Redfish Resource and Schema Guide

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Overview

The Redfish standard comprises a set of specifications maintained by the Redfish Forum, a working group within the DMTF. The standard defines a protocol that uses RESTful interfaces to provide access to data and operations associated with the management of systems and networks. One of the strengths of the Redfish protocol is that it works with a wide range of servers: from stand-alone servers to rack-mount and bladed environments to large-scale data centers and cloud environments.

The Redfish standard addresses several key issues for infrastructures that require scalability. Large infrastructures often consist of many simple servers of different makes and types. This hyper-scale usage model requires a new approach to systems management. The Redfish Scalable Platforms Management ("Redfish") protocol addresses these needs by providing a standard protocol based on out-of-band systems management.

With the above goals in mind, the Redfish protocol was designed as an open industry standard to meet scalability requirements in multi-vendor deployments. It easily integrates with commonly used tools, using RESTful interfaces to perform operations and using JSON and OData formats for data payloads.

Who should read this document?

This document is useful to people who want to understand how to use the Redfish API. This includes application developers who want to create client-side software to communicate with a Redfish service, and other consumers of the API.

Where can I find more information?

The following web sites provide more information about the Redfish standard:

- **Redfish Developer Hub:** http://redfish.dmtf.org Resources for developers building applications using Redfish. Contains an interactive schema explorer, hosted schema and other links.
- **Redfish User Forum:** http://www.redfishforum.com User forum monitored by DMTF Redfish personnel to answer questions about any Redfish-related topics:
- **DMTF Github Repositories:** http://www.github.com/DMTF Open source tools and libraries for working with Redfish.
- **Redfish Standards:** http://www.dmtf.org/standards/redfish Schemas, specs, mockups, white papers, FAQ, educational material and more.
- **DMTF Redfish Forum** (Working group that maintains the Redfish standard): http://www.dmtf.org/standards/spmf Companies involved, upcoming schedules and future work, charter, and information about joining.

Using this guide

Every Redfish response consists of a JSON payload containing properties that are strictly defined by a schema for that resource. The schema defining a particular resource can be determined from the value of the "@odata.type" property returned in every Redfish response. This guide details the definitions for every Redfish standard schema.

Each schema section contains:

- The name, current version and description of the schema.
- The release history of the schema, listing each minor schema version and the DSP8010 release bundle which included it.
- A listing of the possible URIs where resources defined by this schema can appear in a Redfish Service (v1.6 or later). See URI listings below for more information.
- A table defining each property with additional details for those properties when needed.
- A listing of the available Actions defined for the schema.
- An example JSON payload for a resource using the schema.

The property-level details include:

Column	Purpose
Property Name	The name of the JSON property as it will appear (case sensitive) in the JSON payload. For properties added to the schema after the initial release (v1.0.0), the version that the property was added will be shown in parenthesis. Properties that have been deprecated will also be indicated (along with the version where the deprecation occurred).
Type	The JSON data type(s) for the property. This can include boolean, number, string or object. String types that use defined enumerations will state "(enum)". Number types will state their units where used.
Attributes	Designates whether the property is read-only or read-write (if supported by the implementation), and whether a 'null' value may be returned by the Service if the value of the property is temporarily unavailable.
Description	The description of the property, as copied directly from the schema 'Description' definition.

URI listings

The Redfish Specification v1.6.0 added mandatory support for the OpenAPI Specification v3.0. As part of this support, the URIs for every Redfish Resource are defined to appear at known, fixed locations. Resource Collections also appear at fixed locations, with the Members of each collection appearing at URIs constructed using a fixed path structure, with appropriate path segments equal to the value of "Id" properties of Members along the path.

Support for v1.6.0 and OpenAPI can be determined by comparing the value of the "RedfishVersion" property in the Service Root (\redfish\v1). Services reporting a value of "1.6.0" or higher (such as "1.6.1" or "1.7.0") adhere to the URI definitions shown.

The URI listings do not apply to Redfish Services reporting support of Specification versions prior to v1.6.0. For those Services, clients must utilize the hypermedia features of the API to discover links from the Service Root to each resource. While Services will typically match the URIs listed in this documents for many of their resources, this is not guaranteed and will result in errors.

Common properties

Properties defined for all Redfish schemas

The following properties are defined for inclusion in every Redfish schema, and therefore may be encountered in any Response payload. They are documented here to avoid repetition in the Reference Guide property tables. Note that several of these properties are payload annotations, but are listed here as they are required for all Redfish resources.

@odata.context	string	read-only	The @odata.context property is a URL to a metadata document with a fragment describing the data (typically rooted at the top-level singleton or collection). Technically the metadata document only has to define, or reference, any of the types that it directly uses, and different payloads could reference different metadata documents. However, since the @odata.context provides a root URL for resolving relative references (such as @odata.id's), we return the canonical metadata document.
@odata.etag	string	read-only	The current ETag for the resource.
@odata.id	string	read-only required	The @odata.id property is a string that indicates the unique identifier of a resource.
@odata.type	string	read-only required	The type of a resource.
Description	string	read-only	The Description property is used to convey a human-readable description of the resource.
Id	string	read-only	The Id property of a resource uniquely identifies the resource within the Resource Collection that contains it. The value of Id is unique within a Resource Collection.
Name	string	read-only required	The Name property is used to convey a human-readable moniker for a resource. The type of the Name property is a string. The value of Name is NOT necessarily unique across resource instances within a Resource Collection.
Oem { }	object		This is the manufacturer/provider specific extension moniker used to divide the Oem object into sections.

Frequently used properties

In addition, the following properties are frequently defined in Redfish schemas. Their definition and usage is the same throughout the Redfish data model.

Actions { }	object		This object contains definitions for the Redfish Actions available for this resource.
Links { }	object		The Links property represents the links associated with the resource, as defined by that resource's schema definition. All associated reference properties defined for a resource are nested under the Links property. All directly referenced (subordinate) properties defined for a resource can be found from the root of the resource.
RelatedItem [{	array		The RelatedItem property is represented as a set of links. The links point to a resource, or part of a resource, as defined by that resource's schema definition. This representation is not intended to be a strong linking methodology like other references. Instead it is used to show a relationship between elements or sub-elements in disparate parts of the service. For example, Fans may be in one area of the system and Processors in another area of the system. It could be that the relationship between the two is not obvious. The RelatedItem property can be used to show that one is related to the other. In this example, it might indicate that a specific fan is cooling a specific processor.
@odata.id }]	string	read-only	The unique identifier for a resource.

Payload annotations

Payload annotations are a mechanism in which a service provides additional information about a given property or object. Redfish limits usage of these annotations to OData core terms, Redfish Extensions or Redfish Messages.

Property-level annotations

A payload annotation for a single property takes the form of an additional property named `Property@Schema.Term`, where `Property` is the JSON property being annotated, `Schema` is the schema file where the definition for the annotation is found, and `Term` is the name of the Annotation.

@Message.ExtendedInfo { }	object		Allows the service to provide a set of Message structures for a given property to indicate additional information; this can be useful when a property is `null` due to an error condition, and the service wants to convey why the property is `null`.
@odata.count	integer	read-only	The number of items in a collection.
@Redfish.AllowableValues [ ]	array (string)	read-only	Indicates to the client the different string values the service accepts for a given property or action parameter.

In the example below, the property `ResetType` is being annotated with the `AllowableValues` term, which is defined in the `Redfish` schema (an alias for RedfishExtensions). This is used to indicate to the client that the service supports the values `On` and `ForceOff` for `ResetType`.

```
{
    "ResetType@Redfish.AllowableValues": [
        "On",
        "ForceOff"
    ]
}
```

Resource or object-level annotations

A payload annotation for an entire resource or a JSON object takes the form of `@Schema.Term`, where `Namespace` is the schema file where the definition is found and `Term` is the name of the Annotation. These payload annotations are used to provide further information about the object itself.

@Redfish.ActionInfo	string	read-only	The term can be applied to an Action to specify a URI to an ActionInfo resource which describes the parameters supported by this instance of the Action.
@Redfish.CollectionCapabilities { }	object		Reference to the resource that represents the POST capabilities of a given collection. *See the CollectionCapabilities object for details on this property.*
@Redfish.MaintenanceWindow { }	object		Maintenance window configuration of a resource for when to apply settings or operations. *See the MaintenanceWindow object for details on this property.*
@Redfish.OperationApplyTime	string (enum)	read-write	The requested apply time from a client when performing a Create, Delete, or Action operation. *See @Redfish.OperationApplyTime in Property Details, below, for the possible values of this property.*
@Redfish.OperationApplyTimeSupport { }	object		Indicates if a client is allowed to request for a specific apply time of a Create, Delete, or Action operation of a given resource via the OperationApplyTime term. *See the OperationApplyTimeSupport object for details on this property.*
@Redfish.Settings { }	object		Reference to the resource that represents the settings to be applied to this object. *See the Settings object for details on this property.*
@Redfish.SettingsApplyTime { }	object		Configuration settings for when the values in the settings object are applied to a given resource. *See the PreferredApplyTime object for details on this property.*

Property Details

@Redfish.OperationApplyTime:

The requested apply time from a client when performing a Create, Delete, or Action operation.

string	Description
AtMaintenanceWindowStart	Apply the requested operation during a maintenance window as specified by an administrator.
Immediate	Apply the requested operation immediately.
InMaintenanceWindowOnReset	Apply the requested operation after a reset but within maintenance window as specified by an adminstrator.
OnReset	Apply the requested operation on a reset.

In the example below, the object is being annotated with the `ActionInfo` term, which is defined in the `Redfish` schema (an alias for RedfishExtensions). This is used to indicate to the client that it can find more information about the given action, in this case `#ComputerSystem.Reset`, at the URI `/redfish/v1/Systems/1/ResetActionInfo`.

```
{
    "#ComputerSystem.Reset": {
        "target": "/redfish/v1/Systems/1/Actions/ComputerSystem.Reset",
        "@Redfish.ActionInfo": "/redfish/v1/Systems/1/ResetActionInfo"
    }
}
```

Common objects

The following JSON objects are frequently defined in Redfish schemas. Like the individual common properties listed above, these objects share a common definition which is shown here to avoid repetition in the Reference Guide property tables.

Actions

The Actions object contains descriptions of the actions defined and available for this resource.

#{action name} {	object		This object describes a single Redfish Action.
@Redfish.ActionInfo	string	read-only	The URI for an ActionInfo resource describing this action.
target }	string	read-only	The target URI for the POST operation to invoke the action.

Identifier

This type describes any additional identifiers for a resource.

DurableName *(v1.1+)*	string	read-only (null)	This indicates the world wide, persistent name of the resource.
DurableNameFormat *(v1.1+)*	string (enum)	read-only (null)	This represents the format of the DurableName property. *See DurableNameFormat in Property Details, below, for the possible values of this property.*

Property Details

DurableNameFormat:

This represents the format of the DurableName property.

string	Description
EUI	IEEE-defined 64-bit Extended Unique Identifier.
FC_WWN	Fibre Channel World Wide Name.
iQN	iSCSI Qualified Name.
NAA	Name Address Authority Format.
NQN	NVMe Qualified Name.
NSID	NVM Namespace Identifier.

UUID	Universally Unique Identifier.

IPv4Address

This type describes an IPv4 Address.

Address	string	read-write (null)	This is the IPv4 Address.
AddressOrigin	string (enum)	read-only (null)	This indicates how the address was determined. *See AddressOrigin in Property Details, below, for the possible values of this property.*
Gateway	string	read-write (null)	This is the IPv4 gateway for this address.
Oem { }	object		See the OEM object definition in the Common properties section.
SubnetMask	string	read-write (null)	This is the IPv4 Subnet mask.

Property Details

AddressOrigin:

This indicates how the address was determined.

string	Description
BOOTP	Address is provided by a BOOTP service.
DHCP	Address is provided by a DHCPv4 service.
IPv4LinkLocal	Address is valid only for this network segment (link).
Static	A static address as configured by the user.

IPv6Address

This type describes an IPv6 Address.

Address	string	read-write (null)	This is the IPv6 Address.
AddressOrigin	string (enum)	read-only (null)	This indicates how the address was determined. *See AddressOrigin in Property Details, below, for the possible values of this property.*
AddressState	string (enum)	read-only (null)	The current state of this address as defined in RFC 4862. *See AddressState in Property Details, below, for the possible values of this property.*
Oem { }	object		See the OEM object definition in the Common properties section.
PrefixLength	integer	read-only (null)	This is the IPv6 Address Prefix Length.

Property Details

AddressOrigin:

This indicates how the address was determined.

string	Description
DHCPv6	Address is provided by a DHCPv6 service.
LinkLocal	Address is valid only for this network segment (link).
SLAAC	Address is provided by a Stateless Address AutoConfiguration (SLAAC) service.
Static	A static address as configured by the user.

AddressState:

The current state of this address as defined in RFC 4862.

string	Description

Deprecated	This address is currently within it's valid lifetime, but is now outside of it's preferred lifetime as defined in RFC 4862.
Failed	This address has failed Duplicate Address Detection testing as defined in RFC 4862 section 5.4 and is not currently in use.
Preferred	This address is currently within both it's valid and preferred lifetimes as defined in RFC 4862.
Tentative	This address is currently undergoing Duplicate Address Detection testing as defined in RFC 4862 section 5.4.

IPv6GatewayStaticAddress

This object represents a single IPv6 static address to be assigned on a network interface.

Address	string	read-write required (null)	A valid IPv6 address.
Oem { }	object		See the OEM object definition in the Common properties section.
PrefixLength	integer	read-write (null)	The Prefix Length of this IPv6 address.

IPv6StaticAddress

This object represents a single IPv6 static address to be assigned on a network interface.

Address	string	read-write required (null)	A valid IPv6 address.
Oem { }	object		See the OEM object definition in the Common properties section.
PrefixLength	integer	read-write required (null)	The Prefix Length of this IPv6 address.

Location

This type describes the location of a resource.

AltitudeMeters *(v1.6+)*	number (meters)	read-write (null)	The altitude of the resource in meters.
Contacts *(v1.7+)* [{	array		Array of contact information.
ContactName	string	read-write (null)	Name of this contact.
EmailAddress	string	read-write (null)	Email address for this contact.
PhoneNumber }]	string	read-write (null)	Phone number for this contact.
Info *(v1.1+, deprecated v1.5)*	string	read-only (null)	This indicates the location of the resource. *Deprecated v1.5+. This property has been Deprecated in favor of new properties defined in Resource.v1_3_0.Location and Resource.v1_5_0.Location.*
InfoFormat *(v1.1+, deprecated v1.5)*	string	read-only (null)	This represents the format of the Info property. *Deprecated v1.5+. This property has been Deprecated in favor of new properties defined in Resource.v1_3_0.Location and Resource.v1_5_0.Location.*
Latitude *(v1.6+)*	number (deg)	read-write (null)	The latitude resource.
Longitude *(v1.6+)*	number (deg)	read-write (null)	The longitude resource in degrees.
Oem *(v1.1+)* {	object		See the OEM object definition in the Common properties section.
(pattern) { } [ ]	array, boolean,	(null)	Property names follow regular expression pattern "^([a-zA-Z_][a-zA-

	integer, number, object, string		Z0-9_]*)?@(odata|Redfish|Message)\.[a-zA-Z_][a-zA-Z0-9_]*$"
(pattern) {	object		Property names follow regular expression pattern "^[A-Za-z0-9_]+$"
(pattern) { } [ ] } }	array, boolean, integer, number, object, string	(null)	Property names follow regular expression pattern "^([a-zA-Z_][a-zA-Z0-9_]*)?@(odata|Redfish|Message)\.[a-zA-Z_][a-zA-Z0-9_]*$"
PartLocation *(v1.5+)* {	object		The part location within the placement.
LocationOrdinalValue	integer	read-only (null)	The number that represents the location of the part. If LocationType is slot and this unit is in slot 2 then the LocationOrdinalValue will be 2.
LocationType	string (enum)	read-only (null)	The type of location of the part, such as slot, bay, socket and slot. *See [LocationType](#) in Property Details, below, for the possible values of this property.*
Orientation	string (enum)	read-only (null)	The orientation for the ordering of the slot enumeration used by the LocationOrdinalValue property. *See [Orientation](#) in Property Details, below, for the possible values of this property.*
Reference	string (enum)	read-only (null)	The reference point for the part location. This is used to give guidance as to the general location of the part. *See [Reference](#) in Property Details, below, for the possible values of this property.*
ServiceLabel }	string	read-only (null)	This is the label of the part location, such as a silk screened name or a printed label.
Placement *(v1.3+)* {	object		A place within the addressed location.
AdditionalInfo *(v1.7+)*	string	read-write (null)	Area designation or other additional info.
Rack	string	read-write (null)	Name of a rack location within a row.
RackOffset	integer	read-write (null)	Vertical location of the item in terms of RackOffsetUnits.
RackOffsetUnits	string (enum)	read-write (null)	The type of Rack Units in use. *See [RackOffsetUnits](#) in Property Details, below, for the possible values of this property.*
Row }	string	read-write (null)	Name of row.
PostalAddress *(v1.3+)* {	object		Postal address of the addressed resource.
AdditionalCode	string	read-write (null)	Additional code.
AdditionalInfo *(v1.7+)*	string	read-write (null)	Room designation or other additional info.
Building	string	read-write (null)	Name of the building.
City	string	read-write (null)	City, township, or shi (JP).
Community	string	read-write (null)	Postal community name.
Country	string	read-write (null)	Country.
District	string	read-write	A county, parish, gun (JP), or district (IN).

			(null)	
Division	string	read-write (null)	City division, borough, dity district, ward, chou (JP).
Floor	string	read-write (null)	Floor.
GPSCoords *(deprecated v1.6)*	string	read-write (null)	The GPS coordinates of the part. *Deprecated v1.6+. This property has been Deprecated in favor of Location.v1_6_0.Longitude and Location.v1_6_0.Latitude*
HouseNumber	integer	read-write (null)	Numeric portion of house number.
HouseNumberSuffix	string	read-write (null)	House number suffix.
Landmark	string	read-write (null)	Landmark.
LeadingStreetDirection	string	read-write (null)	A leading street direction.
Location *(deprecated v1.7)*	string	read-write (null)	Room designation or other additional info. *Deprecated v1.7+. This property has been Deprecated in favor of the property AdditionalInfo found in the 1.7.0 definition of PostalAddress.*
Name	string	read-write (null)	Name.
Neighborhood	string	read-write (null)	Neighborhood or block.
PlaceType	string	read-write (null)	A description of the type of place that is addressed.
POBox	string	read-write (null)	Post office box (P.O. box).
PostalCode	string	read-write (null)	Postal code (or zip code).
Road	string	read-write (null)	A primary road or street.
RoadBranch	string	read-write (null)	Road branch.
RoadPostModifier	string	read-write (null)	Road post-modifier.
RoadPreModifier	string	read-write (null)	Road pre-modifier.
RoadSection	string	read-write (null)	Road Section.
RoadSubBranch	string	read-write (null)	Road sub branch.
Room	string	read-write (null)	Name or number of the room.
Seat	string	read-write (null)	Seat (desk, cubicle, workstation).
Street	string	read-write (null)	Street name.
StreetSuffix	string	read-write (null)	Avenue, Platz, Street, Circle.
Territory	string	read-write	A top-level subdivision within a country.

		(null)	
TrailingStreetSuffix	string	read-write (null)	A trailing street suffix.
Unit }	string	read-write (null)	Name or number of the unit (apartment, suite).

Property Details

LocationType:

The type of location of the part, such as slot, bay, socket and slot.

string	Description
Bay	Defines a bay as the type of location.
Connector	Defines a connector as the type of location.
Slot	Defines a slot as the type of location.
Socket	Defines a socket as the type of location.

Orientation:

The orientation for the ordering of the slot enumeration used by the LocationOrdinalValue property.

string	Description
BackToFront	Defines the ordering for the LocationOrdinalValue is back to front.
BottomToTop	Defines the ordering for the LocationOrdinalValue is bottom to top.
FrontToBack	Defines the ordering for the LocationOrdinalValue is front to back.
LeftToRight	Defines the ordering for the LocationOrdinalValue is left to right.
RightToLeft	Defines the ordering for the LocationOrdinalValue is right to left.
TopToBottom	Defines the ordering for the LocationOrdinalValue is top to bottom.

RackOffsetUnits:

The type of Rack Units in use.

string	Description
EIA_310	Defines a rack unit as being equal to 1.75 in (44.45 mm).
OpenU	Defines a rack unit as being equal to 48 mm (1.89 in).

Reference:

The reference point for the part location. This is used to give guidance as to the general location of the part.

string	Description
Bottom	Defines the part as being in the bottom of the unit.
Front	Defines the part as being in the front of the unit.
Left	Defines the part as being in the left of the unit.
Middle	Defines the part as being in the middle of the unit.
Rear	Defines the part as being in the rear of the unit.
Right	Defines the part as being in the right of the unit.
Top	Defines the part as being in the top of the unit.

MaintenanceWindow

This object indicates if a given resource has a maintenance window assignment for applying settings or operations.

MaintenanceWindowDurationInSeconds *(v1.2+)*	integer (seconds)	read-write required	The value of this property as specified by client indicates the expiry time of maintenance window in seconds.
MaintenanceWindowStartTime *(v1.2+)*	string	read-write required	The value of this property as specified by client to indicate the start time of a maintenance window.

Message

This type describes a Message returned by the Redfish service.

Message	string	read-only (null)	This is the human readable message, if provided.
MessageArgs [ ]	array (string)	read-only	This array of message arguments are substituted for the arguments in the message when looked up in the message registry.
MessageId	string	read-only required	This is the key for this message which can be used to look up the message in a message registry.
Oem { }	object		See the OEM object definition in the Common properties section.
RelatedProperties [ ]	array (string)	read-only	This is an array of properties described by the message.
Resolution	string	read-only (null)	Used to provide suggestions on how to resolve the situation that caused the error.
Severity	string	read-only (null)	This is the severity of the errors.

OperationApplyTimeSupport

This object indicates if a client is allowed to request for a specific apply time of a Create, Delete, or Action operation of a given resource.

MaintenanceWindowDurationInSeconds *(v1.2+)*	integer (seconds)	read-only	The value of this property as specified by client indicates the expiry time of maintenance window in seconds.
MaintenanceWindowResource *(v1.2+)* {	object		The value of this property is used to indicate the location of the maintenance window settings.
@odata.id }	string	read-only	The unique identifier for a resource.
MaintenanceWindowStartTime *(v1.2+)*	string	read-only	The value of this property as specified by client to indicate the start time of a maintenance window.
SupportedValues [ ]	array (string (enum))	read-only	This property indicates the types of apply times the client is allowed request when performing a Create, Delete, or Action operation. See *SupportedValues* in *Property Details, below, for the possible values of this property.*

Property Details

SupportedValues:

This property indicates the types of apply times the client is allowed request when performing a Create, Delete, or Action operation.

string	Description
AtMaintenanceWindowStart	Apply the requested operation during a maintenance window as specified by an administrator.

Immediate	Apply the requested operation immediately.
InMaintenanceWindowOnReset	Apply the requested operation after a reset but within maintenance window as specified by an adminstrator.
OnReset	Apply the requested operation on a reset.

PCIeInterface

This is the definition for a PCI Interface object.

LanesInUse	integer	read-only (null)	This is the number of PCIe lanes in use by this device.
MaxLanes	integer	read-only (null)	This is the number of PCIe lanes supported by this device.
MaxPCIeType	string (enum)	read-only (null)	The highest version of the PCIe specification supported by this device. *See MaxPCIeType in Property Details, below, for the possible values of this property.*
Oem { }	object		See the OEM object definition in the Common properties section.
PCIeType	string (enum)	read-only (null)	The version of the PCIe specification in use by this device. *See PCIeType in Property Details, below, for the possible values of this property.*

Property Details

MaxPCIeType:

The highest version of the PCIe specification supported by this device.

string	Description
Gen1	A PCIe v1.0 slot.
Gen2	A PCIe v2.0 slot.
Gen3	A PCIe v3.0 slot.
Gen4	A PCIe v4.0 slot.
Gen5	A PCIe v5.0 slot.

PCIeType:

The version of the PCIe specification in use by this device.

string	Description
Gen1	A PCIe v1.0 slot.
Gen2	A PCIe v2.0 slot.
Gen3	A PCIe v3.0 slot.
Gen4	A PCIe v4.0 slot.
Gen5	A PCIe v5.0 slot.

PreferredApplyTime

This object indicates when the future configuration (i.e. Settings resource) should be applied.

ApplyTime *(v1.1+)*	string (enum)	read-write	This property indicates when the future configuration (i.e. Settings resource) should be applied. *See ApplyTime in Property Details, below, for the possible values of this property.*
MaintenanceWindowDurationInSeconds *(v1.1+)*	integer (seconds)	read-write	The value of this property as specified by client indicates the expiry time of maintenance window in seconds.
MaintenanceWindowStartTime *(v1.1+)*	string	read-write	The value of this property as specified by client to indicate

			the start time of a maintenance window.

Property Details

ApplyTime:

This property indicates when the future configuration (i.e. Settings resource) should be applied.

string	Description
AtMaintenanceWindowStart	Apply during a maintenance window as specified by an administrator.
Immediate	Apply immediately.
InMaintenanceWindowOnReset	Apply after a reset but within maintenance window as specified by an adminstrator.
OnReset	Apply on a reset.

Schedule

Schedule a series of occurrences.

EnabledDaysOfMonth [ ]	array (integer, null)	read-write	Days of month when scheduled occurrences are enabled. Zero indicates that every day of the month is enabled.
EnabledDaysOfWeek [ ]	array (string (enum))	read-write (null)	Days of the week when scheduled occurrences are enabled, for enabled days of month and months of year. Days of the Week. See *EnabledDaysOfWeek* in Property Details, below, for the possible values of this property.
EnabledIntervals *(v1.1+)* [ ]	array (string, null)	read-write	Intervals when scheduled occurrences are enabled.
EnabledMonthsOfYear [ ]	array (string (enum))	read-write (null)	Months of year when scheduled occurrences are enabled. Months of the year. See *EnabledMonthsOfYear* in Property Details, below, for the possible values of this property.
InitialStartTime	string	read-write (null)	Time for initial occurrence.
Lifetime	string	read-write (null)	The time after provisioning when the schedule as a whole expires.
MaxOccurrences	integer	read-write (null)	Maximum number of scheduled occurrences.
Name	string	read-write (null)	The Schedule name.
RecurrenceInterval	string	read-write (null)	Distance until the next occurrences.

Property Details

EnabledDaysOfWeek:

Days of the week when scheduled occurrences are enabled, for enabled days of month and months of year. Days of the Week.

string	Description
Every	Every day of the week.
Friday	Friday.
Monday	Monday.
Saturday	Saturday.
Sunday	Sunday.

Thursday	Thursday.
Tuesday	Tuesday.
Wednesday	Wednesday.

EnabledMonthsOfYear:

Months of year when scheduled occurrences are enabled. Months of the year.

string	Description
April	April.
August	August.
December	December.
Every	Every month of the year.
February	February.
January	January.
July	July.
June	June.
March	March.
May	May.
November	November.
October	October.
September	September.

Settings

This type describes the settings of a resouce.

ETag		string	read-only (null)	The ETag of the resource to which the settings were applied, after the application.
MaintenanceWindowResource *(v1.2+)* {		object		The value of this property is used to indicate the location of the maintenance window settings.
@odata.id }		string	read-only	The unique identifier for a resource.
Messages [{ }]		array (object)		This is an array of messages associated with the task. This type describes a Message returned by the Redfish service. *See the [Message object](#) for details on this property.*
SettingsObject {		object		Reference to the resource the client may PUT/PATCH to in order to change this resource.
@odata.id }		string	read-only	The unique identifier for a resource.
SupportedApplyTimes [ ]		array (string (enum))	read-only	This property indicates when a Settings resource can be applied. *See [SupportedApplyTimes](#) in Property Details, below, for the possible values of this property.*
Time		string	read-only (null)	Indicates the time the settings were applied.

Property Details

SupportedApplyTimes:

This property indicates when a Settings resource can be applied.

string	Description
AtMaintenanceWindowStart	Apply during a maintenance window as specified by an administrator.
Immediate	Apply immediately.
InMaintenanceWindowOnReset	Apply after a reset but within maintenance window as specified by an administrator.
OnReset	Apply on a reset.

Status

This type describes the status and health of a resource and its children.

Health	string (enum)	read-only (null)	This represents the health state of this resource in the absence of its dependent resources. See *Health* in Property Details, below, for the possible values of this property.
HealthRollup	string (enum)	read-only (null)	This represents the overall health state from the view of this resource. See *HealthRollup* in Property Details, below, for the possible values of this property.
Oem {	object		See the OEM object definition in the Common properties section.
(pattern) { } [ ]	array, boolean, integer, number, object, string	(null)	Property names follow regular expression pattern "^([a-zA-Z_][a-zA-Z0-9_]*)?@(odata|Redfish|Message)\.[a-zA-Z_][a-zA-Z0-9_]*$"
(pattern) {	object		Property names follow regular expression pattern "^[A-Za-z0-9_]+$"
(pattern) { } [ ] } }	array, boolean, integer, number, object, string	(null)	Property names follow regular expression pattern "^([a-zA-Z_][a-zA-Z0-9_]*)?@(odata|Redfish|Message)\.[a-zA-Z_][a-zA-Z0-9_]*$"
State	string (enum)	read-only (null)	This indicates the known state of the resource, such as if it is enabled. See *State* in Property Details, below, for the possible values of this property.

Property Details

Health:

This represents the health state of this resource in the absence of its dependent resources.

string	Description
Critical	A critical condition exists that requires immediate attention.
OK	Normal.
Warning	A condition exists that requires attention.

HealthRollup:

This represents the overall health state from the view of this resource.

string	Description
Critical	A critical condition exists that requires immediate attention.
OK	Normal.
Warning	A condition exists that requires attention.

State:

This indicates the known state of the resource, such as if it is enabled.

string	Description

Absent	This function or resource is not present or not detected.
Deferring	The element will not process any commands but will queue new requests.
Disabled	This function or resource has been disabled.
Enabled	This function or resource has been enabled.
InTest	This function or resource is undergoing testing.
Quiesced	The element is enabled but only processes a restricted set of commands.
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.
Starting	This function or resource is starting.
UnavailableOffline	This function or resource is present but cannot be used.
Updating	The element is updating and may be unavailable or degraded.

Redundancy

This is the redundancy definition to be used in other resource schemas.

@odata.id	string	read-only required	The unique identifier for a resource.
Actions { }	object		The available actions for this resource.
MaxNumSupported	integer	read-only required (null)	This is the maximum number of members allowable for this particular redundancy group.
MemberId	string	read-only required	This is the identifier for the member within the collection.
MinNumNeeded	integer	read-only required (null)	This is the minumum number of members needed for this group to be redundant.
Mode	string (enum)	read-write required (null)	This is the redundancy mode of the group. See *Mode* in Property Details, below, for the possible values of this property.
Name	string	read-only required	The name of the resource or array element.
Oem { }	object		This is the manufacturer/provider specific extension moniker used to divide the Oem object into sections. See the *Oem object* for details on this property.
RedundancyEnabled	boolean	read-write (null)	This indicates whether redundancy is enabled.
RedundancySet [{	array	required	Contains any ids that represent components of this redundancy set.
@odata.id }]	string	read-only	The unique identifier for a resource.
RedundancySet@odata.count	integer	read-only	The number of items in a collection.
Status { }	object	required	This property describes the status and health of the resource and its children. See the *Status object* for details on this property.

Property Details

Mode:

This is the redundancy mode of the group.

string	Description

Failover	Failure of one unit will automatically cause its functions to be taken over by a standby or offline unit in the redundancy set.
N+m	Multiple units are available and active such that normal operation will continue if one or more units fail.
NotRedundant	The subsystem is not configured in a redundancy mode, either due to configuration or the functionality has been disabled by the user.
Sharing	Multiple units contribute or share such that operation will continue, but at a reduced capacity, if one or more units fail.
Sparing	One or more spare units are available to take over the function of a failed unit, but takeover is not automatic.

Resource collections

A core concept in Redfish is a Collection of resources. A Collection is a group of like resources where the number of instances in the group can shrink or grow depending on the scope of the Redfish Service or the configuration of the devices being managed. Every Resource Collection resource has the same set of supported properties, and all contain "Collection" in the name of their schema. Every resource linked in the "Members" array within a Resource Collection will have the same resource type (same schema with the same major version, but can vary in minor or errata schema versions, which are all compatible).

The properties of a Resource Collection are as follows:

@odata.context	string	read-only	The OData description of a payload.
@odata.id	string	read-only required	The unique identifier for a resource.
@odata.type	string	read-only required	The type of a resource.
Description	string	read-only (null)	Provides a description of this resource and is used for commonality in the schema definitions.
Members [{	array	required	Contains the members of this collection.
@odata.id }]	string	read-only	A link to a resource instance which is a member of this collection.
Members@odata.count	integer	read-only	The number of items in a collection.
Members@odata.navigationLink	string	read-write	
Name	string	read-only required	The name of the resource or array element.
Oem { }	object		This is the manufacturer/provider specific extension moniker used to divide the Oem object into sections.

As shown in the example below, a Redfish Service may provide management functionality for several Computer Systems, and therefore a ComputerSystemCollection resource is provided. This example shows a Service with four ComputerSystem instances ("Members").

```
{
    "@odata.type": "#ComputerSystemCollection.ComputerSystemCollection",
    "Name": "Computer System Collection",
    "Members@odata.count": 4,
    "Members": [
        {
            "@odata.id": "/redfish/v1/Systems/529QB9450R6"
        },
        {
            "@odata.id": "/redfish/v1/Systems/529QB9451R6"
        },
        {
            "@odata.id": "/redfish/v1/Systems/529QB9452R6"
        },
        {
            "@odata.id": "/redfish/v1/Systems/529QB9453R6"
        }
    ],
    "@odata.context": "/redfish/v1/$metadata#ComputerSystemCollection.ComputerSystemCollection",
    "@odata.id": "/redfish/v1/Systems"
}
```

Resource Collection URIs (Redfish v1.6+)

The following table lists all of the Redfish-defined Resource Collections and the URIs where they can appear. NOTE: The URIs listed are valid for Redfish Services conforming to the Redfish Specification v1.6.0 or higher. Services built on earlier versions of the Specification may use different URIs which must be discovered by following the links from the Service Root (/redfish/v1/).

Collection Type	URIs
AccelerationFunctionCollection	/redfish/v1/CompositionService/ResourceBlocks/*{ResourceBlockId}*/Processors/*{ProcessorId}*/AccelerationFunctions /redfish/v1/CompositionService/ResourceBlocks/*{ResourceBlockId}*/Systems/*{ComputerSystemId}*/Processors/*{ProcessorId}*/AccelerationFunctions /redfish/v1/ResourceBlocks/*{ResourceBlockId}*/Processors/*{ProcessorId}*/AccelerationFunctions /redfish/v1/ResourceBlocks/*{ResourceBlockId}*/Systems/*{ComputerSystemId}*/Processors/*{ProcessorId}*/AccelerationFunctions /redfish/v1/Systems/*{ComputerSystemId}*/Processors/*{ProcessorId}*/AccelerationFunctions
BootOptionCollection	/redfish/v1/CompositionService/ResourceBlocks/*{ResourceBlockId}*/Systems/*{ComputerSystemId}*/BootOptions /redfish/v1/ResourceBlocks/*{ResourceBlockId}*/Systems/*{ComputerSystemId}*/BootOptions /redfish/v1/Systems/*{ComputerSystemId}*/BootOptions
CertificateCollection	/redfish/v1/AccountService/Accounts/*{ManagerAccountId}*/Certificates /redfish/v1/AccountService/ActiveDirectory/Certificates /redfish/v1/AccountService/ExternalAccountProviders/*{ExternalAccountProviderId}*/Certificates /redfish/v1/AccountService/LDAP/Certificates /redfish/v1/CompositionService/ResourceBlocks/*{ResourceBlockId}*/Systems/*{ComputerSystemId}*/Boot/Certificates /redfish/v1/Managers/*{ManagerId}*/NetworkProtocol/HTTPS/Certificates /redfish/v1/Managers/*{ManagerId}*/RemoteAccountService/Accounts/*{ManagerAccountId}*/Certificates /redfish/v1/Managers/*{ManagerId}*/RemoteAccountService/ActiveDirectory/Certificates /redfish/v1/Managers/*{ManagerId}*/RemoteAccountService/ExternalAccountProviders/*{ExternalAccountProviderId}*/Certificates /redfish/v1/Managers/*{ManagerId}*/RemoteAccountService/LDAP/Certificates /redfish/v1/ResourceBlocks/*{ResourceBlockId}*/Systems/*{ComputerSystemId}*/Boot/Certificates /redfish/v1/Systems/*{ComputerSystemId}*/Boot/Certificates
ChassisCollection	/redfish/v1/Chassis
ComputerSystemCollection	/redfish/v1/Systems
EndpointCollection	/redfish/v1/Fabrics/*{FabricId}*/Endpoints
EthernetInterfaceCollection	/redfish/v1/CompositionService/ResourceBlocks/*{ResourceBlockId}*/Systems/*{ComputerSystemId}*/EthernetInterfaces /redfish/v1/Managers/*{ManagerId}*/EthernetInterfaces /redfish/v1/Managers/*{ManagerId}*/HostInterfaces/*{HostInterfaceId}*/HostEthernetInterfaces /redfish/v1/ResourceBlocks/*{ResourceBlockId}*/Systems/*{ComputerSystemId}*/EthernetInterfaces /redfish/v1/Systems/*{ComputerSystemId}*/EthernetInterfaces
EventDestinationCollection	/redfish/v1/EventService/Subscriptions
ExternalAccountProviderCollection	/redfish/v1/AccountService/ExternalAccountProviders /redfish/v1/Managers/*{ManagerId}*/RemoteAccountService/ExternalAccountProviders
FabricCollection	/redfish/v1/Fabrics
HostInterfaceCollection	/redfish/v1/Managers/*{ManagerId}*/HostInterfaces
JobCollection	/redfish/v1/JobService/Jobs /redfish/v1/JobService/Jobs/*{JobId}*/Steps
JsonSchemaFileCollection	/redfish/v1/JsonSchemas
LogEntryCollection	/redfish/v1/CompositionService/ResourceBlocks/*{ResourceBlockId}*/Systems/*{ComputerSystemId}*/LogServices/*{LogServiceId}*/Entries /redfish/v1/Managers/*{ManagerId}*/LogServices/*{LogServiceId}*/Entries /redfish/v1/ResourceBlocks/*{ResourceBlockId}*/Systems/*{ComputerSystemId}*/LogServices/*{LogServ*

	iceId}/Entries /redfish/v1/Systems/*{ComputerSystemId}*/LogServices/*{LogServiceId}*/Entries
LogServiceCollection	/redfish/v1/CompositionService/ResourceBlocks/*{ResourceBlockId}*/Systems/*{ComputerSystemId}*/LogServices /redfish/v1/Managers/*{ManagerId}*/LogServices /redfish/v1/ResourceBlocks/*{ResourceBlockId}*/Systems/*{ComputerSystemId}*/LogServices /redfish/v1/Systems/*{ComputerSystemId}*/LogServices
ManagerAccountCollection	/redfish/v1/AccountService/Accounts /redfish/v1/Managers/*{ManagerId}*/RemoteAccountService/Accounts
ManagerCollection	/redfish/v1/Managers
MemoryChunksCollection	/redfish/v1/CompositionService/ResourceBlocks/*{ResourceBlockId}*/Systems/*{ComputerSystemId}*/MemoryDomains/*{MemoryDomainId}*/MemoryChunks /redfish/v1/ResourceBlocks/*{ResourceBlockId}*/Systems/*{ComputerSystemId}*/MemoryDomains/*{MemoryDomainId}*/MemoryChunks /redfish/v1/Systems/*{ComputerSystemId}*/MemoryDomains/*{MemoryDomainId}*/MemoryChunks
MemoryCollection	/redfish/v1/CompositionService/ResourceBlocks/*{ResourceBlockId}*/Systems/*{ComputerSystemId}*/Memory /redfish/v1/ResourceBlocks/*{ResourceBlockId}*/Systems/*{ComputerSystemId}*/Memory /redfish/v1/Systems/*{ComputerSystemId}*/Memory
MemoryDomainCollection	/redfish/v1/CompositionService/ResourceBlocks/*{ResourceBlockId}*/Systems/*{ComputerSystemId}*/MemoryDomains /redfish/v1/ResourceBlocks/*{ResourceBlockId}*/Systems/*{ComputerSystemId}*/MemoryDomains /redfish/v1/Systems/*{ComputerSystemId}*/MemoryDomains
MessageRegistryCollection	
MessageRegistryFileCollection	/redfish/v1/Registries
MetricDefinitionCollection	/redfish/v1/TelemetryService/MetricDefinitions
MetricReportCollection	/redfish/v1/TelemetryService/MetricReports
MetricReportDefinitionCollection	/redfish/v1/TelemetryService/MetricReportDefinitions
NetworkAdapterCollection	/redfish/v1/Chassis/*{ChassisId}*/NetworkAdapters
NetworkDeviceFunctionCollection	/redfish/v1/Chassis/*{ChassisId}*/NetworkAdapters/*{NetworkAdapterId}*/NetworkDeviceFunctions /redfish/v1/CompositionService/ResourceBlocks/*{ResourceBlockId}*/NetworkInterfaces/*{NetworkInterfaceId}*/NetworkDeviceFunctions /redfish/v1/CompositionService/ResourceBlocks/*{ResourceBlockId}*/Systems/*{ComputerSystemId}*/NetworkInterfaces/*{NetworkInterfaceId}*/NetworkDeviceFunctions /redfish/v1/ResourceBlocks/*{ResourceBlockId}*/NetworkInterfaces/*{NetworkInterfaceId}*/NetworkDeviceFunctions /redfish/v1/ResourceBlocks/*{ResourceBlockId}*/Systems/*{ComputerSystemId}*/NetworkInterfaces/*{NetworkInterfaceId}*/NetworkDeviceFunctions /redfish/v1/Systems/*{ComputerSystemId}*/NetworkInterfaces/*{NetworkInterfaceId}*/NetworkDeviceFunctions
NetworkInterfaceCollection	/redfish/v1/CompositionService/ResourceBlocks/*{ResourceBlockId}*/Systems/*{ComputerSystemId}*/NetworkInterfaces /redfish/v1/ResourceBlocks/*{ResourceBlockId}*/Systems/*{ComputerSystemId}*/NetworkInterfaces /redfish/v1/Systems/*{ComputerSystemId}*/NetworkInterfaces
NetworkPortCollection	/redfish/v1/Chassis/*{ChassisId}*/NetworkAdapters/*{NetworkAdapterId}*/NetworkPorts /redfish/v1/CompositionService/ResourceBlocks/*{ResourceBlockId}*/NetworkInterfaces/*{NetworkInterfaceId}*/NetworkPorts /redfish/v1/CompositionService/ResourceBlocks/*{ResourceBlockId}*/Systems/*{ComputerSystemId}*/NetworkInterfaces/*{NetworkInterfaceId}*/NetworkPorts /redfish/v1/ResourceBlocks/*{ResourceBlockId}*/NetworkInterfaces/*{NetworkInterfaceId}*/NetworkPorts /redfish/v1/ResourceBlocks/*{ResourceBlockId}*/Systems/*{ComputerSystemId}*/NetworkInterfaces/*{NetworkInterfaceId}*/NetworkPorts /redfish/v1/Systems/*{ComputerSystemId}*/NetworkInterfaces/*{NetworkInterfaceId}*/NetworkPorts
PortCollection	/redfish/v1/CompositionService/ResourceBlocks/*{ResourceBlockId}*/Storage/*{StorageId}*/StorageController/*{StorageControllerMemberId}*/Ports

	/redfish/v1/CompositionService/ResourceBlocks/*{ResourceBlockId}*/Systems/*{ComputerSystemId}*/Storage/*{StorageId}*/StorageController/*{StorageControllerMemberId}*/Ports /redfish/v1/Fabrics/*{FabricId}*/Switches/*{SwitchId}*/Ports /redfish/v1/ResourceBlocks/*{ResourceBlockId}*/Storage/*{StorageId}*/StorageController/*{StorageControllerMemberId}*/Ports /redfish/v1/ResourceBlocks/*{ResourceBlockId}*/Systems/*{ComputerSystemId}*/Storage/*{StorageId}*/StorageController/*{StorageControllerMemberId}*/Ports /redfish/v1/Systems/*{ComputerSystemId}*/Storage/*{StorageId}*/StorageController/*{StorageControllerMemberId}*/Ports
ProcessorCollection	/redfish/v1/CompositionService/ResourceBlocks/*{ResourceBlockId}*/Processors/*{ProcessorId}*/SubProcessors /redfish/v1/CompositionService/ResourceBlocks/*{ResourceBlockId}*/Systems/*{ComputerSystemId}*/Processors /redfish/v1/CompositionService/ResourceBlocks/*{ResourceBlockId}*/Systems/*{ComputerSystemId}*/Processors/*{ProcessorId}*/SubProcessors /redfish/v1/ResourceBlocks/*{ResourceBlockId}*/Processors/*{ProcessorId}*/SubProcessors /redfish/v1/ResourceBlocks/*{ResourceBlockId}*/Systems/*{ComputerSystemId}*/Processors /redfish/v1/ResourceBlocks/*{ResourceBlockId}*/Systems/*{ComputerSystemId}*/Processors/*{ProcessorId}*/SubProcessors /redfish/v1/Systems/*{ComputerSystemId}*/Processors /redfish/v1/Systems/*{ComputerSystemId}*/Processors/*{ProcessorId}*/SubProcessors
ResourceBlockCollection	/redfish/v1/CompositionService/ResourceBlocks /redfish/v1/ResourceBlocks
RoleCollection	/redfish/v1/AccountService/Roles /redfish/v1/Managers/*{ManagerId}*/RemoteAccountService/Roles
SensorCollection	/redfish/v1/Chassis/*{ChassisId}*/Sensors
SerialInterfaceCollection	/redfish/v1/Managers/*{ManagerId}*/SerialInterfaces
SessionCollection	/redfish/v1/SessionService/Sessions
SimpleStorageCollection	/redfish/v1/CompositionService/ResourceBlocks/*{ResourceBlockId}*/Systems/*{ComputerSystemId}*/SimpleStorage /redfish/v1/ResourceBlocks/*{ResourceBlockId}*/Systems/*{ComputerSystemId}*/SimpleStorage /redfish/v1/Systems/*{ComputerSystemId}*/SimpleStorage
SoftwareInventoryCollection	/redfish/v1/UpdateService/FirmwareInventory /redfish/v1/UpdateService/SoftwareInventory
StorageCollection	/redfish/v1/CompositionService/ResourceBlocks/*{ResourceBlockId}*/Storage /redfish/v1/CompositionService/ResourceBlocks/*{ResourceBlockId}*/Systems/*{ComputerSystemId}*/Storage /redfish/v1/ResourceBlocks/*{ResourceBlockId}*/Storage /redfish/v1/ResourceBlocks/*{ResourceBlockId}*/Systems/*{ComputerSystemId}*/Storage /redfish/v1/Systems/*{ComputerSystemId}*/Storage
SwitchCollection	/redfish/v1/Fabrics/*{FabricId}*/Switches
TaskCollection	/redfish/v1/TaskService/Tasks
TriggersCollection	/redfish/v1/TelemetryService/Triggers
VirtualMediaCollection	/redfish/v1/Managers/*{ManagerId}*/VirtualMedia
VLanNetworkInterfaceCollection	/redfish/v1/Chassis/*{ChassisId}*/NetworkAdapters/*{NetworkAdapterId}*/NetworkDeviceFunctions/*{NetworkDeviceFunctionId}*/Ethernet/VLANs /redfish/v1/CompositionService/ResourceBlocks/*{ResourceBlockId}*/EthernetInterfaces/*{EthernetInterfaceId}*/VLANs /redfish/v1/CompositionService/ResourceBlocks/*{ResourceBlockId}*/Systems/*{ComputerSystemId}*/EthernetInterfaces/*{EthernetInterfaceId}*/VLANs /redfish/v1/Managers/*{ManagerId}*/EthernetInterfaces/*{EthernetInterfaceId}*/VLANs /redfish/v1/ResourceBlocks/*{ResourceBlockId}*/EthernetInterfaces/*{EthernetInterfaceId}*/VLANs /redfish/v1/ResourceBlocks/*{ResourceBlockId}*/Systems/*{ComputerSystemId}*/EthernetInterfaces/*{EthernetInterfaceId}*/VLANs /redfish/v1/Systems/*{ComputerSystemId}*/EthernetInterfaces/*{EthernetInterfaceId}*/VLANs
VolumeCollection	/redfish/v1/CompositionService/ResourceBlocks/*{ResourceBlockId}*/Storage/*{StorageId}*/Volumes /redfish/v1/CompositionService/ResourceBlocks/*{ResourceBlockId}*/Systems/*{ComputerSystemId}*/S

	torage/*{StorageId}*/Volumes /redfish/v1/ResourceBlocks/*{ResourceBlockId}*/Storage/*{StorageId}*/Volumes /redfish/v1/ResourceBlocks/*{ResourceBlockId}*/Systems/*{ComputerSystemId}*/Storage/*{StorageId}*/Volumes /redfish/v1/Systems/*{ComputerSystemId}*/Storage/*{StorageId}*/Volumes
ZoneCollection	/redfish/v1/CompositionService/ResourceZones /redfish/v1/Fabrics/*{FabricId}*/Zones

Reference Guide

This guide was produced using the contents of the schema files from DMTF Redfish Schema bundle DSP8010 and merged with supplemental text using the DMTF's Redfish Documentation Generator. The version of this guide corresponds to the version of DSP8010 used to generate the text.

AccelerationFunction 1.0.1

v1.0
2018.3

The AccelerationFunction schema defines the accelerator implemented in a Processor device.

URIs:

/redfish/v1/CompositionService/ResourceBlocks/*{ResourceBlockId}*/Processors/*{ProcessorId}*/AccelerationFunctions/*{AccelerationFunctionId}*

/redfish/v1/CompositionService/ResourceBlocks/*{ResourceBlockId}*/Systems/*{ComputerSystemId}*/Processors/*{ProcessorId}*/AccelerationFunctions/*{AccelerationFunctionId}*

/redfish/v1/ResourceBlocks/*{ResourceBlockId}*/Processors/*{ProcessorId}*/AccelerationFunctions/*{AccelerationFunctionId}*

/redfish/v1/ResourceBlocks/*{ResourceBlockId}*/Systems/*{ComputerSystemId}*/Processors/*{ProcessorId}*/AccelerationFunctions/*{AccelerationFunctionId}*

/redfish/v1/Systems/*{ComputerSystemId}*/Processors/*{ProcessorId}*/AccelerationFunctions/*{AccelerationFunctionId}*

AccelerationFunctionType	string (enum)	read-only (null)	The type of acceleration function. *See AccelerationFunctionType in Property Details, below, for the possible values of this property.*
FpgaReconfigurationSlots [ ]	array (string)	read-only	An array of the reconfiguration slot identifiers for an FPGA.
Links {	object		Contains references to other resources that are related to this resource.
Endpoints [{	array		An array of references to the endpoints that connect to this acceleartion function.
@odata.id }]	string	read-only	*Link to a Endpoint resource. See the Links section and the Endpoint schema for details.*
Oem { }	object		See the OEM object definition in the Common properties section.
PCIeFunctions [{	array		An array of references to the PCIeFunctions associated with this acceleration function.
@odata.id }] }	string	read-only	*Link to a PCIeFunction resource. See the Links section and the PCIeFunction schema for details.*
Manufacturer	string	read-only	The acceleration function code manufacturer.
PowerWatts	integer (Watts)	read-only	The acceleration function power consumption.
Status { }	object		This property describes the status and health of the resource and its children. *See the Status object for details on this property.*
UUID	string	read-only (null)	The universal unique identifier (UUID) for this acceleration function.
Version	string	read-only	The acceleration function version.

Property Details

AccelerationFunctionType:

The type of acceleration function.

string	Description
AudioProcessing	An audio processing function.
Compression	A compression function.
Encryption	An encryption function.
OEM	An OEM-defined acceleration function.
PacketInspection	A packet inspection function.
PacketSwitch	A packet switch function.
Scheduler	A scheduler function.
VideoProcessing	A video processing function.

Example Response

```
{
    "@odata.type": "#AccelerationFunction.v1_0_0.AccelerationFunction",
    "Id": "Compression",
    "Name": "Compression Accelerator",
    "Status": {
        "State": "Enabled",
        "Health": "OK"
    },
    "FpgaReconfigurationSlots": [
        "AFU0"
    ],
    "AccelerationFunctionType": "Compression",
    "Manufacturer": "Intel (R) Corporation",
    "Version": "Green Compression Type 1 v.1.00.86",
    "PowerWatts": 15,
    "Links": {
        "Endpoints": [],
        "PCIeFunctions": []
    },
    "Oem": {},
    "@odata.id": "/redfish/v1/Systems/1/Processors/FPGA1/AccelerationFunctions/Compression"
}
```

AccountService 1.5.0

v1.5	v1.4	v1.3	v1.2	v1.1	v1.0
2019.1	2018.3	2018.1	2017.1	2016.3	1.0

The AccountService schema contains properties for managing user accounts. The properties are common to all user accounts, such as password requirements, and control features such as account lockout. The schema also contains links to the collections of Manager Accounts and Roles.

URIs:

/redfish/v1/AccountService

/redfish/v1/Managers/*{ManagerId}*/RemoteAccountService

AccountLockoutCounterResetAfter	integer (seconds)	read-write	The interval of time in seconds between the last failed login attempt and reset of the lockout threshold counter. This value must be less than or equal to AccountLockoutDuration. Reset sets the counter to zero.
AccountLockoutCounterResetEnabled *(v1.5+)*	boolean	read-write	The value indicates whether the threshold counter will be reset after AccountLockoutCounterResetAfter expires.
AccountLockoutDuration	integer (seconds)	read-write (null)	The time in seconds an account is locked out. The value must be greater than or equal to the value of the AccountLockoutCounterResetAfter property. If set to 0, no lockout occurs.
AccountLockoutThreshold	integer	read-write (null)	The number of failed login attempts allowed before a user account is locked for a specified duration. A value of 0 means it is never locked.
Accounts {	object		A link to a collection of Manager Accounts. *Contains a link to a resource.*

@odata.id }	string	read-only	*Link to Collection of [ManagerAccount](#). See the ManagerAccount schema for details.*
ActiveDirectory *(v1.3+)* {	object		The first ActiveDirectory external account provider this AccountService supports.
AccountProviderType *(deprecated v1.5)*	string (enum)	read-only (null)	This property contains the type of external account provider this resource references. *See [AccountProviderType](#) in Property Details, below, for the possible values of this property. Deprecated v1.5+. This property has been Deprecated as the Account Provider type is known when used in the LDAP and ActiveDirectory objects.*
Authentication {	object		This property contains the authentication information for the external account provider.
AuthenticationType	string (enum)	read-write (null)	This property contains the type of authentication used to connect to the external account provider. *See [AuthenticationType](#) in Property Details, below, for the possible values of this property.*
KerberosKeytab	string	read-write (null)	This property is used with a PATCH or PUT to write a base64 encoded version of the kerberos keytab for the account. This property is null on a GET.
Oem { }	object		See the OEM object definition in the [Common properties](#) section.
Password	string	read-write (null)	This property is used with a PATCH or PUT to write the password for the account service. This property is null on a GET.
Token	string	read-write (null)	This property is used with a PATCH or PUT to write the token for the account. This property is null on a GET.
Username }	string	read-write	This property contains the user name for the account service.
Certificates *(v1.4+)* {	object		This is a reference to a collection of certificates used for the external account provider. *Contains a link to a resource.*
@odata.id }	string	read-only	*Link to Collection of [Certificate](#). See the Certificate schema for details.*
LDAPService {	object		This property contains additional mapping information needed to parse a generic LDAP service.
Oem { }	object		See the OEM object definition in the [Common properties](#) section.
SearchSettings {	object		This property contains the settings needed to search an external LDAP service.
BaseDistinguishedNames [ ]	array (string, null)	read-write	The base distinguished names to use when searching the LDAP service.
GroupNameAttribute	string	read-write (null)	The attribute name that contains the name of the Group on the group LDAP entry.
GroupsAttribute	string	read-write (null)	The attribute name that contains the Groups for a user on the user LDAP entry.
UsernameAttribute } }	string	read-write (null)	The attribute name that contains the Username on the user LDAP entry.
RemoteRoleMapping [{	array		This property contains a collection of the mapping rules to convert the external account providers account information to the local Redfish Role.

LocalRole	string	read-write (null)	The name of the local role in which to map the remote user or group.
Oem { }	object		See the OEM object definition in the [Common properties](#) section.
RemoteGroup	string	read-write (null)	This property is the name of the remote group (or in the case of a Redfish Service, remote role) that will be mapped to the local role referenced by this entity.
RemoteUser }]	string	read-write (null)	This property is the name of the remote user that will be mapped to the local role referenced by this entity.
ServiceAddresses [ ]	array (string, null)	read-write	This property contains the addresses of the user account providers this resource references. The format of this field depends on the Type.
ServiceEnabled }	boolean	read-write (null)	This indicates whether this service is enabled.
AdditionalExternalAccountProviders *(v1.3+)* {	object		The additional external account providers this AccountService is using. *Contains a link to a resource.*
@odata.id }	string	read-only	*Link to Collection of [ExternalAccountProvider](#). See the ExternalAccountProvider schema for details.*
AuthFailureLoggingThreshold	integer	read-write	The number of authorization failures allowed before the failure attempt is logged to the manager log.
LDAP *(v1.3+)* {	object		The first LDAP external account provider this AccountService supports.
AccountProviderType *(deprecated v1.5)*	string (enum)	read-only (null)	This property contains the type of external account provider this resource references. *See [AccountProviderType](#) in Property Details, below, for the possible values of this property. Deprecated v1.5+. This property has been Deprecated as the Account Provider type is known when used in the LDAP and ActiveDirectory objects.*
Authentication {	object		This property contains the authentication information for the external account provider.
AuthenticationType	string (enum)	read-write (null)	This property contains the type of authentication used to connect to the external account provider. *See [AuthenticationType](#) in Property Details, below, for the possible values of this property.*
KerberosKeytab	string	read-write (null)	This property is used with a PATCH or PUT to write a base64 encoded version of the kerberos keytab for the account. This property is null on a GET.
Oem { }	object		See the OEM object definition in the [Common properties](#) section.
Password	string	read-write (null)	This property is used with a PATCH or PUT to write the password for the account service. This property is null on a GET.
Token	string	read-write (null)	This property is used with a PATCH or PUT to write the token for the account. This property is null on a GET.
Username }	string	read-write	This property contains the user name for the account service.
Certificates *(v1.4+)* {	object		This is a reference to a collection of certificates used for the external account provider. *Contains a link to a resource.*
@odata.id }	string	read-only	*Link to Collection of [Certificate](#). See the Certificate schema for details.*

LDAPService {	object		This property contains additional mapping information needed to parse a generic LDAP service.
Oem { }	object		See the OEM object definition in the [Common properties](#) section.
SearchSettings {	object		This property contains the settings needed to search an external LDAP service.
BaseDistinguishedNames [ ]	array (string, null)	read-write	The base distinguished names to use when searching the LDAP service.
GroupNameAttribute	string	read-write (null)	The attribute name that contains the name of the Group on the group LDAP entry.
GroupsAttribute	string	read-write (null)	The attribute name that contains the Groups for a user on the user LDAP entry.
UsernameAttribute } }	string	read-write (null)	The attribute name that contains the Username on the user LDAP entry.
RemoteRoleMapping [{	array		This property contains a collection of the mapping rules to convert the external account providers account information to the local Redfish Role.
LocalRole	string	read-write (null)	The name of the local role in which to map the remote user or group.
Oem { }	object		See the OEM object definition in the [Common properties](#) section.
RemoteGroup	string	read-write (null)	This property is the name of the remote group (or in the case of a Redfish Service, remote role) that will be mapped to the local role referenced by this entity.
RemoteUser }]	string	read-write (null)	This property is the name of the remote user that will be mapped to the local role referenced by this entity.
ServiceAddresses [ ]	array (string, null)	read-write	This property contains the addresses of the user account providers this resource references. The format of this field depends on the Type.
ServiceEnabled }	boolean	read-write (null)	This indicates whether this service is enabled.
LocalAccountAuth *(v1.3+)*	string (enum)	read-write	Controls when this service will use the accounts defined withing this AccountService as part of authentication. *See [LocalAccountAuth](#) in Property Details, below, for the possible values of this property.*
MaxPasswordLength	integer	read-only	The maximum password length for this service.
MinPasswordLength	integer	read-only	The minimum password length for this service.
PrivilegeMap *(v1.1+)* **{**	object		A reference to the Privilege mapping that defines the privileges needed to perform a requested operation on a URI associated with this service. *See the [PrivilegeRegistry](#) schema for details on this property.*
@odata.id }	string	read-only	*Link to a PrivilegeRegistry resource. See the Links section and the [PrivilegeRegistry](#) schema for details.*
Roles {	object		A link to a collection of Roles. *Contains a link to a resource.*
@odata.id }	string	read-only	*Link to Collection of [Role](#). See the Role schema for details.*
ServiceEnabled	boolean	read-write (null)	Indicates whether this service is enabled. If set to false, the AccountService is disabled. This means no users can be created, deleted or modified. Any service attempting to

			access the AccountService resource (for example, the Session Service) will fail. New sessions cannot be started when the service is disabled. However, established sessions may still continue operating. This does not affect Basic AUTH connections.
Status { }	object		This property describes the status and health of the resource and its children. *See the [Status object](#) for details on this property.*

Property Details

AccountProviderType:

This property contains the type of external account provider this resource references.

string	Description
ActiveDirectoryService	An external Active Directory Service.
LDAPService	A generic external LDAP Service.
OEM	An OEM specific external authentication or directory service.
RedfishService	An external Redfish Service.

AuthenticationType:

This property contains the type of authentication used to connect to the external account provider.

string	Description
KerberosKeytab	A kerberos keytab.
OEM	An OEM specific authentication mechanism.
Token	An opaque authentication token.
UsernameAndPassword	Username and password combination.

LocalAccountAuth:

Controls when this service will use the accounts defined withing this AccountService as part of authentication.

string	Description
Disabled	Authentication via accounts defined in this AccountService is disabled.
Enabled	Authentication via accounts defined in this AccountService is enabled.
Fallback	Authentication via accounts defined in this AccountService is only used if there are external account providers that are currently unreachable.

Example Response

```
{
    "@odata.type": "#AccountService.v1_3_1.AccountService",
    "Id": "AccountService",
    "Name": "Account Service",
    "Description": "Local Manager Account Service",
    "Status": {
        "State": "Enabled",
        "Health": "OK"
    },
    "ServiceEnabled": true,
    "AuthFailureLoggingThreshold": 3,
    "MinPasswordLength": 8,
    "AccountLockoutThreshold": 5,
    "AccountLockoutDuration": 30,
    "AccountLockoutCounterResetAfter": 30,
    "Accounts": {
        "@odata.id": "/redfish/v1/AccountService/Accounts"
    },
    "Roles": {
        "@odata.id": "/redfish/v1/AccountService/Roles"
    },
    "LocalAccountAuth": "Enabled",
    "LDAP": {
        "AccountProviderType": "LDAPService",
        "ServiceEnabled": false,
        "ServiceAddresses": [
            "ldaps://ldap.example.org:636"
        ],
```

```
        "Authentication": {
            "AuthenticationType": "UsernameAndPassword",
            "Username": "cn=Manager,dc=example,dc=org",
            "Password": null
        },
        "LDAPService": {
            "SearchSettings": {
                "BaseDistinguishedNames": [
                    "dc=example,dc=org"
                ],
                "UsernameAttribute": "uid",
                "GroupsAttribute": "memberof"
            }
        },
        "RemoteRoleMapping": [
            {
                "RemoteUser": "cn=Manager,dc=example,dc=org",
                "LocalRole": "Administrator"
            },
            {
                "RemoteGroup": "cn=Admins,ou=Groups,dc=example,dc=org",
                "LocalRole": "Administrator"
            },
            {
                "RemoteGroup": "cn=PowerUsers,ou=Groups,dc=example,dc=org",
                "LocalRole": "Operator"
            },
            {
                "RemoteGroup": "(cn=*)",
                "LocalRole": "ReadOnly"
            }
        ]
    },
    "ActiveDirectory": {
        "AccountProviderType": "ActiveDirectoryService",
        "ServiceEnabled": true,
        "ServiceAddresses": [
            "ad1.example.org",
            "ad2.example.org",
            null,
            null
        ],
        "Authentication": {
            "AuthenticationType": "KerberosKeytab",
            "KerberosKeytab": null
        },
        "RemoteRoleMapping": [
            {
                "RemoteGroup": "Administrators",
                "LocalRole": "Administrator"
            },
            {
                "RemoteUser": "DOMAIN\\Bob",
                "LocalRole": "Operator"
            },
            {
                "RemoteGroup": "PowerUsers",
                "LocalRole": "Operator"
            },
            {
                "RemoteGroup": "Everybody",
                "LocalRole": "ReadOnly"
            }
        ]
    },
    "AdditionalExternalAccountProviders": {
        "@odata.id": "/redfish/v1/AccountService/ExternalAccountProviders"
    },
    "@odata.context": "/redfish/v1/$metadata#AccountService.AccountService",
    "@odata.id": "/redfish/v1/AccountService"
}
```

ActionInfo 1.1.1

v1.1	v1.0
2018.2	2016.2

The ActionInfo schema describes the parameters and other information necessary to perform a Redfish Action on a particular Action target. Parameter support can differ between vendors and even between instances of a resource. This data can be used to ensure Action requests from applications contain supported parameters.

Parameters [{	array		The parameters associated with the specified Redfish Action.
AllowableValues [ ]	array (string, null)	read-only	A list of values for this parameter supported by this Action target.
DataType	string (enum)	read-only (null)	The JSON property type used for this parameter. See *DataType* in Property Details, below, for the possible values of this property.
MaximumValue *(v1.1+)*	number	read-only (null)	The maximum supported value of this parameter.

MinimumValue *(v1.1+)*	number	read-only (null)	The minimum supported value for this parameter.
Name	string	read-only required	The name of the parameter for this Action.
ObjectDataType	string	read-only (null)	The OData Type of an object-based parameter.
Required	boolean	read-only	Indicates whether the parameter is required to perform this Action.

`}]`

Property Details

DataType:

The JSON property type used for this parameter.

string	Description
Boolean	A boolean (true or false).
Number	A number.
NumberArray	An array of numbers.
Object	An embedded JSON object.
ObjectArray	An array of JSON objects.
String	A string.
StringArray	An array of strings.

Example Response

```
{
    "@odata.type": "#ActionInfo.v1_1_0.ActionInfo",
    "Id": "ResetActionInfo",
    "Name": "Reset Action Info",
    "Parameters": [
        {
            "Name": "ResetType",
            "Required": true,
            "DataType": "String",
            "AllowableValues": [
                "On",
                "ForceOff",
                "GracefulShutdown",
                "GracefulRestart",
                "ForceRestart",
                "Nmi",
                "ForceOn",
                "PushPowerButton"
            ]
        }
    ],
    "Oem": {},
    "@odata.context": "/redfish/v1/$metadata#ActionInfo.ActionInfo",
    "@odata.id": "/redfish/v1/Systems/1/ResetActionInfo"
}
```

Assembly 1.2.1

v1.2	v1.1	v1.0
2018.2	2018.1	2017.3

This is the schema definition for the Assembly properties.

URIs:

/redfish/v1/Chassis/*{ChassisId}*/Assembly

/redfish/v1/Chassis/*{ChassisId}*/Drives/*{DriveId}*/Assembly

/redfish/v1/Chassis/*{ChassisId}*/NetworkAdapters/*{NetworkAdapterId}*/Assembly

/redfish/v1/Chassis/*{ChassisId}*/PCIeDevices/*{PCIeDeviceId}*/Assembly

/redfish/v1/Chassis/*{ChassisId}*/Power/PowerSupplies/*{PowerSupplyId}*/Assembly

/redfish/v1/Chassis/*{ChassisId}*/Thermal/Fans/*{FanId}*/Thermal

/redfish/v1/CompositionService/ResourceBlocks/*{ResourceBlockId}*/Drives/*{DriveId}*/Assembly

/redfish/v1/CompositionService/ResourceBlocks/*{ResourceBlockId}*/Memory/*{MemoryId}*/Assembly

/redfish/v1/CompositionService/ResourceBlocks/*{ResourceBlockId}*/Processors/*{ProcessorId}*/Assembly

/redfish/v1/CompositionService/ResourceBlocks/*{ResourceBlockId}*/Processors/*{ProcessorId}*/SubProcessors/*{ProcessorId2}*/Assembly

/redfish/v1/CompositionService/ResourceBlocks/*{ResourceBlockId}*/Storage/*{StorageId}*/Assembly

/redfish/v1/CompositionService/ResourceBlocks/*{ResourceBlockId}*/Storage/*{StorageId}*/Drives/*{DriveId}*/Assembly

/redfish/v1/CompositionService/ResourceBlocks/*{ResourceBlockId}*/Systems/*{ComputerSystemId}*/Memory/*{MemoryId}*/Assembly

/redfish/v1/CompositionService/ResourceBlocks/*{ResourceBlockId}*/Systems/*{ComputerSystemId}*/Processors/*{ProcessorId}*/Assembly

/redfish/v1/CompositionService/ResourceBlocks/*{ResourceBlockId}*/Systems/*{ComputerSystemId}*/Processors/*{ProcessorId}*/SubProcessors/*{ProcessorId2}*/Assembly

/redfish/v1/CompositionService/ResourceBlocks/*{ResourceBlockId}*/Systems/*{ComputerSystemId}*/Storage/*{StorageId}*/Assembly

/redfish/v1/CompositionService/ResourceBlocks/*{ResourceBlockId}*/Systems/*{ComputerSystemId}*/Storage/*{StorageId}*/Drives/*{DriveId}*/Assembly

/redfish/v1/ResourceBlocks/*{ResourceBlockId}*/Drives/*{DriveId}*/Assembly

/redfish/v1/ResourceBlocks/*{ResourceBlockId}*/Memory/*{MemoryId}*/Assembly

/redfish/v1/ResourceBlocks/*{ResourceBlockId}*/Processors/*{ProcessorId}*/Assembly

/redfish/v1/ResourceBlocks/*{ResourceBlockId}*/Processors/*{ProcessorId}*/SubProcessors/*{ProcessorId2}*/Assembly

/redfish/v1/ResourceBlocks/*{ResourceBlockId}*/Storage/*{StorageId}*/Assembly

/redfish/v1/ResourceBlocks/*{ResourceBlockId}*/Storage/*{StorageId}*/Drives/*{DriveId}*/Assembly

/redfish/v1/ResourceBlocks/*{ResourceBlockId}*/Systems/*{ComputerSystemId}*/Memory/*{MemoryId}*/Assembly

/redfish/v1/ResourceBlocks/*{ResourceBlockId}*/Systems/*{ComputerSystemId}*/Processors/*{ProcessorId}*/Assembly

/redfish/v1/ResourceBlocks/*{ResourceBlockId}*/Systems/*{ComputerSystemId}*/Processors/*{ProcessorId}*/SubProcessors/*{ProcessorId2}*/Assembly

/redfish/v1/ResourceBlocks/*{ResourceBlockId}*/Systems/*{ComputerSystemId}*/Storage/*{StorageId}*/Assembly

/redfish/v1/ResourceBlocks/*{ResourceBlockId}*/Systems/*{ComputerSystemId}*/Storage/*{StorageId}*/Drives/*{DriveId}*/Assembly

/redfish/v1/Systems/*{ComputerSystemId}*/Memory/*{MemoryId}*/Assembly

/redfish/v1/Systems/*{ComputerSystemId}*/PCIeDevices/*{PCIeDeviceId}*/Assembly

/redfish/v1/Systems/*{ComputerSystemId}*/Processors/*{ProcessorId}*/Assembly

/redfish/v1/Systems/*{ComputerSystemId}*/Processors/*{ProcessorId}*/SubProcessors/*{ProcessorId2}*/Assembly

/redfish/v1/Systems/*{ComputerSystemId}*/Storage/*{StorageId}*/Assembly

/redfish/v1/Systems/*{ComputerSystemId}*/Storage/*{StorageId}*/Drives/*{DriveId}*/Assembly

Assemblies [{	array		This is the definition for an assembly information record.
@odata.id *(v1.2+)*	string	read-only required	The unique identifier for a resource.
Actions { }	object		The available actions for this resource.
BinaryDataURI	string	read-only (null)	URI that provides the ability to access an image of the assembly information.
Description	string	read-only (null)	Description of the Assembly.
EngineeringChangeLevel	string	read-only (null)	Engineering change level of the Assembly.
MemberId	string	read-only required	This is the identifier for the member within the collection.
Model	string	read-only (null)	Model number of the Assembly.
Name	string	read-only (null)	Name of the Assembly.
Oem { }	object		See the OEM object definition in the Common properties section.
PartNumber	string	read-only (null)	Part number of the Assembly.
PhysicalContext *(v1.2+)*	string (enum)	read-only	Describes the area or device to which this assembly data applies. *See PhysicalContext in Property Details, below, for the possible values of this property.*
Producer	string	read-only (null)	Producer or manufacturer of the Assembly.
ProductionDate	string	read-only (null)	Production date of the Assembly.

SerialNumber *(v1.2+)*	string	read-only (null)	The serial number of this assembly.
SKU	string	read-only (null)	SKU of the Assembly.
SparePartNumber	string	read-only (null)	Spare part number of the Assembly.
Status *(v1.1+)* { }	object		This property describes the status and health of the resource and its children. See the *Status object* for details on this property.
Vendor	string	read-only (null)	Vendor of the Assembly.
Version }]	string	read-only (null)	Version of the Assembly.

Property Details

PhysicalContext:

Describes the area or device to which this assembly data applies.

string	Description
Accelerator	An Accelerator.
ACInput	An AC Input.
ACMaintenanceBypassInput	An AC Maintenance Bypass Input.
ACOutput	An AC Output.
ACStaticBypassInput	An AC Static Bypass Input.
ACUtilityInput	An AC Utility Input.
ASIC	An ASIC device, such as networking chip or a chipset component.
Back	The back of the chassis.
Backplane	A backplane within the chassis.
Chassis	The entire chassis.
ComputeBay	Within a compute bay.
CoolingSubsystem	The entire cooling (air and liquid) subsystem.
CPU	A Processor (CPU).
CPUSubsystem	The entire Processor (CPU) subsystem.
DCBus	A DC Bus.
Exhaust	The air exhaust point(s) or region of the chassis.
ExpansionBay	Within an expansion bay.
Fan	A fan.
FPGA	A Field Programmable Gate Array (FPGA).
Front	The front of the chassis.
GPU	A Graphics Processor (GPU).
GPUSubsystem	The entire Graphics Processor (GPU) subsystem.
Intake	The air intake point(s) or region of the chassis.
LiquidInlet	The liquid inlet point of the chassis.
LiquidOutlet	The liquid outlet point of the chassis.
Lower	The lower portion of the chassis.

Memory	A memory device.
MemorySubsystem	The entire Memory subsystem.
Motor	A motor.
NetworkBay	Within a networking bay.
NetworkingDevice	A networking device.
PowerSubsystem	The entire power subsystem.
PowerSupply	A power supply.
PowerSupplyBay	Within a power supply bay.
Rectifier	A rectifier device.
Room	The room.
StorageBay	Within a storage bay.
StorageDevice	A storage device.
SystemBoard	The system board (PCB).
Transformer	A Transformer.
Upper	The upper portion of the chassis.
VoltageRegulator	A voltage regulator device.

Example Response

```json
{
    "@odata.type": "#Assembly.v1_2_0.Assembly",
    "Id": "Assembly",
    "Name": "System-related Assembly data",
    "Assemblies": [
        {
            "@odata.id": "/redfish/v1/Chassis/1/Assembly#/Assemblies/0",
            "MemberId": "0",
            "Name": "System Board",
            "Description": "PCA System Board",
            "Model": "345TTT",
            "PartNumber": "923943",
            "SparePartNumber": "55-434",
            "SKU": "55ZZATR",
            "SerialNumber": "345394834",
            "Vendor": "Contoso",
            "ProductionDate": "2017-04-01T14:55:33+03:00",
            "Producer": "Contoso Supply Co.",
            "Version": "1.44B",
            "EngineeringChangeLevel": "9",
            "BinaryDataURI": "/dumpster/434",
            "Oem": {
                "Contoso": {
                    "Region": "C",
                    "Packaging": "Retail"
                }
            }
        },
        {
            "@odata.id": "/redfish/v1/Chassis/1/Assembly#/Assemblies/1",
            "MemberId": "1",
            "Name": "Fan Controller",
            "Description": "PCA Fan Controller",
            "Model": "F58AS",
            "PartNumber": "3434-149",
            "Vendor": "Contoso",
            "Version": "2.4.481",
            "BinaryDataURI": "/dumpster/422",
            "Status": {
                "State": "Enabled",
                "Health": "Warning"
            }
        }
    ],
    "@odata.id": "/redfish/v1/Chassis/1/Assembly"
}
```

AttributeRegistry 1.3.1

v1.3	v1.2	v1.1	v1.0
2018.3	2018.1	2017.1	2016.1

The AttributeRegistry schema contains a set of key-value pairs that represents the structure of a Registry. It includes mechanisms for building user interfaces (menus), allowing consistent navigation of the contents. The Attribute Registry is specific to a particular implementation or product. The attributes and property names are not standardized.

Language	string	read-only required	This is the RFC 5646 compliant language code for the registry.
OwningEntity	string	read-only required	This is the organization or company that publishes this registry.
RegistryEntries {	object		List of all attributes and their metadata for this component.
Attributes [{	array		The array containing the attributes and their possible values.
AttributeName	string	read-only required	The unique name of the attribute.
CurrentValue	string, boolean, number	read-only (null)	Placeholder of the current value of the attribute.
DefaultValue	string, boolean, number	read-only (null)	The default current value of the attribute.
DisplayName	string	read-only (null)	The user-readable display string of the attribute in the defined 'Language'.
DisplayOrder	integer	read-only (null)	The numeric value describing the ascending order that the attribute is displayed relative to other attributes.
GrayOut	boolean	read-only (null)	The gray-out state of this attribute.
HelpText	string	read-only (null)	The help text for the attribute.
Hidden	boolean	read-only (null)	The hidden state of this attribute.
Immutable	boolean	read-only (null)	Defines whether this attribute is immutable or not.
IsSystemUniqueProperty	boolean	read-only (null)	Defines whether this attribute is unique for this system and should not be replicated.
LowerBound	integer	read-only (null)	The lower limit of the value of an attribute of type 'Integer'.
MaxLength	integer	read-only (null)	The maximum character length of the value of an attribute of type 'String'.
MenuPath	string	read-only (null)	A path that describes the menu hierarchy of this attribute.
MinLength	integer	read-only (null)	The minimum character length of the value of an attribute of type 'String'.
Oem *(v1.3+)* { }	object		See the OEM object definition in the [Common properties](#) section.
ReadOnly	boolean	read-only (null)	The read-only state of this attribute.
ResetRequired *(v1.2+)*	boolean	read-only (null)	True if changing the value of this attribute requires a system or device reset in order to take effect.
ScalarIncrement	integer	read-only (null)	The amount to increment or decrement the value of an attribute of type 'Integer' each time a user requests a value change.
Type	string (enum)	read-only	The type of the attribute. *See [Type](#) in Property Details, below, for the possible values of this property.*
UefiDevicePath *(v1.2+)*	string	read-only	The UEFI device path that qualifies this attribute.

			(null)
UefiKeywordName *(v1.2+)*	string	read-only	The UEFI KeywordString of the attribute.
UefiNamespaceId *(v1.2+)*	string	read-only	The UEFI NamespaceId of the attribute.
UpperBound	integer	read-only (null)	The upper limit of the value of an attribute of type 'Integer'.
Value [{	array		The array containing possible values for attributes of type 'Enumeration'.
ValueDisplayName	string	read-only (null)	A user-readable display string of the value of the attribute in the defined 'Language'.
ValueName }]	string	read-only required	The unique value name of the attribute.
ValueExpression	string	read-only (null)	A regular expression that is used to validate the value of the attribute. This is only applicable to attributes of type 'String' or 'Integer'.
WarningText	string	read-only (null)	The warning text for changing the attribute.
WriteOnly }]	boolean	read-only (null)	Defines whether this attribute is write-only. Such attributes revert back to their initial value after settings are applied.
Dependencies [{	array		The array containing a list of dependencies of attributes on this component.
Dependency {	object		The dependency expression for one or more Attributes in this Attribute Registry.
MapFrom [{	array		Array of the map-from conditions for mapping dependency.
MapFromAttribute	string	read-only	The attribute that is used to evaluate this dependency expression.
MapFromCondition	string (enum)	read-only	The condition that is used to evaluate this dependency expression. *See MapFromCondition in Property Details, below, for the possible values of this property.*
MapFromProperty	string (enum)	read-only	The meta-data property of the attribute specified in MapFromAttribute that is used to evaluate this dependency expression. *See MapFromProperty in Property Details, below, for the possible values of this property.*
MapFromValue	string, boolean, number	read-only (null)	The value that the is used property specified in MapFromProperty that is used to evaluate this dependency expression.
MapTerms }]	string (enum)	read-only	The logical term used to combine two or more MapFrom conditions in this dependency expression. *See MapTerms in Property Details, below, for the possible values of this property.*
MapToAttribute	string	read-only	The Name of the attribute that is affected by this dependency expression.
MapToProperty	string (enum)	read-only	The meta-data property of the attribute specified in MapFromAttribute that is used to evaluate this dependency expression. *See MapToProperty in Property Details, below, for the possible values of this property.*
MapToValue }	string, boolean, number	read-only (null)	The value that MapToProperty is changed to if the dependency expression evaluates to true.
DependencyFor	string	read-only	The AttributeName of the attribute whose change triggers the evaluation of this dependency expression.
Type }]	string (enum)	read-only	The type of the dependency structure. *See Type in Property Details, below, for the possible values of this property.*

Menus [{	array		The array containing the attributes menus and their hierarchy.
DisplayName	string	read-only (null)	The user-readable display string of this menu in the defined 'Language'.
DisplayOrder	integer	read-only (null)	The numeric value describing the ascending order in which this menu is displayed relative to other menus.
GrayOut	boolean	read-only (null)	The gray-out state of this menu. A grayed-only menu is not accessible in user interfaces.
Hidden *(v1.3+)*	boolean	read-only (null)	The hidden state of this menu.
MenuName	string	read-only	The unique name string of this menu.
MenuPath	string	read-only (null)	A path that describes this menu hierarchy relative to other menus.
Oem *(v1.3+)* { }	object		See the OEM object definition in the [Common properties](#) section.
ReadOnly }] }	boolean	read-only (null)	The read-only state of this menu.
RegistryVersion	string	read-only required	This is the attribute registry version which is used in the middle portion of a AttributeRegistry.
SupportedSystems [{	array		Array of systems supported by this attribute registry.
FirmwareVersion *(v1.1+)*	string	read-only (null)	Firmware version.
ProductName	string	read-only (null)	The product name of the system.
SystemId }]	string	read-only (null)	The system ID of the system.

Property Details

MapFromCondition:

The condition that is used to evaluate this dependency expression.

string	Description
EQU	The logical operation for 'Equal'.
GEQ	The logical operation for 'Greater than or Equal'.
GTR	The logical operation for 'Greater than'.
LEQ	The logical operation for 'Less than or Equal'.
LSS	The logical operation for 'Less than'.
NEQ	The logical operation for 'Not Equal'.

MapFromProperty:

The meta-data property of the attribute specified in MapFromAttribute that is used to evaluate this dependency expression.

string	Description
CurrentValue	The dependency on an attribute's CurrentValue.
DefaultValue	The dependency on an attribute's DefaultValue.
GrayOut	The dependency on an attribute's GrayOut state.
Hidden	The dependency on an attribute's Hidden state.
LowerBound	The dependency on an attribute's LowerBound.

MaxLength	The dependency on an attribute's MaxLength.
MinLength	The dependency on an attribute's MinLength.
ReadOnly	The dependency on an attribute's ReadOnly state.
ScalarIncrement	The dependency on an attribute's ScalarIncrement.
UpperBound	The dependency on an attribute's UpperBound.
WriteOnly	The dependency on an attribute's WriteOnly state.

MapTerms:

The logical term used to combine two or more MapFrom conditions in this dependency expression.

string	Description
AND	The operation used for logical 'AND' of dependency terms.
OR	The operation used for logical 'OR' of dependency terms.

MapToProperty:

The meta-data property of the attribute specified in MapFromAttribute that is used to evaluate this dependency expression.

string	Description
CurrentValue	The dependency that affects an attribute's CurrentValue.
DefaultValue	The dependency that affects an attribute's DefaultValue.
DisplayName	The dependency that affects an attribute's DisplayName.
DisplayOrder	The dependency that affects an attribute's DisplayName.
GrayOut	The dependency that affects an attribute's GrayOut state.
HelpText	The dependency that affects an attribute's HelpText.
Hidden	The dependency that affects an attribute's Hidden state.
Immutable	The dependency that affects an attribute's Immutable state.
LowerBound	The dependency that affects an attribute's LowerBound.
MaxLength	The dependency that affects an attribute's MaxLength.
MinLength	The dependency that affects an attribute's MinLength.
ReadOnly	The dependency that affects an attribute's ReadOnly state.
ScalarIncrement	The dependency that affects an attribute's ScalarIncrement.
UpperBound	The dependency that affects an attribute's UpperBound.
ValueExpression	The dependency that affects an attribute's ValueExpression.
WarningText	The dependency that affects an attribute's WarningText.
WriteOnly	The dependency that affects an attribute's WriteOnly state.

Type:

The type of the dependency structure.

string	Description
Map	A simple mapping dependency. The attribute value or state is changed to the mapped value if the condition evaluates to true.

Example Response

```
{
    "@odata.type": "#AttributeRegistry.v1_1_0.AttributeRegistry",
    "Description": "This registry defines a representation of BIOS Attribute instances",
```

```
        "Id": "BiosAttributeRegistryG9000.v1_0_0",
        "Language": "en",
        "Name": "G9000 BIOS Attribute Registry",
        "OwningEntity": "Contoso",
        "RegistryVersion": "1.0.0",
        "SupportedSystems": [
            {
                "ProductName": "Contoso Server GLH9000",
                "SystemId": "G9000",
                "FirmwareVersion": "v1.00 (06/02/2014)"
            }
        ],
        "RegistryEntries": {
            "Attributes": [
                {
                    "CurrentValue": null,
                    "DisplayName": "Embedded NIC 1 Boot",
                    "DisplayOrder": 5,
                    "HelpText": "Select this option to enable network boot (PXE, iSCSI, or FCoE) for the selected NIC. You
may need to configure the NIC firmware for the boot option to be active.",
                    "MenuPath": "./SystemOptions/NetworkBootOptions",
                    "AttributeName": "NicBoot1",
                    "ReadOnly": false,
                    "Hidden": false,
                    "Type": "Enumeration",
                    "Value": [
                        {
                            "ValueDisplayName": "Network Boot",
                            "ValueName": "NetworkBoot"
                        },
                        {
                            "ValueDisplayName": "Disabled",
                            "ValueName": "Disabled"
                        }
                    ],
                    "WarningText": "Important: When enabling network boot support for an embedded NIC, the NIC boot option
does not appear in the UEFI Boot Order or Legacy IPL lists until the next system reboot."
                },
                {
                    "CurrentValue": null,
                    "DisplayName": "Embedded SATA Configuration",
                    "DisplayOrder": 74,
                    "HelpText": "Important: Select this option to configure the embedded chipset SATA controller.",
                    "MenuPath": "./SystemOptions/SataOptions",
                    "AttributeName": "EmbeddedSata",
                    "ReadOnly": false,
                    "Hidden": false,
                    "Type": "Enumeration",
                    "Value": [
                        {
                            "ValueDisplayName": "Enable SATA AHCI Support",
                            "ValueName": "Ahci"
                        },
                        {
                            "ValueDisplayName": "Enable Software RAID Support",
                            "ValueName": "Raid"
                        }
                    ],
                    "WarningText": "Important: Software RAID is not supported when the Boot Mode is configured in Legacy BIOS
Mode."
                }
            ],
            "Dependencies": [
                {
                    "Dependency": {
                        "MapFrom": [
                            {
                                "MapFromAttribute": "BootMode",
                                "MapFromCondition": "EQU",
                                "MapFromProperty": "CurrentValue",
                                "MapFromValue": "LegacyBios"
                            }
                        ],
                        "MapToAttribute": "EmbeddedSata",
                        "MapToProperty": "ReadOnly",
                        "MapToValue": true
                    },
                    "DependencyFor": "EmbeddedSata",
                    "Type": "Map"
                }
            ],
            "Menus": [
                {
                    "DisplayName": "BIOS Configuration",
                    "DisplayOrder": 1,
                    "MenuPath": "./",
                    "MenuName": "BiosMainMenu",
                    "Hidden": false,
                    "ReadOnly": false
                },
                {
                    "DisplayName": "System Options",
                    "DisplayOrder": 2,
                    "MenuPath": "./SystemOptions",
                    "MenuName": "SystemOptions",
                    "Hidden": false,
                    "ReadOnly": false
                }
            ]
        }
    }
}
```

Bios 1.0.6

```
v1.0
```

2016.1

The Bios schema contains properties related to the BIOS Attribute Registry. The Attribute Registry describes the system-specific BIOS attributes and Actions for changing to BIOS settings. Changes to the BIOS typically require a system reset before they take effect. It is likely that a client will find the @Redfish.Settings term in this resource, and if it is found, the client makes requests to change BIOS settings by modifying the resource identified by the @Redfish.Settings term.

URIs:

/redfish/v1/CompositionService/ResourceBlocks/*{ResourceBlockId}*/Systems/*{ComputerSystemId}*/Bios

/redfish/v1/ResourceBlocks/*{ResourceBlockId}*/Systems/*{ComputerSystemId}*/Bios

/redfish/v1/Systems/*{ComputerSystemId}*/Bios

AttributeRegistry	string	read-only (null)	The Resource ID of the Attribute Registry that has the system-specific information about a BIOS resource.
Attributes {	object		The list of BIOS attributes specific to the manufacturer or provider.
(pattern) { } [ ]	array, boolean, integer, number, object, string	(null)	Property names follow regular expression pattern "^([a-zA-Z_][a-zA-Z0-9_]*)?@(odata|Redfish|Message)\.[a-zA-Z_][a-zA-Z0-9_]*$"
(pattern) }	string, boolean, number	read-write (null)	Property names follow regular expression pattern "^[A-Za-z][A-Za-z0-9_]+$"

Actions

ChangePassword

This action is used to change the BIOS passwords.

URIs:

/redfish/v1/CompositionService/ResourceBlocks/*{ResourceBlockId}*/Systems/*{ComputerSystemId}*/Bios/Actions/Bios.ChangePassword

/redfish/v1/ResourceBlocks/*{ResourceBlockId}*/Systems/*{ComputerSystemId}*/Bios/Actions/Bios.ChangePassword

/redfish/v1/Systems/*{ComputerSystemId}*/Bios/Actions/Bios.ChangePassword

The following table shows the parameters for the action which are included in the POST body to the URI shown in the "target" property of the Action.

{			
NewPassword	string	read-write required	The value of the new BIOS password.
OldPassword	string	read-write required	The value of the existing password.
PasswordName }	string	read-write required	The name of the BIOS password to change.

ResetBios

This action is used to reset the BIOS attributes to default.

URIs:

/redfish/v1/CompositionService/ResourceBlocks/*{ResourceBlockId}*/Systems/*{ComputerSystemId}*/Bios/Actions/Bios.ResetBios

/redfish/v1/ResourceBlocks/*{ResourceBlockId}*/Systems/*{ComputerSystemId}*/Bios/Actions/Bios.ResetBios

/redfish/v1/Systems/*{ComputerSystemId}*/Bios/Actions/Bios.ResetBios

(This action takes no parameters.)

Example Response

```
{
    "@odata.type": "#Bios.v1_0_4.Bios",
    "Id": "BIOS",
    "Name": "BIOS Configuration Current Settings",
    "AttributeRegistry": "BiosAttributeRegistryP89.v1_0_0",
    "Attributes": {
        "AdminPhone": "",
        "BootMode": "Uefi",
        "EmbeddedSata": "Raid",
        "NicBoot1": "NetworkBoot",
        "NicBoot2": "Disabled",
        "PowerProfile": "MaxPerf",
        "ProcCoreDisable": 0,
        "ProcHyperthreading": "Enabled",
        "ProcTurboMode": "Enabled",
        "UsbControl": "UsbEnabled"
```

```
        },
    "@Redfish.Settings": {
        "@odata.type": "#Settings.v1_0_0.Settings",
        "ETag": "9234ac83b9700123cc32",
        "Messages": [
            {
                "MessageId": "Base.1.0.SettingsFailed",
                "RelatedProperties": [
                    "#/Attributes/ProcTurboMode"
                ]
            }
        ],
        "SettingsObject": {
            "@odata.id": "/redfish/v1/Systems/437XR1138R2/BIOS/Settings"
        },
        "Time": "2016-03-07T14:44.30-05:00"
    },
    "Actions": {
        "#Bios.ResetBios": {
            "target": "/redfish/v1/Systems/437XR1138R2/BIOS/Actions/Bios.ResetBios"
        },
        "#Bios.ChangePassword": {
            "target": "/redfish/v1/Systems/437XR1138R2/BIOS/Actions/Bios.ChangePassword"
        }
    },
    "@odata.context": "/redfish/v1/$metadata#Bios.Bios",
    "@odata.id": "/redfish/v1/Systems/437XR1138R2/BIOS"
}
```

BootOption 1.0.2

v1.0
2017.3

This is the schema definition for the BootOption resource. It represents the properties of a bootable device available in the System.

URIs:

/redfish/v1/CompositionService/ResourceBlocks/*{ResourceBlockId}*/Systems/*{ComputerSystemId}*/BootOptions/*{BootOptionId}*

/redfish/v1/ResourceBlocks/*{ResourceBlockId}*/Systems/*{ComputerSystemId}*/BootOptions/*{BootOptionId}*

/redfish/v1/Systems/*{ComputerSystemId}*/BootOptions/*{BootOptionId}*

Alias	string (enum)	read-only (null)	The alias of this Boot Source. See *Alias* in Property Details, below, for the possible values of this property.
BootOptionEnabled	boolean	read-write (null)	A flag that shows if the Boot Option is enabled.
BootOptionReference	string	read-only required (null)	The unique boot option string that is referenced in the BootOrder.
DisplayName	string	read-only (null)	The user-readable display string of the Boot Option.
RelatedItem [{	array		The ID(s) of the resources associated with this Boot Option.
@odata.id }]	string	read-only	The unique identifier for a resource.
UefiDevicePath	string	read-only (null)	The UEFI device path used to access this UEFI Boot Option.

Property Details

Alias:

The alias of this Boot Source.

string	Description
BiosSetup	Boot to the BIOS Setup Utility.
Cd	Boot from the CD/DVD disc.
Diags	Boot the manufacturer's Diagnostics program.
Floppy	Boot from the floppy disk drive.
Hdd	Boot from a hard drive.
None	Boot from the normal boot device.

Pxe	Boot from the Pre-Boot EXecution (PXE) environment.
RemoteDrive	Boot from a remote drive (e.g. iSCSI).
SDCard	Boot from an SD Card.
UefiBootNext	Boot to the UEFI Device specified in the BootNext property.
UefiHttp	Boot from a UEFI HTTP network location.
UefiShell	Boot to the UEFI Shell.
UefiTarget	Boot to the UEFI Device specified in the UefiTargetBootSourceOverride property.
Usb	Boot from a USB device as specified by the system BIOS.
Utilities	Boot the manufacturer's Utilities program(s).

Example Response

```
{
    "@odata.context": "/redfish/v1/$metadata#BootOption.BootOption",
    "@odata.id": "/redfish/v1/Systems/1/BootOptions/1",
    "@odata.type": "#BootOption.v1_0_0.BootOption",
    "Id": "1",
    "Name": "Boot Option",
    "Description": "UEFI Boot Option",
    "BootOptionReference": "Boot0000",
    "DisplayName": "Windows Boot Manager",
    "UefiDevicePath": "PciRoot(0x0)/Pci(0x1,0x0)/Pci(0x0,0x0)/Scsi(0x0,0x0)/HD(2,GPT,B02BF459-8975-4222-A1C4-
17915C29E5E5,0x96800,0x31800)/\\EFI\\Microsoft\\Boot\\bootmgfw.efi",
    "Alias": "Hdd",
    "RelatedItem": [
        {
            "@odata.id": "/redfish/v1/Systems/1/SimpleStorage/1"
        }
    ],
    "Oem": {}
}
```

Certificate 1.1.0

v1.1	*v1.0*
2019.1	2018.3

The Certificate resource describes a certificate used to prove the identify of a component, account, or service.

URIs:

/redfish/v1/AccountService/Accounts/*{ManagerAccountId}*/Certificates/*{CertificateId}*

/redfish/v1/AccountService/ActiveDirectory/Certificates/*{CertificateId}*

/redfish/v1/AccountService/ExternalAccountProviders/*{ExternalAccountProviderId}*/Certificates/*{CertificateId}*

/redfish/v1/AccountService/LDAP/Certificates/*{CertificateId}*

/redfish/v1/CompositionService/ResourceBlocks/*{ResourceBlockId}*/Systems/*{ComputerSystemId}*/Boot/Certificates/*{CertificateId}*

/redfish/v1/Managers/*{ManagerId}*/NetworkProtocol/HTTPS/Certificates/*{CertificateId}*

/redfish/v1/Managers/*{ManagerId}*/RemoteAccountService/Accounts/*{ManagerAccountId}*/Certificates/*{CertificateId}*

/redfish/v1/Managers/*{ManagerId}*/RemoteAccountService/ActiveDirectory/Certificates/*{CertificateId}*

/redfish/v1/Managers/*{ManagerId}*/RemoteAccountService/ExternalAccountProviders/*{ExternalAccountProviderId}*/Certificates/*{CertificateId}*

/redfish/v1/Managers/*{ManagerId}*/RemoteAccountService/LDAP/Certificates/*{CertificateId}*

/redfish/v1/ResourceBlocks/*{ResourceBlockId}*/Systems/*{ComputerSystemId}*/Boot/Certificates/*{CertificateId}*

/redfish/v1/Systems/*{ComputerSystemId}*/Boot/Certificates/*{CertificateId}*

CertificateString	string	read-only required on create (null)	The string for the certificate.
CertificateType	string (enum)	read-only required on create (null)	The format of the certificate. *See CertificateType in Property Details, below, for the possible values of this property.*
Issuer {	object		The issuer of the certificate.

City	string	read-only	The city or locality of the organization of the entity.
CommonName	string	read-only	The fully qualified domain name of the entity.
Country	string	read-only	The country of the organization of the entity.
Email	string	read-only (null)	The email address of the contact within the organization of the entity.
Organization	string	read-only	The name of the organization of the entity.
OrganizationalUnit	string	read-only	The name of the unit or division of the organization of the entity.
State }	string	read-only	The state, province, or region of the organization of the entity.
KeyUsage [ ]	array (string (enum))	read-only (null)	The usage of the key contained in the certificate. The usages of a key contained within a certificate. See *KeyUsage in Property Details, below, for the possible values of this property.*
Subject {	object		The subject of the certificate.
City	string	read-only	The city or locality of the organization of the entity.
CommonName	string	read-only	The fully qualified domain name of the entity.
Country	string	read-only	The country of the organization of the entity.
Email	string	read-only (null)	The email address of the contact within the organization of the entity.
Organization	string	read-only	The name of the organization of the entity.
OrganizationalUnit	string	read-only	The name of the unit or division of the organization of the entity.
State }	string	read-only	The state, province, or region of the organization of the entity.
ValidNotAfter	string	read-only	The date when the certificate is no longer valid.
ValidNotBefore	string	read-only	The date when the certificate becomes valid.

Actions

Rekey

This action is used to generate a new key pair for an existing certificate and produce a certificate signing request.

URIs:

/redfish/v1/AccountService/Accounts/*{ManagerAccountId}*/Certificates/*{CertificateId}*/Actions/Certificate.Rekey

/redfish/v1/AccountService/ActiveDirectory/Certificates/*{CertificateId}*/Actions/Certificate.Rekey

/redfish/v1/AccountService/ExternalAccountProviders/*{ExternalAccountProviderId}*/Certificates/*{CertificateId}*/Actions/Certificate.Rekey

/redfish/v1/AccountService/LDAP/Certificates/*{CertificateId}*/Actions/Certificate.Rekey

/redfish/v1/CompositionService/ResourceBlocks/*{ResourceBlockId}*/Systems/*{ComputerSystemId}*/Boot/Certificates/*{CertificateId}*/Actions/Certificate.Rekey

/redfish/v1/Managers/*{ManagerId}*/NetworkProtocol/HTTPS/Certificates/*{CertificateId}*/Actions/Certificate.Rekey

/redfish/v1/Managers/*{ManagerId}*/RemoteAccountService/Accounts/*{ManagerAccountId}*/Certificates/*{CertificateId}*/Actions/Certificate.Rekey

/redfish/v1/Managers/*{ManagerId}*/RemoteAccountService/ActiveDirectory/Certificates/*{CertificateId}*/Actions/Certificate.Rekey

/redfish/v1/Managers/*{ManagerId}*/RemoteAccountService/ExternalAccountProviders/*{ExternalAccountProviderId}*/Certificates/*{CertificateId}*/Actions/Certificate.Rekey

/redfish/v1/Managers/*{ManagerId}*/RemoteAccountService/LDAP/Certificates/*{CertificateId}*/Actions/Certificate.Rekey

/redfish/v1/ResourceBlocks/*{ResourceBlockId}*/Systems/*{ComputerSystemId}*/Boot/Certificates/*{CertificateId}*/Actions/Certificate.Rekey

/redfish/v1/Systems/*{ComputerSystemId}*/Boot/Certificates/*{CertificateId}*/Actions/Certificate.Rekey

The following table shows the parameters for the action which are included in the POST body to the URI shown in the "target" property of the Action.

{			
ChallengePassword	string	read-write	The challenge password to be applied to the certificate for revocation requests.
KeyBitLength	integer	read-write	The length of the key in bits, if needed based on the value of the 'KeyPairAlgorithm' parameter.
KeyCurveId	string	read-write	The curve ID to be used with the key, if needed based on the value of the 'KeyPairAlgorithm' parameter.
KeyPairAlgorithm	string	read-write	The type of key pair for use with signing algorithms.
}			

Renew

This action is used to generate a certificate signing request using the existing information and key pair of the certificate.

URIs:

/redfish/v1/AccountService/Accounts/*{ManagerAccountId}*/Certificates/*{CertificateId}*/Actions/Certificate.Renew

/redfish/v1/AccountService/ActiveDirectory/Certificates/*{CertificateId}*/Actions/Certificate.Renew

/redfish/v1/AccountService/ExternalAccountProviders/*{ExternalAccountProviderId}*/Certificates/*{CertificateId}*/Actions/Certificate.Renew

/redfish/v1/AccountService/LDAP/Certificates/*{CertificateId}*/Actions/Certificate.Renew

/redfish/v1/CompositionService/ResourceBlocks/*{ResourceBlockId}*/Systems/*{ComputerSystemId}*/Boot/Certificates/*{CertificateId}*/Actions/Certificate.Renew

/redfish/v1/Managers/*{ManagerId}*/NetworkProtocol/HTTPS/Certificates/*{CertificateId}*/Actions/Certificate.Renew

/redfish/v1/Managers/*{ManagerId}*/RemoteAccountService/Accounts/*{ManagerAccountId}*/Certificates/*{CertificateId}*/Actions/Certificate.Renew

/redfish/v1/Managers/*{ManagerId}*/RemoteAccountService/ActiveDirectory/Certificates/*{CertificateId}*/Actions/Certificate.Renew

/redfish/v1/Managers/*{ManagerId}*/RemoteAccountService/ExternalAccountProviders/*{ExternalAccountProviderId}*/Certificates/*{CertificateId}*/Actions/Certificate.Renew

/redfish/v1/Managers/*{ManagerId}*/RemoteAccountService/LDAP/Certificates/*{CertificateId}*/Actions/Certificate.Renew

/redfish/v1/ResourceBlocks/*{ResourceBlockId}*/Systems/*{ComputerSystemId}*/Boot/Certificates/*{CertificateId}*/Actions/Certificate.Renew

/redfish/v1/Systems/*{ComputerSystemId}*/Boot/Certificates/*{CertificateId}*/Actions/Certificate.Renew

The following table shows the parameters for the action which are included in the POST body to the URI shown in the "target" property of the Action.

{			
ChallengePassword	string	read-write	The challenge password to be applied to the certificate for revocation requests.
}			

Property Details

CertificateType:

The format of the certificate.

string	Description
PEM	A PEM encoded certificate.
PKCS7	A PEM encoded PKCS7 certificate.

KeyUsage:

The usage of the key contained in the certificate. The usages of a key contained within a certificate.

string	Description
ClientAuthentication	The public key is used for TLS WWW client authentication.
CodeSigning	The public key is used for the signing of executable code.
CRLSigning	The public key is used for verifying signatures on certificate revocation lists (CLRs).

DataEncipherment	The public key is used for directly enciphering raw user data without the use of an intermediate symmetric cipher.
DecipherOnly	The public key could be used for deciphering data while performing key agreement.
DigitalSignature	The public key is used for verifying digital signatures, other than signatures on certificates and CRLs.
EmailProtection	The public key is used for email protection.
EncipherOnly	The public key could be used for enciphering data while performing key agreement.
KeyAgreement	The public key is used for key agreement.
KeyCertSign	The public key is used for verifying signatures on public key certificates.
KeyEncipherment	The public key is used for enciphering private or secret keys.
NonRepudiation	The public key is used to verify digital signatures, other than signatures on certificates and CRLs, and used to provide a non-repudiation service that protects against the signing entity falsely denying some action.
OCSPSigning	The public key is used for signing OCSP responses.
ServerAuthentication	The public key is used for TLS WWW server authentication.
Timestamping	The public key is used for binding the hash of an object to a time.

Example Response

```
{
    "@odata.type": "#Certificate.v1_0_0.Certificate",
    "Id": "1",
    "Name": "HTTPS Certificate",
    "CertificateString": "-----BEGIN CERTIFICATE-----\nMIIFsTCC [**truncated example**] GXG5zljlu\n-----END CERTIFICATE-----",
    "CertificateType": "PEM",
    "Issuer": {
        "Country": "US",
        "State": "Oregon",
        "City": "Portland",
        "Organization": "Contoso",
        "OrganizationalUnit": "ABC",
        "CommonName": "manager.contoso.org"
    },
    "Subject": {
        "Country": "US",
        "State": "Oregon",
        "City": "Portland",
        "Organization": "Contoso",
        "OrganizationalUnit": "ABC",
        "CommonName": "manager.contoso.org"
    },
    "ValidNotBefore": "2018-09-07T13:22:05Z",
    "ValidNotAfter": "2019-09-07T13:22:05Z",
    "KeyUsage": [
        "KeyEncipherment",
        "ServerAuthentication"
    ],
    "Oem": {},
    "@odata.id": "/redfish/v1/Managers/BMC/NetworkProtocol/HTTPS/Certificates/1"
}
```

CertificateLocations 1.0.1

v1.0
2018.3

The CertificateLocations schema defines a resource that an administrator can use in order to locate all certificates installed on a given service.

URIs:

/redfish/v1/CertificateService/CertificateLocations

Links {	object		Contains references to other resources that are related to this resource.
Certificates [{	array		This property is an array of references to the certificates installed on this service.
@odata.id }]	string	read-only	*Link to a Certificate resource. See the Links section and the Certificate schema for details.*

Oem { }	object		See the OEM object definition in the [Common properties](#) section.
}			

Example Response

```
{
    "@odata.type": "#CertificateLocations.v1_0_0.CertificateLocations",
    "Id": "CertificateLocations",
    "Name": "Certificate Locations",
    "Links": {
        "Certificates": [
            {
                "@odata.id": "/redfish/v1/Managers/BMC/NetworkProtocol/HTTPS/Certificates/1"
            }
        ]
    },
    "Oem": {},
    "@odata.id": "/redfish/v1/CertificateService/CertificateLocations"
}
```

CertificateService 1.0.1

v1.0
2018.3

The CertificateService schema defines a Certificate Service which represents the actions available to manage certificates and links to where certificates are installed.

URIs:

/redfish/v1/CertificateService

CertificateLocations {	object		Information regarding the location of certificates. *See the [CertificateLocations](#) schema for details on this property.*
@odata.id }	string	read-only	*Link to a CertificateLocations resource. See the Links section and the [CertificateLocations](#) schema for details.*

Actions

GenerateCSR

This action is used to perform a certificate signing request.

URIs:

/redfish/v1/CertificateService/Actions/CertificateService.GenerateCSR

The following table shows the parameters for the action which are included in the POST body to the URI shown in the "target" property of the Action.

{			
AlternativeNames [ ]	array (string)	read-write	Additional hostnames of the component that is being secured.
CertificateCollection {	object		A link to the certificate collection where the certificate will be installed. *Contains a link to a resource.*
@odata.id }	string	read-only	*Link to Collection of [Certificate](#). See the Certificate schema for details.*
ChallengePassword	string	read-write	The challenge password to be applied to the certificate for revocation requests.
City	string	read-write required	The city or locality of the organization making the request.
CommonName	string	read-write required	The fully qualified domain name of the component that is being secured.
ContactPerson	string	read-write	The name of the user making the request.
Country	string	read-write required	The country of the organization making the request.
Email	string	read-write	The email address of the contact within the organization making the

			request.
GivenName	string	read-write	The given name of the user making the request.
Initials	string	read-write	The initials of the user making the request.
KeyBitLength	integer	read-write	The length of the key in bits, if needed based on the value of the 'KeyPairAlgorithm' parameter.
KeyCurveId	string	read-write	The curve ID to be used with the key, if needed based on the value of the 'KeyPairAlgorithm' parameter.
KeyPairAlgorithm	string	read-write	The type of key pair for use with signing algorithms.
KeyUsage [ ]	array (string (enum))	read-write	The usage of the key contained in the certificate. The usages of a key contained within a certificate. *See [KeyUsage](#) in Property Details, below, for the possible values of this property.*
Organization	string	read-write required	The name of the organization making the request.
OrganizationalUnit	string	read-write required	The name of the unit or division of the organization making the request.
State	string	read-write required	The state, province, or region of the organization making the request.
Surname	string	read-write	The surname of the user making the request.
UnstructuredName }	string	read-write	The unstructured name of the subject.

ReplaceCertificate

This action is used to replace an existing certificate.

URIs:

/redfish/v1/CertificateService/Actions/CertificateService.ReplaceCertificate

The following table shows the parameters for the action which are included in the POST body to the URI shown in the "target" property of the Action.

{			
CertificateString	string	read-write required	The string for the certificate.
CertificateType	string (enum)	read-write	The format of the certificate. *See [CertificateType](#) in Property Details, below, for the possible values of this property.*
CertificateUri {	object		A link to the certificate that is being replaced. *See the [Certificate](#) schema for details on this property.*
@odata.id } }	string	read-only	*Link to a Certificate resource. See the Links section and the [Certificate](#) schema for details.*

Property Details

CertificateType:

The format of the certificate.

string	Description
PEM	A PEM encoded certificate.
PKCS7	A PEM encoded PKCS7 certificate.

KeyUsage:

The usage of the key contained in the certificate. The usages of a key contained within a certificate.

string	Description
ClientAuthentication	The public key is used for TLS WWW client authentication.
CodeSigning	The public key is used for the signing of executable code.
CRLSigning	The public key is used for verifying signatures on certificate revocation lists (CLRs).
DataEncipherment	The public key is used for directly enciphering raw user data without the use of an intermediate symmetric cipher.
DecipherOnly	The public key could be used for deciphering data while performing key agreement.
DigitalSignature	The public key is used for verifying digital signatures, other than signatures on certificates and CRLs.
EmailProtection	The public key is used for email protection.
EncipherOnly	The public key could be used for enciphering data while performing key agreement.
KeyAgreement	The public key is used for key agreement.
KeyCertSign	The public key is used for verifying signatures on public key certificates.
KeyEncipherment	The public key is used for enciphering private or secret keys.
NonRepudiation	The public key is used to verify digital signatures, other than signatures on certificates and CRLs, and used to provide a non-repudiation service that protects against the signing entity falsely denying some action.
OCSPSigning	The public key is used for signing OCSP responses.
ServerAuthentication	The public key is used for TLS WWW server authentication.
Timestamping	The public key is used for binding the hash of an object to a time.

Example Response

```
{
    "@odata.type": "#CertificateService.v1_0_0.CertificateService",
    "Id": "CertificateService",
    "Name": "Certificate Service",
    "Actions": {
        "#CertificateService.GenerateCSR": {
            "target": "/redfish/v1/CertificateService/Actions/CertificateService.GenerateCSR",
            "@Redfish.ActionInfo": "/redfish/v1/CertificateService/GenerateCSRActionInfo"
        },
        "#CertificateService.ReplaceCertificate": {
            "target": "/redfish/v1/CertificateService/Actions/CertificateService.ReplaceCertificate",
            "@Redfish.ActionInfo": "/redfish/v1/CertificateService/ReplaceCertificateActionInfo"
        }
    },
    "CertificateLocations": {
        "@odata.id": "/redfish/v1/CertificateService/CertificateLocations"
    },
    "Oem": {},
    "@odata.id": "/redfish/v1/CertificateService"
}
```

Chassis 1.9.1

v1.9	v1.8	v1.7	v1.6	v1.5	v1.4	v1.3	v1.2	v1.1	v1.0
2018.3	2018.2	2018.1	2017.3	2017.1	2016.3	2016.2	2016.1	1.1	1.0

The Chassis schema represents the physical components of a system. This resource represents the sheet-metal confined spaces and logical zones such as racks, enclosures, chassis and all other containers. Subsystems (like sensors) that operate outside of a system's data plane (meaning the resources are not accessible to software running on the system) are linked either directly or indirectly through this resource.

URIs:

/redfish/v1/Chassis/*{ChassisId}*

Assembly *(v1.6+)* {	object		A reference to the Assembly resource associated with this chassis. *See the Assembly schema for details on this property.*
@odata.id }	string	read-only	*Link to a Assembly resource. See the Links section and the Assembly schema for details.*

AssetTag	string	read-write (null)	The user assigned asset tag of this chassis.
ChassisType	string (enum)	read-only required	The type of physical form factor of the chassis. See _ChassisType_ in Property Details, below, for the possible values of this property.
DepthMm _(v1.4+)_	number (mm)	read-only (null)	The depth of the chassis.
EnvironmentalClass _(v1.9+)_	string (enum)	read-only (null)	The ASHRAE Environmental Class for this Chassis. See _EnvironmentalClass_ in Property Details, below, for the possible values of this property.
HeightMm _(v1.4+)_	number (mm)	read-only (null)	The height of the chassis.
IndicatorLED	string (enum)	read-write (null)	The state of the indicator LED, used to identify the chassis. See _IndicatorLED_ in Property Details, below, for the possible values of this property.
Links {	object		Contains references to other resources that are related to this resource.
ComputerSystems [{	array		An array of references to the computer systems contained in this chassis. This will only reference ComputerSystems that are directly and wholly contained in this chassis.
@odata.id }]	string	read-only	_Link to a ComputerSystem resource. See the Links section and the ComputerSystem schema for details._
ContainedBy {	object		A reference to the chassis that this chassis is contained by.
@odata.id }	string	read-only	_Link to another Chassis resource._
Contains [{	array		An array of references to any other chassis that this chassis has in it.
@odata.id }]	string	read-only	_Link to another Chassis resource._
CooledBy [{	array		An array of ID[s] of resources that cool this chassis. Normally the ID will be a chassis or a specific set of fans.
@odata.id }]	string	read-only	The unique identifier for a resource.
Drives _(v1.2+)_ [{	array		An array of references to the disk drives located in this Chassis.
@odata.id }]	string	read-only	_Link to a Drive resource. See the Links section and the Drive schema for details._
ManagedBy [{	array		An array of references to the Managers responsible for managing this chassis.
@odata.id }]	string	read-only	_Link to a Manager resource. See the Links section and the Manager schema for details._
ManagersInChassis _(v1.2+)_ [{	array		An array of references to the managers located in this Chassis.
@odata.id }]	string	read-only	_Link to a Manager resource. See the Links section and the Manager schema for details._
Oem { }	object		See the OEM object definition in the Common properties section.
PCIeDevices _(v1.4+)_ [{	array		An array of references to the PCIe Devices located in this Chassis.
@odata.id }]	string	read-only	_Link to a PCIeDevice resource. See the Links section and the PCIeDevice schema for details._
PoweredBy [{	array		An array of ID[s] of resources that power this chassis. Normally the ID will be a chassis or a specific set of Power Supplies.
@odata.id }]	string	read-only	The unique identifier for a resource.

Processors *(v1.9+)* [{	array		An array of references to the Processors located in this Chassis.
@odata.id }]	string	read-only	*Link to a Processor resource. See the Links section and the [Processor](#) schema for details.*
ResourceBlocks *(v1.5+)* [{	array		An array of references to the Resource Blocks located in this Chassis.
@odata.id }]	string	read-only	*Link to a ResourceBlock resource. See the Links section and the [ResourceBlock](#) schema for details.*
Storage *(v1.2+)* [{	array		An array of references to the storage subsystems connected to or inside this Chassis.
@odata.id }]	string	read-only	*Link to a Storage resource. See the Links section and the [Storage](#) schema for details.*
Switches *(v1.7+)* [{	array		An array of references to the Switches located in this Chassis.
@odata.id }] }	string	read-only	*Link to a Switch resource. See the Links section and the [Switch](#) schema for details.*
Location *(v1.2+)* { }	object		The Location of the chassis. *See the [Location object](#) for details on this property.*
LogServices {	object		A reference to the logs for this chassis. *Contains a link to a resource.*
@odata.id }	string	read-only	*Link to Collection of [LogService](#). See the LogService schema for details.*
Manufacturer	string	read-only (null)	The manufacturer of this chassis.
Model	string	read-only (null)	The model number of the chassis.
NetworkAdapters *(v1.4+)* {	object		A reference to the collection of Network Adapters associated with this chassis. *Contains a link to a resource.*
@odata.id }	string	read-only	*Link to Collection of [NetworkAdapter](#). See the NetworkAdapter schema for details.*
PartNumber	string	read-only (null)	The part number of the chassis.
PCIeSlots *(v1.8+)* {	object		A reference to the PCIe Slot properties of this chassis. *See the [PCIeSlots](#) schema for details on this property.*
@odata.id }	string	read-only	*Link to a PCIeSlots resource. See the Links section and the [PCIeSlots](#) schema for details.*
PhysicalSecurity *(v1.1+)* {	object		The state of the physical security sensor.
IntrusionSensor	string (enum)	read-write (null)	This indicates the known state of the physical security sensor, such as if it is hardware intrusion detected. *See [IntrusionSensor](#) in Property Details, below, for the possible values of this property.*
IntrusionSensorNumber	integer	read-only (null)	A numerical identifier to represent the physical security sensor.
IntrusionSensorReArm }	string (enum)	read-only (null)	This indicates how the Normal state to be restored. *See [IntrusionSensorReArm](#) in Property Details, below, for the possible values of this property.*
Power {	object		A reference to the power properties (power supplies, power policies, sensors) of this chassis. *See the [Power](#) schema for details on this property.*
@odata.id	string	read-only	*Link to a Power resource. See the Links section and the [Power](#) schema for*

}			*details.*
PowerState *(v1.1+)*	string (enum)	read-only (null)	The current power state of the chassis. See [PowerState](#) in Property Details, below, for the possible values of this property.
Sensors *(v1.9+)* {	object		The naivgation pointer to the collection of sensors located in the equipment and sub-components. *Contains a link to a resource.*
@odata.id }	string	read-only	*Link to Collection of [Sensor](#). See the Sensor schema for details.*
SerialNumber	string	read-only (null)	The serial number of the chassis.
SKU	string	read-only (null)	The SKU of the chassis.
Status { }	object		This property describes the status and health of the resource and its children. See the [Status object](#) for details on this property.
Thermal {	object		A reference to the thermal properties (fans, cooling, sensors) of this chassis. See the [Thermal](#) schema for details on this property.
@odata.id }	string	read-only	*Link to a Thermal resource. See the Links section and the [Thermal](#) schema for details.*
UUID	string	read-only (null)	The Universal Unique Identifier (UUID) for this Chassis.
WeightKg *(v1.4+)*	number (kg)	read-only (null)	The weight of the chassis.
WidthMm *(v1.4+)*	number (mm)	read-only (null)	The width of the chassis.

Actions

Reset

This action is used to reset the chassis. This action resets the chassis, not Systems or other contained resources, although side effects may occur which affect those resources.

URIs:

/redfish/v1/Chassis/*[{ChassisId}](#)*/Actions/Chassis.Reset

The following table shows the parameters for the action which are included in the POST body to the URI shown in the "target" property of the Action.

{			
ResetType }	string (enum)	read-write	The type of reset to be performed. See [ResetType](#) in Property Details, below, for the possible values of this property.

Property Details

ChassisType:

The type of physical form factor of the chassis.

string	Description
Blade	An enclosed or semi-enclosed, typically vertically-oriented, system chassis which must be plugged into a multi-system chassis to function normally.
Card	A loose device or circuit board intended to be installed in a system or other enclosure.
Cartridge	A small self-contained system intended to be plugged into a multi-system chassis.
Component	A small chassis, card, or device which contains devices for a particular subsystem or function.
Drawer	An enclosed or semi-enclosed, typically horizontally-oriented, system chassis which may be slid into a multi-system chassis.

Enclosure	A generic term for a chassis that does not fit any other description.
Expansion	A chassis which expands the capabilities or capacity of another chassis.
IPBasedDrive (v1.3+)	A chassis in a drive form factor with IP-based network connections.
Module	A small, typically removable, chassis or card which contains devices for a particular subsystem or function.
Other	A chassis that does not fit any of these definitions.
Pod	A collection of equipment racks in a large, likely transportable, container.
Rack	An equipment rack, typically a 19-inch wide freestanding unit.
RackGroup (v1.4+)	A group of racks which form a single entity or share infrastructure.
RackMount	A single system chassis designed specifically for mounting in an equipment rack.
Row	A collection of equipment racks.
Shelf	An enclosed or semi-enclosed, typically horizontally-oriented, system chassis which must be plugged into a multi-system chassis to function normally.
Sidecar	A chassis that mates mechanically with another chassis to expand its capabilities or capacity.
Sled	An enclosed or semi-enclosed, system chassis which must be plugged into a multi-system chassis to function normally similar to a blade type chassis.
StandAlone	A single, free-standing system, commonly called a tower or desktop chassis.
StorageEnclosure (v1.6+)	A chassis which encloses storage.
Zone	A logical division or portion of a physical chassis that contains multiple devices or systems that cannot be physically separated.

EnvironmentalClass:

The ASHRAE Environmental Class for this Chassis.

string	Description
A1	ASHRAE Environmental Specification Class 'A1'.
A2	ASHRAE Environmental Specification Class 'A2'.
A3	ASHRAE Environmental Specification Class 'A3'.
A4	ASHRAE Environmental Specification Class 'A4'.

IndicatorLED:

The state of the indicator LED, used to identify the chassis.

string	Description
Blinking	The Indicator LED is blinking.
Lit	The Indicator LED is lit.
Off	The Indicator LED is off.
Unknown (deprecated v1.5)	The state of the Indicator LED cannot be determined. *Deprecated v1.5+. This value has been Deprecated in favor of returning null if the state is unknown.*

IntrusionSensor:

This indicates the known state of the physical security sensor, such as if it is hardware intrusion detected.

string	Description
HardwareIntrusion	A door, lock, or other mechanism protecting the internal system hardware from being accessed is

	detected as being in an insecure state.
Normal	No abnormal physical security conditions are detected at this time.
TamperingDetected	Physical tampering of the monitored entity is detected.

IntrusionSensorReArm:

This indicates how the Normal state to be restored.

string	Description
Automatic	This sensor would be restored to the Normal state automatically as no abnormal physical security conditions are detected.
Manual	This sensor would be restored to the Normal state by a manual re-arm.

PowerState:

The current power state of the chassis.

string	Description
Off	The components within the chassis has no power, except some components may continue to have AUX power such as management controller.
On	The components within the chassis has power on.
PoweringOff	A temporary state between On and Off. The components within the chassis can take time to process the power off action.
PoweringOn	A temporary state between Off and On. The components within the chassis can take time to process the power on action.

ResetType:

The type of reset to be performed.

string	Description
ForceOff	Turn the unit off immediately (non-graceful shutdown).
ForceOn	Turn the unit on immediately.
ForceRestart	Perform an immediate (non-graceful) shutdown, followed by a restart.
GracefulRestart	Perform a graceful shutdown followed by a restart of the system.
GracefulShutdown	Perform a graceful shutdown and power off.
Nmi	Generate a Diagnostic Interrupt (usually an NMI on x86 systems) to cease normal operations, perform diagnostic actions and typically halt the system.
On	Turn the unit on.
PowerCycle	Perform a power cycle of the unit.
PushPowerButton	Simulate the pressing of the physical power button on this unit.

Example Response

```
{
    "@odata.type": "#Chassis.v1_8_0.Chassis",
    "Id": "1U",
    "Name": "Computer System Chassis",
    "ChassisType": "RackMount",
    "AssetTag": "Chicago-45Z-2381",
    "Manufacturer": "Contoso",
    "Model": "3500RX",
    "SKU": "8675309",
    "SerialNumber": "437XR1138R2",
    "PartNumber": "224071-J23",
    "PowerState": "On",
    "IndicatorLED": "Lit",
    "HeightMm": 44.45,
    "WidthMm": 431.8,
    "DepthMm": 711,
    "WeightKg": 15.31,
    "Location": {
        "PostalAddress": {
            "Country": "US",
```

```
            "Territory": "OR",
            "City": "Portland",
            "Street": "1001 SW 5th Avenue",
            "HouseNumber": 1100,
            "Name": "DMTF",
            "PostalCode": "97204"
        },
        "Placement": {
            "Row": "North",
            "Rack": "WEB43",
            "RackOffsetUnits": "EIA_310",
            "RackOffset": 12
        }
    },
    "Status": {
        "State": "Enabled",
        "Health": "OK"
    },
    "Thermal": {
        "@odata.id": "/redfish/v1/Chassis/1U/Thermal"
    },
    "Power": {
        "@odata.id": "/redfish/v1/Chassis/1U/Power"
    },
    "Assembly": {
        "@odata.id": "/redfish/v1/Chassis/1U/Assembly"
    },
    "Links": {
        "ComputerSystems": [
            {
                "@odata.id": "/redfish/v1/Systems/437XR1138R2"
            }
        ],
        "ManagedBy": [
            {
                "@odata.id": "/redfish/v1/Managers/BMC"
            }
        ],
        "ManagersInChassis": [
            {
                "@odata.id": "/redfish/v1/Managers/BMC"
            }
        ]
    },
    "@odata.context": "/redfish/v1/$metadata#Chassis.Chassis",
    "@odata.id": "/redfish/v1/Chassis/1U"
}
```

CompositionService 1.1.1

v1.1	v1.0
2018.2	2017.1

The CompositionService schema defines a Composition Service which represents the properties for the service and links to the resources available for composition.

URIs:

/redfish/v1/CompositionService

AllowOverprovisioning *(v1.1+)*	boolean	read-write (null)	This indicates whether this service is allowed to overprovision a composition relative to the composition request.
AllowZoneAffinity *(v1.1+)*	boolean	read-only (null)	This indicates whether a client is allowed to request that given composition request is fulfilled by a specified Resource Zone.
ResourceBlocks {	object		The resource blocks available on the service. *Contains a link to a resource.*
@odata.id }	string	read-only	*Link to Collection of ResourceBlock. See the ResourceBlock schema for details.*
ResourceZones {	object		The resource zones available on the service. *Contains a link to a resource.*
@odata.id }	string	read-only	*Link to Collection of Zone. See the Zone schema for details.*
ServiceEnabled	boolean	read-write (null)	This indicates whether this service is enabled.
Status { }	object		This property describes the status and health of the resource and its children. *See the Status object for details on this property.*

Example Response

```
{
    "@odata.type": "#CompositionService.v1_1_0.CompositionService",
    "Id": "CompositionService",
    "Name": "Composition Service",
    "Status": {
        "State": "Enabled",
        "Health": "OK"
    },
    "ServiceEnabled": true,
    "AllowOverprovisioning": true,
    "AllowZoneAffinity": true,
    "ResourceBlocks": {
        "@odata.id": "/redfish/v1/CompositionService/ResourceBlocks"
    },
    "ResourceZones": {
        "@odata.id": "/redfish/v1/CompositionService/ResourceZones"
    },
    "Oem": {},
    "@odata.context": "/redfish/v1/$metadata#CompositionService.CompositionService",
    "@odata.id": "/redfish/v1/CompositionService"
}
```

ComputerSystem 1.7.0

v1.7	v1.6	v1.5	v1.4	v1.3	v1.2	v1.1	v1.0
2019.1	2018.3	2017.3	2017.1	2016.3	2016.2	2016.1	1.0

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.

URIs:

/redfish/v1/CompositionService/ResourceBlocks/*{ResourceBlockId}*/Systems/*{ComputerSystemId}*

/redfish/v1/ResourceBlocks/*{ResourceBlockId}*/Systems/*{ComputerSystemId}*

/redfish/v1/Systems/*{ComputerSystemId}*

AssetTag	string	read-write (null)	The user definable tag that can be used to track this computer system for inventory or other client purposes.
Bios *(v1.1+)* {	object		A reference to the BIOS settings associated with this system. *See the Bios schema for details on this property.*
@odata.id }	string	read-only	*Link to a Bios resource. See the Links section and the Bios schema for details.*
BiosVersion	string	read-only (null)	The version of the system BIOS or primary system firmware.
Boot {	object		Information about the boot settings for this system.
AliasBootOrder [ ]	array (string (enum))	read-write (null)	Ordered array of boot source aliases representing the persistent Boot Order associated with this computer system. *See AliasBootOrder in Property Details, below, for the possible values of this property.*
BootNext *(v1.5+)*	string	read-write (null)	This property is the BootOptionReference of the Boot Option to perform a one time boot from when BootSourceOverrideTarget is UefiBootNext.
BootOptions *(v1.5+)* {	object		A reference to the collection of the UEFI Boot Options associated with this Computer System. *Contains a link to a resource.*
@odata.id }	string	read-only	*Link to Collection of BootOption. See the BootOption schema for details.*
BootOrder *(v1.5+)* [ ]	array (string, null)	read-write	Ordered array of BootOptionReference strings representing the persistent Boot Order associated with this computer system.
BootOrderPropertySelection *(v1.6+)*	string (enum)	read-write (null)	Choice of which boot order property to use when specifying the boot order. *See BootOrderPropertySelection in Property Details, below, for the possible values of this property.*
BootSourceOverrideEnabled	string	read-write	Describes the state of the Boot Source Override feature.

		(enum)	(null)	*See [BootSourceOverrideEnabled](#) in Property Details, below, for the possible values of this property.*
BootSourceOverrideMode *(v1.1+)*		string (enum)	read-write (null)	The BIOS Boot Mode (either Legacy or UEFI) to be used when BootSourceOverrideTarget boot source is booted from. *See [BootSourceOverrideMode](#) in Property Details, below, for the possible values of this property.*
BootSourceOverrideTarget		string (enum)	read-write (null)	The current boot source to be used at next boot instead of the normal boot device, if BootSourceOverrideEnabled is true. *See [BootSourceOverrideTarget](#) in Property Details, below, for the possible values of this property.*
Certificates *(v1.7+)* {		object		This is a reference to a collection of certificates used for booting via HTTPS by this ComputerSystem. *Contains a link to a resource.*
@odata.id }		string	read-only	*Link to Collection of [Certificate](#). See the Certificate schema for details.*
UefiTargetBootSourceOverride }		string	read-write (null)	This property is the UEFI Device Path of the device to boot from when BootSourceOverrideTarget is UefiTarget.
EthernetInterfaces {		object		A reference to the collection of Ethernet interfaces associated with this system. *Contains a link to a resource.*
@odata.id }		string	read-only	*Link to Collection of [EthernetInterface](#). See the EthernetInterface schema for details.*
HostedServices *(v1.2+)* {		object		The services that this computer system supports.
Oem { }		object		See the OEM object definition in the [Common properties](#) section.
StorageServices {		object		A reference to a collection of storage services supported by this computer system.
@odata.id } }		string	read-only	The unique identifier for a resource.
HostingRoles *(v1.2+)* [ ]		array (string (enum))	read-only	The hosing roles that this computer system supports. The enumerations of HostingRoles specify different features that the hosting ComputerSystem supports. *See [HostingRoles](#) in Property Details, below, for the possible values of this property.*
HostName		string	read-write (null)	The DNS Host Name, without any domain information.
HostWatchdogTimer *(v1.5+)* {		object		This object describes the Host Watchdog Timer functionality for this system.
FunctionEnabled		boolean	read-write required (null)	This indicates if the Host Watchdog Timer functionality has been enabled. Additional host-based software is necessary to activate the timer function.
Oem { }		object		See the OEM object definition in the [Common properties](#) section.
Status { }		object		This property describes the status and health of the resource and its children. *See the [Status object](#) for details on this property.*
TimeoutAction		string (enum)	read-write required (null)	This property indicates the action to perform when the Watchdog Timer reaches its timeout value. *See [TimeoutAction](#) in Property Details, below, for the possible values of this property.*
WarningAction }		string (enum)	read-write (null)	This property indicates the action to perform when the Watchdog Timer is close (typically 3-10 seconds) to reaching its timeout value.

			See WarningAction in Property Details, below, for the possible values of this property.
IndicatorLED	string (enum)	read-write (null)	The state of the indicator LED, used to identify the system. *See IndicatorLED in Property Details, below, for the possible values of this property.*
Links {	object		Contains references to other resources that are related to this resource.
Chassis [{	array		An array of references to the chassis in which this system is contained.
@odata.id }]	string	read-only	*Link to a Chassis resource. See the Links section and the Chassis schema for details.*
ConsumingComputerSystems *(v1.5+)* [{	array		An array of references to ComputerSystems that are realized, in whole or in part, from this ComputerSystem.
@odata.id }]	string	read-only	*Link to another ComputerSystem resource.*
CooledBy [{	array		An array of ID[s] of resources that cool this computer system. Normally the ID will be a chassis or a specific set of fans.
@odata.id }]	string	read-only	The unique identifier for a resource.
Endpoints *(v1.2+)* [{	array		An array of references to the endpoints that connect to this system.
@odata.id }]	string	read-only	*Link to a Endpoint resource. See the Links section and the Endpoint schema for details.*
ManagedBy [{	array		An array of references to the Managers responsible for this system.
@odata.id }]	string	read-only	*Link to a Manager resource. See the Links section and the Manager schema for details.*
Oem { }	object		See the OEM object definition in the Common properties section.
PoweredBy [{	array		An array of ID[s] of resources that power this computer system. Normally the ID will be a chassis or a specific set of Power Supplies.
@odata.id }]	string	read-only	The unique identifier for a resource.
ResourceBlocks *(v1.4+)* [{	array		An array of references to the Resource Blocks that are used in this Computer System.
@odata.id }]	string	read-only	*Link to a ResourceBlock resource. See the Links section and the ResourceBlock schema for details.*
SupplyingComputerSystems *(v1.5+)* [{	array		An array of references to ComputerSystems that contribute, in whole or in part, to the implementation of this ComputerSystem.
@odata.id }] }	string	read-only	*Link to another ComputerSystem resource.*
LogServices {	object		A reference to the collection of Log Services associated with this system. *Contains a link to a resource.*
@odata.id }	string	read-only	*Link to Collection of LogService. See the LogService schema for details.*
Manufacturer	string	read-only (null)	The manufacturer or OEM of this system.

Memory *(v1.1+)* {	object		A reference to the collection of Memory associated with this system. *Contains a link to a resource.*
@odata.id }	string	read-only	*Link to Collection of Memory. See the Memory schema for details.*
MemoryDomains *(v1.2+)* {	object		A reference to the collection of Memory Domains associated with this system. *Contains a link to a resource.*
@odata.id }	string	read-only	*Link to Collection of MemoryDomain. See the MemoryDomain schema for details.*
MemorySummary {	object		This object describes the central memory of the system in general detail.
MemoryMirroring *(v1.1+)*	string (enum)	read-only (null)	The ability and type of memory mirroring supported by this system. *See MemoryMirroring in Property Details, below, for the possible values of this property.*
Status { }	object		This property describes the status and health of the resource and its children. *See the Status object for details on this property.*
TotalSystemMemoryGiB	number (GiBy)	read-only (null)	The total configured operating system-accessible memory (RAM), measured in GiB.
TotalSystemPersistentMemoryGiB *(v1.4+)* }	number (GiBy)	read-only (null)	The total configured, system-accessible persistent memory, measured in GiB.
Model	string	read-only (null)	The product name for this system, without the manufacturer name.
NetworkInterfaces *(v1.3+)* {	object		A reference to the collection of Network Interfaces associated with this system. *Contains a link to a resource.*
@odata.id }	string	read-only	*Link to Collection of NetworkInterface. See the NetworkInterface schema for details.*
PartNumber	string	read-only (null)	The part number for this system.
PCIeDevices *(v1.2+)* [{	array		A reference to a collection of PCIe Devices used by this computer system.
@odata.id }]	string	read-only	*Link to a PCIeDevice resource. See the Links section and the PCIeDevice schema for details.*
PCIeFunctions *(v1.2+)* [{	array		A reference to a collection of PCIe Functions used by this computer system.
@odata.id }]	string	read-only	*Link to a PCIeFunction resource. See the Links section and the PCIeFunction schema for details.*
PowerRestorePolicy *(v1.6+)*	string (enum)	read-write	The desired power state of the system when power is restored after a power loss. *See PowerRestorePolicy in Property Details, below, for the possible values of this property.*
PowerState	string (enum)	read-only (null)	This is the current power state of the system. *See PowerState in Property Details, below, for the possible values of this property.*
Processors {	object		A reference to the collection of Processors associated with this system. *Contains a link to a resource.*
@odata.id }	string	read-only	*Link to Collection of Processor. See the Processor schema for details.*

ProcessorSummary {	object		This object describes the central processors of the system in general detail.
Count	integer	read-only (null)	The number of physical processors in the system.
LogicalProcessorCount *(v1.5+)*	integer	read-only (null)	The number of logical processors in the system.
Metrics *(v1.7+)* {	object		A reference to the Metrics associated with all Processors in this system. *See the [ProcessorMetrics](#) schema for details on this property.*
@odata.id }	string	read-only	*Link to a ProcessorMetrics resource. See the Links section and the [ProcessorMetrics](#) schema for details.*
Model	string	read-only (null)	The processor model for the primary or majority of processors in this system.
Status { } }	object		This property describes the status and health of the resource and its children. *See the [Status object](#) for details on this property.*
Redundancy *(v1.5+)* [{	array		A reference to a collection of Redundancy entities that each name a set of computer systems that provide redundancy for this ComputerSystem.
@odata.id }]	string	read-only	The unique identifier for a resource.
SecureBoot *(v1.1+)* {	object		A reference to the UEFI SecureBoot resource associated with this system. *See the [SecureBoot](#) schema for details on this property.*
@odata.id }	string	read-only	*Link to a SecureBoot resource. See the Links section and the [SecureBoot](#) schema for details.*
SerialNumber	string	read-only (null)	The serial number for this system.
SimpleStorage {	object		A reference to the collection of storage devices associated with this system. *Contains a link to a resource.*
@odata.id }	string	read-only	*Link to Collection of [SimpleStorage](#). See the SimpleStorage schema for details.*
SKU	string	read-only (null)	The manufacturer SKU for this system.
Status { }	object		This property describes the status and health of the resource and its children. *See the [Status object](#) for details on this property.*
Storage *(v1.1+)* {	object		A reference to the collection of storage devices associated with this system. *Contains a link to a resource.*
@odata.id }	string	read-only	*Link to Collection of [Storage](#). See the Storage schema for details.*
SubModel *(v1.5+)*	string	read-only (null)	The sub-model for this system.
SystemType	string (enum)	read-only	The type of computer system represented by this resource. *See [SystemType](#) in Property Details, below, for the possible values of this property.*
TrustedModules *(v1.1+)* [{	array		This object describes the array of Trusted Modules in the system.
FirmwareVersion	string	read-only (null)	The firmware version of this Trusted Module.

FirmwareVersion2 *(v1.3+)*	string	read-only (null)	The 2nd firmware version of this Trusted Module, if applicable.
InterfaceType	string (enum)	read-only (null)	This property indicates the interface type of the Trusted Module. *See [InterfaceType](#) in Property Details, below, for the possible values of this property.*
InterfaceTypeSelection *(v1.3+)*	string (enum)	read-only (null)	The Interface Type selection supported by this Trusted Module. *See [InterfaceTypeSelection](#) in Property Details, below, for the possible values of this property.*
Oem { }	object		See the OEM object definition in the [Common properties](#) section.
Status { } }]	object		This property describes the status and health of the resource and its children. *See the [Status object](#) for details on this property.*
UUID	string	read-only (null)	The universal unique identifier (UUID) for this system. *See Property Details, below, for more information about this property.*

Actions

AddResourceBlock

This action is used to add a Resource Block to a system.

URIs:

/redfish/v1/CompositionService/ResourceBlocks/*{ResourceBlockId}*/Systems/*{ComputerSystemId}*/Actions/ComputerSystem.AddResourceBlock

/redfish/v1/ResourceBlocks/*{ResourceBlockId}*/Systems/*{ComputerSystemId}*/Actions/ComputerSystem.AddResourceBlock

/redfish/v1/Systems/*{ComputerSystemId}*/Actions/ComputerSystem.AddResourceBlock

The following table shows the parameters for the action which are included in the POST body to the URI shown in the "target" property of the Action.

{			
ComputerSystemETag	string	read-write	The current ETag of the system.
ResourceBlock {	object		The Resource Block to add to the system. *See the [ResourceBlock](#) schema for details on this property.*
@odata.id }	string	read-only	*Link to a ResourceBlock resource. See the Links section and the [ResourceBlock](#) schema for details.*
ResourceBlockETag }	string	read-write	The current ETag of the Resource Block to add to the system.

RemoveResourceBlock

This action is used to remove a Resource Block from a system.

URIs:

/redfish/v1/CompositionService/ResourceBlocks/*{ResourceBlockId}*/Systems/*{ComputerSystemId}*/Actions/ComputerSystem.RemoveResourceBlock

/redfish/v1/ResourceBlocks/*{ResourceBlockId}*/Systems/*{ComputerSystemId}*/Actions/ComputerSystem.RemoveResourceBlock

/redfish/v1/Systems/*{ComputerSystemId}*/Actions/ComputerSystem.RemoveResourceBlock

The following table shows the parameters for the action which are included in the POST body to the URI shown in the "target" property of the Action.

{			
ComputerSystemETag	string	read-write	The current ETag of the system.
ResourceBlock {	object		The Resource Block to remove from the system. *See the [ResourceBlock](#) schema for details on this property.*
@odata.id	string	read-only	*Link to a ResourceBlock resource. See the Links section and the*

}			*ResourceBlock* schema for details.
ResourceBlockETag }	string	read-write	The current ETag of the Resource Block to remove from the system.

Reset

This action is used to reset the system.

URIs:

/redfish/v1/CompositionService/ResourceBlocks/*{ResourceBlockId}*/Systems/*{ComputerSystemId}*/Actions/ComputerSystem.Reset

/redfish/v1/ResourceBlocks/*{ResourceBlockId}*/Systems/*{ComputerSystemId}*/Actions/ComputerSystem.Reset

/redfish/v1/Systems/*{ComputerSystemId}*/Actions/ComputerSystem.Reset

The following table shows the parameters for the action which are included in the POST body to the URI shown in the "target" property of the Action.

{			
ResetType }	string (enum)	read-write	The type of reset to be performed. See *ResetType* in Property Details, below, for the possible values of this property.

SetDefaultBootOrder

This action is used to set the Boot Order to the default settings.

URIs:

/redfish/v1/CompositionService/ResourceBlocks/*{ResourceBlockId}*/Systems/*{ComputerSystemId}*/Actions/ComputerSystem.SetDefaultBootOrder

/redfish/v1/ResourceBlocks/*{ResourceBlockId}*/Systems/*{ComputerSystemId}*/Actions/ComputerSystem.SetDefaultBootOrder

/redfish/v1/Systems/*{ComputerSystemId}*/Actions/ComputerSystem.SetDefaultBootOrder

(This action takes no parameters.)

Property Details

AliasBootOrder:

Ordered array of boot source aliases representing the persistent Boot Order associated with this computer system.

string	Description
BiosSetup	Boot to the BIOS Setup Utility.
Cd	Boot from the CD/DVD disc.
Diags	Boot the manufacturer's Diagnostics program.
Floppy	Boot from the floppy disk drive.
Hdd	Boot from a hard drive.
None	Boot from the normal boot device.
Pxe	Boot from the Pre-Boot EXecution (PXE) environment.
RemoteDrive *(v1.2+)*	Boot from a remote drive (e.g. iSCSI).
SDCard	Boot from an SD Card.
UefiBootNext *(v1.5+)*	Boot to the UEFI Device specified in the BootNext property.
UefiHttp	Boot from a UEFI HTTP network location.
UefiShell	Boot to the UEFI Shell.
UefiTarget	Boot to the UEFI Device specified in the UefiTargetBootSourceOverride property.
Usb	Boot from a USB device as specified by the system BIOS.
Utilities	Boot the manufacturer's Utilities program(s).

BootOrderPropertySelection:

Choice of which boot order property to use when specifying the boot order.

string	Description
AliasBootOrder	The system uses the AliasBootOrder property for specifying persistent boot order.
BootOrder	The system uses the BootOrder property for specifying persistent boot order.

BootSourceOverrideEnabled:

Describes the state of the Boot Source Override feature.

string	Description
Continuous	The system will boot to the target specified in the BootSourceOverrideTarget until this property is set to Disabled.
Disabled	The system will boot normally.
Once	On its next boot cycle, the system will boot (one time) to the Boot Source Override Target. The value of BootSourceOverrideEnabled is then reset back to Disabled.

BootSourceOverrideMode:

The BIOS Boot Mode (either Legacy or UEFI) to be used when BootSourceOverrideTarget boot source is booted from.

string	Description
Legacy	The system will boot in non-UEFI boot mode to the Boot Source Override Target.
UEFI	The system will boot in UEFI boot mode to the Boot Source Override Target.

BootSourceOverrideTarget:

The current boot source to be used at next boot instead of the normal boot device, if BootSourceOverrideEnabled is true.

string	Description
BiosSetup	Boot to the BIOS Setup Utility.
Cd	Boot from the CD/DVD disc.
Diags	Boot the manufacturer's Diagnostics program.
Floppy	Boot from the floppy disk drive.
Hdd	Boot from a hard drive.
None	Boot from the normal boot device.
Pxe	Boot from the Pre-Boot EXecution (PXE) environment.
RemoteDrive *(v1.2+)*	Boot from a remote drive (e.g. iSCSI).
SDCard	Boot from an SD Card.
UefiBootNext *(v1.5+)*	Boot to the UEFI Device specified in the BootNext property.
UefiHttp	Boot from a UEFI HTTP network location.
UefiShell	Boot to the UEFI Shell.
UefiTarget	Boot to the UEFI Device specified in the UefiTargetBootSourceOverride property.
Usb	Boot from a USB device as specified by the system BIOS.
Utilities	Boot the manufacturer's Utilities program(s).

HostingRoles:

The hosing roles that this computer system supports. The enumerations of HostingRoles specify different features that the hosting ComputerSystem supports.

string	Description
ApplicationServer	The system hosts functionality that supports general purpose applications.
StorageServer	The system hosts functionality that supports the system acting as a storage server.
Switch	The system hosts functionality that supports the system acting as a switch.

IndicatorLED:

The state of the indicator LED, used to identify the system.

string	Description
Blinking	The Indicator LED is blinking.
Lit	The Indicator LED is lit.
Off	The Indicator LED is off.
Unknown (deprecated v1.4)	The state of the Indicator LED cannot be determined. *Deprecated v1.4+. This value has been Deprecated in favor of returning null if the state is unknown.*

InterfaceType:

This property indicates the interface type of the Trusted Module.

string	Description
TCM1_0	Trusted Cryptography Module (TCM) 1.0.
TPM1_2	Trusted Platform Module (TPM) 1.2.
TPM2_0	Trusted Platform Module (TPM) 2.0.

InterfaceTypeSelection:

The Interface Type selection supported by this Trusted Module.

string	Description
BiosSetting	The TrustedModule supports switching InterfaceType via platform software, such as a BIOS configuration Attribute.
FirmwareUpdate	The TrustedModule supports switching InterfaceType via a firmware update.
None	The TrustedModule does not support switching the InterfaceType.
OemMethod	The TrustedModule supports switching InterfaceType via an OEM proprietary mechanism.

MemoryMirroring:

The ability and type of memory mirroring supported by this system.

string	Description
DIMM	The system supports DIMM mirroring at the DIMM level. Individual DIMMs can be mirrored.
Hybrid	The system supports a hybrid mirroring at the system and DIMM levels. Individual DIMMs can be mirrored.
None	The system does not support DIMM mirroring.
System	The system supports DIMM mirroring at the System level. Individual DIMMs are not paired for mirroring in this mode.

PowerRestorePolicy:

The desired power state of the system when power is restored after a power loss.

string	Description
AlwaysOff	The system will always remain powered off when power is applied.
AlwaysOn	The system will always power on when power is applied.

LastState	The system will return to its last power state (on or off) when power is applied.

PowerState:

This is the current power state of the system.

string	Description
Off	The system is powered off, although some components may continue to have AUX power such as management controller.
On	The system is powered on.
PoweringOff	A temporary state between On and Off. The power off action can take time while the OS is in the shutdown process.
PoweringOn	A temporary state between Off and On. This temporary state can be very short.

ResetType:

The type of reset to be performed.

string	Description
ForceOff	Turn the unit off immediately (non-graceful shutdown).
ForceOn	Turn the unit on immediately.
ForceRestart	Perform an immediate (non-graceful) shutdown, followed by a restart.
GracefulRestart	Perform a graceful shutdown followed by a restart of the system.
GracefulShutdown	Perform a graceful shutdown and power off.
Nmi	Generate a Diagnostic Interrupt (usually an NMI on x86 systems) to cease normal operations, perform diagnostic actions and typically halt the system.
On	Turn the unit on.
PowerCycle	Perform a power cycle of the unit.
PushPowerButton	Simulate the pressing of the physical power button on this unit.

SystemType:

The type of computer system represented by this resource.

string	Description
Composed *(v1.4+)*	A computer system that has been created by binding resource blocks together.
OS	An operating system instance.
Physical	A computer system.
PhysicallyPartitioned	A hardware-based partition of a computer system.
Virtual	A virtual machine instance running on this system.
VirtuallyPartitioned	A virtual or software-based partition of a computer system.

TimeoutAction:

This property indicates the action to perform when the Watchdog Timer reaches its timeout value.

string	Description
None	No action taken.
OEM	Perform an OEM-defined action.
PowerCycle	Power cycle the system.
PowerDown	Power down the system.

| ResetSystem | Reset the system. |

UUID:

The universal unique identifier (UUID) for this system.

The UUID property contains a value that represents the universal unique identifier number (UUID) of a system.

The UUID property is a string data type. The format of the string is the 35-character string format specified in RFC4122: "xxxxxx-xxxx-xxxx-xxxx-xxxxxxxxxxxx". Each x represents a hexadecimal digit (0-f).

Regarding the case of the hex values, RFC4122 specifies that the hex values should be lowercase characters. Most modern scripting languages typically also represent hex values in lowercase characters following the RFC. However, dmidecode, WMI and some Redfish implementations currently use uppercase characters for UUID on output.

WarningAction:

This property indicates the action to perform when the Watchdog Timer is close (typically 3-10 seconds) to reaching its timeout value.

string	Description
DiagnosticInterrupt	Raise a (typically non-maskable) Diagnostic Interrupt.
MessagingInterrupt	Raise a legacy IPMI messaging interrupt.
None	No action taken.
OEM	Perform an OEM-defined action.
SCI	Raise an interrupt using the ACPI System Control Interrupt (SCI).
SMI	Raise a Systems Management Interrupt (SMI).

Example Response

```json
{
    "@odata.type": "#ComputerSystem.v1_5_1.ComputerSystem",
    "Id": "437XR1138R2",
    "Name": "WebFrontEnd483",
    "SystemType": "Physical",
    "AssetTag": "Chicago-45Z-2381",
    "Manufacturer": "Contoso",
    "Model": "3500RX",
    "SKU": "8675309",
    "SerialNumber": "437XR1138R2",
    "PartNumber": "224071-J23",
    "Description": "Web Front End node",
    "UUID": "38947555-7742-3448-3784-823347823834",
    "HostName": "web483",
    "Status": {
        "State": "Enabled",
        "Health": "OK",
        "HealthRollup": "OK"
    },
    "HostingRoles": [
        "ApplicationServer"
    ],
    "IndicatorLED": "Off",
    "PowerState": "On",
    "Boot": {
        "BootSourceOverrideEnabled": "Once",
        "BootSourceOverrideTarget": "Pxe",
        "BootSourceOverrideTarget@Redfish.AllowableValues": [
            "None",
            "Pxe",
            "Cd",
            "Usb",
            "Hdd",
            "BiosSetup",
            "Utilities",
            "Diags",
            "SDCard",
            "UefiTarget"
        ],
        "BootSourceOverrideMode": "UEFI",
        "UefiTargetBootSourceOverride": "/0x31/0x33/0x01/0x01"
    },
    "TrustedModules": [
        {
            "FirmwareVersion": "1.13b",
            "InterfaceType": "TPM1_2",
            "Status": {
                "State": "Enabled",
                "Health": "OK"
            }
        }
    ],
    "Oem": {
        "Contoso": {
            "@odata.type": "#Contoso.ComputerSystem",
            "ProductionLocation": {
                "FacilityName": "PacWest Production Facility",
                "Country": "USA"
            }
        },
```

```
        "Chipwise": {
            "@odata.type": "#Chipwise.ComputerSystem",
            "Style": "Executive"
        }
    },
    "BiosVersion": "P79 v1.33 (02/28/2015)",
    "ProcessorSummary": {
        "Count": 2,
        "Model": "Multi-Core Intel(R) Xeon(R) processor 7xxx Series",
        "Status": {
            "State": "Enabled",
            "Health": "OK",
            "HealthRollup": "OK"
        }
    },
    "MemorySummary": {
        "TotalSystemMemoryGiB": 96,
        "TotalSystemPersistentMemoryGiB": 0,
        "MemoryMirroring": "None",
        "Status": {
            "State": "Enabled",
            "Health": "OK",
            "HealthRollup": "OK"
        }
    },
    "Bios": {
        "@odata.id": "/redfish/v1/Systems/437XR1138R2/BIOS"
    },
    "Processors": {
        "@odata.id": "/redfish/v1/Systems/437XR1138R2/Processors"
    },
    "Memory": {
        "@odata.id": "/redfish/v1/Systems/437XR1138R2/Memory"
    },
    "EthernetInterfaces": {
        "@odata.id": "/redfish/v1/Systems/437XR1138R2/EthernetInterfaces"
    },
    "SimpleStorage": {
        "@odata.id": "/redfish/v1/Systems/437XR1138R2/SimpleStorage"
    },
    "LogServices": {
        "@odata.id": "/redfish/v1/Systems/437XR1138R2/LogServices"
    },
    "Links": {
        "Chassis": [
            {
                "@odata.id": "/redfish/v1/Chassis/1U"
            }
        ],
        "ManagedBy": [
            {
                "@odata.id": "/redfish/v1/Managers/BMC"
            }
        ]
    },
    "Actions": {
        "#ComputerSystem.Reset": {
            "target": "/redfish/v1/Systems/437XR1138R2/Actions/ComputerSystem.Reset",
            "ResetType@Redfish.AllowableValues": [
                "On",
                "ForceOff",
                "GracefulShutdown",
                "GracefulRestart",
                "ForceRestart",
                "Nmi",
                "ForceOn",
                "PushPowerButton"
            ]
        },
        "Oem": {
            "#Contoso.Reset": {
                "target": "/redfish/v1/Systems/437XR1138R2/Oem/Contoso/Actions/Contoso.Reset"
            }
        }
    },
    "@odata.context": "/redfish/v1/$metadata#ComputerSystem.ComputerSystem",
    "@odata.id": "/redfish/v1/Systems/437XR1138R2"
}
```

Drive 1.6.0

v1.6	v1.5	v1.4	v1.3	v1.2	v1.1	v1.0
2019.1	2018.2	2018.1	2017.3	2017.1	2016.2	2016.1

The Drive schema represents a single physical disk drive for a system, including links to associated Volumes.

URIs:

/redfish/v1/Chassis/*{ChassisId}*/Drives/*{DriveId}*

/redfish/v1/CompositionService/ResourceBlocks/*{ResourceBlockId}*/Drives/*{DriveId}*

/redfish/v1/CompositionService/ResourceBlocks/*{ResourceBlockId}*/Storage/*{StorageId}*/Drives/*{DriveId}*

/redfish/v1/CompositionService/ResourceBlocks/*{ResourceBlockId}*/Systems/*{ComputerSystemId}*/Storage/*{StorageId}*/Drives/*{DriveId}*

/redfish/v1/ResourceBlocks/*{ResourceBlockId}*/Drives/*{DriveId}*

/redfish/v1/ResourceBlocks/*{ResourceBlockId}*/Storage/*{StorageId}*/Drives/*{DriveId}*

/redfish/v1/ResourceBlocks/*{ResourceBlockId}*/Systems/*{ComputerSystemId}*/Storage/*{StorageId}*/Drives/*{DriveId}*

/redfish/v1/Systems/*{ComputerSystemId}*/Storage/*{StorageId}*/Drives/*{DriveId}*

Assembly *(v1.3+)* {	object		A reference to the Assembly resource associated with this drive. *See the Assembly schema for details on this property.*
@odata.id }	string	read-only	*Link to a Assembly resource. See the Links section and the Assembly schema for details.*
AssetTag	string	read-write (null)	The user assigned asset tag for this drive.
BlockSizeBytes	integer (bytes)	read-only (null)	The size of the smallest addressible unit (Block) of this drive in bytes.
CapableSpeedGbs	number (Gbit/s)	read-only (null)	The speed which this drive can communicate to a storage controller in ideal conditions in Gigabits per second.
CapacityBytes	integer (bytes)	read-only (null)	The size in bytes of this Drive.
EncryptionAbility	string (enum)	read-only (null)	The encryption abilities of this drive. *See EncryptionAbility in Property Details, below, for the possible values of this property.*
EncryptionStatus	string (enum)	read-only (null)	The status of the encrytion of this drive. *See EncryptionStatus in Property Details, below, for the possible values of this property.*
FailurePredicted	boolean	read-only (null)	Is this drive currently predicting a failure in the near future.
HotspareReplacementMode *(v1.5+)*	string (enum)	read-write (null)	The replacement mode for the hotspare drive. *See HotspareReplacementMode in Property Details, below, for the possible values of this property.*
HotspareType	string (enum)	read-only (null)	The type of hotspare this drive is currently serving as. *See HotspareType in Property Details, below, for the possible values of this property.*
Identifiers [{ }]	array (object)		The Durable names for the drive. This type describes any additional identifiers for a resource. *See the Identifier object for details on this property.*
IndicatorLED	string (enum)	read-write (null)	The state of the indicator LED, used to identify the drive. *See IndicatorLED in Property Details, below, for the possible values of this property.*
Links {	object		Contains references to other resources that are related to this resource.
Chassis *(v1.2+)* {	object		A reference to the Chassis which contains this Drive. *See the Chassis schema for details on this property.*
@odata.id }	string	read-only	*Link to a Chassis resource. See the Links section and the Chassis schema for details.*
Endpoints *(v1.1+)* [{	array		An array of references to the endpoints that connect to this drive.
@odata.id }]	string	read-only	*Link to a Endpoint resource. See the Links section and the Endpoint schema for details.*
Oem { }	object		See the OEM object definition in the Common properties section.
PCIeFunctions *(v1.6+)* [{	array		An array of references to the PCIe Functions which the drive produces.
@odata.id }]	string	read-only	*Link to a PCIeFunction resource. See the Links section and the PCIeFunction schema for details.*
Volumes [{	array		An array of references to the volumes contained in this drive. This will reference Volumes that are either wholly or only partly contained by this drive.
@odata.id	string	read-only	The unique identifier for a resource.

```
    }]
}
```

Location [{ }]	array (object)		The Location of the drive. This type describes the location of a resource. *See the Location object for details on this property.*
Manufacturer	string	read-only (null)	This is the manufacturer of this drive.
MediaType	string (enum)	read-only (null)	The type of media contained in this drive. *See MediaType in Property Details, below, for the possible values of this property.*
Model	string	read-only (null)	This is the model number for the drive.
NegotiatedSpeedGbs	number (Gbit/s)	read-only (null)	The speed which this drive is currently communicating to the storage controller in Gigabits per second.
Operations *(v1.1+)* [{	array		The operations currently running on the Drive.
AssociatedTask *(v1.3+)* {	object		A reference to the task associated with the operation if any. *See the Task schema for details on this property.*
@odata.id }	string	read-only	*Link to a Task resource. See the Links section and the Task schema for details.*
OperationName *(v1.3+)*	string	read-only (null)	The name of the operation.
PercentageComplete *(v1.3+)* }]	integer (%)	read-only (null)	The percentage of the operation that has been completed.
PartNumber	string	read-only (null)	The part number for this drive.
PhysicalLocation *(v1.4+)* { }	object		The Location of the drive. *See the Location object for details on this property.*
PredictedMediaLifeLeftPercent	number (%)	read-only (null)	The percentage of reads and writes that are predicted to still be available for the media.
Protocol	string (enum)	read-only (null)	The protocol this drive is using to communicate to the storage controller. *See Protocol in Property Details, below, for the possible values of this property.*
Revision	string	read-only (null)	The revision of this Drive. This is typically the firmware/hardware version of the drive.
RotationSpeedRPM	number (RPM)	read-only (null)	The rotation speed of this Drive in Revolutions per Minute (RPM).
SerialNumber	string	read-only (null)	The serial number for this drive.
SKU	string	read-only (null)	This is the SKU for this drive.
Status { }	object		This property describes the status and health of the resource and its children. *See the Status object for details on this property.*
StatusIndicator	string (enum)	read-write (null)	The state of the status indicator, used to communicate status information about this drive. *See StatusIndicator in Property Details, below, for the possible values of this property.*

Actions

SecureErase

This action is used to securely erase the contents of the drive.

URIs:

/redfish/v1/Chassis/*{ChassisId}*/Drives/*{DriveId}*/Actions/Drive.SecureErase

/redfish/v1/CompositionService/ResourceBlocks/*{ResourceBlockId}*/Drives/*{DriveId}*/Actions/Drive.SecureErase

/redfish/v1/CompositionService/ResourceBlocks/*{ResourceBlockId}*/Storage/*{StorageId}*/Drives/*{DriveId}*/Actions/Drive.SecureErase

/redfish/v1/CompositionService/ResourceBlocks/*{ResourceBlockId}*/Systems/*{ComputerSystemId}*/Storage/*{StorageId}*/Drives/*{DriveId}*/Actions/Drive.SecureErase

/redfish/v1/ResourceBlocks/*{ResourceBlockId}*/Drives/*{DriveId}*/Actions/Drive.SecureErase

/redfish/v1/ResourceBlocks/*{ResourceBlockId}*/Storage/*{StorageId}*/Drives/*{DriveId}*/Actions/Drive.SecureErase

/redfish/v1/ResourceBlocks/*{ResourceBlockId}*/Systems/*{ComputerSystemId}*/Storage/*{StorageId}*/Drives/*{DriveId}*/Actions/Drive.SecureErase

/redfish/v1/Systems/*{ComputerSystemId}*/Storage/*{StorageId}*/Drives/*{DriveId}*/Actions/Drive.SecureErase

(This action takes no parameters.)

Property Details

EncryptionAbility:

The encryption abilities of this drive.

string	Description
None	The drive is not capable of self encryption.
Other	The drive is capable of self encryption through some other means.
SelfEncryptingDrive	The drive is capable of self encryption per the Trusted Computing Group's Self Encrypting Drive Standard.

EncryptionStatus:

The status of the encrytion of this drive.

string	Description
Foreign	The drive is currently encrypted, the data is not accessible to the user, and the system requires user intervention to expose the data.
Locked	The drive is currently encrypted and the data is not accessible to the user, however the system has the ability to unlock the drive automatically.
Unecrypted *(deprecated v1.2)*	The drive is not currently encrypted. *Deprecated v1.2+. This value has been Deprecated in favor of Unencrypted.*
Unencrypted *(v1.1+)*	The drive is not currently encrypted.
Unlocked	The drive is currently encrypted but the data is accessible to the user unencrypted.

HotspareReplacementMode:

The replacement mode for the hotspare drive.

string	Description
NonRevertible	A hotspare drive that is commissioned due to a drive failure will remain as a data drive and will not revert to a hotspare if the failed drive is replaced.
Revertible	A hotspare drive that is commissioned due to a drive failure will revert to being a hotspare once the failed drive is replaced and rebuilt.

HotspareType:

The type of hotspare this drive is currently serving as.

string	Description
Chassis	The drive is currently serving as a hotspare for all other drives in the chassis.
Dedicated	The drive is currently serving as a hotspare for a user defined set of drives.
Global	The drive is currently serving as a hotspare for all other drives in the storage system.

None	The drive is not currently a hotspare.

IndicatorLED:

The state of the indicator LED, used to identify the drive.

string	Description
Blinking	The Indicator LED is blinking.
Lit	The Indicator LED is lit.
Off	The Indicator LED is off.

MediaType:

The type of media contained in this drive.

string	Description
HDD	The drive media type is traditional magnetic platters.
SMR	The drive media type is shingled magnetic recording.
SSD	The drive media type is solid state or flash memory.

Protocol:

The protocol this drive is using to communicate to the storage controller.

string	Description
AHCI	Advanced Host Controller Interface.
FC	Fibre Channel.
FCoE	Fibre Channel over Ethernet.
FCP	Fibre Channel Protocol for SCSI.
FICON	FIbre CONnection (FICON).
FTP	File Transfer Protocol.
HTTP	Hypertext Transport Protocol.
HTTPS	Secure Hypertext Transport Protocol.
I2C	Inter-Integrated Circuit Bus.
iSCSI	Internet SCSI.
iWARP	Internet Wide Area Remote Direct Memory Access Protocol.
NFSv3	Network File System version 3.
NFSv4	Network File System version 4.
NVMe	Non-Volatile Memory Express.
NVMeOverFabrics	NVMe over Fabrics.
OEM	OEM specific.
PCIe	PCI Express.
RoCE	RDMA over Converged Ethernet Protocol.
RoCEv2	RDMA over Converged Ethernet Protocol Version 2.
SAS	Serial Attached SCSI.
SATA	Serial AT Attachment.
SFTP	Secure File Transfer Protocol.

SMB	Server Message Block (aka CIFS Common Internet File System).
UHCI	Universal Host Controller Interface.
USB	Universal Serial Bus.

StatusIndicator:

The state of the status indicator, used to communicate status information about this drive.

string	Description
Fail	The drive has failed.
Hotspare	The drive is marked to be automatically rebuilt and used as a replacement for a failed drive.
InACriticalArray	The array that this drive is a part of is degraded.
InAFailedArray	The array that this drive is a part of is failed.
OK	The drive is OK.
PredictiveFailureAnalysis	The drive is still working but predicted to fail soon.
Rebuild	The drive is being rebuilt.

Example Response

```json
{
    "@odata.type": "#Drive.v1_5_0.Drive",
    "Id": "3D58ECBC375FD9F2",
    "Name": "Drive Sample",
    "IndicatorLED": "Lit",
    "Model": "C123",
    "Revision": "100A",
    "Status": {
        "State": "Enabled",
        "Health": "OK"
    },
    "CapacityBytes": 899527000000,
    "FailurePredicted": false,
    "Protocol": "SAS",
    "MediaType": "HDD",
    "Manufacturer": "Contoso",
    "SerialNumber": "1234568",
    "PartNumber": "C123-1111",
    "Identifiers": [
        {
            "DurableNameFormat": "NAA",
            "DurableName": "32ADF365C6C1B7BD"
        }
    ],
    "HotspareType": "None",
    "EncryptionAbility": "SelfEncryptingDrive",
    "EncryptionStatus": "Unlocked",
    "RotationSpeedRPM": 15000,
    "BlockSizeBytes": 512,
    "CapableSpeedGbs": 12,
    "NegotiatedSpeedGbs": 12,
    "Links": {
        "Volumes": [
            {
                "@odata.id": "/redfish/v1/Systems/437XR1138R2/Storage/1/Volumes/2"
            },
            {
                "@odata.id": "/redfish/v1/Systems/437XR1138R2/Storage/1/Volumes/3"
            }
        ]
    },
    "Actions": {
        "#Drive.SecureErase": {
            "target": "/redfish/v1/Systems/437XR1138R2/Storage/1/Drives/3D58ECBC375FD9F2/Actions/Drive.SecureErase"
        }
    },
    "@odata.context": "/redfish/v1/$metadata#Drive.Drive",
    "@odata.id": "/redfish/v1/Systems/437XR1138R2/Storage/1/Drives/3D58ECBC375FD9F2"
}
```

Endpoint 1.3.1

v1.3	v1.2	v1.1	v1.0
2018.3	2018.2	2017.3	2016.2

This is the schema definition for the Endpoint resource. It represents the properties of an entity that sends or receives protocol defined messages over a transport.

URIs:

/redfish/v1/Fabrics/*{FabricId}*/Endpoints/*{EndpointId}*

ConnectedEntities [{	array		All the entities connected to this endpoint.
EntityLink		read-only	A link to the associated entity.
EntityPciId {	object		The PCI ID of the connected entity.
ClassCode *(v1.2+)*	string	read-only (null)	The Class Code, Subclass code, and Programming Interface code of this PCIe function.
DeviceId	string	read-only (null)	The Device ID of this PCIe function.
FunctionNumber *(v1.2+)*	integer	read-only (null)	The PCI ID of the connected entity.
SubsystemId	string	read-only (null)	The Subsystem ID of this PCIe function.
SubsystemVendorId	string	read-only (null)	The Subsystem Vendor ID of this PCIe function.
VendorId }	string	read-only (null)	The Vendor ID of this PCIe function.
EntityRole	string (enum)	read-only (null)	The role of the connected entity. See *EntityRole* in Property Details, below, for the possible values of this property.
EntityType	string (enum)	read-only (null)	The type of the connected entity. See *EntityType* in Property Details, below, for the possible values of this property.
Identifiers [{ }]	array (object)		Identifiers for the remote entity. This type describes any additional identifiers for a resource. See the *Identifier object* for details on this property.
Oem { }	object		See the OEM object definition in the Common properties section.
PciClassCode *(deprecated v1.2)*	string	read-only (null)	The Class Code, Subclass code, and Programming Interface code of this PCIe function. *Deprecated v1.2+. This property has been deprecated in favor of the ClassCode property inside the EntityPciId object.*
PciFunctionNumber *(deprecated v1.2)* }]	integer	read-only (null)	The PCI ID of the connected entity. *Deprecated v1.2+. This property has been deprecated in favor of the FunctionNumber property inside the EntityPciId object.*
EndpointProtocol	string (enum)	read-only (null)	The protocol supported by this endpoint. See *EndpointProtocol* in Property Details, below, for the possible values of this property.
HostReservationMemoryBytes	integer (bytes)	read-only (null)	The amount of memory in Bytes that the Host should allocate to connect to this endpoint.
Identifiers [{ }]	array (object)		Identifiers for this endpoint. This type describes any additional identifiers for a resource. See the *Identifier object* for details on this property.
IPTransportDetails *(v1.1+)* [{	array		This array contains details for each IP transport supported by this endpoint. The array structure can be used to model multiple IP addresses for this endpoint.
IPv4Address { }	object		The IPv4 addresses assigned to the Endpoint. See the *IPv4Address object* for details on this property.
IPv6Address { }	object		The IPv6 addresses assigned to the Endpoint. See the *IPv6Address object* for details on this property.
Port	number	read-only	The UDP or TCP port number used by the Endpoint.

TransportProtocol }]	string (enum)	read-only	The protocol used by the connection entity. *See [TransportProtocol](#) in Property Details, below, for the possible values of this property.*
Links {	object		The links object contains the links to other resources that are related to this resource.
MutuallyExclusiveEndpoints [{	array		An array of references to the endpoints that may not be used in zones if this endpoint is used in a zone.
@odata.id }]	string	read-only	*Link to another Endpoint resource.*
NetworkDeviceFunction *(v1.1+)* [{	array		When NetworkDeviceFunction resources are present, this array contains references to the network device function that connect to this endpoint.
@odata.id }]	string	read-only	*Link to a NetworkDeviceFunction resource. See the Links section and the [NetworkDeviceFunction](#) schema for details.*
Oem { }	object		See the OEM object definition in the [Common properties](#) section.
Ports [{	array		An array of references to the the physical ports associated with this endpoint.
@odata.id }] }	string	read-only	*Link to a Port resource. See the Links section and the [Port](#) schema for details.*
PciId {	object		The PCI ID of the endpoint.
ClassCode *(v1.2+)*	string	read-only (null)	The Class Code, Subclass code, and Programming Interface code of this PCIe function.
DeviceId	string	read-only (null)	The Device ID of this PCIe function.
FunctionNumber *(v1.2+)*	integer	read-only (null)	The PCI ID of the connected entity.
SubsystemId	string	read-only (null)	The Subsystem ID of this PCIe function.
SubsystemVendorId	string	read-only (null)	The Subsystem Vendor ID of this PCIe function.
VendorId }	string	read-only (null)	The Vendor ID of this PCIe function.
Redundancy [{	array		Redundancy information for the lower level endpoints supporting this endpoint.
@odata.id }]	string	read-only	The unique identifier for a resource.
Status { }	object		This property describes the status and health of the resource and its children. *See the [Status object](#) for details on this property.*

Property Details

EndpointProtocol:

The protocol supported by this endpoint.

string	Description
AHCI	Advanced Host Controller Interface.
FC	Fibre Channel.
FCoE	Fibre Channel over Ethernet.
FCP	Fibre Channel Protocol for SCSI.

FICON	FIbre CONnection (FICON).
FTP	File Transfer Protocol.
HTTP	Hypertext Transport Protocol.
HTTPS	Secure Hypertext Transport Protocol.
I2C	Inter-Integrated Circuit Bus.
iSCSI	Internet SCSI.
iWARP	Internet Wide Area Remote Direct Memory Access Protocol.
NFSv3	Network File System version 3.
NFSv4	Network File System version 4.
NVMe	Non-Volatile Memory Express.
NVMeOverFabrics	NVMe over Fabrics.
OEM	OEM specific.
PCIe	PCI Express.
RoCE	RDMA over Converged Ethernet Protocol.
RoCEv2	RDMA over Converged Ethernet Protocol Version 2.
SAS	Serial Attached SCSI.
SATA	Serial AT Attachment.
SFTP	Secure File Transfer Protocol.
SMB	Server Message Block (aka CIFS Common Internet File System).
UHCI	Universal Host Controller Interface.
USB	Universal Serial Bus.

EntityRole:

The role of the connected entity.

string	Description
Both	The entity is able to both send and receive commands, messages, or other types of requests to other entities on the fabric.
Initiator	The entity sends commands, messages, or other types of requests to other entities on the fabric, but does not have the ability to recieve commands from other entities.
Target	The entity receives commands, messages, or other types of requests from other entities on the fabric, but does not have the ability to send commands to other entities.

EntityType:

The type of the connected entity.

string	Description
AccelerationFunction (v1.3+)	The entity is an acceleration function realized through a device, such as an FPGA. The EntityLink property (if present) should be a AccelerationFunction.AccelerationFunction entity.
Bridge	The entity is a PCI(e) bridge.
DisplayController	The entity is a display controller.
Drive	The entity is a disk drive. The EntityLink property (if present) should be a Drive.Drive entity.
NetworkController	The entity is a network controller. The EntityLink property (if present) should be an EthernetInterface.EthernetInterface entity.

Processor	The entity is a processor device.
RootComplex	The entity is a PCI(e) root complex. The EntityLink property (if present) should be a ComputerSystem.ComputerSystem entity.
StorageExpander	The entity is a storage expander. The EntityLink property (if present) should be a Chassis.Chassis entity.
StorageInitiator	The entity is a storage initator. The EntityLink property (if present) should be a Storage.StorageController entity.
Volume (v1.1+)	The entity is a volume. The EntityLink property (if present) should be a Volume.Volume entity.

TransportProtocol:

The protocol used by the connection entity.

string	Description
AHCI	Advanced Host Controller Interface.
FC	Fibre Channel.
FCoE	Fibre Channel over Ethernet.
FCP	Fibre Channel Protocol for SCSI.
FICON	FIbre CONnection (FICON).
FTP	File Transfer Protocol.
HTTP	Hypertext Transport Protocol.
HTTPS	Secure Hypertext Transport Protocol.
I2C	Inter-Integrated Circuit Bus.
iSCSI	Internet SCSI.
iWARP	Internet Wide Area Remote Direct Memory Access Protocol.
NFSv3	Network File System version 3.
NFSv4	Network File System version 4.
NVMe	Non-Volatile Memory Express.
NVMeOverFabrics	NVMe over Fabrics.
OEM	OEM specific.
PCIe	PCI Express.
RoCE	RDMA over Converged Ethernet Protocol.
RoCEv2	RDMA over Converged Ethernet Protocol Version 2.
SAS	Serial Attached SCSI.
SATA	Serial AT Attachment.
SFTP	Secure File Transfer Protocol.
SMB	Server Message Block (aka CIFS Common Internet File System).
UHCI	Universal Host Controller Interface.
USB	Universal Serial Bus.

Example Response

```
{
    "@odata.type": "#Endpoint.v1_2_0.Endpoint",
    "Id": "Drive1",
    "Name": "SAS Drive",
    "Description": "The SAS Drive in Enclosure 2 Bay 0",
    "EndpointProtocol": "SAS",
```

```
        "ConnectedEntities": [
            {
                "EntityType": "Drive",
                "EntityRole": "Target",
                "Identifiers": [
                    {
                        "DurableNameFormat": "NAA",
                        "DurableName": "32ADF365C6C1B7C3"
                    }
                ],
                "Oem": {}
            }
        ],
        "Links": {
            "MutuallyExclusiveEndpoints": [
                {
                    "@odata.id": "/redfish/v1/Fabrics/SAS/Endpoints/Enclosure2"
                }
            ],
            "Ports": [
                {
                    "@odata.id": "/redfish/v1/Fabrics/SAS/Switches/Switch1/Ports/8"
                },
                {
                    "@odata.id": "/redfish/v1/Fabrics/SAS/Switches/Switch2/Ports/8"
                }
            ],
            "Oem": {}
        },
        "Oem": {},
        "@odata.context": "/redfish/v1/$metadata#Endpoint.Endpoint",
        "@odata.id": "/redfish/v1/Fabrics/SAS/Endpoints/Drive1"
}
```

EthernetInterface 1.5.0

v1.5	v1.4	v1.3	v1.2	v1.1	v1.0
2019.1	2017.3	2017.1	2016.3	2016.2	1.0

The EthernetInterface schema represents a single, logical ethernet interface or network interface controller (NIC).

URIs:

/redfish/v1/CompositionService/ResourceBlocks/*{ResourceBlockId}*/EthernetInterfaces/*{EthernetInterfaceId}*

/redfish/v1/CompositionService/ResourceBlocks/*{ResourceBlockId}*/Systems/*{ComputerSystemId}*/EthernetInterfaces/*{EthernetInterfaceId}*

/redfish/v1/Managers/*{ManagerId}*/EthernetInterfaces/*{EthernetInterfaceId}*

/redfish/v1/ResourceBlocks/*{ResourceBlockId}*/EthernetInterfaces/*{EthernetInterfaceId}*

/redfish/v1/ResourceBlocks/*{ResourceBlockId}*/Systems/*{ComputerSystemId}*/EthernetInterfaces/*{EthernetInterfaceId}*

/redfish/v1/Systems/*{ComputerSystemId}*/EthernetInterfaces/*{EthernetInterfaceId}*

AutoNeg	boolean	read-write (null)	This indicates if the speed and duplex are automatically negotiated and configured on this interface.
DHCPv4 *(v1.4+)* {	object		DHCPv4 configuration for this interface.
DHCPEnabled	boolean	read-write (null)	Determines whether DHCPv4 is enabled on this interface.
FallbackAddress *(v1.5+)*	string (enum)	read-write (null)	DHCPv4 fallback address method for this interface. See *FallbackAddress* in Property Details, below, for the possible values of this property.
UseDNSServers	boolean	read-write (null)	Determines whether to use DHCPv4-supplied DNS servers.
UseDomainName	boolean	read-write (null)	Determines whether to use a DHCPv4-supplied domain name.
UseGateway	boolean	read-write (null)	Determines whether to use a DHCPv4-supplied gateway.
UseNTPServers	boolean	read-write (null)	Determines whether to use DHCPv4-supplied NTP servers.
UseStaticRoutes }	boolean	read-write (null)	Determines whether to use DHCPv4-supplied static routes.
DHCPv6 *(v1.4+)* {	object		DHCPv6 configuration for this interface.

OperatingMode	string (enum)	read-write (null)	Determines the DHCPv6 operating mode for this interface. *See OperatingMode in Property Details, below, for the possible values of this property.*
UseDNSServers	boolean	read-write (null)	When enabled, DNS server addresses supplied through DHCPv6 stateless mode will be used.
UseDomainName	boolean	read-write (null)	When enabled, the domain name supplied through DHCPv6 stateless mode will be used.
UseNTPServers	boolean	read-write (null)	When enabled, NTP server addresses supplied through DHCPv6 stateless mode will be used.
UseRapidCommit }	boolean	read-write (null)	Determines whether to use DHCPv6 rapid commit mode for stateful mode address assignments. Do not enable in networks where more than one DHCPv6 server is configured to provide address assignments.
FQDN	string	read-write (null)	This is the complete, fully qualified domain name obtained by DNS for this interface.
FullDuplex	boolean	read-write (null)	This indicates if the interface is in Full Duplex mode or not.
HostName	string	read-write (null)	The DNS Host Name, without any domain information.
InterfaceEnabled	boolean	read-write (null)	This indicates whether this interface is enabled.
IPv4Addresses [{ }]	array (object)		The IPv4 addresses currently assigned to this interface. This type describes an IPv4 Address. *See the IPv4Address object for details on this property.*
IPv4StaticAddresses [{ }]	array (object)		The IPv4 static addresses assigned to this interface. This type describes an IPv4 Address. *See the IPv4Address object for details on this property.*
IPv6Addresses [{ }]	array (object)		Enumerates in an array all of the currently assigned IPv6 addresses on this interface. This type describes an IPv6 Address. *See the IPv6Address object for details on this property.*
IPv6AddressPolicyTable [{	array		An array representing the RFC 6724 Address Selection Policy Table.
Label	integer	read-write (null)	The IPv6 Label (as defined in RFC 6724 section 2.1).
Precedence	integer	read-write (null)	The IPv6 Precedence (as defined in RFC 6724 section 2.1.
Prefix }]	string	read-write (null)	The IPv6 Address Prefix (as defined in RFC 6724 section 2.1).
IPv6DefaultGateway	string	read-only (null)	This is the IPv6 default gateway address that is currently in use on this interface.
IPv6StaticAddresses [{ }]	array (object)		Represents in an array all of the IPv6 static addresses to be assigned on this interface. This object represents a single IPv6 static address to be assigned on a network interface. *See the IPv6StaticAddress object for details on this property.*
IPv6StaticDefaultGateways [{ }]	array (object)		The IPv6 static default gateways for this interface. This object represents a single IPv6 static address to be assigned on a network interface. *See the IPv6GatewayStaticAddress object (v1.1.0) for details on this property.*
Links *(v1.1+)* {	object		Contains references to other resources that are related to this resource.
Chassis *(v1.3+)* {	object		A reference to the Chassis which contains this Ethernet Interface. *See the Chassis schema for details on this property.*
@odata.id	string	read-only	*Link to a Chassis resource. See the Links section and the Chassis*

}			*schema for details.*
Endpoints [{	array		An array of references to the endpoints that connect to this ethernet interface.
@odata.id }]	string	read-only	*Link to a Endpoint resource. See the Links section and the [Endpoint](#) schema for details.*
HostInterface *(v1.2+)* {	object		This is a reference to a Host Interface that is associated with this Ethernet Interface. *See the [HostInterface](#) schema for details on this property.*
@odata.id }	string	read-only	*Link to a HostInterface resource. See the Links section and the [HostInterface](#) schema for details.*
Oem { } }	object		See the OEM object definition in the [Common properties](#) section.
LinkStatus *(v1.1+)*	string (enum)	read-only (null)	The link status of this interface (port). *See [LinkStatus](#) in Property Details, below, for the possible values of this property.*
MACAddress	string	read-write (null)	This is the currently configured MAC address of the (logical port) interface.
MaxIPv6StaticAddresses	integer	read-only (null)	This indicates the maximum number of Static IPv6 addresses that can be configured on this interface.
MTUSize	integer	read-write (null)	This is the currently configured Maximum Transmission Unit (MTU) in bytes on this interface.
NameServers [ ]	array (string)	read-only	This represents DNS name servers that are currently in use on this interface.
PermanentMACAddress	string	read-only (null)	This is the permanent MAC address assigned to this interface (port).
SpeedMbps	integer (Mbit/s)	read-write (null)	This is the current speed in Mbps of this interface.
StatelessAddressAutoConfig *(v1.4+)* {	object		Stateless Address Automatic Configuration (SLAAC) parameters for this interface.
IPv4AutoConfigEnabled	boolean	read-write (null)	Indicates whether IPv4 SLAAC is enabled for this interface.
IPv6AutoConfigEnabled }	boolean	read-write (null)	Indicates whether IPv6 SLAAC is enabled for this interface.
StaticNameServers *(v1.4+)* [ ]	array (string, null)	read-write	A statically defined set of DNS server IP addresses (both IPv4 and IPv6).
Status { }	object		This property describes the status and health of the resource and its children. *See the [Status object](#) for details on this property.*
UefiDevicePath	string	read-only (null)	The UEFI device path for this interface.
VLAN {	object		If this Network Interface supports more than one VLAN, this property is not present. VLANs collections appear in the Link section of this resource. *See the [VLanNetworkInterface](#) schema for details on this property.*
@odata.id }	string	read-only	*Link to a VLAN resource. See the Links section and the [VLanNetworkInterface](#) schema for details.*
VLANs {	object		This is a reference to a collection of VLANs and is only used if the interface supports more than one VLANs. *Contains a link to a resource.*
@odata.id	string	read-only	*Link to Collection of [VLanNetworkInterface](#). See the*

			VLanNetworkInterface schema for details.
}			

Property Details

FallbackAddress:

DHCPv4 fallback address method for this interface.

string	Description
AutoConfig	Fall back to an autoconfigured address.
None	Continue attempting DHCP without a fallback address.
Static	Fall back to a static address specified by IPv4StaticAddresses.

LinkStatus:

The link status of this interface (port).

string	Description
LinkDown	There is no link on this interface, but the interface is connected.
LinkUp	The link is available for communication on this interface.
NoLink	There is no link or connection detected on this interface.

OperatingMode:

Determines the DHCPv6 operating mode for this interface.

string	Description
Disabled	DHCPv6 is disabled.
Stateful	DHCPv6 stateful mode.
Stateless	DHCPv6 stateless mode.

Example Response

```
{
    "@odata.type": "#EthernetInterface.v1_4_1.EthernetInterface",
    "Id": "1",
    "Name": "Ethernet Interface",
    "Description": "Manager NIC 1",
    "Status": {
        "State": "Enabled",
        "Health": "OK"
    },
    "LinkStatus": "LinkUp",
    "PermanentMACAddress": "12:44:6A:3B:04:11",
    "MACAddress": "12:44:6A:3B:04:11",
    "SpeedMbps": 1000,
    "AutoNeg": true,
    "FullDuplex": true,
    "MTUSize": 1500,
    "HostName": "web483",
    "FQDN": "web483.contoso.com",
    "NameServers": [
        "names.contoso.com"
    ],
    "IPv4Addresses": [
        {
            "Address": "192.168.0.10",
            "SubnetMask": "255.255.252.0",
            "AddressOrigin": "DHCP",
            "Gateway": "192.168.0.1"
        }
    ],
    "DHCPv4": {
        "DHCPEnabled": true,
        "UseDNSServers": true,
        "UseGateway": true,
        "UseNTPServers": false,
        "UseStaticRoutes": true,
        "UseDomainName": true
    },
    "DHCPv6": {
        "OperatingMode": "Stateful",
        "UseDNSServers": true,
        "UseDomainName": false,
        "UseNTPServers": false,
        "UseRapidCommit": false
    },
    "StatelessAddressAutoConfig": {
        "IPv4AutoConfigEnabled": false,
        "IPv6AutoConfigEnabled": true
    },
```

```
        "IPv4StaticAddresses": [
            {
                "Address": "192.168.88.130",
                "SubnetMask": "255.255.0.0",
                "Gateway": "192.168.0.1"
            }
        ],
        "IPv6AddressPolicyTable": [
            {
                "Prefix": "::1/128",
                "Precedence": 50,
                "Label": 0
            }
        ],
        "MaxIPv6StaticAddresses": 1,
        "IPv6StaticAddresses": [
            {
                "Address": "fc00:1234::a:b:c:d",
                "PrefixLength": 64
            }
        ],
        "IPv6StaticDefaultGateways": [
            {
                "Address": "fe80::fe15:b4ff:fe97:90cd",
                "PrefixLength": 64
            }
        ],
        "IPv6DefaultGateway": "fe80::214:c1ff:fe4c:5c4d",
        "IPv6Addresses": [
            {
                "Address": "fe80::1ec1:deff:fe6f:1e24",
                "PrefixLength": 64,
                "AddressOrigin": "SLAAC",
                "AddressState": "Preferred",
                "Oem": {}
            },
            {
                "Address": "fc00:1234::a:b:c:d",
                "PrefixLength": 64,
                "AddressOrigin": "Static",
                "AddressState": "Preferred",
                "Oem": {}
            },
            {
                "Address": "2001:1:3:5::100",
                "PrefixLength": 64,
                "AddressOrigin": "DHCPv6",
                "AddressState": "Preferred",
                "Oem": {}
            },
            {
                "Address": "2002:2:5::1ec1:deff:fe6f:1e24",
                "PrefixLength": 64,
                "AddressOrigin": "SLAAC",
                "AddressState": "Preferred",
                "Oem": {}
            }
        ],
        "StaticNameServers": [
            "192.168.150.1",
            "fc00:1234:200:2500"
        ],
        "VLAN": {
            "VLANEnable": true,
            "VLANId": 101
        },
        "@odata.context": "/redfish/v1/$metadata#EthernetInterface.EthernetInterface",
        "@odata.id": "/redfish/v1/Systems/437XR1138R2/EthernetInterfaces/12446A3B0411"
}
```

Event 1.4.0

v1.4	v1.3	v1.2	v1.1	v1.0
2019.1	2018.2	2017.1	2016.1	1.0

The Event schema describes the JSON payload received by an Event Destination (which has subscribed to event notification) when events occurs. This resource contains data about event(s), including descriptions, severity and MessageId reference to a Message Registry that can be accessed for further information.

Context *(v1.1+)*	string	read-only	A context can be supplied at subscription time. This property is the context value supplied by the subscriber.
Events [{	array	required	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.
Actions *(v1.2+)* { }	object		The available actions for this resource.
Context *(deprecated v1.2)*	string	read-only	A context can be supplied at subscription time. This property is the context value supplied by the subscriber. *Deprecated v1.2+. Events are triggered independently from subscriptions to those events. This property has been Deprecated in favor of Event.v1_0_2.Event.Context*
EventGroupId *(v1.3+)*	integer	read-only	This value is the identifier used to correlate events that came from the same

			cause.
EventId	string	read-only	This is a unique instance identifier of an event.
EventTimestamp	string	read-only	This is time the event occurred.
EventType *(deprecated v1.3)*	string (enum)	read-only required	This indicates the type of event sent, according to the definitions in the EventService. *See [EventType](#) in Property Details, below, for the possible values of this property. Deprecated v1.3+. This property has been deprecated. Starting Redfish Spec 1.6 (Event 1.3), subscriptions are based on RegistryId and ResourceType and not EventType.*
MemberId	string	read-only required	This is the identifier for the member within the collection.
Message	string	read-only	This is the human readable message, if provided.
MessageArgs [ ]	array (string)	read-only	This array of message arguments are substituted for the arguments in the message when looked up in the message registry.
MessageId	string	read-only required	This is the key for this message which can be used to look up the message in a message registry.
Oem { }	object		See the OEM object definition in the [Common properties](#) section.
OriginOfCondition {	object		This indicates the resource that originated the condition that caused the event to be generated.
@odata.id }	string	read-only	The unique identifier for a resource.
Severity }]	string	read-only	This is the severity of the event.

Property Details

EventType:

This indicates the type of event sent, according to the definitions in the EventService.

string	Description
Alert	A condition exists which requires attention.
MetricReport	A metric report managed by the Telemetry Service is being sent.
Other	As of Redfish Specification v1.6, EventType has been deprecated. The event is therefore based on a Registry or Resource, not an EventType.
ResourceAdded	A resource has been added.
ResourceRemoved	A resource has been removed.
ResourceUpdated	The value of this resource has been updated.
StatusChange	The status of this resource has changed.

EventDestination 1.5.0

v1.5	v1.4	v1.3	v1.2	v1.1	v1.0
2019.1	2018.2	2018.1	2017.1	2016.2	1.0

An Event Destination desribes the target of an event subscription, including the types of events subscribed and context to provide to the target in the Event payload.

URIs:

/redfish/v1/EventService/Subscriptions/*{EventDestinationId}*

Context	string	read-write required (null)	A client-supplied string that is stored with the event destination subscription.
Destination	string	read-only required on create	The URI of the destination Event Service.
EventFormatType *(v1.4+)*	string (enum)	read-only (null)	Indicates the content types of the message that will be sent to the EventDestination. See *EventFormatType* in Property Details, below, for the possible values of this property.
EventTypes [ ]	array (string (enum))	read-only	This property contains the types of events that will be sent to the destination. See *EventTypes* in Property Details, below, for the possible values of this property.
HttpHeaders [{	array		This is for setting HTTP headers, such as authorization information. This object will be null or an empty array on a GET. An empty array is the preferred return value on GET.
(pattern) { } [ ]	array, boolean, integer, number, object, string	(null)	Property names follow regular expression pattern "^([a-zA-Z_][a-zA-Z0-9_]*)?@(odata|Redfish|Message)\.[a-zA-Z_][a-zA-Z0-9_]*$"
(pattern) }]	string	read-write	Property names follow regular expression pattern "^[^:\\s]+$"
MessageIds *(v1.1+)* [ ]	array (string, null)	read-only	A list of MessageIds that the service will only send. If this property is absent or the array is empty, then Events with any MessageId will be sent to the subscriber.
OriginResources *(v1.1+)* [{	array		A list of resources for which the service will only send related events. If this property is absent or the array is empty, then Events originating from any resource will be sent to the subscriber.
@odata.id }]	string	read-only	The unique identifier for a resource.
Protocol	string (enum)	read-only required on create	The protocol type of the event connection. See *Protocol* in Property Details, below, for the possible values of this property.
RegistryPrefixes *(v1.4+)* [ ]	array (string, null)	read-only	A list of the Prefixes for the Message Registries that contain the MessageIds that will be sent to this event destination.
ResourceTypes *(v1.4+)* [ ]	array (string, null)	read-only	A list of Resource Type values (Schema names) that correspond to the OriginOfCondition. The version and full namespace should not be specified.
SubordinateResources *(v1.4+)*	boolean	read-only (null)	By setting this to true and specifying OriginResources, this indicates the subscription will be for events from the OriginsResources specified and also all subordinate resources. Note that resources associated via the Links section are not considered subordinate.
SubscriptionType *(v1.3+)*	string (enum)	read-only required (null)	Indicates the subscription type for events. See *SubscriptionType* in Property Details, below, for the possible values of this property.

Property Details

EventFormatType:

Indicates the content types of the message that will be sent to the EventDestination.

string	Description
Event	The subscription destination will receive JSON Bodies of the Resource Type Event.

MetricReport	The subscription destination will receive JSON Bodies of the Resource Type MetricReport.

EventTypes:

This property contains the types of events that will be sent to the destination.

string	Description
Alert	A condition exists which requires attention.
MetricReport	A metric report managed by the Telemetry Service is being sent.
Other	As of Redfish Specification v1.6, EventType has been deprecated. The event is therefore based on a Registry or Resource, not an EventType.
ResourceAdded	A resource has been added.
ResourceRemoved	A resource has been removed.
ResourceUpdated	The value of this resource has been updated.
StatusChange	The status of this resource has changed.

Protocol:

The protocol type of the event connection.

string	Description
Redfish	The destination follows the Redfish specification for event notifications.

SubscriptionType:

Indicates the subscription type for events.

string	Description
RedfishEvent	The subscription follows the Redfish specification for event notifications, which is done by a service sending an HTTP POST to the subscriber's destination URI.
SSE	The subscription follows the HTML5 Server-Sent Event definition for event notifications.

Example Response

```
{
    "@odata.type": "#EventDestination.v1_4_0.EventDestination",
    "Id": "1",
    "Name": "EventSubscription 1",
    "Destination": "http://www.dnsname.com/Destination1",
    "SubscriptionType": "RedfishEvent",
    "EventTypes": [
        "Alert"
    ],
    "Context": "WebUser3",
    "Protocol": "Redfish",
    "@odata.context": "/redfish/v1/$metadata#EventDestination.EventDestination",
    "@odata.id": "/redfish/v1/EventService/Subscriptions/1"
}
```

EventService 1.3.0

v1.3	v1.2	v1.1	v1.0
2019.1	2018.2	2018.1	1.0

The Event Service resource contains properties for managing event subcriptions and generates the events sent to subscribers. The resource has links to the actual collection of subscriptions (called Event Destinations).

URIs:

/redfish/v1/EventService

DeliveryRetryAttempts		integer	read-write	This is the number of attempts an event posting is retried before the subscription is terminated. This retry is at the service level, meaning the HTTP POST to the Event Destination was returned by the HTTP operation as unsuccessful (4xx or 5xx return code) or

			an HTTP timeout occurred this many times before the Event Destination subscription is terminated.
DeliveryRetryIntervalSeconds	integer (seconds)	read-write	This represents the number of seconds between retry attempts for sending any given Event.
EventFormatTypes [ ]	array (string (enum))	read-only (null)	Indicates the content types of the message that this service can send to the event destination. See *EventFormatTypes* in Property Details, below, for the possible values of this property.
EventTypesForSubscription [ ]	array (string (enum))	read-only	This is the types of Events that can be subscribed to. See *EventTypesForSubscription* in Property Details, below, for the possible values of this property.
RegistryPrefixes *(v1.2+)* [ ]	array (string, null)	read-only	A list of the Prefixes of the Message Registries that can be used for the RegistryPrefix property on a subscription. If this property is absent or contains an empty array, the service does not support RegistryPrefix-based subscriptions.
ResourceTypes *(v1.2+)* [ ]	array (string, null)	read-only	A list of @odata.type values (Schema names) that can be specified in a ResourceType on a subscription. If this property is absent or contains an empty array, the service does not support ResourceType-based subscriptions.
ServerSentEventUri *(v1.1+)*	string	read-only	Link to a URI for receiving Sever Sent Event representations of the events generated by this service.
ServiceEnabled	boolean	read-write (null)	This indicates whether this service is enabled.
SSEFilterPropertiesSupported *(v1.2+)* {	object		Contains a set of properties that indicate which properties are supported in the $filter query parameter for the ServerSentEventUri.
EventFormatType	boolean	read-only	This indicates if the EventFormatType property is supported.
EventType *(deprecated v1.3)*	boolean	read-only	This indicates if the EventType property is supported. *Deprecated v1.3+. This property has been deprecated. Starting Redfish Spec 1.6 (Event 1.3), subscriptions are based on RegistryId and ResourceType and not EventType.*
MessageId	boolean	read-only	This indicates if the MessageId property is supported.
MetricReportDefinition	boolean	read-only	This indicates if the MetricReportDefinition property is supported.
OriginResource	boolean	read-only	This indicates if the OriginResource property is supported.
RegistryPrefix	boolean	read-only	This indicates if the RegistryPrefix property is supported.
ResourceType }	boolean	read-only	This indicates if the ResourceType property is supported.
Status { }	object		This property describes the status and health of the resource and its children. See the *Status object* for details on this property.
SubordinateResourcesSupported *(v1.2+)*	boolean	read-only (null)	This indicates if the service supports the SubordinateResource property on Event Subscriptions.
Subscriptions {	object		This is a reference to a collection of Event Destination resources. *Contains a link to a resource.*
@odata.id }	string	read-only	*Link to Collection of EventDestination. See the EventDestination schema for details.*

Actions

SubmitTestEvent

This action is used to generate a test event.

URIs:

/redfish/v1/EventService/Actions/EventService.SubmitTestEvent

The following table shows the parameters for the action which are included in the POST body to the URI shown in the "target" property of the Action.

{			
EventGroupId	integer	read-write	This is the group ID of the event to be added.
EventId	string	read-write required	This is the ID of event to be added.
EventTimestamp	string	read-write required	This is the time stamp of event to be added.
EventType	string (enum)	read-write	This is the type of event to be added. See *EventType* in Property Details, below, for the possible values of this property.
Message	string	read-write required	This is the human readable message of event to be added.
MessageArgs [ ]	array (string)	read-write required	This is the array of message arguments of the event to be added.
MessageId	string	read-write required	This is the message ID of event to be added.
OriginOfCondition	string	read-write required	This is the string of the URL within the OriginOfCondition property of the event to be added. It is not a reference object.
Severity }	string	read-write required	This is the Severity of event to be added.

Property Details

EventFormatTypes:

Indicates the content types of the message that this service can send to the event destination.

string	Description
Event	The subscription destination will receive JSON Bodies of the Resource Type Event.
MetricReport	The subscription destination will receive JSON Bodies of the Resource Type MetricReport.

EventType:

This is the type of event to be added.

string	Description
Alert	A condition exists which requires attention.
MetricReport	A metric report managed by the Telemetry Service is being sent.
Other	As of Redfish Specification v1.6, EventType has been deprecated. The event is therefore based on a Registry or Resource, not an EventType.
ResourceAdded	A resource has been added.
ResourceRemoved	A resource has been removed.
ResourceUpdated	The value of this resource has been updated.
StatusChange	The status of this resource has changed.

EventTypesForSubscription:

This is the types of Events that can be subscribed to.

string	Description
Alert	A condition exists which requires attention.
MetricReport	A metric report managed by the Telemetry Service is being sent.

Other	As of Redfish Specification v1.6, EventType has been deprecated. The event is therefore based on a Registry or Resource, not an EventType.
ResourceAdded	A resource has been added.
ResourceRemoved	A resource has been removed.
ResourceUpdated	The value of this resource has been updated.
StatusChange	The status of this resource has changed.

Example Response

```json
{
    "@odata.type": "#EventService.v1_2_0.EventService",
    "Id": "EventService",
    "Name": "Event Service",
    "Status": {
        "State": "Enabled",
        "Health": "OK"
    },
    "ServiceEnabled": true,
    "DeliveryRetryAttempts": 3,
    "DeliveryRetryIntervalSeconds": 60,
    "ServerSentEventUri": "/redfish/v1/EventService/SSE",
    "EventTypesForSubscription": [
        "StatusChange",
        "ResourceUpdated",
        "ResourceAdded",
        "ResourceRemoved",
        "Alert"
    ],
    "Subscriptions": {
        "@odata.id": "/redfish/v1/EventService/Subscriptions"
    },
    "Actions": {
        "#EventService.SubmitTestEvent": {
            "target": "/redfish/v1/EventService/Actions/EventService.SubmitTestEvent",
            "EventType@Redfish.AllowableValues": [
                "StatusChange",
                "ResourceUpdated",
                "ResourceAdded",
                "ResourceRemoved",
                "Alert"
            ]
        },
        "Oem": {}
    },
    "Oem": {},
    "@odata.context": "/redfish/v1/$metadata#EventService.EventService",
    "@odata.id": "/redfish/v1/EventService"
}
```

ExternalAccountProvider 1.1.1

v1.1	v1.0
2018.3	2018.1

A remote service that can provide accounts for this manager to utilize for authentication.

URIs:

/redfish/v1/AccountService/ExternalAccountProviders/*{ExternalAccountProviderId}*

/redfish/v1/Managers/*{ManagerId}*/RemoteAccountService/ExternalAccountProviders/*{ExternalAccountProviderId}*

AccountProviderType	string (enum)	read-only required on create (null)	This property contains the type of external account provider this resource references. *See AccountProviderType in Property Details, below, for the possible values of this property.*
Authentication {	object		This property contains the authentication information for the external account provider.
AuthenticationType	string (enum)	read-write (null)	This property contains the type of authentication used to connect to the external account provider. *See AuthenticationType in Property Details, below, for the possible values of this property.*
KerberosKeytab	string	read-write (null)	This property is used with a PATCH or PUT to write a base64 encoded version of the kerberos keytab for the account. This property is null on a GET.

Oem { }	object		See the OEM object definition in the [Common properties](#) section.
Password	string	read-write (null)	This property is used with a PATCH or PUT to write the password for the account service. This property is null on a GET.
Token	string	read-write (null)	This property is used with a PATCH or PUT to write the token for the account. This property is null on a GET.
Username }	string	read-write	This property contains the user name for the account service.
Certificates *(v1.1+)* {	object		This is a reference to a collection of certificates used for the external account provider. *Contains a link to a resource.*
@odata.id }	string	read-only	*Link to Collection of [Certificate](#). See the Certificate schema for details.*
LDAPService {	object		This property contains additional mapping information needed to parse a generic LDAP service.
Oem { }	object		See the OEM object definition in the [Common properties](#) section.
SearchSettings {	object		This property contains the settings needed to search an external LDAP service.
BaseDistinguishedNames [ ]	array (string, null)	read-write	The base distinguished names to use when searching the LDAP service.
GroupNameAttribute	string	read-write (null)	The attribute name that contains the name of the Group on the group LDAP entry.
GroupsAttribute	string	read-write (null)	The attribute name that contains the Groups for a user on the user LDAP entry.
UsernameAttribute } }	string	read-write (null)	The attribute name that contains the Username on the user LDAP entry.
Links {	object		Contains references to other resources that are related to this resource.
Oem { } }	object		See the OEM object definition in the [Common properties](#) section.
RemoteRoleMapping [{	array		This property contains a collection of the mapping rules to convert the external account providers account information to the local Redfish Role.
LocalRole	string	read-write (null)	The name of the local role in which to map the remote user or group.
Oem { }	object		See the OEM object definition in the [Common properties](#) section.
RemoteGroup	string	read-write (null)	This property is the name of the remote group (or in the case of a Redfish Service, remote role) that will be mapped to the local role referenced by this entity.
RemoteUser }]	string	read-write (null)	This property is the name of the remote user that will be mapped to the local role referenced by this entity.
ServiceAddresses [ ]	array (string, null)	read-write	This property contains the addresses of the user account providers this resource references. The format of this field depends on the Type.
ServiceEnabled	boolean	read-write (null)	This indicates whether this service is enabled.

Property Details

AccountProviderType:

This property contains the type of external account provider this resource references.

string	Description
ActiveDirectoryService	An external Active Directory Service.
LDAPService	A generic external LDAP Service.
OEM	An OEM specific external authentication or directory service.
RedfishService	An external Redfish Service.

AuthenticationType:

This property contains the type of authentication used to connect to the external account provider.

string	Description
KerberosKeytab	A kerberos keytab.
OEM	An OEM specific authentication mechanism.
Token	An opaque authentication token.
UsernameAndPassword	Username and password combination.

Example Response

```
{
    "@odata.type": "#ExternalAccountProvider.v1_0_1.ExternalAccountProvider",
    "Id": "ExternalRedfishService",
    "Name": "Remote Redfish Service",
    "Description": "Remote Redfish Service providing additional Accounts to this Redfish Service",
    "AccountProviderType": "RedfishService",
    "ServiceAddresses": [
        "http://redfish.dmtf.org/redfish/v1/AccountService"
    ],
    "Authentication": {
        "AuthenticationType": "Token",
        "Token": null
    },
    "RemoteRoleMapping": [
        {
            "RemoteGroup": "Admin",
            "LocalRole": "Administrator"
        },
        {
            "RemoteGroup": "Operator",
            "LocalRole": "Operator"
        },
        {
            "RemoteGroup": "ReadOnly",
            "LocalRole": "ReadOnly"
        }
    ],
    "@odata.context": "/redfish/v1/$metadata#ExternalAccountProvider.ExternalAccountProvider",
    "@odata.id": "/redfish/v1/AccountService/ExternalAccountProviders/ExternalRedfishService"
}
```

Fabric 1.0.5

v1.0
2016.2

The Fabric schema represents a simple fabric consisting of one or more switches, zero or more endpoints, and zero or more zones.

URIs:

/redfish/v1/Fabrics/*{FabricId}*

Endpoints {	object		A collection of references to the endpoints contained in this fabric. *Contains a link to a resource.*
@odata.id }	string	read-only	*Link to Collection of Endpoint. See the Endpoint schema for details.*
FabricType	string (enum)	read-only (null)	The protocol being sent over this fabric. *See FabricType in Property Details, below, for the possible values of this property.*
Links {	object		Contains references to other resources that are related to this resource.
Oem { }	object		See the OEM object definition in the Common properties section.

}			
MaxZones	integer	read-only (null)	The value of this property shall contain the maximum number of zones the switch can currently configure.
Status { }	object		This property describes the status and health of the resource and its children. *See the [Status object](#) for details on this property.*
Switches {	object		A collection of references to the switches contained in this fabric. *Contains a link to a resource.*
@odata.id }	string	read-only	*Link to Collection of [Switch](#). See the Switch schema for details.*
Zones {	object		A collection of references to the zones contained in this fabric. *Contains a link to a resource.*
@odata.id }	string	read-only	*Link to Collection of [Zone](#). See the Zone schema for details.*

Property Details

FabricType:

The protocol being sent over this fabric.

string	Description
AHCI	Advanced Host Controller Interface.
FC	Fibre Channel.
FCoE	Fibre Channel over Ethernet.
FCP	Fibre Channel Protocol for SCSI.
FICON	FIbre CONnection (FICON).
FTP	File Transfer Protocol.
HTTP	Hypertext Transport Protocol.
HTTPS	Secure Hypertext Transport Protocol.
I2C	Inter-Integrated Circuit Bus.
iSCSI	Internet SCSI.
iWARP	Internet Wide Area Remote Direct Memory Access Protocol.
NFSv3	Network File System version 3.
NFSv4	Network File System version 4.
NVMe	Non-Volatile Memory Express.
NVMeOverFabrics	NVMe over Fabrics.
OEM	OEM specific.
PCIe	PCI Express.
RoCE	RDMA over Converged Ethernet Protocol.
RoCEv2	RDMA over Converged Ethernet Protocol Version 2.
SAS	Serial Attached SCSI.
SATA	Serial AT Attachment.
SFTP	Secure File Transfer Protocol.
SMB	Server Message Block (aka CIFS Common Internet File System).
UHCI	Universal Host Controller Interface.

USB	Universal Serial Bus.

Example Response

```
{
    "@odata.type": "#Fabric.v1_0_4.Fabric",
    "Id": "SAS",
    "Name": "SAS Fabric",
    "FabricType": "SAS",
    "Description": "A SAS Fabric with redundant switches connected to two initiators",
    "Status": {
        "State": "Enabled",
        "Health": "OK"
    },
    "Zones": {
        "@odata.id": "/redfish/v1/Fabrics/SAS/Zones"
    },
    "Endpoints": {
        "@odata.id": "/redfish/v1/Fabrics/SAS/Endpoints"
    },
    "Switches": {
        "@odata.id": "/redfish/v1/Fabrics/SAS/Switches"
    },
    "Links": {
        "Oem": {}
    },
    "Actions": {
        "Oem": {}
    },
    "Oem": {},
    "@odata.context": "/redfish/v1/$metadata#Fabric.Fabric",
    "@odata.id": "/redfish/v1/Fabrics/SAS"
}
```

HostInterface 1.2.1

v1.2	v1.1	v1.0
2018.2	2017.1	2016.3

This schema defines a single Host Interface resource.

URIs:

/redfish/v1/Managers/*{ManagerId}*/HostInterfaces/*{HostInterfaceId}*

AuthenticationModes [ ]	array (string (enum))	read-write	Indicates the authentication modes available on this interface. *See AuthenticationModes in Property Details, below, for the possible values of this property.*
AuthNoneRoleId *(v1.2+)*	string	read-write	The Role used when no authentication on this interface is used.
ExternallyAccessible	boolean	read-only (null)	Indicates whether this interface is accessible by external entities.
FirmwareAuthEnabled	boolean	read-write (null)	Indicates whether this firmware authentication is enabled for this interface.
FirmwareAuthRoleId	string	read-write	The Role used for firmware authentication on this interface.
HostEthernetInterfaces {	object		The Redfish link to the collection of network interface controllers or cards (NICs) that a Computer System uses to communicate with this Host Interface. *Contains a link to a resource.*
@odata.id }	string	read-only	*Link to Collection of EthernetInterface. See the EthernetInterface schema for details.*
HostInterfaceType	string (enum)	read-only (null)	Indicates the Host Interface type for this interface. *See HostInterfaceType in Property Details, below, for the possible values of this property.*
InterfaceEnabled	boolean	read-write (null)	Indicates whether this interface is enabled.
KernelAuthEnabled	boolean	read-write (null)	Indicates whether this kernel authentication is enabled for this interface.
KernelAuthRoleId	string	read-write	The Role used for kernel authentication on this interface.
Links {	object		Contains references to other resources that are related to this resource.

AuthNoneRole *(v1.2+)* {	object		A reference to the Role that contains the privileges on this Host Interface when no authentication is performed. *See the [Role](#) schema for details on this property.*
@odata.id }	string	read-only	*Link to a Role resource. See the Links section and the [Role](#) schema for details.*
ComputerSystems [{	array		An array of references to the Computer Systems connected to this Host Interface.
@odata.id }]	string	read-only	*Link to a ComputerSystem resource. See the Links section and the [ComputerSystem](#) schema for details.*
FirmwareAuthRole {	object		A reference to the Role that has firmware authentication privileges on this Host Interface. *See the [Role](#) schema for details on this property.*
@odata.id }	string	read-only	*Link to a Role resource. See the Links section and the [Role](#) schema for details.*
KernelAuthRole {	object		A reference to the Role object defining Privileges for this Host Interface when using kernel authentication. *See the [Role](#) schema for details on this property.*
@odata.id }	string	read-only	*Link to a Role resource. See the Links section and the [Role](#) schema for details.*
Oem { } }	object		See the OEM object definition in the [Common properties](#) section.
ManagerEthernetInterface {	object		The Redfish link to a single network interface controllers or cards (NIC) that this Manager uses for network communication with this Host Interface. *See the [EthernetInterface](#) schema for details on this property.*
@odata.id }	string	read-only	*Link to a EthernetInterface resource. See the Links section and the [EthernetInterface](#) schema for details.*
NetworkProtocol {	object		The Redfish link to the network services and their settings that the Manager controls. It is here that clients will find network configuration options as well as network services. *See the [ManagerNetworkProtocol](#) schema for details on this property.*
@odata.id }	string	read-only	*Link to a ManagerNetworkProtocol resource. See the Links section and the [ManagerNetworkProtocol](#) schema for details.*
Status { }	object		This property describes the status and health of the resource and its children. *See the [Status object](#) for details on this property.*

Property Details

AuthenticationModes:

Indicates the authentication modes available on this interface.

string	Description
AuthNone	Requests without any sort of authentication are allowed.
BasicAuth	Requests using HTTP Basic Authentication are allowed.
OemAuth	Requests using OEM authentication mechanisms are allowed.
RedfishSessionAuth	Requests using Redfish Session Authentication are allowed.

HostInterfaceType:

Indicates the Host Interface type for this interface.

string	Description
NetworkHostInterface	This interface is a Network Host Interface.

Example Response

```
{
    "@odata.context": "/redfish/v1/$metadata#HostInterface.HostInterface",
    "@odata.id": "/redfish/v1/Managers/BMC/HostInterfaces/1",
    "@odata.type": "#HostInterface.v1_0_0.HostInterface",
    "Id": "1",
    "Name": "Host Interface",
    "Description": "Management Host Interface",
    "HostInterfaceType": "NetworkHostInterface",
    "Status": {
        "State": "Enabled",
        "Health": "OK"
    },
    "InterfaceEnabled": true,
    "ExternallyAccessible": false,
    "AuthenticationModes": [
        "AuthNone",
        "BasicAuth",
        "RedfishSessionAuth",
        "OemAuth"
    ],
    "KernelAuthRoleId": "Administrator",
    "KernelAuthEnabled": true,
    "FirmwareAuthRoleId": "Administrator",
    "FirmwareAuthEnabled": true,
    "HostEthernetInterfaces": {
        "@odata.id": "/redfish/v1/Managers/BMC/HostInterfaces/1/HostEthernetInterfaces"
    },
    "ManagerEthernetInterface": {
        "@odata.id": "/redfish/v1/Managers/BMC/EthernetInterfaces/ToHost"
    },
    "NetworkProtocol": {
        "@odata.id": "/redfish/v1/Managers/BMC/NetworkProtocol"
    },
    "Links": {
        "ComputerSystems": [
            {
                "@odata.id": "/redfish/v1/Systems/ORD144"
            }
        ],
        "KernelAuthRole": {
            "@odata.id": "/redfish/v1/AccountService/Roles/Administrator"
        },
        "FirmwareAuthRole": {
            "@odata.id": "/redfish/v1/AccountService/Roles/Administrator"
        }
    },
    "Oem": {}
}
```

Job 1.0.2

v1.0
2018.2

This resource contains information about a specific Job scheduled or being executed by a Redfish service's Job Service. Jobs are created by clients for describing a series of operations to take place at periodic intervals.

URIs:

/redfish/v1/JobService/Jobs/*{JobId}*

/redfish/v1/JobService/Jobs/*{JobId}*/Steps/*{JobId2}*

CreatedBy	string	read-only	The person or program that created this job entry.
EndTime	string	read-only (null)	The date-time stamp that the job was completed.
HidePayload	boolean	read-only	Indicates that the contents of the Payload should be hidden from view after the Job has been created. When set to True, the Payload object will not be returned on GET.
JobState	string (enum)	read-write	The state of the job. See *JobState* in Property Details, below, for the possible values of this property.
JobStatus	string (enum)	read-only	The status of the job. See *JobStatus* in Property Details, below, for the possible values of this property.
MaxExecutionTime	string	read-write (null)	The maximum amount of time the job is allowed to execute.
Messages [{ }]	array (object)		This is an array of messages associated with the job. This type describes a Message returned by the Redfish service. See the *Message object* for details on this property.
Payload {	object		The HTTP and JSON payload details for this job.
HttpHeaders [ ]	array	read-only	This represents the HTTP headers used in the operation of this job.

	(string)		
HttpOperation	string	read-only	The HTTP operation to perform to execute this job.
JsonBody	string	read-only	This property contains the JSON payload to use in the execution of this Job.
TargetUri }	string	read-only	The URI of the target for this job.
PercentComplete	integer (%)	read-only (null)	The completion percentage of this job.
Schedule { }	object		The Schedule Settings for this Job. *See the [Schedule object](#) for details on this property.*
StartTime	string	read-only	The date-time stamp that the job was started or is scheduled to start.
StepOrder [ ]	array (string)	read-only	This represents the serialized execution order of the Job Steps.
Steps {	object		A link to a collection of Steps for this Job. *Contains a link to a resource.*
@odata.id }	string	read-only	*Link to Collection of [Job](#). See the Job schema for details.*

Property Details

JobState:

The state of the job.

string	Description
Cancelled	Job was cancelled..
Completed	Job has completed.
Continue	Job is to resume operation.
Exception	Job has stopped due to an exception condition.
Interrupted	Job has been interrupted.
New	A new job.
Pending	Job is pending and has not started.
Running	Job is running normally.
Service	Job is running as a service.
Starting	Job is starting.
Stopping	Job is in the process of stopping.
Suspended	Job has been suspended.
UserIntervention	Job is waiting for user intervention.

JobStatus:

The status of the job.

string	Description
Critical	A critical condition exists that requires immediate attention.
OK	Normal.
Warning	A condition exists that requires attention.

Example Response

{

```
        "@odata.type": "#Job.v1_0_0.Job",
        "Id": "RebootRack",
        "Name": "Scheduled Nightly Reboot of the rack",
        "JobStatus": "OK",
        "JobState": "Running",
        "StartTime": "2018-04-01T00:01+6:00",
        "PercentComplete": 24,
        "Schedule": {
            "Lifetime": "P4Y",
            "InitialStartTime": "2018-01-01T01:00:00+06:00",
            "RecurrenceInterval": "P1D",
            "EnabledDaysOfWeek": [
                "Monday",
                "Tuesday",
                "Wednesday",
                "Thursday",
                "Friday"
            ]
        },
        "Steps": {
            "@odata.id": "/redfish/v1/JobService/Jobs/RebootRack/Steps"
        },
        "StepOrder": [
            "Red",
            "Orange",
            "Yellow",
            "Green",
            "Blue",
            "Indigo",
            "Violet"
        ],
        "@odata.context": "/redfish/v1/$metadata#Job.Job",
        "@odata.id": "/redfish/v1/JobService/Jobs/RebootRack"
}
```

JobService 1.0.1

v1.0
2018.2

The Job Service of a Redfish service allows scheduling and execution of operations. It represents the properties for the Job Service itself and has links to the actual collection of Job resources.

URIs:

/redfish/v1/JobService

DateTime	string	read-only (null)	The current DateTime (with offset) setting that the job service is using.
Jobs {	object		References to the Jobs collection. *Contains a link to a resource.*
@odata.id }	string	read-only	*Link to Collection of Job. See the Job schema for details.*
Log {	object		This is a reference to a Log Service used by the Job Service. *See the LogService schema for details on this property.*
@odata.id }	string	read-only	*Link to a LogService resource. See the Links section and the LogService schema for details.*
ServiceCapabilities {	object		This object describes the supported capabilities of this Job Service implementation.
MaxJobs	integer	read-only (null)	Maximum number of Jobs supported.
MaxSteps	integer	read-only (null)	Maximum number of Job Steps supported.
Scheduling }	boolean	read-only (null)	Indicates whether scheduling of Jobs is supported.
ServiceEnabled	boolean	read-write (null)	This indicates whether this service is enabled.
Status { }	object		This property describes the status and health of the resource and its children. *See the Status object for details on this property.*

Example Response

```
{
```

```
    "@odata.type": "#JobService.v1_0_0.JobService",
    "Id": "JobService",
    "Name": "Job Service",
    "DateTime": "2018-06-13T04:14+06:00",
    "Status": {
        "State": "Enabled",
        "Health": "OK"
    },
    "ServiceEnabled": true,
    "ServiceCapabilities": {
        "MaxJobs": 100,
        "MaxSteps": 50,
        "Scheduling": true
    },
    "Jobs": {
        "@odata.id": "/redfish/v1/JobService/Jobs"
    },
    "Log": {
        "@odata.id": "/redfish/v1/JobService/Log"
    },
    "Actions": {
        "Oem": {
            "#Contoso.EasyButton": {
                "target": "/redfish/v1/JobService/Contoso.EasyButton",
                "@Redfish.ActionInfo": "/redfish/v1/JobService/EasyButtonActionInfo"
            }
        }
    },
    "Oem": {},
    "@odata.context": "/redfish/v1/$metadata/JobService.JobService",
    "@odata.id": "/redfish/v1/JobService"
}
```

JsonSchemaFile 1.1.3

v1.1	v1.0
2017.1	1.0

This is the schema definition for the Schema File locator resource.

URIs:

/redfish/v1/JsonSchemas/*{JsonSchemaFileId}*

Languages [ ]	array (string)	read-only required	Language codes for the schemas available.
Location [{	array	required	Location information for this schema file.
ArchiveFile	string	read-only	If the schema is hosted on the service in an archive file, this is the name of the file within the archive.
ArchiveUri	string	read-only	If the schema is hosted on the service in an archive file, this is the link to the archive file.
Language	string	read-only	The language code for the file the schema is in.
PublicationUri	string	read-only	Link to publicly available (canonical) URI for schema.
Uri }]	string	read-only	Link to locally available URI for schema.
Schema	string	read-only required	The @odata.type name this schema describes.

Example Response

```
{
    "@odata.type": "#JsonSchemaFile.v1_1_1.JsonSchemaFile",
    "Id": "Chassis.v1_7_0",
    "Name": "Chassis Schema File",
    "Description": "Chassis Schema File Location",
    "Languages": [
        "en"
    ],
    "Schema": "#Chassis.v1_7_0.Chassis",
    "Oem": {},
    "Location": [
        {
            "Language": "en",
            "ArchiveUri": "/Schemas.gz",
            "PublicationUri": "http://redfish.dmtf.org/schemas/v1/Chassis.v1_7_0.json",
            "ArchiveFile": "Chassis.v1_7_0.json"
        },
        {
            "Language": "zh",
            "ArchiveUri": "/Schemas.zh.gz",
            "PublicationUri": "http://schemas.contoso.com/Chassis.v1_7_0.zh.json",
            "ArchiveFile": "Chassis.v1_7_0.zh.json"
        },
```

```
        {
            "Language": "xy",
            "Uri": "/redfish/v1/JsonSchemas/Chassis.v1_7_0.xy.json",
            "PublicationUri": "http://schemas.contoso.com/Chassis.v1_7_0.xy.json"
        }
    ],
    "@odata.context": "/redfish/v1/$metadata#JsonSchemaFile.JsonSchemaFile",
    "@odata.id": "/redfish/v1/JsonSchemas/Chassis.v1_7_0"
}
```

LogEntry 1.4.2

v1.4	v1.3	v1.2	v1.1	v1.0
2018.2	2017.3	2017.1	2016.2	1.0

This resource defines the record format for a log. It is designed to be used for SEL logs (from IPMI) as well as Event Logs and OEM-specific log formats. The EntryType field indicates the type of log and the resource includes several additional properties dependent on the EntryType.

URIs:

/redfish/v1/CompositionService/ResourceBlocks/*{ResourceBlockId}*/Systems/*{ComputerSystemId}*/LogServices/*{LogServiceId}*/Entries/*{LogEntryId}*

/redfish/v1/Managers/*{ManagerId}*/LogServices/*{LogServiceId}*/Entries/*{LogEntryId}*

/redfish/v1/ResourceBlocks/*{ResourceBlockId}*/Systems/*{ComputerSystemId}*/LogServices/*{LogServiceId}*/Entries/*{LogEntryId}*

/redfish/v1/Systems/*{ComputerSystemId}*/LogServices/*{LogServiceId}*/Entries/*{LogEntryId}*

Created	string	read-only	The time the log entry was created.
EntryCode	string (enum)	read-only (null)	If the EntryType is SEL, this will have the entry code for the log entry. *See EntryCode in Property Details, below, for the possible values of this property.*
EntryType	string (enum)	read-only required	This is the type of log entry. *See EntryType in Property Details, below, for the possible values of this property.*
EventGroupId *(v1.4+)*	integer	read-only (null)	This value is the identifier used to correlate events that came from the same cause.
EventId *(v1.1+)*	string	read-only	This is a unique instance identifier of an event.
EventTimestamp *(v1.1+)*	string	read-only	This is time the event occurred.
EventType *(v1.1+, deprecated v1.4)*	string (enum)	read-only	This indicates the type of an event recorded in this log. *See EventType in Property Details, below, for the possible values of this property. Deprecated v1.4+. This property has been deprecated. Starting Redfish Spec 1.6 (Event 1.3), subscriptions are based on RegistryId and ResourceType and not EventType.*
Links {	object		Contains references to other resources that are related to this resource.
Oem { }	object		See the OEM object definition in the Common properties section.
OriginOfCondition {	object		This is the URI of the resource that caused the log entry.
@odata.id **}** **}**	string	read-only	The unique identifier for a resource.
Message	string	read-only (null)	This property decodes from EntryType. If the EntryType is Event, then it is a message string. Otherwise, it is SEL or OEM specific. In most cases, this will be the actual Log Entry.
MessageArgs [ ]	array (string)	read-only	The values of this property shall be any arguments for the message.
MessageId	string	read-only	This property decodes from EntryType. If the EntryType is Event, then it is a message id. If the EntryType is SEL, then it contains the Event Data. Otherwise, it is OEM specific. This value is only used for registries - for more information, see the specification.

OemLogEntryCode *(v1.3+)*	string	read-only (null)	If the LogEntryCode type is OEM, this will contain the OEM-specific entry code.
OemRecordFormat	string	read-only (null)	If the EntryType is Oem, this will contain more information about the record format from the Oem.
OemSensorType *(v1.3+)*	string	read-only (null)	If the Sensor Type is OEM, this will contain the OEM-specific sensor type.
SensorNumber	integer	read-only (null)	This property decodes from EntryType. If the EntryType is SEL, it is the sensor number. If the EntryType is Event, then the count of events. Otherwise, it is OEM specific.
SensorType	string (enum)	read-only (null)	If the EntryType is SEL, this will have the sensor type that the log entry pertains to. *See SensorType in Property Details, below, for the possible values of this property.*
Severity	string (enum)	read-only (null)	This is the severity of the log entry. *See Severity in Property Details, below, for the possible values of this property.*

Property Details

EntryCode:

If the EntryType is SEL, this will have the entry code for the log entry.

string	Description
Assert	The condition has been asserted.
D0 Power State	The ACPI defined D0 Power State.
D1 Power State	The ACPI defined D1 Power State.
D2 Power State	The ACPI defined D2 Power State.
D3 Power State	The ACPI defined D3 Power State.
Deassert	The condition has been deasserted.
Device Disabled	A device has been disabled.
Device Enabled	A device has been enabled.
Device Inserted / Device Present	A device has been inserted or is now present.
Device Removed / Device Absent	A device has been removed or is now absent.
Fully Redundant	Indicates that full redundancy has been regained.
Informational	An Informational event.
Install Error	An Install Error has been detected.
Limit Exceeded	A limit has been exceeded.
Limit Not Exceeded	A limit has not been exceeded.
Lower Critical - going high	The reading crossed the Lower Critical threshold while going high.
Lower Critical - going low	The reading crossed the Lower Critical threshold while going low.
Lower Non-critical - going high	The reading crossed the Lower Non-critical threshold while going high.
Lower Non-critical - going low	The reading crossed the Lower Non-critical threshold while going low.
Lower Non-recoverable - going high	The reading crossed the Lower Non-recoverable threshold while going high.
Lower Non-recoverable - going low	The reading crossed the Lower Non-recoverable threshold while going low.
Monitor	A Monitor event.
Non-redundant:Insufficient Resources	Unit is non-redundant and has insufficient resource to maintain normal

	operation.
Non-redundant:Sufficient Resources from Insufficient Resources	Unit has regianed minimum resources needed for normal operation.
Non-redundant:Sufficient Resources from Redundant	Redundancy has been lost but unit is functioning with minimum resources needed for normal operation.
OEM *(v1.3+)*	An OEM defined event.
Performance Lags	Performance does not meet expectations.
Performance Met	Performance meets expectations.
Predictive Failure asserted	A Predictive Failure has been detected.
Predictive Failure deasserted	A Predictive Failure is no longer present.
Redundancy Degraded	Redundancy still exists, but at less than full level.
Redundancy Degraded from Fully Redundant	Unit has lost some redundant resource(s) but is still in a redundant state.
Redundancy Degraded from Non-redundant	Unit has regained some resource(s) and is redundant but not fully redundant.
Redundancy Lost	Entered any non-redundant state, including Non-redundant: Insufficient Resources.
State Asserted	The state has been asserted.
State Deasserted	The state has been deasserted.
Transition to Active	The state transitioned to active.
Transition to Busy	The state transitioned to busy.
Transition to Critical from less severe	A state has changed to Critical from less severe.
Transition to Critical from Non-recoverable	A state has changed to Critical from Non-recoverable.
Transition to Degraded	A state has transitioned to Degraded.
Transition to Idle	The state transitioned to idle.
Transition to In Test	A state has transitioned to In Test.
Transition to Non-Critical from more severe	A state has changed to Non-Critical from more severe.
Transition to Non-Critical from OK	A state has changed to Non-Critical from OK.
Transition to Non-recoverable	A state has changed to Non-recoverable.
Transition to Non-recoverable from less severe	A state has changed to Non-recoverable from less severe.
Transition to Off Duty	A state has transitioned to Off Duty.
Transition to Off Line	A state has transitioned to Off Line.
Transition to OK	A state has changed to OK.
Transition to On Line	A state has transitioned to On Line.
Transition to Power Off	A state has transitioned to Power Off.
Transition to Power Save	A state has transitioned to Power Save.
Transition to Running	A state has transitioned to Running.
Upper Critical - going high	The reading crossed the Upper Critical threshold while going high.
Upper Critical - going low	The reading crossed the Upper Critical threshold while going low.
Upper Non-critical - going high	The reading crossed the Upper Non-critical threshold while going high.
Upper Non-critical - going low	The reading crossed the Upper Non-critical threshold while going low.

| Upper Non-recoverable - going high | The reading crossed the Upper Non-recoverable threshold while going high. |
| Upper Non-recoverable - going low | The reading crossed the Upper Non-recoverable threshold while going low. |

EntryType:

This is the type of log entry.

string	Description
Event	Contains a Redfish-defined message (event).
Oem	Contains an entry in an OEM-defined format.
SEL	Contains a legacy IPMI System Event Log (SEL) entry.

EventType:

This indicates the type of an event recorded in this log.

string	Description
Alert	A condition exists which requires attention.
MetricReport	A metric report managed by the Telemetry Service is being sent.
Other	As of Redfish Specification v1.6, EventType has been deprecated. The event is therefore based on a Registry or Resource, not an EventType.
ResourceAdded	A resource has been added.
ResourceRemoved	A resource has been removed.
ResourceUpdated	The value of this resource has been updated.
StatusChange	The status of this resource has changed.

SensorType:

If the EntryType is SEL, this will have the sensor type that the log entry pertains to.

string	Description
Add-in Card	A sensor for an add-in card.
BaseOSBoot/InstallationStatus	A sensor for a base OS boot or installation status event.
Battery	A sensor for a battery.
Boot Error	A sensor for a boot error event.
Button/Switch	A sensor for a button or switch.
Cable/Interconnect	A sensor for a cable or interconnect type of device.
Chassis	A sensor for a chassis.
ChipSet	A sensor for a chipset.
CoolingDevice	A sensor for a cooling device.
Critical Interrupt	A sensor for a critical interrupt event.
Current	A current sensor.
Drive Slot/Bay	A sensor for a drive slot or bay.
Entity Presence	A sensor for an entity presence event.
Event Logging Disabled	A sensor for the event log.
Fan	A fan sensor.
FRUState	A sensor for a FRU state event.

LAN	A sensor for a LAN device.
Management Subsystem Health	A sensor for a management subsystem health event.
Memory	A sensor for a memory device.
Microcontroller/Coprocessor	A sensor for a microcontroller or coprocessor.
Module/Board	A sensor for a module or board.
Monitor ASIC/IC	A sensor for a monitor ASIC or IC.
OEM *(v1.3+)*	An OEM defined sensor.
OS Stop/Shutdown	A sensor for an OS stop or shutdown event
Other FRU	A sensor for an other type of FRU.
Other Units-based Sensor	A sensor for a miscellaneous analog sensor.
Physical Chassis Security	A physical security sensor.
Platform Alert	A sensor for a platform alert event.
Platform Security Violation Attempt	A platform security sensor.
POST Memory Resize	A sensor for a POST memory resize event.
Power Supply / Converter	A sensor for a power supply or DC-to-DC converter.
PowerUnit	A sensor for a power unit.
Processor	A sensor for a processor.
Session Audit	A sensor for a session audit event.
Slot/Connector	A sensor for a slot or connector.
System ACPI PowerState	A sensor for an ACPI power state event.
System Event	A sensor for a system event.
System Firmware Progress	A sensor for a system firmware progress event.
SystemBoot/Restart	A sensor for a system boot or restart event.
Temperature	A temperature sensor.
Terminator	A sensor for a terminator.
Version Change	A sensor for a version change event.
Voltage	A voltage sensor.
Watchdog	A sensor for a watchdog event.

Severity:

This is the severity of the log entry.

string	Description
Critical	A critical condition requiring immediate attention.
OK	Informational or operating normally.
Warning	A condition requiring attention.

Example Response

```
{
    "@odata.type": "#LogEntry.v1_4_0.LogEntry",
    "Id": "1",
    "Name": "Log Entry 1",
    "EntryType": "Event",
    "Severity": "Critical",
    "Created": "2012-03-07T14:44:00Z",
    "SensorNumber": 1,
```

```
    "Message": "Temperature threshold exceeded",
    "MessageId": "Contoso.1.0.TempAssert",
    "MessageArgs": [
        "42"
    ],
    "Links": {
        "OriginOfCondition": {
            "@odata.id": "/redfish/v1/Chassis/1U/Thermal"
        },
        "Oem": {}
    },
    "Oem": {},
    "@odata.context": "/redfish/v1/$metadata#LogEntry.LogEntry",
    "@odata.id": "/redfish/v1/Systems/437XR1138R2/LogServices/Log1/Entries/1"
}
```

LogService 1.1.2

v1.1	v1.0
2017.3	1.0

This resource represents the log service for the resource or service to which it is associated.

URIs:

/redfish/v1/CompositionService/ResourceBlocks/*{ResourceBlockId}*/Systems/*{ComputerSystemId}*/LogServices/*{LogServiceId}*

/redfish/v1/Managers/*{ManagerId}*/LogServices/*{LogServiceId}*

/redfish/v1/ResourceBlocks/*{ResourceBlockId}*/Systems/*{ComputerSystemId}*/LogServices/*{LogServiceId}*

/redfish/v1/Systems/*{ComputerSystemId}*/LogServices/*{LogServiceId}*

DateTime	string	read-write (null)	The current DateTime (with offset) for the log service, used to set or read time.
DateTimeLocalOffset	string	read-write (null)	The time offset from UTC that the DateTime property is set to in format: +06:00 .
Entries {	object		References to the log entry collection. *Contains a link to a resource.*
@odata.id }	string	read-only	*Link to Collection of LogEntry. See the LogEntry schema for details.*
LogEntryType *(v1.1+)*	string (enum)	read-only (null)	The format of the Entries of this log. *See LogEntryType in Property Details, below, for the possible values of this property.*
MaxNumberOfRecords	integer	read-only	The maximum number of log entries this service can have.
OverWritePolicy	string (enum)	read-only	The overwrite policy for this service that takes place when the log is full. *See OverWritePolicy in Property Details, below, for the possible values of this property.*
ServiceEnabled	boolean	read-write (null)	This indicates whether this service is enabled.
Status { }	object		This property describes the status and health of the resource and its children. *See the Status object for details on this property.*

Actions

ClearLog

This action is used to clear the log for this Log Service.

URIs:

/redfish/v1/CompositionService/ResourceBlocks/*{ResourceBlockId}*/Systems/*{ComputerSystemId}*/LogServices/*{LogServiceId}*/Actions/LogService.ClearLog

/redfish/v1/Managers/*{ManagerId}*/LogServices/*{LogServiceId}*/Actions/LogService.ClearLog

/redfish/v1/ResourceBlocks/*{ResourceBlockId}*/Systems/*{ComputerSystemId}*/LogServices/*{LogServiceId}*/Actions/LogService.ClearLog

/redfish/v1/Systems/*{ComputerSystemId}*/LogServices/*{LogServiceId}*/Actions/LogService.ClearLog

(This action takes no parameters.)

Property Details

LogEntryType:

The format of the Entries of this log.

string	Description
Event	The log contains Redfish-defined messages (events).
Multiple	The log contains multiple Log Entry types or a single entry type cannot be guaranteed by the Log Service.
OEM	The log contains entries in an OEM-defined format.
SEL	The log contains legacy IPMI System Event Log (SEL) entries.

OverWritePolicy:

The overwrite policy for this service that takes place when the log is full.

string	Description
NeverOverWrites	When full, new entries to the Log will be discarded.
Unknown	The overwrite policy is not known or is undefined.
WrapsWhenFull	When full, new entries to the Log will overwrite previous entries.

Example Response

```
{
    "@odata.type": "#LogService.v1_1_1.LogService",
    "Id": "Log1",
    "Name": "System Log Service",
    "Description": "This log contains entries related to the operation of the host Computer System.",
    "MaxNumberOfRecords": 1000,
    "OverWritePolicy": "WrapsWhenFull",
    "DateTime": "2015-03-13T04:14:33+06:00",
    "DateTimeLocalOffset": "+06:00",
    "ServiceEnabled": true,
    "LogEntryType": "Event",
    "Status": {
        "State": "Enabled",
        "Health": "OK"
    },
    "Oem": {},
    "Actions": {
        "#LogService.ClearLog": {
            "target": "/redfish/v1/Managers/1/LogServices/Log1/Actions/LogService.ClearLog"
        },
        "Oem": {}
    },
    "Entries": {
        "@odata.id": "/redfish/v1/Managers/1/LogServices/Log1/Entries"
    },
    "@odata.context": "/redfish/v1/$metadata#LogService.LogService",
    "@odata.id": "/redfish/v1/Managers/1/LogServices/Log1"
}
```

Manager 1.5.2

v1.5	v1.4	v1.3	v1.2	v1.1	v1.0
2018.2	2018.1	2016.3	2016.2	2016.1	1.0

This is the schema definition for a Manager. Examples of managers are BMCs, Enclosure Managers, Management Controllers and other subsystems assigned managability functions.

URIs:

/redfish/v1/Managers/*{ManagerId}*

AutoDSTEnabled *(v1.4+)*	boolean	read-write	Indicates whether the manager is configured for automatic DST adjustment.
CommandShell {	object		Information about the Command Shell service provided by this manager.
ConnectTypesSupported [ ]	array (string (enum))	read-only	This object is used to enumerate the Command Shell connection types allowed by the implementation. See *ConnectTypesSupported* in Property Details, below, for the possible values of this property.

MaxConcurrentSessions	integer	read-only	Indicates the maximum number of service sessions, regardless of protocol, this manager is able to support.
ServiceEnabled }	boolean	read-write	Indicates if the service is enabled for this manager.
DateTime	string	read-write (null)	The current DateTime (with offset) for the manager, used to set or read time.
DateTimeLocalOffset	string	read-write (null)	The time offset from UTC that the DateTime property is set to in format: +06:00 .
EthernetInterfaces {	object		This is a reference to a collection of NICs that this manager uses for network communication. It is here that clients will find NIC configuration options and settings. *Contains a link to a resource.*
@odata.id }	string	read-only	*Link to Collection of [EthernetInterface](). See the EthernetInterface schema for details.*
FirmwareVersion	string	read-only (null)	The firmware version of this Manager.
GraphicalConsole {	object		The value of this property shall contain the information about the Graphical Console (KVM-IP) service of this manager.
ConnectTypesSupported [ ]	array (string (enum))	read-only	This object is used to enumerate the Graphical Console connection types allowed by the implementation. *See [ConnectTypesSupported]() in Property Details, below, for the possible values of this property.*
MaxConcurrentSessions	integer	read-only	Indicates the maximum number of service sessions, regardless of protocol, this manager is able to support.
ServiceEnabled }	boolean	read-write	Indicates if the service is enabled for this manager.
HostInterfaces *(v1.3+)* {	object		This is a reference to a collection of Host Interfaces that this manager uses for local host communication. It is here that clients will find Host Interface configuration options and settings. *Contains a link to a resource.*
@odata.id }	string	read-only	*Link to Collection of [HostInterface](). See the HostInterface schema for details.*
Links {	object		Contains references to other resources that are related to this resource.
ManagerForChassis [{	array		This property is an array of references to the chassis that this manager has control over.
@odata.id }]	string	read-only	*Link to a Chassis resource. See the Links section and the [Chassis]() schema for details.*
ManagerForServers [{	array		This property is an array of references to the systems that this manager has control over.
@odata.id }]	string	read-only	*Link to a ComputerSystem resource. See the Links section and the [ComputerSystem]() schema for details.*
ManagerForSwitches *(v1.4+)* [{	array		This property is an array of references to the switches that this manager has control over.
@odata.id }]	string	read-only	*Link to a Switch resource. See the Links section and the [Switch]() schema for details.*
ManagerInChassis *(v1.1+)* {	object		This property is a reference to the chassis that this manager is located in. *See the [Chassis]() schema for details on this property.*
@odata.id }	string	read-only	*Link to a Chassis resource. See the Links section and the [Chassis]() schema for details.*
Oem { }	object		See the OEM object definition in the [Common properties]() section.

}			
LogServices {	object		This is a reference to a collection of Logs used by the manager. *Contains a link to a resource.*
@odata.id }	string	read-only	*Link to Collection of LogService. See the LogService schema for details.*
ManagerType	string (enum)	read-only	This property represents the type of manager that this resource represents. *See ManagerType in Property Details, below, for the possible values of this property.*
Model	string	read-only (null)	The model information of this Manager as defined by the manufacturer.
NetworkProtocol {	object		This is a reference to the network services and their settings that the manager controls. It is here that clients will find network configuration options as well as network services. *See the ManagerNetworkProtocol schema for details on this property.*
@odata.id }	string	read-only	*Link to a ManagerNetworkProtocol resource. See the Links section and the ManagerNetworkProtocol schema for details.*
PowerState	string (enum)	read-only (null)	This is the current power state of the Manager. *See PowerState in Property Details, below, for the possible values of this property.*
Redundancy [{	array		Redundancy information for the managers of this system.
@odata.id }]	string	read-only	The unique identifier for a resource.
RemoteAccountService *(v1.5+)* {	object		This property contains a reference to the AccountService resource for the remote Manager represented by this resource. *See the AccountService schema for details on this property.*
@odata.id }	string	read-only	*Link to a AccountService resource. See the Links section and the AccountService schema for details.*
RemoteRedfishServiceUri *(v1.5+)*	string	read-only (null)	This property contains the URI of the Redfish Service Root for the remote Manager represented by this resource.
SerialConsole {	object		Information about the Serial Console service provided by this manager.
ConnectTypesSupported [ ]	array (string (enum))	read-only	This object is used to enumerate the Serial Console connection types allowed by the implementation. *See ConnectTypesSupported in Property Details, below, for the possible values of this property.*
MaxConcurrentSessions	integer	read-only	Indicates the maximum number of service sessions, regardless of protocol, this manager is able to support.
ServiceEnabled }	boolean	read-write	Indicates if the service is enabled for this manager.
SerialInterfaces {	object		This is a reference to a collection of serial interfaces that this manager uses for serial and console communication. It is here that clients will find serial configuration options and settings. *Contains a link to a resource.*
@odata.id }	string	read-only	*Link to Collection of SerialInterface. See the SerialInterface schema for details.*
ServiceEntryPointUUID	string	read-only (null)	The UUID of the Redfish Service provided by this manager.
Status { }	object		This property describes the status and health of the resource and its children. *See the Status object for details on this property.*
UUID	string	read-only (null)	The Universal Unique Identifier (UUID) for this Manager.

VirtualMedia {	object		This is a reference to the Virtual Media services for this particular manager. *Contains a link to a resource.*
@odata.id }	string	read-only	*Link to Collection of [VirtualMedia](). See the VirtualMedia schema for details.*

Actions

ForceFailover

The ForceFailover action forces a failover of this manager to the manager used in the parameter.

URIs:
/redfish/v1/Managers/*{ManagerId}*/Actions/Manager.ForceFailover

The following table shows the parameters for the action which are included in the POST body to the URI shown in the "target" property of the Action.

{			
NewManager {	object		This parameter specifies the Manager in which to fail over. In this case, a valid reference is supported.
@odata.id } }	string	read-only	*Link to another Manager resource.*

ModifyRedundancySet

The ModifyRedundancySet operation is used to add or remove members to a redundant group of manager.

URIs:
/redfish/v1/Managers/*{ManagerId}*/Actions/Manager.ModifyRedundancySet

The following table shows the parameters for the action which are included in the POST body to the URI shown in the "target" property of the Action.

{			
Add [{	array		This array defines the Managers to add to the redundancy set. In this case, a valid reference is supported.
@odata.id }]	string	read-only	*Link to another Manager resource.*
Remove [{	array		This array defines the Managers to remove from the redundancy set. In this case, a valid reference is supported.
@odata.id }] }	string	read-only	*Link to another Manager resource.*

Reset

The reset action resets/reboots the manager.

URIs:
/redfish/v1/Managers/*{ManagerId}*/Actions/Manager.Reset

The following table shows the parameters for the action which are included in the POST body to the URI shown in the "target" property of the Action.

{			
ResetType }	string (enum)	read-write	This is the type of reset to be performed. *See [ResetType]() in Property Details, below, for the possible values of this property.*

Property Details

ConnectTypesSupported:

This object is used to enumerate the Serial Console connection types allowed by the implementation.

string	Description
IPMI	The controller supports a Serial Console connection using the IPMI Serial-over-LAN (SOL) protocol.

Oem	The controller supports a Serial Console connection using an OEM-specific protocol.
SSH	The controller supports a Serial Console connection using the SSH protocol.
Telnet	The controller supports a Serial Console connection using the Telnet protocol.

ManagerType:

This property represents the type of manager that this resource represents.

string	Description
AuxiliaryController	A controller which provides management functions for a particular subsystem or group of devices.
BMC	A controller which provides management functions for a single computer system.
EnclosureManager	A controller which provides management functions for a chassis or group of devices or systems.
ManagementController	A controller used primarily to monitor or manage the operation of a device or system.
RackManager	A controller which provides management functions for a whole or part of a rack.
Service *(v1.4+)*	A software-based service which provides management functions.

PowerState:

This is the current power state of the Manager.

string	Description
Off	The state is powered Off.
On	The state is powered On.
PoweringOff	A temporary state between On and Off.
PoweringOn	A temporary state between Off and On.

ResetType:

This is the type of reset to be performed.

string	Description
ForceOff	Turn the unit off immediately (non-graceful shutdown).
ForceOn	Turn the unit on immediately.
ForceRestart	Perform an immediate (non-graceful) shutdown, followed by a restart.
GracefulRestart	Perform a graceful shutdown followed by a restart of the system.
GracefulShutdown	Perform a graceful shutdown and power off.
Nmi	Generate a Diagnostic Interrupt (usually an NMI on x86 systems) to cease normal operations, perform diagnostic actions and typically halt the system.
On	Turn the unit on.
PowerCycle	Perform a power cycle of the unit.
PushPowerButton	Simulate the pressing of the physical power button on this unit.

Example Response

```json
{
    "@odata.type": "#Manager.v1_5_0.Manager",
    "Id": "BMC",
    "Name": "Manager",
    "ManagerType": "BMC",
    "Description": "Contoso BMC",
    "ServiceEntryPointUUID": "92384634-2938-2342-8820-489239905423",
    "UUID": "58893887-8974-2487-2389-841168418919",
    "Model": "Joo Janta 200",
    "FirmwareVersion": "4.4.6521",
    "DateTime": "2015-03-13T04:14:33+06:00",
    "DateTimeLocalOffset": "+06:00",
    "Status": {
        "State": "Enabled",
        "Health": "OK"
```

```
        },
        "PowerState": "On",
        "GraphicalConsole": {
            "ServiceEnabled": true,
            "MaxConcurrentSessions": 2,
            "ConnectTypesSupported": [
                "KVMIP"
            ]
        },
        "SerialConsole": {
            "ServiceEnabled": true,
            "MaxConcurrentSessions": 1,
            "ConnectTypesSupported": [
                "Telnet",
                "SSH",
                "IPMI"
            ]
        },
        "CommandShell": {
            "ServiceEnabled": true,
            "MaxConcurrentSessions": 4,
            "ConnectTypesSupported": [
                "Telnet",
                "SSH"
            ]
        },
        "HostInterfaces": {
            "@odata.id": "/redfish/v1/Managers/9/HostInterfaces"
        },
        "NetworkProtocol": {
            "@odata.id": "/redfish/v1/Managers/BMC/NetworkProtocol"
        },
        "EthernetInterfaces": {
            "@odata.id": "/redfish/v1/Managers/BMC/NICs"
        },
        "SerialInterfaces": {
            "@odata.id": "/redfish/v1/Managers/BMC/SerialInterfaces"
        },
        "LogServices": {
            "@odata.id": "/redfish/v1/Managers/BMC/LogServices"
        },
        "VirtualMedia": {
            "@odata.id": "/redfish/v1/Managers/BMC/VirtualMedia"
        },
        "Links": {
            "ManagerForServers": [
                {
                    "@odata.id": "/redfish/v1/Systems/437XR1138R2"
                }
            ],
            "ManagerForChassis": [
                {
                    "@odata.id": "/redfish/v1/Chassis/1U"
                }
            ],
            "ManagerInChassis": {
                "@odata.id": "/redfish/v1/Chassis/1U"
            },
            "Oem": {}
        },
        "Actions": {
            "#Manager.Reset": {
                "target": "/redfish/v1/Managers/BMC/Actions/Manager.Reset",
                "ResetType@Redfish.AllowableValues": [
                    "ForceRestart",
                    "GracefulRestart"
                ]
            },
            "Oem": {}
        },
        "Oem": {},
        "@odata.context": "/redfish/v1/$metadata#Manager.Manager",
        "@odata.id": "/redfish/v1/Managers/BMC"
}
```

ManagerAccount 1.3.0

v1.3	v1.2	v1.1	v1.0
2019.1	2018.3	2017.1	1.0

The user accounts, owned by a Manager, are defined in this resource. Changes to a Manager Account may affect the current Redfish service connection if this manager is responsible for the Redfish service.

URIs:

/redfish/v1/AccountService/Accounts/*{ManagerAccountId}*

/redfish/v1/Managers/*{ManagerId}*/RemoteAccountService/Accounts/*{ManagerAccountId}*

Certificates *(v1.2+)* {	object		This is a reference to a collection of certificates used for this account. *Contains a link to a resource.*
@odata.id }	string	read-only	*Link to Collection of Certificate. See the Certificate schema for details.*

Enabled	boolean	read-write	This property is used by a User Administrator to disable an account w/o having to delet the user information. When set to true, the user can login. When set to false, the account is administratively disabled and the user cannot login.
Links {	object		Contains references to other resources that are related to this resource.
Oem { }	object		See the OEM object definition in the Common properties section.
Role {	object		A reference to the Role object defining Privileges for this account-- returned when the resource is read. The ID of the role is the same as property RoleId. _See the Role schema for details on this property._
@odata.id } }	string	read-only	_Link to a Role resource. See the Links section and the Role schema for details._
Locked	boolean	read-write	This property indicates that the account has been auto-locked by the account service because the lockout threshold has been exceeded. When set to true, the account is locked. A user admin can write the property to false to manually unlock, or the account service will unlock it once the lockout duration period has passed.
Password	string	read-write required on create (null)	This property is used with a PATCH or PUT to write the password for the account. This property is null on a GET.
PasswordChangeRequired _(v1.3+)_	boolean	read-write (null)	Indicates that the password for this account must be changed. The service requires the password to be changed before access is allowed.
RoleId	string	read-write required on create	This property contains the Role for this account.
UserName	string	read-write required on create	This property contains the user name for the account.

Example Response

```
{
    "@odata.type": "#ManagerAccount.v1_1_3.ManagerAccount",
    "Id": "1",
    "Name": "User Account",
    "Description": "User Account",
    "Enabled": true,
    "Password": null,
    "UserName": "Administrator",
    "RoleId": "Administrator",
    "Locked": false,
    "Links": {
        "Role": {
            "@odata.id": "/redfish/v1/AccountService/Roles/Administrator"
        }
    },
    "@odata.context": "/redfish/v1/$metadata#ManagerAccount.ManagerAccount",
    "@odata.id": "/redfish/v1/AccountService/Accounts/1"
}
```

ManagerNetworkProtocol 1.4.1

v1.4	v1.3	v1.2	v1.1	v1.0
2018.3	2018.2	2017.1	2016.3	1.0

This resource is used to obtain or modify the network services managed by a given manager.

URIs:

/redfish/v1/Managers/_{ManagerId}_/NetworkProtocol

DHCP {	object		Settings for this Manager's DHCPv4 protocol support.
Port	integer	read-write (null)	Indicates the protocol port.

ProtocolEnabled }	boolean	read-write (null)	Indicates if the protocol is enabled or disabled.
DHCPv6 {	object		Settings for this Manager's DHCPv6 protocol support.
Port	integer	read-write (null)	Indicates the protocol port.
ProtocolEnabled }	boolean	read-write (null)	Indicates if the protocol is enabled or disabled.
FQDN	string	read-only (null)	This is the fully qualified domain name for the manager obtained by DNS including the host name and top-level domain name.
HostName	string	read-only (null)	The DNS Host Name of this manager, without any domain information.
HTTP {	object		Settings for this Manager's HTTP protocol support.
Port	integer	read-write (null)	Indicates the protocol port.
ProtocolEnabled }	boolean	read-write (null)	Indicates if the protocol is enabled or disabled.
HTTPS {	object		Settings for this Manager's HTTPS protocol support.
Certificates *(v1.4+)* {	object		This is a reference to a collection of certificates used for HTTPS by this manager. *Contains a link to a resource.*
@odata.id }	string	read-only	*Link to Collection of [Certificate](). See the Certificate schema for details.*
Port *(v1.4+)*	integer	read-write (null)	Indicates the protocol port.
ProtocolEnabled *(v1.4+)* }	boolean	read-write (null)	Indicates if the protocol is enabled or disabled.
IPMI {	object		Settings for this Manager's IPMI-over-LAN protocol support.
Port	integer	read-write (null)	Indicates the protocol port.
ProtocolEnabled }	boolean	read-write (null)	Indicates if the protocol is enabled or disabled.
KVMIP {	object		Settings for this Manager's KVM-IP protocol support.
Port	integer	read-write (null)	Indicates the protocol port.
ProtocolEnabled }	boolean	read-write (null)	Indicates if the protocol is enabled or disabled.
NTP *(v1.2+)* {	object		Settings for this Manager's NTP protocol support.
NTPServers [ ]	array (string, null)	read-write	Indicates to which NTP servers this manager is subscribed.
Port	integer	read-write (null)	Indicates the protocol port.
ProtocolEnabled }	boolean	read-write (null)	Indicates if the protocol is enabled or disabled.
RDP {	object		Settings for this Manager's Remote Desktop Protocol support.
Port	integer	read-write (null)	Indicates the protocol port.
ProtocolEnabled	boolean	read-write	Indicates if the protocol is enabled or disabled.

}		(null)	
RFB {	object		Settings for this Manager's Remote Frame Buffer protocol support, which can be used to support VNC.
Port	integer	read-write (null)	Indicates the protocol port.
ProtocolEnabled }	boolean	read-write (null)	Indicates if the protocol is enabled or disabled.
SNMP {	object		Settings for this Manager's SNMP support.
Port	integer	read-write (null)	Indicates the protocol port.
ProtocolEnabled }	boolean	read-write (null)	Indicates if the protocol is enabled or disabled.
SSDP {	object		Settings for this Manager's SSDP support.
NotifyIPv6Scope	string (enum)	read-write (null)	Indicates the scope for the IPv6 Notify messages for SSDP. See *NotifyIPv6Scope* in Property Details, below, for the possible values of this property.
NotifyMulticastIntervalSeconds	integer (seconds)	read-write (null)	Indicates how often the Multicast is done from this service for SSDP.
NotifyTTL	integer	read-write (null)	Indicates the time to live hop count for SSDPs Notify messages.
Port	integer	read-write (null)	Indicates the protocol port.
ProtocolEnabled }	boolean	read-write (null)	Indicates if the protocol is enabled or disabled.
SSH {	object		Settings for this Manager's SSH (Secure Shell) protocol support.
Port	integer	read-write (null)	Indicates the protocol port.
ProtocolEnabled }	boolean	read-write (null)	Indicates if the protocol is enabled or disabled.
Status { }	object		This property describes the status and health of the resource and its children. See the *Status object* for details on this property.
Telnet {	object		Settings for this Manager's Telnet protocol support.
Port	integer	read-write (null)	Indicates the protocol port.
ProtocolEnabled }	boolean	read-write (null)	Indicates if the protocol is enabled or disabled.
VirtualMedia {	object		Settings for this Manager's Virtual Media support.
Port	integer	read-write (null)	Indicates the protocol port.
ProtocolEnabled }	boolean	read-write (null)	Indicates if the protocol is enabled or disabled.

Property Details

NotifyIPv6Scope:

Indicates the scope for the IPv6 Notify messages for SSDP.

string	Description
Link	SSDP Notify messages are sent to addresses in the IPv6 Local Link scope.

| Organization | SSDP Notify messages are sent to addresses in the IPv6 Local Organization scope. |
| Site | SSDP Notify messages are sent to addresses in the IPv6 Local Site scope. |

Example Response

```
{
    "@odata.type": "#ManagerNetworkProtocol.v1_3_0.ManagerNetworkProtocol",
    "Id": "NetworkProtocol",
    "Name": "Manager Network Protocol",
    "Description": "Manager Network Service",
    "Status": {
        "State": "Enabled",
        "Health": "OK"
    },
    "HostName": "web483-bmc",
    "FQDN": "web483-bmc.dmtf.org",
    "HTTP": {
        "ProtocolEnabled": true,
        "Port": 80
    },
    "HTTPS": {
        "ProtocolEnabled": true,
        "Port": 443
    },
    "IPMI": {
        "ProtocolEnabled": true,
        "Port": 623
    },
    "SSH": {
        "ProtocolEnabled": true,
        "Port": 22
    },
    "SNMP": {
        "ProtocolEnabled": true,
        "Port": 161
    },
    "VirtualMedia": {
        "ProtocolEnabled": true,
        "Port": 17988
    },
    "SSDP": {
        "ProtocolEnabled": true,
        "Port": 1900,
        "NotifyMulticastIntervalSeconds": 600,
        "NotifyTTL": 5,
        "NotifyIPv6Scope": "Site"
    },
    "Telnet": {
        "ProtocolEnabled": true,
        "Port": 23
    },
    "KVMIP": {
        "ProtocolEnabled": true,
        "Port": 5288
    },
    "@odata.context": "/redfish/v1/$metadata#ManagerNetworkProtocol.ManagerNetworkProtocol",
    "@odata.id": "/redfish/v1/Managers/BMC/NetworkProtocol"
}
```

Memory 1.7.1

v1.7	v1.6	v1.5	v1.4	v1.3	v1.2	v1.1	v1.0
2018.3	2018.2	2018.1	2017.3	2017.2	2017.1	2016.3	2016.1

This is the schema definition for definition of a Memory and its configuration.

URIs:

/redfish/v1/CompositionService/ResourceBlocks/*{ResourceBlockId}*/Memory/*{MemoryId}*

/redfish/v1/CompositionService/ResourceBlocks/*{ResourceBlockId}*/Systems/*{ComputerSystemId}*/Memory/*{MemoryId}*

/redfish/v1/ResourceBlocks/*{ResourceBlockId}*/Memory/*{MemoryId}*

/redfish/v1/ResourceBlocks/*{ResourceBlockId}*/Systems/*{ComputerSystemId}*/Memory/*{MemoryId}*

/redfish/v1/Systems/*{ComputerSystemId}*/Memory/*{MemoryId}*

AllocationAlignmentMiB *(v1.2+)*	integer (mebibytes)	read-only (null)	The boundary which memory regions are allocated on, measured in mebibytes (MiB).
AllocationIncrementMiB *(v1.2+)*	integer (mebibytes)	read-only (null)	The size of the smallest unit of allocation for a memory region in mebibytes (MiB).
AllowedSpeedsMHz [ ]	array (MHz) (integer)	read-only	Speed bins supported by this Memory.

Assembly *(v1.4+)* {	object		A reference to the Assembly resource associated with this memory. *See the [Assembly](#) schema for details on this property.*
@odata.id }	string	read-only	*Link to a Assembly resource. See the Links section and the [Assembly](#) schema for details.*
BaseModuleType	string (enum)	read-only (null)	The base module type of Memory. *See [BaseModuleType](#) in Property Details, below, for the possible values of this property.*
BusWidthBits	integer	read-only (null)	Bus Width in bits.
CacheSizeMiB *(v1.4+)*	integer (mebibytes)	read-only (null)	Total size of the cache portion memory in MiB.
CapacityMiB	integer (mebibytes)	read-only (null)	Memory Capacity in mebibytes (MiB).
ConfigurationLocked *(v1.7+)*	boolean	read-only (null)	Indicates that the configuration of this memory has been locked.
DataWidthBits	integer	read-only (null)	Data Width in bits.
DeviceID *(deprecated v1.3)*	string	read-only (null)	Device ID. *Deprecated v1.3+. This property has been Deprecated in favor of Memory.v1_3_0.ModuleProductID*
DeviceLocator	string	read-only (null)	Location of the Memory in the platform.
ErrorCorrection	string (enum)	read-only (null)	Error correction scheme supported for this memory. *See [ErrorCorrection](#) in Property Details, below, for the possible values of this property.*
FirmwareApiVersion	string	read-only (null)	Version of API supported by the firmware.
FirmwareRevision	string	read-only (null)	Revision of firmware on the Memory controller.
FunctionClasses *(deprecated v1.4)* [ ]	array (string)	read-only	Function Classes by the Memory. *Deprecated v1.4+. This property has been Deprecated in favor of Memory.v1_0_0.Memory.OperatingMemoryModes or Memory.v1_0_0.Memory.RegionSet.MemoryClassification.*
IsRankSpareEnabled	boolean	read-only (null)	Rank spare enabled status.
IsSpareDeviceEnabled	boolean	read-only (null)	Spare device enabled status.
Links *(v1.2+)* {	object		Contains references to other resources that are related to this resource.
Chassis {	object		A reference to the Chassis which contains this Memory. *See the [Chassis](#) schema for details on this property.*
@odata.id }	string	read-only	*Link to a Chassis resource. See the Links section and the [Chassis](#) schema for details.*
Oem { } }	object		See the OEM object definition in the [Common properties](#) section.
Location *(v1.4+)* { }	object		The Location of the memory. *See the [Location object](#) for details on this property.*
LogicalSizeMiB *(v1.4+)*	integer (mebibytes)	read-only (null)	Total size of the logical memory in MiB.
Manufacturer	string	read-only (null)	The Memory manufacturer.

MaxTDPMilliWatts [ ]	array (milliWatts) (integer)	read-only	Maximum TDPs in milli Watts.
MemoryDeviceType	string (enum)	read-only (null)	Type details of the Memory. *See MemoryDeviceType in Property Details, below, for the possible values of this property.*
MemoryLocation {	object		Memory connection information to sockets and memory controllers.
Channel	integer	read-only (null)	Channel number in which Memory is connected.
MemoryController	integer	read-only (null)	Memory controller number in which Memory is connected.
Slot	integer	read-only (null)	Slot number in which Memory is connected.
Socket }	integer	read-only (null)	Socket number in which Memory is connected.
MemoryMedia [ ]	array (string (enum))	read-only	Media of this Memory. *See MemoryMedia in Property Details, below, for the possible values of this property.*
MemorySubsystemControllerManufacturerID *(v1.3+)*	string	read-only (null)	The manufacturer ID of the memory subsystem controller of this memory module.
MemorySubsystemControllerProductID *(v1.3+)*	string	read-only (null)	The product ID of the memory subsystem controller of this memory module.
MemoryType	string (enum)	read-only (null)	The type of Memory. *See MemoryType in Property Details, below, for the possible values of this property.*
Metrics {	object		A reference to the Metrics associated with this Memory. *See the MemoryMetrics schema for details on this property.*
@odata.id }	string	read-only	*Link to a MemoryMetrics resource. See the Links section and the MemoryMetrics schema for details.*
ModuleManufacturerID *(v1.3+)*	string	read-only (null)	The manufacturer ID of this memory module.
ModuleProductID *(v1.3+)*	string	read-only (null)	The product ID of this memory module.
NonVolatileSizeMiB *(v1.4+)*	integer (mebibytes)	read-only (null)	Total size of the non-volatile portion memory in MiB.
OperatingMemoryModes [ ]	array (string (enum))	read-only	Memory modes supported by the Memory. *See OperatingMemoryModes in Property Details, below, for the possible values of this property.*
OperatingSpeedMhz	integer (MHz)	read-only (null)	Operating speed of Memory in MHz or MT/s as appropriate.
PartNumber	string	read-only (null)	The product part number of this device.
PersistentRegionNumberLimit *(v1.2+)*	integer	read-only (null)	Total number of persistent regions this Memory can support.
PersistentRegionSizeLimitMiB	integer (mebibytes)	read-only (null)	Total size of persistent regions in mebibytes (MiB).
PersistentRegionSizeMaxMiB *(v1.2+)*	integer (mebibytes)	read-only (null)	Maximum size of a single persistent region in mebibytes (MiB).
PowerManagementPolicy {	object		Power management policy information.

AveragePowerBudgetMilliWatts	integer (milliWatts)	read-only (null)	Average power budget in milli watts.
MaxTDPMilliWatts	integer (milliWatts)	read-only (null)	Maximum TDP in milli watts.
PeakPowerBudgetMilliWatts	integer (milliWatts)	read-only (null)	Peak power budget in milli watts.
PolicyEnabled }	boolean	read-only (null)	Power management policy enabled status.
RankCount	integer	read-only (null)	Number of ranks available in the Memory.
Regions [{	array		Memory regions information within the Memory.
MemoryClassification	string (enum)	read-only (null)	Classification of memory occupied by the given memory region. See *MemoryClassification* in Property Details, below, for the possible values of this property.
OffsetMiB	integer (mebibytes)	read-only (null)	Offset with in the Memory that corresponds to the starting of this memory region in mebibytes (MiB).
PassphraseEnabled *(v1.5+)*	boolean	read-only (null)	Indicates if the passphrase is enabled for this region.
PassphraseState *(deprecated v1.5)*	boolean	read-only (null)	State of the passphrase for this region. *Deprecated v1.5+. This property has been Deprecated in favor of Memory.v1_5_0.Memory.RegionSet.PassphraseEnabled.*
RegionId	string	read-only (null)	Unique region ID representing a specific region within the Memory.
SizeMiB }]	integer (mebibytes)	read-only (null)	Size of this memory region in mebibytes (MiB).
SecurityCapabilities {	object		This object contains security capabilities of the Memory.
ConfigurationLockCapable *(v1.7+)*	boolean	read-only (null)	Support for locking the configuration.
DataLockCapable *(v1.7+)*	boolean	read-only (null)	Support for data locking.
MaxPassphraseCount	integer	read-only (null)	Maximum number of passphrases supported for this Memory.
PassphraseCapable	boolean	read-only (null)	Memory passphrase set capability.
PassphraseLockLimit *(v1.7+)*	integer	read-only (null)	Maximum number of incorrect passphrase attempts allowed before memory is locked.
SecurityStates [ ] }	array (string (enum))	read-only	Security states supported by the Memory. See *SecurityStates* in Property Details, below, for the possible values of this property.
SecurityState	string (enum)	read-write (null)	The current security state of this Memory. See *SecurityState* in Property Details, below, for the possible values of this property.
SerialNumber	string	read-only (null)	The product serial number of this device.
SpareDeviceCount	integer	read-only (null)	Number of unused spare devices available in the Memory.
Status *(v1.1+)* { }	object		This property describes the status and health of the resource and its children. See the *Status object* for details on this property.

SubsystemDeviceID *(deprecated v1.3)*	string	read-only (null)	Subsystem Device ID. *Deprecated v1.3+. This property has been Deprecated in favor of Memory.v1_3_0.MemorySubsystemControllerProductID*
SubsystemVendorID *(deprecated v1.3)*	string	read-only (null)	SubSystem Vendor ID. *Deprecated v1.3+. This property has been Deprecated in favor of Memory.v1_3_0.MemorySubsystemControllerManufacturerID*
VendorID *(deprecated v1.3)*	string	read-only (null)	Vendor ID. *Deprecated v1.3+. This property has been Deprecated in favor of Memory.v1_3_0.ModuleManufacturerID*
VolatileRegionNumberLimit *(v1.2+)*	integer	read-only (null)	Total number of volatile regions this Memory can support.
VolatileRegionSizeLimitMiB	integer (mebibytes)	read-only (null)	Total size of volatile regions in mebibytes (MiB).
VolatileRegionSizeMaxMiB *(v1.2+)*	integer (mebibytes)	read-only (null)	Maximum size of a single volatile region in mebibytes (MiB).
VolatileSizeMiB *(v1.4+)*	integer (mebibytes)	read-only (null)	Total size of the volitile portion memory in MiB.

Actions

DisablePassphrase

Disable passphrase for given regions.

URIs:

/redfish/v1/CompositionService/ResourceBlocks/*{ResourceBlockId}*/Memory/*{MemoryId}*/Actions/Memory.DisablePassphrase

/redfish/v1/CompositionService/ResourceBlocks/*{ResourceBlockId}*/Systems/*{ComputerSystemId}*/Memory/*{MemoryId}*/Actions/Memory.DisablePassphrase

/redfish/v1/ResourceBlocks/*{ResourceBlockId}*/Memory/*{MemoryId}*/Actions/Memory.DisablePassphrase

/redfish/v1/ResourceBlocks/*{ResourceBlockId}*/Systems/*{ComputerSystemId}*/Memory/*{MemoryId}*/Actions/Memory.DisablePassphrase

/redfish/v1/Systems/*{ComputerSystemId}*/Memory/*{MemoryId}*/Actions/Memory.DisablePassphrase

The following table shows the parameters for the action which are included in the POST body to the URI shown in the "target" property of the Action.

{			
Passphrase	string	read-write required	Passphrase for doing the operation.
RegionId }	string	read-write required	Memory region ID for which this action to be applied.

OverwriteUnit

This defines the action for securely erasing given regions using the NIST SP800-88 Purge: Overwrite.

URIs:

/redfish/v1/CompositionService/ResourceBlocks/*{ResourceBlockId}*/Memory/*{MemoryId}*/Actions/Memory.OverwriteUnit

/redfish/v1/CompositionService/ResourceBlocks/*{ResourceBlockId}*/Systems/*{ComputerSystemId}*/Memory/*{MemoryId}*/Actions/Memory.OverwriteUnit

/redfish/v1/ResourceBlocks/*{ResourceBlockId}*/Memory/*{MemoryId}*/Actions/Memory.OverwriteUnit

/redfish/v1/ResourceBlocks/*{ResourceBlockId}*/Systems/*{ComputerSystemId}*/Memory/*{MemoryId}*/Actions/Memory.OverwriteUnit

/redfish/v1/Systems/*{ComputerSystemId}*/Memory/*{MemoryId}*/Actions/Memory.OverwriteUnit

The following table shows the parameters for the action which are included in the POST body to the URI shown in the "target" property of the Action.

{			
Passphrase	string	read-write required	Passphrase for doing the operation.
RegionId	string	read-write required	Memory region ID for which this action to be applied.

}			

SecureEraseUnit

This defines the action for securely erasing given regions using the NIST SP800-88 Purge: Cryptograhic Erase.

URIs:

/redfish/v1/CompositionService/ResourceBlocks/*{ResourceBlockId}*/Memory/*{MemoryId}*/Actions/Memory.SecureEraseUnit

/redfish/v1/CompositionService/ResourceBlocks/*{ResourceBlockId}*/Systems/*{ComputerSystemId}*/Memory/*{MemoryId}*/Actions/Memory.SecureEraseUnit

/redfish/v1/ResourceBlocks/*{ResourceBlockId}*/Memory/*{MemoryId}*/Actions/Memory.SecureEraseUnit

/redfish/v1/ResourceBlocks/*{ResourceBlockId}*/Systems/*{ComputerSystemId}*/Memory/*{MemoryId}*/Actions/Memory.SecureEraseUnit

/redfish/v1/Systems/*{ComputerSystemId}*/Memory/*{MemoryId}*/Actions/Memory.SecureEraseUnit

The following table shows the parameters for the action which are included in the POST body to the URI shown in the "target" property of the Action.

{			
Passphrase	string	read-write required	Passphrase for doing the operation.
RegionId }	string	read-write required	Memory region ID for which this action to be applied.

SetPassphrase

Set passphrase for the given regions.

URIs:

/redfish/v1/CompositionService/ResourceBlocks/*{ResourceBlockId}*/Memory/*{MemoryId}*/Actions/Memory.SetPassphrase

/redfish/v1/CompositionService/ResourceBlocks/*{ResourceBlockId}*/Systems/*{ComputerSystemId}*/Memory/*{MemoryId}*/Actions/Memory.SetPassphrase

/redfish/v1/ResourceBlocks/*{ResourceBlockId}*/Memory/*{MemoryId}*/Actions/Memory.SetPassphrase

/redfish/v1/ResourceBlocks/*{ResourceBlockId}*/Systems/*{ComputerSystemId}*/Memory/*{MemoryId}*/Actions/Memory.SetPassphrase

/redfish/v1/Systems/*{ComputerSystemId}*/Memory/*{MemoryId}*/Actions/Memory.SetPassphrase

The following table shows the parameters for the action which are included in the POST body to the URI shown in the "target" property of the Action.

{			
Passphrase	string	read-write required	Passphrase for doing the operation.
RegionId }	string	read-write required	Memory region ID for which this action to be applied.

UnlockUnit

This defines the action for unlocking given regions.

URIs:

/redfish/v1/CompositionService/ResourceBlocks/*{ResourceBlockId}*/Memory/*{MemoryId}*/Actions/Memory.UnlockUnit

/redfish/v1/CompositionService/ResourceBlocks/*{ResourceBlockId}*/Systems/*{ComputerSystemId}*/Memory/*{MemoryId}*/Actions/Memory.UnlockUnit

/redfish/v1/ResourceBlocks/*{ResourceBlockId}*/Memory/*{MemoryId}*/Actions/Memory.UnlockUnit

/redfish/v1/ResourceBlocks/*{ResourceBlockId}*/Systems/*{ComputerSystemId}*/Memory/*{MemoryId}*/Actions/Memory.UnlockUnit

/redfish/v1/Systems/*{ComputerSystemId}*/Memory/*{MemoryId}*/Actions/Memory.UnlockUnit

The following table shows the parameters for the action which are included in the POST body to the URI shown in the "target" property of the Action.

{			
Passphrase	string	read-write required	Passphrase for doing the operation.
RegionId }	string	read-write required	Memory region ID for which this action to be applied.

Property Details

BaseModuleType:

The base module type of Memory.

string	Description
Die *(v1.7+)*	A die within a package.
LRDIMM	Load Reduced.
Mini_RDIMM	Mini_RDIMM.
Mini_UDIMM	Mini_UDIMM.
RDIMM	Registered DIMM.
SO_DIMM	SO_DIMM.
SO_DIMM_16b	SO_DIMM_16b.
SO_DIMM_32b	SO_DIMM_32b.
SO_RDIMM_72b	SO_RDIMM_72b.
SO_UDIMM_72b	SO_UDIMM_72b.
UDIMM	UDIMM.

ErrorCorrection:

Error correction scheme supported for this memory.

string	Description
AddressParity	Address Parity errors can be corrected.
MultiBitECC	Multi-bit Data errors can be corrected by ECC.
NoECC	No ECC available.
SingleBitECC	Single bit Data error can be corrected by ECC.

MemoryClassification:

Classification of memory occupied by the given memory region.

string	Description
Block	Block accesible memory.
ByteAccessiblePersistent	Byte accessible persistent memory.
Volatile	Volatile memory.

MemoryDeviceType:

Type details of the Memory.

string	Description
DDR	DDR.
DDR2	DDR2.
DDR2_SDRAM	DDR2 SDRAM.
DDR2_SDRAM_FB_DIMM	DDR2 SDRAM FB_DIMM.
DDR2_SDRAM_FB_DIMM_PROBE	DDR2 SDRAM FB_DIMM PROBE.
DDR3	DDR3.
DDR3_SDRAM	DDR3 SDRAM.

DDR4	DDR4.
DDR4_SDRAM	DDR4 SDRAM.
DDR4E_SDRAM	DDR4E SDRAM.
DDR_SDRAM	DDR SDRAM.
DDR_SGRAM	DDR SGRAM.
EDO	EDO.
FastPageMode	Fast Page Mode.
HBM *(v1.7+)*	High Bandwidth Memory.
HBM2 *(v1.7+)*	High Bandwidth Memory 2.
Logical *(v1.4+)*	Logical Non-volatile device.
LPDDR3_SDRAM	LPDDR3 SDRAM.
LPDDR4_SDRAM	LPDDR4 SDRAM.
PipelinedNibble	Pipelined Nibble.
ROM	ROM.
SDRAM	SDRAM.

MemoryMedia:

Media of this Memory.

string	Description
DRAM	DRAM media.
Intel3DXPoint *(v1.7+)*	Intel 3D XPoint media.
NAND	NAND media.
Proprietary	Proprietary media.

MemoryType:

The type of Memory.

string	Description
DRAM	The memory module is composed of volatile memory.
IntelOptane *(v1.6+)*	The memory module is Intel Optane DC Persistent Memory and composed of a combination of non-volatile and volatile memory.
NVDIMM_F	The memory module is composed of non-volatile memory.
NVDIMM_N	The memory module is composed of volatile memory backed by non-volatile memory.
NVDIMM_P	The memory module is composed of a combination of non-volatile and volatile memory.

OperatingMemoryModes:

Memory modes supported by the Memory.

string	Description
Block	Block accessible system memory.
PMEM	Persistent memory, byte accesible through system address space.
Volatile	Volatile memory.

SecurityState:

The current security state of this Memory.

string	Description
Disabled	Secure mode is disabled.
Enabled	Secure mode is enabled and access to the data is allowed.
Frozen (deprecated v1.7)	Secure state is frozen and can not be modified until reset. *Deprecated v1.7+. This value has been deprecated in favor of using the ConfigurationLocked to indicate that the configuration has been frozen.*
Locked	Secure mode is enabled and access to the data is locked.
Passphraselimit	Number of attempts to unlock the Memory exceeded limit.
Unlocked (deprecated v1.7)	Secure mode is enabled and access to the data is unlocked. *Deprecated v1.7+. This value has been deprecated in favor of 'Enabled' to indicate normal security operation.*

SecurityStates:

Security states supported by the Memory.

string	Description
Disabled	Secure mode is disabled.
Enabled	Secure mode is enabled and access to the data is allowed.
Frozen (deprecated v1.7)	Secure state is frozen and can not be modified until reset. *Deprecated v1.7+. This value has been deprecated in favor of using the ConfigurationLocked to indicate that the configuration has been frozen.*
Locked	Secure mode is enabled and access to the data is locked.
Passphraselimit	Number of attempts to unlock the Memory exceeded limit.
Unlocked (deprecated v1.7)	Secure mode is enabled and access to the data is unlocked. *Deprecated v1.7+. This value has been deprecated in favor of 'Enabled' to indicate normal security operation.*

Example Response

```
{
    "@odata.type": "#Memory.v1_6_0.Memory",
    "Id": "DIMM1",
    "Name": "DIMM Slot 1",
    "RankCount": 2,
    "MaxTDPMilliWatts": [
        12000
    ],
    "CapacityMiB": 32768,
    "DataWidthBits": 64,
    "BusWidthBits": 72,
    "ErrorCorrection": "MultiBitECC",
    "MemoryLocation": {
        "Socket": 1,
        "MemoryController": 1,
        "Channel": 1,
        "Slot": 1
    },
    "MemoryType": "DRAM",
    "MemoryDeviceType": "DDR4",
    "BaseModuleType": "RDIMM",
    "MemoryMedia": [
        "DRAM"
    ],
    "Status": {
        "State": "Enabled",
        "Health": "OK"
    },
    "@odata.context": "/redfish/v1/$metadata#Memory.Memory",
    "@odata.id": "/redfish/v1/Systems/437XR1138R2/Memory/DIMM1"
}
```

MemoryChunks 1.2.3

v1.2	v1.1	v1.0
2017.3	2017.1	2016.2

This is the schema definition of a Memory Chunk and its configuration.

URIs:

/redfish/v1/CompositionService/ResourceBlocks/*{ResourceBlockId}*/Systems/*{ComputerSystemId}*/MemoryDomains/*{MemoryDomainId}*/MemoryChunks/*{MemoryChunksId}*

/redfish/v1/ResourceBlocks/*{ResourceBlockId}*/Systems/*{ComputerSystemId}*/MemoryDomains/*{MemoryDomainId}*/MemoryChunks/*{MemoryChunksId}*

/redfish/v1/Systems/*{ComputerSystemId}*/MemoryDomains/*{MemoryDomainId}*/MemoryChunks/*{MemoryChunksId}*

AddressRangeType	string (enum)	read-only (null)	Memory type of this memory chunk. See *AddressRangeType* in Property Details, below, for the possible values of this property.
InterleaveSets [{	array		This is the interleave sets for the memory chunk.
Memory {	object		Describes a memory device of the interleave set.
@odata.id }	string	read-only	The unique identifier for a resource.
MemoryLevel	integer	read-only (null)	Level of the interleave set for multi-level tiered memory.
OffsetMiB	integer (mebibytes)	read-only (null)	Offset within the DIMM that corresponds to the start of this memory region, measured in mebibytes (MiB).
RegionId	string	read-only (null)	DIMM region identifier.
SizeMiB }]	integer (mebibytes)	read-only (null)	Size of this memory region measured in mebibytes (MiB).
IsMirrorEnabled	boolean	read-only (null)	Mirror Enabled status.
IsSpare	boolean	read-only (null)	Spare enabled status.
MemoryChunkSizeMiB	integer (mebibytes)	read-only (null)	Size of the memory chunk measured in mebibytes (MiB).
Status *(v1.2+)* { }	object		This property describes the status and health of the resource and its children. See the *Status object* for details on this property.

Property Details

AddressRangeType:

Memory type of this memory chunk.

string	Description
Block	Block accesible memory.
PMEM	Byte accessible persistent memory.
Volatile	Volatile memory.

Example Response

```json
{
    "@odata.type": "#MemoryChunks.v1_0_0.MemoryChunks",
    "Name": "Memory Chunk - Whole System",
    "Id": "1",
    "MemoryChunkSizeMiB": 32768,
    "AddressRangeType": "Volatile",
    "IsMirrorEnabled": false,
    "IsSpare": false,
    "InterleaveSets": [
        {
            "Memory": {
                "@odata.id": "/redfish/v1/Systems/2/Memory/1"
            }
        },
        {
            "Memory": {
                "@odata.id": "/redfish/v1/Systems/2/Memory/2"
```

```
            }
        },
            "Memory": {
                "@odata.id": "/redfish/v1/Systems/2/Memory/3"
            }
        },
        {
            "Memory": {
                "@odata.id": "/redfish/v1/Systems/2/Memory/4"
            }
        }
    ],
    "@Redfish.Settings": {
        "@odata.type": "#Settings.v1_0_0.Settings",
        "SettingsObject": {
            "@odata.id": "/redfish/v1/Systems/2/MemoryDomains/1/MemoryChunks/1/SD"
        },
        "Time": "2012-03-07T14:44.30-05:00",
        "ETag": "someetag",
        "Messages": [
            {
                "MessageId": "Base.1.0.Success"
            }
        ]
    },
    "Oem": {},
    "@odata.context": "/redfish/v1/$metadata#MemoryChunks.MemoryChunks",
    "@odata.id": "/redfish/v1/Systems/2/MemoryDomains/1/MemoryChunks/1"
}
```

MemoryDomain 1.2.2

v1.2	v1.1	v1.0
2017.1	2016.3	2016.2

This is the schema definition of a Memory Domain and its configuration. Memory Domains are used to indicate to the client which Memory (DIMMs) can be grouped together in Memory Chunks to form interleave sets or otherwise grouped together.

URIs:

/redfish/v1/CompositionService/ResourceBlocks/*{ResourceBlockId}*/Systems/*{ComputerSystemId}*/MemoryDomains/*{MemoryDomainId}*

/redfish/v1/ResourceBlocks/*{ResourceBlockId}*/Systems/*{ComputerSystemId}*/MemoryDomains/*{MemoryDomainId}*

/redfish/v1/Systems/*{ComputerSystemId}*/MemoryDomains/*{MemoryDomainId}*

AllowsBlockProvisioning	boolean	read-only (null)	Indicates if this Memory Domain supports the provisioning of blocks of memory.
AllowsMemoryChunkCreation	boolean	read-only (null)	Indicates if this Memory Domain supports the creation of Memory Chunks.
AllowsMirroring *(v1.1+)*	boolean	read-only (null)	Indicates if this Memory Domain supports the creation of Memory Chunks with mirroring enabled.
AllowsSparing *(v1.1+)*	boolean	read-only (null)	Indicates if this Memory Domain supports the creation of Memory Chunks with sparing enabled.
InterleavableMemorySets [{	array		This is the interleave sets for the memory chunk.
MemorySet [{	array		This is the collection of memory for a particular interleave set.
@odata.id }] }]	string	read-only	*Link to a Memory resource. See the Links section and the Memory schema for details.*
MemoryChunks {	object		A reference to the collection of Memory Chunks associated with this Memory Domain. *Contains a link to a resource.*
@odata.id }	string	read-only	*Link to Collection of MemoryChunks. See the MemoryChunks schema for details.*

Example Response

```
{
    "@odata.type": "#MemoryDomain.v1_2_1.MemoryDomain",
    "Name": "Memory Domain - Whole System Mirroring Only",
    "Id": "1",
    "MemoryChunks": {
        "@odata.id": "/redfish/v1/Systems/4/MemoryDomains/1/MemoryChunks"
```

```
        },
        "AllowsMemoryChunkCreation": false,
        "AllowsBlockProvisioning": false,
        "InterleavableMemorySets": [
            {
                "MemorySet": [
                    {
                        "@odata.id": "/redfish/v1/Systems/2/Memory/1"
                    },
                    {
                        "@odata.id": "/redfish/v1/Systems/2/Memory/2"
                    },
                    {
                        "@odata.id": "/redfish/v1/Systems/2/Memory/3"
                    },
                    {
                        "@odata.id": "/redfish/v1/Systems/2/Memory/4"
                    }
                ]
            }
        ],
        "Oem": {},
        "@odata.context": "/redfish/v1/$metadata#MemoryDomain.MemoryDomain",
        "@odata.id": "/redfish/v1/Systems/2/MemoryDomains/1"
}
```

MemoryMetrics 1.1.5

v1.1	v1.0
2016.2	2016.1

MemoryMetrics contains usage and health statistics for a single Memory module or device instance.

URIs:

/redfish/v1/CompositionService/ResourceBlocks/*{ResourceBlockId}*/Memory/*{MemoryId}*/MemoryMetrics

/redfish/v1/CompositionService/ResourceBlocks/*{ResourceBlockId}*/Systems/*{ComputerSystemId}*/Memory/*{MemoryId}*/MemoryMetrics

/redfish/v1/ResourceBlocks/*{ResourceBlockId}*/Memory/*{MemoryId}*/MemoryMetrics

/redfish/v1/ResourceBlocks/*{ResourceBlockId}*/Systems/*{ComputerSystemId}*/Memory/*{MemoryId}*/MemoryMetrics

/redfish/v1/Systems/*{ComputerSystemId}*/Memory/*{MemoryId}*/MemoryMetrics

BlockSizeBytes	integer (bytes)	read-only (null)	Block size in bytes.
CurrentPeriod {	object		This object contains the Memory metrics since last reset or ClearCurrentPeriod action.
BlocksRead	integer	read-only (null)	Number of blocks read since reset.
BlocksWritten }	integer	read-only (null)	Number of blocks written since reset.
HealthData {	object		This object describes the health information of the memory.
AlarmTrips {	object		Alarm trip information about the memory.
AddressParityError	boolean	read-only (null)	Address parity error detected status.
CorrectableECCError	boolean	read-only (null)	Correctable data error threshold crossing alarm trip detected status.
SpareBlock	boolean	read-only (null)	Spare block capacity crossing alarm trip detected status.
Temperature	boolean	read-only (null)	Temperature threshold crossing alarm trip detected status.
UncorrectableECCError }	boolean	read-only (null)	Uncorrectable data error threshold crossing alarm trip detected status.
DataLossDetected	boolean	read-only (null)	Data loss detection status.
LastShutdownSuccess	boolean	read-only (null)	Status of last shutdown.

PerformanceDegraded	boolean	read-only (null)	Performance degraded mode status.
PredictedMediaLifeLeftPercent *(v1.1+)*	number (%)	read-only (null)	The percentage of reads and writes that are predicted to still be available for the media.
RemainingSpareBlockPercentage }	number (%)	read-only (null)	Remaining spare blocks in percentage.
LifeTime {	object		This object contains the Memory metrics for the lifetime of the Memory.
BlocksRead	integer	read-only (null)	Number of blocks read for the lifetime of the Memory.
BlocksWritten }	integer	read-only (null)	Number of blocks written for the lifetime of the Memory.

Actions

ClearCurrentPeriod

This sets the CurrentPeriod object values to zero.

URIs:

/redfish/v1/CompositionService/ResourceBlocks/*{ResourceBlockId}*/Memory/*{MemoryId}*/MemoryMetrics/Actions/MemoryMetrics.ClearCurrentPeriod

/redfish/v1/CompositionService/ResourceBlocks/*{ResourceBlockId}*/Systems/*{ComputerSystemId}*/Memory/*{MemoryId}*/MemoryMetrics/Actions/MemoryMetrics.ClearCurrentPeriod

/redfish/v1/ResourceBlocks/*{ResourceBlockId}*/Memory/*{MemoryId}*/MemoryMetrics/Actions/MemoryMetrics.ClearCurrentPeriod

/redfish/v1/ResourceBlocks/*{ResourceBlockId}*/Systems/*{ComputerSystemId}*/Memory/*{MemoryId}*/MemoryMetrics/Actions/MemoryMetrics.ClearCurrentPeriod

/redfish/v1/Systems/*{ComputerSystemId}*/Memory/*{MemoryId}*/MemoryMetrics/Actions/MemoryMetrics.ClearCurrentPeriod

(This action takes no parameters.)

Example Response

```
{
    "@odata.type": "#MemoryMetrics.v1_1_4.MemoryMetrics",
    "Name": "Memory Metrics",
    "Id": "Metrics",
    "BlockSizeBytes": 4096,
    "CurrentPeriod": {
        "BlocksRead": 0,
        "BlocksWritten": 0
    },
    "LifeTime": {
        "BlocksRead": 0,
        "BlocksWritten": 0
    },
    "HealthData": {
        "RemainingSpareBlockPercentage": 50,
        "LastShutdownSuccess": true,
        "DataLossDetected": false,
        "PerformanceDegraded": false,
        "AlarmTrips": {
            "Temperature": true,
            "SpareBlock": false,
            "UncorrectableECCError": false,
            "CorrectableECCError": false
        }
    },
    "Actions": {
        "#MemoryMetrics.ClearCurrentPeriod": {
            "target": "/redfish/v1/Systems/1/Memory/1/Actions/MemoryMetrics.ClearCurrentPeriod"
        },
        "Oem": {}
    },
    "Oem": {},
    "@odata.context": "/redfish/v1/$metadata#MemoryMetrics.MemoryMetrics",
    "@odata.id": "/redfish/v1/Systems/1/Memory/1/MemoryMetrics"
}
```

MessageRegistry 1.3.0

v1.3	*v1.2*	*v1.1*	*v1.0*
2019.1	2018.2	2017.1	1.0

This is the schema definition for all Message Registries. It represents the properties for the registries themselves. The MessageId is formed per the Redfish specification. It consists of the RegistryPrefix concatenated with the version concatenated with the unique identifier for the message registry entry.

Language	string	read-only required	This is the RFC 5646 compliant language code for the registry.
Messages {	object	required	The pattern property indicates that a free-form string is the unique identifier for the message within the registry.
(pattern) {	object		Property names follow regular expression pattern "[A-Za-z0-9]+"
ArgDescriptions *(v1.3+)* [ ]	array (string, null)	read-only	The MessageArg descriptions, in order, used for this Message.
ArgLongDescriptions *(v1.3+)* [ ]	array (string, null)	read-only	The MessageArg normative descriptions, in order, used for this Message.
ClearingLogic *(v1.2+)* {	object		The clearing logic associated with this message. The properties within indicate that what messages are cleared by this message as well as under what conditions.
ClearsAll	boolean	read-only (null)	This property indicates that all prior conditions and messages are cleared provided the ClearsIf condition is met.
ClearsIf	string (enum)	read-only (null)	This property contains the available OEM specific actions for this resource. *See ClearsIf in Property Details, below, for the possible values of this property.*
ClearsMessage [ ] }	array (string, null)	read-only	This property contains the array of Message Ids that are cleared by this message, provided the other conditions are met.
Description	string	read-only required	This is a short description of how and when this message is to be used.
LongDescription *(v1.3+)*	string	read-only (null)	The normative language describing the usage of this Message.
Message	string	read-only required	The actual message.
NumberOfArgs	integer	read-only required	The number of arguments to be expected to be passed in as MessageArgs for this message.
Oem { }	object		See the OEM object definition in the Common properties section.
ParamTypes [ ]	array (string (enum))	read-only	The MessageArg types, in order, for the message. *See ParamTypes in Property Details, below, for the possible values of this property.*
Resolution	string	read-only required	Used to provide suggestions on how to resolve the situation that caused the error.
Severity }	string	read-only required	This is the severity of the message.
(pattern) { } [ ] }	array, boolean, integer, number, object, string	(null)	Property names follow regular expression pattern "^([a-zA-Z_][a-zA-Z0-9_]*)?@(odata|Redfish|Message)\.[a-zA-Z_][a-zA-Z0-9_]*$"
OwningEntity	string	read-only required	This is the organization or company that publishes this registry.
RegistryPrefix	string	read-only required	This is the single word prefix used to form a messageID structure.
RegistryVersion	string	read-only required	This is the message registry version which is used in the middle portion of a messageID.

Property Details

ClearsIf:

This property contains the available OEM specific actions for this resource.

string	Description
SameOriginOfCondition	Indicates the message is cleared by the other message(s) listed in the ClearingLogic object, provided the OriginOfCondition for both Events are the same.

ParamTypes:

The MessageArg types, in order, for the message.

string	Description
number	The argument is a number.
string	The argument is a string.

Example Response

```
{
    "@odata.type": "#MessageRegistry.v1_0_0.MessageRegistry",
    "Id": "Basic.1.2.0",
    "Name": "Simple Message Registry",
    "Language": "en",
    "Description": "Collection of Basic messages for numerous use cases",
    "RegistryPrefix": "Basic",
    "RegistryVersion": "1.2.0",
    "OwningEntity": "Contoso",
    "Messages": {
        "Success": {
            "Description": "Indicates that all conditions of a successful operation have been met.",
            "Message": "Successfully Completed Request",
            "Severity": "OK",
            "NumberOfArgs": 0,
            "Resolution": "None"
        },
        "GeneralError": {
            "Description": "Indicates that a general error has occurred.",
            "Message": "A general error has occurred. See ExtendedInfo for more information.",
            "Severity": "Critical",
            "NumberOfArgs": 0,
            "Resolution": "See ExtendedInfo for more information."
        },
        "ResourceAtUriUnauthorized": {
            "Description": "Indicates that the attempt to access the resource/file/image at the URI was unauthorized.",
            "Message": "While accessing the resource at %1, the service received an authorization error %2.",
            "Severity": "Critical",
            "NumberOfArgs": 2,
            "ParamTypes": [
                "string",
                "string"
            ],
            "Resolution": "Ensure that the appropriate access is provided for the service in order for it to access the URI."
        }
    }
}
```

MessageRegistryFile 1.1.2

v1.1	v1.0
2017.1	2016.1

This is the schema definition for the Schema File locator resource.

URIs:

/redfish/v1/Registries/*{MessageRegistryFileId}*

Languages [ ]	array (string)	read-only required	Language codes for the schemas available.
Location [{	array	required	Location information for this registry file.
ArchiveFile	string	read-only	If the schema is hosted on the service in an archive file, this is the name of the file within the archive.
ArchiveUri	string	read-only	If the schema is hosted on the service in an archive file, this is the link to the archive file.

Language	string	read-only	The language code for the file the schema is in.
PublicationUri	string	read-only	Link to publicly available (canonical) URI for schema.
Uri }]	string	read-only	Link to locally available URI for schema.
Registry	string	read-only required	The Registry Name, Major, and Minor version. This Registry can reference any type of Registry, such as a Message Registry, Privilege Registry, or Attribute Registry.

Example Response

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

MetricDefinition 1.0.2

v1.0
2018.2

The metadata information about a metric.

URIs:

/redfish/v1/TelemetryService/MetricDefinitions/*{MetricDefinitionId}*

Accuracy	number	read-only (null)	Estimated percent error of measured vs. actual values.
Calculable	string (enum)	read-write (null)	Indicates whether the metric can be used in a calculation. *See Calculable in Property Details, below, for the possible values of this property.*
CalculationAlgorithm	string (enum)	read-only (null)	The calculation which is performed on a source metric to obtain the metric being defined. *See CalculationAlgorithm in Property Details, below, for the possible values of this property.*
CalculationParameters [{	array		Specifies the metric properties which are part of the synthesis calculation. This property is present when the MetricType property has the value 'Synthesized'.
ResultMetric	string	read-only (null)	The metric property used to store the results of the calculation.
SourceMetric }]	string	read-only (null)	The metric property used as the input into the calculation.
CalculationTimeInterval	string	read-write (null)	The time interval over which the metric calculation is performed.
Calibration	number	read-only (null)	Specifies the calibration offset added to the metric reading.
DiscreteValues [ ]	array (string, null)	read-write	This array property specifies possible values of a discrete metric.

Implementation	string (enum)	read-only (null)	The implementation of the metric. See _Implementation_ in Property Details, below, for the possible values of this property.
IsLinear	boolean	read-write (null)	Indicates whether the metric values are linear (vs non-linear).
MaxReadingRange	number	read-only (null)	Maximum value for metric reading.
MetricDataType	string (enum)	read-write (null)	The data type of the metric. See _MetricDataType_ in Property Details, below, for the possible values of this property.
MetricProperties [ ]	array (string, null)	read-write	A list of URIs with wildcards and property identifiers for which this metric definition is defined. If a URI has wildcards, the wildcards are substituted as specified in the Wildcards array property.
MetricType	string (enum)	read-write (null)	The type of metric. See _MetricType_ in Property Details, below, for the possible values of this property.
MinReadingRange	number	read-only (null)	Minimum value for metric reading.
PhysicalContext	string (enum)	read-only (null)	Specifies the physical context of the metric. See _PhysicalContext_ in Property Details, below, for the possible values of this property.
Precision	integer	read-only (null)	Number of significant digits in the metric reading.
SensingInterval	string	read-write (null)	The time interval between when a metric is updated.
TimestampAccuracy	string	read-only (null)	Accuracy of the timestamp.
Units	string	read-write (null)	The units of measure for this metric.
Wildcards [{	array		A list of wildcards and their substitution values to be applied to the entries in the MetricProperties array property.
Name	string	read-only (null)	The string used as a wildcard.
Values [ ] }]	array (string, null)	read-only	An array of values to substitute for the wildcard.

Property Details

Calculable:

Indicates whether the metric can be used in a calculation.

string	Description
NonCalculatable	No calculations should be performed on the metric reading.
NonSummable	The sum of the metric reading across multiple instances is not meaningful.
Summable	The sum of the metric reading across multiple instances is meaningful.

CalculationAlgorithm:

The calculation which is performed on a source metric to obtain the metric being defined.

string	Description
Average	The metric is calculated as the average of a metric reading over a sliding time interval.

Maximum	The metric is calculated as the maximum value of a metric reading over during a time interval.
Minimum	The metric is calculated as the minimum value of a metric reading over a sliding time interval.

Implementation:

The implementation of the metric.

string	Description
Calculated	The metric is implemented by applying a calculation on another metric property. The calculation is specified in the CalculationAlgorithm property.
DigitalMeter	The metric is implemented as digital meter.
PhysicalSensor	The metric is implemented as a physical sensor.
Synthesized	The metric is implemented by applying a calculation on one or more metric properties. (The calculation is not specified. For expressing generalized formula, see MathSON).

MetricDataType:

The data type of the metric.

string	Description
Boolean	The data type follows the JSON Boolean definition.
DateTime	The data type follows the JSON String definition with the Date-Time format applied.
Decimal	The data type follows the JSON Decimal definition.
Enumeration	The data type follows the JSON String definition with a set of enumerations defined.
Integer	The data type follows the JSON Integer definition.
String	The data type follows the JSON String definition.

MetricType:

The type of metric.

string	Description
Countdown	The metric is a countdown metric. The metric reading is a non-negative integer which decreases monotonically. When a counter reaches its minimum, the value resets to preset value and resumes counting down.
Counter	The metric is a counter metric. The metric reading is a non-negative integer which increases monotonically. When a counter reaches its maximum, the value resets to 0 and resumes counting.
Discrete	The metric is a discrete metric. The metric value is discrete. The possible values are listed in the DiscreteValues property.
Gauge	The metric is a gauge metric. The metric value is a real number. When the metric value reaches the gauges extrema, it stays at that value, until the reading falls within the extrema.
Numeric	The metric is a numeric metric. The metric value is any real number.

PhysicalContext:

Specifies the physical context of the metric.

string	Description
Accelerator	An Accelerator.
ACInput	An AC Input.
ACMaintenanceBypassInput	An AC Maintenance Bypass Input.
ACOutput	An AC Output.
ACStaticBypassInput	An AC Static Bypass Input.
ACUtilityInput	An AC Utility Input.

ASIC	An ASIC device, such as networking chip or a chipset component.
Back	The back of the chassis.
Backplane	A backplane within the chassis.
Chassis	The entire chassis.
ComputeBay	Within a compute bay.
CoolingSubsystem	The entire cooling (air and liquid) subsystem.
CPU	A Processor (CPU).
CPUSubsystem	The entire Processor (CPU) subsystem.
DCBus	A DC Bus.
Exhaust	The air exhaust point(s) or region of the chassis.
ExpansionBay	Within an expansion bay.
Fan	A fan.
FPGA	A Field Programmable Gate Array (FPGA).
Front	The front of the chassis.
GPU	A Graphics Processor (GPU).
GPUSubsystem	The entire Graphics Processor (GPU) subsystem.
Intake	The air intake point(s) or region of the chassis.
LiquidInlet	The liquid inlet point of the chassis.
LiquidOutlet	The liquid outlet point of the chassis.
Lower	The lower portion of the chassis.
Memory	A memory device.
MemorySubsystem	The entire Memory subsystem.
Motor	A motor.
NetworkBay	Within a networking bay.
NetworkingDevice	A networking device.
PowerSubsystem	The entire power subsystem.
PowerSupply	A power supply.
PowerSupplyBay	Within a power supply bay.
Rectifier	A rectifier device.
Room	The room.
StorageBay	Within a storage bay.
StorageDevice	A storage device.
SystemBoard	The system board (PCB).
Transformer	A Transformer.
Upper	The upper portion of the chassis.
VoltageRegulator	A voltage regulator device.

Example Response

```
{
```

```
        "@odata.type": "#MetricDefinition.v1_0_0.MetricDefinition",
        "Id": "PowerConsumedWatts",
        "Name": "Power Consumed Watts Metric Definition",
        "MetricType": "Numeric",
        "Implementation": "PhysicalSensor",
        "PhysicalContext": "PowerSupply",
        "MetricDataType": "Decimal",
        "Units": "W",
        "Precision": 4,
        "Accuracy": 1,
        "Calibration": 2,
        "MinReadingRange": 0,
        "MaxReadingRange": 50,
        "SensingInterval": "PT1S",
        "TimestampAccuracy": "PT1S",
        "Wildcards": [
            {
                "Name": "ChassisID",
                "Values": [
                    "1"
                ]
            }
        ],
        "MetricProperties": [
            "/redfish/v1/Chassis/{ChassisID}/Power#/PowerControl/0/PowerConsumedWatts"
        ],
        "@odata.context": "/redfish/v1/$metadata#MetricDefinition.MetricDefinition",
        "@odata.id": "/redfish/v1/TelemetryService/MetricDefinitions/PowerConsumedWatts"
}
```

MetricReport 1.1.1

v1.1	v1.0
2018.3	2018.2

The metric definitions used to create a metric report.

URIs:

/redfish/v1/TelemetryService/MetricReports/*{MetricReportId}*

MetricReportDefinition {	object		The metric definitions used to create a metric report. See the *MetricReportDefinition* schema for details on this property.
@odata.id }	string	read-only	*Link to a MetricReportDefinition resource. See the Links section and the MetricReportDefinition schema for details.*
MetricValues [{	array		An array of metric values for the metered items of this Metric.
MetricDefinition {	object		A link to the Metric Definition. See the *MetricDefinition* schema for details on this property.
@odata.id }	string	read-only	*Link to a MetricDefinition resource. See the Links section and the MetricDefinition schema for details.*
MetricId	string	read-only (null)	The metric definitions identifier for this metric.
MetricProperty	string	read-only (null)	The URI for the property from which this metric is derived.
MetricValue	string	read-only (null)	The value identifies this resource.
Timestamp }]	string	read-only (null)	The time when the value of the metric is obtained. A management application may establish a time series of metric data by retrieving the instances of metric value and sorting them according to their Timestamp.
ReportSequence	string	read-only required	The current sequence identifier for this metric report.
Timestamp *(v1.1+)*	string	read-only (null)	The time associated with the metric report in its entirety. The time of the metric report may be relevant when the time of individual metrics are minimally different.

Example Response

```
{
    "@odata.type": "#MetricReport.v1_0_0.MetricReport",
    "Id": "AvgPlatformPowerUsage",
    "Name": "Average Platform Power Usage metric report",
    "ReportSequence": "127",
    "MetricReportDefinition": {
```

```
            "@odata.id": "/redfish/v1/TelemetryService/MetricReportDefinitions/AvgPlatformPowerUsage"
    },
    "MetricValues": [
        {
            "MetricId": "AverageConsumedWatts",
            "MetricValue": "100",
            "Timestamp": "2016-11-08T12:25:00-05:00",
            "MetricProperty": "/redfish/v1/Chassis/Tray_1/Power#/0/PowerConsumedWatts"
        },
        {
            "MetricId": "AverageConsumedWatts",
            "MetricValue": "94",
            "Timestamp": "2016-11-08T13:25:00-05:00",
            "MetricProperty": "/redfish/v1/Chassis/Tray_1/Power#/0/PowerConsumedWatts"
        },
        {
            "MetricId": "AverageConsumedWatts",
            "MetricValue": "100",
            "Timestamp": "2016-11-08T14:25:00-05:00",
            "MetricProperty": "/redfish/v1/Chassis/Tray_1/Power#/0/PowerConsumedWatts"
        }
    ],
    "@odata.context": "/redfish/v1/$metadata#MetricReport.MetricReport",
    "@odata.id": "/redfish/v1/TelemetryService/MetricReports/AvgPlatformPowerUsage"
}
```

MetricReportDefinition 1.2.0

v1.2	v1.1	v1.0
2019.1	2018.3	2018.2

A set of metrics that are collected into a metric report.

URIs:

/redfish/v1/TelemetryService/MetricReportDefinitions/*{MetricReportDefinitionId}*

AppendLimit	integer	read-only	Indicates the maximum number of entries that can be appended to a metric report. When the metric report reaches its limit, its behavior is dictated by the ReportUpdates property.
Links *(v1.2+)* {	object		Contains references to other resources that are related to this resource.
Oem { }	object		See the OEM object definition in the Common properties section.
Triggers [{	array		The triggers that will cause this metric report definition to generate a new metric report upon a trigger occurrence when the TriggerActions property contains the value RedfishMetricReport.
@odata.id }] }	string	read-only	*Link to a Triggers resource. See the Links section and the Triggers schema for details.*
MetricProperties [ ]	array (string, null)	read-write	A list of URIs with wildcards and property identifiers to include in the metric report. If a URI has wildcards, the wildcards are substituted as specified in the Wildcards array property.
MetricReport {	object		Specifies the location where the resultant metric report is placed. *See the MetricReport schema for details on this property.*
@odata.id }	string	read-only	*Link to a MetricReport resource. See the Links section and the MetricReport schema for details.*
MetricReportDefinitionEnabled *(v1.2+)*	boolean	read-write (null)	This indicates whether this MetricReportDefinition is enabled.
MetricReportDefinitionType	string (enum)	read-write (null)	Specifies when the metric report is generated. *See MetricReportDefinitionType in Property Details, below, for the possible values of this property.*
MetricReportHeartbeatInterval *(v1.2+)*	string	read-write (null)	This property specifies an interval to send complete MetricReport regardless of whether values have changed. It is used in addition to the ReccurranceInterval where SuppressRepeatedMetricValue is Enabled and the Redfish client desired to be refreshed with metric data occasionally regardless of whether the data is changed or not.
Metrics [{	array		Specifies a list of metrics to include in the metric report. The metrics

			may include metric properties or calculations applied to a metric property.
CollectionDuration	string	read-write (null)	Specifies the duration over which the function is computed.
CollectionFunction	string (enum)	read-write (null)	Specified the function to perform on each of the metric properties listed in the MetricProperties property. *See [CollectionFunction](#) in Property Details, below, for the possible values of this property.*
CollectionTimeScope	string (enum)	read-write (null)	Specifies the scope of time scope over which the function is applied. *See [CollectionTimeScope](#) in Property Details, below, for the possible values of this property.*
MetricId	string	read-only (null)	Specifies the label for the metric definition which is derived by applying the CollectionFunction to the metric property.
MetricProperties [ ] }]	array (string, null)	read-write	A collection of URI for the properties on which this metric is collected.
ReportActions [ ]	array (string (enum))	read-only	Specifies the actions to perform when a metric report is generated. Actions to perform when a metric report is generated. *See [ReportActions](#) in Property Details, below, for the possible values of this property.*
ReportUpdates	string (enum)	read-only	When logging metric reports, specifies how subsequent metric reports are handled in relationship to an existing metric report created from the metric report definition. Namely, whether to overwrite, append, or create new report resource. *See [ReportUpdates](#) in Property Details, below, for the possible values of this property.*
Schedule { }	object		Specifies the schedule for generating the metric report. *See the [Schedule object](#) for details on this property.*
Status { }	object		This property describes the status and health of the resource and its children. *See the [Status object](#) for details on this property.*
SuppressRepeatedMetricValue *(v1.2+)*	boolean	read-write (null)	A value of true indicates that any Metric in the MetricReport currently be generated will be suppressed and not included in the MetricReport when the value of the Metric equals the value of the same Metric in the previously generated MetricReport. A value of false means that the suppression mechanism is not applied to the MetricReport being generated. A MetricReport may be generated with no MetricProperty array values if all Metrics had the same values as in the previously generated MetricReport.
Wildcards [{	array		A list of wildcards and their substitution values to be applied to the entries in the MetricProperties array property.
Keys *(deprecated v1.2)* [ ]	array (string, null)	read-only	An array of values to substitute for the wildcard. *Deprecated v1.2+. This property has been Deprecated in favor of using the property 'Values'.*
Name	string	read-only (null)	The string used as a wildcard.
Values *(v1.1+)* [ ] }]	array (string, null)	read-only	An array of values to substitute for the wildcard.

Property Details

CollectionFunction:

Specified the function to perform on each of the metric properties listed in the MetricProperties property.

string	Description

Average	The metric is calculated as the average of a metric reading over a sliding time interval.
Maximum	The metric is calculated as the maximum value of a metric reading over during a time interval.
Minimum	The metric is calculated as the minimum value of a metric reading over a sliding time interval.
Summation	The metric is calculated as the sum of the values over a sliding time interval.

CollectionTimeScope:

Specifies the scope of time scope over which the function is applied.

string	Description
Interval	The corresponding metric values apply to a time interval. On the corresponding metric value instances, the value of Timestamp shall specify the end of the time interval and Duration shall specify its duration.
Point	The corresponding metric values apply to a point in time. On the corresponding metric value instances, the value of Timestamp shall specify the point in time.
StartupInterval	The corresponding metric values apply to a time interval that began at the startup of the measured resource (i.e. the Resources associated by Links.MetricDefinitionForResources). On the corresponding metric value instances, the value of Timestamp shall specify the end of the time interval. The value of Duration shall specifies the duration between startup of the resource and TimeStamp.

MetricReportDefinitionType:

Specifies when the metric report is generated.

string	Description
OnChange	The metric report is generated when any of the metric values change.
OnRequest	The metric report is generated when a HTTP GET is performed on the specified metric report.
Periodic	The metric report is generated at a periodic time interval, specified in the Schedule property.

ReportActions:

Specifies the actions to perform when a metric report is generated. Actions to perform when a metric report is generated.

string	Description
LogToMetricReportsCollection	When a metric report is scheduled to be generated, record the occurrence to the Metric Report Collection.
RedfishEvent	When a metric report is scheduled to be generated, send a Redfish Event message of type MetricReport.

ReportUpdates:

When logging metric reports, specifies how subsequent metric reports are handled in relationship to an existing metric report created from the metric report definition. Namely, whether to overwrite, append, or create new report resource.

string	Description
AppendStopsWhenFull	When a metric report is updated, append to the specified metric report resource. This also indicates that the metric report stops adding entries when the metric report has reached its maximum capacity.
AppendWrapsWhenFull	When a metric report is updated, append to the specified metric report resource. This also indicates that the metric report overwrites its entries with new entries when the metric report has reached its maximum capacity.
NewReport	When a metric report is updated, create a new metric report resource, whose resource name is the metric report resource name concatenated with the timestamp.
Overwrite	When a metric report is updated, overwrite the specified metric report resource.

Example Response

```
{
    "@odata.type": "#MetricReportDefinition.v1_1_0.MetricReportDefinition",
    "Id": "PlatformPowerUsage",
    "Name": "Transmit and Log Platform Power Usage",
```

```
        "MetricReportDefinitionType": "Periodic",
        "Schedule": {
            "RecurrenceInterval": "T01:00:00"
        },
        "ReportActions": [
            "RedfishEvent",
            "LogToMetricReportsCollection"
        ],
        "ReportUpdates": "AppendWrapsWhenFull",
        "AppendLimit": 256,
        "MetricReport": {
            "@odata.id": "/redfish/v1/TelemetryService/MetricReports/PlatformPowerUsage"
        },
        "Status": {
            "State": "Enabled"
        },
        "Wildcards": [
            {
                "Name": "PWild",
                "Values": [
                    "0"
                ]
            },
            {
                "Name": "TWild",
                "Values": [
                    "Tray_1",
                    "Tray_2"
                ]
            }
        ],
        "MetricProperties": [
            "/redfish/v1/Chassis/{TWild}/Power#/PowerControl/{PWild}/PowerConsumedWatts"
        ],
        "@odata.context": "/redfish/v1/$metadata#MetricReportDefinition.MetricReportDefinition",
        "@odata.id": "/redfish/v1/TelemetryService/MetricReportDefinitions/PlatformPowerUsage"
}
```

NetworkAdapter 1.2.1

v1.2	v1.1	v1.0
2018.2	2017.3	2016.3

A NetworkAdapter represents the physical network adapter capable of connecting to a computer network. Examples include but are not limited to Ethernet, Fibre Channel, and converged network adapters.

URIs:

/redfish/v1/Chassis/*{ChassisId}*/NetworkAdapters/*{NetworkAdapterId}*

Assembly *(v1.1+)* {	object		A reference to the Assembly resource associated with this adapter. *See the Assembly schema for details on this property.*
@odata.id }	string	read-only	*Link to a Assembly resource. See the Links section and the Assembly schema for details.*
Controllers [{	array		The set of network controllers ASICs that make up this NetworkAdapter.
ControllerCapabilities {	object		The capabilities of this controller.
DataCenterBridging {	object		Data Center Bridging (DCB) for this controller.
Capable }	boolean	read-only (null)	Whether this controller is capable of Data Center Bridging (DCB).
NetworkDeviceFunctionCount	integer	read-only (null)	The maximum number of physical functions available on this controller.
NetworkPortCount	integer	read-only (null)	The number of physical ports on this controller.
NPAR *(v1.2+)* {	object		NIC Partitioning (NPAR) capabilities for this controller.
NparCapable	boolean	read-only (null)	Indicates whether or not NIC function partitioning is supported by a controller.
NparEnabled }	boolean	read-write (null)	When true, NIC function partitioning is active on this controller.
NPIV {	object		N_Port ID Virtualization (NPIV) capabilties for this controller.
MaxDeviceLogins	integer	read-only	The maximum number of N_Port ID Virtualization (NPIV) logins

		(null)	allowed simultaneously from all ports on this controller.
MaxPortLogins }	integer	read-only (null)	The maximum number of N_Port ID Virtualization (NPIV) logins allowed per physical port on this controller.
VirtualizationOffload {	object		Virtualization offload for this controller.
SRIOV {	object		Single-Root Input/Output Virtualization (SR-IOV) capabilities.
SRIOVVEPACapable }	boolean	read-only (null)	Whether this controller supports Single Root Input/Output Virtualization (SR-IOV) in Virtual Ethernet Port Aggregator (VEPA) mode.
VirtualFunction {	object		The virtual function of the controller.
DeviceMaxCount	integer	read-only (null)	The maximum number of Virtual Functions (VFs) supported by this controller.
MinAssignmentGroupSize	integer	read-only (null)	The minimum number of Virtual Functions (VFs) that can be allocated or moved between physical functions for this controller.
NetworkPortMaxCount } } }	integer	read-only (null)	The maximum number of Virtual Functions (VFs) supported per network port for this controller.
FirmwarePackageVersion	string	read-only (null)	The version of the user-facing firmware package.
Links {	object		Links.
NetworkDeviceFunctions [{	array		An array of references to the NetworkDeviceFunctions associated with this Network Controller.
@odata.id }]	string	read-only	*Link to a NetworkDeviceFunction resource. See the Links section and the NetworkDeviceFunction schema for details.*
NetworkPorts [{	array		An array of references to the NetworkPorts associated with this Network Controller.
@odata.id }]	string	read-only	*Link to a NetworkPort resource. See the Links section and the NetworkPort schema for details.*
Oem { }	object		See the OEM object definition in the Common properties section.
PCIeDevices [{	array		An array of references to the PCIeDevices associated with this Network Controller.
@odata.id }] }	string	read-only	*Link to a PCIeDevice resource. See the Links section and the PCIeDevice schema for details.*
Location *(v1.1+)* { }	object		The Location of the network adapter controller. *See the Location object for details on this property.*
PCIeInterface *(v1.2+)* { } }]	object		The PCIe interface details for this controller. *See the PCIeInterface object (v1.3.0) for details on this property.*
Manufacturer	string	read-only (null)	The manufacturer or OEM of this network adapter.
Model	string	read-only (null)	The model string for this network adapter.
NetworkDeviceFunctions {	object		A reference to the collection of NetworkDeviceFunctions associated with this NetworkAdapter. *Contains a link to a resource.*
@odata.id }	string	read-only	*Link to Collection of NetworkDeviceFunction. See the NetworkDeviceFunction schema for details.*
NetworkPorts {	object		A reference to the collection of NetworkPorts associated with this NetworkAdapter. *Contains a link to a resource.*

@odata.id }	string	read-only	*Link to Collection of [NetworkPort](). See the NetworkPort schema for details.*
PartNumber	string	read-only (null)	Part number for this network adapter.
SerialNumber	string	read-only (null)	The serial number for this network adapter.
SKU	string	read-only (null)	The manufacturer SKU for this network adapter.
Status { }	object		This property describes the status and health of the resource and its children. *See the [Status object]() for details on this property.*

Actions

ResetSettingsToDefault

This action is to clear the settings back to factory defaults.

URIs:

/redfish/v1/Chassis/*[{ChassisId}]*/NetworkAdapters/*[{NetworkAdapterId}]*/Actions/NetworkAdapter.ResetSettingsToDefault

(This action takes no parameters.)

Example Response

```
{
    "@odata.id": "/redfish/v1/Chassis/1/NetworkAdapters/9fd725a1",
    "@odata.type": "#NetworkAdapter.v1_2_0.NetworkAdapter",
    "Id": "9fa725a1",
    "Name": "Network Adapter View",
    "Manufacturer": "Contoso",
    "Model": "599TPS-T",
    "SKU": "Contoso TPS-Net 2-Port Base-T",
    "SerialNumber": "003BFLRT00023234",
    "PartNumber": "975421-B20",
    "NetworkPorts": {
        "@odata.id": "/redfish/v1/Chassis/1/NetworkAdapters/9fd725a1/NetworkPorts"
    },
    "NetworkDeviceFunctions": {
        "@odata.id": "/redfish/v1/Chassis/1/NetworkAdapters/9fd725a1/NetworkDeviceFunctions"
    },
    "Controllers": [
        {
            "FirmwarePackageVersion": "7.4.10",
            "Links": {
                "PCIeDevices": [
                    {
                        "@odata.id": "/redfish/v1/Systems/1/PCIeDevices/NIC"
                    }
                ],
                "NetworkPorts": [
                    {
                        "@odata.id": "/redfish/v1/Chassis/1/NetworkAdapters/9fd725a1/NetworkPorts/1"
                    }
                ],
                "NetworkDeviceFunctions": [
                    {
                        "@odata.id": "/redfish/v1/Chassis/1/NetworkAdapters/9fd725a1/NetworkDeviceFunctions/111111111100"
                    }
                ]
            },
            "ControllerCapabilities": {
                "NetworkPortCount": 2,
                "NetworkDeviceFunctionCount": 8,
                "DataCenterBridging": {
                    "Capable": true
                },
                "VirtualizationOffload": {
                    "VirtualFunction": {
                        "DeviceMaxCount": 256,
                        "NetworkPortMaxCount": 128,
                        "MinAssignmentGroupSize": 4
                    },
                    "SRIOV": {
                        "SRIOVVEPACapable": true
                    }
                },
                "NPIV": {
                    "MaxDeviceLogins": 4,
                    "MaxPortLogins": 2
                },
                "NPAR": {
                    "NparCapable": true,
                    "NparEnabled": false
                }
            },
            "PCIeInterface": {
                "PCIeType": "Gen2",
                "MaxPCIeType": "Gen3",
                "LanesInUse": 1,
                "MaxLanes": 4
            },
```

```
            "Location": {
                "PartLocation": {
                    "ServiceLabel": "Slot 1",
                    "LocationType": "Slot",
                    "LocationOrdinalValue": 0,
                    "Reference": "Rear",
                    "Orientation": "LeftToRight"
                }
            }
        }
    ],
    "Actions": {
        "#NetworkAdapter.ResetSettingsToDefault": {
            "target": "/redfish/v1/Chassis/1/NetworkAdapters/9fd725a1/Actions/NetworkAdapter.ResetSettingsToDefault"
        },
        "Oem": {}
    }
}
```

NetworkDeviceFunction 1.3.2

v1.3	v1.2	v1.1	v1.0
2018.2	2017.3	2017.1	2016.3

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

URIs:

/redfish/v1/Chassis/*{ChassisId}*/NetworkAdapters/*{NetworkAdapterId}*/NetworkDeviceFunctions/*{NetworkDeviceFunctionId}*

AssignablePhysicalPorts [{	array		The array of physical port references that this network device function may be assigned to.
@odata.id }]	string	read-only	*Link to a NetworkPort resource. See the Links section and the* *NetworkPort* *schema for details.*
BootMode	string (enum)	read-write (null)	The boot mode configured for this network device function. *See BootMode in Property Details, below, for the possible values of this property.*
DeviceEnabled	boolean	read-write (null)	Whether the network device function is enabled.
Ethernet {	object		Ethernet.
MACAddress	string	read-write (null)	This is the currently configured MAC address of the (logical port) network device function.
MTUSize	integer	read-write (null)	The Maximum Transmission Unit (MTU) configured for this network device function.
PermanentMACAddress	string	read-only (null)	This is the permanent MAC address assigned to this network device function (physical function).
VLAN *(v1.3+)* {	object		If this Network Interface supports more than one VLAN, this property is not present. VLANs collections appear in the Link section of this resource. *See the VLanNetworkInterface schema for details on this property.*
@odata.id }	string	read-only	*Link to a VLAN resource. See the Links section and the* *VLanNetworkInterface* *schema for details.*
VLANs *(v1.3+)* {	object		This is a reference to a collection of VLANs and is only used if the interface supports more than one VLANs. *Contains a link to a resource.*
@odata.id } }	string	read-only	*Link to Collection of VLanNetworkInterface. See the VLanNetworkInterface schema for details.*
FibreChannel {	object		Fibre Channel.
AllowFIPVLANDiscovery	boolean	read-write (null)	Whether the FCoE Initialization Protocol (FIP) is used for populating the FCoE VLAN Id.

BootTargets [{	array		An array of Fibre Channel boot targets configured for this network device function.
BootPriority	integer	read-write (null)	The relative priority for this entry in the boot targets array.
LUNID	string	read-write (null)	The Logical Unit Number (LUN) ID to boot from on the device referred to by the corresponding WWPN.
WWPN }]	string	read-write (null)	The World-Wide Port Name to boot from.
FCoEActiveVLANId	integer	read-only (null)	The active FCoE VLAN ID.
FCoELocalVLANId	integer	read-write (null)	The locally configured FCoE VLAN ID.
FibreChannelId *(v1.3+)*	string	read-only (null)	The Fibre Channel Id assigned by the switch for this interface.
PermanentWWNN	string	read-only (null)	This is the permanent WWNN address assigned to this network device function (physical function).
PermanentWWPN	string	read-only (null)	This is the permanent WWPN address assigned to this network device function (physical function).
WWNN	string	read-write (null)	This is the currently configured WWNN address of the network device function (physical function).
WWNSource	string (enum)	read-write (null)	The configuration source of the WWNs for this connection (WWPN and WWNN). See *WWNSource* in Property Details, below, for the possible values of this property.
WWPN }	string	read-write (null)	This is the currently configured WWPN address of the network device function (physical function).
iSCSIBoot {	object		iSCSI Boot.
AuthenticationMethod	string (enum)	read-write (null)	The iSCSI boot authentication method for this network device function. See *AuthenticationMethod* in Property Details, below, for the possible values of this property.
CHAPSecret	string	read-write (null)	The shared secret for CHAP authentication.
CHAPUsername	string	read-write (null)	The username for CHAP authentication.
InitiatorDefaultGateway	string	read-write (null)	The IPv6 or IPv4 iSCSI boot default gateway.
InitiatorIPAddress	string	read-write (null)	The IPv6 or IPv4 address of the iSCSI initiator.
InitiatorName	string	read-write (null)	The iSCSI initiator name.
InitiatorNetmask	string	read-write (null)	The IPv6 or IPv4 netmask of the iSCSI boot initiator.
IPAddressType	string (enum)	read-write (null)	The type of IP address (IPv6 or IPv4) being populated in the iSCSIBoot IP address fields. See *IPAddressType* in Property Details, below, for the possible values of this property.
IPMaskDNSViaDHCP	boolean	read-write (null)	Whether the iSCSI boot initiator uses DHCP to obtain the iniator name, IP address, and netmask.
MutualCHAPSecret	string	read-write (null)	The CHAP Secret for 2-way CHAP authentication.

MutualCHAPUsername	string	read-write (null)	The CHAP Username for 2-way CHAP authentication.
PrimaryDNS	string	read-write (null)	The IPv6 or IPv4 address of the primary DNS server for the iSCSI boot initiator.
PrimaryLUN	integer	read-write (null)	The logical unit number (LUN) for the primary iSCSI boot target.
PrimaryTargetIPAddress	string	read-write (null)	The IP address (IPv6 or IPv4) for the primary iSCSI boot target.
PrimaryTargetName	string	read-write (null)	The name of the iSCSI primary boot target.
PrimaryTargetTCPPort	integer	read-write (null)	The TCP port for the primary iSCSI boot target.
PrimaryVLANEnable	boolean	read-write (null)	This indicates if the primary VLAN is enabled.
PrimaryVLANId	integer	read-write (null)	The 802.1q VLAN ID to use for iSCSI boot from the primary target.
RouterAdvertisementEnabled	boolean	read-write (null)	Whether IPv6 router advertisement is enabled for the iSCSI boot target.
SecondaryDNS	string	read-write (null)	The IPv6 or IPv4 address of the secondary DNS server for the iSCSI boot initiator.
SecondaryLUN	integer	read-write (null)	The logical unit number (LUN) for the secondary iSCSI boot target.
SecondaryTargetIPAddress	string	read-write (null)	The IP address (IPv6 or IPv4) for the secondary iSCSI boot target.
SecondaryTargetName	string	read-write (null)	The name of the iSCSI secondary boot target.
SecondaryTargetTCPPort	integer	read-write (null)	The TCP port for the secondary iSCSI boot target.
SecondaryVLANEnable	boolean	read-write (null)	This indicates if the secondary VLAN is enabled.
SecondaryVLANId	integer	read-write (null)	The 802.1q VLAN ID to use for iSCSI boot from the secondary target.
TargetInfoViaDHCP }	boolean	read-write (null)	Whether the iSCSI boot target name, LUN, IP address, and netmask should be obtained from DHCP.
Links {	object		Links.
Endpoints *(v1.2+)* [{	array		An array of references to endpoints associated with this network device function.
@odata.id }]	string	read-only	*Link to a Endpoint resource. See the Links section and the* *[Endpoint](#)* *schema for details.*
PCIeFunction {	object		A reference to the PCIeFunction associated with this Network Device Function. *See the [PCIeFunction](#) schema for details on this property.*
@odata.id }	string	read-only	*Link to a PCIeFunction resource. See the Links section and the* *[PCIeFunction](#)* *schema for details.*
PhysicalPortAssignment *(v1.3+)* {	object		The physical port that this network device function is currently assigned to. *See the [NetworkPort](#) schema for details on this property.*
@odata.id } }	string	read-only	*Link to a NetworkPort resource. See the Links section and the* *[NetworkPort](#)* *schema for details.*

MaxVirtualFunctions	integer	read-only (null)	The number of virtual functions (VFs) that are available for this Network Device Function.
NetDevFuncCapabilities *(v1.2+)* [ ]	array (string (enum))	read-only (null)	Capabilities of this network device function. See *NetDevFuncCapabilities* in Property Details, below, for the possible values of this property.
NetDevFuncType *(v1.2+)*	string (enum)	read-write (null)	The configured capability of this network device function. See *NetDevFuncType* in Property Details, below, for the possible values of this property.
PhysicalPortAssignment *(deprecated v1.3)* {	object		The physical port that this network device function is currently assigned to. See the *NetworkPort* schema for details on this property. *Deprecated v1.3+. This property has been deprecated and moved to the Links section to avoid loops on expand.*
@odata.id }	string	read-only	*Link to a NetworkPort resource. See the Links section and the NetworkPort schema for details.*
Status { }	object		This property describes the status and health of the resource and its children. See the *Status object* for details on this property.
VirtualFunctionsEnabled	boolean	read-only (null)	Whether Single Root I/O Virtualization (SR-IOV) Virual Functions (VFs) are enabled for this Network Device Function.

Property Details

AuthenticationMethod:

The iSCSI boot authentication method for this network device function.

string	Description
CHAP	iSCSI Challenge Handshake Authentication Protocol (CHAP) authentication is used.
MutualCHAP	iSCSI Mutual Challenge Handshake Authentication Protocol (CHAP) authentication is used.
None	No iSCSI authentication is used.

BootMode:

The boot mode configured for this network device function.

string	Description
Disabled	Do not indicate to UEFI/BIOS that this device is bootable.
FibreChannel	Boot this device using the embedded Fibre Channel support and configuration. Only applicable if the NetworkDeviceFunctionType is set to FibreChannel.
FibreChannelOverEthernet	Boot this device using the embedded Fibre Channel over Ethernet (FCoE) boot support and configuration. Only applicable if the NetworkDeviceFunctionType is set to FibreChannelOverEthernet.
iSCSI	Boot this device using the embedded iSCSI boot support and configuration. Only applicable if the NetworkDeviceFunctionType is set to iSCSI.
PXE	Boot this device using the embedded PXE support. Only applicable if the NetworkDeviceFunctionType is set to Ethernet.

IPAddressType:

The type of IP address (IPv6 or IPv4) being populated in the iSCSIBoot IP address fields.

string	Description
IPv4	IPv4 addressing is used for all IP-fields in this object.
IPv6	IPv6 addressing is used for all IP-fields in this object.

NetDevFuncCapabilities:

Capabilities of this network device function.

string	Description
Disabled	Neither enumerated nor visible to the operating system.
Ethernet	Appears to the operating system as an Ethernet device.
FibreChannel	Appears to the operating system as a Fibre Channel device.
FibreChannelOverEthernet	Appears to the operating system as an FCoE device.
iSCSI	Appears to the operating system as an iSCSI device.

NetDevFuncType:

The configured capability of this network device function.

string	Description
Disabled	Neither enumerated nor visible to the operating system.
Ethernet	Appears to the operating system as an Ethernet device.
FibreChannel	Appears to the operating system as a Fibre Channel device.
FibreChannelOverEthernet	Appears to the operating system as an FCoE device.
iSCSI	Appears to the operating system as an iSCSI device.

WWNSource:

The configuration source of the WWNs for this connection (WWPN and WWNN).

string	Description
ConfiguredLocally	The set of FC/FCoE boot targets was applied locally through API or UI.
ProvidedByFabric	The set of FC/FCoE boot targets was applied by the Fibre Channel fabric.

Example Response

```
{
    "@odata.id": "/redfish/v1/Chassis/1/NetworkAdapters/9fd725a1/NetworkDeviceFunctions/111111111100",
    "@odata.type": "#NetworkDeviceFunction.v1_3_0.NetworkDeviceFunction",
    "Id": "111111111100",
    "Name": "Network Device Function View",
    "NetDevFuncType": "Ethernet",
    "DeviceEnabled": true,
    "NetDevFuncCapabilities": [
        "Ethernet",
        "FibreChannel"
    ],
    "Ethernet": {
        "PermanentMACAddress": "00:0C:29:9A:98:ED",
        "MACAddress": "00:0C:29:9A:98:ED",
        "MTUSize": 1500,
        "VLAN": {
            "VLANEnable": true,
            "VLANId": 101
        }
    },
    "iSCSIBoot": {
        "IPAddressType": "IPv4",
        "InitiatorIPAddress": "16.0.11.6",
        "InitiatorName": "iqn.2005-03.com.acme:database-server",
        "InitiatorDefaultGateway": "169.0.16.1",
        "InitiatorNetmask": "255.255.252.0",
        "TargetInfoViaDHCP": false,
        "PrimaryTargetName": "iqn.2005-03.com.acme:image-server",
        "PrimaryTargetIPAddress": "169.0.15.1",
        "PrimaryTargetTCPPort": 3260,
        "PrimaryLUN": 5,
        "PrimaryVLANEnable": true,
        "PrimaryVLANId": 1001,
        "PrimaryDNS": "16.0.10.21",
        "SecondaryTargetName": "iqn.2005-03.com.acme:image-server",
        "SecondaryTargetIPAddress": "16.0.11.5",
        "SecondaryTargetTCPPort": 3260,
        "SecondaryLUN": 5,
        "SecondaryVLANEnable": true,
        "SecondaryVLANId": 1002,
        "SecondaryDNS": "169.0.10.22",
        "IPMaskDNSViaDHCP": false,
        "RouterAdvertisementEnabled": false,
        "AuthenticationMethod": "CHAP",
        "CHAPUsername": "yosemite",
        "CHAPSecret": "usrpasswd",
```

```
            "MutualCHAPUsername": "yosemite",
            "MutualCHAPSecret": "usrpasswd"
        },
    "FibreChannel": {
            "PermanentWWPN": "10:00:B0:5A:DD:BB:74:E0",
            "PermanentWWNN": "10:00:B0:5A:DD:BB:A1:B3",
            "WWPN": "10:00:B0:5A:DD:BB:74:E0",
            "WWNN": "10:00:B0:5A:DD:C4:D3:BB",
            "WWNSource": "ConfiguredLocally",
            "FCoELocalVLANId": 1001,
            "AllowFIPVLANDiscovery": true,
            "FCoEActiveVLANId": 2001,
            "BootTargets": [
                {
                    "WWPN": "10:00:B0:5A:DD:BB:74:FA",
                    "LUNID": "3",
                    "BootPriority": 0
                }
            ]
        },
    "AssignablePhysicalPorts": [
            {
                "@odata.id": "/redfish/v1/Chassis/1/NetworkAdapters/9fd725a1/NetworkPorts/1"
            }
        ],
    "BootMode": "Disabled",
    "VirtualFunctionsEnabled": true,
    "MaxVirtualFunctions": 16,
    "Links": {
            "PCIeFunction": {
                "@odata.id": "/redfish/v1/Systems/1/PCIeDevices/NIC/PCIeFunctions/1"
            },
            "PhysicalPortAssignment": {
                "@odata.id": "/redfish/v1/Chassis/1/NetworkAdapters/9fd725a1/NetworkPorts/1"
            }
        }
    }
}
```

NetworkInterface 1.1.2

v1.1	v1.0
2017.1	2016.3

A NetworkInterface contains references linking NetworkAdapter, NetworkPort, and NetworkDeviceFunction resources and represents the functionality available to the containing system.

URIs:

/redfish/v1/CompositionService/ResourceBlocks/*{ResourceBlockId}*/NetworkInterfaces/*{NetworkInterfaceId}*

/redfish/v1/CompositionService/ResourceBlocks/*{ResourceBlockId}*/Systems/*{ComputerSystemId}*/NetworkInterfaces/*{NetworkInterface Id}*

/redfish/v1/ResourceBlocks/*{ResourceBlockId}*/NetworkInterfaces/*{NetworkInterfaceId}*

/redfish/v1/ResourceBlocks/*{ResourceBlockId}*/Systems/*{ComputerSystemId}*/NetworkInterfaces/*{NetworkInterfaceId}*

/redfish/v1/Systems/*{ComputerSystemId}*/NetworkInterfaces/*{NetworkInterfaceId}*

Links {	object		Links.
NetworkAdapter {	object		A reference to the NetworkAdapter which contains this NetworkInterface. *See the NetworkAdapter schema for details on this property.*
@odata.id }	string	read-only	*Link to a NetworkAdapter resource. See the Links section and the NetworkAdapter schema for details.*
Oem { } }	object		See the OEM object definition in the Common properties section.
NetworkDeviceFunctions {	object		A reference to the collection of NetworkDeviceFunctions associated with this NetworkInterface. *Contains a link to a resource.*
@odata.id }	string	read-only	*Link to Collection of NetworkDeviceFunction. See the NetworkDeviceFunction schema for details.*
NetworkPorts {	object		A reference to the collection of NetworkPorts associated with this NetworkInterface. *Contains a link to a resource.*
@odata.id }	string	read-only	*Link to Collection of NetworkPort. See the NetworkPort schema for details.*
Status { }	object		This property describes the status and health of the resource and its children. *See the Status object for details on this property.*

Example Response

```json
{
    "@odata.id": "/redfish/v1/Systems/1/NetworkInterfaces/9fd725a1",
    "@odata.type": "#NetworkInterface.v1_0_0.NetworkInterface",
    "Id": "9fa725a1",
    "Name": "Network Device View",
    "NetworkPorts": {
        "@odata.id": "/redfish/v1/Systems/1/NetworkInterfaces/9fd725a1/NetworkPorts"
    },
    "NetworkDeviceFunctions": {
        "@odata.id": "/redfish/v1/Systems/1/NetworkInterfaces/9fd725a1/NetworkDeviceFunctions"
    },
    "Links": {
        "NetworkAdapter": {
            "@odata.id": "/redfish/v1/Chassis/1/NetworkAdapters/9fd725a1"
        }
    }
}
```

NetworkPort 1.2.2

v1.2	v1.1	v1.0
2018.2	2017.1	2016.3

A Network Port represents a discrete physical port capable of connecting to a network.

URIs:

/redfish/v1/Chassis/*{ChassisId}*/NetworkAdapters/*{NetworkAdapterId}*/NetworkPorts/*{NetworkPortId}*

ActiveLinkTechnology	string (enum)	read-write (null)	Network Port Active Link Technology. See *ActiveLinkTechnology* in Property Details, below, for the possible values of this property.
AssociatedNetworkAddresses [ ]	array (string, null)	read-only	The array of configured network addresses (MAC or WWN) that are associated with this Network Port, including the programmed address of the lowest numbered Network Device Function, the configured but not active address if applicable, the address for hardware port teaming, or other network addresses.
CurrentLinkSpeedMbps *(v1.2+)*	integer (Mbit/s)	read-write (null)	Network Port Current Link Speed.
EEEEnabled	boolean	read-write (null)	Whether IEEE 802.3az Energy Efficient Ethernet (EEE) is enabled for this network port.
FCFabricName *(v1.2+)*	string	read-only (null)	The FC Fabric Name provided by the switch.
FCPortConnectionType *(v1.2+)*	string (enum)	read-only (null)	This is the connection type of this port. See *FCPortConnectionType* in Property Details, below, for the possible values of this property.
FlowControlConfiguration	string (enum)	read-write (null)	The locally configured 802.3x flow control setting for this network port. See *FlowControlConfiguration* in Property Details, below, for the possible values of this property.
FlowControlStatus	string (enum)	read-only (null)	The 802.3x flow control behavior negotiated with the link partner for this network port (Ethernet-only). See *FlowControlStatus* in Property Details, below, for the possible values of this property.
LinkStatus	string (enum)	read-only (null)	The status of the link between this port and its link partner. See *LinkStatus* in Property Details, below, for the possible values of this property.
MaxFrameSize *(v1.2+)*	integer (bytes)	read-only (null)	The maximum frame size supported by the port.
NetDevFuncMaxBWAlloc [{	array		The array of maximum bandwidth allocation percentages for the Network Device Functions associated with this port.

MaxBWAllocPercent	integer (%)	read-write (null)	The maximum bandwidth allocation percentage allocated to the corresponding network device function instance.
NetworkDeviceFunction {	object		A reference to the NetworkDeviceFunction associated with this bandwidth setting of this Network Port. *See the [NetworkDeviceFunction](#) schema for details on this property.*
@odata.id } }]	string	read-only	*Link to a NetworkDeviceFunction resource. See the Links section and the [NetworkDeviceFunction](#) schema for details.*
NetDevFuncMinBWAlloc [{	array		The array of minimum bandwidth allocation percentages for the Network Device Functions associated with this port.
MinBWAllocPercent	integer (%)	read-write (null)	The minimum bandwidth allocation percentage allocated to the corresponding network device function instance.
NetworkDeviceFunction {	object		A reference to the NetworkDeviceFunction associated with this bandwidth setting of this Network Port. *See the [NetworkDeviceFunction](#) schema for details on this property.*
@odata.id } }]	string	read-only	*Link to a NetworkDeviceFunction resource. See the Links section and the [NetworkDeviceFunction](#) schema for details.*
NumberDiscoveredRemotePorts *(v1.2+)*	integer	read-only (null)	The number of ports not on this adapter that this port has discovered.
PhysicalPortNumber	string	read-only (null)	The physical port number label for this port.
PortMaximumMTU	integer	read-only (null)	The largest maximum transmission unit (MTU) that can be configured for this network port.
SignalDetected	boolean	read-only (null)	Whether or not the port has detected enough signal on enough lanes to establish link.
Status { }	object		This property describes the status and health of the resource and its children. *See the [Status object](#) for details on this property.*
SupportedEthernetCapabilities [ ]	array (string (enum))	read-only (null)	The set of Ethernet capabilities that this port supports. *See [SupportedEthernetCapabilities](#) in Property Details, below, for the possible values of this property.*
SupportedLinkCapabilities [{	array		The self-described link capabilities of this port.
AutoSpeedNegotiation *(v1.2+)*	boolean	read-only (null)	Indicates whether the port has the capability to auto negotiate speed.
CapableLinkSpeedMbps *(v1.2+)* [ ]	array (integer, null)	read-only	The self-described link network speed capabilities of this port. Note: Should this be a new enumerated type of link speeds?.
LinkNetworkTechnology	string (enum)	read-only (null)	The self-described link network technology capabilities of this port. *See [LinkNetworkTechnology](#) in Property Details, below, for the possible values of this property.*
LinkSpeedMbps *(deprecated v1.2)* }]	integer (Mbit/s)	read-only (null)	The speed of the link in Mbps when this link network technology is active. *Deprecated v1.2+. This property has been Deprecated in favor of the CapableLinkSpeedMbps collection found in NetworkPort.v1_2_0.*
VendorId *(v1.2+)*	string	read-only (null)	The Vendor Identification for this port.
WakeOnLANEnabled	boolean	read-write (null)	Whether Wake on LAN (WoL) is enabled for this network port.

Property Details

ActiveLinkTechnology:

Network Port Active Link Technology.

string	Description
Ethernet	The port is capable of connecting to an Ethernet network.
FibreChannel	The port is capable of connecting to a Fibre Channel network.
InfiniBand	The port is capable of connecting to an InfiniBand network.

FCPortConnectionType:

This is the connection type of this port.

string	Description
ExtenderFabric	This port connection type is an extender fabric port.
Generic	This port connection type is a generic fabric port.
NotConnected	This port is not connected.
NPort	This port connects via an N-Port to a switch.
PointToPoint	This port connects in a Point-to-point configuration.
PrivateLoop	This port connects in a private loop configuration.
PublicLoop	This port connects in a public configuration.

FlowControlConfiguration:

The locally configured 802.3x flow control setting for this network port.

string	Description
None	No IEEE 802.3x flow control is enabled on this port.
RX	IEEE 802.3x flow control may be initiated by the link partner.
TX	IEEE 802.3x flow control may be initiated by this station.
TX_RX	IEEE 802.3x flow control may be initiated by this station or the link partner.

FlowControlStatus:

The 802.3x flow control behavior negotiated with the link partner for this network port (Ethernet-only).

string	Description
None	No IEEE 802.3x flow control is enabled on this port.
RX	IEEE 802.3x flow control may be initiated by the link partner.
TX	IEEE 802.3x flow control may be initiated by this station.
TX_RX	IEEE 802.3x flow control may be initiated by this station or the link partner.

LinkNetworkTechnology:

The self-described link network technology capabilities of this port.

string	Description
Ethernet	The port is capable of connecting to an Ethernet network.
FibreChannel	The port is capable of connecting to a Fibre Channel network.
InfiniBand	The port is capable of connecting to an InfiniBand network.

LinkStatus:

The status of the link between this port and its link partner.

string	Description

Down	The port is enabled but link is down.
Up	The port is enabled and link is good (up).

SupportedEthernetCapabilities:

The set of Ethernet capabilities that this port supports.

string	Description
EEE	IEEE 802.3az Energy Efficient Ethernet (EEE) is supported on this port.
WakeOnLAN	Wake on LAN (WoL) is supported on this port.

PCIeDevice 1.3.1

v1.3	v1.2	v1.1	v1.0
2018.2	2017.3	2017.1	2016.2

This is the schema definition for the PCIeDevice resource. It represents the properties of a PCIeDevice attached to a System.

URIs:

/redfish/v1/Chassis/*{ChassisId}*/PCIeDevices/*{PCIeDeviceId}*

/redfish/v1/Systems/*{ComputerSystemId}*/PCIeDevices/*{PCIeDeviceId}*

Assembly *(v1.2+)* {	object		A reference to the Assembly resource associated with this PCIe device. *See the Assembly schema for details on this property.*
@odata.id }	string	read-only	*Link to a Assembly resource. See the Links section and the Assembly schema for details.*
AssetTag	string	read-write (null)	The user assigned asset tag for this PCIe device.
DeviceType	string (enum)	read-only	The device type for this PCIe device. *See DeviceType in Property Details, below, for the possible values of this property.*
FirmwareVersion	string	read-only (null)	The version of firmware for this PCIe device.
Links {	object		The links object contains the links to other resources that are related to this resource.
Chassis [{	array		An array of references to the chassis in which the PCIe device is contained.
@odata.id }]	string	read-only	*Link to a Chassis resource. See the Links section and the Chassis schema for details.*
Oem { }	object		See the OEM object definition in the Common properties section.
PCIeFunctions [{	array		An array of references to PCIeFunctions exposed by this device.
@odata.id }] }	string	read-only	*Link to a PCIeFunction resource. See the Links section and the PCIeFunction schema for details.*
Manufacturer	string	read-only (null)	This is the manufacturer of this PCIe device.
Model	string	read-only (null)	This is the model number for the PCIe device.
PartNumber	string	read-only (null)	The part number for this PCIe device.
PCIeInterface *(v1.3+)* {	object		The PCIe interface details for this PCIe device.
LanesInUse	integer	read-only (null)	This is the number of PCIe lanes in use by this device.

MaxLanes	integer	read-only (null)	This is the number of PCIe lanes supported by this device.
MaxPCIeType	string (enum)	read-only (null)	The highest version of the PCIe specification supported by this device. *See MaxPCIeType in Property Details, below, for the possible values of this property.*
Oem { }	object		See the OEM object definition in the Common properties section.
PCIeType }	string (enum)	read-only (null)	The version of the PCIe specification in use by this device. *See PCIeType in Property Details, below, for the possible values of this property.*
SerialNumber	string	read-only (null)	The serial number for this PCIe device.
SKU	string	read-only (null)	This is the SKU for this PCIe device.
Status { }	object		This property describes the status and health of the resource and its children. *See the Status object for details on this property.*

Property Details

DeviceType:

The device type for this PCIe device.

string	Description
MultiFunction	A multi-function PCIe device.
Simulated	A PCIe device which is not currently physically present, but is being simulated by the PCIe infrastructure.
SingleFunction	A single-function PCIe device.

MaxPCIeType:

The highest version of the PCIe specification supported by this device.

string	Description
Gen1	A PCIe v1.0 slot.
Gen2	A PCIe v2.0 slot.
Gen3	A PCIe v3.0 slot.
Gen4	A PCIe v4.0 slot.
Gen5	A PCIe v5.0 slot.

PCIeType:

The version of the PCIe specification in use by this device.

string	Description
Gen1	A PCIe v1.0 slot.
Gen2	A PCIe v2.0 slot.
Gen3	A PCIe v3.0 slot.
Gen4	A PCIe v4.0 slot.
Gen5	A PCIe v5.0 slot.

Example Response

```
{
    "@odata.id": "/redfish/v1/Systems/1/PCIeDevices/NIC",
    "@odata.type": "#PCIeDevice.v1_3_0.PCIeDevice",
    "Id": "NIC",
    "Name": "Simple Two-Port NIC",
    "Description": "Simple Two-Port NIC PCIe Device",
    "AssetTag": "ORD-4302015-18432RS",
    "Manufacturer": "Contoso",
    "Model": "SuperNIC 2000",
```

```
        "SKU": "89587433",
        "SerialNumber": "2M220100SL",
        "PartNumber": "232-4598D7",
        "DeviceType": "MultiFunction",
        "FirmwareVersion": "12.342-343",
        "Status": {
            "State": "Enabled",
            "Health": "OK",
            "HealthRollup": "OK"
        },
        "PCIeInterface": {
            "PCIeType": "Gen2",
            "MaxPCIeType": "Gen3",
            "LanesInUse": 4,
            "MaxLanes": 4
        },
        "Links": {
            "Chassis": [
                {
                    "@odata.id": "/redfish/v1/Chassis/1"
                }
            ],
            "PCIeFunctions": [
                {
                    "@odata.id": "/redfish/v1/Systems/1/PCIeDevices/NIC/PCIeFunctions/1"
                },
                {
                    "@odata.id": "/redfish/v1/Systems/1/PCIeDevices/NIC/PCIeFunctions/2"
                }
            ],
            "Oem": {}
        },
        "Oem": {}
}
```

PCIeFunction 1.2.2

v1.2	v1.1	v1.0
2018.1	2017.1	2016.2

This is the schema definition for the PCIeFunction resource. It represents the properties of a PCIeFunction attached to a System.

URIs:

/redfish/v1/Chassis/*{ChassisId}*/PCIeDevices/*{PCIeDeviceId}*/PCIeFunctions/*{PCIeFunctionId}*

/redfish/v1/Systems/*{ComputerSystemId}*/PCIeDevices/*{PCIeDeviceId}*/PCIeFunctions/*{PCIeFunctionId}*

ClassCode	string	read-only (null)	The Class Code of this PCIe function.
DeviceClass	string (enum)	read-only	The class for this PCIe Function. *See DeviceClass in Property Details, below, for the possible values of this property.*
DeviceId	string	read-only (null)	The Device ID of this PCIe function.
FunctionId	integer	read-only (null)	The the PCIe Function identifier.
FunctionType	string (enum)	read-only	The type of the PCIe Function. *See FunctionType in Property Details, below, for the possible values of this property.*
Links {	object		The links object contains the links to other resources that are related to this resource.
Drives [{	array		An array of references to the drives which the PCIe device produces.
@odata.id }]	string	read-only	*Link to a Drive resource. See the Links section and the Drive schema for details.*
EthernetInterfaces [{	array		An array of references to the ethernet interfaces which the PCIe device produces.
@odata.id }]	string	read-only	*Link to a EthernetInterface resource. See the Links section and the EthernetInterface schema for details.*
NetworkDeviceFunctions *(v1.2+)* [{	array		An array of references to the Network Device Functions which the PCIe device produces.

@odata.id }]	string	read-only	*Link to a NetworkDeviceFunction resource. See the Links section and the [NetworkDeviceFunction](#) schema for details.*
Oem { }	object		See the OEM object definition in the [Common properties](#) section.
PCIeDevice {	object		A reference to the PCIeDevice on which this function resides. *See the [PCIeDevice](#) schema for details on this property.*
@odata.id }	string	read-only	*Link to a PCIeDevice resource. See the Links section and the [PCIeDevice](#) schema for details.*
StorageControllers [{	array		An array of references to the storage controllers which the PCIe device produces.
@odata.id }] }	string	read-only	*Link to a StorageController resource. See the Links section and the [Storage](#) schema for details.*
RevisionId	string	read-only (null)	The Revision ID of this PCIe function.
Status { }	object		This property describes the status and health of the resource and its children. *See the [Status object](#) for details on this property.*
SubsystemId	string	read-only (null)	The Subsystem ID of this PCIe function.
SubsystemVendorId	string	read-only (null)	The Subsystem Vendor ID of this PCIe function.
VendorId	string	read-only (null)	The Vendor ID of this PCIe function.

Property Details

DeviceClass:

The class for this PCIe Function.

string	Description
Bridge	A bridge.
CommunicationController	A communication controller.
Coprocessor	A coprocessor.
DisplayController	A display controller.
DockingStation	A docking station.
EncryptionController	An encryption controller.
GenericSystemPeripheral	A generic system peripheral.
InputDeviceController	An input device controller.
IntelligentController	An intelligent controller.
MassStorageController	A mass storage controller.
MemoryController	A memory controller.
MultimediaController	A multimedia controller.
NetworkController	A network controller.
NonEssentialInstrumentation	A non-essential instrumentation.
Other	A other class. The function Device Class Id needs to be verified.
ProcessingAccelerators	A processing accelerators.

Processor	A processor.
SatelliteCommunicationsController	A satellite communications controller.
SerialBusController	A serial bus controller.
SignalProcessingController	A signal processing controller.
UnassignedClass	An unassigned class.
UnclassifiedDevice	An unclassified device.
WirelessController	A wireless controller.

FunctionType:

The type of the PCIe Function.

string	Description
Physical	A physical PCie function.
Virtual	A virtual PCIe function.

Example Response

```
{
    "@odata.id": "/redfish/v1/Chassis/1/PCIeDevices/FC/Functions/2",
    "@odata.type": "#PCIeFunction.v1_0_0.PCIeFunction",
    "Id": "2",
    "Name": "FC Port 2",
    "Description": "FC Port 2",
    "FunctionId": 2,
    "FunctionType": "Physical",
    "DeviceClass": "NetworkController",
    "DeviceId": "0xABCD",
    "VendorId": "0xABCD",
    "ClassCode": "0x010802",
    "RevisionId": "0x00",
    "SubsystemId": "0xABCD",
    "SubsystemVendorId": "0xABCD",
    "Status": {
        "State": "Enabled",
        "Health": "OK",
        "HealthRollup": "OK"
    },
    "Links": {
        "PCIeDevice": {
            "@odata.id": "/redfish/v1/Chassis/1/NetworkAdapters/FC"
        }
    },
    "Oem": {}
}
```

PCIeSlots 1.1.0

v1.1	v1.0
2019.1	2018.2

This is the schema definition for the PCIe Slot properties.

URIs:

/redfish/v1/Chassis/*{ChassisId}*/PCIeSlots

HotPluggable *(v1.1+)*	boolean	read-only (null)	Indicates whether the PCIe slot supports hotplug.
Slots [{	array		An array of PCI Slot information.
Lanes	integer	read-only (null)	This is the number of PCIe lanes supported by this slot.
Links {	object		Contains references to other resources that are related to this resource.
Oem { }	object		See the OEM object definition in the Common properties section.
PCIeDevice [{	array		An array of references to the PCIe Devices contained in this slot.
@odata.id	string	read-only	*Link to a PCIeDevice resource. See the Links section and the PCIeDevice schema for*

			details.
Location { }	object		The Location of the PCIe slot. See the _Location object_ for details on this property.
Oem { }	object		See the OEM object definition in the _Common properties_ section.
PCIeType	string (enum)	read-only (null)	This is the PCIe specification supported by this slot. See _PCIeType_ in Property Details, below, for the possible values of this property.
SlotType	string (enum)	read-only (null)	This is the PCIe slot type for this slot. See _SlotType_ in Property Details, below, for the possible values of this property.
Status { } }]	object		This property describes the status and health of the resource and its children. See the _Status object_ for details on this property.

Property Details

PCIeType:

This is the PCIe specification supported by this slot.

string	Description
Gen1	A PCIe v1.0 slot.
Gen2	A PCIe v2.0 slot.
Gen3	A PCIe v3.0 slot.
Gen4	A PCIe v4.0 slot.
Gen5	A PCIe v5.0 slot.

SlotType:

This is the PCIe slot type for this slot.

string	Description
FullLength	Full-Length PCIe slot.
HalfLength	Half-Length PCIe slot.
LowProfile	Low-Profile or Slim PCIe slot.
M2	PCIe M.2 slot.
Mini	Mini PCIe slot.
OEM	And OEM-specific slot.

Example Response

```
{
    "@odata.type": "#PCIeSlots.v1_0_0.PCIeSlots",
    "Id": "1",
    "Name": "PCIe Slot Information",
    "Slots": [
        {
            "PCIeType": "Gen3",
            "Lanes": 16,
            "SlotType": "FullLength",
            "Status": {
                "State": "Enabled"
            },
            "Location": {
                "PartLocation": {
                    "ServiceLabel": "Slot 1",
                    "LocationOrdinalValue": 1,
                    "LocationType": "Slot",
                    "Orientation": "LeftToRight",
                    "Reference": "Rear"
                }
            },
            "Links": {
                "PCIeDevice": [
                    {
                        "@odata.id": "/redfish/v1/Systems/1/PCIeDevices/NIC"
                    }
                ]
            }
        },
```

```
        {
            "PCIeType": "Gen4",
            "Lanes": 4,
            "SlotType": "FullLength",
            "Status": {
                "State": "Absent"
            },
            "Location": {
                "PartLocation": {
                    "ServiceLabel": "Slot 2",
                    "LocationOrdinalValue": 2,
                    "LocationType": "Slot",
                    "Orientation": "LeftToRight",
                    "Reference": "Rear"
                }
            }
        },
        {
            "PCIeType": "Gen3",
            "Lanes": 1,
            "SlotType": "HalfLength",
            "Status": {
                "State": "Absent"
            },
            "Location": {
                "PartLocation": {
                    "ServiceLabel": "Slot 3",
                    "LocationOrdinalValue": 3,
                    "LocationType": "Slot",
                    "Orientation": "LeftToRight",
                    "Reference": "Rear"
                }
            }
        }
    ],
    "Oem": {},
    "@odata.context": "/redfish/v1/$metadata#PCIeSlots.PCIeSlots",
    "@odata.id": "/redfish/v1/Chassis/1/PCIeSlots"
}
```

Port 1.1.2

v1.1	v1.0
2017.3	2016.2

Port contains properties describing a port of a switch, controller, chassis, or any other device that could be connected to another entity.

URIs:

/redfish/v1/CompositionService/ResourceBlocks/*{ResourceBlockId}*/Storage/*{StorageId}*/StorageControllers/*{StorageControllerId}*/Ports/*{PortId}*

/redfish/v1/CompositionService/ResourceBlocks/*{ResourceBlockId}*/Systems/*{ComputerSystemId}*/Storage/*{StorageId}*/StorageControllers/*{StorageControllerId}*/Ports/*{PortId}*

/redfish/v1/Fabrics/*{FabricId}*/Switches/*{SwitchId}*/Ports/*{PortId}*

/redfish/v1/ResourceBlocks/*{ResourceBlockId}*/Storage/*{StorageId}*/StorageControllers/*{StorageControllerId}*/Ports/*{PortId}*

/redfish/v1/ResourceBlocks/*{ResourceBlockId}*/Systems/*{ComputerSystemId}*/Storage/*{StorageId}*/StorageControllers/*{StorageControllerId}*/Ports/*{PortId}*

/redfish/v1/Systems/*{ComputerSystemId}*/Storage/*{StorageId}*/StorageControllers/*{StorageControllerId}*/Ports/*{PortId}*

CurrentSpeedGbps	number (Gbit/s)	read-only (null)	The current speed of this port.
Links {	object		Contains references to other resources that are related to this resource.
AssociatedEndpoints [{	array		An array of references to the endpoints that connect through this port.
@odata.id }]	string	read-only	*Link to a Endpoint resource. See the Links section and the Endpoint schema for details.*
ConnectedSwitches [{	array		An array of references to the switches that connect to the device through this port.
@odata.id }]	string	read-only	*Link to a Switch resource. See the Links section and the Switch schema for details.*
ConnectedSwitchPorts [{	array		An array of references to the ports that connect to the switch through this port.
@odata.id }]	string	read-only	*Link to another Port resource.*
Oem { }	object		See the OEM object definition in the Common properties section.

}			
Location *(v1.1+)* { }	object		The Location of the port. See the *Location object* for details on this property.
MaxSpeedGbps	number (Gbit/s)	read-only (null)	The maximum speed of this port as currently configured.
PortId	string	read-only (null)	This is the label of this port on the physical package for this port.
PortProtocol	string (enum)	read-only (null)	The protocol being sent over this port. See *PortProtocol* in Property Details, below, for the possible values of this property.
PortType	string (enum)	read-only (null)	This is the type of this port. See *PortType* in Property Details, below, for the possible values of this property.
Status { }	object		This property describes the status and health of the resource and its children. See the *Status object* for details on this property.
Width	integer	read-only (null)	The number of lanes, phys, or other physical transport links that this port contains.

Actions

Reset

This action is used to reset this port.

URIs:

/redfish/v1/CompositionService/ResourceBlocks/*{ResourceBlockId}*/Storage/*{StorageId}*/StorageControllers/*{StorageControllerId}*/Ports/*{PortId}*/Actions/Port.Reset

/redfish/v1/CompositionService/ResourceBlocks/*{ResourceBlockId}*/Systems/*{ComputerSystemId}*/Storage/*{StorageId}*/StorageControllers/*{StorageControllerId}*/Ports/*{PortId}*/Actions/Port.Reset

/redfish/v1/Fabrics/*{FabricId}*/Switches/*{SwitchId}*/Ports/*{PortId}*/Actions/Port.Reset

/redfish/v1/ResourceBlocks/*{ResourceBlockId}*/Storage/*{StorageId}*/StorageControllers/*{StorageControllerId}*/Ports/*{PortId}*/Actions/Port.Reset

/redfish/v1/ResourceBlocks/*{ResourceBlockId}*/Systems/*{ComputerSystemId}*/Storage/*{StorageId}*/StorageControllers/*{StorageControllerId}*/Ports/*{PortId}*/Actions/Port.Reset

/redfish/v1/Systems/*{ComputerSystemId}*/Storage/*{StorageId}*/StorageControllers/*{StorageControllerId}*/Ports/*{PortId}*/Actions/Port.Reset

The following table shows the parameters for the action which are included in the POST body to the URI shown in the "target" property of the Action.

{			
ResetType }	string (enum)	read-write	The type of reset to be performed. See *ResetType* in Property Details, below, for the possible values of this property.

Property Details

PortProtocol:

The protocol being sent over this port.

string	Description
AHCI	Advanced Host Controller Interface.
FC	Fibre Channel.
FCoE	Fibre Channel over Ethernet.
FCP	Fibre Channel Protocol for SCSI.
FICON	FIbre CONnection (FICON).
FTP	File Transfer Protocol.

HTTP	Hypertext Transport Protocol.
HTTPS	Secure Hypertext Transport Protocol.
I2C	Inter-Integrated Circuit Bus.
iSCSI	Internet SCSI.
iWARP	Internet Wide Area Remote Direct Memory Access Protocol.
NFSv3	Network File System version 3.
NFSv4	Network File System version 4.
NVMe	Non-Volatile Memory Express.
NVMeOverFabrics	NVMe over Fabrics.
OEM	OEM specific.
PCIe	PCI Express.
RoCE	RDMA over Converged Ethernet Protocol.
RoCEv2	RDMA over Converged Ethernet Protocol Version 2.
SAS	Serial Attached SCSI.
SATA	Serial AT Attachment.
SFTP	Secure File Transfer Protocol.
SMB	Server Message Block (aka CIFS Common Internet File System).
UHCI	Universal Host Controller Interface.
USB	Universal Serial Bus.

PortType:

This is the type of this port.

string	Description
BidirectionalPort	This port connects to any type of device.
DownstreamPort	This port connects to a target device.
InterswitchPort	This port connects to another switch.
ManagementPort	This port connects to a switch manager.
UnconfiguredPort	This port has not yet been configured.
UpstreamPort	This port connects to a host device.

ResetType:

The type of reset to be performed.

string	Description
ForceOff	Turn the unit off immediately (non-graceful shutdown).
ForceOn	Turn the unit on immediately.
ForceRestart	Perform an immediate (non-graceful) shutdown, followed by a restart.
GracefulRestart	Perform a graceful shutdown followed by a restart of the system.
GracefulShutdown	Perform a graceful shutdown and power off.
Nmi	Generate a Diagnostic Interrupt (usually an NMI on x86 systems) to cease normal operations, perform diagnostic actions and typically halt the system.
On	Turn the unit on.

PowerCycle	Perform a power cycle of the unit.	
PushPowerButton	Simulate the pressing of the physical power button on this unit.	

Example Response

```
{
    "@odata.type": "#Port.v1_1_1.Port",
    "Id": "1",
    "Name": "SAS Port 1",
    "Description": "SAS Port 1",
    "Status": {
        "State": "Enabled",
        "Health": "OK"
    },
    "PortId": "1",
    "PortProtocol": "SAS",
    "PortType": "BidirectionalPort",
    "CurrentSpeedGbps": 48,
    "Width": 4,
    "MaxSpeedGbps": 48,
    "Actions": {
        "Oem": {}
    },
    "Links": {
        "AssociatedEndpoints": [
            {
                "@odata.id": "/redfish/v1/Fabrics/SAS/Endpoints/Initiator1"
            }
        ]
    },
    "Oem": {},
    "@odata.context": "/redfish/v1/$metadata#Port.Port",
    "@odata.id": "/redfish/v1/Fabrics/SAS/Switches/Switch1/Ports/1"
}
```

Power 1.5.3

v1.5	v1.4	v1.3	v1.2	v1.1	v1.0
2017.3	2017.2	2017.1	2016.2	2016.1	1.0

This is the schema definition for the Power Metrics. It represents the properties for Power Consumption and Power Limiting.

URIs:

/redfish/v1/Chassis/*{ChassisId}*/Power

PowerControl [{	array		This is the definition for power control function (power reading/limiting).
@odata.id	string	read-only required	The unique identifier for a resource.
Actions *(v1.3+)* { }	object		The available actions for this resource.
MemberId	string	read-only required	This is the identifier for the member within the collection.
Name	string	read-only (null)	Power Control Function name.
Oem { }	object		See the OEM object definition in the Common properties section.
PhysicalContext *(v1.4+)*	string (enum)	read-only	Describes the area, device, or set of devices to which this power control applies. *See PhysicalContext in Property Details, below, for the possible values of this property.*
PowerAllocatedWatts	number (Watts)	read-only (null)	The total amount of power that has been allocated (or budegeted)to chassis resources.
PowerAvailableWatts	number (Watts)	read-only (null)	The amount of power not already budgeted and therefore available for additional allocation. (powerCapacity - powerAllocated). This indicates how much reserve power capacity is left.
PowerCapacityWatts	number (Watts)	read-only (null)	The total amount of power available to the chassis for allocation. This may the power supply capacity, or power budget assigned to the chassis from an up-stream chassis.
PowerConsumedWatts	number	read-only	The actual power being consumed by the chassis.

	(Watts)	(null)	
PowerLimit {	object		Power limit status and configuration information for this chassis.
CorrectionInMs	integer (ms)	read-write (null)	The time required for the limiting process to reduce power consumption to below the limit.
LimitException	string (enum)	read-write (null)	The action that is taken if the power cannot be maintained below the LimitInWatts. See *LimitException* in Property Details, below, for the possible values of this property.
LimitInWatts }	number (Watts)	read-write (null)	The Power limit in watts. Set to null to disable power capping.
PowerMetrics {	object		Power readings for this chassis.
AverageConsumedWatts	number (Watts)	read-only (null)	The average power level over the measurement window (the last IntervalInMin minutes).
IntervalInMin	integer (min)	read-only (null)	The time interval (or window) in which the PowerMetrics are measured over.
MaxConsumedWatts	number (Watts)	read-only (null)	The highest power consumption level that has occured over the measurement window (the last IntervalInMin minutes).
MinConsumedWatts }	number (Watts)	read-only (null)	The lowest power consumption level over the measurement window (the last IntervalInMin minutes).
PowerRequestedWatts	number (Watts)	read-only (null)	The potential power that the chassis resources are requesting which may be higher than the current level being consumed since requested power includes budget that the chassis resource wants for future use.
RelatedItem [{	array		The ID(s) of the resources associated with this Power Limit.
@odata.id }]	string	read-only	The unique identifier for a resource.
Status { } }]	object		This property describes the status and health of the resource and its children. See the *Status object* for details on this property.
PowerSupplies [{	array		Details of the power supplies associated with this system or device.
@odata.id	string	read-only required	The unique identifier for a resource.
Actions *(v1.3+)* { }	object		The available actions for this resource.
Assembly *(v1.5+)* {	object		A reference to the Assembly resource associated with this power supply. See the *Assembly* schema for details on this property.
@odata.id }	string	read-only	Link to a Assembly resource. See the Links section and the *Assembly* schema for details.
EfficiencyPercent *(v1.5+)*	number (%)	read-only (null)	The measured efficiency of this Power Supply as a percentage.
FirmwareVersion	string	read-only (null)	The firmware version for this Power Supply.
HotPluggable *(v1.5+)*	boolean	read-only (null)	Indicates if this device can be inserted or removed while the equipment is in operation.
IndicatorLED *(v1.2+)*	string (enum)	read-write (null)	The state of the indicator LED, used to identify the power supply. See *IndicatorLED* in Property Details, below, for the possible values of this property.
InputRanges *(v1.1+)* [{	array		This is the input ranges that the power supply can use.
InputType	string (enum)	read-only (null)	The Input type (AC or DC). See *InputType* in Property Details, below, for the possible values of this property.
MaximumFrequencyHz	number	read-only	The maximum line input frequency at which this power supply input range is

	(Hz)	(null)	effective.
MaximumVoltage	number (Volts)	read-only (null)	The maximum line input voltage at which this power supply input range is effective.
MinimumFrequencyHz	number (Hz)	read-only (null)	The minimum line input frequency at which this power supply input range is effective.
MinimumVoltage	number (Volts)	read-only (null)	The minimum line input voltage at which this power supply input range is effective.
Oem { }	object		See the OEM object definition in the Common properties section.
OutputWattage }]	number (Watts)	read-only (null)	The maximum capacity of this Power Supply when operating in this input range.
LastPowerOutputWatts	number (Watts)	read-only (null)	The average power output of this Power Supply.
LineInputVoltage	number (Volts)	read-only (null)	The line input voltage at which the Power Supply is operating.
LineInputVoltageType	string (enum)	read-only (null)	The line voltage type supported as an input to this Power Supply. See *LineInputVoltageType* in Property Details, below, for the possible values of this property.
Location *(v1.5+)* { }	object		The Location of the power supply. See the *Location object* for details on this property.
Manufacturer *(v1.1+)*	string	read-only (null)	This is the manufacturer of this power supply.
MemberId	string	read-only required	This is the identifier for the member within the collection.
Model	string	read-only (null)	The model number for this Power Supply.
Name	string	read-only (null)	The name of the Power Supply.
Oem { }	object		See the OEM object definition in the Common properties section.
PartNumber	string	read-only (null)	The part number for this Power Supply.
PowerCapacityWatts	number (Watts)	read-only (null)	The maximum capacity of this Power Supply.
PowerInputWatts *(v1.5+)*	number (Watts)	read-only (null)	The measured input power of this Power Supply.
PowerOutputWatts *(v1.5+)*	number (Watts)	read-only (null)	The measured output power of this Power Supply.
PowerSupplyType	string (enum)	read-only (null)	The Power Supply type (AC or DC). See *PowerSupplyType* in Property Details, below, for the possible values of this property.
Redundancy [{	array		A reference to a set of Redundancy entities that provide redundant services for this resource. See the Redundancy object definition in the Common objects section.
@odata.id }]	string	read-only	The unique identifier for a resource.
RelatedItem [{	array		The ID(s) of the resources associated with this Power Limit.
@odata.id }]	string	read-only	The unique identifier for a resource.
SerialNumber	string	read-only (null)	The serial number for this Power Supply.

SparePartNumber	string	read-only (null)	The spare part number for this Power Supply.
Status { } }]	object		This property describes the status and health of the resource and its children. *See the [Status object](#) for details on this property.*
Redundancy [{	array		Redundancy information for the power subsystem of this system or device.
@odata.id }]	string	read-only	The unique identifier for a resource.
Voltages [{	array		This is the definition for voltage sensors.
@odata.id	string	read-only required	The unique identifier for a resource.
Actions *(v1.3+)* { }	object		The available actions for this resource.
LowerThresholdCritical	number (Volts)	read-only (null)	Below normal range but not yet fatal.
LowerThresholdFatal	number (Volts)	read-only (null)	Below normal range and is fatal.
LowerThresholdNonCritical	number (Volts)	read-only (null)	Below normal range.
MaxReadingRange	number (Volts)	read-only (null)	Maximum value for this Voltage sensor.
MemberId	string	read-only required	This is the identifier for the member within the collection.
MinReadingRange	number (Volts)	read-only (null)	Minimum value for this Voltage sensor.
Name	string	read-only (null)	Voltage sensor name.
Oem { }	object		See the OEM object definition in the [Common properties](#) section.
PhysicalContext	string (enum)	read-only	Describes the area or device to which this voltage measurement applies. *See [PhysicalContext](#) in Property Details, below, for the possible values of this property.*
ReadingVolts	number (Volts)	read-only (null)	The present reading of the voltage sensor.
RelatedItem [{	array		Describes the areas or devices to which this voltage measurement applies.
@odata.id }]	string	read-only	The unique identifier for a resource.
SensorNumber	integer	read-only (null)	A numerical identifier to represent the voltage sensor.
Status { }	object		This property describes the status and health of the resource and its children. *See the [Status object](#) for details on this property.*
UpperThresholdCritical	number (Volts)	read-only (null)	Above normal range but not yet fatal.
UpperThresholdFatal	number (Volts)	read-only (null)	Above normal range and is fatal.
UpperThresholdNonCritical }]	number (Volts)	read-only (null)	Above normal range.

Property Details

IndicatorLED:

The state of the indicator LED, used to identify the power supply.

string	Description
Blinking	The Indicator LED is blinking.
Lit	The Indicator LED is lit.
Off	The Indicator LED is off.

InputType:

The Input type (AC or DC).

string	Description
AC	Alternating Current (AC) input range.
DC	Direct Current (DC) input range.

LimitException:

The action that is taken if the power cannot be maintained below the LimitInWatts.

string	Description
HardPowerOff	Turn the power off immediately when the limit is exceeded.
LogEventOnly	Log an event when the limit is exceeded, but take no further action.
NoAction	Take no action when the limit is exceeded.
Oem	Take an OEM-defined action.

LineInputVoltageType:

The line voltage type supported as an input to this Power Supply.

string	Description
AC120V	AC 120V nominal input.
AC240V	AC 240V nominal input.
AC277V	AC 277V nominal input.
ACandDCWideRange	Wide range AC or DC input.
ACHighLine *(deprecated v1.3)*	277V AC input. *Deprecated v1.3+. This value has been Deprecated in favor of AC277V.*
ACLowLine *(deprecated v1.3)*	100-127V AC input. *Deprecated v1.3+. This value has been Deprecated in favor of AC120V.*
ACMidLine *(deprecated v1.3)*	200-240V AC input. *Deprecated v1.3+. This value has been Deprecated in favor of AC240V.*
ACWideRange	Wide range AC input.
DC240V	DC 240V nominal input.
DC380V	High Voltage DC input (380V).
DCNeg48V	-48V DC input.
Unknown	The power supply line input voltage type cannot be determined.

PhysicalContext:

Describes the area or device to which this voltage measurement applies.

string	Description
Accelerator	An Accelerator.
ACInput	An AC Input.
ACMaintenanceBypassInput	An AC Maintenance Bypass Input.
ACOutput	An AC Output.

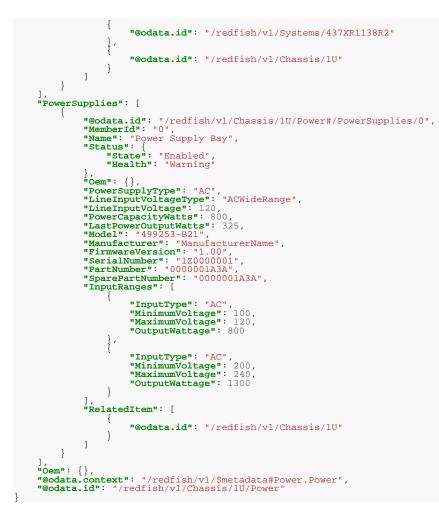|	
ACStaticBypassInput	An AC Static Bypass Input.
ACUtilityInput	An AC Utility Input.
ASIC	An ASIC device, such as networking chip or a chipset component.
Back	The back of the chassis.
Backplane	A backplane within the chassis.
Chassis	The entire chassis.
ComputeBay	Within a compute bay.
CoolingSubsystem	The entire cooling (air and liquid) subsystem.
CPU	A Processor (CPU).
CPUSubsystem	The entire Processor (CPU) subsystem.
DCBus	A DC Bus.
Exhaust	The air exhaust point(s) or region of the chassis.
ExpansionBay	Within an expansion bay.
Fan	A fan.
FPGA	A Field Programmable Gate Array (FPGA).
Front	The front of the chassis.
GPU	A Graphics Processor (GPU).
GPUSubsystem	The entire Graphics Processor (GPU) subsystem.
Intake	The air intake point(s) or region of the chassis.
LiquidInlet	The liquid inlet point of the chassis.
LiquidOutlet	The liquid outlet point of the chassis.
Lower	The lower portion of the chassis.
Memory	A memory device.
MemorySubsystem	The entire Memory subsystem.
Motor	A motor.
NetworkBay	Within a networking bay.
NetworkingDevice	A networking device.
PowerSubsystem	The entire power subsystem.
PowerSupply	A power supply.
PowerSupplyBay	Within a power supply bay.
Rectifier	A rectifier device.
Room	The room.
StorageBay	Within a storage bay.
StorageDevice	A storage device.
SystemBoard	The system board (PCB).
Transformer	A Transformer.
Upper	The upper portion of the chassis.
VoltageRegulator	A voltage regulator device.

PowerSupplyType:

The Power Supply type (AC or DC).

string	Description
AC	Alternating Current (AC) power supply.
ACorDC	Power Supply supports both DC or AC.
DC	Direct Current (DC) power supply.
Unknown	The power supply type cannot be determined.

Example Response

```
{
    "@odata.type": "#Power.v1_5_1.Power",
    "Id": "Power",
    "Name": "Power",
    "PowerControl": [
        {
            "@odata.id": "/redfish/v1/Chassis/1U/Power#/PowerControl/0",
            "MemberId": "0",
            "Name": "Server Power Control",
            "PowerConsumedWatts": 344,
            "PowerRequestedWatts": 800,
            "PowerAvailableWatts": 0,
            "PowerCapacityWatts": 800,
            "PowerAllocatedWatts": 800,
            "PowerMetrics": {
                "IntervalInMin": 30,
                "MinConsumedWatts": 271,
                "MaxConsumedWatts": 489,
                "AverageConsumedWatts": 319
            },
            "PowerLimit": {
                "LimitInWatts": 500,
                "LimitException": "LogEventOnly",
                "CorrectionInMs": 50
            },
            "RelatedItem": [
                {
                    "@odata.id": "/redfish/v1/Systems/437XR1138R2"
                },
                {
                    "@odata.id": "/redfish/v1/Chassis/1U"
                }
            ],
            "Status": {
                "State": "Enabled",
                "Health": "OK"
            },
            "Oem": {}
        }
    ],
    "Voltages": [
        {
            "@odata.id": "/redfish/v1/Chassis/1U/Power#/Voltages/0",
            "MemberId": "0",
            "Name": "VRM1 Voltage",
            "SensorNumber": 11,
            "Status": {
                "State": "Enabled",
                "Health": "OK"
            },
            "ReadingVolts": 12,
            "UpperThresholdNonCritical": 12.5,
            "UpperThresholdCritical": 13,
            "UpperThresholdFatal": 15,
            "LowerThresholdNonCritical": 11.5,
            "LowerThresholdCritical": 11,
            "LowerThresholdFatal": 10,
            "MinReadingRange": 0,
            "MaxReadingRange": 20,
            "PhysicalContext": "VoltageRegulator",
            "RelatedItem": [
                {
                    "@odata.id": "/redfish/v1/Systems/437XR1138R2"
                },
                {
                    "@odata.id": "/redfish/v1/Chassis/1U"
                }
            ]
        },
        {
            "@odata.id": "/redfish/v1/Chassis/1U/Power#/Voltages/1",
            "MemberId": "1",
            "Name": "VRM2 Voltage",
            "SensorNumber": 12,
            "Status": {
                "State": "Enabled",
                "Health": "OK"
            },
            "ReadingVolts": 5,
            "UpperThresholdNonCritical": 5.5,
            "UpperThresholdCritical": 7,
            "LowerThresholdNonCritical": 4.75,
            "LowerThresholdCritical": 4.5,
            "MinReadingRange": 0,
            "MaxReadingRange": 20,
            "PhysicalContext": "VoltageRegulator",
            "RelatedItem": [
```

```
                {
                    "@odata.id": "/redfish/v1/Systems/437XR1138R2"
                },
                {
                    "@odata.id": "/redfish/v1/Chassis/1U"
                }
            ]
        }
    ],
    "PowerSupplies": [
        {
            "@odata.id": "/redfish/v1/Chassis/1U/Power#/PowerSupplies/0",
            "MemberId": "0",
            "Name": "Power Supply Bay",
            "Status": {
                "State": "Enabled",
                "Health": "Warning"
            },
            "Oem": {},
            "PowerSupplyType": "AC",
            "LineInputVoltageType": "ACWideRange",
            "LineInputVoltage": 120,
            "PowerCapacityWatts": 800,
            "LastPowerOutputWatts": 325,
            "Model": "499253-B21",
            "Manufacturer": "ManufacturerName",
            "FirmwareVersion": "1.00",
            "SerialNumber": "1Z0000001",
            "PartNumber": "0000001A3A",
            "SparePartNumber": "0000001A3A",
            "InputRanges": [
                {
                    "InputType": "AC",
                    "MinimumVoltage": 100,
                    "MaximumVoltage": 120,
                    "OutputWattage": 800
                },
                {
                    "InputType": "AC",
                    "MinimumVoltage": 200,
                    "MaximumVoltage": 240,
                    "OutputWattage": 1300
                }
            ],
            "RelatedItem": [
                {
                    "@odata.id": "/redfish/v1/Chassis/1U"
                }
            ]
        }
    ],
    "Oem": {},
    "@odata.context": "/redfish/v1/$metadata#Power.Power",
    "@odata.id": "/redfish/v1/Chassis/1U/Power"
}
```

PrivilegeRegistry 1.1.3

v1.1	v1.0
2017.1	2016.3

This is the schema definition for Operation to Privilege mapping.

Mappings [{	array		This property describes the mappings between entities and the relevant privileges used to access them.
Entity	string	read-only	Indicates entity name. e.g., Manager.
OperationMap {	object		List mapping between HTTP method and privilege required for entity.
DELETE [{	array		Indicates privilege required for HTTP DELETE operation.
Privilege [ ] }]	array (string)	read-only	Lists the privileges that are allowed to perform the given type of HTTP operation on the entity type.
GET [{	array		Indicates privilege required for HTTP GET operation.
Privilege [ ] }]	array (string)	read-only	Lists the privileges that are allowed to perform the given type of HTTP operation on the entity type.
HEAD [{	array		Indicates privilege required for HTTP HEAD operation.
Privilege [ ] }]	array (string)	read-only	Lists the privileges that are allowed to perform the given type of HTTP operation on the entity type.
PATCH [{	array		Indicates privilege required for HTTP PATCH operation.
Privilege [ ]	array	read-only	Lists the privileges that are allowed to perform the given type of HTTP operation

}]	(string)		on the entity type.
POST [{	array		Indicates privilege required for HTTP POST operation.
Privilege [ ] }]	array (string)	read-only	Lists the privileges that are allowed to perform the given type of HTTP operation on the entity type.
PUT [{	array		Indicates privilege required for HTTP PUT operation.
Privilege [ ] }] }	array (string)	read-only	Lists the privileges that are allowed to perform the given type of HTTP operation on the entity type.
PropertyOverrides [{	array		Indicates privilege overrides of property or element within a entity.
OperationMap {	object		List mapping between HTTP operation and privilege needed to perform operation.
DELETE [{	array		Indicates privilege required for HTTP DELETE operation.
Privilege [ ] }]	array (string)	read-only	Lists the privileges that are allowed to perform the given type of HTTP operation on the entity type.
GET [{	array		Indicates privilege required for HTTP GET operation.
Privilege [ ] }]	array (string)	read-only	Lists the privileges that are allowed to perform the given type of HTTP operation on the entity type.
HEAD [{	array		Indicates privilege required for HTTP HEAD operation.
Privilege [ ] }]	array (string)	read-only	Lists the privileges that are allowed to perform the given type of HTTP operation on the entity type.
PATCH [{	array		Indicates privilege required for HTTP PATCH operation.
Privilege [ ] }]	array (string)	read-only	Lists the privileges that are allowed to perform the given type of HTTP operation on the entity type.
POST [{	array		Indicates privilege required for HTTP POST operation.
Privilege [ ] }]	array (string)	read-only	Lists the privileges that are allowed to perform the given type of HTTP operation on the entity type.
PUT [{	array		Indicates privilege required for HTTP PUT operation.
Privilege [ ] }] }	array (string)	read-only	Lists the privileges that are allowed to perform the given type of HTTP operation on the entity type.
Targets [ ] }]	array (string, null)	read-only	Indicates the URI or Entity.
ResourceURIOverrides [{	array		Indicates privilege overrides of Resource URI.
OperationMap {	object		List mapping between HTTP operation and privilege needed to perform operation.
DELETE [{	array		Indicates privilege required for HTTP DELETE operation.
Privilege [ ] }]	array (string)	read-only	Lists the privileges that are allowed to perform the given type of HTTP operation on the entity type.
GET [{	array		Indicates privilege required for HTTP GET operation.
Privilege [ ] }]	array (string)	read-only	Lists the privileges that are allowed to perform the given type of HTTP operation on the entity type.
HEAD [{	array		Indicates privilege required for HTTP HEAD operation.
Privilege [ ] }]	array (string)	read-only	Lists the privileges that are allowed to perform the given type of HTTP operation on the entity type.
PATCH [{	array		Indicates privilege required for HTTP PATCH operation.

Privilege [ ] }]	array (string)	read-only	Lists the privileges that are allowed to perform the given type of HTTP operation on the entity type.
POST [{	array		Indicates privilege required for HTTP POST operation.
Privilege [ ] }]	array (string)	read-only	Lists the privileges that are allowed to perform the given type of HTTP operation on the entity type.
PUT [{	array		Indicates privilege required for HTTP PUT operation.
Privilege [ ] }] }	array (string)	read-only	Lists the privileges that are allowed to perform the given type of HTTP operation on the entity type.
Targets [ ] }]	array (string, null)	read-only	Indicates the URI or Entity.
SubordinateOverrides [{	array		Indicates privilege overrides of subordinate resource.
OperationMap {	object		List mapping between HTTP operation and privilege needed to perform operation.
DELETE [{	array		Indicates privilege required for HTTP DELETE operation.
Privilege [ ] }]	array (string)	read-only	Lists the privileges that are allowed to perform the given type of HTTP operation on the entity type.
GET [{	array		Indicates privilege required for HTTP GET operation.
Privilege [ ] }]	array (string)	read-only	Lists the privileges that are allowed to perform the given type of HTTP operation on the entity type.
HEAD [{	array		Indicates privilege required for HTTP HEAD operation.
Privilege [ ] }]	array (string)	read-only	Lists the privileges that are allowed to perform the given type of HTTP operation on the entity type.
PATCH [{	array		Indicates privilege required for HTTP PATCH operation.
Privilege [ ] }]	array (string)	read-only	Lists the privileges that are allowed to perform the given type of HTTP operation on the entity type.
POST [{	array		Indicates privilege required for HTTP POST operation.
Privilege [ ] }]	array (string)	read-only	Lists the privileges that are allowed to perform the given type of HTTP operation on the entity type.
PUT [{	array		Indicates privilege required for HTTP PUT operation.
Privilege [ ] }] }	array (string)	read-only	Lists the privileges that are allowed to perform the given type of HTTP operation on the entity type.
Targets [ ] }] }]	array (string, null)	read-only	Indicates the URI or Entity.
OEMPrivilegesUsed [ ]	array (string)	read-only	Lists the set of OEM Priviliges used in building this mapping.
PrivilegesUsed [ ]	array (string (enum))	read-only	Lists the set of Redfish standard priviliges used in building this mapping. See *PrivilegesUsed* in Property Details, below, for the possible values of this property.

Property Details

PrivilegesUsed:

Lists the set of Redfish standard priviliges used in building this mapping.

string	Description
ConfigureComponents	Able to configure components managed by this service.

ConfigureManager	Able to configure Manager resources.
ConfigureSelf	Able to change the password for the current user Account.
ConfigureUsers	Able to configure Users and their Accounts.
Login	Able to log into the service and read resources.

Example Response

```
{
    "@odata.type": "#PrivilegeRegistry.v1_0_0.PrivilegeRegistry",
    "Id": "Contoso_1.0.1_PrivilegeRegistry",
    "Name": "Privilege Map",
    "PrivilegesUsed": [
        "Login",
        "ConfigureManager",
        "ConfigureUsers",
        "ConfigureComponents",
        "ConfigureSelf"
    ],
    "OEMPrivilegesUsed": [],
    "Mappings": [
        {
            "Entity": "Manager",
            "OperationMap": {
                "GET": [
                    {
                        "Privilege": [
                            "Login"
                        ]
                    }
                ],
                "HEAD": [
                    {
                        "Privilege": [
                            "Login"
                        ]
                    }
                ],
                "PATCH": [
                    {
                        "Privilege": [
                            "ConfigureManager"
                        ]
                    }
                ],
                "POST": [
                    {
                        "Privilege": [
                            "ConfigureManager"
                        ]
                    }
                ],
                "PUT": [
                    {
                        "Privilege": [
                            "ConfigureManager"
                        ]
                    }
                ],
                "DELETE": [
                    {
                        "Privilege": [
                            "ConfigureManager"
                        ]
                    }
                ]
            }
        }
    ]
}
```

Processor 1.5.0

v1.5	v1.4	v1.3	v1.2	v1.1	v1.0
2019.1	2018.3	2018.1	2017.3	2017.1	1.0

This is the schema definition for the Processor resource. It represents the properties of a processor attached to a System.

URIs:

/redfish/v1/CompositionService/ResourceBlocks/*{ResourceBlockId}*/Processors/*{ProcessorId}*

/redfish/v1/CompositionService/ResourceBlocks/*{ResourceBlockId}*/Processors/*{ProcessorId}*/SubProcessors/*{ProcessorId2}*

/redfish/v1/CompositionService/ResourceBlocks/*{ResourceBlockId}*/Systems/*{ComputerSystemId}*/Processors/*{ProcessorId}*

/redfish/v1/CompositionService/ResourceBlocks/*{ResourceBlockId}*/Systems/*{ComputerSystemId}*/Processors/*{ProcessorId}*/SubProcessors/*{ProcessorId2}*

/redfish/v1/ResourceBlocks/*{ResourceBlockId}*/Processors/*{ProcessorId}*

/redfish/v1/ResourceBlocks/*{ResourceBlockId}*/Processors/*{ProcessorId}*/SubProcessors/*{ProcessorId2}*

/redfish/v1/ResourceBlocks/*{ResourceBlockId}*/Systems/*{ComputerSystemId}*/Processors/*{ProcessorId}*

/redfish/v1/ResourceBlocks/*{ResourceBlockId}*/Systems/*{ComputerSystemId}*/Processors/*{ProcessorId}*/SubProcessors/*{ProcessorId2}*

/redfish/v1/Systems/*{ComputerSystemId}*/Processors/*{ProcessorId}*

/redfish/v1/Systems/*{ComputerSystemId}*/Processors/*{ProcessorId}*/SubProcessors/*{ProcessorId2}*

AccelerationFunctions *(v1.4+)* {	object		A reference to the collection of Acceleration Functions associated with this Processor. *Contains a link to a resource.*
@odata.id }	string	read-only	*Link to Collection of AccelerationFunction. See the AccelerationFunction schema for details.*
Assembly *(v1.2+)* {	object		A reference to the Assembly resource associated with this processor. *See the Assembly schema for details on this property.*
@odata.id }	string	read-only	*Link to a Assembly resource. See the Links section and the Assembly schema for details.*
FPGA *(v1.4+)* {	object		The properties specific for Processors of type FPGA.
ExternalInterfaces [{	array		An array of the FPGA external interfaces.
Ethernet {	object		Describes the Ethernet related information about this FPGA interface.
MaxLanes	integer	read-only (null)	This is the number of lanes supported by this interface.
MaxSpeedMbps	integer (Mbit/s)	read-only (null)	The maximum speed supported by this interface.
Oem { } }	object		See the OEM object definition in the Common properties section.
InterfaceType	string (enum)	read-only (null)	The FPGA interface type. *See InterfaceType in Property Details, below, for the possible values of this property.*
PCIe { } }]	object		Describes the PCI-e related information about this FPGA interface. *See the PCIeInterface object (v1.3.0) for details on this property.*
FirmwareId	string	read-only	The FPGA firmware identifier.
FirmwareManufacturer	string	read-only	The FPGA firmware manufacturer.
FirmwareVersion	string	read-only	The FPGA firmware version.
FpgaType	string (enum)	read-only	The FPGA type. *See FpgaType in Property Details, below, for the possible values of this property.*
HostInterface {	object		The FPGA interface to the host.
Ethernet {	object		Describes the Ethernet related information about this FPGA interface.
MaxLanes	integer	read-only (null)	This is the number of lanes supported by this interface.
MaxSpeedMbps	integer (Mbit/s)	read-only (null)	The maximum speed supported by this interface.
Oem { } }	object		See the OEM object definition in the Common properties section.
InterfaceType	string (enum)	read-only (null)	The FPGA interface type. *See InterfaceType in Property Details, below, for the possible values of this property.*
PCIe { } }	object		Describes the PCI-e related information about this FPGA interface. *See the PCIeInterface object (v1.3.0) for details on this property.*
Model	string	read-only	The FPGA model.

Oem { }	object		See the OEM object definition in the [Common properties](#) section.
PCIeVirtualFunctions	integer	read-write	The number of the PCIe Virtual Functions.
ProgrammableFromHost	boolean	read-write (null)	This flag indicates if the FPGA firmware can be reprogrammed from the host using system software.
ReconfigurationSlots [{	array		An array of the FPGA reconfiguration slots. A reconfiguration slot is used by an FPGA to contain an acceleration function that can change as the FPGA is being provisioned.
AccelerationFunction {	object		A link to the Acceleration Function provided by the code programmed into a reconfiguration slot. *See the [AccelerationFunction](#) schema for details on this property.*
@odata.id }	string	read-only	*Link to a AccelerationFunction resource. See the Links section and the [AccelerationFunction](#) schema for details.*
ProgrammableFromHost	boolean	read-write (null)	This flag indicates if the reconfiguration slot can be reprogrammed from the host using system software.
SlotId	string	read-only (null)	The FPGA reconfiguration slot identifier.
UUID }] }	string	read-only (null)	The universal unique identifier (UUID) for this reconfiguration slot.
InstructionSet	string (enum)	read-only (null)	The instruction set of the processor. *See [InstructionSet](#) in Property Details, below, for the possible values of this property.*
Links *(v1.1+)* {	object		Contains references to other resources that are related to this resource.
Chassis {	object		A reference to the Chassis which contains this Processor. *See the [Chassis](#) schema for details on this property.*
@odata.id }	string	read-only	*Link to a Chassis resource. See the Links section and the [Chassis](#) schema for details.*
ConnectedProcessors *(v1.4+)* [{	array		An array of references to the processors directly connected to this processor.
@odata.id }]	string	read-only	*Link to another Processor resource.*
Endpoints *(v1.4+)* [{	array		An array of references to the endpoints that connect to this processor.
@odata.id }]	string	read-only	*Link to a Endpoint resource. See the Links section and the [Endpoint](#) schema for details.*
Oem { }	object		See the OEM object definition in the [Common properties](#) section.
PCIeDevice *(v1.4+)* {	object		A reference to the PCIeDevice associated with this Processor. *See the [PCIeDevice](#) schema for details on this property.*
@odata.id }	string	read-only	*Link to a PCIeDevice resource. See the Links section and the [PCIeDevice](#) schema for details.*
PCIeFunctions *(v1.4+)* [{	array		An array of references to the PCIeFunctions associated with this Processor.
@odata.id }] }	string	read-only	*Link to a PCIeFunction resource. See the Links section and the [PCIeFunction](#) schema for details.*
Location *(v1.2+)* { }	object		The Location of the processor. *See the [Location object](#) for details on this property.*
Manufacturer	string	read-only (null)	The processor manufacturer.

MaxSpeedMHz	integer (MHz)	read-only (null)	The maximum clock speed of the processor.
MaxTDPWatts *(v1.4+)*	integer (Watts)	read-only (null)	The maximum Thermal Design Power (TDP) in watts.
Metrics *(v1.4+)* {	object		A reference to the Metrics associated with this Processor. *See the ProcessorMetrics schema for details on this property.*
@odata.id }	string	read-only	*Link to a ProcessorMetrics resource. See the Links section and the ProcessorMetrics schema for details.*
Model	string	read-only (null)	The product model number of this device.
ProcessorArchitecture	string (enum)	read-only (null)	The architecture of the processor. *See ProcessorArchitecture in Property Details, below, for the possible values of this property.*
ProcessorId {	object		Identification information for this processor.
EffectiveFamily	string	read-only (null)	The effective Family for this processor.
EffectiveModel	string	read-only (null)	The effective Model for this processor.
IdentificationRegisters	string	read-only (null)	The contents of the Identification Registers (CPUID) for this processor.
MicrocodeInfo	string	read-only (null)	The Microcode Information for this processor.
Step	string	read-only (null)	The Step value for this processor.
VendorId }	string	read-only (null)	The Vendor Identification for this processor.
ProcessorMemory *(v1.4+)* [{	array		The memory directly attached or integrated witin this Procesor.
CapacityMiB	integer (mebibytes)	read-only (null)	The memory capacity in MiB.
IntegratedMemory	boolean	read-only (null)	This indicates whether this memory is integrated within the Processor.
MemoryType	string (enum)	read-only (null)	The type of memory used by this processor. *See MemoryType in Property Details, below, for the possible values of this property.*
SpeedMHz }]	integer	read-only (null)	The operating speed of the memory in MHz.
ProcessorType	string (enum)	read-only (null)	The type of processor. *See ProcessorType in Property Details, below, for the possible values of this property.*
Socket	string	read-only (null)	The socket or location of the processor.
Status { }	object		This property describes the status and health of the resource and its children. *See the Status object for details on this property.*
SubProcessors *(v1.3+)* {	object		A reference to the collection of Sub-Processors associated with this system, such as cores or threads that are part of a processor. *Contains a link to a resource.*
@odata.id }	string	read-only	*Link to Collection of Processor. See the Processor schema for details.*
TDPWatts *(v1.4+)*	integer	read-only	The nominal Thermal Design Power (TDP) in watts.

		(Watts)	(null)	
TotalCores		integer	read-only (null)	The total number of cores contained in this processor.
TotalEnabledCores *(v1.5+)*		integer	read-only (null)	The total number of enabled cores contained in this processor.
TotalThreads		integer	read-only (null)	The total number of execution threads supported by this processor.
UUID		string	read-only (null)	The universal unique identifier (UUID) for this processor.

Property Details

FpgaType:

The FPGA type.

string	Description
Discrete	The discrete FPGA device.
Integrated	The FPGA device integrasted with other porcessor in the single chip.

InstructionSet:

The instruction set of the processor.

string	Description
ARM-A32	ARM 32-bit.
ARM-A64	ARM 64-bit.
IA-64	Intel IA-64.
MIPS32	MIPS 32-bit.
MIPS64	MIPS 64-bit.
OEM	OEM-defined.
PowerISA *(v1.4+)*	PowerISA-64 or PowerISA-32.
x86	x86 32-bit.
x86-64	x86 64-bit.

InterfaceType:

The FPGA interface type.

string	Description
Ethernet	An Ethernet interface.
OEM	An OEM defined interface.
PCIe	A PCI Express interface.
QPI	The Intel QuickPath Interconnect.
UPI	The Intel UltraPath Interconnect.

MemoryType:

The type of memory used by this processor.

string	Description
DDR	Double data rate synchronous dynamic random-access memory.
DDR2	Double data rate type two synchronous dynamic random-access memory.

DDR3	Double data rate type three synchronous dynamic random-access memory.
DDR4	Double data rate type four synchronous dynamic random-access memory.
DDR5	Double data rate type five synchronous dynamic random-access memory.
Flash	Flash memory.
GDDR	Synchronous graphics random-access memory.
GDDR2	Double data rate type two synchronous graphics random-access memory.
GDDR3	Double data rate type three synchronous graphics random-access memory.
GDDR4	Double data rate type four synchronous graphics random-access memory.
GDDR5	Double data rate type five synchronous graphics random-access memory.
GDDR5X	Double data rate type five synchronous graphics random-access memory.
GDDR6	Double data rate type five synchronous graphics random-access memory.
HBM1	High Bandwidth Memory.
HBM2	The second generation of High Bandwidth Memory.
HBM3	The third generation of High Bandwidth Memory.
L1Cache	L1 cache.
L2Cache	L2 cache.
L3Cache	L3 cache.
L4Cache	L4 cache.
L5Cache	L5 cache.
L6Cache	L6 cache.
L7Cache	L7 cache.
OEM	OEM-defined.
SDRAM	Synchronous dynamic random-access memory.
SGRAM	Synchronous graphics RAM.
SRAM	Static random-access memory.

ProcessorArchitecture:

The architecture of the processor.

string	Description
ARM	ARM.
IA-64	Intel Itanium.
MIPS	MIPS.
OEM	OEM-defined.
Power *(v1.4+)*	Power.
x86	x86 or x86-64.

ProcessorType:

The type of processor.

string	Description
Accelerator	An Accelerator.

Core *(v1.3+)*	A Core in a Processor.
CPU	A Central Processing Unit.
DSP	A Digital Signal Processor.
FPGA	A Field Programmable Gate Array.
GPU	A Graphics Processing Unit.
OEM	An OEM-defined Processing Unit.
Thread *(v1.3+)*	A Thread in a Processor.

Example Response

```
{
    "@odata.type": "#Processor.v1_3_1.Processor",
    "Id": "CPU1",
    "Name": "Processor",
    "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"
    },
    "@odata.context": "/redfish/v1/$metadata#Processor.Processor",
    "@odata.id": "/redfish/v1/Systems/437XR1138R2/Processors/CPU1"
}
```

ProcessorMetrics 1.0.1

v1.0
2018.3

ProcessorMetrics contains usage and health statistics for a Processor (all Cores).

URIs:

/redfish/v1/CompositionService/ResourceBlocks/*{ResourceBlockId}*/Processors/*{ProcessorId}*/ProcessorMetrics

/redfish/v1/CompositionService/ResourceBlocks/*{ResourceBlockId}*/Processors/*{ProcessorId}*/SubProcessors/*{ProcessorId2}*/ProcessorMetrics

/redfish/v1/CompositionService/ResourceBlocks/*{ResourceBlockId}*/Systems/*{ComputerSystemId}*/Processors/*{ProcessorId}*/ProcessorMetrics

/redfish/v1/CompositionService/ResourceBlocks/*{ResourceBlockId}*/Systems/*{ComputerSystemId}*/Processors/*{ProcessorId}*/SubProcessors/*{ProcessorId2}*/ProcessorMetrics

/redfish/v1/CompositionService/ResourceBlocks/*{ResourceBlockId}*/Systems/*{ComputerSystemId}*/ProcessorSummary/ProcessorMetrics

/redfish/v1/ResourceBlocks/*{ResourceBlockId}*/Processors/*{ProcessorId}*/ProcessorMetrics

/redfish/v1/ResourceBlocks/*{ResourceBlockId}*/Processors/*{ProcessorId}*/SubProcessors/*{ProcessorId2}*/ProcessorMetrics

/redfish/v1/ResourceBlocks/*{ResourceBlockId}*/Systems/*{ComputerSystemId}*/Processors/*{ProcessorId}*/ProcessorMetrics

/redfish/v1/ResourceBlocks/*{ResourceBlockId}*/Systems/*{ComputerSystemId}*/Processors/*{ProcessorId}*/SubProcessors/*{ProcessorId2}*/ProcessorMetrics

/redfish/v1/ResourceBlocks/*{ResourceBlockId}*/Systems/*{ComputerSystemId}*/ProcessorSummary/ProcessorMetrics

/redfish/v1/Systems/*{ComputerSystemId}*/Processors/*{ProcessorId}*/ProcessorMetrics

/redfish/v1/Systems/*{ComputerSystemId}*/Processors/*{ProcessorId}*/SubProcessors/*{ProcessorId2}*/ProcessorMetrics

/redfish/v1/Systems/*{ComputerSystemId}*/ProcessorSummary/ProcessorMetrics

AverageFrequencyMHz	number (MHz)	read-only (null)	The average frequency of the processor.
BandwidthPercent	number (%)	read-only (null)	The CPU bandwidth as a percentage.
Cache [{	array		The processor cache metrics.
CacheMiss	number	read-only (null)	The number of cache line misses in millions.
CacheMissesPerInstruction	number	read-only (null)	The number of cache misses per instruction.
HitRatio	number	read-only (null)	The cache line hit ratio.
Level	string	read-only (null)	The cache level.
OccupancyBytes	integer (bytes)	read-only (null)	The total cache level occupancy in bytes.
OccupancyPercent }]	number (%)	read-only (null)	The total cache occupancy percentage.
ConsumedPowerWatt	number (Watts)	read-only (null)	The power consumed by the processor.
CoreMetrics [{	array		The processor core metrics.
CoreCache [{	array		The cache metrics of this core in the processor.
CacheMiss	number	read-only (null)	The number of cache line misses in millions.
CacheMissesPerInstruction	number	read-only (null)	The number of cache misses per instruction.
HitRatio	number	read-only (null)	The cache line hit ratio.
Level	string	read-only (null)	The cache level.
OccupancyBytes	integer (bytes)	read-only (null)	The total cache level occupancy in bytes.
OccupancyPercent }]	number (%)	read-only (null)	The total cache occupancy percentage.
CoreId	string	read-only (null)	The processor core identifier.
CStateResidency [{	array		The C-state residency of this core in the processor.
Level	string	read-only (null)	The level of C-state, e.g. C0, C1, C2.
ResidencyPercent }]	number (%)	read-only (null)	The percentage of time that the processor or core has spent in this particular level of C-state.
InstructionsPerCycle	number	read-only (null)	The number of instructions per clock cycle of this core.
IOStallCount	number	read-only (null)	The number of stalled cycles due to I/O operations.
MemoryStallCount	number	read-only (null)	The number of stalled cycles due to memory operations.
UnhaltedCycles }]	number	read-only (null)	The unhalted cycles count of this core.

FrequencyRatio	number	read-only (null)	The frequency relative to the nominal processor frequency ratio.
KernelPercent	number (%)	read-only (null)	The percentage of time spent in kernel mode.
LocalMemoryBandwidthBytes	integer (bytes)	read-only (null)	The local memory bandwidth usage in bytes.
RemoteMemoryBandwidthBytes	integer (bytes)	read-only (null)	The remote memory bandwidth usage in bytes.
TemperatureCelsius	number (Celsius)	read-only (null)	The temperature of the processor.
ThrottlingCelsius	number (Celsius)	read-only (null)	The CPU margin to throttle (temperature offset in degree Celsius).
UserPercent	number (%)	read-only (null)	The percentage of time spent in user mode.

Example Response

```json
{
    "@odata.type": "#ProcessorMetrics.v1_0_0.ProcessorMetrics",
    "Id": "Metrics",
    "Name": "Processor Metrics",
    "BandwidthPercent": 62,
    "AverageFrequencyMHz": 2400,
    "ThrottlingCelsius": 65,
    "TemperatureCelsius": 41,
    "ConsumedPowerWatt": 82,
    "FrequencyRatio": 0.00432,
    "Cache": [
        {
            "Level": "3",
            "CacheMiss": 0.12,
            "HitRatio": 0.719,
            "CacheMissesPerInstruction": 0.00088,
            "OccupancyBytes": 3030144,
            "OccupancyPercent": 90.1
        }
    ],
    "LocalMemoryBandwidthBytes": 18253611008,
    "RemoteMemoryBandwidthBytes": 81788928,
    "KernelPercent": 2.3,
    "UserPercent": 34.7,
    "CoreMetrics": [
        {
            "CoreId": "core0",
            "InstructionsPerCycle": 1.16,
            "UnhaltedCycles": 6254383746,
            "MemoryStallCount": 58372,
            "IOStallCount": 2634872,
            "CoreCache": [
                {
                    "Level": "2",
                    "CacheMiss": 0.472,
                    "HitRatio": 0.57,
                    "CacheMissesPerInstruction": 0.00346,
                    "OccupancyBytes": 198231,
                    "OccupancyPercent": 77.4
                }
            ],
            "CStateResidency": [
                {
                    "Level": "C0",
                    "Residency": 1.13
                },
                {
                    "Level": "C1",
                    "Residency": 26
                },
                {
                    "Level": "C3",
                    "Residency": 0.00878
                },
                {
                    "Level": "C6",
                    "Residency": 0.361
                },
                {
                    "Level": "C7",
                    "Residency": 72.5
                }
            ]
        }
    ],
    "Oem": {},
    "@odata.id": "/redfish/v1/Systems/1/Processors/FPGA1/ProcessorMetrics"
}
```

ResourceBlock 1.3.1

v1.3	v1.2	v1.1	v1.0
2018.3	2018.2	2018.1	2017.1

This schema defines a Resource Block resource.

URIs:

/redfish/v1/CompositionService/ResourceBlocks/*{ResourceBlockId}*

/redfish/v1/ResourceBlocks/*{ResourceBlockId}*

CompositionStatus {	object	required	This property describes the composition status details for this Resource Block.
CompositionState	string (enum)	read-only required (null)	This property represents the current state of the Resource Block from a composition perspective. *See CompositionState in Property Details, below, for the possible values of this property.*
MaxCompositions *(v1.1+)*	integer	read-only (null)	The maximum number of compositions in which this Resource Block is capable of participating simultaneously.
NumberOfCompositions *(v1.1+)*	integer	read-only (null)	The number of compositions in which this Resource Block is currently participating.
Reserved	boolean	read-write (null)	This represents if the Resource Block is reserved by any client.
SharingCapable *(v1.1+)*	boolean	read-only (null)	Indicates if this Resource Block is capable of participating in multiple compositions simultaneously.
SharingEnabled *(v1.1+)* }	boolean	read-write (null)	Indicates if this Resource Block is allowed to participate in multiple compositions simultaneously.
ComputerSystems [{	array		An array of references to the Computer Systems available in this Resource Block.
@odata.id }]	string	read-only	*Link to a ComputerSystem resource. See the Links section and the ComputerSystem schema for details.*
Drives *(v1.3+)* [{	array		An array of references to the Drives available in this Resource Block.
@odata.id }]	string	read-only	*Link to a Drive resource. See the Links section and the Drive schema for details.*
EthernetInterfaces [{	array		An array of references to the Ethernet Interfaces available in this Resource Block.
@odata.id }]	string	read-only	*Link to a EthernetInterface resource. See the Links section and the EthernetInterface schema for details.*
Links {	object		Contains references to other resources that are related to this resource.
Chassis [{	array		An array of references to the Chassis in which this Resource Block is contained.
@odata.id }]	string	read-only	*Link to a Chassis resource. See the Links section and the Chassis schema for details.*
ComputerSystems [{	array		An array of references to the Computer Systems that are composed from this Resource Block.
@odata.id }]	string	read-only	*Link to a ComputerSystem resource. See the Links section and the ComputerSystem schema for details.*
Oem { }	object		See the OEM object definition in the Common properties section.
Zones [{	array		An array of references to the Zones in which this Resource Block is bound.
@odata.id }]	string	read-only	*Link to a Zone resource. See the Links section and the Zone schema for details.*

}			
Memory [{	array		An array of references to the Memory available in this Resource Block.
@odata.id }]	string	read-only	*Link to a Memory resource. See the Links section and the [Memory](#) schema for details.*
NetworkInterfaces [{	array		An array of references to the Network Interfaces available in this Resource Block.
@odata.id }]	string	read-only	*Link to a NetworkInterface resource. See the Links section and the [NetworkInterface](#) schema for details.*
Processors [{	array		An array of references to the Processors available in this Resource Block.
@odata.id }]	string	read-only	*Link to a Processor resource. See the Links section and the [Processor](#) schema for details.*
ResourceBlockType [ ]	array (string (enum))	read-only	This property represents the types of resources available on this Resource Block. *See [ResourceBlockType](#) in Property Details, below, for the possible values of this property.*
SimpleStorage [{	array		An array of references to the Simple Storage available in this Resource Block.
@odata.id }]	string	read-only	*Link to a SimpleStorage resource. See the Links section and the [SimpleStorage](#) schema for details.*
Status { }	object		This property describes the status and health of the resource and its children. *See the [Status object](#) for details on this property.*
Storage [{	array		An array of references to the Storage available in this Resource Block.
@odata.id }]	string	read-only	*Link to a Storage resource. See the Links section and the [Storage](#) schema for details.*

Property Details

CompositionState:

This property represents the current state of the Resource Block from a composition perspective.

string	Description
Composed	Final successful state of a Resource Block which has participated in composition.
ComposedAndAvailable *(v1.1+)*	Indicates the Resource Block is currently participating in one or more compositions, and is available to be used in more compositions.
Composing	Intermediate state indicating composition is in progress.
Failed	The final composition resulted in failure and manual intervention may be required to fix it.
Unavailable *(v1.2+)*	Indicates the Resource Block has been made unavailable by the service, such as due to maintenance being performed on the Resource Block.
Unused	Indicates the Resource Block is free and can participate in composition.

ResourceBlockType:

This property represents the types of resources available on this Resource Block.

string	Description
Compute	This Resource Block contains both Processor and Memory resources in a manner that creates a compute complex.
ComputerSystem	This Resource Block contains ComputerSystem resources.

Expansion *(v1.2+)*	This Resource Block is capable of changing over time based on its configuration. Different types of devices within this Resource Block can be added and removed over time.
Memory	This Resource Block contains Memory resources.
Network	This Resource Block contains Network resources, such as Ethernet Interfaces.
Processor	This Resource Block contains Processor resources.
Storage	This Resource Block contains Storage resources, such as Storage and Simple Storage.

Example Response

```
{
    "@odata.type": "#ResourceBlock.v1_2_0.ResourceBlock",
    "Id": "ComputeBlock1",
    "Name": "Compute Block 1",
    "ResourceBlockType": [
        "Compute"
    ],
    "Status": {
        "State": "Enabled",
        "Health": "OK"
    },
    "CompositionStatus": {
        "Reserved": false,
        "CompositionState": "Composed",
        "SharingCapable": false,
        "MaxCompositions": 1,
        "NumberOfCompositions": 1
    },
    "Processors": [
        {
            "@odata.id": "/redfish/v1/CompositionService/ResourceBlocks/ComputeBlock1/Processors/Block1CPU0"
        },
        {
            "@odata.id": "/redfish/v1/CompositionService/ResourceBlocks/ComputeBlock1/Processors/Block1CPU1"
        }
    ],
    "Memory": [
        {
            "@odata.id": "/redfish/v1/CompositionService/ResourceBlocks/ComputeBlock1/Memory/Block1DIMM0"
        },
        {
            "@odata.id": "/redfish/v1/CompositionService/ResourceBlocks/ComputeBlock1/Memory/Block1DIMM1"
        },
        {
            "@odata.id": "/redfish/v1/CompositionService/ResourceBlocks/ComputeBlock1/Memory/Block1DIMM2"
        },
        {
            "@odata.id": "/redfish/v1/CompositionService/ResourceBlocks/ComputeBlock1/Memory/Block1DIMM3"
        }
    ],
    "Storage": [],
    "SimpleStorage": [],
    "EthernetInterfaces": [
        {
            "@odata.id":
"/redfish/v1/CompositionService/ResourceBlocks/ComputeBlock1/EthernetInterfaces/Block1OnboardNIC"
        }
    ],
    "ComputerSystems": [],
    "Links": {
        "ComputerSystems": [
            {
                "@odata.id": "/redfish/v1/Systems/ComposedSystem"
            }
        ],
        "Chassis": [
            {
                "@odata.id": "/redfish/v1/Chassis/ComposableModule1"
            }
        ],
        "Zones": [
            {
                "@odata.id": "/redfish/v1/CompositionService/ResourceZones/1"
            }
        ]
    },
    "Oem": {},
    "@odata.context": "/redfish/v1/$metadata#ResourceBlock.ResourceBlock",
    "@odata.id": "/redfish/v1/CompositionService/ResourceBlocks/ComputeBlock1"
}
```

Role 1.2.3

v1.2	v1.1	v1.0
2017.2	2017.1	1.0

This resource defines a user role to be used in conjunction with a Manager Account.

URIs:

/redfish/v1/AccountService/Roles/*{RoleId}*

/redfish/v1/Managers/*{ManagerId}*/RemoteAccountService/Roles/*{RoleId}*

AssignedPrivileges [ ]	array (string (enum))	read-write	The redfish privileges that this role includes. See *AssignedPrivileges* in Property Details, below, for the possible values of this property.
IsPredefined	boolean	read-only	This property is used to indicate if the Role is one of the Redfish Predefined Roles vs a Custom role.
OemPrivileges [ ]	array (string)	read-write	The OEM privileges that this role includes.
RoleId *(v1.2+)*	string	read-only required on create	This property contains the name of the Role.

Property Details

AssignedPrivileges:

The redfish privileges that this role includes.

string	Description
ConfigureComponents	Able to configure components managed by this service.
ConfigureManager	Able to configure Manager resources.
ConfigureSelf	Able to change the password for the current user Account.
ConfigureUsers	Able to configure Users and their Accounts.
Login	Able to log into the service and read resources.

Example Response

```
{
    "@odata.type": "#Role.v1_2_2.Role",
    "Id": "Administrator",
    "Name": "User Role",
    "Description": "Admin User Role",
    "IsPredefined": true,
    "AssignedPrivileges": [
        "Login",
        "ConfigureManager",
        "ConfigureUsers",
        "ConfigureSelf",
        "ConfigureComponents"
    ],
    "OemPrivileges": [
        "OemClearLog",
        "OemPowerControl"
    ],
    "@odata.context": "/redfish/v1/$metadata#Role.Role",
    "@odata.id": "/redfish/v1/AccountService/Roles/Administrator"
}
```

SecureBoot 1.0.5

v1.0
2016.1

This resource contains UEFI Secure Boot information. It represents properties for managing the UEFI Secure Boot functionality of a system.

URIs:

/redfish/v1/CompositionService/ResourceBlocks/*{ResourceBlockId}*/Systems/*{ComputerSystemId}*/SecureBoot

/redfish/v1/ResourceBlocks/*{ResourceBlockId}*/Systems/*{ComputerSystemId}*/SecureBoot

/redfish/v1/Systems/*{ComputerSystemId}*/SecureBoot

SecureBootCurrentBoot	string (enum)	read-only (null)	Secure Boot state during the current boot cycle. See *SecureBootCurrentBoot* in Property Details, below, for the possible values of this property.
SecureBootEnable	boolean	read-write (null)	Enable or disable UEFI Secure Boot (takes effect on next boot).

SecureBootMode	string (enum)	read-only (null)	Current Secure Boot Mode. See _SecureBootMode_ in Property Details, below, for the possible values of this property.

Actions

ResetKeys

This action is used to reset the Secure Boot keys.

URIs:

/redfish/v1/CompositionService/ResourceBlocks/_{ResourceBlockId}_/Systems/_{ComputerSystemId}_/SecureBoot/Actions/SecureBoot.ResetKeys

/redfish/v1/ResourceBlocks/_{ResourceBlockId}_/Systems/_{ComputerSystemId}_/SecureBoot/Actions/SecureBoot.ResetKeys

/redfish/v1/Systems/_{ComputerSystemId}_/SecureBoot/Actions/SecureBoot.ResetKeys

The following table shows the parameters for the action which are included in the POST body to the URI shown in the "target" property of the Action.

{			
ResetKeysType }	string (enum)	read-write	The type of keys to reset or delete. See _ResetKeysType_ in Property Details, below, for the possible values of this property.

Property Details

ResetKeysType:

The type of keys to reset or delete.

string	Description
DeleteAllKeys	Delete the content of all UEFI Secure Boot key databases (PK, KEK, DB, DBX). This puts the system in Setup Mode.
DeletePK	Delete the content of the PK UEFI Secure Boot database. This puts the system in Setup Mode.
ResetAllKeysToDefault	Reset the content of all UEFI Secure Boot key databases (PK, KEK, DB, DBX) to their default values.

SecureBootCurrentBoot:

Secure Boot state during the current boot cycle.

string	Description
Disabled	Secure Boot is currently disabled.
Enabled	Secure Boot is currently enabled.

SecureBootMode:

Current Secure Boot Mode.

string	Description
AuditMode	Secure Boot is currently in Audit Mode.
DeployedMode	Secure Boot is currently in Deployed Mode.
SetupMode	Secure Boot is currently in Setup Mode.
UserMode	Secure Boot is currently in User Mode.

Example Response

```
{
    "@odata.id": "/redfish/v1/Systems/1/SecureBoot",
    "@odata.type": "#SecureBoot.v1_0_0.SecureBoot",
    "Id": "SecureBoot",
    "Name": "UEFI Secure Boot",
    "Actions": {
        "#SecureBoot.ResetKeys": {
            "target": "/redfish/v1/Systems/1/SecureBoot/Actions/SecureBoot.ResetKeys",
            "ResetKeysType@Redfish.AllowableValues": [
                "ResetAllKeysToDefault",
```

```
                "DeleteAllKeys",
                "DeletePK"
            ]
        },
        "Oem": {}
    },
    "SecureBootEnable": false,
    "SecureBootCurrentBoot": "Disabled",
    "SecureBootMode": "UserMode",
    "Oem": {}
}
```

Sensor 1.0.1

v1.0
2018.3

This schema defines a Sensor to be used in conjunction with data center equipment.

URIs:

/redfish/v1/Chassis/*{ChassisId}*/Sensors/*{SensorId}*

Accuracy	number	read-only (null)	Estimated percent error of measured vs. actual values.
AdjustedMaxAllowableOperatingValue	number	read-only (null)	Adjusted maximum allowable operating value for this equipment based on the current environmental conditions present.
AdjustedMinAllowableOperatingValue	number	read-only (null)	Adjusted minimum allowable operating value for this equipment based on the current environmental conditions present.
ApparentVA	number	read-only (null)	The product of Voltage and Current for an AC circuit, in Volt-Amperes units.
ElectricalContext	string (enum)	read-only (null)	The combination of current-carrying conductors. *See ElectricalContext in Property Details, below, for the possible values of this property.*
LoadPercent	number	read-only (null)	The power load utilization for this Sensor.
Location { }	object		The location information for this Sensor. *See the Location object for details on this property.*
MaxAllowableOperatingValue	number	read-only (null)	Maximum allowable operating value for this equipment.
MinAllowableOperatingValue	number	read-only (null)	Minimum allowable operating value for this equipment.
PeakReading	number	read-only (null)	The peak reading value for this sensor.
PeakReadingTime	string	read-only (null)	The time at which the Peak Reading value occurred.
PhysicalContext	string (enum)	read-only (null)	Describes the area or device to which this sensor measurement applies. *See PhysicalContext in Property Details, below, for the possible values of this property.*
PhysicalSubContext	string (enum)	read-only (null)	Describes the usage or location within a device to which this sensor measurement applies. *See PhysicalSubContext in Property Details, below, for the possible values of this property.*
PowerFactor	number	read-only (null)	The power factor for this Sensor.
Precision	number	read-only (null)	Number of significant digits in the Reading.
ReactiveVAR	number	read-only	The square root of the difference term of squared ApparentVA and

		(null)	squared Power (Reading) for a circuit, expressed in VAR units.
Reading	number	read-only (null)	The present value for this Sensor.
ReadingRangeMax	number	read-only (null)	The maximum value of Reading possible for this Sensor.
ReadingRangeMin	number	read-only (null)	The minimum value of Reading possible for this Sensor.
ReadingType	string (enum)	read-only (null)	The kind of sensor being represented. *See ReadingType in Property Details, below, for the possible values of this property.*
ReadingUnits	string	read-only (null)	Units in which the reading and thresholds are measured.
SensingFrequency	number	read-only (null)	The time interval between readings of the physical sensor.
SensorResetTime	string	read-only (null)	The time at which the time-based properties were last reset.
Status { }	object		This property describes the status and health of the resource and its children. *See the Status object for details on this property.*
Thresholds {	object		The set of thresholds defined for this sensor.
LowerCaution {	object		Below normal range.
Activation	string (enum)	read-write (null)	The direction of crossing that activates this threshold. *See Activation in Property Details, below, for the possible values of this property.*
DwellTime	string	read-write (null)	The time interval over which the sensor reading must have passed through this Threshold value before the threshold is considered to be violated.
Reading }	number	read-write (null)	The threshold value.
LowerCritical {	object		Below normal range but not yet fatal.
Activation	string (enum)	read-write (null)	The direction of crossing that activates this threshold. *See Activation in Property Details, below, for the possible values of this property.*
DwellTime	string	read-write (null)	The time interval over which the sensor reading must have passed through this Threshold value before the threshold is considered to be violated.
Reading }	number	read-write (null)	The threshold value.
LowerFatal {	object		Below normal range and fatal.
Activation	string (enum)	read-write (null)	The direction of crossing that activates this threshold. *See Activation in Property Details, below, for the possible values of this property.*
DwellTime	string	read-write (null)	The time interval over which the sensor reading must have passed through this Threshold value before the threshold is considered to be violated.
Reading }	number	read-write (null)	The threshold value.
UpperCaution {	object		Above normal range.
Activation	string (enum)	read-write (null)	The direction of crossing that activates this threshold. *See Activation in Property Details, below, for the possible values of this*

			property.
DwellTime	string	read-write (null)	The time interval over which the sensor reading must have passed through this Threshold value before the threshold is considered to be violated.
Reading }	number	read-write (null)	The threshold value.
UpperCritical {	object		Above normal range but not yet fatal.
Activation	string (enum)	read-write (null)	The direction of crossing that activates this threshold. See *Activation* in Property Details, below, for the possible values of this property.
DwellTime	string	read-write (null)	The time interval over which the sensor reading must have passed through this Threshold value before the threshold is considered to be violated.
Reading }	number	read-write (null)	The threshold value.
UpperFatal {	object		Above normal range and fatal.
Activation	string (enum)	read-write (null)	The direction of crossing that activates this threshold. See *Activation* in Property Details, below, for the possible values of this property.
DwellTime	string	read-write (null)	The time interval over which the sensor reading must have passed through this Threshold value before the threshold is considered to be violated.
Reading } }	number	read-write (null)	The threshold value.
VoltageType	string (enum)	read-only (null)	The voltage type (AC or DC) for this sensor. See *VoltageType* in Property Details, below, for the possible values of this property.

Actions

ResetStatistics

This action is used to reset statistics related to this sensor.

URIs:

/redfish/v1/Chassis/*{ChassisId}*/Sensors/*{SensorId}*/Actions/Sensor.ResetStatistics

(This action takes no parameters.)

Property Details

Activation:

The direction of crossing that activates this threshold.

string	Description
Decreasing	Value decreases below the threshold.
Either	Value crosses the threshold in either direction.
Increasing	Value increases above the threshold.

ElectricalContext:

The combination of current-carrying conductors.

string	Description
Line1	The circuits sharing L1 current-carrying conductor.
Line1ToLine2	The circuit formed by L1 and L2 current-carrying conductors when PhaseWiringType.TwoPhase3Wire, TwoPhase4Wire, ThreePhase4Wire, or ThreePhase5Wire.

Line1ToNeutral	The circuit formed by L1 and Neutral current-carrying conductors when PhaseWiringType.OnePhase3Wire, TwoPhase4Wire, ThreePhase4Wire, or ThreePhase5Wire.
Line1ToNeutralAndL1L2	The circuits formed by L1, L2, and Neutral current-carrying conductors when PhaseWiringType.TwoPhase4Wire or ThreePhase5Wire.
Line2	The circuits sharing L2 current-carrying conductor when PhaseWiringType.ThreePhase4Wire. TwoPhase4Wire, or ThreePhase5Wire.
Line2ToLine3	The circuit formed by L2 and L3 current-carrying conductors when PhaseWiringType.ThreePhase4Wire or ThreePhase5Wire.
Line2ToNeutral	The circuit formed by L2 and Neutral current-carrying conductors when PhaseWiringType.TwoPhase4Wire or ThreePhase5Wire.
Line2ToNeutralAndL1L2	The circuits formed by L1, L2, and Neutral current-carrying conductors when PhaseWiringType.TwoPhase4Wire or ThreePhase5Wire.
Line2ToNeutralAndL2L3	The circuits formed by L2, L3, and Neutral current-carrying conductors when PhaseWiringType.ThreePhase5Wire.
Line3	The circuits sharing L3 current-carrying conductor when PhaseWiringType.ThreePhase4Wire or ThreePhase5Wire.
Line3ToLine1	The circuit formed by L3 and L1 current-carrying conductors when PhaseWiringType.ThreePhase4Wire or ThreePhase5Wire.
Line3ToNeutral	The circuit formed by L3 and Neutral current-carrying conductors when PhaseWiringType.ThreePhase5Wire.
Line3ToNeutralAndL3L1	The circuits formed by L3, L1, and Neutral current-carrying conductors when PhaseWiringType.ThreePhase5Wire.
LineToLine	The circuit formed by two current-carrying conductors when PhaseWiringType.TwoPhase3Wire, TwoPhase4Wire, ThreePhase4Wire, or ThreePhase5Wire.
LineToNeutral	The circuit formed by a line and Neutral current-carrying conductor when PhaseWiringType.OnePhase3Wire, TwoPhase4Wire, ThreePhase4Wire, or ThreePhase5Wire.
Neutral	The grounded current-carrying return circuit of current-carrying conductors when PhaseWiringType.OnePhase3Wire, TwoPhase4Wire, or ThreePhase5Wire.
Total	The circuits formed by all current-carrying conductors for any PhaseWiringType.

PhysicalContext:

Describes the area or device to which this sensor measurement applies.

string	Description
Accelerator	An Accelerator.
ACInput	An AC Input.
ACMaintenanceBypassInput	An AC Maintenance Bypass Input.
ACOutput	An AC Output.
ACStaticBypassInput	An AC Static Bypass Input.
ACUtilityInput	An AC Utility Input.
ASIC	An ASIC device, such as networking chip or a chipset component.
Back	The back of the chassis.
Backplane	A backplane within the chassis.
Chassis	The entire chassis.
ComputeBay	Within a compute bay.
CoolingSubsystem	The entire cooling (air and liquid) subsystem.

CPU	A Processor (CPU).
CPUSubsystem	The entire Processor (CPU) subsystem.
DCBus	A DC Bus.
Exhaust	The air exhaust point(s) or region of the chassis.
ExpansionBay	Within an expansion bay.
Fan	A fan.
FPGA	A Field Programmable Gate Array (FPGA).
Front	The front of the chassis.
GPU	A Graphics Processor (GPU).
GPUSubsystem	The entire Graphics Processor (GPU) subsystem.
Intake	The air intake point(s) or region of the chassis.
LiquidInlet	The liquid inlet point of the chassis.
LiquidOutlet	The liquid outlet point of the chassis.
Lower	The lower portion of the chassis.
Memory	A memory device.
MemorySubsystem	The entire Memory subsystem.
Motor	A motor.
NetworkBay	Within a networking bay.
NetworkingDevice	A networking device.
PowerSubsystem	The entire power subsystem.
PowerSupply	A power supply.
PowerSupplyBay	Within a power supply bay.
Rectifier	A rectifier device.
Room	The room.
StorageBay	Within a storage bay.
StorageDevice	A storage device.
SystemBoard	The system board (PCB).
Transformer	A Transformer.
Upper	The upper portion of the chassis.
VoltageRegulator	A voltage regulator device.

PhysicalSubContext:

Describes the usage or location within a device to which this sensor measurement applies.

string	Description
Input	The input.
Output	The output.

ReadingType:

The kind of sensor being represented.

string	Description

AirFlow	Airflow.
Altitude	Altitude.
Barometric	Barometric Pressure.
Current	Current.
EnergyJoules	Energy (Joules).
EnergykWh	Energy (kWh).
Frequency	Frequency.
Humidity	Relative Humidity.
LiquidFlow	Liquid flow.
LiquidLevel	Liquid level.
Power	Power.
Pressure	Pressure.
Rotational	Rotational.
Temperature	Temperature.
Voltage	Voltage (AC or DC).

VoltageType:

The voltage type (AC or DC) for this sensor.

string	Description
AC	Alternating Current.
DC	Direct Current.

Example Response

```
{
    "@odata.type": "#Sensor.v1_0_0.Sensor",
    "Id": "CabinetTemp",
    "Name": "Rack Temperature",
    "ReadingType": "Temperature",
    "Status": {
        "State": "Enabled",
        "Health": "OK"
    },
    "Reading": 31,
    "ReadingUnits": "C",
    "ReadingRangeMin": 0,
    "ReadingRangeMax": 70,
    "Accuracy": 0.25,
    "Precision": 1,
    "SensingFrequency": 3,
    "PhysicalContext": "Chassis",
    "Thresholds": {
        "UpperCritical": {
            "Reading": 40,
            "Activation": "Increasing"
        },
        "UpperCaution": {
            "Reading": 35,
            "Activation": "Increasing"
        },
        "LowerCaution": {
            "Reading": 10,
            "Activation": "Increasing"
        }
    },
    "Oem": {},
    "@odata.id": "/redfish/v1/Chassis/1/Sensors/CabinetTemp"
}
```

SerialInterface 1.1.4

v1.1	v1.0
2017.1	1.0

This schema defines an asynchronous serial interface resource.

URIs:

/redfish/v1/Managers/*{ManagerId}*/SerialInterfaces/*{SerialInterfaceId}*

BitRate	string (enum)	read-write	The receive and transmit rate of data flow, typically in bits-per-second (bps), over the serial connection. See *BitRate* in Property Details, below, for the possible values of this property.
ConnectorType	string (enum)	read-only	The type of connector used for this interface. See *ConnectorType* in Property Details, below, for the possible values of this property.
DataBits	string (enum)	read-write	The number of data bits that will follow the start bit over the serial connection. See *DataBits* in Property Details, below, for the possible values of this property.
FlowControl	string (enum)	read-write	The type of flow control, if any, that will be imposed on the serial connection. See *FlowControl* in Property Details, below, for the possible values of this property.
InterfaceEnabled	boolean	read-write (null)	This indicates whether this interface is enabled.
Parity	string (enum)	read-write	The type of parity used by the sender and receiver in order to detect errors over the serial connection. See *Parity* in Property Details, below, for the possible values of this property.
PinOut	string (enum)	read-only (null)	The physical pin configuration needed for a serial connector. See *PinOut* in Property Details, below, for the possible values of this property.
SignalType	string (enum)	read-only	The type of signal used for the communication connection - RS232 or RS485. See *SignalType* in Property Details, below, for the possible values of this property.
StopBits	string (enum)	read-write	The period of time before the next start bit is transmitted. See *StopBits* in Property Details, below, for the possible values of this property.

Property Details

BitRate:

The receive and transmit rate of data flow, typically in bits-per-second (bps), over the serial connection.

string	Description
115200	A bit rate of 115200bps.
1200	A bit rate of 1200bps.
19200	A bit rate of 19200bps.
230400	A bit rate of 230400bps.
2400	A bit rate of 2400bps.
38400	A bit rate of 38400bps.
4800	A bit rate of 4800bps.
57600	A bit rate of 57600bps.
9600	A bit rate of 9600bps.

ConnectorType:

The type of connector used for this interface.

string	Description
DB25 Female	A DB25 Female connector.
DB25 Male	A DB25 Male connector.
DB9 Female	A DB9 Female connector.
DB9 Male	A DB9 Male connector.

mUSB	A mUSB connector.
RJ11	An RJ11 connector.
RJ45	An RJ45 connector.
USB	A USB connector.
uUSB	A uUSB connector.

DataBits:

The number of data bits that will follow the start bit over the serial connection.

string	Description
5	5 bits of data following the start bit.
6	6 bits of data following the start bit.
7	7 bits of data following the start bit.
8	8 bits of data following the start bit.

FlowControl:

The type of flow control, if any, that will be imposed on the serial connection.

string	Description
Hardware	Out of band flow control imposed.
None	No flow control imposed.
Software	XON/XOFF in-band flow control imposed.

Parity:

The type of parity used by the sender and receiver in order to detect errors over the serial connection.

string	Description
Even	An even parity bit.
Mark	A mark parity bit.
None	No parity bit.
Odd	An odd parity bit.
Space	A space parity bit.

PinOut:

The physical pin configuration needed for a serial connector.

string	Description
Cisco	The Cisco pin configuration.
Cyclades	The Cyclades pin configuration.
Digi	The Digi pin configuration.

SignalType:

The type of signal used for the communication connection - RS232 or RS485.

string	Description
Rs232	The serial interface follows RS232.
Rs485	The serial interface follows RS485.

StopBits:

The period of time before the next start bit is transmitted.

string	Description
1	1 stop bit following the data bits.
2	2 stop bits following the data bits.

Example Response

```json
{
    "@odata.type": "#SerialInterface.v1_1_3.SerialInterface",
    "Id": "TTY0",
    "Name": "Manager Serial Interface 1",
    "Description": "Management for Serial Interface",
    "InterfaceEnabled": true,
    "SignalType": "Rs232",
    "BitRate": "115200",
    "Parity": "None",
    "DataBits": "8",
    "StopBits": "1",
    "FlowControl": "None",
    "ConnectorType": "RJ45",
    "PinOut": "Cyclades",
    "@odata.context": "/redfish/v1/$metadata#SerialInterface.SerialInterface",
    "@odata.id": "/redfish/v1/Managers/BMC/SerialInterfaces/TTY0"
}
```

ServiceRoot 1.5.1

v1.5	v1.4	v1.3	v1.2	v1.1	v1.0
2018.3	2018.2	2017.3	2017.1	2016.2	1.0

This object represents the root Redfish service.

URIs:

/redfish/v1

/redfish/v1/

AccountService {	object		This is a link to the Account Service. *See the AccountService schema for details on this property.*
@odata.id }	string	read-only	*Link to a AccountService resource. See the Links section and the AccountService schema for details.*
CertificateService *(v1.5+)* **{**	object		This is a link to the CertificateService. *See the CertificateService schema for details on this property.*
@odata.id }	string	read-only	*Link to a CertificateService resource. See the Links section and the CertificateService schema for details.*
Chassis {	object		This is a link to a collection of Chassis. *Contains a link to a resource.*
@odata.id }	string	read-only	*Link to Collection of Chassis. See the Chassis schema for details.*
CompositionService *(v1.2+)* **{**	object		This is a link to the CompositionService. *See the CompositionService schema for details on this property.*
@odata.id }	string	read-only	*Link to a CompositionService resource. See the Links section and the CompositionService schema for details.*
EventService {	object		This is a link to the EventService. *See the EventService schema for details on this property.*
@odata.id }	string	read-only	*Link to a EventService resource. See the Links section and the EventService schema for details.*
Fabrics *(v1.1+)* **{**	object		A link to a collection of all fabric entities. *Contains a link to a resource.*
@odata.id	string	read-only	*Link to Collection of Fabric. See the Fabric schema for details.*

}			
JobService *(v1.4+)* {	object		This is a link to the JobService. *See the [JobService](#) schema for details on this property.*
@odata.id }	string	read-only	*Link to a JobService resource. See the Links section and the [JobService](#) schema for details.*
JsonSchemas {	object		This is a link to a collection of Json-Schema files. *Contains a link to a resource.*
@odata.id }	string	read-only	*Link to Collection of [JsonSchemaFile](#). See the JsonSchemaFile schema for details.*
Links {	object	required	Contains references to other resources that are related to this resource.
Oem { }	object		See the OEM object definition in the [Common properties](#) section.
Sessions {	object	required	Link to a collection of Sessions. *Contains a link to a resource.*
@odata.id } }	string	read-only	*Link to Collection of [Session](#). See the Session schema for details.*
Managers {	object		This is a link to a collection of Managers. *Contains a link to a resource.*
@odata.id }	string	read-only	*Link to Collection of [Manager](#). See the Manager schema for details.*
Product *(v1.3+)*	string	read-only (null)	The product associated with this Redfish service.
ProtocolFeaturesSupported *(v1.3+)* {	object		Contains information about protocol features supported by the service.
ExcerptQuery *(v1.4+)*	boolean	read-only	This indicates whether the 'excerpt' query parameter is supported.
ExpandQuery {	object		Contains information about the use of $expand in the service.
ExpandAll	boolean	read-only	This indicates whether the $expand support of asterisk (expand all entries) is supported.
Levels	boolean	read-only	This indicates whether the expand support of the $levels qualifier is supported by the service.
Links	boolean	read-only	This indicates whether the $expand support of tilde (expand only entries in the Links section) is supported.
MaxLevels	integer	read-only	This indicates the maximum number value of the $levels qualifier in $expand operations.
NoLinks }	boolean	read-only	This indicates whether the $expand support of period (expand only entries not in the Links section) is supported.
FilterQuery	boolean	read-only	This indicates whether the $filter query parameter is supported.
OnlyMemberQuery *(v1.4+)*	boolean	read-only	This indicates whether the 'only' query parameter is supported.
SelectQuery }	boolean	read-only	This indicates whether the $select query parameter is supported.
RedfishVersion	string	read-only	The version of the Redfish service.
Registries {	object		This is a link to a collection of Registries. *Contains a link to a resource.*
@odata.id }	string	read-only	*Link to Collection of [MessageRegistryFile](#). See the MessageRegistryFile schema for details.*
ResourceBlocks *(v1.5+)* {	object		A link to a collection of all resource block entities. This collection is intended for implementations that do not contain a Composition Service, but will expose resources to an orchestrator that implements a Composition Service.

			Contains a link to a resource.
@odata.id }	string	read-only	Link to Collection of *ResourceBlock*. See the ResourceBlock schema for details.
SessionService {	object		This is a link to the Sessions Service. See the *SessionService* schema for details on this property.
@odata.id }	string	read-only	Link to a SessionService resource. See the Links section and the *SessionService* schema for details.
StorageServices {	object		A link to a collection of all storage service entities.
@odata.id }	string	read-only	The unique identifier for a resource.
StorageSystems {	object		This is a link to a collection of storage systems.
@odata.id }	string	read-only	The unique identifier for a resource.
Systems {	object		This is a link to a collection of Systems. *Contains a link to a resource.*
@odata.id }	string	read-only	Link to Collection of *ComputerSystem*. See the ComputerSystem schema for details.
Tasks {	object		This is a link to the Task Service. See the *TaskService* schema for details on this property.
@odata.id }	string	read-only	Link to a TaskService resource. See the Links section and the *TaskService* schema for details.
TelemetryService *(v1.4+)* {	object		This is a link to the TelemetryService. See the *TelemetryService* schema for details on this property.
@odata.id }	string	read-only	Link to a TelemetryService resource. See the Links section and the *TelemetryService* schema for details.
UpdateService *(v1.1+)* {	object		This is a link to the UpdateService. See the *UpdateService* schema for details on this property.
@odata.id }	string	read-only	Link to a UpdateService resource. See the Links section and the *UpdateService* schema for details.
UUID	string	read-only (null)	Unique identifier for a service instance. When SSDP is used, this value should be an exact match of the UUID value returned in a 200OK from an SSDP M-SEARCH request during discovery.
Vendor *(v1.5+)*	string	read-only (null)	The vendor or manufacturer associated with this Redfish service.

Example Response

```
{
    "@odata.type": "#ServiceRoot.v1_4_0.ServiceRoot",
    "Id": "RootService",
    "Name": "Root Service",
    "RedfishVersion": "1.6.0",
    "UUID": "92384634-2938-2342-8820-489239905423",
    "Product": "UR99 1U Server",
    "ProtocolFeaturesSupported": {
        "ExpandQuery": {
            "ExpandAll": true,
            "Levels": true,
            "MaxLevels": 2,
            "Links": true,
            "NoLinks": true
        },
        "SelectQuery": false,
        "FilterQuery": false,
        "OnlyMemberQuery": true,
        "ExcerptQuery": true
    },
    "Systems": {
        "@odata.id": "/redfish/v1/Systems"
    },
    "Chassis": {
        "@odata.id": "/redfish/v1/Chassis"
    },
    "Managers": {
        "@odata.id": "/redfish/v1/Managers"
    },
```

```
    "UpdateService": {
        "@odata.id": "/redfish/v1/UpdateService"
    },
    "CompositionService": {
        "@odata.id": "/redfish/v1/CompositionService"
    },
    "Tasks": {
        "@odata.id": "/redfish/v1/TaskService"
    },
    "SessionService": {
        "@odata.id": "/redfish/v1/SessionService"
    },
    "AccountService": {
        "@odata.id": "/redfish/v1/AccountService"
    },
    "EventService": {
        "@odata.id": "/redfish/v1/EventService"
    },
    "Links": {
        "Sessions": {
            "@odata.id": "/redfish/v1/SessionService/Sessions"
        }
    },
    "Oem": {},
    "@odata.context": "/redfish/v1/$metadata#ServiceRoot.ServiceRoot",
    "@odata.id": "/redfish/v1/"
}
```

Session 1.2.0

v1.2	v1.1	v1.0
2019.1	2017.1	1.0

The Session resource describes a single connection (session) between a client and a Redfish service instance.

URIs:

/redfish/v1/SessionService/Sessions/*{SessionId}*

OemSessionType *(v1.2+)*	string	read-only (null)	The active session type defined by the OEM.
Password	string	read-only required on create (null)	This property is used in a POST to specify a password when creating a new session. This property is null on a GET.
SessionType *(v1.2+)*	string (enum)	read-only (null)	The active session type. See *SessionType* in Property Details, below, for the possible values of this property.
UserName	string	read-only required on create (null)	The UserName for the account for this session.

Property Details

SessionType:

The active session type.

string	Description
HostConsole	The Host's console, which could be connected via Telnet, SSH, or other protocol.
IPMI	Intelligent Platform Management Interface.
KVMIP	Keyboard-Video-Mouse over IP Session.
ManagerConsole	The Manager's console, which could be connected via Telnet, SSH, SM CLP, or other protocol.
OEM	OEM Type. Please look at OemSessionType for OEM session type(s).
Redfish	A Redfish Session.
VirtualMedia	Virtual Media.
WebUI	A non-Redfish Web User Interface session such as a graphical interface or other kinds of web-based protocols.

Example Response

```
{
    "@odata.type": "#Session.v1_1_1.Session",
    "Id": "1234567890ABCDEF",
    "Name": "User Session",
    "Description": "Manager User Session",
    "UserName": "Administrator",
    "Oem": {},
    "@odata.context": "/redfish/v1/$metadata#Session.Session",
    "@odata.id": "/redfish/v1/SessionService/Sessions/1234567890ABCDEF"
}
```

SessionService 1.1.5

v1.1	v1.0
2016.2	1.0

This is the schema definition for the Session Service. It represents the properties for the service itself and has links to the actual list of sessions.

URIs:

/redfish/v1/SessionService

ServiceEnabled	boolean	read-write (null)	This indicates whether this service is enabled. If set to false, the Session Service is disabled, and new sessions cannot be created, old sessions cannot be deleted, and established sessions may continue operating.
Sessions {	object		Link to a collection of Sessions. *Contains a link to a resource.*
@odata.id }	string	read-only	*Link to Collection of Session. See the Session schema for details.*
SessionTimeout	integer (seconds)	read-write	This is the number of seconds of inactivity that a session may have before the session service closes the session due to inactivity.
Status { }	object		This property describes the status and health of the resource and its children. *See the Status object for details on this property.*

Example Response

```
{
    "@odata.type": "#SessionService.v1_1_4.SessionService",
    "Id": "SessionService",
    "Name": "Session Service",
    "Description": "Session Service",
    "Status": {
        "State": "Enabled",
        "Health": "OK"
    },
    "ServiceEnabled": true,
    "SessionTimeout": 30,
    "Sessions": {
        "@odata.id": "/redfish/v1/SessionService/Sessions"
    },
    "@odata.context": "/redfish/v1/$metadata#SessionService.SessionService",
    "@odata.id": "/redfish/v1/SessionService"
}
```

SimpleStorage 1.2.2

v1.2	v1.1	v1.0
2017.1	2016.1	1.0

This is the schema definition for the Simple Storage resource. It represents the properties of a storage controller and its directly-attached devices.

URIs:

/redfish/v1/CompositionService/ResourceBlocks/{ResourceBlockId}/SimpleStorage/{SimpleStorageId}

/redfish/v1/CompositionService/ResourceBlocks/{ResourceBlockId}/Systems/{ComputerSystemId}/SimpleStorage/{SimpleStorageId}

/redfish/v1/ResourceBlocks/{ResourceBlockId}/SimpleStorage/{SimpleStorageId}

/redfish/v1/ResourceBlocks/{ResourceBlockId}/Systems/{ComputerSystemId}/SimpleStorage/{SimpleStorageId}

/redfish/v1/Systems/*{ComputerSystemId}*/SimpleStorage/*{SimpleStorageId}*

Devices [{	array		The storage devices associated with this resource.
CapacityBytes *(v1.1+)*	integer (bytes)	read-only (null)	The size of the storage device.
Manufacturer	string	read-only (null)	The name of the manufacturer of this device.
Model	string	read-only (null)	The product model number of this device.
Name	string	read-only required	The name of the resource or array element.
Oem { }	object		See the OEM object definition in the Common properties section.
Status { } }]	object		This property describes the status and health of the resource and its children. *See the Status object for details on this property.*
Links *(v1.2+)* {	object		Contains references to other resources that are related to this resource.
Chassis {	object		A reference to the Chassis which contains this Simple Storage. *See the Chassis schema for details on this property.*
@odata.id }	string	read-only	*Link to a Chassis resource. See the Links section and the Chassis schema for details.*
Oem { } }	object		See the OEM object definition in the Common properties section.
Status { }	object		This property describes the status and health of the resource and its children. *See the Status object for details on this property.*
UefiDevicePath	string	read-only (null)	The UEFI device path used to access this storage controller.

Example Response

```json
{
    "@odata.type": "#SimpleStorage.v1_2_1.SimpleStorage",
    "Id": "1",
    "Name": "Simple Storage Controller",
    "Description": "System SATA",
    "UefiDevicePath": "Acpi(PNP0A03,0)/Pci(1F|1)/Ata(Primary,Master)/HD(Part3, Sig00110011)",
    "Status": {
        "State": "Enabled",
        "Health": "OK",
        "HealthRollup": "Warning"
    },
    "Devices": [
        {
            "Name": "SATA Bay 1",
            "Manufacturer": "Contoso",
            "Model": "3000GT8",
            "CapacityBytes": 8000000000000,
            "Status": {
                "State": "Enabled",
                "Health": "OK"
            }
        },
        {
            "Name": "SATA Bay 2",
            "Manufacturer": "Contoso",
            "Model": "3000GT7",
            "CapacityBytes": 4000000000000,
            "Status": {
                "State": "Enabled",
                "Health": "Warning"
            }
        },
        {
            "Name": "SATA Bay 3",
            "Status": {
                "State": "Absent"
            }
        },
        {
            "Name": "SATA Bay 4",
            "Status": {
                "State": "Absent"
            }
        }
    ],
    "@odata.context": "/redfish/v1/$metadata#SimpleStorage.SimpleStorage",
    "@odata.id": "/redfish/v1/Systems/437XR1138R2/SimpleStorage/1"
}
```

SoftwareInventory 1.2.2

v1.2	v1.1	v1.0
2018.1	2016.3	2016.2

This schema defines an inventory of software components.

URIs:

/redfish/v1/UpdateService/FirmwareInventory/*{SoftwareInventoryId}*

/redfish/v1/UpdateService/SoftwareInventory/*{SoftwareInventoryId}*

LowestSupportedVersion *(v1.1+)*	string	read-only (null)	A string representing the lowest supported version of this software.
Manufacturer *(v1.2+)*	string	read-only (null)	A string representing the manufacturer/producer of this software.
RelatedItem *(v1.1+)* [{	array		The ID(s) of the resources associated with this software inventory item.
@odata.id }]	string	read-only	The unique identifier for a resource.
ReleaseDate *(v1.2+)*	string	read-only (null)	Release date of this software.
SoftwareId *(v1.1+)*	string	read-only	A string representing the implementation-specific ID for identifying this software.
Status { }	object		This property describes the status and health of the resource and its children. *See the [Status object](#) for details on this property.*
UefiDevicePaths *(v1.1+)* [ ]	array (string, null)	read-only	A list of strings representing the UEFI Device Path(s) of the component(s) associated with this software inventory item.
Updateable	boolean	read-only (null)	Indicates whether this software can be updated by the update service.
Version	string	read-only (null)	A string representing the version of this software.

Example Response

```
{
    "@odata.type": "#SoftwareInventory.v1_2_1.SoftwareInventory",
    "Id": "BMC",
    "Name": "Contoso BMC Firmware",
    "Status": {
        "State": "Enabled",
        "Health": "OK"
    },
    "Updateable": true,
    "Manufacturer": "Contoso",
    "ReleaseDate": "2017-08-22T12:00:00",
    "Version": "1.45.455b66-rev4",
    "SoftwareId": "1624A9DF-5E13-47FC-874A-DF3AFF143089",
    "LowestSupportedVersion": "1.30.367a12-rev1",
    "UefiDevicePaths": [
        "BMC(0x1,0x0ABCDEF)"
    ],
    "RelatedItem": [
        {
            "@odata.id": "/redfish/v1/Managers/1"
        }
    ],
    "Actions": {
        "Oem": {}
    },
    "Oem": {},
    "@odata.context": "/redfish/v1/$metadata#SoftwareInventory.SoftwareInventory",
    "@odata.id": "/redfish/v1/UpdateService/FirmwareInventory/BMC"
}
```

Storage 1.7.0

v1.7	v1.6	v1.5	v1.4	v1.3	v1.2	v1.1	v1.0
2019.1	2018.3	2018.2	2017.3	2017.2	2017.1	2016.2	2016.1

This schema defines a storage subsystem and its respective properties. A storage subsystem represents a set of storage controllers (physical or virtual) and the resources such as volumes that can be accessed from that subsystem.

URIs:

/redfish/v1/CompositionService/ResourceBlocks/*{ResourceBlockId}*/Storage/*{StorageId}*

/redfish/v1/CompositionService/ResourceBlocks/*{ResourceBlockId}*/Systems/*{ComputerSystemId}*/Storage/*{StorageId}*

/redfish/v1/ResourceBlocks/*{ResourceBlockId}*/Storage/*{StorageId}*

/redfish/v1/ResourceBlocks/*{ResourceBlockId}*/Systems/*{ComputerSystemId}*/Storage/*{StorageId}*

/redfish/v1/Systems/*{ComputerSystemId}*/Storage/*{StorageId}*

Drives [{	array		The set of drives attached to the storage controllers represented by this resource.
@odata.id }]	string	read-only	*Link to a Drive resource. See the Links section and the Drive schema for details.*
Links {	object		Contains references to other resources that are related to this resource.
Enclosures [{	array		An array of references to the chassis to which this storage subsystem is attached.
@odata.id }]	string	read-only	*Link to a Chassis resource. See the Links section and the Chassis schema for details.*
Oem { } }	object		See the OEM object definition in the Common properties section.
Redundancy [{	array		Redundancy information for the storage subsystem.
@odata.id }]	string	read-only	The unique identifier for a resource.
Status { }	object		This property describes the status and health of the resource and its children. *See the Status object for details on this property.*
StorageControllers [{	array		The set of storage controllers represented by this resource.
@odata.id *(v1.5+)*	string	read-only required	The unique identifier for a resource.
Actions *(v1.2+)* { }	object		The available actions for this resource.
Assembly *(v1.4+)* {	object		A reference to the Assembly resource associated with this Storage Controller. *See the Assembly schema for details on this property.*
@odata.id }	string	read-only	*Link to a Assembly resource. See the Links section and the Assembly schema for details.*
AssetTag *(v1.1+)*	string	read-write (null)	The user assigned asset tag for this storage controller.
CacheSummary *(v1.5+)* {	object		This object describes the cache memory of the storage controller in general detail.
PersistentCacheSizeMiB	integer (mebibytes)	read-only (null)	The portion of the cache memory that is persistent, measured in MiB.
Status { }	object		This property describes the status and health of the resource and its children. *See the Status object for details on this property.*
TotalCacheSizeMiB }	integer (mebibytes)	read-only required (null)	The total configured cache memory, measured in MiB.
ControllerRates *(v1.7+)* {	object		This object describes the various controller rates used for things like Volume Rebuild or Consistency Checks.

ConsistencyCheckRatePercent	integer	read-write (null)	The percentage of controller resources used for performing a data consistency check on volumes.
RebuildRatePercent	integer	read-write (null)	The percentage of controller resources used for rebuilding/repairing volumes.
TransformationRatePercent }	integer	read-write (null)	The percentage of controller resources used for transforming volumes from one configuration to another.
FirmwareVersion *(v1.1+)*	string	read-only (null)	The firmware version of this storage Controller.
Identifiers [{ }]	array (object)		The Durable names for the storage controller. This type describes any additional identifiers for a resource. *See the [Identifier object](#) for details on this property.*
Links *(v1.1+)* {	object		Contains references to other resources that are related to this resource.
Endpoints [{	array		An array of references to the endpoints that connect to this controller.
@odata.id }]	string	read-only	*Link to a Endpoint resource. See the Links section and the [Endpoint](#) schema for details.*
Oem { }	object		See the OEM object definition in the [Common properties](#) section.
PCIeFunctions *(v1.7+)* [{	array		An array of references to the PCIe Functions which the stroage controller produces.
@odata.id }]	string	read-only	*Link to a PCIeFunction resource. See the Links section and the [PCIeFunction](#) schema for details.*
StorageServices *(v1.4+)* [{	array		An array of references to the StorageServices that connect to this controller.
@odata.id }] }	string	read-only	The unique identifier for a resource.
Location *(v1.4+)* { }	object		The Location of the storage controller. *See the [Location object](#) for details on this property.*
Manufacturer *(v1.1+)*	string	read-only (null)	This is the manufacturer of this storage controller.
MemberId *(v1.1+)*	string	read-only required	This is the identifier for the member within the collection.
Model *(v1.1+)*	string	read-only (null)	This is the model number for the storage controller.
Name *(v1.3+)*	string	read-only (null)	The name of the Storage Controller.
Oem *(v1.1+)* { }	object		See the OEM object definition in the [Common properties](#) section.
PartNumber *(v1.1+)*	string	read-only (null)	The part number for this storage controller.
PCIeInterface *(v1.5+)* { }	object		The PCIe interface details for this controller. *See the [PCIeInterface object](#) (v1.3.0) for details on this property.*
Ports *(v1.7+)* {	object		This object describes the Ports that exist on the storage controller. *Contains a link to a resource.*
@odata.id }	string	read-only	*Link to Collection of [Port](#). See the Port schema for details.*
SerialNumber *(v1.1+)*	string	read-only	The serial number for this storage controller.

			(null)	
SKU *(v1.1+)*	string	read-only (null)	This is the SKU for this storage controller.
SpeedGbps *(v1.1+)*	number (Gbit/s)	read-only (null)	The maximum speed of the storage controller's device interface.
Status *(v1.1+)* { }	object		This property describes the status and health of the resource and its children. *See the Status object for details on this property.*
SupportedControllerProtocols [ ]	array (string (enum))	read-only	This represents the protocols by which this storage controller can be communicated to. *See SupportedControllerProtocols in Property Details, below, for the possible values of this property.*
SupportedDeviceProtocols [ ]	array (string (enum))	read-only	This represents the protocols which the storage controller can use to communicate with attached devices. *See SupportedDeviceProtocols in Property Details, below, for the possible values of this property.*
SupportedRAIDTypes [ ] }]	array (string (enum))	read-only (null)	This object describes the RAID Types supported by the storage controller. *See SupportedRAIDTypes in Property Details, below, for the possible values of this property.*
Volumes {	object		The set of volumes produced by the storage controllers represented by this resource.
@odata.id }	string	read-only	The unique identifier for a resource.

Actions

SetEncryptionKey

This action is used to set the encryption key for the storage subsystem.

URIs:

/redfish/v1/CompositionService/ResourceBlocks/*{ResourceBlockId}*/Storage/*{StorageId}*/Actions/Storage.SetEncryptionKey

/redfish/v1/CompositionService/ResourceBlocks/*{ResourceBlockId}*/Systems/*{ComputerSystemId}*/Storage/*{StorageId}*/Actions/Storage.SetEncryptionKey

/redfish/v1/ResourceBlocks/*{ResourceBlockId}*/Storage/*{StorageId}*/Actions/Storage.SetEncryptionKey

/redfish/v1/ResourceBlocks/*{ResourceBlockId}*/Systems/*{ComputerSystemId}*/Storage/*{StorageId}*/Actions/Storage.SetEncryptionKey

/redfish/v1/Systems/*{ComputerSystemId}*/Storage/*{StorageId}*/Actions/Storage.SetEncryptionKey

The following table shows the parameters for the action which are included in the POST body to the URI shown in the "target" property of the Action.

{			
EncryptionKey }	string	read-write required	The encryption key to set on the storage subsytem.

Property Details

SupportedControllerProtocols:

This represents the protocols by which this storage controller can be communicated to.

string	Description
AHCI	Advanced Host Controller Interface.
FC	Fibre Channel.
FCoE	Fibre Channel over Ethernet.
FCP	Fibre Channel Protocol for SCSI.

FICON	FIbre CONnection (FICON).
FTP	File Transfer Protocol.
HTTP	Hypertext Transport Protocol.
HTTPS	Secure Hypertext Transport Protocol.
I2C	Inter-Integrated Circuit Bus.
iSCSI	Internet SCSI.
iWARP	Internet Wide Area Remote Direct Memory Access Protocol.
NFSv3	Network File System version 3.
NFSv4	Network File System version 4.
NVMe	Non-Volatile Memory Express.
NVMeOverFabrics	NVMe over Fabrics.
OEM	OEM specific.
PCIe	PCI Express.
RoCE	RDMA over Converged Ethernet Protocol.
RoCEv2	RDMA over Converged Ethernet Protocol Version 2.
SAS	Serial Attached SCSI.
SATA	Serial AT Attachment.
SFTP	Secure File Transfer Protocol.
SMB	Server Message Block (aka CIFS Common Internet File System).
UHCI	Universal Host Controller Interface.
USB	Universal Serial Bus.

SupportedDeviceProtocols:

This represents the protocols which the storage controller can use to communicate with attached devices.

string	Description
AHCI	Advanced Host Controller Interface.
FC	Fibre Channel.
FCoE	Fibre Channel over Ethernet.
FCP	Fibre Channel Protocol for SCSI.
FICON	FIbre CONnection (FICON).
FTP	File Transfer Protocol.
HTTP	Hypertext Transport Protocol.
HTTPS	Secure Hypertext Transport Protocol.
I2C	Inter-Integrated Circuit Bus.
iSCSI	Internet SCSI.
iWARP	Internet Wide Area Remote Direct Memory Access Protocol.
NFSv3	Network File System version 3.
NFSv4	Network File System version 4.
NVMe	Non-Volatile Memory Express.

NVMeOverFabrics	NVMe over Fabrics.
OEM	OEM specific.
PCIe	PCI Express.
RoCE	RDMA over Converged Ethernet Protocol.
RoCEv2	RDMA over Converged Ethernet Protocol Version 2.
SAS	Serial Attached SCSI.
SATA	Serial AT Attachment.
SFTP	Secure File Transfer Protocol.
SMB	Server Message Block (aka CIFS Common Internet File System).
UHCI	Universal Host Controller Interface.
USB	Universal Serial Bus.

SupportedRAIDTypes:

This object describes the RAID Types supported by the storage controller.

string	Description
RAID0	A placement policy where consecutive logical blocks of data are uniformly distributed across a set of independent storage devices without offering any form of redundancy.
RAID00	A placement policy that creates a RAID 0 stripe set over two or more RAID 0 sets.
RAID01	A data placement policy that creates a mirrored device (RAID 1) over a set of striped devices (RAID 0).
RAID1	A placement policy where each logical block of data is stored on more than one independent storage device.
RAID10	A placement policy that creates a striped device (RAID 0) over a set of mirrored devices (RAID 1).
RAID10E	A placement policy that uses a RAID 0 stripe set over two or more RAID 10 sets.
RAID10Triple	A placement policy that uses a striped device (RAID 0) over a set of triple mirrored devices (RAID 1Triple).
RAID1E	A placement policy that uses a form of mirroring implemented over a set of independent storage devices where logical blocks are duplicated on a pair of independent storage devices so that data is uniformly distributed across the storage devices.
RAID1Triple	A placement policy where each logical block of data is mirrored three times across a set of three independent storage devices.
RAID3	A placement policy using parity-based protection where logical bytes of data are uniformly distributed across a set of independent storage devices and where the parity is stored on a dedicated independent storage device.
RAID4	A placement policy using parity-based protection where logical blocks of data are uniformly distributed across a set of independent storage devices and where the parity is stored on a dedicated independent storage device.
RAID5	A placement policy using parity-based protection for storing stripes of 'n' logical blocks of data and one logical block of parity across a set of 'n+1' independent storage devices where the parity and data blocks are interleaved across the storage devices.
RAID50	A placement policy that uses a RAID 0 stripe set over two or more RAID 5 sets of independent storage devices.
RAID6	A placement policy using parity-based protection for storing stripes of 'n' logical blocks of data and two logical blocks of independent parity across a set of 'n+2' independent storage devices where the parity and data blocks are interleaved across the storage devices.
RAID60	A placement policy that uses a RAID 0 stripe set over two or more RAID 6 sets of independent storage devices.
RAID6TP	A placement policy that uses parity-based protection for storing stripes of 'n' logical blocks of data and three logical blocks of independent parity across a set of 'n+3' independent storage devices where the parity and data blocks are interleaved across the storage devices. This is commonly referred to as Triple Parity RAID.

		Data stored using this form of RAID is able to survive any three independent storage device failures without data loss.

Example Response

```json
{
    "@odata.type": "#Storage.v1_5_0.Storage",
    "Id": "1",
    "Name": "Local Storage Controller",
    "Description": "Integrated RAID Controller",
    "Status": {
        "State": "Enabled",
        "Health": "OK",
        "HealthRollup": "OK"
    },
    "StorageControllers": [
        {
            "@odata.id": "/redfish/v1/Systems/437XR1138R2/Storage/1#/StorageControllers/0",
            "MemberId": "0",
            "Name": "Contoso Integrated RAID",
            "Status": {
                "State": "Enabled",
                "Health": "OK"
            },
            "Identifiers": [
                {
                    "DurableNameFormat": "NAA",
                    "DurableName": "345C59DBD970859C"
                }
            ],
            "Manufacturer": "Contoso",
            "Model": "12Gbs Integrated RAID",
            "SerialNumber": "2M220100SL",
            "PartNumber": "CT18754",
            "SpeedGbps": 12,
            "FirmwareVersion": "1.0.0.7",
            "SupportedControllerProtocols": [
                "PCIe"
            ],
            "SupportedDeviceProtocols": [
                "SAS",
                "SATA"
            ]
        }
    ],
    "Drives": [
        {
            "@odata.id": "/redfish/v1/Systems/437XR1138R2/Storage/1/Drives/35D38F11ACEF7BD3"
        },
        {
            "@odata.id": "/redfish/v1/Systems/437XR1138R2/Storage/1/Drives/3F5A8C54207B7233"
        },
        {
            "@odata.id": "/redfish/v1/Systems/437XR1138R2/Storage/1/Drives/32ADF365C6C1B7BD"
        },
        {
            "@odata.id": "/redfish/v1/Systems/437XR1138R2/Storage/1/Drives/3D58ECBC375FD9F2"
        }
    ],
    "Volumes": {
        "@odata.id": "/redfish/v1/Systems/437XR1138R2/Storage/1/Volumes"
    },
    "Links": {},
    "Actions": {
        "#Storage.SetEncryptionKey": {
            "target": "/redfish/v1/Systems/437XR1138R2/Storage/1/Actions/Storage.SetEncryptionKey"
        }
    },
    "@odata.context": "/redfish/v1/$metadata#Storage.Storage",
    "@odata.id": "/redfish/v1/Systems/437XR1138R2/Storage/1"
}
```

Switch 1.1.2

v1.1	v1.0
2017.3	2016.2

Switch contains properties describing a simple fabric switch.

URIs:

/redfish/v1/Fabrics/*{FabricId}*/Switches/*{SwitchId}*

AssetTag	string	read-write (null)	The user assigned asset tag for this switch.
DomainID	integer	read-only (null)	The Domain ID for this switch.
IndicatorLED	string (enum)	read-write (null)	The state of the indicator LED, used to identify the switch. See *IndicatorLED* in Property Details, below, for the possible values of this property.
IsManaged	boolean	read-write	This indicates whether the switch is in a managed or unmanaged state.

			(null)	
Links {	object			Contains references to other resources that are related to this resource.
Chassis {	object			A reference to the chassis which contains this switch. *See the [Chassis](#) schema for details on this property.*
@odata.id }	string	read-only		*Link to a Chassis resource. See the Links section and the [Chassis](#) schema for details.*
ManagedBy [{	array			An array of references to the managers that manage this switch.
@odata.id }]	string	read-only		*Link to a Manager resource. See the Links section and the [Manager](#) schema for details.*
Oem { } }	object			See the OEM object definition in the [Common properties](#) section.
Location *(v1.1+)* { }	object			The Location of the switch. *See the [Location object](#) for details on this property.*
LogServices {	object			A reference to the collection of Log Services associated with this system. *Contains a link to a resource.*
@odata.id }	string	read-only		*Link to Collection of [LogService](#). See the LogService schema for details.*
Manufacturer	string	read-only (null)		This is the manufacturer of this switch.
Model	string	read-only (null)		The product model number of this switch.
PartNumber	string	read-only (null)		The part number for this switch.
Ports {	object			A collection of references to the ports for this switch. *Contains a link to a resource.*
@odata.id }	string	read-only		*Link to Collection of [Port](#). See the Port schema for details.*
PowerState	string (enum)	read-only (null)		This is the current power state of the switch. *See [PowerState](#) in Property Details, below, for the possible values of this property.*
Redundancy [{	array			Redundancy information for the switches.
@odata.id }]	string	read-only		The unique identifier for a resource.
SerialNumber	string	read-only (null)		The serial number for this switch.
SKU	string	read-only (null)		This is the SKU for this switch.
Status { }	object			This property describes the status and health of the resource and its children. *See the [Status object](#) for details on this property.*
SwitchType	string (enum)	read-only (null)		The protocol being sent over this switch. *See [SwitchType](#) in Property Details, below, for the possible values of this property.*
TotalSwitchWidth	integer	read-only (null)		The total number of lanes, phys, or other physical transport links that this switch contains.

Actions

Reset

This action is used to reset this switch.

URIs:

/redfish/v1/Fabrics/*{FabricId}*/Switches/*{SwitchId}*/Actions/Switch.Reset

The following table shows the parameters for the action which are included in the POST body to the URI shown in the "target" property of the Action.

{				
ResetType	string	read-write		The type of reset to be performed.

| } | (enum) | | *See [ResetType](#) in Property Details, below, for the possible values of this property.* |

Property Details

IndicatorLED:

The state of the indicator LED, used to identify the switch.

string	Description
Blinking	The Indicator LED is blinking.
Lit	The Indicator LED is lit.
Off	The Indicator LED is off.

PowerState:

This is the current power state of the switch.

string	Description
Off	The state is powered Off.
On	The state is powered On.
PoweringOff	A temporary state between On and Off.
PoweringOn	A temporary state between Off and On.

ResetType:

The type of reset to be performed.

string	Description
ForceOff	Turn the unit off immediately (non-graceful shutdown).
ForceOn	Turn the unit on immediately.
ForceRestart	Perform an immediate (non-graceful) shutdown, followed by a restart.
GracefulRestart	Perform a graceful shutdown followed by a restart of the system.
GracefulShutdown	Perform a graceful shutdown and power off.
Nmi	Generate a Diagnostic Interrupt (usually an NMI on x86 systems) to cease normal operations, perform diagnostic actions and typically halt the system.
On	Turn the unit on.
PowerCycle	Perform a power cycle of the unit.
PushPowerButton	Simulate the pressing of the physical power button on this unit.

SwitchType:

The protocol being sent over this switch.

string	Description
AHCI	Advanced Host Controller Interface.
FC	Fibre Channel.
FCoE	Fibre Channel over Ethernet.
FCP	Fibre Channel Protocol for SCSI.
FICON	FIbre CONnection (FICON).
FTP	File Transfer Protocol.
HTTP	Hypertext Transport Protocol.

HTTPS	Secure Hypertext Transport Protocol.
I2C	Inter-Integrated Circuit Bus.
iSCSI	Internet SCSI.
iWARP	Internet Wide Area Remote Direct Memory Access Protocol.
NFSv3	Network File System version 3.
NFSv4	Network File System version 4.
NVMe	Non-Volatile Memory Express.
NVMeOverFabrics	NVMe over Fabrics.
OEM	OEM specific.
PCIe	PCI Express.
RoCE	RDMA over Converged Ethernet Protocol.
RoCEv2	RDMA over Converged Ethernet Protocol Version 2.
SAS	Serial Attached SCSI.
SATA	Serial AT Attachment.
SFTP	Secure File Transfer Protocol.
SMB	Server Message Block (aka CIFS Common Internet File System).
UHCI	Universal Host Controller Interface.
USB	Universal Serial Bus.

Example Response

```json
{
    "@odata.type": "#Switch.v1_1_1.Switch",
    "Id": "Switch1",
    "Name": "SAS Switch",
    "SwitchType": "SAS",
    "Manufacturer": "Contoso",
    "Model": "SAS1000",
    "SKU": "67B",
    "SerialNumber": "2M220100SL",
    "PartNumber": "76-88883",
    "Ports": {
        "@odata.id": "/redfish/v1/Fabrics/SAS/Switches/Switch1/Ports"
    },
    "Redundancy": [
        {
            "@odata.id": "/redfish/v1/Fabrics/SAS/Switches/Switch1#/Redundancy/0",
            "MemberId": "Redundancy",
            "Mode": "Sharing",
            "MaxNumSupported": 2,
            "MinNumNeeded": 1,
            "Status": {
                "State": "Enabled",
                "Health": "OK"
            },
            "RedundancySet": [
                {
                    "@odata.id": "/redfish/v1/Fabrics/SAS/Switches/Switch1"
                },
                {
                    "@odata.id": "/redfish/v1/Fabrics/SAS/Switches/Switch2"
                }
            ]
        }
    ],
    "Links": {
        "Chassis": {
            "@odata.id": "/redfish/v1/Chassis/Switch1"
        },
        "ManagedBy": [
            {
                "@odata.id": "/redfish/v1/Managers/Switch1"
            },
            {
                "@odata.id": "/redfish/v1/Managers/Switch2"
            }
        ],
        "Oem": {}
    },
    "Actions": {
        "#Switch.Reset": {
            "target": "/redfish/v1/Fabrics/SAS/Switches/Switch1/Actions/Switch.Reset",
            "ResetType@Redfish.AllowableValues": [
                "ForceRestart",
                "GracefulRestart"
            ]
```

```
        },
        "Oem": {}
    },
    "Oem": {},
    "@odata.context": "/redfish/v1/$metadata#Switch.Switch",
    "@odata.id": "/redfish/v1/Fabrics/SAS/Switches/Switch1"
}
```

Task 1.4.1

v1.4	v1.3	v1.2	v1.1	v1.0
2018.3	2018.2	2018.1	2017.1	1.0

This resource contains information about a specific Task scheduled by or being executed by a Redfish service's Task Service. Tasks are used to represent operations that take more time than a client typically wants to wait.

URIs:

/redfish/v1/TaskService/Tasks/*{TaskId}*

EndTime	string	read-only	The date-time stamp that the task was last completed.
HidePayload *(v1.3+)*	boolean	read-only	Indicates that the contents of the Payload should be hidden from view after the Task has been created. When set to True, the Payload object will not be returned on GET.
Messages [{ }]	array (object)		This is an array of messages associated with the task. This type describes a Message returned by the Redfish service. *See the Message object for details on this property.*
Payload *(v1.3+)* {	object		The HTTP and JSON payload details for this task.
HttpHeaders [ ]	array (string)	read-only	This represents the HTTP headers used in the operation of this Task.
HttpOperation	string	read-only	The HTTP operation to perform to execute this Task.
JsonBody	string	read-only	This property contains the JSON payload to use in the execution of this Task.
TargetUri }	string	read-only	The URI of the target for this task.
PercentComplete *(v1.4+)*	integer (%)	read-only (null)	The completion percentage of this Task.
StartTime	string	read-only	The date-time stamp that the task was last started.
TaskMonitor *(v1.2+)*	string	read-only	The URI of the Task Monitor for this task.
TaskState	string (enum)	read-only	The state of the task. *See TaskState in Property Details, below, for the possible values of this property.*
TaskStatus	string (enum)	read-only	This is the completion status of the task. *See TaskStatus in Property Details, below, for the possible values of this property.*

Property Details

TaskState:

The state of the task.

string	Description
Cancelled *(v1.2+)*	Task has been cancelled by an operator or internal process.
Cancelling *(v1.2+)*	Task is in the process of being cancelled.
Completed	Task has completed.
Exception	Task has stopped due to an exception condition.
Interrupted	Task has been interrupted.

Killed (deprecated v1.2)	Task was terminated. *Deprecated v1.2+. This value has been deprecated and is being replaced by the value Cancelled which has more determinate semantics.*
New	A new task.
Pending	Task is pending and has not started.
Running	Task is running normally.
Service	Task is running as a service.
Starting	Task is starting.
Stopping	Task is in the process of stopping.
Suspended	Task has been suspended.

TaskStatus:

This is the completion status of the task.

string	Description
Critical	A critical condition exists that requires immediate attention.
OK	Normal.
Warning	A condition exists that requires attention.

Example Response

```
{
    "@odata.type": "#Task.v1_3_0.Task",
    "Id": "545",
    "Name": "Task 545",
    "TaskMonitor": "/taskmon/545",
    "TaskState": "Completed",
    "StartTime": "2012-03-07T14:44+06:00",
    "EndTime": "2012-03-07T14:45+06:00",
    "TaskStatus": "OK",
    "Messages": [
        {
            "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"
        }
    ],
    "@odata.context": "/redfish/v1/$metadata#Task.Task",
    "@odata.id": "/redfish/v1/TaskService/Tasks/545"
}
```

TaskService 1.1.3

v1.1	v1.0
2017.1	1.0

The Task Service of a Redfish service allows for the management of long-duration operations. It represents the properties for the Task Service itself and has links to the actual collection of Task resources.

URIs:

/redfish/v1/TaskService

CompletedTaskOverWritePolicy	string (enum)	read-only	Overwrite policy of completed tasks. See *CompletedTaskOverWritePolicy in Property Details, below, for the possible values of this property.*
DateTime	string	read-only (null)	The current DateTime (with offset) setting that the task service is using.
LifeCycleEventOnTaskStateChange	boolean	read-only	Send an Event upon Task State Change.

ServiceEnabled	boolean	read-write (null)	This indicates whether this service is enabled.
Status { }	object		This property describes the status and health of the resource and its children. *See the [Status object](#) for details on this property.*
Tasks {	object		References to the Tasks collection. *Contains a link to a resource.*
@odata.id **}**	string	read-only	*Link to Collection of [Task](#). See the Task schema for details.*

Property Details

CompletedTaskOverWritePolicy:

Overwrite policy of completed tasks.

string	Description
Manual	Completed tasks are not automatically overwritten.
Oldest	Oldest completed tasks are overwritten.

Example Response

```
{
    "@odata.type": "#TaskService.v1_1_2.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": {},
    "@odata.context": "/redfish/v1/$metadata#TaskService.TaskService",
    "@odata.id": "/redfish/v1/TaskService"
}
```

TelemetryService 1.1.1

v1.1	v1.0
2018.3	2018.2

This is the schema definition for the Metrics Service. It represents the properties for the service itself and has links to collections of metric definitions and metric report definitions.

URIs:

/redfish/v1/TelemetryService

LogService {	object		This is a reference to a Log Service used by the Telemetry Service. *See the [LogService](#) schema for details on this property.*
@odata.id **}**	string	read-only	*Link to a LogService resource. See the Links section and the [LogService](#) schema for details.*
MaxReports	integer	read-only (null)	The maximum number of metric reports supported by this service.
MetricDefinitions {	object		A link to the collection of Metric Definitions. *Contains a link to a resource.*
@odata.id **}**	string	read-only	*Link to Collection of [MetricDefinition](#). See the MetricDefinition schema for details.*
MetricReportDefinitions {	object		A link to the collection of Metric Report Definitions. *Contains a link to a resource.*

@odata.id }	string	read-only	*Link to Collection of [MetricReportDefinition](). See the MetricReportDefinition schema for details.*
MetricReports {	object		A link to the collection of Metric Reports. *Contains a link to a resource.*
@odata.id }	string	read-only	*Link to Collection of [MetricReport](). See the MetricReport schema for details.*
MinCollectionInterval	string	read-only (null)	The minimum time interval between collections supported by this service.
Status { }	object		This property describes the status and health of the resource and its children. *See the [Status object]() for details on this property.*
SupportedCollectionFunctions [ ]	array (string (enum))	read-write (null)	The functions that can be performed over each metric. An operation to perform over the sample. *See [SupportedCollectionFunctions]() in Property Details, below, for the possible values of this property.*
Triggers {	object		A link to the collection of Triggers, which apply to metrics. *Contains a link to a resource.*
@odata.id }	string	read-only	*Link to Collection of [Triggers](). See the Triggers schema for details.*

Actions

SubmitTestMetricReport

This action is used to generate a metric report.

URIs:

/redfish/v1/TelemetryService/Actions/TelemetryService.SubmitTestMetricReport

The following table shows the parameters for the action which are included in the POST body to the URI shown in the "target" property of the Action.

{			
GeneratedMetricReportValues [{	array	required	The content of the MetricReportValues in the generated metric report.
MetricDefinition *(v1.1+)* **{**	object		A link to the Metric Definition. *See the [MetricDefinition]() schema for details on this property.*
@odata.id }	string	read-only	*Link to a MetricDefinition resource. See the Links section and the [MetricDefinition]() schema for details.*
MetricId *(v1.1+)*	string	read-only (null)	The metric definitions identifier for this metric.
MetricProperty *(v1.1+)*	string	read-only (null)	The URI for the property from which this metric is derived.
MetricValue *(v1.1+)*	string	read-only (null)	The value identifies this resource.
Timestamp *(v1.1+)* }]	string	read-only (null)	The time when the value of the metric is obtained. A management application may establish a time series of metric data by retrieving the instances of metric value and sorting them according to their Timestamp.
MetricReportName	string	read-write required	The Name property of the metric report in generated metric report.
MetricReportValues }	string	read-write	The content of MetricReportValues array in generated metric report.

Property Details

SupportedCollectionFunctions:

The functions that can be performed over each metric. An operation to perform over the sample.

string	Description
Average	An averaging function.
Maximum	A maximum function.
Minimum	A minimum function.
Summation	A summation function.

Example Response

```
{
    "@odata.type": "#TelemetryService.v1_0_0.TelemetryService",
    "Id": "TelemetryService",
    "Name": "Telemetry Service",
    "Status": {
        "State": "Enabled",
        "Health": "OK"
    },
    "SupportedCollectionFunctions": [
        "Average",
        "Minimum",
        "Maximum"
    ],
    "MetricDefinitions": {
        "@odata.id": "/redfish/v1/TelemetryService/MetricDefinitions"
    },
    "MetricReportDefinitions": {
        "@odata.id": "/redfish/v1/TelemetryService/MetricReportDefinitions"
    },
    "MetricReports": {
        "@odata.id": "/redfish/v1/TelemetryService/MetricReports"
    },
    "Triggers": {
        "@odata.id": "/redfish/v1/TelemetryService/Triggers"
    },
    "LogService": {
        "@odata.id": "/redfish/v1/Managers/1/LogServices/Log1"
    },
    "@odata.context": "/redfish/v1/$metadata#TelemetryService",
    "@odata.id": "/redfish/v1/TelemetryService"
}
```

Thermal 1.5.2

v1.5	v1.4	v1.3	v1.2	v1.1	v1.0
2018.2	2017.3	2017.1	2016.3	2016.1	1.0

This is the schema definition for the Thermal properties. It represents the properties for Temperature and Cooling.

URIs:

/redfish/v1/Chassis/*{ChassisId}*/Thermal

Fans [{	array		This is the definition for fans.
@odata.id *(v1.5+)*	string	read-only required	The unique identifier for a resource.
Actions *(v1.3+)* { }	object		The available actions for this resource.
Assembly *(v1.4+)* {	object		A reference to the Assembly resource associated with this fan. *See the Assembly schema for details on this property.*
@odata.id }	string	read-only	*Link to a Assembly resource. See the Links section and the Assembly schema for details.*
FanName *(deprecated v1.2)*	string	read-only (null)	Name of the fan. *Deprecated v1.2+. This property has been Deprecated in favor of Thermal.v1_1_0.Thermal.Fan.Name*
HotPluggable *(v1.4+)*	boolean	read-only (null)	Indicates if this device can be inserted or removed while the equipment is in operation.
IndicatorLED *(v1.2+)*	string (enum)	read-write (null)	The state of the indicator LED, used to identify this Fan. *See IndicatorLED in Property Details, below, for the*

			possible values of this property.
Location *(v1.4+)* { }	object		The Location of the fan. See the *Location object* for details on this property.
LowerThresholdCritical	integer	read-only (null)	Below normal range but not yet fatal.
LowerThresholdFatal	integer	read-only (null)	Below normal range and is fatal.
LowerThresholdNonCritical	integer	read-only (null)	Below normal range.
Manufacturer *(v1.2+)*	string	read-only (null)	This is the manufacturer of this Fan.
MaxReadingRange	integer	read-only (null)	Maximum value for Reading.
MemberId	string	read-only required	This is the identifier for the member within the collection.
MinReadingRange	integer	read-only (null)	Minimum value for Reading.
Model *(v1.2+)*	string	read-only (null)	The model number for this Fan.
Name *(v1.1+)*	string	read-only (null)	Name of the fan.
Oem { }	object		See the OEM object definition in the *Common properties* section.
PartNumber *(v1.2+)*	string	read-only (null)	The part number for this Fan.
PhysicalContext	string (enum)	read-only	Describes the area or device associated with this fan. See *PhysicalContext* in Property Details, below, for the possible values of this property.
Reading	integer	read-only (null)	Current fan speed.
ReadingUnits *(v1.1+)*	string (enum)	read-only (null)	Units in which the reading and thresholds are measured. See *ReadingUnits* in Property Details, below, for the possible values of this property.
Redundancy [{	array		A reference to a set of Redundancy entities that provide redundant services for this resource. See the *Redundancy* object definition in the Common objects section.
@odata.id }]	string	read-only	The unique identifier for a resource.
RelatedItem [{	array		The ID(s) of the resources serviced with this fan.
@odata.id }]	string	read-only	The unique identifier for a resource.
SensorNumber *(v1.5+)*	integer	read-only (null)	A numerical identifier to represent the fan speed sensor.
SerialNumber *(v1.2+)*	string	read-only (null)	The serial number for this Fan.
SparePartNumber *(v1.2+)*	string	read-only (null)	The spare part number for this Fan.
Status { }	object		This property describes the status and health of the resource and its children. See the *Status object* for details on this property.

UpperThresholdCritical	integer	read-only (null)	Above normal range but not yet fatal.
UpperThresholdFatal	integer	read-only (null)	Above normal range and is fatal.
UpperThresholdNonCritical }]	integer	read-only (null)	Above normal range.
Redundancy [{	array		This structure is used to show redundancy for fans. The Component ids will reference the members of the redundancy groups.
@odata.id }]	string	read-only	The unique identifier for a resource.
Status { }	object		This property describes the status and health of the resource and its children. See the *Status object* for details on this property.
Temperatures [{	array		This is the definition for temperature sensors.
@odata.id *(v1.5+)*	string	read-only required	The unique identifier for a resource.
Actions *(v1.3+)* { }	object		The available actions for this resource.
AdjustedMaxAllowableOperatingValue *(v1.4+)*	integer (Celsius)	read-only (null)	Adjusted maximum allowable operating temperature for this equipment based on the current environmental conditions present.
AdjustedMinAllowableOperatingValue *(v1.4+)*	integer (Celsius)	read-only (null)	Adjusted minimum allowable operating temperature for this equipment based on the current environmental conditions present.
DeltaPhysicalContext *(v1.4+)*	string (enum)	read-only	Describes the area or device to which the DeltaReadingCelsius temperature measurement applies, relative to PhysicalContext. See *DeltaPhysicalContext* in Property Details, below, for the possible values of this property.
DeltaReadingCelsius *(v1.4+)*	number (Celsius)	read-only (null)	Delta Temperature reading.
LowerThresholdCritical	number (Celsius)	read-only (null)	Below normal range but not yet fatal.
LowerThresholdFatal	number (Celsius)	read-only (null)	Below normal range and is fatal.
LowerThresholdNonCritical	number (Celsius)	read-only (null)	Below normal range.
MaxAllowableOperatingValue *(v1.4+)*	integer (Celsius)	read-only (null)	Maximum allowable operating temperature for this equipment.
MaxReadingRangeTemp	number (Celsius)	read-only (null)	Maximum value for ReadingCelsius.
MemberId	string	read-only required	This is the identifier for the member within the collection.
MinAllowableOperatingValue *(v1.4+)*	integer (Celsius)	read-only (null)	Minimum allowable operating temperature for this equipment.
MinReadingRangeTemp	number (Celsius)	read-only (null)	Minimum value for ReadingCelsius.
Name	string	read-only (null)	Temperature sensor name.
Oem { }	object		See the OEM object definition in the *Common properties* section.

PhysicalContext	string (enum)	read-only	Describes the area or device to which this temperature measurement applies. *See PhysicalContext in Property Details, below, for the possible values of this property.*
ReadingCelsius	number (Celsius)	read-only (null)	Temperature.
RelatedItem [{	array		Describes the areas or devices to which this temperature measurement applies.
@odata.id }]	string	read-only	The unique identifier for a resource.
SensorNumber	integer	read-only (null)	A numerical identifier to represent the temperature sensor.
Status { }	object		This property describes the status and health of the resource and its children. *See the Status object for details on this property.*
UpperThresholdCritical	number (Celsius)	read-only (null)	Above normal range but not yet fatal.
UpperThresholdFatal	number (Celsius)	read-only (null)	Above normal range and is fatal.
UpperThresholdNonCritical }]	number (Celsius)	read-only (null)	Above normal range.

Property Details

DeltaPhysicalContext:

Describes the area or device to which the DeltaReadingCelsius temperature measurement applies, relative to PhysicalContext.

string	Description
Accelerator	An Accelerator.
ACInput	An AC Input.
ACMaintenanceBypassInput	An AC Maintenance Bypass Input.
ACOutput	An AC Output.
ACStaticBypassInput	An AC Static Bypass Input.
ACUtilityInput	An AC Utility Input.
ASIC	An ASIC device, such as networking chip or a chipset component.
Back	The back of the chassis.
Backplane	A backplane within the chassis.
Chassis	The entire chassis.
ComputeBay	Within a compute bay.
CoolingSubsystem	The entire cooling (air and liquid) subsystem.
CPU	A Processor (CPU).
CPUSubsystem	The entire Processor (CPU) subsystem.
DCBus	A DC Bus.
Exhaust	The air exhaust point(s) or region of the chassis.
ExpansionBay	Within an expansion bay.
Fan	A fan.

FPGA	A Field Programmable Gate Array (FPGA).
Front	The front of the chassis.
GPU	A Graphics Processor (GPU).
GPUSubsystem	The entire Graphics Processor (GPU) subsystem.
Intake	The air intake point(s) or region of the chassis.
LiquidInlet	The liquid inlet point of the chassis.
LiquidOutlet	The liquid outlet point of the chassis.
Lower	The lower portion of the chassis.
Memory	A memory device.
MemorySubsystem	The entire Memory subsystem.
Motor	A motor.
NetworkBay	Within a networking bay.
NetworkingDevice	A networking device.
PowerSubsystem	The entire power subsystem.
PowerSupply	A power supply.
PowerSupplyBay	Within a power supply bay.
Rectifier	A rectifier device.
Room	The room.
StorageBay	Within a storage bay.
StorageDevice	A storage device.
SystemBoard	The system board (PCB).
Transformer	A Transformer.
Upper	The upper portion of the chassis.
VoltageRegulator	A voltage regulator device.

IndicatorLED:

The state of the indicator LED, used to identify this Fan.

string	Description
Blinking	The Indicator LED is blinking.
Lit	The Indicator LED is lit.
Off	The Indicator LED is off.

PhysicalContext:

Describes the area or device to which this temperature measurement applies.

string	Description
Accelerator	An Accelerator.
ACInput	An AC Input.
ACMaintenanceBypassInput	An AC Maintenance Bypass Input.
ACOutput	An AC Output.
ACStaticBypassInput	An AC Static Bypass Input.

ACUtilityInput	An AC Utility Input.
ASIC	An ASIC device, such as networking chip or a chipset component.
Back	The back of the chassis.
Backplane	A backplane within the chassis.
Chassis	The entire chassis.
ComputeBay	Within a compute bay.
CoolingSubsystem	The entire cooling (air and liquid) subsystem.
CPU	A Processor (CPU).
CPUSubsystem	The entire Processor (CPU) subsystem.
DCBus	A DC Bus.
Exhaust	The air exhaust point(s) or region of the chassis.
ExpansionBay	Within an expansion bay.
Fan	A fan.
FPGA	A Field Programmable Gate Array (FPGA).
Front	The front of the chassis.
GPU	A Graphics Processor (GPU).
GPUSubsystem	The entire Graphics Processor (GPU) subsystem.
Intake	The air intake point(s) or region of the chassis.
LiquidInlet	The liquid inlet point of the chassis.
LiquidOutlet	The liquid outlet point of the chassis.
Lower	The lower portion of the chassis.
Memory	A memory device.
MemorySubsystem	The entire Memory subsystem.
Motor	A motor.
NetworkBay	Within a networking bay.
NetworkingDevice	A networking device.
PowerSubsystem	The entire power subsystem.
PowerSupply	A power supply.
PowerSupplyBay	Within a power supply bay.
Rectifier	A rectifier device.
Room	The room.
StorageBay	Within a storage bay.
StorageDevice	A storage device.
SystemBoard	The system board (PCB).
Transformer	A Transformer.
Upper	The upper portion of the chassis.
VoltageRegulator	A voltage regulator device.

ReadingUnits:

Units in which the reading and thresholds are measured.

string	Description
Percent	Indicates that the fan reading and thresholds are measured in percentage.
RPM	Indicates that the fan reading and thresholds are measured in rotations per minute.

Example Response

```
{
    "@odata.type": "#Thermal.v1_5_0.Thermal",
    "Id": "Thermal",
    "Name": "Thermal",
    "Temperatures": [
        {
            "@odata.id": "/redfish/v1/Chassis/1U/Thermal#/Temperatures/0",
            "MemberId": "0",
            "Name": "CPU1 Temp",
            "SensorNumber": 5,
            "Status": {
                "State": "Enabled",
                "Health": "OK"
            },
            "ReadingCelsius": 41,
            "UpperThresholdNonCritical": 42,
            "UpperThresholdCritical": 45,
            "UpperThresholdFatal": 48,
            "MinReadingRangeTemp": 0,
            "MaxReadingRangeTemp": 60,
            "PhysicalContext": "CPU",
            "RelatedItem": [
                {
                    "@odata.id": "/redfish/v1/Systems/437XR1138R2/Processors/CPU1"
                }
            ]
        },
        {
            "@odata.id": "/redfish/v1/Chassis/1U/Thermal#/Temperatures/1",
            "MemberId": "1",
            "Name": "CPU2 Temp",
            "SensorNumber": 6,
            "Status": {
                "State": "Disabled"
            },
            "UpperThresholdNonCritical": 42,
            "UpperThresholdCritical": 45,
            "UpperThresholdFatal": 48,
            "MinReadingRangeTemp": 0,
            "MaxReadingRangeTemp": 60,
            "PhysicalContext": "CPU",
            "RelatedItem": [
                {
                    "@odata.id": "/redfish/v1/Systems/437XR1138R2/Processors/CPU2"
                }
            ]
        },
        {
            "@odata.id": "/redfish/v1/Chassis/1U/Thermal#/Temperatures/2",
            "MemberId": "2",
            "Name": "Chassis Intake Temp",
            "SensorNumber": 9,
            "Status": {
                "State": "Enabled",
                "Health": "OK"
            },
            "ReadingCelsius": 25,
            "UpperThresholdNonCritical": 30,
            "UpperThresholdCritical": 40,
            "UpperThresholdFatal": 50,
            "LowerThresholdNonCritical": 10,
            "LowerThresholdCritical": 5,
            "LowerThresholdFatal": 0,
            "MinReadingRangeTemp": 0,
            "MaxReadingRangeTemp": 60,
            "PhysicalContext": "Intake",
            "RelatedItem": [
                {
                    "@odata.id": "/redfish/v1/Chassis/1U"
                },
                {
                    "@odata.id": "/redfish/v1/Systems/437XR1138R2"
                }
            ]
        }
    ],
    "Fans": [
        {
            "@odata.id": "/redfish/v1/Chassis/1U/Thermal#/Fans/0",
            "MemberId": "0",
            "Name": "BaseBoard System Fan",
            "PhysicalContext": "Backplane",
            "Status": {
                "State": "Enabled",
                "Health": "OK"
            },
            "Reading": 2100,
            "ReadingUnits": "RPM",
            "LowerThresholdFatal": 0,
            "MinReadingRange": 0,
            "MaxReadingRange": 5000,
            "Redundancy": [
                {
                    "@odata.id": "/redfish/v1/Chassis/1U/Thermal#/Redundancy/0"
                }
```

```
        ],
        "RelatedItem": [
            {
                "@odata.id": "/redfish/v1/Systems/437XR1138R2"
            },
            {
                "@odata.id": "/redfish/v1/Chassis/1U"
            }
        ]
    },
    {
        "@odata.id": "/redfish/v1/Chassis/1U/Thermal#/Fans/1",
        "MemberId": "1",
        "Name": "BaseBoard System Fan Backup",
        "PhysicalContext": "Backplane",
        "Status": {
            "State": "Enabled",
            "Health": "OK"
        },
        "Reading": 2050,
        "ReadingUnits": "RPM",
        "LowerThresholdFatal": 0,
        "MinReadingRange": 0,
        "MaxReadingRange": 5000,
        "Redundancy": [
            {
                "@odata.id": "/redfish/v1/Chassis/1U/Thermal#/Redundancy/0"
            }
        ],
        "RelatedItem": [
            {
                "@odata.id": "/redfish/v1/Systems/437XR1138R2"
            },
            {
                "@odata.id": "/redfish/v1/Chassis/1U"
            }
        ]
    }
],
"Redundancy": [
    {
        "@odata.id": "/redfish/v1/Chassis/1U/Thermal#/Redundancy/0",
        "MemberId": "0",
        "Name": "BaseBoard System Fans",
        "RedundancySet": [
            {
                "@odata.id": "/redfish/v1/Chassis/1U/Thermal#/Fans/0"
            },
            {
                "@odata.id": "/redfish/v1/Chassis/1U/Thermal#/Fans/1"
            }
        ],
        "Mode": "N+m",
        "Status": {
            "State": "Enabled",
            "Health": "OK"
        },
        "MinNumNeeded": 1,
        "MaxNumSupported": 2
    }
],
"@odata.context": "/redfish/v1/$metadata#Thermal.Thermal",
"@odata.id": "/redfish/v1/Chassis/1U/Thermal"
}
```

Triggers 1.1.0

v1.1	v1.0
2019.1	2018.2

Triggers which apply to a list of metrics.

URIs:

/redfish/v1/TelemetryService/Triggers/*{TriggersId}*

DiscreteTriggerCondition	string (enum)	read-only (null)	Specifies the conditions when a discrete metric triggers. *See DiscreteTriggerCondition in Property Details, below, for the possible values of this property.*
DiscreteTriggers [{	array		List of discrete triggers.
DwellTime	string	read-write (null)	This time the trigger occurance persists before a trigger event has occurred.
Name	string	read-only (null)	The name of trigger.
Severity	string (enum)	read-write (null)	This property contains the value of the Severity property in the Event message. *See Severity in Property Details, below, for the possible values of this property.*
Value	string	read-write	The value of the discrete metric that constitutes a trigger occurance.

}]		(null)	
EventTriggers *(v1.1+)* [ ]	array (string, null)	read-write	A list of MessageIds that specify when a trigger occurs based on an event.
Links *(v1.1+)* {	object		Contains references to other resources that are related to this resource.
MetricReportDefinitions [{	array		The metric report definitions that will generate new metric reports when a trigger occurs when the TriggerActions property contains the value RedfishMetricReport.
@odata.id }]	string	read-only	*Link to a MetricReportDefinition resource. See the Links section and the MetricReportDefinition schema for details.*
Oem { } }	object		See the OEM object definition in the Common properties section.
MetricProperties [ ]	array (string, null)	read-write	A list of URIs with wildcards and property identifiers for which this trigger is defined. If a URI has wildcards, the wildcards are substituted as specified in the Wildcards array property.
MetricType	string (enum)	read-only (null)	The type of trigger. *See MetricType in Property Details, below, for the possible values of this property.*
NumericThresholds {	object		Specifies the thresholds when a numeric metric triggers.
LowerCritical {	object		Below normal range and requires attention.
Activation	string (enum)	read-write (null)	The direction of crossing that activates this threshold. *See Activation in Property Details, below, for the possible values of this property.*
DwellTime	string	read-write (null)	The time interval over which the sensor reading must have passed through this Threshold value before the threshold is considered to be violated.
Reading }	number	read-write (null)	The threshold value.
LowerWarning {	object		Below normal range.
Activation	string (enum)	read-write (null)	The direction of crossing that activates this threshold. *See Activation in Property Details, below, for the possible values of this property.*
DwellTime	string	read-write (null)	The time interval over which the sensor reading must have passed through this Threshold value before the threshold is considered to be violated.
Reading }	number	read-write (null)	The threshold value.
UpperCritical {	object		Above normal range and requires attention.
Activation	string (enum)	read-write (null)	The direction of crossing that activates this threshold. *See Activation in Property Details, below, for the possible values of this property.*
DwellTime	string	read-write (null)	The time interval over which the sensor reading must have passed through this Threshold value before the threshold is considered to be violated.
Reading }	number	read-write (null)	The threshold value.
UpperWarning {	object		Above normal range.
Activation	string (enum)	read-write (null)	The direction of crossing that activates this threshold. *See Activation in Property Details, below, for the possible values of this property.*
DwellTime	string	read-write (null)	The time interval over which the sensor reading must have passed through this Threshold value before the threshold is considered to be violated.
Reading	number	read-write	The threshold value.

} }		(null)	
Status { }	object		This property describes the status and health of the resource and its children. *See the [Status object](#) for details on this property.*
TriggerActions [ ]	array (string (enum))	read-only	This property specifies the actions to perform when the trigger occurs. Specifies the actions to perform when a trigger occurs. *See [TriggerActions](#) in Property Details, below, for the possible values of this property.*
Wildcards [{	array		A list of wildcards and their substitution values to be applied to the entries in the MetricProperties array property.
Name	string	read-only (null)	The string used as a wildcard.
Values [ ] }]	array (string, null)	read-only	An array of values to substitute for the wildcard.

Property Details

Activation:

The direction of crossing that activates this threshold.

string	Description
Decreasing	Value decreases below the threshold.
Either	Value crosses the threshold in either direction.
Increasing	Value increases above the threshold.

DiscreteTriggerCondition:

Specifies the conditions when a discrete metric triggers.

string	Description
Changed	A discrete trigger occures whenever the value of the metric changes.
Specified	A discrete trigger occurs when the value of the metric becomes one of the values listed in the DiscreteTriggers property.

MetricType:

The type of trigger.

string	Description
Discrete	The trigger is for a discrete sensor.
Numeric	The trigger is for numeric sensor.

Severity:

This property contains the value of the Severity property in the Event message.

string	Description
Critical	A critical condition exists that requires immediate attention.
OK	Normal.
Warning	A condition exists that requires attention.

TriggerActions:

This property specifies the actions to perform when the trigger occurs. Specifies the actions to perform when a trigger occurs.

string	Description

LogToLogService	Upon a trigger, record in a log.
RedfishEvent	Upon a trigger, send a Redfish Event message of type Event.
RedfishMetricReport *(v1.1+)*	Upon a trigger, force an update of the specified Metric Reports.

Example Response

```
{
    "@odata.type": "#Triggers.v1_0_0.Triggers",
    "Id": "PlatformPowerCapTriggers",
    "Name": "Triggers for platform power consumed",
    "MetricType": "Numeric",
    "TriggerActions": [
        "RedfishEvent"
    ],
    "NumericThresholds": {
        "UpperCritical": {
            "Reading": 50,
            "Activation": "Increasing",
            "DwellTime": "PT0.001S"
        },
        "UpperWarning": {
            "Reading": 48.1,
            "Activation": "Increasing",
            "DwellTime": "PT0.004S"
        }
    },
    "MetricProperties": [
        "/redfish/v1/Chassis/1/Power#/PowerControl/0/PowerConsumedWatts"
    ],
    "@odata.context": "/redfish/v1/$metadata#Triggers.Triggers",
    "@odata.id": "/redfish/v1/TelemetryService/Triggers/PlatformPowerCapTriggers"
}
```

UpdateService 1.5.0

v1.5	v1.4	v1.3	v1.2	v1.1	v1.0
2019.1	2018.3	2018.2	2017.1	2016.3	2016.2

This is the schema definition for the Update Service. It represents the properties for the service itself and has links to collections of firmware and software inventory.

URIs:

/redfish/v1/UpdateService

FirmwareInventory {	object		An inventory of firmware. *Contains a link to a resource.*
@odata.id }	string	read-only	*Link to Collection of SoftwareInventory. See the SoftwareInventory schema for details.*
HttpPushUri *(v1.1+)*	string	read-only	The URI used to perform an HTTP or HTTPS push update to the Update Service.
HttpPushUriOptions *(v1.4+)* {	object		This property contains options for software update via HttpPushUri.
HttpPushUriApplyTime {	object		This property contains settings for when firmware is to be applied when provided via HttpPushUri.
ApplyTime	string (enum)	read-write	This property indicates when the software update invoked via HttpPushUri should be applied. *See ApplyTime in Property Details, below, for the possible values of this property.*
MaintenanceWindowDurationInSeconds	integer (seconds)	read-write	The value of this property as specified by client indicates the expiry time of maintenance window in seconds.
MaintenanceWindowStartTime } }	string	read-write	The value of this property as specified by client to indicate the start time of a maintenance window.
HttpPushUriOptionsBusy *(v1.4+)*	boolean	read-write (null)	This represents if the properties of HttpPushUriOptions are reserved by any client.
HttpPushUriTargets *(v1.2+)* [ ]	array (string,	read-write	The array of URIs indicating the target for applying the update image.

		null)	
HttpPushUriTargetsBusy *(v1.2+)*	boolean	read-write (null)	This represents if the HttpPushUriTargets property is reserved by any client.
MaxImageSizeBytes *(v1.5+)*	integer (bytes)	read-only (null)	The maximum size in bytes of the software update image that this service supports.
ServiceEnabled	boolean	read-write (null)	This indicates whether this service is enabled.
SoftwareInventory {	object		An inventory of software. *Contains a link to a resource.*
@odata.id }	string	read-only	*Link to Collection of SoftwareInventory. See the SoftwareInventory schema for details.*
Status { }	object		This property describes the status and health of the resource and its children. *See the Status object for details on this property.*

Actions

SimpleUpdate

This action is used to update software components.

URIs:

/redfish/v1/UpdateService/Actions/UpdateService.SimpleUpdate

The following table shows the parameters for the action which are included in the POST body to the URI shown in the "target" property of the Action.

{			
ImageURI	string	read-write required	The URI of the software image to be installed.
Password	string	read-write	The password to be used when accessing the URI specified by the ImageURI parameter.
Targets [ ]	array (string)	read-write	The array of URIs indicating where the update image is to be applied.
TransferProtocol	string (enum)	read-write	The network protocol used by the Update Service to retrieve the software image file located at the URI provided in ImageURI, if the URI does not contain a scheme. *See TransferProtocol in Property Details, below, for the possible values of this property.*
Username }	string	read-write	The username to be used when accessing the URI specified by the ImageURI parameter.

Property Details

ApplyTime:

This property indicates when the software update invoked via HttpPushUri should be applied.

string	Description
AtMaintenanceWindowStart	Apply during a maintenance window as specified by an administrator.
Immediate	Apply immediately.
InMaintenanceWindowOnReset	Apply after a reset but within maintenance window as specified by an adminstrator.
OnReset	Apply on a reset.

TransferProtocol:

The network protocol used by the Update Service to retrieve the software image file located at the URI provided in ImageURI, if the URI does not contain a scheme.

string	Description
CIFS	Common Internet File System protocol.
FTP	File Transfer Protocol.
HTTP	Hypertext Transfer Protocol.
HTTPS	HTTP Secure protocol.
NFS *(v1.3+)*	Network File System protocol.
NSF *(deprecated v1.3)*	Network File System protocol. *Deprecated v1.3+. This value has been Deprecated in favor of NFS.*
OEM	A protocol defined by the manufacturer.
SCP	Secure File Copy protocol.
SFTP *(v1.1+)*	Secure File Transfer Protocol.
TFTP	Trivial File Transfer Protocol.

Example Response

```
{
    "@odata.type": "#UpdateService.v1_3_0.UpdateService",
    "Id": "UpdateService",
    "Name": "Update service",
    "Status": {
        "State": "Enabled",
        "Health": "OK",
        "HealthRollup": "OK"
    },
    "ServiceEnabled": true,
    "HttpPushUri": "/FWUpdate",
    "FirmwareInventory": {
        "@odata.id": "/redfish/v1/UpdateService/FirmwareInventory"
    },
    "SoftwareInventory": {
        "@odata.id": "/redfish/v1/UpdateService/SoftwareInventory"
    },
    "Actions": {
        "#UpdateService.SimpleUpdate": {
            "target": "/redfish/v1/UpdateService/Actions/SimpleUpdate",
            "@Redfish.ActionInfo": "/redfish/v1/UpdateService/SimpleUpdateActionInfo"
        },
        "Oem": {}
    },
    "Oem": {},
    "@odata.context": "/redfish/v1/$metadata#UpdateService.UpdateService",
    "@odata.id": "/redfish/v1/UpdateService"
}
```

VirtualMedia 1.3.1

v1.3	v1.2	v1.1	v1.0
2018.3	2017.3	2017.1	1.0

The VirtualMedia schema contains properties related to monitoring and control of an instance of virtual media such as a remote CD, DVD, or USB device. Virtual media functionality is provided by a Manager for a system or device.

URIs:

/redfish/v1/Managers/*{ManagerId}*/VirtualMedia/*{VirtualMediaId}*

ConnectedVia	string (enum)	read-only (null)	Current virtual media connection methods. *See ConnectedVia in Property Details, below, for the possible values of this property.*
Image	string	read-write (null)	A URI providing the location of the selected image.
ImageName	string	read-only (null)	The current image name.
Inserted	boolean	read-write (null)	Indicates if virtual media is inserted in the virtual device.
MediaTypes [ ]	array (string	read-only	This is the media types supported as virtual media. *See MediaTypes in Property Details, below, for the possible values of this*

		(enum))		*property.*
Password *(v1.3+)*	string	read-write (null)	The password to be used when accessing the URI specified by the Image parameter. This property is null on a GET.	
TransferMethod *(v1.3+)*	string (enum)	read-write (null)	Transfer method to use with the given Image. *See TransferMethod in Property Details, below, for the possible values of this property.*	
TransferProtocolType *(v1.3+)*	string (enum)	read-write (null)	Network protocol to use with the image. *See TransferProtocolType in Property Details, below, for the possible values of this property.*	
UserName *(v1.3+)*	string	read-write (null)	The username to be used when accessing the URI specified by the Image parameter.	
WriteProtected	boolean	read-write (null)	Indicates the media is write protected.	

Actions

EjectMedia

This action is used to detach remote media from virtual media.

URIs:

/redfish/v1/Managers/*{ManagerId}*/VirtualMedia/*{VirtualMediaId}*/Actions/VirtualMedia.EjectMedia

(This action takes no parameters.)

InsertMedia

This action is used to attach remote media to virtual media.

URIs:

/redfish/v1/Managers/*{ManagerId}*/VirtualMedia/*{VirtualMediaId}*/Actions/VirtualMedia.InsertMedia

The following table shows the parameters for the action which are included in the POST body to the URI shown in the "target" property of the Action.

{			
Image	string	read-write required	The URI of the remote media to attach to the virtual media.
Inserted	boolean	read-write	Indicates if the image is to be treated as inserted upon completion of the action.
Password	string	read-write	The password to be used when accessing the URI specified by the Image parameter.
TransferMethod *(v1.3+)*	string (enum)	read-write	Transfer method to use with the given Image. *See TransferMethod in Property Details, below, for the possible values of this property.*
TransferProtocolType *(v1.3+)*	string (enum)	read-write	Network protocol to use with the image. *See TransferProtocolType in Property Details, below, for the possible values of this property.*
UserName	string	read-write	The username to be used when accessing the URI specified by the Image parameter.
WriteProtected }	boolean	read-write	Indicates if the remote media is supposed to be treated as write protected.

Property Details

ConnectedVia:

Current virtual media connection methods.

string	Description
Applet	Connected to a client application.
NotConnected	No current connection.

Oem	Connected via an OEM-defined method.
URI	Connected to a URI location.

MediaTypes:

This is the media types supported as virtual media.

string	Description
CD	A CD-ROM format (ISO) image.
DVD	A DVD-ROM format image.
Floppy	A floppy disk image.
USBStick	An emulation of a USB storage device.

TransferMethod:

Transfer method to use with the given Image.

string	Description
Stream	Stream image file data from the source URI.
Upload	Upload the entire image file from the source URI to the service.

TransferProtocolType:

Network protocol to use with the image.

string	Description
CIFS	Common Internet File System protocol.
FTP	File Transfer Protocol.
HTTP	Hypertext Transfer Protocol.
HTTPS	HTTP Secure protocol.
NFS	Network File System protocol.
OEM	A protocol defined by the manufacturer.
SCP	Secure File Copy protocol.
SFTP	Secure File Transfer Protocol.
TFTP	Trivial File Transfer Protocol.

Example Response

```
{
    "@odata.type": "#VirtualMedia.v1_2_1.VirtualMedia",
    "Id": "CD1",
    "Name": "Virtual CD",
    "MediaTypes": [
        "CD",
        "DVD"
    ],
    "Image": "redfish.dmtf.org/freeImages/freeOS.1.1.iso",
    "ImageName": "mymedia-read-only",
    "ConnectedVia": "Applet",
    "Inserted": true,
    "WriteProtected": false,
    "@odata.context": "/redfish/v1/$metadata#VirtualMedia.VirtualMedia",
    "@odata.id": "/redfish/v1/Managers/BMC/VirtualMedia/CD1"
}
```

VLanNetworkInterface 1.1.3

v1.1	v1.0
2017.1	1.0

This resource describes the attributes of a Virtual LAN.

URIs:

/redfish/v1/Chassis/*{ChassisId}*/NetworkAdapters/*{NetworkAdapterId}*/NetworkDeviceFunctions/*{NetworkDeviceFunctionId}*/Ethernet/VLANs/*{VLanNetworkInterfaceId}*

/redfish/v1/CompositionService/ResourceBlocks/*{ResourceBlockId}*/EthernetInterfaces/*{EthernetInterfaceId}*/VLANs/*{VLanNetworkInterfaceId}*

/redfish/v1/CompositionService/ResourceBlocks/*{ResourceBlockId}*/Systems/*{ComputerSystemId}*/EthernetInterfaces/*{EthernetInterfaceId}*/VLANs/*{VLanNetworkInterfaceId}*

/redfish/v1/Managers/*{ManagerId}*/EthernetInterfaces/*{EthernetInterfaceId}*/VLANs/*{VLanNetworkInterfaceId}*

/redfish/v1/ResourceBlocks/*{ResourceBlockId}*/EthernetInterfaces/*{EthernetInterfaceId}*/VLANs/*{VLanNetworkInterfaceId}*

/redfish/v1/ResourceBlocks/*{ResourceBlockId}*/Systems/*{ComputerSystemId}*/EthernetInterfaces/*{EthernetInterfaceId}*/VLANs/*{VLanNetworkInterfaceId}*

/redfish/v1/Systems/*{ComputerSystemId}*/EthernetInterfaces/*{EthernetInterfaceId}*/VLANs/*{VLanNetworkInterfaceId}*

VLANEnable	boolean	read-write required on create (null)	This indicates if this VLAN is enabled.
VLANId	integer	read-write required on create (null)	This indicates the VLAN identifier for this VLAN.

Example Response

```
{
    "@odata.type": "#VLanNetworkInterface.v1_1_2.VLanNetworkInterface",
    "Id": "1",
    "Name": "VLAN Network Interface",
    "Description": "System NIC 1 VLAN",
    "VLANEnable": true,
    "VLANId": 101,
    "@odata.context": "/redfish/v1/$metadata#VLanNetworkInterface.VLanNetworkInterface",
    "@odata.id": "/redfish/v1/Systems/437XR1138R2/EthernetInterfaces/12446A3B0411/VLANs/1"
}
```

Volume 1.0.3

Volume contains properties used to describe a volume, virtual disk, LUN, or other logical storage entity for any system.

URIs:

/redfish/v1/CompositionService/ResourceBlocks/*{ResourceBlockId}*/Storage/*{StorageId}*/Volumes/*{VolumeId}*

/redfish/v1/CompositionService/ResourceBlocks/*{ResourceBlockId}*/Systems/*{ComputerSystemId}*/Storage/*{StorageId}*/Volumes/*{VolumeId}*

/redfish/v1/ResourceBlocks/*{ResourceBlockId}*/Storage/*{StorageId}*/Volumes/*{VolumeId}*

/redfish/v1/ResourceBlocks/*{ResourceBlockId}*/Systems/*{ComputerSystemId}*/Storage/*{StorageId}*/Volumes/*{VolumeId}*

/redfish/v1/Systems/*{ComputerSystemId}*/Storage/*{StorageId}*/Volumes/*{VolumeId}*

BlockSizeBytes	number (bytes)	read-only (null)	The size of the smallest addressable unit (Block) of this volume in bytes.
CapacityBytes	number (bytes)	read-only (null)	The size in bytes of this Volume.
Encrypted	boolean	read-write (null)	Is this Volume encrypted.
EncryptionTypes [ ]	array (string (enum))	read-write	The types of encryption used by this Volume. *See EncryptionTypes in Property Details, below, for the possible values of this property.*
Identifiers [{ }]	array (object)		The Durable names for the volume. *See the Identifier object (v1.1.0) for details on this property.*
Links {	object		Contains references to other resources that are related to this resource.
Drives [{	array		An array of references to the drives which contain this volume. This will reference Drives that either wholly or only partly contain this volume.
@odata.id }]	string	read-only	*Link to a Drive resource. See the Links section and the Drive schema for details.*
Oem { }	object		See the OEM object definition in the Common properties section.

}			
Operations [{	array		The operations currently running on the Volume.
AssociatedTask {	object		A reference to the task associated with the operation if any. *See the [Task](#) schema for details on this property.*
@odata.id }	string	read-only	*Link to a Task resource. See the Links section and the [Task](#) schema for details.*
OperationName	string	read-only (null)	The name of the operation.
PercentageComplete }]	number	read-only (null)	The percentage of the operation that has been completed.
OptimumIOSizeBytes	number (bytes)	read-only (null)	The size in bytes of this Volume's optimum IO size.
Status { }	object		This type describes the status and health of a resource and its children. *See the [Status object](#) for details on this property.*
VolumeType	string (enum)	read-only (null)	The type of this volume. *See [VolumeType](#) in Property Details, below, for the possible values of this property.*

Actions

Initialize

This action is used to prepare the contents of the volume for use by the system.

URIs:

/redfish/v1/CompositionService/ResourceBlocks/*{ResourceBlockId}*/Storage/*{StorageId}*/Volumes/*{VolumeId}*/Actions/Volume.Initialize

/redfish/v1/CompositionService/ResourceBlocks/*{ResourceBlockId}*/Systems/*{ComputerSystemId}*/Storage/*{StorageId}*/Volumes/*{VolumeId}*/Actions/Volume.Initialize

/redfish/v1/ResourceBlocks/*{ResourceBlockId}*/Storage/*{StorageId}*/Volumes/*{VolumeId}*/Actions/Volume.Initialize

/redfish/v1/ResourceBlocks/*{ResourceBlockId}*/Systems/*{ComputerSystemId}*/Storage/*{StorageId}*/Volumes/*{VolumeId}*/Actions/Volume.Initialize

/redfish/v1/Systems/*{ComputerSystemId}*/Storage/*{StorageId}*/Volumes/*{VolumeId}*/Actions/Volume.Initialize

(This action takes no parameters.)

Property Details

EncryptionTypes:

The types of encryption used by this Volume.

string	Description
ControllerAssisted	The volume is being encrypted by the storage controller entity.
NativeDriveEncryption	The volume is utilizing the native drive encryption capabilities of the drive hardware.
SoftwareAssisted	The volume is being encrypted by software running on the system or the operating system.

VolumeType:

The type of this volume.

string	Description
Mirrored	The volume is a mirrored device.
NonRedundant	The volume is a non-redundant storage device.
RawDevice	The volume is a raw physical device without any RAID or other virtualization applied.
SpannedMirrors	The volume is a spanned set of mirrored devices.
SpannedStripesWithParity	The volume is a spanned set of devices which uses parity to retain redundant information.
StripedWithParity	The volume is a device which uses parity to retain redundant information.

Example Response

```json
{
    "@odata.type": "#Volume.v1_3_1.Volume",
    "Id": "2",
    "Name": "Virtual Disk 2",
    "Status": {
        "State": "Enabled",
        "Health": "OK"
    },
    "Encrypted": false,
    "RAIDType": "RAID0",
    "CapacityBytes": 107374182400,
    "Identifiers": [
        {
            "DurableNameFormat": "UUID",
            "DurableName": "0324c96c-8031-4f5e-886c-50cd90aca854"
        }
    ],
    "Links": {
        "Drives": [
            {
                "@odata.id": "/redfish/v1/Systems/437XR1138R2/Storage/1/Drives/3D58ECBC375FD9F2"
            }
        ]
    },
    "Actions": {
        "#Volume.Initialize": {
            "target": "/redfish/v1/Systems/3/Storage/RAIDIntegrated/Volumes/1/Actions/Volume.Initialize",
            "InitializeType@Redfish.AllowableValues": [
                "Fast",
                "Slow"
            ]
        }
    },
    "@odata.context": "/redfish/v1/$metadata#Volume.Volume",
    "@odata.id": "/redfish/v1/Systems/437XR1138R2/Storage/1/Volumes/2"
}
```

Zone 1.3.0

v1.3	v1.2	v1.1	v1.0
2019.1	2017.3	2017.1	2016.2

The Zone schema represents a fabric zone.

URIs:

/redfish/v1/CompositionService/ResourceZones/*{ZoneId}*

/redfish/v1/Fabrics/*{FabricId}*/Zones/*{ZoneId}*

ExternalAccessibility *(v1.3+)*	string (enum)	read-write (null)	How is this zone accessible to endpoints not explicitly listed. *See ExternalAccessibility in Property Details, below, for the possible values of this property.*
Identifiers [{ }]	array (object)		Identifiers for this zone. This type describes any additional identifiers for a resource. *See the Identifier object for details on this property.*
Links {	object		Contains references to other resources that are related to this resource.
Endpoints [{	array		Represents an array of references to the endpoints that are contained in this zone.
@odata.id }]	string	read-only	*Link to a Endpoint resource. See the Links section and the Endpoint schema for details.*
InvolvedSwitches [{	array		Represents an array of references to the switches in this zone.
@odata.id }]	string	read-only	*Link to a Switch resource. See the Links section and the Switch schema for details.*
Oem { }	object		See the OEM object definition in the Common properties section.
ResourceBlocks *(v1.1+)* [{	array		An array of references to the Resource Blocks that are used in this Zone.
@odata.id }] }	string	read-only	*Link to a ResourceBlock resource. See the Links section and the ResourceBlock schema for details.*
Status { }	object		This property describes the status and health of the resource and its children.

			See the [Status object](#) for details on this property.

Property Details

ExternalAccessibility:

How is this zone accessible to endpoints not explicitly listed.

string	Description
GloballyAccessible	The endpoints listed in this zone are accessible to any external entity that has the correct access details (which may include authorization information).
NonZonedAccessible	The endpoints listed in this zone are accessible to any external entity that is not explicitly listed in another zone.
ZoneOnly	The endpoints listed in this zone are accessible only to other endpoints listed in this zone.

Example Response

```json
{
    "@odata.type": "#Zone.v1_2_1.Zone",
    "Id": "1",
    "Name": "SAS Zone 1",
    "Description": "SAS Zone 1",
    "Status": {
        "State": "Enabled",
        "Health": "OK"
    },
    "Links": {
        "Endpoints": [
            {
                "@odata.id": "/redfish/v1/Fabrics/SAS/Endpoints/Initiator1"
            },
            {
                "@odata.id": "/redfish/v1/Fabrics/SAS/Endpoints/Initiator2"
            },
            {
                "@odata.id": "/redfish/v1/Fabrics/SAS/Endpoints/Drive1"
            },
            {
                "@odata.id": "/redfish/v1/Fabrics/SAS/Endpoints/Drive3"
            }
        ]
    },
    "Oem": {},
    "@odata.context": "/redfish/v1/$metadata#Zone.Zone",
    "@odata.id": "/redfish/v1/Fabrics/SAS/Zones/1"
}
```

Redfish documentation generator

This document was created using the Redfish Documentation Generator utility, which uses the contents of the Redfish schema files (in JSON schema format) to automatically generate the bulk of the text. The source code for the utility is available for download at the DMTF's Github repository located at http://www.github.com/DMTF/Redfish-Tools.

ANNEX A

Change log

Version	Date	Description
2019.1	2019-05-03	Release built from Redfish schemas released in DSP8010 version 2019.1
		Added release version history to match each schema to the DSP8010 version that included it.
		Added Action URIs to the Action Details section, and removed the Action object from the property table for clarity.
2018.3	2018-12-15	Release built from Redfish schemas released in DSP8010 version 2018.3
2018.2	2018-08-10	Release built from Redfish schemas released in DSP8010 version 2018.2
		Expanded introduction section with additional information.
		Expanded Common Objects section to include previously excluded objects.
		Added URI listings for all resources for use with Redfish Specification v1.6.0
		Added Resource Collection table showing schema names and URIs.
		Restructured common objects section utilizing new Documentation Generator functions.
2018.1	2018-05-01	Initial release. Built from Redfish schemas released in DSP8010 version 2018.1
2017.0a	2017-05-19	Work in progress release to gather feedback on content and format.