td>4.50.1</td>
<td>Operations</td>
</tr>
<tr>
<td>4.51</td>
<td>Port</td>
</tr>
<tr>
<td>4.51.1</td>
<td>Operations</td>
</tr>
<tr>
<td>4.52</td>
<td>Port Metrics</td>
</tr>
<tr>
<td>4.52.1</td>
<td>Operations</td>
</tr>
<tr>
<td>4.53</td>
<td>Zones collection</td>
</tr>
<tr>
<td>4.53.1</td>
<td>Operations</td>
</tr>
<tr>
<td>4.54</td>
<td>Zone</td>
</tr>
<tr>
<td>4.54.1</td>
<td>Operations</td>
</tr>
<tr>
<td>4.55</td>
<td>Endpoint collection</td>
</tr>
<tr>
<td>4.55.1</td>
<td>Operations</td>
</tr>
<tr>
<td>4.56</td>
<td>Endpoint</td>
</tr>
<tr>
<td>4.56.1</td>
<td>Operations</td>
</tr>
<tr>
<td>4.57</td>
<td>PCIe* Device</td>
</tr>
<tr>
<td>4.57.1</td>
<td>Operations</td>
</tr>
<tr>
<td>4.58</td>
<td>PCIe Device Function</td>
</tr>
<tr>
<td>4.58.1</td>
<td>Operations</td>
</tr>
<tr>
<td>4.59</td>
<td>Task Service</td>
</tr>
<tr>
<td>4.59.1</td>
<td>Operations</td>
</tr>
<tr>
<td>4.60</td>
<td>Task Collection</td>
</tr>
<tr>
<td>4.60.1</td>
<td>Operations</td>
</tr>
<tr>
<td>4.61</td>
<td>Task</td>
</tr>
<tr>
<td>4.61.1</td>
<td>Operations</td>
</tr>
<tr>
<td>4.62</td>
<td>Registries (MessageRegistryFileCollection)</td>
</tr>
<tr>
<td>4.62.1</td>
<td>Operations</td>
</tr>
<tr>
<td>4.63</td>
<td>Message Registry File</td>
</tr>
<tr>
<td>4.63.1</td>
<td>Operations</td>
</tr>
<tr>
<td>4.64</td>
<td>Metric Definition Collection</td>
</tr>
<tr>
<td>4.64.1</td>
<td>Operations</td>
</tr>
</tbody>
</table>
Figures

Figure 1. PSME REST API Hierarchy for Compute Resources .......................................................... 11
Figure 2. PSME REST API Hierarchy for PNC Resources ............................................................. 12
Figure 3. Chassis Relationship .................................................................................................... 23
Tables

Table 1. Terminology ................................................................................................................. 9
Table 2. Document References.................................................................................................. 10
Table 3. Resources and URLs.................................................................................................... 12
Table 4. API Error Response Attributes .................................................................................. 16
Table 5. Message Object Attributes ......................................................................................... 16
Table 6. HTTP Error Status Codes ........................................................................................ 17
Table 7. Properties Updated by Patch Operation ...................................................................... 26
Table 8. Properties Updated by Patch Operation ...................................................................... 34
Table 9. Boot Override Update Properties ................................................................................. 34
Table 10. Action Parameters .................................................................................................... 37
Table 11. Properties Updated by PATCH Operation ................................................................. 53
Table 12. Properties Updated by Patch Operation .................................................................... 64
Table 13. Port Attribute ........................................................................................................... 70
Table 14. New ACL Rule Condition Attributes .................................................................... 72
Table 15. ACL Rule Condition Attributes .............................................................................. 72
Table 16. ACL Rule Modification Attributes ......................................................................... 76
Table 17. ACL Rule Condition Attributes .............................................................................. 77
Table 18. New Static MAC Entry Attributes .......................................................................... 81
Table 19. Static MAC Modification Attributes ....................................................................... 82
Table 20. Network Service Attributes .................................................................................... 83
Table 21. Post Action Attributes ............................................................................................. 87
Table 22. Properties Updated by Patch Operation ................................................................... 89
Table 23. Event Service Attributes ........................................................................................ 90
Table 24. Event Subscription Attributes ............................................................................... 93
Table 25. Event Array Attributes ........................................................................................... 94
Table 26. Event Attributes ..................................................................................................... 95
Table 27. Properties Updated by Patch Operation .................................................................. 105
Table 28. Properties Updated by Patch Operation .................................................................. 110
Table 29. Properties Updated by Patch Operation .................................................................. 141
Table 30. Ethernet Object Properties .................................................................................... 141
Table 31. iSCSIBoot Object Properties ................................................................................... 141
Table 32. Required Resources per Service Type ..................................................................... 146
Table 33. Status ..................................................................................................................... 149
## Revision History

<table>
<thead>
<tr>
<th>Revision</th>
<th>Description</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>001</td>
<td>Initial Release</td>
<td>December 19, 2017</td>
</tr>
</tbody>
</table>
1 Introduction

1.1 Scope

This specification defines the interface to the Pooled System Management Engine (PSME) module to support Intel® Rack Scale Design (Intel® RSD) drawers. Covering the functionality designed and implemented in Intel® Rack Scale Design software v2.2.

The interface specified in this document is based on the Distributed Management Task Force's Redfish* Interface Specification and schema, Doc #DSP8010 (refer to https://www.dmtf.org version 2016.3. The schema has been enhanced with the Sensor Model, which is still a work in progress at the Scalable Platforms Management Forum (SPMF), also the MemoryMetrics model has been updated based on Redfish/SPMF API DSP8010_2017.1.

1.2 Intended audience

The intended audiences for this document include:

- Software vendors (for example, independent software vendors (xSsV) of pod management software, that make use of the PSME API to discover, compose, and manage Intel® RSD drawers, regardless of the hardware vendor and/or manage drawers in a multivendor environment.
- Hardware vendors (for example, an OxMs) of PSME firmware that implement PSME firmware for their hardware platforms, providing Intel® RSD compliant systems.

1.3 Conventions

The key words/phrases "MUST", "MUST NOT", "REQUIRED", "SHALL", "SHALL NOT", "SHOULD", "SHOULD NOT", "RECOMMENDED", "MAY", and "OPTIONAL" in this document are to be interpreted as described in RFC 2119, Table 2.

1.4 Terminology

Table 1. Terminology

<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>BMC</td>
<td>Baseboard management controller</td>
</tr>
<tr>
<td>HTTP</td>
<td>Hypertext Transfer Protocol</td>
</tr>
<tr>
<td>ISV</td>
<td>Independent software vendor</td>
</tr>
<tr>
<td>JSON</td>
<td>JavaScript object notation</td>
</tr>
<tr>
<td>NIC</td>
<td>Network interface card</td>
</tr>
<tr>
<td>OData</td>
<td>Open Data Protocol</td>
</tr>
<tr>
<td>POD</td>
<td>A physical collection of multiple racks</td>
</tr>
<tr>
<td>PNC</td>
<td>Pooled Node Controller</td>
</tr>
<tr>
<td>PDM</td>
<td>POD Manager</td>
</tr>
<tr>
<td>PSME</td>
<td>Pooled System Management Engine</td>
</tr>
<tr>
<td>PXE</td>
<td>Preboot execution</td>
</tr>
<tr>
<td>REST</td>
<td>Representational state transfer</td>
</tr>
<tr>
<td>SPMF</td>
<td>Scalable Platforms Management Forum</td>
</tr>
<tr>
<td>URI</td>
<td>Uniform resource identifier</td>
</tr>
<tr>
<td>UUID</td>
<td>Universally unique identifier</td>
</tr>
</tbody>
</table>
1.5 Document References

Table 2. Document References

<table>
<thead>
<tr>
<th>Doc ID</th>
<th>Title</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>336811</td>
<td>Intel® Rack Scale Design (RSD) Conformance and Software Reference Kit</td>
<td><a href="http://www.intel.com/intelRSD">http://www.intel.com/intelRSD</a></td>
</tr>
<tr>
<td></td>
<td>Getting Started Guide v2.2, Revision 001</td>
<td></td>
</tr>
<tr>
<td>336814</td>
<td>Intel® Rack Scale Design Pod Manager (PDOM) Release Notes, Software v2.2,</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Revision 001</td>
<td></td>
</tr>
<tr>
<td>336815</td>
<td>Intel® Rack Scale Design Pod Manager (PDOM) User Guide, Software v2.2,</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Revision 001</td>
<td></td>
</tr>
<tr>
<td>336816</td>
<td>Intel® Rack Scale Design PSME Release Notes, Software v2.2, Revision 001</td>
<td></td>
</tr>
<tr>
<td>336810</td>
<td>Intel® Rack Scale Design PSME User Guide, Software v2.2, Revision 001</td>
<td></td>
</tr>
<tr>
<td>336856</td>
<td>Intel® Rack Scale Design Storage Services API Specification, Software v2.2,</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Revision 001</td>
<td></td>
</tr>
<tr>
<td>336857</td>
<td>Intel® Rack Scale Design Pod Manager REST API Specification, Software v2.2,</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Revision 001</td>
<td></td>
</tr>
<tr>
<td>336858</td>
<td>Intel® Rack Scale Design Rack Management Module (RMM) API Specification,</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Software v2.2, Revision 001</td>
<td></td>
</tr>
<tr>
<td>336859</td>
<td>Intel® Rack Scale Design Generic Assets Management Interface API</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Specification, Software v2.2, Revision 001</td>
<td></td>
</tr>
<tr>
<td>336860</td>
<td>Intel® Rack Scale Design Firmware Extension Specification, Software v2.2,</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Revision 001</td>
<td></td>
</tr>
<tr>
<td>336861</td>
<td>Intel® Rack Scale Design Architecture Specification, Software v2.2, Revision 001</td>
<td></td>
</tr>
<tr>
<td>336862</td>
<td>Intel® RSD v2.2 Solid State Drive (SSD) Technical Advisory</td>
<td></td>
</tr>
<tr>
<td>RFC2119</td>
<td>Key words for use in RFCs to Indicate Requirement Levels, March 1997</td>
<td><a href="https://www.ietf.org/rfc/rfc2119.txt">https://www.ietf.org/rfc/rfc2119.txt</a></td>
</tr>
<tr>
<td>DSP8010</td>
<td>Redfish Schema v2016.3</td>
<td><a href="https://www.dmtf.org/sites/default/files/standards/documents/DSP8010_2016.3.zip">https://www.dmtf.org/sites/default/files/standards/documents/DSP8010_2016.3.zip</a></td>
</tr>
</tbody>
</table>

1.6 Notes and Symbol Convention

Symbol and note convention are similar to typographical conventions used in CIMI specification. Notation used in JSON serialization description:

- Mandatory in italics indicate data types instead of literal Mandatory.
- Characters are appended to items to indicate cardinality:
  - "?" (0 or 1)
  - "*" (0 or more)
  - "+" (1 or more)
- Vertical bars, "|", denote choice. For example, "a|b" means a choice between "a" and "b".
- Parentheses, "(" and ")", are used to indicate the scope of the operators "?", "*", "+" and "|".
- Ellipses (i.e., "...") indicate points of extensibility.

**Note:** The lack of ellipses does not mean no extensibility point exists; rather it is just not explicitly called out.
2 PSME API

2.1 PSME API structure and relations

The Pooled System Management Engine REST API provides the representational state transfer (REST) based interface that allows full management of the Pooled System Management Engine (PSME), including asset discovery and configuration.

The API hierarchy for compute resources is shown in Figure 1, the API hierarchy for Pooled Node Controller (PNC) resources is shown in Figure 2, and resources and Uniform resource identifiers (URI) are listed in Table 3.

2.1.1 PSME API physical resource hierarchy

Figure 1. PSME REST API Hierarchy for Compute Resources
Table 3. Resources and URIs

<table>
<thead>
<tr>
<th>Resource</th>
<th>Schema</th>
<th>OEM Extended?</th>
<th>URI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Service Root</td>
<td>v1_1_1</td>
<td>Yes</td>
<td>/redfish/v1</td>
</tr>
<tr>
<td>Chassis Collection</td>
<td></td>
<td>No</td>
<td>/redfish/v1/Chassis</td>
</tr>
<tr>
<td>Chassis</td>
<td>V1_3_0</td>
<td>Yes</td>
<td>/redfish/v1/Chassis/{chassisID}</td>
</tr>
<tr>
<td>Computer System Collection</td>
<td></td>
<td>No</td>
<td>/redfish/v1/Systems</td>
</tr>
<tr>
<td>Computer System</td>
<td>V1_2_0</td>
<td>Yes</td>
<td>/redfish/v1/Systems/{systemID}</td>
</tr>
<tr>
<td>Computer System Metrics</td>
<td>Oem v1_0_0</td>
<td></td>
<td>/redfish/v1/Systems/{systemID}/Metrics</td>
</tr>
<tr>
<td>Processors Collection</td>
<td></td>
<td>No</td>
<td>/redfish/v1/Systems/{systemID}/Processors</td>
</tr>
<tr>
<td>Processor</td>
<td>V1_0_0</td>
<td>Yes</td>
<td>/redfish/v1/Systems/{systemID}/Processors/{processorID}</td>
</tr>
<tr>
<td>Processor Metrics</td>
<td>Oem v1_0_0</td>
<td></td>
<td>/redfish/v1/Systems/{systemID}/Processors/{processorID}/Metrics</td>
</tr>
<tr>
<td>Memory Collection</td>
<td></td>
<td></td>
<td>/redfish/v1/Systems/{systemID}/Memory</td>
</tr>
<tr>
<td>Memory</td>
<td>V1_1_0</td>
<td>Yes</td>
<td>/redfish/v1/Systems/{systemID}/Memory/{memoryID}</td>
</tr>
<tr>
<td>Memory Metrics</td>
<td>V1_0_0</td>
<td>Yes</td>
<td>/redfish/v1/Systems/{systemID}/Memory/{memoryID}/Metrics</td>
</tr>
<tr>
<td>Storage Subsystem Collection</td>
<td></td>
<td></td>
<td>/redfish/v1/Systems/{systemID}/Storage</td>
</tr>
<tr>
<td>Storage Subsystem</td>
<td>V1_0_0</td>
<td>No</td>
<td>/redfish/v1/Systems/{systemID}/Storage/{storageID}</td>
</tr>
<tr>
<td>Drives</td>
<td>V1_1_1</td>
<td>Yes</td>
<td>/redfish/v1/Chassis/{chassisID}/Drives/{driveID}</td>
</tr>
<tr>
<td>Manager Collection</td>
<td></td>
<td></td>
<td>/redfish/v1/Managers</td>
</tr>
<tr>
<td>Manager</td>
<td>V1_2_0</td>
<td>No</td>
<td>/redfish/v1/Managers/{managerID}</td>
</tr>
<tr>
<td>Resource</td>
<td>Schema version</td>
<td>OEM Extended?</td>
<td>URI</td>
</tr>
<tr>
<td>----------------------------------</td>
<td>----------------</td>
<td>---------------</td>
<td>----------------------------------------------------------------------</td>
</tr>
<tr>
<td>Network Protocol</td>
<td>V1_0_0</td>
<td>No</td>
<td>/redfish/v1/Managers/{managerID}/NetworkProtocol</td>
</tr>
<tr>
<td>Ethernet Interface Collection</td>
<td></td>
<td></td>
<td>/redfish/v1/Systems/{systemID}/EthernetInterfaces</td>
</tr>
<tr>
<td>Ethernet Interface</td>
<td>V1_1_0</td>
<td>Yes</td>
<td>/redfish/v1/Systems/{systemID}/EthernetInterfaces/{nicID}</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>/redfish/v1/Managers/{managerID}/EthernetInterfaces/{nicID}</td>
</tr>
<tr>
<td>Ethernet Switch Collection</td>
<td></td>
<td></td>
<td>/redfish/v1/EthernetSwitches</td>
</tr>
<tr>
<td>Ethernet Switch</td>
<td>Oem v1_0_0</td>
<td></td>
<td>/redfish/v1/EthernetSwitches/{switchID}</td>
</tr>
<tr>
<td>Ethernet Switch Metrics</td>
<td>Oem v1_0_0</td>
<td></td>
<td>/redfish/v1/EthernetSwitches/{switchID}/Metrics</td>
</tr>
<tr>
<td>Ethernet Switch Port Collection</td>
<td></td>
<td></td>
<td>/redfish/v1/EthernetSwitches/{switchID}/Ports</td>
</tr>
<tr>
<td>Ethernet Switch Port</td>
<td>Oem v1_0_0</td>
<td></td>
<td>/redfish/v1/EthernetSwitches/{switchID}/Ports/{portID}</td>
</tr>
<tr>
<td>Ethernet Switch Port Metrics</td>
<td>Oem v1_0_0</td>
<td></td>
<td>/redfish/v1/EthernetSwitches/{switchID}/Ports/{portID}/Metrics</td>
</tr>
<tr>
<td>Ethernet Switch Port StaticMAC Collection</td>
<td></td>
<td></td>
<td>/redfish/v1/EthernetSwitches/{switchID}/Ports/{portID}/StaticMACs</td>
</tr>
<tr>
<td>Ethernet Switch Port Static MAC</td>
<td>Oem v1_0_0</td>
<td></td>
<td>/redfish/v1/EthernetSwitches/{switchID}/Ports/{portID}/StaticMACs/(macID)</td>
</tr>
<tr>
<td>Ethernet Switch Access Control List (ACL) collection</td>
<td>Oem v1_0_0</td>
<td></td>
<td>/redfish/v1/EthernetSwitches/{switchID}/ACLs</td>
</tr>
<tr>
<td>Ethernet Switch ACL</td>
<td>Oem v1_0_0</td>
<td></td>
<td>/redfish/v1/EthernetSwitches/{switchID}/ACLs/{aclID}</td>
</tr>
<tr>
<td>Ethernet Switch ACL rule</td>
<td>Oem v1_0_0</td>
<td></td>
<td>/redfish/v1/EthernetSwitches/{switchID}/ACLs/{aclID}/Rules</td>
</tr>
<tr>
<td>VLAN Network Interface Collection</td>
<td></td>
<td></td>
<td>/redfish/v1/EthernetSwitches/{switchID}/Ports/{portID}/VLANS</td>
</tr>
<tr>
<td>VLAN Network Interface</td>
<td>V1_0_1</td>
<td>Yes</td>
<td>/redfish/v1/EthernetSwitches/{switchID}/Ports/{portID}/VLANS/{vlanID}</td>
</tr>
<tr>
<td>EventService</td>
<td>V1_0_0</td>
<td>No</td>
<td>/redfish/v1/EventService</td>
</tr>
<tr>
<td>Event Subscription Collection</td>
<td></td>
<td></td>
<td>/redfish/v1/EventService/Subscriptions</td>
</tr>
<tr>
<td>Event Subscription</td>
<td>V1_1_1</td>
<td>No</td>
<td>/redfish/v1/EventService/Subscriptions/{subscriptionID}</td>
</tr>
<tr>
<td>Resource</td>
<td>Schema Version</td>
<td>OEM Extended?</td>
<td>URI</td>
</tr>
<tr>
<td>------------------------</td>
<td>----------------</td>
<td>---------------</td>
<td>------------------------------------------</td>
</tr>
<tr>
<td>Fabrics collection</td>
<td>V1_0_0</td>
<td>No</td>
<td>/redfish/v1/Fabrics</td>
</tr>
<tr>
<td>Fabric</td>
<td>V1_0_0</td>
<td>No</td>
<td>/redfish/v1/Fabrics/{fabricID}</td>
</tr>
<tr>
<td>Fabric Switch collection</td>
<td>V1_0_0</td>
<td>No</td>
<td>/redfish/v1/Fabrics/{fabricID}/Switches</td>
</tr>
<tr>
<td>Fabric Switch</td>
<td>V1_0_0</td>
<td>No</td>
<td>/redfish/v1/Fabrics/{fabricID}/Switches/{switchID}</td>
</tr>
<tr>
<td>Fabric Switch Port collection</td>
<td>V1_0_0</td>
<td>No</td>
<td>/redfish/v1/Fabrics/{fabricID}/Switches/{switchID}/Ports</td>
</tr>
<tr>
<td>Fabric Switch Port</td>
<td>V1_0_0</td>
<td>Yes</td>
<td>/redfish/v1/Fabrics/{fabricID}/Switches/{switchID}/Ports/{portID}</td>
</tr>
<tr>
<td>Fabric Switch Port Metrics</td>
<td>Oem v1_0_0</td>
<td>No</td>
<td>/redfish/v1/Fabrics/{fabricID}/Switches/{switchID}/Ports/{portID}/Metrics</td>
</tr>
<tr>
<td>Fabric Zone collection</td>
<td>V1_0_0</td>
<td>No</td>
<td>/redfish/v1/Fabrics/{fabricID}/Zones</td>
</tr>
<tr>
<td>Fabric Zone</td>
<td>V1_0_0</td>
<td>No</td>
<td>/redfish/v1/Fabrics/{fabricID}/Zones/{zoneID}</td>
</tr>
<tr>
<td>Endpoint Collection</td>
<td>V1_0_0</td>
<td>No</td>
<td>/redfish/v1/Fabrics/{fabricID}/Endpoints</td>
</tr>
<tr>
<td>Endpoint</td>
<td>V1_0_0</td>
<td>No</td>
<td>/redfish/v1/Fabrics/{fabricID}/Endpoints/{endpointID}</td>
</tr>
<tr>
<td>PCIeDevice</td>
<td>V1_0_0</td>
<td>No</td>
<td>/redfish/v1/Chassis/{chassisID}/PCieDevices/{deviceID}</td>
</tr>
<tr>
<td>PCIe Device Function</td>
<td>V1_0_0</td>
<td>No</td>
<td>/redfish/v1/Chassis/{chassisID}/PCieDevices/{deviceID}/Functions/{functionID}</td>
</tr>
<tr>
<td>TelemetryService</td>
<td>WIP</td>
<td></td>
<td>/redfish/v1/TelemetryService</td>
</tr>
<tr>
<td>Metric Definition</td>
<td>WIP</td>
<td></td>
<td>/redfish/v1/TelemetryService/MetricDefinitions</td>
</tr>
<tr>
<td>Metric Definition</td>
<td>WIP</td>
<td></td>
<td>/redfish/v1/TelemetryService/MetricDefinitions/{metricDefinitionId}</td>
</tr>
<tr>
<td>Metric Report</td>
<td>WIP</td>
<td></td>
<td>/redfish/v1/TelemetryService/MetricReportDefinitions</td>
</tr>
<tr>
<td>Metric Report</td>
<td>WIP</td>
<td></td>
<td>/redfish/v1/TelemetryService/MetricReportDefinitions/{metricReportDefinitionId}</td>
</tr>
<tr>
<td>Metric Report</td>
<td>WIP</td>
<td></td>
<td>/redfish/v1/TelemetryService/MetricReports</td>
</tr>
<tr>
<td>Metric Report</td>
<td>WIP</td>
<td></td>
<td>/redfish/v1/TelemetryService/MetricReports/{metricReportId}</td>
</tr>
<tr>
<td>Triggers Collection</td>
<td>WIP</td>
<td></td>
<td>/redfish/v1/TelemetryService/Triggers</td>
</tr>
<tr>
<td>Triggers</td>
<td>WIP</td>
<td></td>
<td>/redfish/v1/TelemetryService/Triggers/{triggerId}</td>
</tr>
<tr>
<td>Network Interface</td>
<td>V1_0_0</td>
<td>No</td>
<td>/redfish/v1/Systems/{systemID}/NetworkInterfaces</td>
</tr>
<tr>
<td>Network Interface</td>
<td>V1_0_0</td>
<td>No</td>
<td>/redfish/v1/Systems/{systemID}/NetworkInterfaces/{interfaceID}</td>
</tr>
<tr>
<td>Network Device Function</td>
<td>V1_0_0</td>
<td>No</td>
<td>/redfish/v1/Systems/{systemID}/NetworkInterfaces/{interfaceID}/NetworkDeviceFunctions</td>
</tr>
<tr>
<td>Task Service</td>
<td>V1_0_0</td>
<td>No</td>
<td>/redfish/v1/TaskService</td>
</tr>
<tr>
<td>Task Collection</td>
<td></td>
<td></td>
<td>/redfish/v1/TaskService/Tasks</td>
</tr>
<tr>
<td>Resource</td>
<td>Schema Version</td>
<td>OEM Extended?</td>
<td>URI</td>
</tr>
<tr>
<td>--------------------</td>
<td>----------------</td>
<td>---------------</td>
<td>------------------------------------------</td>
</tr>
<tr>
<td>Task</td>
<td>V1_0_0</td>
<td>No</td>
<td>/redfish/v1//TaskService/Tasks/{taskID}</td>
</tr>
<tr>
<td>Power</td>
<td>V1_1_0</td>
<td>No</td>
<td>/redfish/v1/Chassis/{chassisID}/Power</td>
</tr>
<tr>
<td>Thermal</td>
<td>V1_1_0</td>
<td>No</td>
<td>/redfish/v1/Chassis/{chassisID}/Thermal</td>
</tr>
<tr>
<td>Update Service</td>
<td>V1_1_0</td>
<td>No</td>
<td>/redfish/v1/UpdateService</td>
</tr>
<tr>
<td>Action Info</td>
<td>V1_0_0</td>
<td>No</td>
<td>/redfish/v1/UpdateService/SimpleUpdateActionInfo</td>
</tr>
</tbody>
</table>
3 PSME REST API Error Codes

This chapter contains descriptions of all error codes that may be returned by the Representational State Transfer (REST) calls implemented in the Pooled System Management Engine REST API (PSME REST API) in the Intel® Rack Scale Design (Intel® RSD) software v2.2 release.

3.1 API error response

In the case of an error, the PSME REST API responds with a Hypertext Transfer Protocol (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 is a JSON object with the properties shown in Table 4.

Table 4. API Error Response Attributes

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>code</td>
<td>A string indicating a specific MessageId from the message registry. &quot;Base.1.0.GeneralError&quot; should be used only if there is no better message.</td>
</tr>
<tr>
<td>message</td>
<td>A human readable error message corresponding to the message in the message registry.</td>
</tr>
<tr>
<td>@Message.ExtendedInfo</td>
<td>An array of message objects describing one or more error message(s).</td>
</tr>
</tbody>
</table>

3.1.1 Message Object

Message Objects provide additional information about an object, property, or error response.

Messages are represented as a JSON object with the properties listed in Table 5.

Table 5. Message Object Attributes

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>MessageId</td>
<td>String indicating a specific error or message (not to be confused with the HTTP status code). This code can be used to access a detailed message from a message registry.</td>
</tr>
<tr>
<td>Message</td>
<td>A human readable error message indicating the semantics associated with the error. This is the complete message, and is does not rely on substitution variables.</td>
</tr>
<tr>
<td>MessageArgs</td>
<td>An optional array of strings representing the substitution parameter values for the message. This is included in the response if a MessageId is specified for a parameterized message</td>
</tr>
<tr>
<td>Severity</td>
<td>An optional string representing the severity of the error.</td>
</tr>
<tr>
<td>Resolution</td>
<td>An optional string describing recommended action(s) to take to resolve the error.</td>
</tr>
<tr>
<td>RelatedProperties</td>
<td>An optional array of JSON Pointers defining the specific properties within a JSON payload described by the message.</td>
</tr>
</tbody>
</table>

3.1.2 Example error JSON object

```json
{
    "error": {
        "code": "Base.1.0.GeneralError",
        "message": "A general error has occurred. See ExtendedInfo for more information."
    },
    "@Message.ExtendedInfo": [
        {
            "@odata.type": "/redfish/v1/$metadata#Message.v1_0_0.Message",
            "MessageId": "Base.1.0.MalformedJSON",
```
"Message": "The request body submitted was malformed JSON and could not be parsed by the receiving service", 
"Severity": "Error"
}
{
"@odata.type": "/redfish/v1/$metadata#Message.v1_0_0.Message",
"MessageId": "Base.1.0.PropertyNotWriteable",
"RelatedProperties": [
"#/Name"
],
"Message": "The property Name is a read only property and cannot be assigned a value",
"MessageArgs": [
"Name"
],
"Severity": "Warning",
"Resolution": "Remove the property from the request body and resubmit the request if the operation failed"
}
]
}
}

3.2 API error codes

In general, if an error is not described in Table 6, it is to be mapped into HTTP 500 Internal Error code.

3.2.1 General error codes

For detailed list of error codes refer to Redfish* Scalable Platforms Management API Specification, Section 6.5.2.

The client should be prepared and ready to handle the error codes listed in Table 6.

Table 6. HTTP Error Status Codes

<table>
<thead>
<tr>
<th>HTTP Status Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>400 Bad Request</td>
<td>The request could not be processed because it contains missing or invalid information (such as validation error on an input field, a missing required value, and so on). An extended error is returned in the response body.</td>
</tr>
<tr>
<td>404 Not Found</td>
<td>The request specified a URI of a resource that does not exist.</td>
</tr>
<tr>
<td>405 Method Not Allowed</td>
<td>The HTTP verb specified in the request (e.g., DELETE, GET, HEAD, POST, PUT, and PATCH) is not supported for this request URI. The response includes an Allow header, which provides a list of methods that are supported by the resource identified by the Request-URI.</td>
</tr>
<tr>
<td>409 Conflict</td>
<td>A creation or update request could not be completed, because it would cause a conflict in the current state of the resources supported by the platform (for example, an attempt to set multiple attributes that work in a linked manner using incompatible values).</td>
</tr>
<tr>
<td>500 Internal Server Error</td>
<td>The server encountered an unexpected condition that prevented it from fulfilling the request. An extended error is returned in the response body.</td>
</tr>
<tr>
<td>501 Not Implemented</td>
<td>The server does not (currently) support the functionality required to fulfill the request. This is the appropriate response when the server does not recognize the request method and is not capable of supporting it for any resource.</td>
</tr>
<tr>
<td>503 Service Unavailable</td>
<td>The server is currently unable to handle the request due to temporary overloading or maintenance of the server.</td>
</tr>
</tbody>
</table>
3.2.2 PATCH method error codes

For PATCH methods, the Intel® RSD service conforms to IETF RFC 5789.

Service responds with the following error codes in the following cases:

- 400 Bad Request – malformed JSON in request (values not in range, unknown property, etc.)
- 405 Method Not Allowed – resource does not support PATCH method
- 409 Conflict – update cannot be executed at this moment. User might be able to resolve the conflict and resubmit the request.
- 501 Not Implemented – resource supports PATCH method, but current implementation doesn't (e.g. underlying HW doesn't support such functionality)
- 500 Internal Server Error – all other situations where any of above codes does not fit (e.g. underlying HW does not allow to execute this particular request).
4 PSME REST API Definition

Important note: The JavaScript® object notation (JSON) examples in this document are informative, not normative. Metadata files that are referenced by this specification are normative.

4.1 OData support

Intel® Rack Scale Design (Intel® RSD) supports the Open Data Protocol (OData) v4.0 as it is defined in Redfish* Scalable Platforms Management API Specification.

All resources within this RESTful API are identified by a unique identifier property named "@odata.id". Resource Identifiers is represented in JSON payloads as URI paths relative to the Redfish Schema portion of the Uniform resource identifier (URI). For example, the URIs always start with "redfish/". The resource identifier is the canonical URI for the resource and can be used to retrieve or edit the resource, as appropriate.

4.2 Asynchronous operations

While the majority of operations in this architecture are synchronous in nature, some operations can take a long time to execute, more time than a client typically wants to wait. For this reason, some operations can be asynchronous at the discretion of the service. The request portion of an asynchronous operation is no different from the request portion of a synchronous operation.

The use of HTTP Response codes enable a client to determine if the operation was completed synchronously or asynchronously. Clients must be prepared to handle both synchronous and asynchronous responses for requests using HTTP DELETE, POST, PATCH and PUT methods.

For details, refer to Redfish Scalable Platforms Management API Specification, Section 8.2 Asynchronous operations.

4.3 Protocol version

The protocol version is separate from the version of the resources or the version of the Redfish Schema supported by them.

Each version of the Redfish protocol is strongly typed. This is accomplished using the URI of the Redfish service in combination with the resource obtained at that URI, called the ServiceRoot.

The root URI for this version of the Redfish protocol is "/redfish/v1/".

While the major version of the protocol is represented in the URI, the major version, minor version and errata version of the protocol are represented in the Version property of the ServiceRoot resource, as defined in the Redfish Schema for that resource. The protocol version is a string of the form:

`MajorVersion.MinorVersion.Errata`

Where:

- **MajorVersion** = integer: something in the class changed in a backward incompatible way.
- **MinorVersion** = integer: a minor update. New functionality may have been added but nothing removed. Compatibility will be preserved with previous minor versions.
- **Errata** = integer: something in the prior version was broken and needed to be fixed.

Any resource discovered through links found by accessing the root service or any service or resource referenced using references from the root service conforms to the same version of the protocol supported by the root service.
4.3.1 Operations

4.3.1.1 GET

Request:

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

Response:

```
{
   "v1": "/redfish/v1/
}
```

4.4 OData service document

This service document provides a standard format for enumerating the resources exposed by the service, enabling generic hypermedia-driven OData clients to navigate to the resources of the service.

4.4.1 Operations

4.4.1.1 GET

Request:

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

Response:

```
{
   "@odata.context": "/redfish/v1/$metadata",
   "value": [
      {
         "name": "Service",
         "kind": "Singleton",
         "url": "/redfish/v1/
      },
      {
         "name": "Systems",
         "kind": "Singleton",
         "url": "/redfish/v1/Systems"
      },
      {
         "name": "Chassis",
         "kind": "Singleton",
         "url": "/redfish/v1/Chassis"
      },
      {
         "name": "Managers",
         "kind": "Singleton",
         "url": "/redfish/v1/Managers"
      },
      {
         "name": "Services",
         "kind": "Singleton",
         "url": "/redfish/v1/Services"
      }
   ]
}```
4.5 Intel® Rack Scale Design OEM extensions

All Intel® RSD OEM extensions to all resources defined in this document are supported.

4.6 Service root

Service root resource – entry point.

Property details are available in ServiceRoot.xml metadata file. OEM extensions details are available in IntelRackScaleOem.xml.

4.6.1 Operations

4.6.1.1 GET

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

Response:


"@odata.context": "/redfish/v1/$metadata#ServiceRoot.ServiceRoot",
"@odata.id": "/redfish/v1/",
"@odata.type": "#ServiceRoot.v1_1_1.ServiceRoot",
"Id": "RootService",
"Name": "Root Service",
"Description": "description-as-string",
"RedfishVersion": "1.1.0",
"UUID": "92384634-2938-2342-8820-489239905423",
"Systems": {
  "@odata.id": "/redfish/v1/Systems"
},
"Chassis": {
  "@odata.id": "/redfish/v1/Chassis"
},
"Managers": {
  "@odata.id": "/redfish/v1/Managers"
},
"EventService": {
  "@odata.id": "/redfish/v1/EventService"
},
"Fabrics": {
  "@odata.id": "/redfish/v1/Fabrics"
},
"Tasks": {
  "@odata.id": "/redfish/v1/TaskService"
},
"Registries": {
  "@odata.id": "/redfish/v1/Registries"
},
"TelemetryService": {
  "@odata.id": "/redfish/v1/TelemetryService"
},
"Oem": {
  "Intel_RackScale": {
    "@odata.type": "#Intel.Oem.ServiceRoot",
    "ApiVersion": "2.2.0",
    "Services": {
      "@odata.id": "/redfish/v1/Services"
    },
    "EthernetSwitches": {
      "@odata.id": "/redfish/v1/EthernetSwitches"
    }
  }
},
"UpdateService": {
  "@odata.id": "/redfish/v1/UpdateService"
},
"Links": {}

4.6.1.2 PUT

Operation is not allowed on this resource.
PSME REST API Definition

4.6.1.3  PATCH
Operation is not allowed on this resource.

4.6.1.4  POST
Operation is not allowed on this resource.

4.6.1.5  DELETE
Operation is not allowed on this resource.

4.7  Chassis collection
Chassis collection resource.

Figure 3 shows the relationship between chassis components in this example Intel RSD rack.

Figure 3. Chassis Relationship
4.7.1 Operations

4.7.1.1 GET

Request:

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

Response:

```
{
  "@odata.context": "/redfish/v1/$metadata#ChassisCollection.ChassisCollection",
  "@odata.id": "/redfish/v1/Chassis",
  "@odata.type": "/#ChassisCollection.ChassisCollection",
  "Name": "Chassis Collection",
  "Description": "description-as-string",
  "Members@odata.count": 4,
  "Members": [
    {
      "@odata.id": "/redfish/v1/Chassis/Drawer1"
    },
    {
      "@odata.id": "/redfish/v1/Chassis/FabricModule1"
    },
    {
      "@odata.id": "/redfish/v1/Chassis/Sled1"
    },
    {
      "@odata.id": "/redfish/v1/Chassis/Blade1"
    }
  ]
}
```

4.7.1.2 PUT

Operation is not allowed on this resource.

4.7.1.3 PATCH

Operation is not allowed on this resource.

4.7.1.4 POST

Operation is not allowed on this resource.

4.7.1.5 DELETE

Operation is not allowed on this resource.

4.8 Chassis

This section provides the schema definition for the Chassis resource. It represents the properties for physical components for any system. This resource is intended to represent racks, rackmount servers, blades, standalone, modular systems, enclosures, and all other containers. The non-cpu/device centric parts of the schema are all accessed either directly or indirectly through this resource.
Details of this resource are described in metadata file: Chassis.xml. OEM extensions details are available in IntelRackScaleOem.xml.

4.8.1 Operations

4.8.1.1 GET

Request:

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

Response:

```json
{
   "@odata.context": "/redfish/v1/$metadata#Chassis.Chassis",
   "@odata.id": "/redfish/v1/Chassis/Blade1",
   "@odata.type": ">#Chassis.v1_3_0.Chassis",
   "Id": "Blade1",
   "ChassisType": "Blade",
   "Name": "name-as-string",
   "Description": "description-as-string",
   "Manufacturer": "Intel Corporation",
   "Model": "model-as-string",
   "SKU": "sku-as-string",
   "SerialNumber": "serial-number-as-string",
   "PartNumber": "part-number-as-string",
   "AssetTag": null,
   "IndicatorLED": null,
   "Status": {
      "State": "Enabled",
      "Health": "OK"
   },
   "Oem": {
      "Intel_RackScale": {
         "@odata.type": ">#Intel.Oem.Chassis",
         "Location": {
            "Id": "Blade1",
            "ParentId": "Sled1"
         }
      }
   },
   "Links": {
      "@odata.type": ">#Chassis.v1_2_0.Links",
      "Contains": [],
      "ContainedBy": {
         "@odata.id": "/redfish/v1/Chassis/Sled1"
      },
      "ComputerSystems": [{
         "@odata.id": "/redfish/v1/Systems/System1"
      }],
      "ManagedBy": [{
         "@odata.id": "/redfish/v1/Managers/VirtualBMC1"
      }]
   }
}
```
PSME REST API Definition

"ManagersInChassis": [{
  "@odata.id": "/redfish/v1/Managers/Manager1"
}]
"Storage": [{
  "@odata.id": "/redfish/v1/Systems/System1/Storage/SATA"
}]
"Drives": [{
  "@odata.id": "/redfish/v1/Chassis/Blade1/Drives/1"
}]
"Oem": {
  "Intel_RackScale": {
    "@odata.type": ":Intel.Oem.ChassisLinks",
    "Switches": [],
  },
  "PoweredBy": [],
  "CooledBy": []
}
"PowerState": "On",
"Thermal": {
  "@odata.id": "/redfish/v1/Chassis/Blade1/Thermal"
},
"Power": {
  "@odata.id": "/redfish/v1/Chassis/Blade1/Power"
}

4.8.1.2 PUT
Operation is not allowed on this resource.

4.8.1.3 PATCH
The properties in Table 7 can be updated by the PATCH operation:

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Type</th>
<th>Required</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>AssetTag</td>
<td>String</td>
<td>No</td>
<td>The user assigned asset tag for this chassis.</td>
</tr>
<tr>
<td>Oem-&gt;Intel_RackScale-&gt;Location</td>
<td>Object</td>
<td>No</td>
<td>Object representing physical location of chassis. Following properties can be patched: &quot;Id&quot; - String containing physical location ID of this chassis</td>
</tr>
</tbody>
</table>

Request:

PATCH /redfish/v1/Chassis/1
Content-Type: application/json

```
{
  "AssetTag": "Chassis1",
  "Oem": {
    "Intel_RackScale": {
      "Location": {
        "Id": "Blade1"
      }
    }
  }
}
```
Response:

HTTP/1.1 204 No Content

Or:

HTTP/1.1 200 OK
{
 (updated resource body)
}

4.8.1.4 POST
Operation is not allowed on this resource.

4.8.1.5 DELETE
Operation is not allowed on this resource.

4.9 Computer Systems collection

4.9.1 Operations

4.9.1.1 GET
Request:
GET /redfish/v1/Systems
Content-Type: application/json

Response:

{
   "@odata.context": "/redfish/v1/$metadata#ComputerSystemCollection.ComputerSystemCollection",
   "@odata.id": "/redfish/v1/Systems",
   "@odata.type": ">#ComputerSystemCollection.ComputerSystemCollection",
   "Name": "Computer System Collection",
   "Description": "description-as-string",
   "Members@odata.count": 1,
   "Members": [
   {
      "@odata.id": "/redfish/v1/Systems/System1"
   }
   ]
}

4.9.1.2 PUT
Operation is not allowed on this resource.

4.9.1.3 PATCH
Operation is not allowed on this resource.

4.9.1.4 POST
Operation is not allowed on this resource.
4.10  Computer system

This schema defines a computer system and its respective properties. A computer system represents a machine (physical or virtual) and the local resources such as memory, CPU and other devices that can be accessed from that machine.

Details of this resource are described in metadata file: ComputerSystem.xml  OEM extensions details available in IntelRackScaleOem.xml.

4.10.1  Operations

4.10.1.1  GET (PSME Compute)

Request:

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

Response:

```json
{
   "@odata.context": "/redfish/v1/$metadata#ComputerSystem.ComputerSystem",
   "@odata.id": "/redfish/v1/Systems/System1",
   "@odata.type": ">#ComputerSystem.v1_3_0.ComputerSystem",
   "Id": "System1",
   "Name": "My Computer System",
   "Description": "Description of server",
   "SystemType": "Physical",
   "AssetTag": "free form asset tag",
   "Manufacturer": "Manufacturer Name",
   "Model": "Model Name",
   "SKU": "SKU",
   "SerialNumber": "2M220100SL",
   "PartNumber": "Computer1",
   "UUID": "00000000-0000-0000-0000-000000000000",
   "HostName": null,
   "Status": {
      "State": "Enabled",
      "Health": "OK",
      "HealthRollup": "OK"
   },
   "IndicatorLED": "Off",
   "PowerState": "On",
   "Boot": {
      "@odata.type": ">#ComputerSystem.v1_1_0.Boot",
      "BootSourceOverrideEnabled": "Once",
      "BootSourceOverrideTarget": "Pxe",
      "BootSourceOverrideTarget@Redfish.AllowableValues": ["None", "Pxe", "Hdd", "RemoteDrive"],
   }
}
```
"BootSourceOverrideMode": "Legacy",
"BootSourceOverrideMode@Redfish.AllowableValues": [
"Legacy",
"UEFI"
]
},
"BiosVersion": "P79 v1.00 (09/20/2013)",
"ProcessorSummary": {
"Count": 8,
"Model": "Multi-Core Intel(R) Xeon(R) processor 7xxx Series",
"Status": {
"State": "Enabled",
"Health": "OK",
"HealthRollup": "OK"
}
},
"MemorySummary": {
"TotalSystemMemoryGiB": 16.0,
"Status": {
"State": "Enabled",
"Health": "OK",
"HealthRollup": "OK"
}
},
"Processors": {
"@odata.id": "/redfish/v1/Systems/System1/Processors"
},
"EthernetInterfaces": {
"@odata.id": "/redfish/v1/Systems/System1/EthernetInterfaces"
},
"SimpleStorage": {},
"Storage": {
"@odata.id": "/redfish/v1/Systems/System1/Storage"
},
"Memory": {
"@odata.id": "/redfish/v1/Systems/System1/Memory"
},
"PClDevices": [],
"PClFunctions": [],
"TrustedModules": [
{
"@odata.type": "#ComputerSystem.v1_3_0.TrustedModules",
"FirmwareVersion": "0.001",
"InterfaceType": "TPM2_0",
"Status": {
"State": "Enabled",
"Health": null,
"HealthRollup": null
},
"Oem": {},
"FirmwareVersion2": null,
"InterfaceTypeSelection": "OemMethod"
}
],
"Links": {
"@odata.type": "#ComputerSystem.v1_2_0.Links",
"Chassis": [
  {
    "@odata.id": "/redfish/v1/Chassis/4"
  }
],
"ManagedBy": [
  {
    "@odata.id": "/redfish/v1/Managers/1"
  }
],
"Endpoints": [],
"Oem": {
},

"Actions": {
  "#ComputerSystem.Reset": {
    "target": "/redfish/v1/Systems/System1/Actions/ComputerSystem.Reset",
    "ResetType@Redfish.AllowableValues": [
      "On",
      "ForceOff",
      "GracefulShutdown",
      "ForceRestart",
      "Nmi",
      "GracefulRestart",
      "ForceOn",
      "PushPowerButton"
    ]
  },
  "Oem": {
    "#Intel.Oem.StartDeepDiscovery": {
      "target": "/redfish/v1/Systems/System1/Actions/Oem/Intel.Oem.StartDeepDiscovery"
    },
    "#Intel.Oem.StartDiscoveryOnDemand": {
      "target": "/redfish/v1/Systems/System1/Actions/Oem/Intel.Oem.StartDiscoveryOnDemand"
    },
    "#Intel.Oem.ChangeTPMState": {
      "InterfaceType@Redfish.AllowableValues": [
        "TPM1_2",
        "TPM2_0"
      ]
    }
  },
  "Oem": {
    "Intel_RackScale": {
      "PciDevices": [
        {
          "VendorId": "0x8086",
          "DeviceId": "0x1234"
        }
      ]
    }
  }
}
GET (PSME PCIe* Fabric)

This resource represents logical system containing PCIe* devices (no CPU or memory) and is excluded from POD Manager Composition.

Request:

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

Response:

```json
{
  "@odata.context": "/redfish/v1/$metadata#ComputerSystem.ComputerSystem",
  "@odata.id": "/redfish/v1/Systems/System2",
  "@odata.type": ".#ComputerSystem.v1_3_0.ComputerSystem",
  "Id": "System2",
  "Name": "My Computer System",
  "Description": "Description of server",
  "SystemType": "Physical",
  "AssetTag": "free form asset tag",
  "Manufacturer": "Manufacturer Name",
  "Model": "Model Name",
  "SKU": "SKU",
  "SerialNumber": "2M22010000",
  "PartNumber": "Computer1",
  "UUID": "00000000-0000-0000-0000-000000000000",
  "HostName": null,
  "Status": {
    "State": "Enabled",
    "Health": "OK",
    "HealthRollup": "OK"
  },
  "IndicatorLED": null,
  "PowerState": "On",
  "Boot": {
    "@odata.type": ".#ComputerSystem.v1_1_0.Boot",
    "@odata.id": "/redfish/v1/Systems/System1/Boot/0"
  }
}
```
"BootSourceOverrideEnabled": "Disabled",
"BootSourceOverrideTarget": "None",
"BootSourceOverrideTarget@Redfish.AllowableValues": ["None"
],
"BootSourceOverrideMode": null,
"BootSourceOverrideMode@Redfish.AllowableValues": []
},
"BiosVersion": null,
"ProcessorSummary": {
  "Count": 0,
  "Model": null,
  "Status": {
    "State": null,
    "Health": null,
    "HealthRollup": null
  }
},
"MemorySummary": {
  "TotalSystemMemoryGiB": 0,
  "Status": {
    "State": null,
    "Health": null,
    "HealthRollup": null
  }
},
"Processors": {
  "@odata.id": "/redfish/v1/Systems/System2/Processors"
},
"EthernetInterfaces": {
  "@odata.id": "/redfish/v1/Systems/System2/EthernetInterfaces"
},
"SimpleStorage": {},
"Storage": {
  "@odata.id": "/redfish/v1/Systems/System2/Storage"
},
"Memory": {
  "@odata.id": "/redfish/v1/Systems/System1/Memory"
},
"PCiDevices": [
  {
    "@odata.id": "/redfish/v1/Chassis/PCIeSwitch1/PCiDevices/Device1"
  }
],
"PCiFunctions": [],
"TrustedModules": []
],
"Links": {
  "@odata.type": "#ComputerSystem.v1_2_0.Links",
  "Chassis": [{
    "@odata.id": "/redfish/v1/Chassis/4"
  }],
  "ManagedBy": [{
    "@odata.id": "/redfish/v1-Managers/1"
  }],
  "Endpoints": [

"Actions": {
  "#ComputerSystem.Reset": {
    "target": "/redfish/v1/Systems/System1/Actions/ComputerSystem.Reset",
  },
  "Oem": {
    "#Intel.Oem.StartDeepDiscovery": {
      "target": "/redfish/v1/Systems/System1/Actions/Oem/Intel.Oem.StartDeepDiscovery"
    },
    "#Intel.Oem.StartDiscoveryOnDemand": {
      "target": "/redfish/v1/Systems/System1/Actions/Oem/Intel.Oem.StartDiscoveryOnDemand"
    },
    "#Intel.Oem.ChangeTPMState": {
      "InterfaceType@Redfish.AllowableValues": ["TPM1_2", "TPM2_0"
    ]
  }
},
"Oem": {
  "Intel_RackScale": {
    "PciDevices": [],
    "DiscoveryState": "Basic",
    "ProcessorSockets": null,
    "MemorySockets": null,
    "PCIeConnectionId": [
    ],
    "UserModeEnabled": false,
    "TrustedExecutionTechnologyEnabled": false,
    "Metrics": {
      "@odata.id": "/redfish/v1/Systems/System2/Metrics"
    }
  }
}
4.10.1.3 PUT
Operation is not allowed on this resource.

4.10.1.4 PATCH
The properties in Table 8 can be updated by the PATCH operation:

Table 8. Properties Updated by Patch Operation

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Type</th>
<th>Required</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>AssetTag</td>
<td>String</td>
<td>No</td>
<td>The user assigned asset tag for this system.</td>
</tr>
<tr>
<td>Boot</td>
<td>Object</td>
<td>No</td>
<td>Boot override properties, details in Table 9</td>
</tr>
<tr>
<td>UserModeEnabled</td>
<td>Boolean</td>
<td>No</td>
<td>Allows to switch between user mode (FW upgrade of system components disabled) and admin mode (FW upgrade enabled)</td>
</tr>
</tbody>
</table>

Table 9 describes the “Boot” properties that can be patched.

Table 9. Boot Override Update Properties

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Type</th>
<th>Required</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>BootSourceOverrideEnabled</td>
<td>String</td>
<td>No</td>
<td>Describes the state of the Boot Source Override feature. Allowed values:</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>&quot;Disabled&quot; - The system will boot as normal</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>&quot;Once&quot; - On its next boot cycle, the system will boot (one time) to</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>the Boot Source Override Target</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>&quot;Continuous&quot; - The system will boot to the target specified in the</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>BootSourceOverride Target until this property is set to Disabled</td>
</tr>
<tr>
<td>BootSourceOverrideTarget</td>
<td>String</td>
<td>No</td>
<td>The current boot source to be used at next boot instead of the normal boot</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>device, if BootSourceOverrideEnabled is true. Available values (refer to</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>annotation @Redfish.AllowableValues for actual list of supported values):</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>&quot;None&quot; - Boot from the normal boot device</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>&quot;Pxe&quot; - Boot from the Pre-Boot EXecution (PXE) environment</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>&quot;Hdd&quot; - Boot from a hard drive</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>&quot;RemoteDrive&quot; - Boot from a remote drive (e.g. iSCSI)</td>
</tr>
<tr>
<td>BootSourceOverrideMode</td>
<td>String</td>
<td>No</td>
<td>The BIOS Boot Mode (either Legacy or UEFI) to be used when</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>BootSourceOverrideTarget boot source is booted from:</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>&quot;Legacy&quot; - The system will boot in non-UEFI boot mode to the Boot Source</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Override Target</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>&quot;UEFI&quot; - The system will boot in UEFI boot mode to the Boot Source Override</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Target</td>
</tr>
</tbody>
</table>

Request:

PATCH /redfish/v1/Systems/System1
Content-Type: application/json
{
   "Boot": {
      "BootSourceOverrideEnabled": "Once",
      "BootSourceOverrideTarget": "Pxe",
      "BootSourceOverrideMode": "UEFI"
   },
   "AssetTag": "Storage System",
   "Oem": {
      "Intel_RackScale": {
      
      
      
      
```
"UserModeEnabled": true
}
}


5.5.2.1 POST
To POST a service request:

POST /redfish/v1/Systems/System1/Actions/ComputerSystem.Reset

Content-Type: application/json

{ "ResetType": "On" }

Response:
HTTP/1.1 204 No Content
Request:

POST
/redfish/v1/Systems/System1/Actions/ComputerSystem.StartDiscoveryOnDemand
Content-Type: application/json
{
}

Response:

HTTP/1.1 204 No Content

4.10.1.5.4 Change TPM state and/or version:

This action typically can be applied to system during reset operation. Created task remains “InProgress” until reset action is triggered. Table 10 describes the action parameters.

Table 10. Action Parameters

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Type</th>
<th>Required</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>DeviceEnabled</td>
<td>Boolean</td>
<td>Yes</td>
<td>This defines the TPM device state as a result of triggering this action.</td>
</tr>
<tr>
<td>InterfaceType</td>
<td>String</td>
<td>No</td>
<td>Required interface type of the Trusted Module. Allowed values are defined in metadata ComputerSystem.xml Refer to Redfish@AllowableValues for service-supported types.</td>
</tr>
<tr>
<td>ClearOwnership</td>
<td>Boolean</td>
<td>No</td>
<td>This indicates if TPM ownership should be cleared.</td>
</tr>
</tbody>
</table>

Request:

POST /redfish/v1/Systems/System1/Actions/ComputerSystem.ChangeTPMState
Content-Type: application/json
{
    "DeviceEnabled": true,
    "InterfaceType": "TPM2_0",
    "ClearOwnership": true
}

Response:

HTTP/1.1 204 No Content

Or when task is created:

(header)
HTTP/1.1 202 Accepted
Location: http://<ip>:<port>/redfish/v1/TaskService/TaskMonitors/1

(body)
{
    "@odata.context": "/redfish/v1/$metadata#Task.Task",
    "@odata.id": "/redfish/v1/TaskService/Tasks/1",
    "@odata.type": ">#Task.v1_0_0.Task",
    "Id": "1",
    "Name": "Task 1",
    "TaskState": "New",
    "StartTime": "2016-09-01T04:45+01:00",
    "TaskStatus": "OK",
    "Messages": []
}
4.10.1.6  **DELETE**  
Operation is not allowed on this resource.

4.11  **Computer System Metrics**  
Property details are available in ComputerSystemMetrics.xml metadata file.

4.11.1  **Operations**  

4.11.1.1  **GET**  

Request:

```
GET /redfish/v1/Systems/{systemID}/Metrics
Content-Type: application/json
```

Response:

```
{
   "@odata.context": "/redfish/v1/$metadata#ComputerSystemMetricsComputerSystemMetrics",
   "@odata.id": "/redfish/v1/Systems/System1/Metrics",
   "@odata.type": "+ComputerSystemMetrics.v1_0_0.ComputerSystemMetrics",
   "Name": "Computer System Metrics for System1",
   "Description": "description-as-string",
   "Id": "Metrics for System1",
   "ProcessorBandwidthPercent": 17,
   "MemoryBandwidthPercent": 23,
   "MemoryThrottledCyclesPercent": 13,
   "ProcessorPowerWatt": 120,
   "MemoryPowerWatt": 48,
   "IOBandwidthGBps": 4,
   "Health": ["OK"]
}
```

4.11.1.2  **PUT**  
Operation is not allowed on this resource.

4.11.1.3  **PATCH**  
Operation is not allowed on this resource.

4.11.1.4  **POST**  
Operation is not allowed on this resource.

4.11.1.5  **DELETE**  
Operation is not allowed on this resource.

4.12  **Processor collection**  
Processor collection resource – provides collection of all processors available in a blade.
4.12.1 Operations

4.12.1.1 GET

Request:

GET /redfish/v1/Systems/System1/Processors
Content-Type: application/json
Response:

```json
{
  "@odata.context": "/redfish/v1/$metadata#ProcessorCollectionProcessorCollection",
  "@odata.id": "/redfish/v1/Systems/System1/Processors",
  "@odata.type": "#ProcessorCollection.ProcessorCollection",
  "Name": "Processors Collection",
  "Description": "description-as-string",
  "Members@odata.count": 1,
  "Members": [
    {
      "@odata.id": "/redfish/v1/Systems/System1/Processors/CPU1"
    }
  ]
}
```

4.12.1.2 PUT
Operation is not allowed on this resource.

4.12.1.3 PATCH
Operation is not allowed on this resource.

4.12.1.4 POST
Operation is not allowed on this resource.

4.12.1.5 DELETE
Operation is not allowed on this resource.

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

Property details are available in Processor.xml metadata file. OEM extensions details are available in IntelRackScaleOem.xml.

4.13.1 Operations

4.13.1.1 GET
Request:

```
GET /redfish/v1/Systems/System1/Processors/CPU1
Content-Type: application/json
```
Response:

```json
{
    "@odata.context": "/redfish/v1/$metadata#Processor.Processor",
    "@odata.id": "/redfish/v1/Systems/System1/Processors/CPU1",
    "@odata.type": "#Processor.v1_0_0.Processor",
    "Name": "Processor",
    "Id": "CPU1",
    "Socket": "CPU 1",
    "ProcessorType": "CPU",
    "ProcessorArchitecture": "x86",
    "InstructionSet": "x86-64",
    "Manufacturer": "Intel(R) Corporation",
    "Model": "Multi-Core Intel(R) Xeon(R) processor 7xxx Series",
    "ProcessorId": {
        "VendorId": "GenuineIntel",
        "IdentificationRegisters": "0x34AC34DC8901274A",
        "EffectiveFamily": "0x42",
        "EffectiveModel": "0x61",
        "Step": "0x1",
        "MicrocodeInfo": "0x429943"
    },
    "MaxSpeedMHz": 3700,
    "TotalCores": 8,
    "TotalThreads": 16,
    "Status": {
        "State": "Enabled",
        "Health": "OK",
        "HealthRollup": null
    },
    "Oem": {
        "Intel_RackScale": {
            "Brand": "E5",
            "Capabilities": [
                "sse",
                "sse2",
                "sse3"
            ],
            "OnPackageMemory": [
                {
                    "Type": "L2Cache",
                    "CapacityMB": 2,
                    "SpeedMHz": null
                },
                {
                    "Type": "L3Cache",
                    "CapacityMB": 20,
                    "SpeedMHz": null
                }
            ],
            "ThermalDesignPowerWatt": 160,
            "Metrics": {
                "@odata.id": "/redfish/v1/Systems/System1/Processors/CPU1/Metrics"
            }
        }
    }
}
```
4.13.1.2 GET (FPGA)

Request:

GET /redfish/v1/Systems/System1/Processors/FPGA1
Content-Type: application/json

Response:

```json
{
    "@odata.context": "/redfish/v1/$metadata#Processor.Processor",
    "@odata.id": "/redfish/v1/Systems/System1/Processors/FPGA1",
    "@odata.type":="#Processor.v1_0_0.Processor",
    "Description": "description-as-string",
    "Name": "Accelerator",
    "Id": "FPGA1",
    "Socket": "CPU 1",
    "ProcessorType": "FPGA",
    "ProcessorArchitecture": "OEM",
    "InstructionSet": "OEM",
    "Manufacturer": "Intel(R) Corporation",
    "Model": "CPU Integrated FPGA Accelerator XYZ8008",
    "ProcessorId": {
        "VendorId": "GenuineIntel",
        "IdentificationRegisters": "0xDEADBEEF",
        "EffectiveFamily": "0xFF",
        "EffectiveModel": "0xAA",
        "Step": "0x1",
        "MicrocodeInfo": null
    },
    "MaxSpeedMHz": null,
    "TotalCores": 2,
    "TotalThreads": null,
    "Status": {
```
"State": "Enabled",
"Health": "OK",
"HealthRollup": null
},
"Oem": {
"Intel_RackScale": {
"@odata.type": "#Intel.Oem.Processor",
"Brand": null,
"Capabilities": [],
"OnPackageMemory": [
{ "Type": "HBM2",
"CapacityMB": 512,
"SpeedMHz": 1066
}
],
"ThermalDesignPowerWatt": 2.5,
"FPGA": {
"Type": "Integrated",
"BitStreamVersion": "Blue1",
"HSSIConfiguration": "4x10G",
"HSSISideband": "I2C",
"ReconfigurationSlots": 1
}
}
}

4.13.3 PUT
Operation is not allowed on this resource.

4.13.4 PATCH
Operation is not allowed on this resource.

4.13.5 POST
Operation is not allowed on this resource.

4.13.6 DELETE
Operation is not allowed on this resource.

4.14 Processor Metrics
Property details are available in ProcessorMetrics.xml metadata file.

4.14.1 Operations

4.14.1.1 GET
Request:
GET /redfish/v1/Systems/System1/Processors/CPUI/Metrics
Content-Type: application/json
Response:

```json
{
   "@odata.context": "/redfish/v1/$metadata#ProcessorMetrics.ProcessorMetrics",
   "@odata.id": "/redfish/v1/Systems/System1/Processors/CPU1/Metrics",
   "@odata.type": "#ProcessorMetrics.v1_0_0.ProcessorMetrics",
   "Name": "ProcessorMetrics for CPU1",
   "Description": "description-as-string",
   "Id": "Metrics for CPU1",
   "AverageFrequencyMHz": 3014,
   "ThrottlingCelsius": 19,
   "TemperatureCelsius": 73,
   "ConsumedPowerWatt": 153,
   "Health": ["FRB1 BIST Failure", "Processor Throttled"]
}
```

4.14.1.2 PUT
Operation is not allowed on this resource.

4.14.1.3 PATCH
Operation is not allowed on this resource.

4.14.1.4 POST
Operation is not allowed on this resource.

4.14.1.5 DELETE
Operation is not allowed on this resource.

4.15 Memory collection
Memory collection resource – provides collection of all memory modules installed in a computer system.

4.15.1 Operations

4.15.1.1 GET
Request:

```
GET /redfish/v1/Systems/{systemID}/Memory
Content-Type: application/json
```
Response:

```json
{
    "@odata.context": "/redfish/v1/$metadata#MemoryCollection.MemoryCollection",
    "@odata.type": "#MemoryCollection.MemoryCollection",
    "@odata.id": "/redfish/v1/Systems/System1/Memory",
    "Name": "Memory Collection",
    "Description": "description-as-string",
    "Members@odata.count": 1,
    "Members": [
        {
            "@odata.id": "/redfish/v1/Systems/System1/Memory/Dimm1"
        }
    ]
}
```

4.15.1.2 PUT

Operation is not allowed on this resource.

4.15.1.3 PATCH

Operation is not allowed on this resource.

4.15.1.4 POST

Operation is not allowed on this resource.

4.15.1.5 DELETE

Operation is not allowed on this resource.

4.16 Memory

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

Properties' details available in `Memory.xml` metadata file. OEM extensions details available in `IntelRackScaleOem.xml`.
### 4.16.1 Operations

#### 4.16.1.1 GET

Request:

```
GET /redfish/v1/Systems/System1/Memory/{MemoryID}
Content-Type: application/json
```

Response:

```
{
   "@odata.context": "/redfish/v1/$metadata#Memory.Memory",
   "@odata.id": "/redfish/v1/Systems/System1/Memory/Dimm1",
   "@odata.type": "#Memory.v1_1_0.Memory",
   "Name": "DIMM",
   "Id": "Dimm1",
   "MemoryType": "DRAM",
   "MemoryDeviceType": "DDR4",
   "BaseModuleType": "LRDIMM",
   "MemoryMedia": [
      "DRAM"
   ],
   "CapacityMiB": 16384,
   "DataWidthBits": 64,
   "BusWidthBits": 72,
   "Manufacturer": "Contoso",
   "SerialNumber": "1A2B3B",
   "PartNumber": "1A2B3D",
   "AllowedSpeedsMHz": [2133, 2400, 2667],
   "FirmwareRevision": "RevAbc",
   "FirmwareApiVersion": "ApiAbc",
   "FunctionClasses": [
      "Volatile"
   ],
   "VendorID": "vendorX",
   "DeviceID": "deviceX",
   "RankCount": 1,
   "DeviceLocator": "PROC 1 DIMM 1",
   "MemoryLocation": {
      "Socket": 1,
      "MemoryController": 1,
      "Channel": 1,
      "Slot": 1
   },
   "ErrorCorrection": "MultiBitECC",
   "Status": {
      "State": "Enabled",
      "Health": "OK",
      "HealthRollup": null
   },
   "OperatingSpeedMhz": 2400,
}
```
"Regions": [{
    "RegionId": "1",
    "MemoryClassification": "Volatile",
    "OffsetMiB": 0,
    "SizeMiB": 16384,
},
"OperatingMemoryModes": [
    "Volatile"
],
"Metrics": {
    "@odata.id": "/redfish/v1/Systems/System1/Memory/Dimm1/Metrics"
},
"Oem": {
    "Intel_RackScale": {
        "@odata.type": "#Intel.Oem.Memory",
        "VoltageVolt": 1.35
    }
},
"MaxTDPMilliWatts": [ 5000 ]
}

4.16.1.2 PUT
Operation is not allowed on this resource.

4.16.1.3 PATCH
Operation is not allowed on this resource.

4.16.1.4 POST
Operation is not allowed on this resource.

4.16.1.5 DELETE
Operation is not allowed on this resource.

4.17 Memory Metrics

Property details are available in MemoryMetrics.xml metadata file for official Redfish Memory Metrics and IntelRackScaleOem.xml file for Intel® RSD extensions for Memory Metrics.

Note: The current version of Intel® RSD does not implement all memory metrics. Currently implemented metrics are annotated as "Required in metadata". Third Party PSME implementations may choose bigger memory metric set for implementation based on capabilities on underlying HW/FW.

4.17.1 Operations

4.17.1.1 GET
Request:
GET /redfish/v1/Systems/3/Memory/Dimm1/Metrics
Content-Type: application/json

Response:
{
    "@odata.context": "/redfish/v1/$metadata#Systems/Members/1/Memory/Metrics/$entity",
}
"@odata.id": "/redfish/v1/Systems/3/Memory/Dimm1/Metrics",
"@odata.type": "#MemoryMetrics.v1_0_0.MemoryMetrics",
"Name": "Memory Metrics for DIMM1",
"Description": "description-as-string",
"Id": "Metrics for DIMM1",
"Oem": {
    "Intel_RackScale": {
        "TemperatureCelsius": 46,
        "Health": ["OK"]
    }
}

4.17.1.2  PUT
Operation is not allowed on this resource.

4.17.1.3  PATCH
Operation is not allowed on this resource.

4.17.1.4  POST
Operation is not allowed on this resource.

4.17.1.5  DELETE
Operation is not allowed on this resource.

4.18  Storage subsystem collection
Storage subsystem collection resource – provides collection of all storage subsystems available in a computer system.
Details of this resource are described in metadata file: StorageCollection.xml

4.18.1  Operations
4.18.1.1  GET
Request:
GET /redfish/v1/Systems/{systemID}/Storage
Content-Type: application/json

Response:
{
    "@odata.context": "/redfish/v1/$metadata#StorageCollection.StorageCollection",
    "@odata.id": "/redfish/v1/Systems/1/Storage",
    "@odata.type": "#StorageCollection.StorageCollection",
    "Name": "Storage Collection",
    "Members@odata.count": 1,
    "Members": [
        {
            "@odata.id": "/redfish/v1/Systems/3/Storage/SATA"
        }
    ]
}
4.18.1.2 PUT
Operation is not allowed on this resource.

4.18.1.3 PATCH
Operation is not allowed on this resource.

4.18.1.4 POST
Operation is not allowed on this resource.

4.18.1.5 DELETE
Operation is not allowed on this resource.

4.19 Storage subsystem

Storage subsystem resource – provides detailed information about a single storage subsystem identified by `{storageID}`.

Details of this resource are described in metadata file: Storage.xml

4.19.1 Operations

4.19.1.1 GET

Request:

GET /redfish/v1/Systems/{systemID}/Storage/{storageID}
Content-Type: application/json

Response:

```json
{
    "@odata.context": "/redfish/v1/$metadata#Storage.Storage",
    "@odata.id": "/redfish/v1/Systems/1/Storage/SATA",
    "@odata.type": ":Storage.v1_1_0.Storage",
    "Id": "1",
    "Name": "SATA Storage System",
    "Description": "System SATA",
    "Status": {
        "State": "Enabled",
        "Health": "OK",
        "HealthRollUp": "OK"
    },
    "StorageControllers": [{
        "@odata.id": "/redfish/v1/Systems/1/Storage/SATA#/StorageControllers/0",
        "@odata.type": ":Storage.v1_1_0.StorageController",
        "MemberId": "0",
        "Status": {
            "State": "Enabled",
            "Health": "OK"
        },
        "Manufacturer": "ManufacturerName",
        "Model": "ProductModelName",
        "SKU": ""
    }]
}
```
4.19.2 PUT
Operation is not allowed on this resource.

4.19.3 PATCH
Operation is not allowed on this resource.

4.20 Volume collection
Volume collection resource – provides collection of all storage volumes available in a storage subsystem.
Details of this resource are described in metadata file: VolumeCollection.xml

4.20.1 Operations
4.20.1.1 GET
Request:
GET/redfish/v1/Systems/1/Storage/SATA/Volumes
Content-Type: application/json

Response:

{...}
4.20.1.2 **PUT**

Operation is not allowed on this resource.

4.20.1.3 **PATCH**

Operation is not allowed on this resource.

4.20.1.4 **POST**

Operation is not allowed on this resource.

4.20.1.5 **DELETE**

Operation is not allowed on this resource.

### 4.21 Drive

Drive contains properties describing a single physical disk drive for any system.

Details of this resource are described in metadata file: Drive.xml  
OEM extensions details available in IntelRackScaleOem.xml.

The Intel® RSD OEM section contains **EraseOnDetach** property, which is handled by POD Manager. If exposed on PSME it does not provide any function thus it is recommended to keep it read-only with value `null`.

#### 4.21.1 Operations

4.21.1.1 **GET**

Request:

```plaintext
GET "/redfish/v1/Chassis/Blade1/Drives/1"
Content-Type: application/json
```

Response:

```json
{
    "@odata.context": "/redfish/v1/$metadata#Drive.Drive",
    "@odata.id": "/redfish/v1/Chassis/Blade1/Drives/1",
    "@odata.type": ">#Drive.v1_1_1.Drive",
    "Id": "1",
    "Name": "Drive",
    "Description": "Drive description string",
    "IndicatorLED": "Lit",
    "Model": "Drive Model string",
    "Status": {
        "State": "Enabled",
```
"Health": "OK",
"HealthRollup": null
},
"CapacityBytes": 899527000000,
"Protocol": "SATA",
"MediaType": "SSD",
"Manufacturer": "Intel",
"SerialNumber": "72DOA037FRD27",
"PartNumber": "SG0GP8811253178M02GJA00",
"SKU": "SKU version",
"StatusIndicator": "OK",
"Revision": "revision string",
"FailurePredicted": false,
"AssetTag": null,
"CapableSpeedGbs": 6,
"NegotiatedSpeedGbs": 6,
"Location": [{
  "Info": "4",
  "InfoFormat": "Hdd index"
}]
],
"Identifiers": [
{
  "DurableName": "123e4567-e89b-12d3-a456-426655440000",
  "DurableNameFormat": "UUID"
}
],
"HotspareType": null,
"EncryptionAbility": null,
"EncryptionStatus": null,
"RotationSpeedRPM": null,
"BlockSizeBytes": null,
"PredictedMediaLifeLeftPercent": null,
"Links": {
  "@odata.type": "#Drive.v1_1_0.Links",
  "Volumes": [],
  "Endpoints": [],
  "Oem": {
  }
},
"Actions": {
  "#Drive.SecureErase": {
    "target": "/redfish/v1/Chassis/Blade1/Drives/1/Actions/Drive.SecureErase"
  }
},
"Oem": {
  "Intel_RackScale": {
    "@odata.type": "#Intel.Oem.Drive",
    "EraseOnDetach": null,
    "FirmwareVersion": "1.17",
    "DriveErased": true,
    "Storage": {"@odata.id": "/redfish/v1/Systems/1/Storage/NVMe"},
    "PCIeFunction": {"@odata.id": "/redfish/v1/Chassis/1/PCIeDevices/Device1/Functions/1"
  }
}
4.21.1.2 PUT

Operation is not allowed on this resource.

4.21.1.3 PATCH

The properties in Table 11 can be updated by the PATCH operation:

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Type</th>
<th>Required</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>AssetTag</td>
<td>String</td>
<td>No</td>
<td>The user assigned asset tag for this drive.</td>
</tr>
<tr>
<td>Oem</td>
<td>Object</td>
<td>No</td>
<td>Within &quot;Intel_RackScale&quot; object following properties are PATCH-able:</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>&quot;EraseOnDetach&quot; – property can be updated on PODM. It indicates if drive</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>should be erased when detached from Composed Node.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>&quot;DriveErased&quot; – property used to indicate whether drive was cleared</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>after assignment to composed node.</td>
</tr>
</tbody>
</table>

Request:

PATCH /redfish/v1/Chassis/Blade1/Drives/1
Content-Type: application/json
{
   "AssetTag": "TemporaryStorage",
   "Oem": {
      "Intel_RackScale": {
         "EraseOnDetach": true,
         "DriveErased": false
      }
   }
}

Response:

HTTP/1.1 204 No Content

Or:

HTTP/1.1 200 OK
{
   (updated resource body as in 4.21.1.1)
}

4.21.1.4 POST

POST action is used to SecureErase drives. If this operation is not immediate, Status->State of resource should be changed to “Starting”. This action works only on drives currently not assigned to any zone.

POST /redfish/v1/Chassis/Blade1/Drives/1/Actions/Drive.SecureErase
Content-Type: application/json
{}

Response:

HTTP/1.1 204 No Content

Or (when task is created)

HTTP/1.1 202 Accepted
4.21.1.5 **DELETE**

Operation is not allowed on this resource.

4.22 **System Network interface**

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

Details of this resource are described in metadata file: EthernetInterface.xml  OEM extensions details available in IntelRackScaleOem.xml.

4.22.1 **Operations**

4.22.1.1 **GET**

Request:

GET /redfish/v1/Systems/System1/EthernetInterfaces/LAN1
Content-Type: application/json

Response:

```
{
    "@odata.context": "/redfish/v1/$metadata#EthernetInterface.EthernetInterface",
    "@odata.id": "/redfish/v1/Systems/System1/EthernetInterfaces/LAN1",
    "@odata.type": ":EthernetInterface.v1_1_0.EthernetInterface",
    "Id": "LAN1",
    "Name": "Ethernet Interface",
    "Description": "System NIC 1",
    "Status": {
        "State": "Enabled",
        "Health": "OK",
        "HealthRollup": null
    },
    "InterfaceEnabled": true,
    "PermanentMACAddress": "AA:BB:CC:DD:EE:FF",
    "MACAddress": "AA:BB:CC:DD:EE:FF",
    "SpeedMbps": 100,
    "AutoNeg": true,
    "FullDuplex": true,
    "MTUSize": 1500,
    "HostName": "web483",
```
"FQDN": "web483.redfishspecification.org",
"IPv6DefaultGateway": "fe80::3ed9:2bff:fe34:600",
"MaxIPv6StaticAddresses": null,
"NameServers": [
  "names.redfishspecification.org"
],
"IPv4Addresses": [
  {
    "Address": "192.168.0.10",
    "SubnetMask": "255.255.252.0",
    "AddressOrigin": "Static",
    "Gateway": "192.168.0.1"
  }
],
"IPv6Addresses": [
  {
    "Address": "fe80::lecl:deff:fe6f:1e24",
    "PrefixLength": 64,
    "AddressOrigin": "Static",
    "AddressState": "Preferred"
  }
],
"IPv6StaticAddresses": [
],
"VLAN": null,
"VLANs": null,
"Oem": {},
"Links": {
  "Oem": {
    "Intel_RackScale": {
      "@odata.type": "#Intel.Oem.EthernetInterface",
      "NeighborPort": {
        "@odata.id": "/redfish/v1/EthernetSwitches/1/Ports/1"
      }
    }
  }
}

4.22.1.2  PUT
Operation is not allowed on this resource.

4.22.1.3  PATCH
Operation is not allowed on this resource.

4.22.1.4  POST
Operation is not allowed on this resource.

4.22.1.5  DELETE
Operation is not allowed on this resource.
4.23 Manager collection
Manager collection resource – provides collection of all managers available in a drawer.

4.23.1 Operations
4.23.1.1 GET
Request:
GET /redfish/v1/Managers
Content-Type: application/json

Response:
{
   "@odata.context":
   "/redfish/v1/$metadata#ManagerCollection.ManagerCollection",
   "@odata.id": "/redfish/v1/Managers",
   "@odata.type": #ManagerCollection.ManagerCollection",
   "Name": "Manager Collection",
   "Description": "description-as-string",
   "Members@odata.count": 3,
   "Members": [
   {
      "@odata.id": "/redfish/v1/Managers/BMC1"
   },
   {
      "@odata.id": "/redfish/v1/Managers/BMC2"
   },
   {
      "@odata.id": "/redfish/v1/Managers/PSME"
   }
   ]
}

4.23.1.2 PUT
Operation is not allowed on this resource.

4.23.1.3 PATCH
Operation is not allowed on this resource.

4.23.1.4 POST
Operation is not allowed on this resource.

4.23.1.5 DELETE
Operation is not allowed on this resource.
4.24  Manager

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

Details about resource properties are found in metadata file: Manager.xml. OEM extensions details available in IntelRackScaleOem.xml.

4.24.1  Operations

4.24.1.1  GET

Request:

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

Response:

```json
{
   "@odata.context": "/redfish/v1/$metadata#Manager.Manager",
   "@odata.id": "/redfish/v1/Managers/PSME",
   "@odata.type": "#Manager.v1_2_0.Manager",
   "Id": "1",
   "Name": "Manager",
   "ManagerType": "BMC",
   "Description": "BMC",
   "ServiceEntryPointUUID": "92384634-2938-2342-8820-489239905423",
   "UUID": "00000000-0000-0000-0000-000000000000",
   "Model": "Joo Janta 200",
   "DateTime": "2015-03-13T04:14:33+06:00",
   "DateTimeLocalOffset": "+06:00",
   "Status": {
      "State": "Enabled",
      "Health": "OK",
      "HealthRollup": null
   },
   "GraphicalConsole": {
      "ServiceEnabled": true,
      "MaxConcurrentSessions": 2,
      "ConnectTypesSupported": ["KVMIP"]
   },
   "SerialConsole": {
      "ServiceEnabled": true,
      "MaxConcurrentSessions": 1,
      "ConnectTypesSupported": ["Telnet",
                               "SSH",
                               "IPMI"]
   },
   "CommandShell": {
      "ServiceEnabled": true,
      "MaxConcurrentSessions": 4,
      "ConnectTypesSupported": ["Telnet",
                               "SSH"]
   },
   "FirmwareVersion": "1.00",
   "NetworkProtocol": {
```
```
"@odata.id": "/redfish/v1/Managers/PSME/NetworkProtocol"
},
"EthernetInterfaces": {  
"@odata.id": "/redfish/v1/Managers/PSME/EthernetInterfaces"
},
"Links": {  
"@odata.type": "#Manager.v1_1_0.Links"
  "ManagerForServers": [],
  "ManagerForChassis": [{
    "@odata.id": "/redfish/v1/Chassis/FabricModule1"
  }],  
  "ManagerInChassis": {  
    "@odata.id": "/redfish/v1/Chassis/Drawer1"
  },
  "Oem": {  
    "Intel_RackScale": {  
      "@odata.type": "#Intel.Oem.ManagerLinks",
      "ManagerForServices": [{
        "@odata.id": "/redfish/v1/Services/RSS1"
      }],
      "ManagerForSwitches": []
    }
  }
},
"Oem": {},
"PowerState": "On",
"Actions": {  
  "#Manager.Reset": {  
    "target": "/redfish/v1/Managers/PSME/Actions/Manager.Reset",
    "ResetType@Redfish.AllowableValues": []
  },
  "Oem": {}  
}

4.24.1.2 PUT
Operation is not allowed on this resource.

4.24.1.3 PATCH
Operation is not allowed on this resource.

4.24.1.4 POST
Operation is not allowed on this resource.

4.24.1.5 DELETE
Operation is not allowed on this resource.

4.25 Ethernet Switch collection
Ethernet Switch collection resource – provides collection of all switches available in a fabric module.
4.25.1 **Operations**

4.25.1.1 **GET**
Request:
```
GET /redfish/v1/EthernetSwitches
Content-Type: application/json
```
Response:
```
{
  "@odata.context": "/redfish/v1/$metadata#EthernetSwitchesCollection.EthernetSwitchesCollection",
  "@odata.id": "/redfish/v1/EthernetSwitches",
  "@odata.type": ">#EthernetSwitchesCollection.EthernetSwitchesCollection",
  "Name": "Ethernet Switches Collection",
  "Description": "Network Switches Collection",
  "Members@odata.count": 1,
  "Members": [
    {
      "@odata.id": "/redfish/v1/EthernetSwitches/Switch1"
    }
  ]
}
```

4.25.1.2 **PUT**
Operation is not allowed on this resource.

4.25.1.3 **PATCH**
Operation is not allowed on this resource.

4.25.1.4 **POST**
Operation is not allowed on this resource.

4.25.1.5 **DELETE**
Operation is not allowed on this resource.

4.26 **Ethernet Switch**
Ethernet Switch resource – provides detailed information about a switch identified by `{switchID}`.
Detailed info about these resource properties can be obtained from metadata file: EthernetSwitch.xml

4.26.1 **Operations**
4.26.1.1 **GET**
Request:
```
GET /redfish/v1/EthernetSwitches/Switch1
Content-Type: application/json
```
Response:
```
{
```

```
PSME REST API Definition

4.26.1.2 PUT
Operation is not allowed on this resource.

4.26.1.3 PATCH
Operation is not allowed on this resource.

4.26.1.4 DELETE
Operation is not allowed on this resource.
4.26.1.5  **POST**
Operation is not allowed on this resource.

4.26.1.6  **DELETE**
Operation is not allowed on this resource.

### 4.27  Ethernet Switch Metrics

Property details are available in `EthernetSwitchMetrics.xml` metadata file.

*Note:* The current version of Intel RSD does not implement Ethernet switch metrics.

#### 4.27.1  Operations

**4.27.1.1**  **GET**

**Request:**

```
GET /redfish/v1/EthernetSwitches/Switch1/Metrics
Content-Type: application/json
```

**Response:**

```
{
  "@odata.context": "/redfish/v1/$metadata#EthernetSwitchMetrics.EthernetSwitchMetrics",
  "@odata.id": "/redfish/v1/EthernetSwitches/Switch1/Metrics",
  "@odata.type": ":#EthernetSwitchMetrics.v1_0_0.EthernetSwitchMetrics",
  "Name": "Ethernet Switch Metrics for Switch1",
  "Description": "description-as-string",
  "Id": "Metrics for Switch1",
  "Health": "OK"
}
```

**4.27.1.2**  **PUT**
Operation is not allowed on this resource.

**4.27.1.3**  **PATCH**
Operation is not allowed on this resource.

**4.27.1.4**  **POST**
Operation is not allowed on this resource.

**4.27.1.5**  **DELETE**
Operation is not allowed on this resource.

### 4.28  Ethernet Switch port collection

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

#### 4.28.1  Operations

**4.28.1.1**  **GET**

**Request:**
GET /redfish/v1/EthernetSwitches/Switch1/Ports
Content-Type: application/json

Response:

```
{
  "@odata.context": "/redfish/v1/$metadata#SwitchPortsCollection.SwitchPortsCollection",
  "@odata.id": "/redfish/v1/EthernetSwitches/Switch1/Ports",
  "@odata.type": "#SwitchPortsCollection.SwitchPortsCollection",
  "Name": "Ethernet Switch Port Collection",
  "Description": "Switch Port Collection",
  "Members@odata.count": 1,
  "Members": [
    {
      "@odata.id": "/redfish/v1/EthernetSwitches/Switch1/Ports/Port1"
    }
  ]
}
```

### 4.28.1.2 PUT

Operation is not allowed on this resource.

### 4.28.1.3 PATCH

Operation is not allowed on this resource.

### 4.28.1.4 POST

Request:

```
POST /redfish/v1/EthernetSwitches/Switch1/Ports
Content-Type: application/json

{
  "PortId": "Lag1",
  "PortMode": "LinkAggregationStatic",
  "Links": {
    "PortMembers": [
      {
        "@odata.id": "/redfish/v1/EthernetSwitches/Switch1/Ports/Port10"
      },
      {
        "@odata.id": "/redfish/v1/EthernetSwitches/Switch1/Ports/Port11"
      }
    ]
  }
}
```

Response:

HTTP/1.1 201 Created
Location: http://<IP>:<PORT>/redfish/v1/EthernetSwitches/Switch1/Ports/Lag1

### 4.28.1.5 DELETE

Operation is not allowed on this resource.
4.29  Ethernet Switch port

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

Detailed info about this resource properties can be obtained from metadata file: EthernetSwitchPort.xml

4.29.1  Operations

4.29.1.1  GET

Request:

```
GET /redfish/v1/EthernetSwitches/Switch1/Ports/Port1
Content-Type: application/json
```

Response:

```json
{
   "@odata.context": "/redfish/v1/$metadata#EthernetSwitchPort.EthernetSwitchPort",
   "@odata.id": "/redfish/v1/EthernetSwitches/Switch1/Ports/Port1",
   "@odata.type": ">#EthernetSwitchPort.v1_1_0.EthernetSwitchPort",
   "Id": "Port1",
   "Name": "RSA Switch Port",
   "Description": "description-as-string",
   "PortId": "sw0p10",
   "Status": {
      "State": "Enabled",
      "Health": "OK",
      "HealthRollup": null
   },
   "LinkType": "Ethernet",
   "OperationalState": "Up",
   "AdministrativeState": "Up",
   "LinkSpeedMbps": 10000,
   "NeighborInfo": {
      "SwitchId": "unique switch id",
      "PortId": "11",
      "CableId": "CustomerWritableThing"
   },
   "NeighborMAC": "00:11:22:33:44:55",
   "FrameSize": 1520,
   "Autosense": true,
   "FullDuplex": true,
   "MACAddress": "2c:60:0c:72:e6:33",
   "IPv4Addresses": [{
      "Address": "192.168.0.10",
      "SubnetMask": "255.255.255.0",
      "AddressOrigin": "Static",
      "Gateway": "192.168.0.1"
   }],
   "IPv6Addresses": [{
      "Address": "fe80::1ec1:deff:fe6f:1e24",
      "PrefixLength": 64,
      "AddressOrigin": "Static",
      "AddressState": "Preferred"
   }]
}
```
"PortClass": "Logical",
"PortMode": "LinkAggregationStatic",
"PortType": "Upstream",
"Oem": {
  
},
"VLANs": {
  "@odata.id": "/redfish/v1/EthernetSwitches/Switch1/Ports/Port1/VLANs"
},
"StaticMACs": {
  "@odata.id": "/redfish/v1/EthernetSwitches/Switch1/Ports/Port1/StaticMACs"
},
"Metrics": {
  "@odata.id": "/redfish/v1/EthernetSwitches/Switch1/Ports/Port1/Metrics"
},
"Links": {
  "@odata.type": "#EthernetSwitchPort.v1_1_0.Links",
  "PrimaryVLAN": {
    "@odata.id": "/redfish/v1/EthernetSwitches/Switch1/Ports/Port1/VLANs/VLAN1"
  },
  "Switch": {
    "@odata.id": "/redfish/v1/EthernetSwitches/Switch1"
  },
  "MemberOfPort": {
    "@odata.id": "/redfish/v1/EthernetSwitches/Switch1/Ports/LAG1"
  },
  "PortMembers": [],
  "ActiveACLs": [{
    "@odata.id": "/redfish/v1/EthernetSwitches/Switch1/ACLs/ACL1"
  }]
},

"NeighborInterface": {
  "@odata.id": "/redfish/v1/Systems/System1/EthernetInterfaces/LAN1"
}

4.29.1.2 PUT
Operation is not allowed on this resource.

4.29.1.3 PATCH
The properties in Table 12 can be updated by the PATCH operation:

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Type</th>
<th>Required</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>AdministrativeState</td>
<td>String (enum)</td>
<td>No</td>
<td>Port link state forced by user. Allowed values:</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>&quot;Up&quot;</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>&quot;Down&quot;</td>
</tr>
<tr>
<td>Attribute</td>
<td>Type</td>
<td>Required</td>
<td>Description</td>
</tr>
<tr>
<td>-----------------</td>
<td>---------------</td>
<td>----------</td>
<td>------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>LinkSpeedMbps</td>
<td>Number</td>
<td>No</td>
<td>Port speed in Mbps</td>
</tr>
<tr>
<td>FrameSize</td>
<td>Number</td>
<td>No</td>
<td>MAC frame size in bytes</td>
</tr>
<tr>
<td>Autosense</td>
<td>Boolean</td>
<td>No</td>
<td>Indicates if the speed and duplex is automatically configured.</td>
</tr>
<tr>
<td>Links</td>
<td>Object</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Attribute</td>
<td>Type</td>
<td>Required</td>
<td>Description</td>
</tr>
<tr>
<td>PrimaryVLAN</td>
<td>Reference</td>
<td>No</td>
<td>Link to VLAN resource that should be primary for this port</td>
</tr>
<tr>
<td>PortMembers</td>
<td>Array of</td>
<td>No</td>
<td>List of ports being members of this logical port</td>
</tr>
<tr>
<td>MACAddress</td>
<td>String</td>
<td>No</td>
<td>MAC address of port</td>
</tr>
<tr>
<td>IPv4Addresses</td>
<td>Array of</td>
<td>No</td>
<td>Array of IP addresses of this port in following format:</td>
</tr>
<tr>
<td>Attribute</td>
<td>Type</td>
<td>Required</td>
<td>Description</td>
</tr>
<tr>
<td>Address</td>
<td>String</td>
<td>Yes</td>
<td>IP v4 address</td>
</tr>
<tr>
<td>SubnetMask</td>
<td>String</td>
<td>No</td>
<td>Subnet mask</td>
</tr>
<tr>
<td>Gateway</td>
<td>String</td>
<td>No</td>
<td>IPv4 gateway for this address</td>
</tr>
<tr>
<td>IPv6Addresses</td>
<td>Array of</td>
<td>No</td>
<td>Array of IP addresses of this port in following format:</td>
</tr>
<tr>
<td>Attribute</td>
<td>Type</td>
<td>Required</td>
<td>Description</td>
</tr>
<tr>
<td>Address</td>
<td>String</td>
<td>Yes</td>
<td>IP address in v6 format</td>
</tr>
<tr>
<td>PrefixLength</td>
<td>Number</td>
<td>No</td>
<td>Provides the IPv6 network prefix length in bits for this address</td>
</tr>
</tbody>
</table>
Request:

PATCH /redfish/v1/EthernetSwitches/Switch1/Ports/Port1
Content-Type: application/json
{
   "AdministrativeState": "Up",
   "LinkSpeedMbps": 1000,
   "FrameSize": 1500,
   "Autosense": false,
   "Links": {
      "PrimaryVLAN": {
         "@odata.id": "redfish/v1/EthernetSwitches/Switch1/Ports/Port1/VLANs/VLAN1",
      },
      "PortMembers": [
         {
            "@odata.id": "redfish/v1/EthernetSwitches/Switch1/Ports/Port10",
         },
         {
            "@odata.id": "redfish/v1/EthernetSwitches/Switch1/Ports/Port12",
         }
      ]
   }
}

Response:

HTTP/1.1 200 OK
{
(updated resource body)
}

Or:

HTTP/1.1 204 No Content

Or (when task is created):

HTTP/1.1 202 Accepted
Location: http://<IP:port>/redfish/v1/TaskService/Tasks/1/TaskMonitor
{
   "@odata.context": "redfish/v1/$metadata#Task.Task",
   "@odata.id": "redfish/v1/TaskService/Tasks/1",
   "@odata.type": "#Task.v1_0_0.Task",
   "Id": "1",
   "Name": "Task 1",
   "TaskState": "New",
   "StartTime": "2016-09-01T04:45+01:00",
   "TaskStatus": "OK",
   "Messages": [
   ]
}

Note: PortMembers array is an optional parameter. If not present in PATCH request, list of port members does not change.
4.29.1.4  **POST**

Operation is not allowed on this resource.

4.29.1.5  **DELETE**

Request:

```
DELETE /redfish/v1/EthernetSwitches/Switch1/Ports/Lag1
```

Response:

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

### 4.30  **Ethernet Switch Port Metrics**

Property details are available in EthernetSwitchPortMetrics.xml metadata file.

**Note:** The current version of Intel® RSD does not implement Ethernet switch port metrics.

#### 4.30.1  **Operations**

#### 4.30.1.1  **GET**

Request:

```
GET /redfish/v1/EthernetSwitches/Switch1/Ports/Port1/Metrics
Content-Type: application/json
```

Response:

```
{
    "@odata.context": "/redfish/v1/$metadata#EthernetSwitchPortMetrics.EthernetSwitchPortMetrics",
    "@odata.id": "/redfish/v1/EthernetSwitches/Switch1/Ports/Port1/Metrics",
    "@odata.type": ":EthernetSwitchPortMetrics.v1_0_0.EthernetSwitchPortMetrics",
    "Name": "Ethernet Switch Port Metrics",
    "Id": "Metrics",
    "Received": {
        "Packets": 8,
        "DroppedPackets": 0,
        "ErrorPackets": 0,
        "BroadcastPackets": 0,
        "MulticastPackets": 0,
        "Errors": 0,
        "Bytes": 64
    },
    "Transmitted": {
        "Packets": 128,
        "DroppedPackets": 0,
        "ErrorPackets": 0,
        "BroadcastPackets": 0,
        "MulticastPackets": 0,
        "Errors": 0,
        "Bytes": 512
    },
    "Collisions": 0,
    "Oem": {}
}
```
4.31 Ethernet Switch ACL collection

The Ethernet Switch (Access Control List) (ACL) collection resource provides the collection of resources of type EthernetSwitchACL defined on the Ethernet switch.

Information on properties can be obtained from metadata file: EthernetSwitchACLCollection.xml.

4.31.1 Operations

4.31.1.1 GET

Request:

GET /redfish/v1/EthernetSwitches/Switch1/ACLs
Content-Type: application/json

Response:

```
{
   "@odata.context": "/redfish/v1/$metadata#EthernetSwitchACLCollection.EthernetSwitchACLCollection",
   "@odata.id": "/redfish/v1/EthernetSwitches/Switch1/ACLs",
   "@odata.type": ".#EthernetSwitchACLCollection.EthernetSwitchACLCollection",
   "Name": "Ethernet Switch Access Control List Collection",
   "Description": "Switch Access Control List. Each ACL entry can be bind to any switch port",
   "Members@odata.count": 1,
   "Members": [
     {
       "@odata.id": "/redfish/v1/EthernetSwitches/Switch1/ACLs/ACL1"
     }
   ]
}
```

4.31.1.2 PUT

Operation is not allowed on this resource.

4.31.1.3 PATCH

Operation is not allowed on this resource.
4.31.4  **POST**

POST action is used to create a new clean Access Control List (ACL) without any rules and bound port. Because of that, JSON used in this post operation does not contain any properties.

Request:

```
POST /redfish/v1/EthernetSwitches/Switch1/ACLs
Content-Type: application/json
{
}
```

Response:

```
HTTP/1.1 201 Created
Location: http://<IP>:<PORT>/redfish/v1/EthernetSwitches/Switch1/ACLs/ACL1
```

4.31.5  **DELETE**

Operation is not allowed on this resource.

### 4.32  Ethernet Switch ACL

Ethernet Switch ACL resource – provides detailed information about a switch Access Control List defined on switch.

Detailed info about this resource properties can be obtained from metadata file: EthernetSwitchACL.xml

#### 4.32.1  Operations

#### 4.32.1.1  GET

Request:

```
GET /redfish/v1/EthernetSwitches/Switch1/ACLs/ACL1
Content-Type: application/json
```

Response:

```json
{
   "@odata.context": "/redfish/v1/$metadata#EthernetSwitchACL.EthernetSwitchACL",
   "@odata.id": "/redfish/v1/EthernetSwitches/Switch1/ACLs/ACL1",
   "@odata.type": ":#EthernetSwitchACL.v1_0_0.EthernetSwitchACL",
   "Id": "ACL1",
   "Name": "Ethernet Switch Access Control List",
   "Description": "Switch ACL",
   "Oem": {},
   "Rules": {
      "@odata.id": "/redfish/v1/EthernetSwitches/Switch1/ACLs/ACL1/Rules"
   },
   "Links": {
      "BoundPorts": [{
         "@odata.id": "/redfish/v1/EthernetSwitches/Switch1/Ports/sw0p1"
      }],
      "Oem": {}
   }
   "Actions": {
      "#EthernetSwitchACL.Bind": {
```
"target": "/redfish/v1/EthernetSwitches/Switch1/ACLs/ACL1/Actions/EthernetSwitchACL.Bind",
    "Port@Redfish.AllowableValues": [
        { "@odata.id": "/redfish/v1/EthernetSwitches/Switch1/Ports/sw0p2"},
        { "@odata.id": "/redfish/v1/EthernetSwitches/Switch1/Ports/sw0p3"} ]
},
"#EthernetSwitchACL.Unbind": {
    "target": "/redfish/v1/EthernetSwitches/Switch1/ACLs/ACL1/Actions/EthernetSwitchACL.Unbind",
    "Port@Redfish.AllowableValues": [
        { "@odata.id": "/redfish/v1/EthernetSwitches/Switch1/Ports/sw0p1"} ]
},

4.32.1.2 **PUT**
Operation is not allowed on this resource.

4.32.1.3 **PATCH**
Operation is not allowed on this resource.

4.32.1.4 **POST**
POST action is used to execute one of supported actions:

1. Bind – action binds given port to ACL
2. Unbind – action will remove given port from ACL

<table>
<thead>
<tr>
<th>Table 13. Port Attribute</th>
<th>Attribute</th>
<th>Type</th>
<th>Required</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Port</td>
<td>Link object</td>
<td>Yes</td>
<td>Provides URI of switch port that should be bind to current ACL. Port should be located on the same switch as ACL is.</td>
<td></td>
</tr>
</tbody>
</table>

Request:

```
POST /redfish/v1/EthernetSwitches/Switch1/ACLs/ACL1/Actions/EthernetSwitchACL.Bind
Content-Type: application/json
{
    "Port": {
        "@odata.id": "/redfish/v1/EthernetSwitches/Switch1/Ports/sw0p2"
    }
}
```

Response:

HTTP/1.1 204 No Content
### 4.32.1.5 DELETE

**Request:**

```
DELETE /redfish/v1/EthernetSwitches/Switch1/ACLs/ACL1
```

**Response:**

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

**Note:** The switch may contain some pre-defined ACLs that can't be deleted. In case of attempt to delete such rule, HTTP 400 BadRequest will be returned along with extended error info indicating that ACL is persistent.

### 4.33 Ethernet Switch ACL rule collection

Ethernet Switch ACL rule collection resource – provides collection of all rules for Access Control List (ACL) defined on switch.

Detailed info about this resource properties can be obtained from metadata file:

EthernetSwitchACLRuleCollection.xml

#### 4.33.1 Operations

#### 4.33.1.1 GET

**Request:**

```
GET /redfish/v1/EthernetSwitches/Switch1/ACLs/ACL1/Rules
Content-Type: application/json
```

**Response:**

```json
{
   "@odata.context": "/redfish/v1/$metadata#EthernetSwitchACLRuleCollection.EthernetSwitchACLRuleCollection",
   "@odata.id": "/redfish/v1/EthernetSwitches/Switch1/ACLs/ACL1/Rules",
   "@odata.type": "#EthernetSwitchACLRuleCollection.EthernetSwitchACLRuleCollection",
   "Name": "Ethernet Switch Access Control List Rules Collection",
   "Description": "Rules for switch Access Control List. Each Rule defines single action and at least one condition",
   "Members@odata.count": 1,
   "Members": [
      {
         "@odata.id": "/redfish/v1/EthernetSwitches/Switch1/ACLs/ACL1/Rules/Rule1"
      }
   ]
}
```

#### 4.33.1.2 PUT

Operation is not allowed on this resource.

#### 4.33.1.3 PATCH

Operation is not allowed on this resource.
### PSME REST API Definition

#### 4.33.1.4 POST

Table 14. New ACL Rule Condition Attributes

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Type</th>
<th>Required</th>
<th>Nullable</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>RuleId</td>
<td>Number</td>
<td>No</td>
<td></td>
<td>This is ACL rule ID which determine rule priority. If not provided during creation, service will assign default next free Id</td>
</tr>
<tr>
<td>Action</td>
<td>String (enum)</td>
<td>Yes</td>
<td></td>
<td>Action that will be executed when rule condition will be met. Available actions:</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• Permit – packets meeting condition will be allowed</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• Deny – deny packets meeting condition</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• Forward – forwards packets to selected interface</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• Mirror – mirrors traffic on selected interface</td>
</tr>
<tr>
<td>ForwardMirrorInterface</td>
<td>Link object</td>
<td>Yes for “Forward” and “Mirror” actions</td>
<td></td>
<td>This is link to interface where traffic will be mirrored/forwarded.</td>
</tr>
<tr>
<td>MirrorPortRegion</td>
<td>Array of link objects</td>
<td>Yes for “Mirror” action</td>
<td></td>
<td>Array of links to Ethernet interfaces which traffic should be mirrored on ForwardMirrorInterface</td>
</tr>
<tr>
<td>MirrorType</td>
<td>String (enum)</td>
<td>Yes for “Mirror” action</td>
<td></td>
<td>Type of mirroring traffic. Available values:</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• Egress - Mirror egressing traffic on the mirrored port to the mirror destination port</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• Ingress - Mirror ingressing traffic on the mirrored port to the mirror destination port</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• Bidirectional - Mirror ingressing and egressing traffic on the mirrored port to the mirror destination port</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• Redirect - Mirror ingress traffic to the mirror destination port and drop the traffic ingressing the mirror ports</td>
</tr>
<tr>
<td>Condition</td>
<td>Object</td>
<td>Yes</td>
<td></td>
<td>Provides all conditions that must be met to trigger rule action. Must contain at least one non null property. List of available properties is described below.</td>
</tr>
</tbody>
</table>

Table 15. ACL Rule Condition Attributes

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Type</th>
<th>Required</th>
<th>Nullable</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>IPSource</td>
<td>Object</td>
<td>No</td>
<td>Yes</td>
<td>Provides packet source IPv4 address.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IPv4Address</td>
<td>String</td>
<td>Yes</td>
<td></td>
<td>IPv4 address</td>
</tr>
<tr>
<td>Mask</td>
<td>String, null</td>
<td>No</td>
<td></td>
<td>The mask selects which bits in the corresponding value property are relevant for matching for a frame (a zero bit in the mask indicates a don't care bit in the value). Null value means all bits are relevant.</td>
</tr>
<tr>
<td>IPDestination</td>
<td>Object</td>
<td>No</td>
<td>Yes</td>
<td>Provides packet destination IPv4 address</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IPv4Address</td>
<td>String</td>
<td>Yes</td>
<td></td>
<td>IPv4 address</td>
</tr>
</tbody>
</table>
### Attribute Type Definition

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Type</th>
<th>Required</th>
<th>Nullable</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Mask</strong></td>
<td>String, null</td>
<td>No</td>
<td></td>
<td>The mask selects which bits in corresponding value property are relevant for matching for a frame (a zero bit in the mask indicates a don't care bit in the value). Null value means all bits are relevant.</td>
</tr>
</tbody>
</table>

**MACSource**

<table>
<thead>
<tr>
<th>MACSource</th>
<th>Object</th>
<th>No</th>
<th>Yes</th>
<th>Provides packet source MAC address:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Attribute</strong></td>
<td><strong>Type</strong></td>
<td><strong>Required</strong></td>
<td><strong>Description</strong></td>
<td></td>
</tr>
<tr>
<td>MACAddress</td>
<td>String</td>
<td>Yes</td>
<td>IPv4 address</td>
<td></td>
</tr>
<tr>
<td>Mask</td>
<td>String, null</td>
<td>No</td>
<td>The mask selects which bits in corresponding value property are relevant for matching for a frame (a zero bit in the mask indicates a don't care bit in the value). Null value means all bits are relevant.</td>
<td></td>
</tr>
</tbody>
</table>

**MACDestination**

<table>
<thead>
<tr>
<th>MACDestination</th>
<th>Object</th>
<th>No</th>
<th>Yes</th>
<th>Provides packet destination MAC address:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Attribute</strong></td>
<td><strong>Type</strong></td>
<td><strong>Required</strong></td>
<td><strong>Description</strong></td>
<td></td>
</tr>
<tr>
<td>MACAddress</td>
<td>String</td>
<td>Yes</td>
<td>IPv4 address</td>
<td></td>
</tr>
<tr>
<td>Mask</td>
<td>String, null</td>
<td>No</td>
<td>The mask selects which bits in corresponding value property are relevant for matching for a frame (a zero bit in the mask indicates a don't care bit in the value). Null value means all bits are relevant.</td>
<td></td>
</tr>
</tbody>
</table>

**VLANId**

<table>
<thead>
<tr>
<th>VLANId</th>
<th>Object</th>
<th>No</th>
<th>Yes</th>
<th>Provides packet VLAN tag ID:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Attribute</strong></td>
<td><strong>Type</strong></td>
<td><strong>Required</strong></td>
<td><strong>Description</strong></td>
<td></td>
</tr>
<tr>
<td>Id</td>
<td>Number</td>
<td>Yes</td>
<td>VLAN Id tag</td>
<td></td>
</tr>
</tbody>
</table>
### PSME REST API Definition

#### Attribute Type Required Nullable Description

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Type</th>
<th>Required</th>
<th>Nullable</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mask</td>
<td>Number, null</td>
<td>No</td>
<td></td>
<td>The mask selects which bits in corresponding value property are relevant for matching for a frame (a zero bit in the mask indicates a don't care bit in the value). Null value means all bits are relevant.</td>
</tr>
</tbody>
</table>

#### L4SourcePort

Object | No | Yes | IP layer 4 source port. Contains following properties:

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Type</th>
<th>Required</th>
<th>Nullable</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Port</td>
<td>Number</td>
<td>Yes</td>
<td></td>
<td>Port numeric value</td>
</tr>
<tr>
<td>Mask</td>
<td>Number, null</td>
<td>No</td>
<td></td>
<td>The mask selects which bits in corresponding value property are relevant for matching for a frame (a zero bit in the mask indicates a don't care bit in the value). Null value means all bits are relevant.</td>
</tr>
</tbody>
</table>

#### L4DestinationPort

Object | No | Yes | IP layer 4 destination port. Contains following properties:

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Type</th>
<th>Required</th>
<th>Nullable</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Port</td>
<td>Number</td>
<td>Yes</td>
<td></td>
<td>Port numeric value</td>
</tr>
<tr>
<td>Mask</td>
<td>Number, null</td>
<td>No</td>
<td></td>
<td>Mask</td>
</tr>
</tbody>
</table>

#### L4Protocol

Number | No | Yes | IP layer 4 protocol number as defined here: [http://www.iana.org/assignments/protocol-numbers/protocol-numbers.xhtml](http://www.iana.org/assignments/protocol-numbers/protocol-numbers.xhtml)

#### Request

```
POST /redfish/v1/EthernetSwitches/Switch1/ACLs/ACL1/Rules
Content-Type: application/json
{
    "RuleId": 1,
    "Action": "Deny",
    "ForwardMirrorInterface": null,
    "MirrorPortRegion": [],
    "MirrorType": null,
    "Condition": {
        "IPSource": {
            "IPv4Address": "192.168.8.0",
            "Mask": "0.0.0.255"
        },
        "IPDestination": null,
        "MACSource": null,
        "MACDestination": null,
        "VLANId": null,
```
"L4SourcePort": null,
"L4DestinationPort": null,
"L4Protocol": null
}
}

Response:
HTTP/1.1 201 Created

4.33.5 DELETE
Operation is not allowed on this resource.

4.34 Ethernet Switch ACL rule
Ethernet Switch ACL rule resource – provides detailed information about a switch ACL rule defined identified by {ruleID}.
Detailed info about this resource properties can be obtained from metadata file: EthernetSwitchACLRule.xml

4.34.1 Operations
4.34.1.1 GET
Request:
GET /redfish/v1/EthernetSwitches/Switch1/ACLs/ACL1/Rules/Rule1
Content-Type: application/json

Response:
{
   "@odata.context": "/redfish/v1/$metadata#EthernetSwitchACLRule.EthernetSwitchACLRule",
   "@odata.id": "/redfish/v1/EthernetSwitches/Switch1/ACLs/ACL1/Rules/Rule1",
   "@odata.type": "#EthernetSwitchACLRule.v1_0_0.EthernetSwitchACLRule",
   "Id": "Rule1",
   "Name": "Example Rule",
   "Description": "User defined rule for ACL",
   "RuleId": 1,
   "Action": "Mirror",
   "ForwardMirrorInterface": {
      "@odata.id": "/redfish/v1/EthernetSwitches/Switch1/Ports/Port9"
   },
   "MirrorPortRegion": [{
      "@odata.id": "/redfish/v1/EthernetSwitches/Switch1/Ports/Port1"
   },
   { "@odata.id": "/redfish/v1/EthernetSwitches/Switch1/Ports/Port2" }],
   "MirrorType": "Bidirectional",....
"Condition": {
   "IPSource": {
      "IPv4Address": "192.168.1.0",
      "Mask": "0.0.0.255"
   },
   "IPDestination": null,
   "MACSource": {
      "Address": "00:11:22:33:44:55",
      "Mask": null
   },
   "MACDestination": null,
   "VLANId": {
      "Id": 1088,
      "Mask": 4095
   },
   "L4SourcePort": {
      "Port": 22,
      "Mask": 255
   },
   "L4DestinationPort": null,
   "L4Protocol": null
},
"Oem": {
   "Links": {
   }
}

### 4.3.4.2 PUT

Operation is not allowed on this resource.

### 4.3.4.3 PATCH

Attributes of ACL Rule that can be modified by PATCH method are listed in Table 16.

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Type</th>
<th>Required</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>RuleId</td>
<td>Number</td>
<td>No</td>
<td>This is ACL rule ID that determines rule priority.</td>
</tr>
<tr>
<td>Action</td>
<td>String (enum)</td>
<td>No</td>
<td>Action that will be executed when rule condition will be met. Available actions:</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Permit – packets meeting condition will be allowed</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Deny – deny packets meeting condition</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Forward – forwards packets to selected interface</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Mirror – mirrors traffic on selected interface</td>
</tr>
<tr>
<td>ForwardMirrorInterface</td>
<td>Link object</td>
<td>Yes for &quot;Forward&quot; and &quot;Mirror&quot; actions</td>
<td>This is link to interface where traffic will be mirrored/forwarded.</td>
</tr>
<tr>
<td>MirrorPortRegion</td>
<td>Array of link objects</td>
<td>Yes for &quot;Mirror&quot; action</td>
<td>Array of links to Ethernet interfaces which traffic should be mirrored on ForwardMirrorInterface</td>
</tr>
<tr>
<td>Attribute</td>
<td>Type</td>
<td>Required</td>
<td>Description</td>
</tr>
<tr>
<td>-----------------</td>
<td>---------------</td>
<td>----------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
</tbody>
</table>
| MirrorType      | String (enum) | Yes for “Mirror” action | Type of mirroring traffic. Available values:  
  • Egress - Mirror egressing traffic on the mirrored port to the mirror destination port  
  • Ingress - Mirror ingressing traffic on the mirrored port to the mirror destination port  
  • Bidirectional - Mirror ingressing and egressing traffic on the mirrored port to the mirror destination port  
  • Redirect - Mirror ingress traffic to the mirror destination port and drop the traffic ingressing the mirror ports |
| Condition       | Object        | No       | Provides all conditions that must be met to trigger rule action. List of available properties is described in Table 17. |

**Table 17. ACL Rule Condition Attributes**

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Type</th>
<th>Required</th>
<th>Nullable</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>IPSource</td>
<td>Object</td>
<td>No</td>
<td>Yes</td>
<td>Provides packet source IPv4 address.</td>
</tr>
<tr>
<td>IP4Address</td>
<td>String</td>
<td>Yes</td>
<td></td>
<td>IPv4 address</td>
</tr>
<tr>
<td>Mask</td>
<td>String, null</td>
<td>No</td>
<td></td>
<td>The mask selects which bits in corresponding value property are relevant for matching for a frame (a zero bit in the mask indicates a don’t care bit in the value). Null value means all bits are relevant.</td>
</tr>
<tr>
<td>IPDestination</td>
<td>Object</td>
<td>No</td>
<td>Yes</td>
<td>Provides packet destination IPv4 address</td>
</tr>
<tr>
<td>IP4Address</td>
<td>String</td>
<td>Yes</td>
<td></td>
<td>IPv4 address</td>
</tr>
<tr>
<td>Mask</td>
<td>String, null</td>
<td>No</td>
<td></td>
<td>The mask selects which bits in corresponding value property are relevant for matching for a frame (a zero bit in the mask indicates a don’t care bit in the value). Null value means all bits are relevant.</td>
</tr>
<tr>
<td>Attribute</td>
<td>Type</td>
<td>Required</td>
<td>Nullable</td>
<td>Description</td>
</tr>
<tr>
<td>--------------</td>
<td>-----------</td>
<td>----------</td>
<td>----------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>MACSource</td>
<td>Object</td>
<td>No</td>
<td>Yes</td>
<td>Provides packet source MAC address:</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td><strong>Attribute</strong></td>
</tr>
<tr>
<td>MACAddress</td>
<td>String</td>
<td>Yes</td>
<td></td>
<td>IPv4 address</td>
</tr>
<tr>
<td>Mask</td>
<td>String,  null</td>
<td>No</td>
<td></td>
<td>The mask selects which bits in corresponding value property are relevant for matching for a frame (a zero bit in the mask indicates a don’t care bit in the value). Null value means all bits are relevant.</td>
</tr>
<tr>
<td>MACDestination</td>
<td>Object</td>
<td>No</td>
<td>Yes</td>
<td>Provides packet destination MAC address:</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td><strong>Attribute</strong></td>
</tr>
<tr>
<td>MACAddress</td>
<td>String</td>
<td>Yes</td>
<td></td>
<td>IPv4 address</td>
</tr>
<tr>
<td>Mask</td>
<td>String, null</td>
<td>No</td>
<td></td>
<td>The mask selects which bits in corresponding value property are relevant for matching for a frame (a zero bit in the mask indicates a don’t care bit in the value). Null value means all bits are relevant.</td>
</tr>
<tr>
<td>VLANId</td>
<td>Object</td>
<td>No</td>
<td>Yes</td>
<td>Provides packet VLAN tag ID:</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td><strong>Attribute</strong></td>
</tr>
<tr>
<td>Id</td>
<td>Number</td>
<td>Yes</td>
<td></td>
<td>VLAN Id tag</td>
</tr>
<tr>
<td>Mask</td>
<td>Number,  null</td>
<td>No</td>
<td></td>
<td>The mask selects which bits in corresponding value property are relevant for matching for a frame (a zero bit in the mask indicates a don’t care bit in the value). Null value means all bits are relevant.</td>
</tr>
</tbody>
</table>
## L4SourcePort

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Type</th>
<th>Required</th>
<th>Nullable</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>L4SourcePort</td>
<td>Object</td>
<td>No</td>
<td>Yes</td>
<td>IP layer 4 Source port. Contains following properties:</td>
</tr>
<tr>
<td>Port</td>
<td>Number</td>
<td>Yes</td>
<td></td>
<td>Port numeric value</td>
</tr>
<tr>
<td>Mask</td>
<td>Number, null</td>
<td>No</td>
<td></td>
<td>The mask selects which bits in corresponding value property are relevant for matching for a frame (a zero bit in the mask indicates a don't care bit in the value). Null value means all bits are relevant.</td>
</tr>
</tbody>
</table>

## L4DestinationPort

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Type</th>
<th>Required</th>
<th>Nullable</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>L4DestinationPort</td>
<td>Object</td>
<td>No</td>
<td>Yes</td>
<td>IP layer 4 Destination port. Contains following properties:</td>
</tr>
<tr>
<td>Port</td>
<td>Number</td>
<td>Yes</td>
<td></td>
<td>Port numeric value</td>
</tr>
<tr>
<td>Mask</td>
<td>Number, null</td>
<td>No</td>
<td></td>
<td>The mask selects which bits in corresponding value property are relevant for matching for a frame (a zero bit in the mask indicates a don't care bit in the value). Null value means all bits are relevant.</td>
</tr>
</tbody>
</table>

## L4Protocol

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Type</th>
<th>Required</th>
<th>Nullable</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>L4Protocol</td>
<td>Number</td>
<td>No</td>
<td>Yes</td>
<td>IP layer 4 protocol number as defined here:</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td><a href="http://www.iana.org/assignments/protocol-numbers/protocol-numbers.xhtml">http://www.iana.org/assignments/protocol-numbers/protocol-numbers.xhtml</a></td>
</tr>
</tbody>
</table>

### Request

```json
PATCH /redfish/v1/EthernetSwitches/Switch1/ACLs/ACL1/Rules/Rule2
Content-Type: application/json
{
    "RuleId": 1,
    "Action": "Permit",
    "ForwardMirrorInterface": null,
    "MirrorPortRegion": [],
    "MirrorType": null,
    "Condition": {
        "IPSource": {
            "IPv4Address": "192.168.6.0",
            "Mask": "0.0.0.255"
        },
        "IPDestination": null,
        "MACSource": null,
        "MACDestination": null,
        "VLANId": null,
        "L4SourcePort": null,
        "L4DestinationPort": null,
```
"L4Protocol": null
}

Response:

Or:

HTTP/1.1 200 OK
{
  (updated resource body)
}

4.34.1.4 POST
Operation is not allowed on this resource.

4.34.1.5 DELETE
Request:

DELETE /redfish/v1/EthernetSwitches/Switch1/ACLs/ACL1/Rules/Rule2

Response:

HTTP/1.1 204 No Content

4.35 Ethernet Switch port static MAC collection

Ethernet Switch port static MAC collection resource – provides collection of all static MAC forwarding table entries.

Detailed info about this resource properties can be obtained from metadata file:
EthernetSwitchACLRuleCollection.xml

4.35.1 Operations

4.35.1.1 GET

Request:

GET /redfish/v1/EthernetSwitches/Switch1/Ports/Port1/StaticMACs
Content-Type: application/json

Response:

{
  "@odata.context": "
/redfish/v1/$metadata#EthernetSwitches/Members/Switch1/Ports/Members/StaticMACs",
  "@odata.id": "/redfish/v1/EthernetSwitches/Switch1/Ports/Port1/StaticMACs",
  "@odata.type": "#StaticMACCollection.StaticMACCollection",
  "Name": "Static MAC Collection",
  "Description": "description-as-string",
  "Members@odata.count": 1,
  "Members": [
    {
      "@odata.id": "/redfish/v1/EthernetSwitches/Switch1/Ports/Port1/StaticMACs/1"
    }
  ]
}
4.35.1.2 PUT
Operation is not allowed on this resource.

4.35.1.3 PATCH
Operation is not allowed on this resource.

4.35.1.4 POST
Attributes of POST action to create new static MAC entry are listed in Table 18.

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Type</th>
<th>Required</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>MACAddress</td>
<td>String</td>
<td>Yes</td>
<td>MAC address that should be forwarded to this port</td>
</tr>
<tr>
<td>VLANId</td>
<td>Number, null</td>
<td>No</td>
<td>This if specified defines which packets tagged with specific VLANId should be forwarded to this port</td>
</tr>
</tbody>
</table>

Request:

```
POST /redfish/v1/EthernetSwitches/Switch1/Ports/Port1/StaticMACs
Content-Type: application/json
{
    "MACAddress": "00:11:22:33:44:55",
    "VLANId": 69
}
```

Response:

```
HTTP/1.1 201 Created
Location: http://<IP>:<PORT>/redfish/v1/EthernetSwitches/Switch1/Ports/Port1/StaticMACs/2
```

4.35.1.5 DELETE
Operation is not allowed on this resource.

4.36 Ethernet Switch port static MAC

Ethernet Switch port static MAC resource – provides detailed information about a static MAC address forward table entry.

Detailed info about this resource properties can be obtained from metadata file:
```
EthernetSwitchStaticMAC.xml
```

4.36.1 Operations

4.36.1.1 GET

Request:

```
GET /redfish/v1/EthernetSwitches/Switch1/Ports/Port1/StaticMACs/1
Content-Type: application/json
```

Response:

```
PATCHE 4.36.2 PUT

Operation is not allowed on this resource.

4.36.3 PATCH

Attributes of static MAC that can be modified by PATCH method are listed in Table 19.

Table 19. Static MAC Modification Attributes

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Type</th>
<th>Required</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>MACAddress</td>
<td>String</td>
<td>Yes</td>
<td>MAC address that should be forwarded to this port</td>
</tr>
<tr>
<td>VLANId</td>
<td>Number, null</td>
<td>No</td>
<td>This if specified defines which packets tagged with specific VLANId, should be forwarded to this port</td>
</tr>
</tbody>
</table>

Note: Only entries with “Type” == “Static” can be updated.

Request:

PATCH /redfish/v1/EthernetSwitches/Switch1/Ports/Port1/StaticMACs/2

Content-Type: application/json

```
{
    "VLANId": 697
}
```

Response:

Or:

HTTP/1.1 200 OK

```
{(updated resource body)}
```

4.36.4 POST

Operation is not allowed on this resource.

4.36.5 DELETE

Request:

DELETE /redfish/v1/EthernetSwitches/Switch1/Ports/Port1/StaticMACs/2

Response:

HTTP/1.1 204 No Content
4.37 Network protocol

Network protocol resource – provides detailed information about all network services supported by a manager identified by \{managerID\}. Network service attributes are listed in Table 20.

### Table 20. Network Service Attributes

<table>
<thead>
<tr>
<th>Name</th>
<th>Network service</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type URI</td>
<td><code>/redfish/v1/Managers/{managerID}/NetworkProtocol</code></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Type</th>
<th>Required</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Id</td>
<td>String</td>
<td>Yes</td>
<td>Resource identifier</td>
</tr>
<tr>
<td>Name</td>
<td>String</td>
<td>Yes</td>
<td>Resource name</td>
</tr>
<tr>
<td>Description</td>
<td>String, null</td>
<td>No</td>
<td>Resource description</td>
</tr>
<tr>
<td>Status</td>
<td>Object, null</td>
<td>No</td>
<td>Refer to Section 6.1 for resource status.</td>
</tr>
<tr>
<td>Oem</td>
<td>Object</td>
<td>No</td>
<td>OEM defined object</td>
</tr>
<tr>
<td>HostName</td>
<td>String, null</td>
<td>No</td>
<td>Provides information about host name</td>
</tr>
<tr>
<td>FQDN</td>
<td>String, null</td>
<td>No</td>
<td>Fully Qualified Domain Name</td>
</tr>
</tbody>
</table>

#### HTTP

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Required</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ProtocolEnabled</td>
<td>Boolean, null</td>
<td>No</td>
<td>Availability of protocol</td>
</tr>
<tr>
<td>Port</td>
<td>Number, null</td>
<td>No</td>
<td>Indicates the protocol port</td>
</tr>
</tbody>
</table>

#### HTTPS

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Required</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ProtocolEnabled</td>
<td>Boolean, null</td>
<td>No</td>
<td>Availability of protocol</td>
</tr>
<tr>
<td>Port</td>
<td>Number, null</td>
<td>No</td>
<td>Indicates the protocol port</td>
</tr>
</tbody>
</table>

#### SNMP

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Required</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ProtocolEnabled</td>
<td>Boolean, null</td>
<td>No</td>
<td>Availability of protocol</td>
</tr>
<tr>
<td>Port</td>
<td>Number, null</td>
<td>No</td>
<td>Indicates the protocol port</td>
</tr>
</tbody>
</table>

#### VirtualMedia

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Required</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ProtocolEnabled</td>
<td>Boolean, null</td>
<td>No</td>
<td>Availability of protocol</td>
</tr>
<tr>
<td>Port</td>
<td>Number, null</td>
<td>No</td>
<td>Indicates the protocol port</td>
</tr>
</tbody>
</table>

#### Telnet

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Required</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ProtocolEnabled</td>
<td>Boolean, null</td>
<td>No</td>
<td>Availability of protocol</td>
</tr>
<tr>
<td>Port</td>
<td>Number, null</td>
<td>No</td>
<td>Indicates the protocol port</td>
</tr>
</tbody>
</table>

#### SSDP

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Required</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ProtocolEnabled</td>
<td>Boolean, null</td>
<td>No</td>
<td>Availability of protocol</td>
</tr>
<tr>
<td>Port</td>
<td>Number, null</td>
<td>No</td>
<td>Indicates the protocol port</td>
</tr>
</tbody>
</table>
### Name
- Network service

### Type URI
- `/redfish/v1/Managers/{managerID}/NetworkProtocol`

### Attribute | Type       | Required | Description
--- | --- | --- | ---
| NotifyMulticastIntervalSeconds | Number, null | No | Indicates how often the Multicast is done from this service for SSDP |
| NotifyTTL | Number, null | No | Indicates the time to live hop count for SSDPs Notify messages. |
| NotifyIPv6Scope | String, null | No | Indicates the scope for the IPv6 Notify messages for SSDP |

### IPMI

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Required</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ProtocolEnabled</td>
<td>Boolean, null</td>
<td>No</td>
<td>Availability of protocol</td>
</tr>
<tr>
<td>Port</td>
<td>Number, null</td>
<td>No</td>
<td>Indicates the protocol port</td>
</tr>
</tbody>
</table>

### SSH

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Required</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ProtocolEnabled</td>
<td>Boolean, null</td>
<td>No</td>
<td>Availability of protocol</td>
</tr>
<tr>
<td>Port</td>
<td>Number, null</td>
<td>No</td>
<td>Indicates the protocol port</td>
</tr>
</tbody>
</table>

### KVMIP

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Required</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ProtocolEnabled</td>
<td>Boolean, null</td>
<td>No</td>
<td>Availability of protocol</td>
</tr>
<tr>
<td>Port</td>
<td>Number, null</td>
<td>No</td>
<td>Indicates the protocol port</td>
</tr>
</tbody>
</table>

### 4.37.1 Operations

#### 4.37.1.1 GET

Request:

```
GET /redfish/v1/Managers/{managerID}/NetworkProtocol
```

Content-Type: application/json

Response:

```json
{
  "@odata.id": "/redfish/v1/Managers/BMC1/NetworkProtocol",
  "@odata.type": ":ManagerNetworkProtocol.v1_0_0.ManagerNetworkProtocol",
  "Id": "NetworkProtocol",
  "Name": "Manager Network Protocol",
  "Description": "Manager Network Service Status",
  "Status": {
    "State": "Enabled",
    "Health": "OK",
    "HealthRollup": null
  },
  "HostName": "mymanager",
  "FQDN": "mymanager.mydomain.com",
  "HTTP": {
    "ProtocolEnabled": true,
```
### PUT

Operation is not allowed on this resource.

### PATCH

Operation is not allowed on this resource.

### POST

Operation is not allowed on this resource.

### DELETE

Operation is not allowed on this resource.
4.38 Ethernet interface collection

Ethernet interface collection resource – provides collection of all Ethernet interfaces supported by a manager identified by {managerID} or included in a blade identified by {bladeID}. Ethernet interface collection attributes are listed in Error! Reference source not found.

4.38.1 Operations

4.38.1.1 GET

Request:

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

Response:

```json
{
    "@odata.context": "/redfish/v1/$metadata#Managers/Members/1/EthernetInterfaces/$entity",
    "@odata.id": "/redfish/v1/Managers/1/EthernetInterfaces",
    "@odata.type": 
    "#EthernetNetworkInterface.v1_0_0.EthernetNetworkInterfaceCollection",
    "Name": "Ethernet Network Interface Collection",
    "Description": "description-as-string",
    "Members@odata.count": 1,
    "Members": [
        {
            "@odata.id": "/redfish/v1/Managers/1/EthernetInterfaces/1"
        }
    ]
}
```

4.38.1.2 PUT

Operation is not allowed on this resource.

4.38.1.3 PATCH

Operation is not allowed on this resource.

4.38.1.4 POST

Operation is not allowed on this resource.

4.38.1.5 DELETE

Operation is not allowed on this resource.

4.39 Ethernet interface

Ethernet interface resource – provides detailed information about an Ethernet interface identified by {nicID}. For current API version this resource is identical with System Network interface (refer to Section 4.22).
4.40 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}. VLAN network interface collection attributes are listed in Section 4.40, VLAN network interface collection.

4.40.1 Operations

4.40.1.1 GET

Request:

GET /redfish/v1/EthernetSwitches/Switch1/Ports/Port1/VLANs
Content-Type: application/json

Response:

```
{
   "@odata.context": "/redfish/v1/$metadata#VlanNetworkInterfaceCollection.VlanNetworkInterfaceCollection",
   "@odata.id": "/redfish/v1/EthernetSwitches",
   "@odata.type": 
   "#VlanNetworkInterfaceCollection.VlanNetworkInterfaceCollection",
   "Name": "VLAN Network Interface Collection",
   "Description": "VLAN Network Interface Collection",
   "Members@odata.count": 1,
   "Members": [ 
   {
      "@odata.id": "/redfish/v1/EthernetSwitches/Switch1/Ports/Port1/VLANs/VLAN1"
   }
   ]
}
```

4.40.1.2 PUT

Operation is not allowed on this resource.

4.40.1.3 PATCH

Operation is not allowed on this resource.

4.40.1.4 POST

POST action attributes are listed in Table 21.

Table 21. Post Action Attributes

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Type</th>
<th>Required</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oem</td>
<td>Object</td>
<td>Yes</td>
<td>OEM defined object</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>&quot;Intel_RackScale&quot; extensions:</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Attribute</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Tagged</td>
</tr>
<tr>
<td>VLANEnable</td>
<td>Boolean</td>
<td>Yes</td>
<td>Indicates if this VLAN is enabled</td>
</tr>
<tr>
<td>VLANId</td>
<td>Number</td>
<td>Yes</td>
<td>VLAN identifier for this NIC</td>
</tr>
</tbody>
</table>
Request:

POST /redfish/v1/EthernetSwitches/Switch1/Ports/Port1/VLANs
Content-Type: application/json
{
  "VLANId": 101,
  "VLANEnable": true,
  "Oem": {
    "Intel_RackScale": {
      "Tagged": false
    }
  }
}

Response:

HTTP/1.1 201 Created
Location: http://<IP>:<PORT>/redfish/v1/EthernetSwitches/Switch1/Ports/Port1/VLANs/VLAN1

4.40.1.5 DELETE
Operation is not allowed on this resource.

4.41 VLAN network interface

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

Details of this resource are described in metadata file: VLANNetworkInterface.xml, OEM extensions details are available in IntelRackScaleOem.xml.

4.41.1 Operations

4.41.1.1 GET

Request:

GET /redfish/v1/EthernetSwitches/Switch1/Ports/Port1/VLANs/{vlanID}
Content-Type: application/json

Response:

{  
  "@odata.id": "/redfish/v1/EthernetSwitches/Switch1/Ports/Port1/VLANs/VLAN1",
  "@odata.context": "/redfish/v1/$metadata#VLanNetworkInterface.VLanNetworkInterface",
  "@odata.type": "#VLanNetworkInterface.v1_0_1.VLanNetworkInterface",
  "Id": "VLAN1",
  "Name": "VLAN Network Interface",
  "Description": "System NIC 1 VLAN",
  "VLANEnable": true,
  "VLANId": 101,
  "Oem": {
    "Intel_RackScale": {
      "@odata.type": "#Intel.Oem.VLanNetworkInterface",
      "Tagged": false,
    }
  }
}
"Status": { 
  "State": "Enabled",
  "Health": "OK"
},
}
}

4.41.1.2 PUT
Operation is not allowed on this resource.

4.41.1.3 PATCH
The properties in Table 22 can be updated by the PATCH operation:

Table 22. Properties Updated by Patch Operation

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Type</th>
<th>Required</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>VLANId</td>
<td>Number</td>
<td>No</td>
<td>VLAN identifier for this VLAN.</td>
</tr>
</tbody>
</table>

**Note:** Ability to write this property value is implementation specific. May not work, or work on only some types of VLANs (e.g., only untagged VLANs).

Request:

PATCH /redfish/v1/EthernetSwitches/Switch1/Ports/Port1/VLANs/VLAN1
Content-Type: application/json
{
  "VLANId": 202
}

Response:

HTTP/1.1 200 OK
{
  (updated resource body)
}

Or:

HTTP/1.1 204 No Content

Or (when task is created):

HTTP/1.1 204 No Content
Or
Location: http://<IP:port>/redfish/v1/TaskService/Tasks/1/TaskMonitor
{
  
  "@odata.context": "/redfish/v1/$metadata#Task.Task",
  "@odata.id": "/redfish/v1/TaskService/Tasks/1",
  "@odata.type": ":Task.v1_0_0.Task",
  "Id": "1",
  "Name": "Task 1",
  "TaskState": "New",
  "StartTime": "2016-09-01T04:45+01:00",
  "TaskStatus": "OK",
  "Messages": [  
  ]
}
4.41.4 POST

Operation is not allowed on this resource.

4.41.5 DELETE

Request:

DELETE /redfish/v1/EthernetSwitches/Switch1/Ports/Port1/VLANs/VLAN2

Response:

HTTP/1.1 204 No Content

4.42 Event service

Event service resource responsible for sending events to subscribers. Event service attributes are listed in Table 23.

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Type</th>
<th>Required</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Id</td>
<td>String</td>
<td>Yes</td>
<td>Resource identifier</td>
</tr>
<tr>
<td>Name</td>
<td>String</td>
<td>Yes</td>
<td>Resource name</td>
</tr>
<tr>
<td>Description</td>
<td>String, null</td>
<td>No</td>
<td>Resource description</td>
</tr>
<tr>
<td>Status</td>
<td>Object, null</td>
<td>No</td>
<td>Refer to Section 6.1 for resource status.</td>
</tr>
<tr>
<td>Oem</td>
<td>Object, null</td>
<td>No</td>
<td>OEM defined object</td>
</tr>
<tr>
<td>ServiceEnabled</td>
<td>Boolean, Null</td>
<td>No</td>
<td>This indicates whether this service is enabled.</td>
</tr>
<tr>
<td>DeliveryRetryAttempts</td>
<td>Number</td>
<td>No</td>
<td>This is the number of attempts an event posting is retried before the subscription is terminated.</td>
</tr>
<tr>
<td>DeliveryRetryIntervalSeconds</td>
<td>Number</td>
<td>No</td>
<td>This represents the number of seconds between retry attempts for sending any given Event</td>
</tr>
<tr>
<td>EventTypesForSubscription</td>
<td>Array</td>
<td>Yes</td>
<td>This is the types of Events that can be subscribed to. Available event types:</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>-  StatusChange - The status of this resource has changed</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>-  ResourceUpdated – The value of this resource has been updated.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>-  ResourceAdded – A resource has been added</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>-  ResourceRemoved – A resource has been removed</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>-  Alert – A condition exist which requires attention.</td>
</tr>
<tr>
<td>Subscriptions</td>
<td>Object, null</td>
<td>Yes</td>
<td>This is a reference to a collection of Event Destination resources.</td>
</tr>
<tr>
<td>Actions</td>
<td>Object</td>
<td>No</td>
<td>The Actions object contains the available custom actions on this resource.</td>
</tr>
</tbody>
</table>

4.42.1 Operations

4.42.1.1 GET

Request:

Or:

HTTP/1.1 200 OK
{
(updated resource body)
}
GET /redfish/v1/EventService
Content-Type: application/json

Response:

```json
{
    "@odata.context": "/redfish/v1/$metadata#EventService",
    "@odata.id": "/redfish/v1/EventService",
    "@odata.type": ">#EventService.v1_0_2.EventService",
    "Id": "EventService",
    "Name": "Event Service",
    "Description": "Event Service",
    "Status": {
        "State": "Enabled",
        "Health": "OK"
    },
    "ServiceEnabled": true,
    "DeliveryRetryAttempts": 3,
    "DeliveryRetryIntervalSeconds": 60,
    "EventTypesForSubscription": [
        "StatusChange",
        "ResourceUpdated",
        "ResourceAdded",
        "ResourceRemoved",
        "Alert",
        "MetricDefinition"
    ],
    "Subscriptions": {
        "@odata.id": "/redfish/v1/EventService/Subscriptions"
    },
    "Actions": {
        "Oem": {}
    },
    "Oem": {}
}
```

4.42.1.2 PUT
Operation is not allowed on this resource.

4.42.1.3 PATCH
Operation is not allowed on this resource.

4.42.1.4 POST
Operation is not allowed on this resource.

4.42.1.5 DELETE
Operation is not allowed on this resource.

4.43 Event subscription collection

4.43.1 Metadata

http://redfish.dmtf.org/schemas/v1/EventDestinationCollection.xml
4.43.2 Operations

4.43.2.1 GET

Request:

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

Response:

{
   "@odata.context": "/redfish/v1/$metadata#EventService/Members/Events/$entity",
   "@odata.type": "#EventDestinationCollection.EventDestinationCollection",
   "Name": "Event Subscriptions Collection",
   "Description": "description-as-a-string",
   "Members@odata.count": 1,
   "Members": [
      {
         "@odata.id": "/redfish/v1/EventService/Subscriptions/1"
      }
   ]
}

4.43.2.2 PUT

Operation is not allowed on this resource.

4.43.2.3 PATCH

Operation is not allowed on this resource.

4.43.2.4 POST

Request:

POST /redfish/v1/EventService/Subscriptions
Content-Type: application/json

{  
   "Name": "EventSubscription 2",
   "Destination": "http://10.0.0.1/Destination1",
   "EventTypes": [
      "ResourceAdded",
      "ResourceRemoved"
   ],
   "Context": "HotSwap events",
   "Protocol": "Redfish"
}

Response:

HTTP/1.1 201 Created
Location: http://<IP>:<PORT/redfish/v1/EventService/Subscriptions/2

4.43.2.5 DELETE

Operation is not allowed on this resource.
4.4.4  Event subscription

Event subscription contains information about the type of events that the user subscribes to and those that should be sent. Even subscription attributes are listed in Table 24.

Table 24.  Event Subscription Attributes

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Required</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Id</td>
<td>String</td>
<td>Yes</td>
<td>Resource identifier</td>
</tr>
<tr>
<td>Name</td>
<td>String</td>
<td>No</td>
<td>Resource name</td>
</tr>
<tr>
<td>Description</td>
<td>String</td>
<td>No</td>
<td>Resource description</td>
</tr>
<tr>
<td>Oem</td>
<td>Object</td>
<td>No</td>
<td>OEM defined object</td>
</tr>
<tr>
<td>Destination</td>
<td>String</td>
<td>Yes</td>
<td>The URI of the destination Event Service.</td>
</tr>
<tr>
<td>EventTypes</td>
<td>Array</td>
<td>Yes</td>
<td>These are types of Events that can be subscribed to.</td>
</tr>
<tr>
<td>Context</td>
<td>String</td>
<td>Deprecated</td>
<td>A client-supplied string that is stored with the event destination subscription.</td>
</tr>
<tr>
<td>Protocol</td>
<td>String (enum)</td>
<td>Yes</td>
<td>The protocol type of the event connection. Available protocols:</td>
</tr>
<tr>
<td>OriginResources</td>
<td>Array)</td>
<td>No</td>
<td>A list of resources for which the service will send events specified in EventTypes array. Empty array or NULL is interpreted as subscription for all resources and assets in subsystem. Not exposed by current version of PSME.</td>
</tr>
<tr>
<td>MessageIds</td>
<td>Array</td>
<td>No</td>
<td>A list of MessageIds that the service will send. Not exposed by current version of PSME.</td>
</tr>
</tbody>
</table>

4.4.4.1  Metadata

http://redfish.dmtf.org/schemas/v1/EventDestination.xml

4.4.4.2  Operations

4.4.4.2.1  GET

Request:

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

Response:

```json
{
  "@odata.context": "/redfish/v1/$metadata#EventService/Members/Subscriptions/Members/$entity",
  "@odata.id": "/redfish/v1/EventService/Subscriptions/1",
  "@odata.type": ">#EventDestination.v1_1_1.EventDestination",
  "Id": "1",
  "Name": "EventSubscription 1",
```
"Description": "EventSubscription",
"Destination": "http://192.168.1.1/Destination1",
"EventTypes": [
    "ResourceAdded",
    "ResourceRemoved"
],
"Context": "My Event",
"Protocol": "Redfish",
"OriginResources": [
    {
        "@odata.id": "/redfish/v1/Systems/1"
    }
],
"MessageIds": []

### 4.44.2 PUT

Operation is not allowed on this resource.

### 4.44.3 PATCH

Operation is not allowed on this resource.

### 4.44.4 POST

Operation is not allowed on this resource.

### 4.44.5 DELETE

Request:

DELETE /redfish/v1/EventService/Subscriptions/1

Response:

HTTP/1.1 204 No Content

### 4.45 Event array

Definition of Event array that is POSTed by Event Service to active subscribers. It represents the properties for the events themselves and not subscriptions or any other resource. Each event in this array has a set of properties that describe the event. Since this is an array, more than one event can be sent simultaneously. Event array attributes are listed in Table 25 and Event attributes are listed in Table 26.

<table>
<thead>
<tr>
<th>Name</th>
<th>Event array</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type URI</td>
<td>n/a</td>
</tr>
</tbody>
</table>

#### Table 25. Event Array Attributes

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Type</th>
<th>Required</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Id</td>
<td>String</td>
<td>Yes</td>
<td>Resource identifier</td>
</tr>
<tr>
<td>Name</td>
<td>String</td>
<td>No</td>
<td>Resource name</td>
</tr>
<tr>
<td>Description</td>
<td>String</td>
<td>No</td>
<td>Resource description</td>
</tr>
<tr>
<td>Oem</td>
<td>Object</td>
<td>No</td>
<td>OEM defined object</td>
</tr>
<tr>
<td>Events</td>
<td>Array</td>
<td>Yes</td>
<td>Array of events – Refer to Table 26</td>
</tr>
<tr>
<td>Context</td>
<td>String</td>
<td>No</td>
<td>A context can be supplied at subscription time. This property shall contain a client supplied context for the Event Destination to which this event is being sent.</td>
</tr>
</tbody>
</table>
Table 26. Event Attributes

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Type</th>
<th>Required</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>EventType</td>
<td>String (enum)</td>
<td>Yes</td>
<td>These are the types of Events that can be subscribed to. Available event types:</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• StatusChange - The status of this resource has changed</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• ResourceUpdated - The value of this resource has been updated.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• ResourceAdded - A resource has been added</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• ResourceRemoved - A resource has been removed</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Alert - A condition exist which requires attention.</td>
</tr>
<tr>
<td>EventId</td>
<td>String</td>
<td>No</td>
<td>This is a unique instance identifier of an event.</td>
</tr>
<tr>
<td>EventTimestamp</td>
<td>String</td>
<td>No</td>
<td>This is the time in which the event occurred.</td>
</tr>
<tr>
<td>Severity</td>
<td>String</td>
<td>No</td>
<td>This is the severity of the event.</td>
</tr>
<tr>
<td>Message</td>
<td>String</td>
<td>No</td>
<td>This is the human readable message, if provided.</td>
</tr>
<tr>
<td>MessageId</td>
<td>String</td>
<td>Yes</td>
<td>This is the key for this message, which can be used to look up the message in a message registry.</td>
</tr>
<tr>
<td>MessageArgs</td>
<td>Array of strings</td>
<td>No</td>
<td>This array of message arguments is substituted for the arguments in the message when looked up in the message registry.</td>
</tr>
<tr>
<td>Context</td>
<td>String</td>
<td>Deprecated</td>
<td>A context can be supplied at subscription time. This property is the context value supplied by the subscriber.</td>
</tr>
<tr>
<td>OriginOfCondition</td>
<td>Object</td>
<td>Yes</td>
<td>This indicates the resource that originated the condition that caused the event to be generated.</td>
</tr>
</tbody>
</table>

4.45.1 Metadata

http://redfish.dmtf.org/schemas/v1/Event.xml

4.45.2 Operations

4.45.2.1 POST

Request:

POST http://192.168.1.1/Destination1
Content-Type: application/json

```
{
    "@odata.context": "/redfish/v1/$metadata#EventService/Members/Events/1"
    , "@odata.id": "/redfish/v1/EventService/Events/1"
    , "@odata.type": "#Event.v1_2_0.Event"
    , "Id": "1"
    , "Name": "Event Array"
    , "Description": "Events"
    , "Events": [
    { "EventType": "ResourceRemoved"
    , "EventId": "ABC132489713478812346"
    , "Severity": "Ok"
    , "EventTimestamp": "2015-02-23T14:44:44+00:00"
    , "Message": "The Blade was removed"
    , "MessageId": "Base.1.0.Success"
    , "MessageArgs": []
    , "OriginOfCondition": {
        "@odata.id": "/redfish/v1/Systems/System1"
    }
    , "Context": "HotSwap event" } ]
```
4.45.2.2 PUT
Operation is not allowed on this resource.

4.45.2.3 PATCH
Operation is not allowed on this resource.

4.45.2.4 GET
Operation is not allowed on this resource.

4.45.2.5 DELETE
Operation is not allowed on this resource.

4.46 Fabric collection
Property details are available in FabricCollection.xml metadata file.

4.46.1 Operations

4.46.1.1 GET
Request:
GET /redfish/v1/Fabrics
Content-Type: application/json

Response:

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

4.46.1.2 PUT
Operation is not allowed on this resource.

4.46.1.3 PATCH
Operation is not allowed on this resource.

4.46.1.4 POST
Operation is not allowed on this resource.
**4.47 Fabric**

Property details are available in Fabric.xml metadata file.

**4.47.1 Operations**

**4.47.1.1 GET**

Request:

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

Response:

```
{
    "@odata.context": "/redfish/v1/$metadata#Fabric.Fabric",
    "@odata.id": "/redfish/v1/Fabrics/PCIe",
    "@odata.type": "#Fabric.v1_0_0.Fabric",
    "Id": "PCIe",
    "Name": "PCIe Fabric",
    "FabricType": "PCIe",
    "Description": "PCIe Fabric",
    "MaxZones": null,
    "Status": {
        "State": "Enabled",
        "Health": "OK",
        "HealthRollup": "OK"
    },
    "Zones": {
        "@odata.id": "/redfish/v1/Fabrics/PCIe/Zones"
    },
    "Endpoints": {
        "@odata.id": "/redfish/v1/Fabrics/PCIe/Endpoints"
    },
    "Switches": {
        "@odata.id": "/redfish/v1/Fabrics/PCIe/Switches"
    },
    "Links": {
        "Oem": {}
    },
    "Actions": {
        "Oem": {}
    },
    "Oem": {}
}
```

**4.47.1.2 PUT**

Operation is not allowed on this resource.

**4.47.1.3 PATCH**

Operation is not allowed on this resource.
4.47.1.4  **POST**
Operation is not allowed on this resource.

4.47.1.5  **DELETE**
Operation is not allowed on this resource.

4.48  **Switch collection**
Property details are available in SwitchCollection.xml metadata file.

4.48.1  **Operations**
4.48.1.1  **GET**
Request:
```
GET /redfish/v1/Fabrics/PCIe/Switches
Content-Type: application/json
```
Response:
```
{
    "@odata.context": "/redfish/v1/$metadata#SwitchCollection.SwitchCollection",
    "@odata.id": "/redfish/v1/Fabrics/PCIe/Switches",
    "@odata.type": ":#SwitchCollection.SwitchCollection",
    "Name": "Switch Collection",
    "Members@odata.count": 1,
    "Members": [
        {
            "@odata.id": "/redfish/v1/Fabrics/PCIe/Switches/1"
        }
    ]
}
```

4.48.1.2  **PUT**
Operation is not allowed on this resource.

4.48.1.3  **PATCH**
Operation is not allowed on this resource.

4.48.1.4  **POST**
Operation is not allowed on this resource.

4.48.1.5  **DELETE**
Operation is not allowed on this resource.

4.49  **Switch**
Property details are available in Switch.xml metadata file.
4.49.1 Operations

4.49.1.1 GET

Request:

GET /redfish/v1/Fabrics/PCIe/Switches/1
Content-Type: application/json

Response:

{
   "@odata.context": "/redfish/v1/$metadata#Switch.Switch",
   "@odata.id": "/redfish/v1/Fabrics/PCIe/Switches/1",
   "@odata.type": "#Switch.v1_0_0.Switch",
   "Id": "1",
   "Name": "PCIe Switch",
   "Description": "PCIe Switch",
   "SwitchType": "PCIe",
   "Status": {
      "State": "Enabled",
      "Health": "OK",
      "HealthRollup": "OK"
   },
   "Manufacturer": "Manufacturer Name",
   "Model": "Model Name",
   "SKU": "SKU",
   "SerialNumber": "1234567890",
   "PartNumber": "997",
   "AssetTag": "Customer Asset Tag",
   "DomainID": 1,
   "IsManaged": true,
   "TotalSwitchWidth": 97,
   "IndicatorLED": null,
   "PowerState": "On",
   "Ports": {
      "@odata.id": "/redfish/v1/Fabrics/PCIe/Switches/1/Ports"
   },
   "Redundancy": [],
   "Links": {
      "Chassis": [
         {"@odata.id": "/redfish/v1/Chassis/PCIeSwitch1"}
      ],
      "ManagedBy": [],
      "Oem": {}
   },
   "Actions": {
      "#Switch.Reset": {
         "target": "/redfish/v1/Fabrics/PCIe/Switches/1/Actions/Switch.Reset",
         "ResetType@Redfish.AllowableValues": [
            "GracefulRestart"
         ]
      }
   },
   "Oem": {}
}
"Oem": {}

4.49.1.2 PUT
Operation is not allowed on this resource.

4.49.1.3 PATCH
Operation is not allowed on this resource.

4.49.1.4 POST
To trigger switch action POST request should be sent:

Request:

POST /redfish/v1/Fabrics/PCIe/Switches/1/Actions/Switch.Reset
Content-Type: application/json
{
   "ResetType": "GracefulRestart"
}

Response:
HTTP/1.1 204 No Content

4.49.1.5 DELETE
Operation is not allowed on this resource.

4.50 Port Collection
Property details are available in PortCollection.xml metadata file.

4.50.1 Operations
4.50.1.1 GET
Request:

GET */redfish/v1/Fabrics/PCIe/Switches/1/Ports
Content-Type: application/json

Response:

{
   "@odata.context": "redfish/v1/$metadata#PortCollection.PortCollection",
   "@odata.id": "redfish/v1/Fabrics/PCIe/Switches/1/Ports",
   "@odata.type": "#PortCollection.PortCollection",
   "Name": "PCIe Port Collection",
   "Description": "PCIe Port Collection",
   "Members@odata.count": 4,
   "Members": [
      {
         "@odata.id": "redfish/v1/Fabrics/PCIe/Switches/1/Ports/Up1",
      },
      {
         "@odata.id": "redfish/v1/Fabrics/PCIe/Switches/1/Ports/Up2",
      },
      {
         "@odata.id": "redfish/v1/Fabrics/PCIe/Switches/1/Ports/Down1",
      },
      {
         "@odata.id": "redfish/v1/Fabrics/PCIe/Switches/1/Ports/Down2",
      }
   ]
}
4.50.1.2 PUT
Operation is not allowed on this resource.

4.50.1.3 PATCH
Operation is not allowed on this resource.

4.50.1.4 POST
Operation is not allowed on this resource.

4.50.1.5 DELETE
Operation is not allowed on this resource.

4.51 Port
Property details are available in Port.xml metadata file. OEM extension details are available in IntelRackScaleOem.xml.

4.51.1 Operations

4.51.1.1 GET
Request:
GET /redfish/v1/Fabrics/PCIe/Switches/1/Ports/Up1
Content-Type: application/json

Response:
{
  "@odata.context": "/redfish/v1/$metadata#Port.Port",
  "@odata.id": "/redfish/v1/Fabrics/PCIe/Switches/1/Ports/Up1",
  "@odata.type": ">#Port.v1_0_0.Port",
  "Id": "Up1",
  "Name": "PCIe Upstream Port 1",
  "Description": "PCIe Upstream Port 1",
  "Status": {
    "State": "Enabled",
    "Health": "OK",
    "HealthRollup": null
  },
  "PortId": "Up1",
  "PortProtocol": "PCIe",
  "PortType": "UpstreamPort",
  "CurrentSpeedGbps": 32,
  "Width": 4,
  "MaxSpeedGbps": 64,
  "Actions": {
    "#Port.Reset": {
      "target": "/redfish/v1/Fabrics/PCIe/Switches/1/Ports/Up1/Actions/PCIePort.Reset",
      "ResetType@Redfish.AllowableValues": [
        "ForceOff",
        "ForceRestart",
        "ForceOn"
      ]
    }
  }
}
4.51.2  **PUT**

Operation is not allowed on this resource.

4.51.3  **PATCH**

Operation is not allowed on this resource.

4.51.4  **POST**

To trigger switch port action POST request should be sent:

Request:

```plaintext
POST /redfish/v1/Fabrics/PCIe/Switches/1/Ports/Up1/Actions/PCIePort.Reset
Content-Type: application/json
{
   "ResetType": "ForceRestart"
}
```

Response:

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

4.51.5  **DELETE**
4.52 Port Metrics

Property details are available in PortMetrics.xml metadata file.

4.52.1 Operations

4.52.1.1 GET

Request:

GET /redfish/v1/Fabrics/PCIe/Switches/1/Ports/Up1/Metrics
Content-Type: application/json

Response:

```json
{
    "@odata.context": "/redfish/v1/$metadata#Systems/Members/1/Port/Metrics/$entity",
    "@odata.id": "/redfish/v1/Fabrics/PCIe/Switches/1/Ports/Up1/Metrics",
    "@odata.type": ">#PortMetrics.v1_0_0.PortMetrics",
    "Name": "Fabric Port Metrics for Port1",
    "Description": "description-as-string",
    "Id": "Metrics for Port1",
    "Health": "OK"
}
```

4.52.1.2 PUT

Operation is not allowed on this resource.

4.52.1.3 PATCH

Operation is not allowed on this resource.

4.52.1.4 POST

Operation is not allowed on this resource.

4.52.1.5 DELETE

Operation is not allowed on this resource.

4.53 Zones collection

Property details are available in ZoneCollection.xml metadata file.

4.53.1 Operations

4.53.1.1 GET

Request:

GET /redfish/v1/Fabrics/PCIe/Zones
Content-Type: application/json

Response:

```json
{
    "@odata.context": "/redfish/v1/$metadata#ZoneCollection.ZoneCollection",
    "@odata.id": "/redfish/v1/Fabrics/PCIe/Zones",
    "@odata.type": ">#ZoneCollection.ZoneCollection",
```
"Name": "PCIe Zone Collection",
"Description": "PCIe Zone Collection",
"Members@odata.count": 2,
"Members": [
  {
    "@odata.id": "/redfish/v1/Fabrics/PCIe/Zones/1"
  },
  {
    "@odata.id": "/redfish/v1/Fabrics/PCIe/Zones/2"
  }
]

4.53.1.2 PUT
Operation is not allowed on this resource.

4.53.1.3 PATCH
Operation is not allowed on this resource.

4.53.1.4 POST
To create a new Fabric zone, the initial zone structure should be POSTed.

Note: In the current PSME implementation the PCIe Fabric switch is preconfigured with maximum number of zones. The user can not create additional zones.

Request:
POST /redfish/v1/Fabrics/PCIe/Zones
Content-Type: application/json
{
  "Name": "PCIe Zone 3",
  "Description": "PCIe Zone 3",
  "Links": {
    "Endpoints": [
      {
        "@odata.id": "/redfish/v1/Fabrics/PCIe/Endpoints/HostRootComplex1"
      },
      {
        "@odata.id": "/redfish/v1/Fabrics/PCIe/Endpoints/NVMeDrivePF1"
      }
    ],
    "InvolvedSwitches": [
      {
        "@odata.id": "/redfish/v1/Fabrics/PCIe/Switches/1"
      }
    ]
  }
}

Response:
HTTP/1.1 201 Created
Location: http://<IP>:<PORT>/redfish/v1/Fabrics/PCIe/Zones/3

4.53.1.5 DELETE
Operation is not allowed on this resource.

4.54 Zone
Property details are available in Zone.xml metadata file.
4.54.1 Operations

4.54.1.1 GET

Request:

```
GET /redfish/v1/Fabrics/PCIe/Zones/1
Content-Type: application/json
```

Response:

```
{
   "@odata.context": "/redfish/v1/$metadata#Zone.Zone",
   "@odata.id": "/redfish/v1/Fabrics/PCIe/Zones/1",
   "@odata.type": "#Zone.v1_0_0.Zone",
   "Id": "1",
   "Name": "PCIe Zone 1",
   "Description": "PCIe Zone 1",
   "Status": {
      "State": "Enabled",
      "Health": "OK"
   },
   "Links": {
      "Endpoints": [
         {"@odata.id": "/redfish/v1/Fabrics/PCIe/Endpoints/HostRootComplex1"},
         {"@odata.id": "/redfish/v1/Fabrics/PCIe/Endpoints/NVMeDrivePF1"},
         {"@odata.id": "/redfish/v1/Fabrics/PCIe/Endpoints/NVMeDrivePF2"}
      ],
      "InvolvedSwitches": [
         {"@odata.id": "/redfish/v1/Fabrics/PCIe/Switches/1"}
      ],
      "Oem": {}
   }
}
```

4.54.1.2 PUT

Operation is not allowed on this resource.

4.54.1.3 PATCH

The PATCH method can be used to add or remove Endpoints from a Zone. The service requires to always provide a complete representation of Endpoints array. A partial update is not supported.

The properties in Table 27 can be updated by the PATCH operation:

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Type</th>
<th>Required</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Endpoints</td>
<td>Array</td>
<td>No</td>
<td>An array of references to the endpoints that are contained in this zone.</td>
</tr>
</tbody>
</table>

```
PATCH /redfish/v1/Fabrics/PCIe/Zones/1
Content-Type: application/json
```

```json
{
   "Endpoints": [
      {"@odata.id": "/redfish/v1/Fabrics/PCIe/Endpoints/HostRootComplex1"},
```
4.54.1.4 POST
Operation is not allowed on this resource.

4.54.1.5 DELETE

**Note:** In current PSME implementation PCIe fabric switch is preconfigured with maximum number of zones. The user cannot delete any existing zone.

Request:
DELETE /redfish/v1/Fabrics/PCIe/Zones/1

Response:
HTTP/1.1 204 No Content

4.55 Endpoint collection
Property details are available in EndpointCollection.xml metadata file.

4.55.1 Operations

4.55.1.1 GET

Request:
GET /redfish/v1/Fabrics/PCIe/Endpoints
Content-Type: application/json

Response:
```json
{
  "@odata.context": "/redfish/v1/$metadata#EndpointCollection.EndpointCollection",
  ...
}
```
"@odata.id": "/redfish/v1/Fabrics/PCIe/Endpoints",
"@odata.type": "#EndpointCollection.EndpointCollection",
"Name": "PCIe Endpoint Collection",
"Members@odata.count": 3,
"Members": [
  {
    "@odata.id": "/redfish/v1/Fabrics/PCIe/Endpoints/NVMeDrivePF1"
  },
  {
    "@odata.id": "/redfish/v1/Fabrics/PCIe/Endpoints/NVMeDrivePF2"
  },
  {
    "@odata.id": "/redfish/v1/Fabrics/PCIe/Endpoints/HostRootComplex1"
  }
]

4.55.1.2 PUT
Operation is not allowed on this resource.

4.55.1.3 PATCH
Operation is not allowed on this resource.

4.55.1.4 POST
In the Intel® RSD software v2.2, endpoints are created automatically for every detected NVMe drive connected to the PNC switch. Implementation of this action is not required.

Request:
POST /redfish/v1/Fabrics/PCIe/Endpoints
Content-Type: application/json
{
  "Name": "NVMe Drive",
  "Description": "The PCIe Physical function of an 850GB NVMe drive",
  "EndpointProtocol": "PCIe",
  "Identifiers": [
    {
      "DurableNameFormat": "UUID",
      "DurableName": "00000000-0000-0000-0000-000000000000"
    }
  ],
  "ConnectedEntities": [
    {
      "EntityType": "Drive",
      "EntityRole": "Target",
      "EntityLink": {
        "@odata.id": "/redfish/v1/Chassis/PCIeSwitch1/Drives/Disk.Bay.0"
      }
    },
    {
      "DurableNameFormat": "UUID",
      "DurableName": "00000000-0000-0000-0000-000000000000"
    }
  ]
}
Response:

HTTP/1.1 201 Created
Location: http://<IP>:<PORT>/redfish/v1/Fabrics/PCIe/Endpoints/3

4.55.1.5 DELETE
Operation is not allowed on this resource.

4.56 Endpoint
Property details are available in Endpoint.xml metadata file.

Additional notes:
The EntityLink property may not present or may be null on PSME. This property may be filled by PODM if all resources are available.

4.56.1 Operations
4.56.1.1 GET
Request:
GET /redfish/v1/Fabrics/PCIe/Endpoints/NVMeDrivePF1
Content-Type: application/json

Response:

{  
  "@odata.context": "/redfish/v1/$metadata#Endpoint.Endpoint",
  "@odata.id": "/redfish/v1/Fabrics/PCIe/Endpoints/NVMeDrivePF1",
  "@odata.type": "#Endpoint.v1_0_0.Endpoint",
  "Id": "NVMeDrivePF1",
  "Name": "NVMe Drive",
  "Description": "The PCIe Physical function of an 850GB NVMe drive",
  "Status": {  
    "State": "Enabled",
    "Health": "OK",
    "HealthRollUp": "OK"
  },
  "EndpointProtocol": "PCIe",
  "Identifiers": [
    {  
      "DurableNameFormat": "UUID",
      "DurableName": "00000000-0000-0000-0000-000000000000"
    }
  ],
  "ConnectedEntities": [
    {  
      "EntityType": "Drive",
      "EntityRole": "Target",
      "EntityLink": {  
        "@odata.id": "/redfish/v1/Chassis/PCIeSwitch1/Drives/Disk.Bay.0"
      }
    }
  ]
}
4.56.1.2  PUT
Operation is not allowed on this resource.

4.56.1.3  PATCH
Operation is not allowed on this resource.

4.56.1.4  POST
Operation is not allowed on this resource.

4.56.1.5  DELETE

4.57  PCIe* Device
Property details are available in the PCIeDevice.xml metadata file. This resource is required for Pooled Node Controller (PNC) service.

Note:  Chassis property in the links section of the Intel® RSD implementation points to a single Chassis (array contains only one element).

4.57.1  Operations

4.57.1.1  GET
Request:
GET /redfish/v1/Chassis/1/PCIeDevices/Device1
Content-Type: application/json

Response:

### PUT

Operation is not allowed on this resource.

#### PATCH

The properties in Table 28 can be updated by the PATCH operation:

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Type</th>
<th>Required</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>AssetTag</td>
<td>String</td>
<td>No</td>
<td>The user assigned asset tag for this storage PCIe device.</td>
</tr>
</tbody>
</table>

PATCH /redfish/v1/Chassis/1/PCIeDevices/Device1

Content-Type: application/json

```json
{
    "AssetTag": "NVMe drive #1"
}
```

Response:

HTTP/1.1 204 No Content

Or:

HTTP/1.1 200 OK

```json
{ }
```
4.57.1.4 POST

Operation is not allowed on this resource.

4.57.1.5 DELETE

Operation is not allowed on this resource.

4.58 PCIe Device Function

Property details are available in PCIeFunction.xml metadata file. This resource is required for Pooled Node Controller (PNC) service.

4.58.1 Operations

4.58.1.1 GET

Request:

GET /redfish/v1/Chassis/1/PCIeDevices/Device1/Functions/1
Content-Type: application/json

Response:

```json
{
  "@odata.context": "/redfish/v1/$metadata#PCIeFunction.PCIeFunction",
  "@odata.id": "/redfish/v1/Chassis/1/PCIeDevices/Device1/Functions/1",
  "@odata.type": "#PCIeFunction.v1_0_0.PCIeFunction",
  "Id": "1",
  "Name": "SSD",
  "Description": "SSD Drive",
  "FunctionId": 1,
  "FunctionType": "Physical",
  "DeviceClass": "MassStorageController",
  "DeviceId": "0xABCD",
  "VendorId": "0x8086",
  "ClassCode": "0x10802",
  "RevisionId": "0x00",
  "SubsystemId": "0x8086",
  "SubsystemVendorId": "0x8086",
  "Status": {
    "State": "Enabled",
    "Health": "OK",
    "HealthRollUp": "OK"
  },
  "Links": {
    "Drives": [
      {
        "@odata.id": "/redfish/v1/Chassis/PCIeSwitch1/Drives/Disk.Bay.1"
      }
    ],
    "PCIeDevice": {
      "@odata.id": "/redfish/v1/Chassis/1/PCIeDevices/Device1"
    }
  }
}
```
"Oem": { }
}

4.58.1.2 PUT
Operation is not allowed on this resource.

4.58.1.3 PATCH
Operation is not allowed on this resource.

4.58.1.4 POST
Operation is not allowed on this resource.

4.58.1.5 DELETE
Operation is not allowed on this resource.

4.59 Task Service

This resource represents the task service which contains all actual tasks created by this service. This resource must be supported by services supporting asynchronous operations (Refer to Section 4.2).

Property details are available in TaskService.xml metadata file.

4.59.1 Operations

4.59.1.1 GET

Request:

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

Response:

{
   "@odata.context": "/redfish/v1/$metadata/TaskService.TaskService",
   "@odata.id": "/redfish/v1/TaskService",
   "@odata.type": "#TaskService.v1_0_0.TaskService",
   "Id": "TaskService",
   "Name": "Tasks Service",
   "DateTime": "2015-03-13T04:14:33+06:00",
   "CompletedTaskOverWritePolicy": "Manual",
   "LifeCycleEventOnTaskStateChange": true,
   "Status": {
      "State": "Enabled",
      "Health": "OK"
   },
   "ServiceEnabled": true,
   "Tasks": {
      "@odata.id": "/redfish/v1/TaskService/Tasks"
   },
   "Oem": {}
}

4.59.1.2 PUT
Operation is not allowed on this resource.
PSME REST API Definition

4.59.1.3 PATCH
Operation is not allowed on this resource.

4.59.1.4 POST
Operation is not allowed on this resource.

4.59.1.5 DELETE
Operation is not allowed on this resource.

4.60 Task Collection
This resource represents a collection of resources of Task type.
Property details are available in TaskCollection.xml metadata file.

4.60.1 Operations

4.60.1.1 GET
Request:
GET /redfish/v1/TaskService/Tasks
Content-Type: application/json

Response:
{
   "@odata.context": "/redfish/v1/$metadata#TaskCollection.TaskCollection",
   "@odata.id": "/redfish/v1/TaskService/Tasks",
   "@odata.type": "#TaskCollection.TaskCollection",
   "Name": "Task Collection",
   "Members@odata.count": 1,
   "Members": [
   {
      "@odata.id": "/redfish/v1/TaskService/Tasks/1"
   }
   ]
}

4.60.1.2 PUT
Operation is not allowed on this resource.

4.60.1.3 PATCH
Operation is not allowed on this resource.

4.60.1.4 POST
Operation is not allowed on this resource.

4.60.1.5 DELETE
Operation is not allowed on this resource.
4.61 Task

This resource contains information about a specific Task scheduled by, or being executed by, a Redfish service's Task Service.

Property details are available in Task.xml metadata file.

4.61.1 Operations

4.61.1.1 GET

Request:

GET /redfish/v1/TaskService/Tasks/1
Content-Type: application/json

Response:

{
   "@odata.context": "/redfish/v1/$metadata#Task.Task",
   "@odata.id": "/redfish/v1/TaskService/Tasks/1",
   "@odata.type": ">#Task.v1_0_0.Task",
   "Id": "1",
   "Name": "Task 1",
   "Description": "Task 1",
   "TaskState": "Completed",
   "StartTime": "2016-08-18T12:00+01:00",
   "EndTime": "2016-08-18T13:13+01:00",
   "TaskStatus": "OK",
   "Messages": [
      {
         "@odata.type": ":Message.v1_0_0.Message",
         "MessageId": "Base.1.0.Created",
         "RelatedProperties": [
          
        ],
         "Message": "The resource has been created successfully",
         "MessageArgs": [
          
        ],
         "Severity": "OK"
      }
   ]
}

4.61.1.2 PUT

Operation is not allowed on this resource.

4.61.1.3 PATCH

Operation is not allowed on this resource.

4.61.1.4 POST

Operation is not allowed on this resource.

4.61.1.5 DELETE

Request:

DELETE /redfish/v1/TaskService/Tasks/1
Response:

HTTP/1.1 204 No Content

### 4.62 Registries (MessageRegistryFileCollection)

This resource represents a collection of the Schema File locator resources.

Property details are available in `MessageRegistryFileCollection.xml` metadata file.

#### 4.62.1 Operations

##### 4.62.1.1 GET

Request:

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

Response:

```json
{
   "@odata.context": "/redfish/v1/$metadata#MessageRegistryFileCollection.MessageRegistryFileCollection",
   "@odata.id": "/redfish/v1/Registries",
   "@odata.type": "#MessageRegistryFileCollection.MessageRegistryFileCollection",
   "Name": "Registry File Collection",
   "Description": "Registry Repository",
   "Members@odata.count": 1,
   "Members": [
      {
         "@odata.id": "/redfish/v1/Registries/Base"
      }
   ]
}
```

##### 4.62.1.2 PUT

Operation is not allowed on this resource.

##### 4.62.1.3 PATCH

Operation is not allowed on this resource.

##### 4.62.1.4 POST

Operation is not allowed on this resource.

##### 4.62.1.5 DELETE

Operation is not allowed on this resource.

### 4.63 Message Registry File

This resource shall be used to represent the Schema File locator resource for a Redfish implementation.

Property details are available in `MessageRegistryFile.xml` metadata file.
The base message registry file is defined by Redfish. Refer to the following address:
http://redfish.dmtf.org/registries/Base.v1_0_0.json

4.63.1 Operations

4.63.1.1 GET

Request:
GET /redfish/v1/Registries/Base
Content-Type: application/json

Response:

```
{
    "@odata.context": "/redfish/v1/$metadata#Registries/Members/$entity",
    "@odata.id": "/redfish/v1/Registries/Base",
    "@odata.type": ":MessageRegistryFile.v1_0_0.MessageRegistryFile",
    "Id": "Base",
    "Name": "Base Message Registry File",
    "Description": "Base Message Registry File locations",
    "Languages": [
      "en"
    ],
    "Registry": "Base.1.0",
    "Location": [
      {
        "Language": "en",
        "PublicationUri": "http://redfish.dmtf.org/registries/Base.v1_0_0.json",
      }
    ],
    "Oem": {}
}
```

4.63.1.2 PUT
Operation is not allowed on this resource.

4.63.1.3 PATCH
Operation is not allowed on this resource.

4.63.1.4 POST
Operation is not allowed on this resource.

4.63.1.5 DELETE
Operation is not allowed on this resource.

4.64 Metric Definition Collection
Property details are available in MetricDefinitionCollection.xml metadata file.
### 4.64.1 Operations

#### 4.64.1.1 GET

**Request:**

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

**Response:**

```json
{
  "@odata.context": "/redfish/v1/$metadata#TelemetryService/MetricDefinitions/$entity",
  "@odata.id": "/redfish/v1/TelemetryService/MetricDefinitions",
  "@odata.type": "#MetricDefinitionCollection.MetricDefinitionCollection",
  "Name": "Metric Definitions Collection",
  "Description": "description-as-string",
  "Members@odata.count": 5,
  "Members": [
    {
      "@odata.id": "/redfish/v1/TelemetryService/MetricDefinitions/CPUTemperature"
    },
    {
      "@odata.id": "/redfish/v1/TelemetryService/MetricDefinitions/CPUHealth"
    },
    {
      "@odata.id": "/redfish/v1/TelemetryService/MetricDefinitions/CPUBandwidth"
    },
    {
      "@odata.id": "/redfish/v1/TelemetryService/MetricDefinitions/SLEDTemperatures"
    },
    {
      "@odata.id": "/redfish/v1/TelemetryService/MetricDefinitions/MemoryHealth"
    }
  ]
}
```

#### 4.64.1.2 PUT

Operation is not allowed on this resource.

#### 4.64.1.3 PATCH

Operation is not allowed on this resource.

#### 4.64.1.4 POST

Operation is not allowed on this resource.

#### 4.64.1.5 DELETE

Operation is not allowed on this resource.
4.65 Metric Definition

Property details are available in the MetricDefinition.xml metadata file. Metric Definition describes either metric associated with physical sensor (e.g. exposed by BMC) or metric associated with specific resource (e.g. statistics of Ethernet Switch Port). This resource is optional for metrics and required for sensors.

4.65.1 Operations

4.65.1.1 GET (Metric Definition for Discrete Sensor)

Request:

```
GET /redfish/v1/TelemetryService/MetricDefinitions/CPUHealth
Content-Type: application/json
```

Response:

```
{
    "@odata.context": "/redfish/v1/$metadata#MetricDefinition.MetricDefinition",
    "@odata.id": "/redfish/v1/TelemetryService/MetricDefinitions/CPUHealth",
    "@odata.type": "#MetricDefinition.v1_0_0.MetricDefinition",
    "Id": "CPUHealth1",
    "Name": "CPU1 IPMI Health Sensor",
    "MetricType": "Discrete",
    "SensorType": "PhysicalSensor",
    "Implementation": "PhysicalSensor",
    "SensingInterval": "PT1S",
    "PhysicalContext": "CPU",
    "DiscreteValues": [
        "OK",
        "Internal Error",
        "Thermal Trip",
        "FRB1 BIST Failure",
        "FRB2 Hang in Post",
        "FRB3 Startup Failure",
        "Config Error",
        "SMBIOS Uncorrectable Error",
        "Processor Presence Detected",
        "Processor Disabled",
        " Terminator Presence Detected",
        "Processor Throttled",
        "Machine Check Exception",
        "Correctable Machine Check Error"
    ],
    "MetricProperties": [
        "/redfish/v1/Systems/System1/Processors/CPU1/Metrics#/CPUHealth"
    ],
    "Oem": {
        "Intel_RackScale": {
            "@odata.type": "#Intel.Oem.MetricDefinition",
            "DiscreteMetricType": "Multiple"
        }
    }
}
```
4.65.1.2 GET (Metric Definition for Numeric Sensor)

Request:
GET /redfish/v1/TelemetryService/MetricDefinitions/CPUTemperature
Content-Type: application/json

Response:

```json
{
  "@odata.context": "/redfish/v1/$metadata#MetricDefinition.MetricDefinition",
  "@odata.id": "/redfish/v1/TelemetryService/MetricDefinitions/CPUTemperature",
  "@odata.type": "#MetricDefinition.v1_0_0.MetricDefinition",
  "Description": "CPU1 Temperature MetricDefinition",
  "Id": "TEMP1",
  "SensorType": "Temperature",
  "Implementation": "Physical",
  "SensingInterval": "PT1S",
  "MetricType": "Numeric",
  "PhysicalContext": "CPU",
  "Units": "Cel",
  "MinReadingRange": 0,
  "MaxReadingRange": 80,
  "Precision": 1,
  "Calibration": 2,

  "MetricProperties": [
    "/redfish/v1/Systems/System1/Processors/CPU1/Metrics#/TemperatureCelsius"
  ]
}
```

4.65.1.3 GET (Metric Definition for Counter or metric not associated with Sensor)

Request:
GET /redfish/v1/TelemetryService/MetricDefinitions/CPUBandwidth
Content-Type: application/json

Response:

```json
{
  "@odata.context": "/redfish/v1/$metadata#MetricDefinition.MetricDefinition",
  "@odata.id": "/redfish/v1/TelemetryService/MetricDefinitions/CPUBandwidth",
  "@odata.type": "#MetricDefinition.v1_0_0.MetricDefinition",
  "Id": "CPUBandwidth",
  "Name": "CPU Bandwidth type",
  "MetricType": "Numeric",
  "Implementation": "DigitalMeter",
  "PhysicalContext": "CPU",
  "Units": "Count",
  "MinReadingRange": 0,
  "MaxReadingRange": 9223372036854775807,
  "Precision": 1,
  "Calibration": 2,
}
```
"SensingInterval": "PT1S",
"Units": "%",
"MinReadingRange": 0,
"MaxReadingRange": 100,

"MetricProperties": [
"/redfish/v1/Systems/System1/Processors/CPU1/Metrics#/CPUBandwidthPercent"
],
"Oem": {
"Intel_RackScale": {
"@odata.type": "#Intel.Oem.MetricDefinition",
"CalculationPrecision": 5
}
}

4.65.1.4 PUT
Operation is not allowed on this resource.

4.65.1.5 PATCH
Operation is not allowed on this resource.

4.65.1.6 POST
Operation is not allowed on this resource.

4.65.1.7 DELETE
Operation is not allowed on this resource.

4.66 Telemetry Service
Property details are available in the TelemetryService.xml metadata file.

4.66.1 Operations
4.66.1.1 GET
Request:
GET /redfish/v1/TelemetryService
Content-Type: application/json

Response:
{
"@odata.context": "/redfish/v1/$metadata#TelemetryService",
"@odata.type": "#TelemetryService.v1_0_0.TelemetryService",
"@odata.id": "/redfish/v1/TelemetryService",
"Id": "TelemetryService",
"Name": "Telemetry Service",
"Status": {
"State": "Enabled",
"Health": "OK"}
chedules the collection of metrics.

**GET**

Request:

```plaintext
GET /redfish/v1/TelemetryService/MetricReportDefinitions
```

Response:

```json
{
   "@odata.context":
   "/redfish/v1/$metadata#TelemetryService/MetricReportDefinitions/$entity",
   "@odata.id": "/redfish/v1/TelemetryService/MetricReportDefinitions",
   "@odata.type":
   "#MetricReportDefinitionCollection.MetricReportDefinitionCollection",
   "Name": "MetricReportDefinition Collection",
   "Members@odata.count": 1,
   "Members": [
      {
         "@odata.id": "/redfish/v1/TelemetryService/MetricReportDefinitions/CPUMetrics"
      }
   ]
}
```

**PUT**

Operation is not allowed on this resource.

---

4.67.1.2 PUT

Operation is not allowed on this resource.

4.67.1.3 PATCH

Operation is not allowed on this resource.

4.67.1.4 POST

Operation is not allowed on this resource.

4.67.1.5 DELETE

Operation is not allowed on this resource.

---

**Metric Report Definition Collection**

Property details are available in the `MetricReportDefinitionCollection.xml` metadata file.

**Note:** In the current PSME implementation, the Metric Report Definition Collection resource is not implemented.

---

**Operations**

**4.67.1 GET**

Request:

```plaintext
GET /redfish/v1/TelemetryService/MetricReportDefinitions
```

Response:

```json
{
   "@odata.context":
   "/redfish/v1/$metadata#TelemetryService/MetricReportDefinitions/$entity",
   "@odata.id": "/redfish/v1/TelemetryService/MetricReportDefinitions",
   "@odata.type":
   "#MetricReportDefinitionCollection.MetricReportDefinitionCollection",
   "Name": "MetricReportDefinition Collection",
   "Members@odata.count": 1,
   "Members": [
      {
         "@odata.id": "/redfish/v1/TelemetryService/MetricReportDefinitions/CPUMetrics"
      }
   ]
}
```

**4.67.1.2 PUT**

Operation is not allowed on this resource.
4.67.1.3 PATCH
Operation is not allowed on this resource.

4.67.1.4 POST
Request:

POST /redfish/v1/TelemetryService/MetricReportDefinitions
Content-Type: application/json
{
    "Name": "CPU1 Metric Publisher",
    "Schedule": {
        "RecurrenceInterval": "PT1M"
    },
    "MetricReportType": "Periodic",
    "CollectionTimeScope": "Interval",
    "ReportActions": ["Transmit", "Log"],
    "MetricReport": {"@odata.id": "/redfish/v1/TelemetryService/MetricReports/TransmitCPU1Metrics"},
    "Status": {
        "State": "Enabled",
        "Health": "OK"
    },
    "MetricProperties": [
        "/redfish/v1/Systems/System1/Processors/CPU1/Metrics#/BandwidthPercent",
        "/redfish/v1/Systems/System1/Processors/CPU1/Metrics#/CPUHealth",
        "/redfish/v1/Systems/System1/Processors/CPU1/Metrics#/TemperatureCelsius"
    ]
}

Response:

HTTP/1.1 201 Created
Location: http://<IP>:<PORT/redfish/v1/TelemetryService/MetricReportDefinitions/1

4.67.1.5 DELETE
Operation is not allowed on this resource.

4.68 Metric Report Definition
Property details are available in the MetricReportDefinition.xml metadata file.

Note: In the current PSME implementation, the Metric Report Definition resource is not implemented.

4.68.1 Operations
4.68.1.1 GET
Request:

GET /redfish/v1/TelemetryService/MetricReportDefinitions/CPUMetrics
Content-Type: application/json

Response:
"@odata.context": "/redfish/v1/$metadata#MetricReportDefinition",
"@odata.type": "#MetricReportDefinition.1.0.0.MetricReportDefinition",
"@odata.id": "/redfish/v1/TelemetryService/MetricReportDefinitions/CPU1Metrics",
"Id": "CPUEventPublish",
"Name": "CPU1 Metric Publisher",
"Schedule": {
  "RecurrenceInterval": "PT1M"
},
"MetricReportType": "Periodic",
"CollectionTimeScope": "Interval",
"ReportActions": ["Transmit", "Log"],
"MetricReport": {
  "@odata.id": "/redfish/v1/TelemetryService/MetricReports/TransmitCPU1Metrics"},
"Status": {
  "State": "Enabled",
  "Health": "OK"
},
"MetricProperties": [
  "/redfish/v1/Systems/System1/Processors/CPU1/Metrics#/BandwidthPercent",
  "/redfish/v1/Systems/System1/Processors/CPU1/Metrics#/CPUHealth",
  "/redfish/v1/Systems/System1/Processors/CPU1/Metrics#/TemperatureCelsius"
]

4.68.1.2 PUT
Operation is not allowed on this resource.

4.68.1.3 PATCH
Operation is not allowed on this resource.

4.68.1.4 POST
Operation is not allowed on this resource.

4.68.1.5 DELETE
Request:
DELETE /redfish/v1/TelemetryService/MetricReportDefinitions/CPUEventPublish
Response:
HTTP/1.1 204 No Content

4.69 Metric Report Collection
Property details are available in the MetricReportCollection.xml metadata file.

Note: In the current PSME implementation, the Metric Report Collection resource is not implemented.

4.69.1 Operations
4.69.1.1 GET
Request:
GET /redfish/v1/TelemetryService/MetricReports
Response:

{
    "@odata.type": ":MetricReport.v1_0_0.MetricReport",
    "@odata.id": "/redfish/v1/TelemetryService/MetricReports/TransmitCPU1Metrics",
    "Id": "TransmitCPU1Metrics",
    "Name": "CPU1 Metric Report",
    "Description": "description-as-string",
}

4.69.1.2 PUT
Operation is not allowed on this resource.

4.69.1.3 PATCH
Operation is not allowed on this resource.

4.69.1.4 POST
Operation is not allowed on this resource.

4.69.1.5 DELETE
Operation is not allowed on this resource.

4.70 Metric Report
Property details are available in the MetricReport.xml metadata file.

Note: In the current PSME implementation, the Metric Report resource is not implemented.

4.70.1 Operations

4.70.1.1 GET

Request:
GET /redfish/v1/TelemetryService/MetricReports/TransmitCPU1Metrics
Content-Type: application/json

Response:

{
    "@odata.type": ":MetricReport.v1_0_0.MetricReport",
    "@odata.id": "/redfish/v1/TelemetryService/MetricReports/TransmitCPU1Metrics",
    "Id": "TransmitCPU1Metrics",
    "Name": "CPU1 Metric Report",
    "Description": "description-as-string",
}
"MetricReportDefinition": { "@odata.id": "/redfish/v1/TelemetryService/MetricReportDefinitions/CPUMetrics" },
  "MetricValues": [
    {
      "MetricValue": "29",
      "Timestamp": "2016-07-25T11:27:59.895513984+02:00",
      "MetricProperty": "/redfish/v1/Systems/System1/Processors/CPU1/Metrics#/BandwidthPercent",
      "MetricDefinition": { "@odata.id": "/redfish/v1/TelemetryService/MetricDefinitions/CPUBandwidth" }
    },
    {
      "MetricValue": "FRB1 BIST Failure",
      "Timestamp": "2016-07-25T11:27:59.795513984+02:00",
      "MetricProperty": { "@odata.id": "/redfish/v1/Systems/System1/Processors/CPU1/Metrics#/CPUHealth" },
      "MetricDefinition": { "@odata.id": "/redfish/v1/TelemetryService/MetricDefinitions/CPUHealth" }
    },
    {
      "MetricValue": "43",
      "Timestamp": "2016-07-25T11:27:59.595513984+02:00",
      "MetricProperty": { "@odata.id": "/redfish/v1/Systems/System1/Processors/CPU1/Metrics#/TemperatureCelsius" },
      "MetricDefinition": { "@odata.id": "/redfish/v1/TelemetryService/MetricDefinitions/CPUTemperature" }
    }
  ]

4.70.1.2 PUT
Operation is not allowed on this resource.

4.70.1.3 PATCH
Operation is not allowed on this resource.

4.70.1.4 POST
Operation is not allowed on this resource.

4.70.1.5 DELETE
Operation is not allowed on this resource.
4.71 Triggers Collection

Property details are available in the TriggersCollection.xml metadata file.

Note: In the current PSME implementation, the Triggers Collection resource is not implemented.

4.71.1 Operations

4.71.1.1 GET

Request:

GET /redfish/v1/TelemetryService/Triggers
Content-Type: application/json

Response:

```
{
    "@odata.context":
    "/redfish/v1/$metadata#TelemetryService/Triggers/$entity",
    "@odata.id": "/redfish/v1/TelemetryService/Triggers",
    "@odata.type": "#TriggersCollection.TriggersCollection",
    "Name": "Triggers Collection",
    "Members@odata.count": 6,
    "Members": [
        {
            "@odata.id":
            "/redfish/v1/TelemetryService/Triggers/ProcessorCatastrophicError"
        },
        {
            "@odata.id":
            "/redfish/v1/TelemetryService/Triggers/ProcessorInitializationError"
        },
        {
            "@odata.id":
            "/redfish/v1/TelemetryService/Triggers/ProcessorMachineCheckError"
        },
        {
            "@odata.id":
            "/redfish/v1/TelemetryService/Triggers/ProcessorPOSTFailure"
        },
        {
            "@odata.id":
            "/redfish/v1/TelemetryService/Triggers/ProcessorTemperature"
        },
        {
            "@odata.id":
            "/redfish/v1/TelemetryService/Triggers/ProcessorThermalTrip"
        }
    ]
}
```

4.71.1.2 PUT

Operation is not allowed on this resource.
4.71.1.3  PATCH

Operation is not allowed on this resource.

4.71.1.4  POST (Numeric Trigger)

Request:

```
POST /redfish/v1/TelemetryService/Triggers
Content-Type: application/json
{
    "Name": "Triggers for Processor Temperature Malfunction",
    "Status": {
        "State": "Enabled",
        "Health": "OK"
    },
    "MetricType": "Numeric",
    "TriggerActions": [
        "Transmit"
    ],
    "NumericTriggers": [
        {
            "Name": "UpperThresholdCritical",
            "Value": "90",
            "DirectionOfCrossing": "Increasing",
            "DwellTimems": "1",
            "Severity": "Critical"
        },
        {
            "Name": "UpperThresholdNonCritical",
            "Value": "75",
            "DirectionOfCrossing": "Increasing",
            "DwellTimems": "4",
            "Severity": "Warning"
        }
    ],
    "MetricProperties": [
        "/redfish/v1/Systems/System1/Processors/CPU0/Metrics#/TemperatureCelsius",
        "/redfish/v1/Systems/System1/Processors/CPU1/Metrics#/TemperatureCelsius"
    ]
}
```

Response:

```
HTTP/1.1 201 Created
Location: http://<IP>:<PORT/redfish/v1/TelemetryService/Triggers/1
```

4.71.1.5  POST (Discrete Trigger)

Request:

```
POST /redfish/v1/TelemetryService/Triggers
Content-Type: application/json
{
```
"Name": "Trigger for Processor Machine Check Error",
"Description": "Triggers for System1 Processor Machine Check Error",

"MetricType": "Discrete",
"TriggerActions": [
  "Transmit"
],
"DiscreteTriggerCondition": "Specified",
"DiscreteTriggers": [
  {
    "Value": "Machine Check Exception",
    "DwellTimems": "1",
    "Severity": "Critical"
  }
],

"Status": {
  "State": "Enabled",
  "Health": "OK"
},
"MetricProperties": [
  "/redfish/v1/Systems/System1/Processors/CPU0/Metrics#/CPUHealth",
  "/redfish/v1/Systems/System1/Processors/CPU1/Metrics#/CPUHealth"
]

Response:

HTTP/1.1 201 Created
Location: http://<IP>:<PORT/redfish/v1/TelemetryService/Triggers/2

4.71.1.6  DELETE
Operation is not allowed on this resource.

4.72  Triggers
Property details are available in the Triggers.xml metadata file.

Note:  In the current PSME implementation, the Triggers resource is not implemented.

4.72.1  Operations
4.72.1.1  GET (Numeric Trigger)
Request:
GET /redfish/v1/TelemetryService/Triggers/ProcessorTemperature
Content-Type: application/json

Response:

{  
  "@odata.context": "/redfish/v1/$metadata#TelemetryService/Triggers/Members/$entity",
  "@odata.id": "/redfish/v1/TelemetryService/Triggers/ProcessorTemperature",
  "@odata.type": "#Trigger.v1_0_0.Trigger",
  "Id": "ProcessorTemperature",
}
"Name": "Triggers for Processor Temperature Malfunction",
"Status": {
    "State": "Enabled",
    "Health": "OK"
},
"MetricType": "Numeric",
"TriggerActions": [
    "Transmit"
],
"NumericTriggers": [
    {
        "Name": "UpperThresholdCritical",
        "Value": "90",
        "DirectionOfCrossing": "Increasing",
        "DwellTimems": "1",
        "Severity": "Critical"
    },
    {
        "Name": "UpperThresholdNonCritical",
        "Value": "75",
        "DirectionOfCrossing": "Increasing",
        "DwellTimems": "4",
        "Severity": "Warning"
    }
],
"MetricProperties": [
    "/redfish/v1/Systems/System1/Processors/CPU0/Metrics#/TemperatureCelsius",
    "/redfish/v1/Systems/System1/Processors/CPU1/Metrics#/TemperatureCelsius"
]}

4.72.1.2 GET (Discrete Trigger)

Request:
GET /redfish/v1/TelemetryService/Triggers/ProcessorMachineCheckError
Content-Type: application/json

Response:

{
    "@odata.context": "/redfish/v1/$metadata#TelemetryService/Triggers/Members/$entity",
    "@odata.id": "/redfish/v1/TelemetryService/Triggers/ProcessorMachineCheckError",
    "@odata.type": "#Trigger.v1_0_0.Trigger",
    "Id": "ProcessorMachineCheckError",
    "Name": "Trigger for Processor Machine Check Error",
    "Description": "Triggers for System1 Processor Machine Check Error",
    "MetricType": "Discrete",
    "TriggerActions": [
        "Transmit"
    ]
}
"DiscreteTriggerCondition": "Specified",
   "DiscreteTriggers": [
   {
      "Value": "Machine Check Exception",
      "DwellTimeMs": "1",
      "Severity": "Critical"
   }
   ],

   "Status": {
      "State": "Enabled",
      "Health": "OK"
   },
   "MetricProperties": [
      "/redfish/v1/Systems/System1/Processors/CPU0/Metrics#/CPUHealth",
      "/redfish/v1/Systems/System1/Processors/CPU1/Metrics#/CPUHealth"
   ]
}

4.72.1.3 PUT
Operation is not allowed on this resource.

4.72.1.4 PATCH
Operation is not allowed on this resource.

4.72.1.5 POST
Operation is not allowed on this resource.

4.72.1.6 DELETE
Request:
DELETE /redfish/v1/TelemetryService/Triggers/ProcessorMachineCheckError
Response:
HTTP/1.1 204 No Content

4.73 Power
The Power metrics resource represents the properties for Power Consumption and Power Limiting.
Detailed information about resource properties can be obtained from the metadata file: Power.xml. OEM extensions details are available in the IntelRackScaleOem.xml.

4.73.1 Operations
4.73.1.1 GET (Rack level Power Metrics)
Request:
GET /redfish/v1/Chassis/Rack1/Power
Content-Type: application/json

Response:
{
   "@odata.context": "/redfish/v1/$metadata#Power.Power", 

"@odata.id": "/redfish/v1/Chassis/Drawer1/Power",
"@odata.type": "#Power.v1_1_0.Power",
"Id": "Power",
"Name": "Power",
"Description": "PowerSubsystem",
"PowerControl": [
  {
    "MemberId": "0",
    "Name": "System Power Control",
    "PowerConsumedWatts": 8000,
    "PowerRequestedWatts": null,
    "PowerAvailableWatts": null,
    "PowerCapacityWatts": 10000,
    "PowerAllocatedWatts": null,
    "PowerMetrics": {
      "IntervalInMin": 30,
      "MinConsumedWatts": 7500,
      "MaxConsumedWatts": 8200,
      "AverageConsumedWatts": 8000
    },
    "PowerLimit": {
      "LimitInWatts": null,
      "LimitException": null,
      "CorrectionInMs": null
    },
    "RelatedItem": [
      {"@odata.id": "/redfish/v1/Systems/System1"}
    ],
    "Status": {
      "State": "Enabled",
      "Health": "OK",
      "HealthRollup": "OK"
    },
    "Oem": {}
  }
],
"Voltages": [
  {
    "MemberId": "0",
    "Name": "VRM1 Voltage",
    "SensorNumber": 11,
    "Status": {
      "State": "Enabled",
      "Health": "OK"
    },
    "ReadingVolts": 12,
    "PhysicalContext": "VoltageRegulator",
    "RelatedItem": [
      {"@odata.id": "/redfish/v1/Systems/System1"}
    ]
  }
],
"PowerSupplies": [
  {
    "MemberId": "0",
    "Name": "PowerSupply1",
    "PowerConsumedWatts": 8000,
    "PowerAvailableWatts": null,
    "PowerCapacityWatts": 10000,
    "PowerAllocatedWatts": null,
    "PowerMetrics": {
      "IntervalInMin": 30,
      "MinConsumedWatts": 7500,
      "MaxConsumedWatts": 8200,
      "AverageConsumedWatts": 8000
    },
    "PowerLimit": {
      "LimitInWatts": null,
      "LimitException": null,
      "CorrectionInMs": null
    },
    "RelatedItem": [
      {"@odata.id": "/redfish/v1/Systems/System1"}
    ],
    "Status": {
      "State": "Enabled",
      "Health": "OK",
      "HealthRollup": "OK"
    },
    "Oem": {}
  }
]
"Name": "Power Supply Bay 1",
"Status": {
   "State": "Enabled",
   "Health": "Warning"
},
"Oem": {},
"PowerSupplyType": "DC",
"LineInputVoltageType": "DCNeg48V",
"LineInputVoltage": -48,
"PowerCapacityWatts": 400,
"LastPowerOutputWatts": 192,
"Model": "499253-B21",
"Manufacturer": "ManufacturerName",
"FirmwareVersion": "1.00",
"SerialNumber": "1z0000001",
"PartNumber": "1z0000001A3a",
"SparePartNumber": "0000001A3a",
"InputRanges": [],
"IndicatorLED": "Off",
"RelatedItem": [
   { "@odata.id": "/redfish/v1/Chassis/Drawer1" }
],
"Redundancy": [
   { "@odata.id": "/redfish/v1/Chassis/Drawer1/Power#/Redundancy/0" }
]
"Redundancy": [
   { "@odata.id": "/redfish/v1/Chassis/Drawer1/Power#/PowerSupplies/0" }
],
"Status": {
   "State": "Offline",
   "Health": "OK"
}
], "Oem": {}

4.73.1.2 GET (SLED level Power Metrics)

Chassis metrics that are available on the SLED level differ from those available on the Rack level, therefore metadata file definition Power.xml contains a superset of all Chassis metrics.

Request:
GET /redfish/v1/Chassis/Sled1/Power
Content-Type: application/json

Response:

```
{
    "@odata.context": "/redfish/v1/$metadata#Power.Power",
    "@odata.id": "/redfish/v1/Chassis/Sled1/Power",
    "@odata.type": ":Power.v1_1_0.Power",
    "Id": "Power",
    "Name": "Power",
    "PowerControl": [
        {
            "@odata.id": "/redfish/v1/Chassis/Sled1/Power#/PowerControl/0",
            "MemberId": "0",
            "Name": "System Power Control",
            "PowerConsumedWatts": 8000,
            "RelatedItem": [
                {
                    "@odata.id": "/redfish/v1/Chassis/Sled1"},
                {"@odata.id": "/redfish/v1/Systems/System1"}
            ],
            "Status": {
                "State": "Enabled",
                "Health": "OK",
                "HealthRollup": "OK"
            },
            "Oem": {}
        }
    ],
    "Oem": {
        "Intel_RackScale": {
            "InputACPowerWatts": 245
        }
    }
}
```

4.73.1.3 PUT
Operation is not allowed on this resource.

4.73.1.4 PATCH
Operation is not allowed on this resource.

4.73.1.5 POST
Operation is not allowed on this resource.

4.73.1.6 DELETE
Operation is not allowed on this resource.

4.74 Thermal
The Thermal metrics resource represents the properties for Temperature and Cooling.
Detailed information about the resource properties can be obtained from the metadata file: `Thermal.xml` OEM extensions details available in `IntelRackScaleOem.xml`.
4.74.1 Operations

4.74.1.1 GET (Rack level Thermal Metrics)

Request:

GET /redfish/v1/Chassis/Rack1/Thermal
Content-Type: application/json

Response:

```json
{
    "@odata.context": "/redfish/v1/$metadata#Thermal.Thermal",
    "@odata.id": "/redfish/v1/Chassis/Drawer1/Thermal",
    "@odata.type": "#Thermal.v1_1_0.Thermal",
    "Id": "Thermal",
    "Name": "Thermal",
    "Description": "Thermal Subsystem",
    "Temperatures": [
        {
            "MemberId": "0",
            "Name": "Drawer inlet Temp",
            "SensorNumber": 42,
            "Status": {
                "State": "Enabled",
                "Health": "OK"
            },
            "ReadingCelsius": 21,
            "PhysicalContext": "Intake",
            "RelatedItem": [
                {
                    "@odata.id": "/redfish/v1/Chassis/Drawer1" }]
        }
    ],
    "Fans": [
        {
            "MemberId": "0",
            "Name": "BaseBoard System Fan",
            "PhysicalContext": "Backplane",
            "Status": {
                "State": "Enabled",
                "Health": "OK"
            },
            "Reading": 2100,
            "ReadingUnits": "RPM",
            "Redundancy": [
                {
                    "@odata.id": "/redfish/v1/Chassis/Drawer1/Thermal#/Redundancy/0"
                }
            ],
            "RelatedItem": [
                {
                    "@odata.id": "/redfish/v1/Chassis/Drawer1" }
            ]
        }
    ],
    "Redundancy": [
        {
```
4.74.1.2 PUT
Operation is not allowed on this resource.

4.74.1.3 PATCH
Operation is not allowed on this resource.

4.74.1.4 POST
Operation is not allowed on this resource.

4.74.1.5 DELETE
Operation is not allowed on this resource.

4.74.1.6 GET (SLED level Thermal Metrics)
SLED level thermal metrics differ from Rack level thermal metrics, therefore metadata definition file Thermal.xml contains the superset of all available thermal metrics.

Request:
GET /redfish/v1/Chassis/Rack1/Thermal
Content-Type: application/json

Response:
{
  "@odata.context": "/redfish/v1/$metadata#Thermal.Thermal",
  "@odata.id": "/redfish/v1/Chassis/Sled1/Thermal",
  "@odata.type": ">#Thermal.v1_1_0.Thermal",
  "Id": "Thermal",
  "Name": "Thermal",
  "Temperatures": [
    {
      "@odata.id": "/redfish/v1/Chassis/Sled1/Thermal#/Temperatures/0",
      "MemberId": "0",
      "Name": "SLED inlet Temp",
      "SensorNumber": 42,
      "Status": {
        "State": "Enabled",
      
```
"Health": "OK"
},
"ReadingCelsius": 21,
"UpperThresholdNonCritical": 42,
"UpperThresholdCritical": 42,
"UpperThresholdFatal": 42,
"LowerThresholdNonCritical": 42,
"LowerThresholdCritical": 5,
"LowerThresholdFatal": 42,
"MinReadingRangeTemp": 0,
"MaxReadingRangeTemp": 200,
"PhysicalContext": "Intake",
"RelatedItem": [
    {
        "@odata.id": "/redfish/v1/Chassis/Sled1" 
    }
],
{
    "@odata.id": "/redfish/v1/Chassis/Sled1/Thermal#/Temperatures/1",
    "MemberId": "0",
    "Name": "SLED Outlet Temp",
    "SensorNumber": 43,
    "Status": {
        "State": "Enabled",
        "Health": "OK"
    },
    "ReadingCelsius": 44,
    "UpperThresholdNonCritical": 55,
    "UpperThresholdCritical": 55,
    "UpperThresholdFatal": 55,
    "LowerThresholdNonCritical": 55,
    "LowerThresholdCritical": 5,
    "LowerThresholdFatal": 42,
    "MinReadingRangeTemp": 0,
    "MaxReadingRangeTemp": 200,
    "PhysicalContext": "Exhaust",
    "RelatedItem": [
        {
            "@odata.id": "/redfish/v1/Chassis/Sled1"
        }
    ]
},
"Oem": {
    "Intel_RackScale": {
        "VolumetricAirFlowCfm": 12
    }
}
4.74.1.9 POST
Operation is not allowed on this resource.

4.74.1.10 DELETE
Operation is not allowed on this resource.

4.75 Network Interface collection
Property details are available in the NetworkInterfaceCollection.xml metadata file.

4.75.1 Operations

4.75.1.1 GET
Request:
GET /redfish/v1/Systems/System1/NetworkInterfaces
Content-Type: application/json

Response:

{
  "@odata.context": "/redfish/v1/$metadata#NetworkInterfaceCollection.NetworkInterfaceCollection",
  "@odata.id": "/redfish/v1/Systems/System1/NetworkInterfaces",
  "@odata.type": "# NetworkInterfaceCollection.NetworkInterfaceCollection",
  "Name": "Network Interface Collection",
  "Description": "description-as-string",
  "Members@odata.count": 1,
  "Members": [
    {
      "@odata.id": "/redfish/v1/Systems/System1/NetworkInterfaces/1"
    }
  ]
}

4.75.1.2 PUT
Operation is not allowed on this resource.

4.75.1.3 PATCH
Operation is not allowed on this resource.

4.75.1.4 POST
Operation is not allowed on this resource.

4.75.1.5 DELETE
Operation is not allowed on this resource.
4.76 Network Interface

Network Interface contains references linking the NetworkDeviceFunction resources and represents network functionality available to the containing system.

Property details are available in the NetworkInterface.xml metadata file.

4.76.1 Operations

4.76.1.1 GET

Request:

GET /redfish/v1/Systems/System1/NetworkInterfaces/1
Content-Type: application/json

Response:

{
  "@odata.context":
  "/redfish/v1/$metadata#NetworkInterface.NetworkInterface",
  "@odata.id": "/redfish/v1/Systems/System1/NetworkInterfaces/1",
  "@odata.type": ":NetworkInterface.v1_0_0.NetworkInterface",
  "Id": "1",
  "Name": "Network Device View",
  "Description": "Network Device View",
  "Status": {
    "State": "Enabled",
    "Health": "OK",
    "HealthRollUp": "OK"
  },
  "NetworkDeviceFunctions": {
    "@odata.id": "/redfish/v1/Systems/System1/NetworkInterfaces/1/NetworkDeviceFunctions"
  },
  "Links": {
  },
  "Oem": {} }
4.77 Network Device Function collection

Property details are available in the NetworkDeviceFunctionCollection.xml metadata file.

4.77.1 Operations

4.77.1.1 GET

Request:

GET /redfish/v1/Systems/System1/NetworkInterfaces/1/NetworkDeviceFunctions
Content-Type: application/json

Response:

{
   "@odata.context": "/redfish/v1/$metadata#NetworkDeviceFunctionCollection.
NetworkDeviceFunctionCollection",
   "@odata.id": "/redfish/v1/Systems/System1/NetworkInterfaces/1/NetworkDeviceFunctions",
   "@odata.type": ":NetworkDeviceFunctionCollection.
NetworkDeviceFunctionCollection",
   "Name": "Network Device Function Collection",
   "Members@odata.count": 1,
   "Members": [
      {
         "@odata.id": "/redfish/v1/Systems/System1/NetworkInterfaces/1/NetworkDeviceFunctions/1"
      }
   ]
}

4.77.1.2 PUT

Operation is not allowed on this resource.

4.77.1.3 PATCH

Operation is not allowed on this resource.

4.77.1.4 POST

Operation is not allowed on this resource.

4.77.1.5 DELETE

Operation is not allowed on this resource.
4.78  Network Device Function

Network Device Function represents a logical interface exposed by the network adapter.

Property details are available in the NetworkDeviceFunction.xml metadata file.

4.78.1  Operations

4.78.1.1  GET

**Note:** Because of the confidential nature of CHAP secret fields, they cannot be shown in a GET request, **null** is shown instead.

Request:

GET /redfish/v1/Systems/System1/NetworkInterfaces/1/NetworkDeviceFunctions/1
Content-Type: application/json

Response:

```
{
  "@odata.context":
  "/redfish/v1/$metadata#NetworkDeviceFunction.NetworkDeviceFunction",
  "@odata.id":
  "/redfish/v1/Systems/System1/NetworkInterfaces/1/NetworkDeviceFunctions/1",
  "@odata.type": "#NetworkDeviceFunction.v1_0_0.NetworkDeviceFunction",
  "Id": "1",
  "Name": "Network Device Fuction View",
  "Description": "Network Device Function View",
  "Status": {
    "State": "Enabled",
    "Health": "OK",
    "HealthRollUp": "OK"
  },
  "DeviceEnabled": true,
  "Ethernet": {
    "MACAddress": "00:0C:29:9A:98:ED"
  },
  "iSCSIBoot": {
    "IPAddressType": "IPv4",
    "InitiatorIPAddress": "10.0.10.10",
    "InitiatorName": "iqn.2017-03.com.intel:workload-server",
    "InitiatorDefaultGateway": "10.0.10.1",
    "InitiatorNetmask": "255.255.255.0",
    "TargetInfoViaDHCP": false,
    "PrimaryTargetName": "iqn.2017-03.com.intel:image-server",
    "PrimaryTargetIPAddress": "10.0.10.254",
    "PrimaryTargetTCPPort": 3260,
    "PrimaryLUN": 1,
    "PrimaryVLANEnable": true,
    "PrimaryVLANId": 4088,
    "PrimaryDNS": null,
    "SecondaryTargetName": null,
    "SecondaryTargetIPAddress": null,
    "SecondaryTargetTCPPort": null,
    "SecondaryLUN": null,
    "SecondaryVLANEnable": null,
  }
}
```
"SecondaryVLANId": null,
"SecondaryDNS": null,
"IPMaskDNSViaDHCP": false,
"RouterAdvertisementEnabled": false,
"AuthenticationMethod": "CHAP",
"CHAPUsername": "user",
"CHAPSecret": null,
"MutualCHAPUsername": "mutualuser",
"MutualCHAPSecret": null
},
"Links": {
},
"Oem": {}
}

4.78.1.2  PUT

Operation is not allowed on this resource.

4.78.1.3  PATCH

The PATCH method should be used to enable iSCSI boot of compute node (Table 29). After patching this resource, one needs to set the BootOverride target to RemoteDrive and submit a PATCH to ComputerSystem.Reset action. Attributes for this method are listed in Table 29, Table 30, and Table 31.

Table 29.  Properties Updated by Patch Operation

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Type</th>
<th>Required</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethernet</td>
<td>Object</td>
<td>No</td>
<td>Ethernet capabilities for this network device function. Details in table below.</td>
</tr>
<tr>
<td>iSCSIBoot</td>
<td>Object</td>
<td>No</td>
<td>iSCSI boot capabilities, status, and configuration values for this network device function. Details in table below.</td>
</tr>
</tbody>
</table>

Table 30.  Ethernet Object Properties

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Type</th>
<th>Required</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>MACAddress</td>
<td>String</td>
<td>No</td>
<td>MAC address of NIC to be used for iSCSI boot.</td>
</tr>
</tbody>
</table>

Table 31.  iSCSIBoot Object Properties

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Type</th>
<th>Required</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>IPAddressType</td>
<td>String (enum)</td>
<td>No</td>
<td>The type of IP address (IPv6 or IPv4) being populated in the iSCSIBoot IP address fields.</td>
</tr>
<tr>
<td>InitiatorIPAddress</td>
<td>String</td>
<td>No</td>
<td>Address of the iSCSI initiator.</td>
</tr>
<tr>
<td>InitiatorName</td>
<td>String</td>
<td>No</td>
<td>The iSCSI initiator name.</td>
</tr>
<tr>
<td>InitiatorDefaultGateway</td>
<td>String</td>
<td>No</td>
<td>The IPv6 or IPv4 iSCSI boot default gateway.</td>
</tr>
<tr>
<td>InitiatorNetmask</td>
<td>String</td>
<td>No</td>
<td>The IPv6 or IPv4 netmask of the iSCSI boot initiator.</td>
</tr>
<tr>
<td>TargetInfoViaDHCP</td>
<td>Boolean</td>
<td>No</td>
<td>Whether the iSCSI boot target name, LUN, IP address, and netmask should be obtained from DHCP.</td>
</tr>
<tr>
<td>PrimaryTargetName</td>
<td>String</td>
<td>No</td>
<td>The name of the iSCSI primary boot target.</td>
</tr>
<tr>
<td>PrimaryTargetIPAddress</td>
<td>String</td>
<td>No</td>
<td>The IP address (IPv6 or IPv4) for the primary iSCSI boot target.</td>
</tr>
<tr>
<td>PrimaryTargetTCPPort</td>
<td>Number</td>
<td>No</td>
<td>The TCP port for the primary iSCSI boot target.</td>
</tr>
<tr>
<td>PrimaryLUN</td>
<td>Number</td>
<td>No</td>
<td>The logical unit number (LUN) for the primary iSCSI boot target.</td>
</tr>
<tr>
<td>PrimaryVLANEnable</td>
<td>Boolean</td>
<td>No</td>
<td>This indicates if the primary VLAN is enabled.</td>
</tr>
<tr>
<td>PrimaryVLANId</td>
<td>Number</td>
<td>No</td>
<td>The 802.1q VLAN ID to use for iSCSI boot from the primary target.</td>
</tr>
<tr>
<td>Attribute</td>
<td>Type</td>
<td>Required</td>
<td>Description</td>
</tr>
<tr>
<td>------------------------</td>
<td>------------</td>
<td>----------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>PrimaryDNS</td>
<td>String</td>
<td>No</td>
<td>The IPv6 or IPv4 address of the primary DNS server for the iSCSI boot initiator.</td>
</tr>
<tr>
<td>SecondaryTargetName</td>
<td>String</td>
<td>No</td>
<td>The name of the iSCSI secondary boot target.</td>
</tr>
<tr>
<td>SecondaryTargetIPAddress</td>
<td>String</td>
<td>No</td>
<td>The IP address (IPv6 or IPv4) for the secondary iSCSI boot target.</td>
</tr>
<tr>
<td>SecondaryTargetTCPPort</td>
<td>Number</td>
<td>No</td>
<td>The TCP port for the secondary iSCSI boot target.</td>
</tr>
<tr>
<td>SecondaryLUN</td>
<td>Number</td>
<td>No</td>
<td>The logical unit number (LUN) for the secondary iSCSI boot target.</td>
</tr>
<tr>
<td>SecondaryVLANEnable</td>
<td>Boolean</td>
<td>No</td>
<td>This indicates if the secondary VLAN is enabled.</td>
</tr>
<tr>
<td>SecondaryVLANId</td>
<td>Number</td>
<td>No</td>
<td>The 802.1q VLAN ID to use for iSCSI boot from the secondary target.</td>
</tr>
<tr>
<td>SecondaryDNS</td>
<td>String</td>
<td>No</td>
<td>The IPv6 or IPv4 address of the secondary DNS server for the iSCSI boot initiator.</td>
</tr>
<tr>
<td>IPMaskDNSViaDHCP</td>
<td>Boolean</td>
<td>No</td>
<td>Whether the iSCSI boot initiator uses DHCP to obtain the initiator name, IP address, and netmask.</td>
</tr>
<tr>
<td>RouterAdvertisementEnabled</td>
<td>Boolean</td>
<td>No</td>
<td>Whether IPv6 router advertisement is enabled for the iSCSI boot target.</td>
</tr>
<tr>
<td>AuthenticationMethod</td>
<td>String (enum)</td>
<td>No</td>
<td>The iSCSI boot authentication method for this network device function. Supported values: &quot;None&quot;, &quot;CHAP&quot;, &quot;MutualCHAP&quot;</td>
</tr>
<tr>
<td>CHAPUsername</td>
<td>String</td>
<td>No</td>
<td>The username for CHAP authentication.</td>
</tr>
<tr>
<td>CHAPSecret</td>
<td>String</td>
<td>No</td>
<td>The shared secret for CHAP authentication.</td>
</tr>
<tr>
<td>MutualCHAPUsername</td>
<td>String</td>
<td>No</td>
<td>The CHAP Username for 2-way CHAP authentication.</td>
</tr>
<tr>
<td>MutualCHAPSecret</td>
<td>String</td>
<td>No</td>
<td>The CHAP Secret for 2-way CHAP authentication.</td>
</tr>
</tbody>
</table>

Request:

```
PATCH /redfish/v1/Systems/System1/NetworkInterfaces/1/NetworkDeviceFunctions/1
Content-Type: application/json
{
    "Ethernet": {
        "MACAddress": "00:0C:29:9A:98:ED"
    },
    "iSCSIBoot": {
        "IPAddressType": "IPv4",
        "InitiatorIPAddress": "10.0.10.10",
        "InitiatorName": "iqn.2017-03.com.intel:workload-server",
        "InitiatorDefaultGateway": "10.0.10.1",
        "InitiatorNetmask": "255.255.255.0",
        "TargetInfoViaDHCP": false,
        "PrimaryTargetName": "iqn.2017-03.com.intel:image-server",
        "PrimaryTargetIPAddress": "10.0.10.254",
        "PrimaryTargetTCPPort": 3260,
        "PrimaryLUN": 1,
        "PrimaryVLANEnable": true,
        "PrimaryVLANId": 4088,
        "PrimaryDNS": null,
        "SecondaryTargetName": null,
        "SecondaryTargetIPAddress": null,
        "SecondaryTargetTCPPort": null,
        "PrimaryDNS": null,
        "SecondaryTargetName": null,
        "SecondaryTargetIPAddress": null,
        "SecondaryTargetTCPPort": null,
    }
```
"SecondaryLUN": null,
"SecondaryVLANEnable": null,
"SecondaryVLANId": null,
"SecondaryDNS": null,
"IPMaskDNSViaDHCP": false,
"RouterAdvertisementEnabled": false,
"AuthenticationMethod": "CHAP",
"CHAPUsername": "user",
"CHAPSecret": "userpassword",
"MutualCHAPUsername": "mutualuser",
"MutualCHAPSecret": "mutualpassword"
}]
}

Response:

HTTP/1.1 204 No Content
Or:

HTTP/1.1 200 OK
{
(updated resource body)
}

Or:

HTTP/1.1 202 Accepted
Location: http://<ip:port>/redfish/v1/TaskService/Tasks/1/TaskMonitor
{
    "@odata.context": "/redfish/v1/$metadata#Task.Task",
    "@odata.id": "/redfish/v1/TaskService/Tasks/1",
    "@odata.type": "#Task.v1_0_0.Task",
    "Id": "1",
    "Name": "Task 1",
    "TaskState": "New",
    "StartTime": "2016-09-01T04:45:00+01:00",
    "TaskStatus": "OK",
    "Messages": [ ]
}

4.78.1.4 POST
Operation is not allowed on this resource.

4.78.1.5 DELETE
Operation is not allowed on this resource.

4.79 Update service
The Update service resource represents the properties required to invoke software/firmware update.

Note: In the current release, this functionality is not implemented.
4.79.1 Operations

4.79.1.1 GET

Request:

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

Response:

{
   "@odata.type": "#UpdateService.v1_0_2.UpdateService",
   "Id": "UpdateService",
   "Name": "Update service",
   "Status": {
      "State": "Disabled",
      "Health": null,
      "HealthRollup": null
   },
   "ServiceEnabled": false,
   "Actions": {
      "#UpdateService.SimpleUpdate": {
         "target": "/redfish/v1/UpdateService/Actions/SimpleUpdate",
         "@Redfish.ActionInfo": "/redfish/v1/UpdateService/Actions/SimpleUpdateActionInfo"
      },
      "Oem": {}
   },
   "Oem": {}
}

"@odata.context": "/redfish/v1/$metadata#UpdateService/$entity",
}

4.79.1.2 PUT

Operation is not allowed on this resource.

4.79.1.3 PATCH

Operation is not allowed on this resource.

4.79.1.4 POST

4.79.1.4.1 Simple update action

Operation is not allowed on this resource.

4.80 ActionInfo

ActionInfo describes the parameters and other information necessary to perform a Redfish Action to a particular Action target. Because parameter support can differ between implementations and even among instances of a resource, this data can be used to ensure Action requests from applications contain supported parameters.
4.80.1  **Operations**

4.80.1.1  **GET (UpdateService SimpleUpdate action)**

Request:

GET /redfish/v1/UpdateService/SimpleUpdateActionInfo  
Content-Type: application/json

Response:

```json
{
  "@odata.type": "#ActionInfo.v1_0_0.ActionInfo",
  "Parameters": [
    {
      "Name": "ImageURI",
      "Required": true,
      "DataType": "String"
    },
    {
      "Name": "TransferProtocol",
      "Required": false,
      "DataType": "String",
      "AllowableValues": []
    },
    {
      "Name": "Targets",
      "Required": false,
      "DataType": "StringArray",
      "AllowableValues": []
    }
  ],
  "Oem": {},
  "@odata.context": "/redfish/v1/$metadata#ActionInfo.ActionInfo",
  "@odata.id": "/redfish/v1/UpdateService/SimpleUpdateActionInfo"
}
```

4.80.1.2  **PUT**

Operation is not allowed on this resource.

4.80.1.3  **PATCH**

Operation is not allowed on this resource.

4.80.1.4  **POST**

Operation is not allowed on this resource.

4.80.1.5  **DELETE**

Operation is not allowed on this resource.
# Required Resources per Service Type

Table 32 lists the types of resources that are required per service type.

- **R** – Required
- **O** – Optional/recommended

## Table 32. Required Resources per Service Type

<table>
<thead>
<tr>
<th>Resource</th>
<th>PSME Compute</th>
<th>PSME Storage</th>
<th>PSME Network</th>
<th>PSME PNC</th>
<th>PSME RMM</th>
</tr>
</thead>
<tbody>
<tr>
<td>$metadata.xml</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
</tr>
<tr>
<td>AccountService.xml</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
</tr>
<tr>
<td>Chassis.xml</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
</tr>
<tr>
<td>ChassisCollection.xml</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
</tr>
<tr>
<td>ComposedNode.xml</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
</tr>
<tr>
<td>ComposedNodeCollection.xml</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ComputerSystem.xml</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
</tr>
<tr>
<td>ComputerSystemCollection.xml</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
</tr>
<tr>
<td>ComputerSystemMetrics.xml</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
</tr>
<tr>
<td>Drive.xml</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
</tr>
<tr>
<td>Endpoint.xml</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
</tr>
<tr>
<td>EndpointCollection.xml</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
</tr>
<tr>
<td>EthernetInterface.xml</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
</tr>
<tr>
<td>EthernetInterfaceCollection.xml</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
</tr>
<tr>
<td>EthernetSwitch.xml</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
</tr>
<tr>
<td>EthernetSwitchACL.xml</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
</tr>
<tr>
<td>EthernetSwitchACLCollection.xml</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
</tr>
<tr>
<td>EthernetSwitchACLRule.xml</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
</tr>
<tr>
<td>EthernetSwitchACLRuleCollection.xml</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
</tr>
<tr>
<td>EthernetSwitchCollection.xml</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
</tr>
<tr>
<td>EthernetSwitchMetrics.xml</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
</tr>
<tr>
<td>EthernetSwitchPort.xml</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
</tr>
<tr>
<td>EthernetSwitchPortCollection.xml</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
</tr>
<tr>
<td>EthernetSwitchPortMetrics.xml</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
</tr>
<tr>
<td>EthernetSwitchStaticMAC.xml</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
</tr>
<tr>
<td>EthernetSwitchStaticMACCollection.xml</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
</tr>
<tr>
<td>Event.xml</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
</tr>
<tr>
<td>EventDestination.xml</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
</tr>
<tr>
<td>EventDestinationCollection.xml</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
</tr>
<tr>
<td>EventService.xml</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
</tr>
<tr>
<td>Fabric.xml</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
</tr>
<tr>
<td>FabricCollection.xml</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
</tr>
<tr>
<td>IntelRackScaleOem.xml</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
</tr>
<tr>
<td>JsonSchemaFile.xml</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
</tr>
<tr>
<td>JsonSchemaFileCollection.xml</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
</tr>
<tr>
<td>LogEntry.xml</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
</tr>
<tr>
<td>LogEntryCollection.xml</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
</tr>
<tr>
<td>LogicalDrive.xml</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
</tr>
</tbody>
</table>
## Required Resources per Service Type

<table>
<thead>
<tr>
<th>Resource</th>
<th>PSME Compute</th>
<th>PSME Storage</th>
<th>PSME Network</th>
<th>PSME PNC</th>
<th>PSME RMM</th>
</tr>
</thead>
<tbody>
<tr>
<td>LogicalDriveCollection.xml</td>
<td>R</td>
<td></td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>LogService.xml</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LogServiceCollection.xml</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Manager.xml</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
</tr>
<tr>
<td>ManagerAccount.xml</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ManagerAccountCollection.xml</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ManagerCollection.xml</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
</tr>
<tr>
<td>ManagerNetworkProtocol.xml</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Memory.xml</td>
<td>R</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MemoryCollection.xml</td>
<td>R</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MemoryMetrics.xml</td>
<td>R</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Message.xml</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>MessageRegistry.xml</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>MessageRegistryCollection.xml</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>MessageRegistryFile.xml</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>MessageRegistryFileCollection.xml</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>MetricDefinition_v1.xml</td>
<td>R</td>
<td>O</td>
<td>R</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>MetricDefinitionCollection_v1.xml</td>
<td>R</td>
<td>O</td>
<td>R</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>MetricReport.xml</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>MetricReportCollection.xml</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>MetricReportDefinition_v1.xml</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>NetworkDeviceFunction.xml</td>
<td>R</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NetworkDeviceFunctionCollection.xml</td>
<td>R</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NetworkInterface.xml</td>
<td>R</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NetworkInterfaceCollection.xml</td>
<td>R</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PCIeDevice.xml</td>
<td>O</td>
<td></td>
<td></td>
<td>R</td>
<td></td>
</tr>
<tr>
<td>PCIeFunction.xml</td>
<td>O</td>
<td></td>
<td></td>
<td>R</td>
<td></td>
</tr>
<tr>
<td>PhysicalDrive.xml</td>
<td>R</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PhysicalDriveCollection.xml</td>
<td>R</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Port.xml</td>
<td>R</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PortCollection.xml</td>
<td>R</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PortMetrics.xml</td>
<td>O</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Power.xml</td>
<td>O</td>
<td></td>
<td></td>
<td>R</td>
<td></td>
</tr>
<tr>
<td>PowerZone.xml</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PowerZoneCollection.xml</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Privileges.xml</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Processor.xml</td>
<td>R</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ProcessorCollection.xml</td>
<td>R</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ProcessorMetrics.xml</td>
<td>R</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Redundancy.xml</td>
<td></td>
<td></td>
<td></td>
<td>R</td>
<td></td>
</tr>
<tr>
<td>RemoteTarget.xml</td>
<td></td>
<td></td>
<td></td>
<td>R</td>
<td></td>
</tr>
<tr>
<td>RemoteTargetCollection.xml</td>
<td></td>
<td></td>
<td></td>
<td>R</td>
<td></td>
</tr>
<tr>
<td>Role.xml</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RoleCollection.xml</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SensorRegistry_v1.xml</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## Required Resources per Service Type

<table>
<thead>
<tr>
<th>Resource</th>
<th>PSME Compute</th>
<th>PSME Storage</th>
<th>PSME Network</th>
<th>PSME PNC</th>
<th>PSME RMM</th>
</tr>
</thead>
<tbody>
<tr>
<td>SerialInterface.xml</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SerialInterfaceCollection.xml</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ServiceRoot.xml</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Session.xml</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>R</td>
</tr>
<tr>
<td>SessionCollection.xml</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SessionService.xml</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Settings.xml</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SimpleStorage.xml</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SimpleStorageCollection.xml</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Storage.xml</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>StorageCollection.xml</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>StorageService.xml</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>StorageServiceCollection.xml</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Switch.xml</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SwitchCollection.xml</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Task.xml</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TaskCollection.xml</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TaskService.xml</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TelemetryService_v1.xml</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Thermal.xml</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ThermalZone.xml</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ThermalZoneCollection.xml</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Triggers_v1.xml</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TriggersCollection_v1.xml</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>VirtualMedia.xml</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>VirtualMediaCollection.xml</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>VLanNetworkInterface.xml</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>VLanNetworkInterfaceCollection.xml</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Volume.xml</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>VolumeCollection.xml</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Zone.xml</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ZoneCollection.xml</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---

**Intel® Rack Scale Design PSME REST**
**API Specification Software v2.2**
148

---

Document Number: 336855-001
December 19, 2017
6 Common Property Description

6.1 Status

Table 33. Status

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Type</th>
<th>Nullable</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>State</td>
<td>String</td>
<td>Yes</td>
<td>This indicates the known state of the resource, such as if it is enabled. Allowed values: Refer to section 6.2.</td>
</tr>
<tr>
<td>Health</td>
<td>String</td>
<td>Yes</td>
<td>This represents the health state of this resource in the absence of its dependent resources. Allowed values: Refer to section 6.3.</td>
</tr>
<tr>
<td>HealthRollup</td>
<td>String</td>
<td>Yes</td>
<td>This represents the overall health state from the view of this resource. Allowed values: Refer to section 6.3.</td>
</tr>
</tbody>
</table>

6.2 Status -> State

- Enabled: This function or resource has been enabled
- Disabled: This function or resource has been disabled
- StandbyOffline: This function or resource is enabled, but awaiting an external action to activate it
- StandbySpare: This function or resource is part of a redundancy set and is awaiting a failover or other external action to activate it.
- InTest: This function or resource is undergoing testing
- Starting: This function or resource is starting
- Absent: This function or resource is not installed
- UnavailableOffline: This function or resource is present but cannot be used
- Deferring: The element does not process any commands, but queues new requests.
- Quiesced: The element is enabled, but processes a restricted set of commands.
- Updating: The element is updating and may be unavailable or degraded.

6.3 Status -> Health

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

6.4 ComputerSystem.Reset

- On: Turns the system on
- ForceOff: Turns the system off immediately (nongraceful) shutdown
- GracefulRestart: Performs a graceful system shutdown followed by a restart of the system
- ForceRestart: Performs an immediate (non-graceful) shutdown, followed by a restart of the system
- Nmi: Generates a nonmaskable interrupt to cause an immediate system halt
- ForceOn: Turns the system on immediately
- PushPowerButton: Simulates the pressing of the physical power button on this system
- GracefulShutdown: Performs a graceful system shutdown and power off
6.5 **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
- SDCard: Boot from an SD Card
- UefiHttp: Boot from a UEFI HTTP network location
- RemoteDrive: Boot from a remote drive (e.g., iSCSI)