Redfish Scalable Platforms Management API Specification

Foreword

Acknowledgments

1. Abstract

2. Normative references

3. Terms and definitions

Term	Definition

Term	Definition
	NOTE

4. Symbols and abbreviated terms

Term	Definition

5. Overview

5.1. Scope

5.2. Goals

5.5. Additional design background and rationale

5.5.1. REST-based

5.5.2. Follow OData conventions

5.5.3. Model-oriented

5.5.4. Separation of protocol from data model

5.5.5. Hypermedia API service endpoint

5.6. Service elements

5.6.1. Synchronous and asynchronous operation support

5.6.2. Eventing mechanism

5.6.3. Actions

actions

5.6.4. Service entry point discovery

5.6.5. Remote access support

5.7. Security

6. Protocol details

6.1. Use of HTTP

6.1.1. URIs

```
Example: https://mgmt.vendor.com/redfish/v1/Systems/1
```

```
                                        https://mgmt.vendor.com
                                        /redfish/v1/
                                Systems/1
```

identifier

uniquely

identifies

```
Example: /redfish/v1/Systems/2
```

```
                    https://mgmt.vendor.com/redfish/v1/Systems/2
```

6.1.2. HTTP methods

HTTP Method	Interface Semantic	Required

6.1.3. HTTP redirect

6.1.4. Media types

6.1.5. ETags

```
ETag: W/"<string>"
```

6.2. Protocol version

MajorVersion MinorVersion Errata

> *MajorVersion*
> *MinorVersion*
>
> *Errata*

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

6.3. Redfish-defined URIs and relative URI rules

URI	Description

URI	Description
	_____
	_____
	_____

URI	Associated Redfish-Defined URI

6.4. Requests

6.4.1. Request headers

Header	Required	Supported Values	Description
		_____	

Header	Required	Supported Values	Description
			application/json application/json;charset=utf-8 application/xml application/xml;charset=utf-8
		_____ ___	
		_____	
		_____	application/json application/json;charset=utf-8
		_____ ___	

Header	Required	Supported Values	Description
		[link]	[link]
		[link]	
		[link]	
		[link] [link]	
		[link]	
		[link]	
		[link]	[link]

Header	Required	Supported Values	Description

6.4.2. Read requests (GET)

6.4.2.1. Service root request

6.4.2.2. Metadata document request

6.4.2.3. OData service document request

6.4.2.4. Resource retrieval requests

6.4.2.4.1. Query parameters

Attribute	Description	Example
		`http://collection?$skip=5`
		`http://collection?$top=30`

6.4.2.4.2. Retrieving collections

6.4.3. HEAD

6.4.4. Data modification requests

6.4.4.1. Update (PATCH)

6.4.4.2. Replace (PUT)

6.4.4.3. Create (POST)

6.4.4.4. Delete (DELETE)

6.4.4.5. Actions (POST)

ResourceUri   *QualifiedActionName*

        ResourceUri

        QualifiedActionName

`http://redfish.dmtf.org/schemas/v1/` `ComputerSystem_v1.xml` `ComputerSystem` `ComputerSystem.v1_0_0.Actions`

```
<Schema Name="ComputerSystem">
  ...
  <Action Name="Reset" IsBound="true">
    <Parameter Name="Resource" Type="ComputerSystem.v1_0_0.Actions"/>
    <Parameter Name="ResetType" Type="Resource.ResetType"/>
  </Action>
  ...
</Schema>
```

```
...
"Actions": {
    "#ComputerSystem.Reset": {
        "target":"/redfish/v1/Systems/1/Actions/ComputerSystem.Reset",
        "ResetType@Redfish.AllowableValues": [
            "On",
            "ForceOff",
            "GracefulRestart",
            "GracefulShutdown",
            "ForceRestart",
            "Nmi",
            "ForceOn",
            "PushPowerButton"
        ]
    }
}
...
```

```
POST /redfish/v1/Systems/1/Actions/ComputerSystem.Reset HTTP/1.1
Content-Type: application/json;charset=utf-8
Content-Length: <computed length>
OData-Version: 4.0

{
    "ResetType": "On"
}
```

6.5. Responses

6.5.1. Response headers

Header	Required	Supported Values	Description
		_____	application/json application/xml ;charset=utf-8
		_____	
		_____ __	
		_____	
		_____	

Header	Required	Supported Values	Description
		‾‾‾‾ ‾‾‾‾‾‾‾	‾‾‾‾‾‾‾‾‾‾
		‾‾‾‾‾‾‾	
		‾‾‾‾‾‾‾	
		‾‾‾‾‾‾‾	
		‾‾‾‾‾‾‾	
		‾‾‾‾‾ ‾‾‾‾‾‾	
		‾‾‾‾‾‾‾	‾‾‾‾‾‾

Header	Required	Supported Values	Description
		_____	

6.5.1.1. Link header

_____

```
        rel=describedby
    rel=describedby
```

```
                                                rel=describedby
```

6.5.2. Status codes

_____

HTTP Status Code	Description

HTTP Status Code	Description

6.5.3. Metadata responses

6.5.3.1. Service metadata

```xml
<edmx:Edmx xmlns:edmx="http://docs.oasis-open.org/odata/ns/edmx" Version="4.0">

</edmx:Edmx>
```

6.5.3.1.1. Referencing other schemas

```xml
<edmx:Reference Uri="http://redfish.dmtf.org/schemas/v1/AccountService_v1.xml">
  <edmx:Include Namespace="AccountService"/>
  <edmx:Include Namespace="AccountService.v1_0_0"/>
</edmx:Reference>
<edmx:Reference Uri="http://redfish.dmtf.org/schemas/v1/ServiceRoot_v1.xml">
    <edmx:Include Namespace="ServiceRoot"/>
    <edmx:Include Namespace="ServiceRoot.v1_0_0"/>
</edmx:Reference>

...

<edmx:Reference Uri="http://redfish.dmtf.org/schemas/v1/VirtualMedia_v1.xml">
  <edmx:Include Namespace="VirtualMedia"/>
  <edmx:Include Namespace="VirtualMedia.v1_0_0"/>
</edmx:Reference>
<edmx:Reference Uri="http://redfish.dmtf.org/schemas/v1/RedfishExtensions_v1.xml">
```

```
    <edmx:Include Namespace="RedfishExtensions.v1_0_0" Alias="Redfish"/>
</edmx:Reference>
```

```
<edmx:DataServices>
    <Schema xmlns="http://docs.oasis-open.org/odata/ns/edm" Namespace="Service">
      <EntityContainer Name="Service" Extends="ServiceRoot.v1_0_0.ServiceContainer"/>
    </Schema>
</edmx:DataServices>
```

6.5.3.1.2. Referencing OEM extensions

```
<edmx:Reference Uri="http://contoso.org/Schema/CustomTypes">
    <edmx:Include Namespace="CustomTypes"/>
</edmx:Reference>
```

6.5.3.1.3. Annotations

```
<edmx:Reference Uri="http://service/metadata/Service.Annotations">
    <edmx:IncludeAnnotations TermNamespace="Annotations.v1_0_0"/>
</edmx:Reference>
```

```
<Annotations Target="ComputerSystem.Reset/ResetType">
  <Annotation Term="Annotation.AdditionalValues">
    <Collection>
      <String>Update and Restart</String>
```

```xml
            <String>Update and PowerOff</String>
        </Collection>
      </Annotation>
  </Annotations>
```

6.5.3.2. OData Service Document

```json
{
    "@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"
        },
        ...
    ]
}
```

application/
json

[link]

```
...
"@odata.context":"/redfish/v1/$metadata#ComputerSystem.ComputerSystem"
...
```

6.5.4.2. Resource identifier property

6.5.4.3. Type property

*#   .

Namespace

TypeName

6.5.4.4. ETag property

6.5.4.5. Primitive properties

Type	JSON Representation

Type	JSON Representation
	[ ]

6.5.4.5.1. DateTime values

```
*YYYY*-*MM*-*DD* T *hh*:*mm*:*ss*[.*SSS*] (Z | (+ | - ) *hh*:*mm*)
```

SSS

6.5.4.6. Structured properties

6.5.4.7. Collection properties

```
...
"#ComputerSystem.Reset": {
    "target":"/redfish/v1/Systems/1/Actions/ComputerSystem.Reset",
    "ResetType@Redfish.AllowableValues": [
        "On",
        "ForceOff",
        "GracefulRestart",
        "GracefulShutdown",
        "ForceRestart",
        "Nmi",
        "ForceOn",
        "PushPowerButton"
        ]
    }
...
```
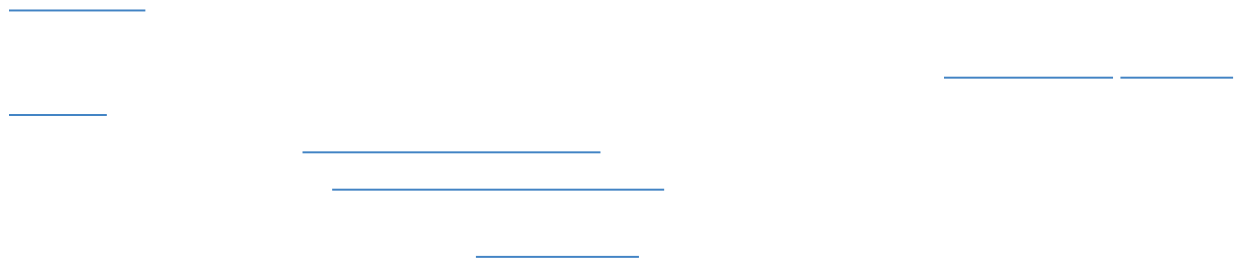
```
{
    "ResetType": "On"
}
```

6.5.4.8.2. Allowable values

6.5.4.9. Links property

6.5.4.9.1. Reference to a single related resource

```
{
  "Links" : {
    "ManagedBy": {
      "@odata.id":"/redfish/v1/Chassis/Encl1"
    }
  }
}
```

6.5.4.9.2. Array of references to related resources

```
{
  "Links" : {
    "Contains" : [
      {
        "@odata.id":"/redfish/v1/Chassis/1"
      },
      {
        "@odata.id":"/redfish/v1/Chassis/Encl1"
      }
    ]
  }
}
```

6.5.4.10. OEM property

6.5.4.11. Extended information

6.5.4.11.1. Extended object information

```json
{
    "@odata.context": "/redfish/v1/$metadata#SerialInterface.SerialInterface",
    "@odata.id": "/redfish/v1/Managers/1/SerialInterfaces/1",
    "@odata.type": "#SerialInterface.v1_0_0.SerialInterface",
    "Name": "Managed Serial Interface 1",
    "Description": "Management for Serial Interface",
    "Status": {
        "State": "Enabled",
        "Health": "OK"
    },
    "InterfaceEnabled": true,
    "SignalType": "Rs232",
    "BitRate": "115200",
    "Parity": "None",
    "DataBits": "8",
    "StopBits": "1",
    "FlowControl": "None",
    "ConnectorType": "RJ45",
    "PinOut": "Cyclades",
    "@Message.ExtendedInfo" : [
        {
            "MessageId": "Base.1.0.PropertyDuplicate",
            "Message": "The property InterfaceEnabled was duplicated in the request.",
            "RelatedProperties": [
                "#/InterfaceEnabled"
            ],
            "Severity": "Warning",
            "Resolution": "Remove the duplicate property from the request body and
resubmit the request if the operation failed."
        }
    ]
}
```

6.5.4.11.2. Extended property information

```
{
    "@odata.context": "/redfish/v1/$metadata#SerialInterface.SerialInterface",
    "@odata.id": "/redfish/v1/Managers/1/SerialInterfaces/1",
    "@odata.type": "#SerialInterface.v1_0_0.SerialInterface",
    "Name": "Managed Serial Interface 1",
    "Description": "Management for Serial Interface",
    "Status": {
        "State": "Enabled",
        "Health": "OK"
    },
    "InterfaceEnabled": true,
    "SignalType": "Rs232",
    "BitRate": 115200,
    "Parity": "None",
    "DataBits": 8,
    "StopBits": 1,
    "FlowControl": "None",
    "ConnectorType": "RJ45",
    "PinOut": "Cyclades",
    "PinOut@Message.ExtendedInfo" : [
        {
            "MessageId": "Base.1.0.PropertyValueNotInList",
            "Message": "The value Contoso for the property PinOut is not in the list of
acceptable values.",
            "Severity": "Warning",
            "Resolution": "Choose a value from the enumeration list that the
implementation can support and resubmit the request if the operation failed."
        }
    ]
}
```

6.5.4.12. Additional annotations

PropertyName   Namespace TermName

PropertyName

Namespace

TermName

6.5.5. Collection resource response

6.5.5.1. Context property

MetadataUrl   *CollectionResourceType MetadataUrl*   *CollectionResourcePath*

MetadataUrl
CollectionResourceType

CollectionResourcePath

6.5.5.2. Resource count property

6.5.5.3. Resource members property

6.5.5.4. Partial results

6.5.5.5. Additional annotations

Namespace TermName

    Namespace

    TermName

6.5.6. Error responses

Property	Description
	_____

```
{
    "error": {
        "code": "Base.1.0.GeneralError",
        "message": "A general error has occurred. See ExtendedInfo for more
information.",
        "@Message.ExtendedInfo": [
            {
                "@odata.type" : "/redfish/v1/$metadata#Message.v1_0_0.Message",
                "MessageId": "Base.1.0.PropertyValueNotInList",
                "RelatedProperties": [
                    "#/IndicatorLED"
                ],
                "Message": "The value Red for the property IndicatorLED is not in the
list of acceptable values",
                "MessageArgs": [
                    "RED",
                    "IndicatorLED"
                ],
                "Severity": "Warning",
                "Resolution": "Remove the property from the request body and resubmit
the request if the operation failed"
            },
            {
                "@odata.type" : "/redfish/v1/$metadata#Message.v1_0_0.Message",
                "MessageId": "Base.1.0.PropertyNotWriteable",
                "RelatedProperties": [
                    "#/SKU"
                ],
                "Message": "The property SKU is a read only property and cannot be
assigned a value",
                "MessageArgs": [
                    "SKU"
                ],
                "Severity": "Warning",
                "Resolution": "Remove the property from the request body and resubmit
```

```
the request if the operation failed"
            }
        ]
    }
}
```

6.5.6.1. Message object

Property	Description

RegistryName MajorVersion MinorVersion MessageKey

RegistryName
MajorVersion
MinorVersion
MessageKey

7. Data model and Schema

7.1. Schema repository

URL	Folder contents

7.1.1. Programmatic access to schema files

7.2. Type identifiers

Type URI

*#   .

Namespace
TypeName

ResourceTypeName   MajorVersionMinorVersionErrata

ResourceTypeName

MajorVersion
MinorVersion

Errata

7.2.1. Type identifiers in JSON

7.3. Common naming conventions

7.4. Localization considerations
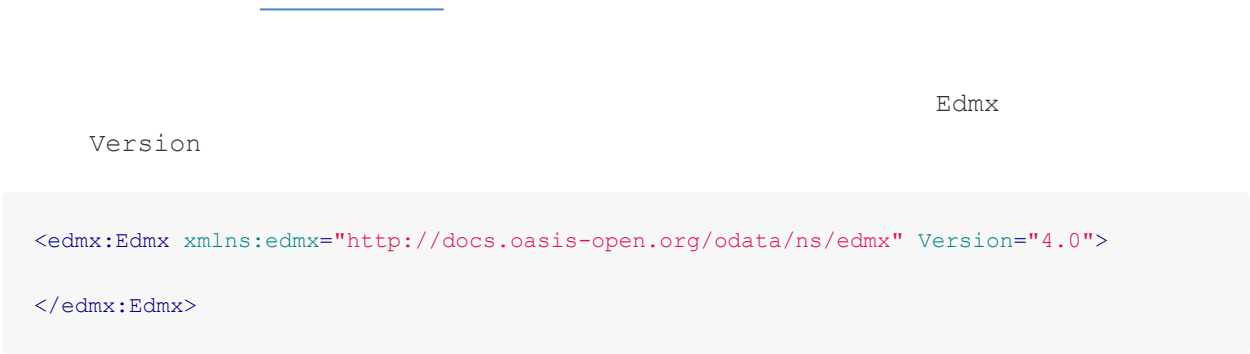
7.5. Schema definition

7.5.1. Common annotations

7.5.1.1. Description

Description

7.5.1.2. Long description

LongDescription

7.5.2. Schema documents

Edmx

Version

```xml
<edmx:Edmx xmlns:edmx="http://docs.oasis-open.org/odata/ns/edmx" Version="4.0">

</edmx:Edmx>
```

7.5.2.1. Referencing other schemas

Reference

Uri

Include   Namespace

Alias

```xml
<edmx:Reference Uri="http://docs.oasis-open.org/odata/odata/v4.0/cs01/vocabularies/
Org.OData.Core.V1.xml">
    <edmx:Include Namespace="Org.OData.Core.V1" Alias="OData"/>
</edmx:Reference>
```

```
<edmx:Reference
   Uri="http://docs.oasis-open.org/odata/odata/v4.0/os/vocabularies/
Org.OData.Measures.V1.xml">
   <edmx:Include Namespace="Org.OData.Measures.V1" Alias="Measures"/>
</edmx:Reference>
<edmx:Reference Uri="http://redfish.dmtf.org/schemas/v1/RedfishExtensions_v1.xml">
   <edmx:Include Namespace="RedfishExtensions.v1_0_0" Alias="Redfish"/>
</edmx:Reference>
<edmx:Reference Uri="http://redfish.dmtf.org/schemas/v1/Resource_v1.xml">
   <edmx:Include Namespace="Resource"/>
   <edmx:Include Namespace="Resource.v1_0_0"/>
</edmx:Reference>
```
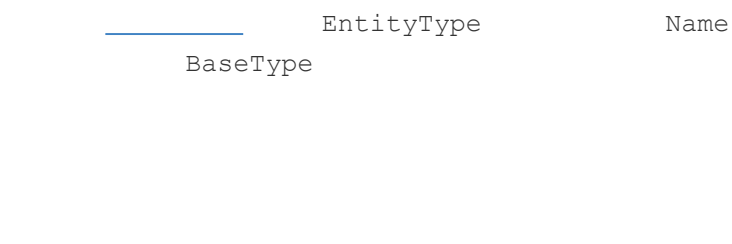
7.5.2.2. Namespace definitions

Schema   Namespace
Alias

                              DataServices   _____

```
<edmx:DataServices>
   <Schema xmlns="http://docs.oasis-open.org/odata/ns/edm" Namespace="MyTypes.v1_0_0">



   </Schema>
</edmx:DataServices>
```

7.5.3. Resource type definitions

                  _____   EntityType   Name
                              BaseType

            _____   _____

```
        <EntityType Name="TypeA" BaseType="Resource.v1_0_0.Resource">
          <Annotation Term="OData.Description" String="This is the description of
TypeA."/>
          <Annotation Term="OData.LongDescription" String="This is the specification of
TypeA."/>



        </EntityType>
```

7.5.4. Resource properties

Property   Name
                                Type

Name

```
        <Property Name="Property1" Type="Edm.String" Nullable="false">
          <Annotation Term="OData.Description" String="This is a property of TypeA."/>
          <Annotation Term="OData.LongDescription" String="This is the specification
of Property1."/>
          <Annotation Term="OData.Permissions" EnumMember="OData.Permission/Read"/>
          <Annotation Term="Redfish.Required"/>
          <Annotation Term="Measures.Unit" String="Watts"/>
        </Property>
```

ODataPermission/Read

7.5.4.1. Property types

Type

7.5.4.1.1. Primitive types

Type	Meaning

7.5.4.1.2. Structured types

ComplexType   Name

BaseType

```xml
<ComplexType Name="PropertyTypeA">
  <Annotation Term="OData.Description" String="This is type used to describe a
structured property."/>
  <Annotation Term="OData.LongDescription" String="This is the specification of
the type."/>



</ComplexType>
```

7.5.4.1.3. Enums

EnumType   Name

Member

Name

```xml
<EnumType Name="EnumTypeA">
   <Annotation Term="OData.Description" String="This is the EnumTypeA
enumeration."/>
   <Annotation Term="OData.LongDescription" String="This is used to describe the
EnumTypeA enumeration."/>
   <Member Name="MemberA">
     <Annotation Term="OData.Description" String="Description of MemberA"/>
   </Member>
   <Member Name="MemberB">
     <Annotation Term="OData.Description" String="Description of MemberB"/>
   </Member>
</EnumType>
```

7.5.4.1.4. Collections

NamespaceQualifiedTypeName

NamespaceQualifiedTypeName

7.5.4.2. Additional properties

"False"

```
<Annotation Term="OData.AdditionalProperties"/>
```

AdditionalProperties _____

_____

7.5.4.3. Non-nullable properties

"true"

```
<Property Name="Property1" Type="Edm.String" Nullable="false">
```

7.5.4.4. Read-only properties

OData.Permission/

Read

```
<Annotation Term="OData.Permissions" EnumMember="OData.Permission/Read"/>
```

Permissions _____

_____

7.5.4.5. Required properties

"false"

```
<Annotation Term="Redfish.Required"/>
```

Required _____

_____

7.5.4.6. Required properties on create

Boolean   "false"

```
<Annotation Term="Redfish.RequiredOnCreate"/>
```

RequiredOnCreate   _____

_____

7.5.4.7. Units of measure

_____

_____

```
<Annotation Term="Measures.Unit" String="MiBy"/>
```

Unit   _____

_____

7.5.5. Reference properties

NavigationProperty   NavigationProperty   Name
                    [Type](#)

```
      <NavigationProperty Name="RelatedType" Type="MyTypes.TypeB">
        <Annotation Term="OData.Description" String="This property references a
related resource."/>
        <Annotation Term="OData.LongDescription" String="This is the specification of
the related property."/>
        <Annotation Term="OData.AutoExpandReferences"/>
      </NavigationProperty>
```

```
      <NavigationProperty Name="RelatedTypes" Type="Collection(MyTypes.TypeB)"
Nullable="false">
        <Annotation Term="OData.Description" String="This property represents a
collection of related resources."/>
        <Annotation Term="OData.LongDescription" String="This is the specification of
the related property."/>
        <Annotation Term="OData.AutoExpandReferences"/>
      </NavigationProperty>
```

7.5.5.1. Contained resources

ContainsTarget   true

ContainsTarget=true

```
        <NavigationProperty Name="Power" Type="Power.Power" ContainsTarget="true">
          <Annotation Term="OData.Description" String="A reference to the power
properties (power supplies, power policies, sensors) for this chassis."/>
          <Annotation Term="OData.LongDescription" String="The value of this property
shall be a reference to the resource that represents the power characteristics of this
chassis and shall be of type Power."/>
          <Annotation Term="OData.AutoExpandReferences"/>
        </NavigationProperty>
```

7.5.5.2. Expanded references

<u></u>

<u></u>

```
<Annotation Term="OData.AutoExpandReferences"/>
```

`AutoExpandReferences` <u></u>

<u></u>

7.5.5.3. Expanded resources

<u></u>

<u></u>   <u></u>

```
<Annotation Term="OData.AutoExpand"/>
```

`AutoExpand` <u></u>

<u></u>

7.5.6. Resource actions

```
<Property Name="Actions" Type="MyType.Actions">
```

<u></u>

```
<ComplexType Name="Actions">
  <Property Name="OEM" Type="MyType.OEMActions"/>
</ComplexType>

<ComplexType Name="OEMActions"/>
```

<u></u>   Action   Name

IsBound

Parameter   Name   Type

*', or an IANA-assigned Enterprise Number prefaced
with "EID*

7.5.8. Oem property examples

```
...
  "Oem": {
    "Contoso": {
      "@odata.type": "http://contoso.com/schemas/
```

```
extensions.v1_2_1#contoso.AnvilTypes1",
      "slogan": "Contoso anvils never fail",
      "disclaimer": "* Most of the time"
    },
    "Contoso_biz": {
      "@odata.type": "http://contoso.biz/schemas/extension1_1#RelatedSpeed",
      "speed" : "ludicrous"
    },
    "EID_412_ASB_123": {
      "@odata.type": "http://AnotherStandardsBody/schemas.v1_0_1#powerInfoExt",
      "readingInfo": {
        "readingAccuracy": "5",
        "readingInterval": "20"
      }
    },
    "Contoso_customers_customerA": {
      "@odata.type" : "http://slingShots.customerA.com/catExt.2015#slingPower",
      "AvailableTargets" : [ "rabbit", "duck", "runner" ],
      "launchPowerOptions" : [ "low", "medium", "eliminate" ],
      "powerSetting" : "eliminate",
      "targetSetting" : "rabbit"
    }
  }
...
```

7.5.8.1. Custom actions

```xml
  <Action Name="Ping" IsBound="true">
    <Parameter Name="ContosoType" Type="MyType.OEMActions"/>
  </Action>

</Schema>
```

```
...
"Actions": {
    "OEM": {
        "Contoso.vx_x_x#Contoso.Ping": {
```

```
                "target":"/redfish/v1/Systems/1/Actions/OEM/Contoso.Ping"
            }
        }
    }
...
```

7.5.8.2. Custom annotations

7.6. Common Redfish resource properties

7.6.1. Id

7.6.2. Name

7.6.3. Description

7.6.4. Status

7.6.5. Links

[_____]

7.6.6. Members

7.6.7. RelatedItem

[_____]

7.6.8. Actions

[_____]

7.6.9. OEM

[_____]   [_____]

7.7. Redfish resources

7.7.1. Current configuration

7.7.2. Settings

7.7.3. Services

7.7.4. Registry

7.8. Special resource situations

7.8.1. Absent resources

7.8.2. Schema variations

8. Service details

8.1. Eventing

8.1.1. Event message subscription

8.1.2. Event message objects

RegistryName MajorVersion MinorVersion MessageKey

      RegistryName
      MajorVersion
      MinorVersion
      MessageKey

8.1.3. Subscription cleanup

8.2. Asynchronous operations

8.3. Resource tree stability

8.4. Discovery

8.4.1. UPnP compatibility

8.4.2. USN format

8.4.3. M-SEARCH response

```
HTTP/1.1 200 OK
CACHE-CONTROL:max-age=<seconds, at least 1800>
ST:urn:dmtf-org:service:redfish-rest:1
USN:uuid:<UUID of Manager>::urn:dmtf-org:service:redfish-rest:1
AL:<URL of Redfish service root>
EXT:
```

8.4.4. Notify, alive, and shutdown messages

9. Security

9.1. Protocols

9.1.1. TLS

9.1.2. Cipher suites

```
TLS_PSK_WITH_AES_256_GCM_SHA384
TLS_DHE_PSK_WITH_AES_256_GCM_SHA384
TLS_RSA_PSK_WITH_AES_256_GCM_SHA384
```

```
http://tools.ietf.org/html/rfc5487
http://tools.ietf.org/html/rfc5288
```

9.1.3. Certificates

9.2. Authentication

9.2.1. HTTP header security

9.2.1.1. HTTP redirect

9.2.2. Extended error handling

9.2.3. HTTP header authentication

9.2.3.1. BASIC authentication

9.2.3.2. Request/Message level authentication

9.2.4. Session Management

9.2.4.1. Session lifecycle management

A Redfish Service shall provide login sessions compliant with this specification.

9.2.4.2. Redfish login sessions

```
...
    "SessionService": {
        "@odata.id": "/redfish/v1/SessionService"
    },
    "Links": {
        "Sessions": {
            "@odata.id": "/redfish/v1/SessionService/Sessions"
```

```
            }
        }
...
```

9.2.4.3. Session login

```
POST /redfish/v1/SessionService/Sessions HTTP/1.1
Host: <host-path>
Content-Type: application/json;charset=utf-8
Content-Length: <computed-length>
Accept: application/json;charset=utf-8
OData-Version: 4.0

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

```
Location: /redfish/v1/SessionService/Sessions/1
X-Auth-Token: <session-auth-token>

{
    "@odata.context": "/redfish/v1/$metadata#Session.Session",
    "@odata.id": "/redfish/v1/SessionService/Sessions/1",
    "@odata.type": "#Session.v1_0_0.Session",
    "Id": "1",
    "Name": "User Session",
    "Description": "User Session",
    "UserName": "<username>"
}
```

9.2.4.4. X-Auth-Token HTTP header

9.2.4.5. Session lifetime

9.2.4.6. Session termination or logout

9.2.5. AccountService

9.2.6. Async tasks

9.2.7. Event subscriptions

9.2.8. Privilege model/Authorization

10. ANNEX A (informative)

10.1. Change log

Version	Date	Description

Version	Date	Description

Version	Date	Description