

# **iDRAC8/7 with Lifecycle Controller Version 2.60.60.60**

Redfish API Reference Guide

## Notes, cautions, and warnings

 **NOTE:** A NOTE indicates important information that helps you make better use of your product.

 **CAUTION:** A CAUTION indicates either potential damage to hardware or loss of data and tells you how to avoid the problem.

 **WARNING:** A WARNING indicates a potential for property damage, personal injury, or death.

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# Overview

The Redfish Scalable Platforms Management API is a standard defined by the Distributed Management Task Force (DMTF). Redfish is a next-generation systems management interface standard, which enables scalable, secure, and open server management. It is a new interface that uses RESTful interface semantics to access data that is defined in model format to perform out-of-band systems management. It is suitable for a wide range of servers ranging from stand-alone servers to rack mount and bladed environments and for large scale cloud environments.

Dell PowerEdge servers offer a comprehensive range of embedded systems management functions enabled by the Integrated Dell Remote Access Controller (iDRAC) with Lifecycle Controller. These functions are designed by adhering industry standard application programming interfaces (APIs) including Redfish.

iDRAC with Lifecycle Controller technology is part of a larger data center solution that helps keep business critical applications and workloads available always. The technology allows administrators to deploy, monitor, manage, configure, update, troubleshoot, and remediate Dell servers from any location, and without the use of agents. It accomplishes this regardless of an operating system or a Hypervisor presence or state.

This document provides a brief overview on Redfish and information on various aspects of Redfish protocol, supported schema, and Redfish Eventing implemented in iDRAC. It also provides guidelines for using the Dell Redfish APIs.

Topics:

- [New in this release](#)
- [Benefits](#)
- [Key technologies](#)
- [Other documents you may need](#)

## New in this release

- Support for Redfish specification v1.0.2.
- Added Redfish support for storage inventory and monitoring.
- Added Redfish support for network inventory and monitoring.
- Added Redfish support for memory (DIMMs) inventory and statistics.
- Added Redfish support for Update Service.

## Benefits

Redfish is a new global standard for open server management. It has the capabilities to support single servers, converged infrastructure, and hyper—scale architecture. It provides the following benefits over existing server management methods:

- Increased simplicity and usability
- High data security
- Programmable interface that can be easily scripted
- Widely-used standard

# Key technologies

Redfish uses web and cloud-based technologies that enable communications with servers using common programming and scripting languages such as Python, JAVA, and C. The key technologies are as follows:

- REpresentational State Transfer (REST) interface — REST is a web based API, which provides a way to interact with a system over a normal web connection. It supports both HTTPS and HTTP.
- Java Script Notation (JSON) — JSON represents data in such a way that it is much easier to read than XML. It also provides the formatting that is required for scripting languages to interface with the data.
- OData — It is important to standardize the data format when implementing a common interface across multiple vendors. OData provides the required framework to ensure that the data structure remains interchangeable between server vendors.

# Other documents you may need

For more information about Redfish, see the DMTF website <http://www.dmtf.org/standards/redfish>. This website provides access to schema files, white papers, technical notes, and so on.

To download or access a file, go to <http://www.dmtf.org/standards/redfish>, locate the desired section, and click the link to open or download the files.

You can download the OEM schemas from the Dell website at <http://downloads.dell.com/redfish/bmc/schemas/>.

# Redfish-based systems management

This section provides an overview of the Redfish service implemented in the iDRAC firmware. It includes information about the Redfish API, schema, configuration, authentication, authorization, and so on.

Topics:

- [URL support](#)
- [Redfish configuration](#)
- [Redfish schema](#)
- [Redfish authentication and authorization](#)
- [iDRAC licensing](#)
- [HTTP methods](#)
- [HTTP headers](#)
- [HTTP status codes and error messages](#)
- [SSL certificates of iDRAC](#)
- [Eventing](#)
- [PowerEdge FX2 and FX2s chassis management using iDRAC Redfish](#)

## URL support

Redfish is a web-based API which implies that resources are accessed using client supplied URLs. URLs are required to identify the Redfish resources. The Redfish API uses a simple URL hierarchy which follows a `/redfish/v1/` pattern for all resources. To access a Redfish resource, use the URL pattern `https://<iDRAC IP>/redfish/v1/<Resource Path>`. For more information on the supported resources, see [Redfish resources](#). iDRAC supports the following URL patterns:

- `/redfish` — URL for the Redfish version object.
- `/redfish/v1` — Root URL for version 1 of the Redfish services.
- `/redfish/v1/odata` — Redfish services expose an OData service document at this URI. This service document provides a standard format for enumerating resources that are exposed by the service by enabling all generic hypermedia-driven OData clients to navigate to the resources of the service.
- `/redfish/v1/$metadata` — Redfish services expose a metadata document in XML format. This document describes the resources and collections that are available at the service root URI. It also provides references to other metadata documents, which describe the complete set of resource types that are exposed by the service.
- `/redfish/v1/$metadata#<Collection or a Singleton resource>` — Metadata URL specified as a part of `@odata.context` property for all resources. This URL returns data in XML format.
- `/redfish/v1/JsonSchemas` — This URL returns data in JSON format. The output is a collection of the `JsonSchemaFile` resource instances.
- `/redfish/v1/JsonSchemas/<resource URI>` — The JSON Schema File resource instance describes the location (URI) of a particular Redfish schema definition being implemented or referenced by a Redfish service. This URL returns data in JSON format.
- `/redfish/v1/<other resource specific URIs>` — All instrumentation resources follow this pattern.

**NOTE:** The Redfish standard implemented in iDRAC supports only HTTPS protocol.

**NOTE:** In previous versions of Redfish implementation, # character was parsed as #. Because this character is treated as a break character by the code, any characters after # were ignored. Now, # character is automatically converted to %23. This conversion allows the consoles or REST clients to use the URL without any errors.

## Redfish configuration

You can configure the Redfish interface on iDRAC by enabling or disabling the iDRAC attribute. If this attribute is disabled, HTTPS requests to Redfish URIs fail with an HTTP status code of 404 and an error message indicating that this attribute is disabled.

**NOTE:** You do not need to restart the web server when enabling or disabling Redfish attribute.

## Configuring Redfish service using iDRAC web interface

To enable or disable the Redfish service on iDRAC, perform the following tasks:

- 1 In the iDRAC web interface, navigate to **Overview > iDRAC Settings > Network > Services**.
- 2 Under **Redfish**, select **Enabled** and click **Apply** to enable the service.

## Configuring Redfish service by using iDRAC RACADM

You can enable or disable the Redfish service using the iDRAC attribute `iDRAC.Redfish.Enable` (Read or Write).

## Configuring Redfish service by using WS-MAN

The Redfish attribute `iDRAC.Redfish.Enable` is modeled under the existing `DCIM_iDRACCardEnumeration` class. You can configure the Redfish service using existing methods such as `SetAttribute`, `SetAttributes`, and `ApplyAttributes` of `DCIM_iDRACCardService` class.

## Redfish schema

The Schemas for the Redfish resources are defined according to the OData Schema representation, which can be directly translated to a JSON Schema representation.

## Redfish authentication and authorization

For certain resources, the Redfish clients may require to authenticate access. Redfish relies on the managed system for the required credentials and supported forms of authentication. In iDRAC, authentication is based on local credentials and remote protocols such as Active Directory and LDAP.

**NOTE:** You must have the required iDRAC license to use Active Directory and LDAP.

Authorization includes both user privilege and license authorization. Redfish support is included in all levels of iDRAC licensing. The following table details the authentication and authorization required for each Redfish action:

**Table 1. Redfish authentication and authorization**

Redfish actions	Authentication required	Authorization required
Read operation on any instrumentation data	Yes	Yes
Modify instrumentation data	Yes	Yes
Invoke actions	Yes	Yes
View service root	No	No
View metadata document	No	No
View OData service document	No	No
View message registry	No	No
View Redfish version URI	No	No
View JSONSchemaFile resource URI	No	No
View JSON schemas URI	No	No

The Redfish service provides access to Redfish URLs by using the following methods:

- **Basic authentication:** In this method, user name and password are provided for each Redfish API request.
- **Session-based authentication:** This method is used while issuing multiple Redfish operation requests.
  - Session login is initiated by accessing the Create session URI. The response for this request includes an X-Auth-Token header with a session token. Authentication for subsequent requests is made using the X-Auth-Token header.
  - Session logout is performed by issuing a DELETE of the Session resource provided by the Login operation including the X-Auth-Token header.

**NOTE:** The iDRAC firmware incorporates the concept of application sessions for various existing interfaces such as the web interface, WSMAN, and RACADM. With the introduction of Redfish-specific sessions, Redfish inherits the characteristics of web server sessions and the property Session Timeout inherits the web server session timeout value.

**NOTE:** To ensure a secure connection, Dell recommends using TLS 1.1 or later.

## iDRAC licensing

Redfish support is included in all license types of iDRAC. However, some of the iDRAC features require specific licenses. If a required license is not present, certain Redfish APIs may not be accessible and return an HTTP 403 status code. 403 implies that there is no sufficient privileges. In other cases, some of the properties in certain resource may not be returned in a response. The service may also return errors when such properties are modified. For information of specific license requirements for the resources, see [Redfish resources](#).

## HTTP methods

The REST API allows you to specify the type of request. It adheres to the Create, Retrieve, Update, and Delete (CRUD) standard format. The data is generated by accessing URIs that can be accessed by using the following HTTP methods:

- GET
- HEAD
- POST
- PUT
- PATCH
- DELETE

## GET

Use the GET method to retrieve a representation of a resource. The representation can either be a single resource or a collection. Depending on the media type, the service returns the resource representation by using one of the media types specified in the Accept header. If the Accept header is not present, the service returns the resource representations either as **application/json** or **application/xml**. The resources support the formats defined by the Redfish standard.

The HTTP GET method is used to retrieve a resource. The service ignores the content of the body on a GET. The GET operation is unchanged in the absence of external changes to the resource.

## HEAD

All URLs support the HEAD method. This method returns the response headers.

## POST

Use the POST method to invoke actions and create a resource. The POST request is submitted to the resource collection to which the new resource belongs. Submitting a POST request to a resource that represents a collection is equivalent to submitting the request to the Members property of that resource. Services that support adding members to a collection support both forms.

Services support the POST method for creating resources. If the resource does not support this method, status code 405 is returned. The body of the create request contains a representation of the object to be created. The service can ignore any service-controlled properties such as ID, forcing those properties for the service to be overridden. The service sets the Location header to the URI of the newly created resource.

## PUT

Use the PUT method to replace the property values of a resource. Properties omitted from the request body are reset to their default value. Services support the PUT method to replace a resource completely. If a service does not support this method, status code 405 is returned. Services may return a representation of the resource after any server-side transformations occur in the body of the response. The PUT operation must be unchanged in the absence of external changes to the resource. The exception is that the ETag values may change as a result of this operation.

## PATCH

Use the PATCH method to update pre-existing resources. Changes to the resource are sent in the request body. This method does not change the properties that are not specified in the request body. The response is either empty or a representation of the resource after the update is done, or a success code if the operation is successful. Depending on the policies, the implementation may reject the update operation on certain fields and not apply any of the requested updates.

## DELETE

Use the DELETE method to remove a resource. Services support the DELETE method for resources that can be deleted. If the resource cannot be deleted, status code 405 is returned. Services return a representation of the deleted resource in the response body.

# HTTP headers

The server response contains only basic information about related resources. Any metadata that is required to process a request or response is accessed by using HTTP headers. iDRAC supports the following request headers:

Header	Description
If-Match	Supported only for AccountService URI.
If-None-Match	Supported only for AccountService and metadata URIs.
Content-Length	Returned on all responses except responses that have Transfer-Encoding: chunked.
Content-Type	<ul style="list-style-type: none"><li>Responses other than OData metadata—application/json;charset=utf-8</li><li>OData responses—application/xml;charset=utf-8</li></ul>
ETag	Supported on AccountService and metadata URIs.
Location	Service sets this header when resources are created or when HTTP requests are redirected to other resources.
Cache-Control	Returned on all responses. Metadata URIs support cached responses. Instrumentation resources cannot be cached.
X-Auth-Token	Used for authentication of user sessions. See “Session-based authentication” under <a href="#">Redfish authentication and authorization</a> .

# HTTP status codes and error messages

HTTP defines the status codes that are returned in response messages. When the HTTP status code indicates a failure, the response body contains an extended error resource, which provides meaningful and deterministic error semantics.

The extended-error information for the Redfish service that Dell has implemented contains error or exception information that is unique to Dell. This information provides more details and recommendations for error resolution. To learn more about extended-error information, see the *Event and Error Message Reference Guide* available at [www.dell.com/manuals](http://www.dell.com/manuals).

For more details about the error messages, see the following:

- Base messages: **Registries > BaseMessage** schema. Examples of base messages are GeneralError, PropertyUnknown, InsufficientPrivilege, and so on.
- Event and Error messages: **Registries > Message** schema. Examples of Event and Error messages are AMP0300, ASR0001, HWC7014, and so on.

For more information about supported status codes and error messages, see the *Redfish Scalable Platforms Management API Specification* document available at [www.dmtf.org/standards/redfish](http://www.dmtf.org/standards/redfish).

## NOTE:

- For some URLs, if you execute an unsupported method, the response code may not indicate that the method is unsupported. To see the methods that the URL supports, see the relevant section in this document. You can also use the Get method on the URL and see the supported methods in the response.
- If you perform a Patch operation on multiple attributes, and if some attributes do not get updated due to dependency issues, HTTP code 400 is returned.

# SSL certificates of iDRAC

iDRAC includes a web server that uses the industry-standard SSL security protocol to transfer encrypted data over a network. Built upon asymmetric encryption technology, SSL is widely accepted for providing authenticated and encrypted communication between clients and servers to prevent eavesdropping across a network.

By default, the iDRAC web server has a Dell self-signed SSL digital certificate. Redfish service reuses this certificate installed on the iDRAC web server. You can replace the default SSL certificate with a certificate signed by a well-known Certificate Authority (CA). You can replace SSL certificates using the iDRAC interfaces such as web interface, RACADM, or WSMAN. For more information on managing SSL certificates of iDRAC, see the latest iDRAC User's Guide available at [Dell.com/idracmanuals](http://Dell.com/idracmanuals).

## Eventing

The Redfish service generates asynchronous notifications (events) that are defined by Redfish subscription for the eventing service. These events are sent to an event destination by using HTTP POST method. Events are generated when some significant change or error condition typically of time critical nature occurs. When an event occurs on the service, it notifies the clients. Redfish service must be enabled and iDRAC must be configured to create event subscriptions and to gain read-only privilege for viewing event subscriptions.

The iDRAC implementation of a Redfish service supports only HTTPS notifications. In certain situations, iDRAC may not be able to verify certificates sent by a peer. To handle such situations, iDRAC can be configured to skip certificate verification by using the attribute `iDRAC.RedfishEventing.IgnoreCertificateErrors`. This attribute can be configured to True or False (Default) using RACADM or the WS-MAN interface. Set this attribute to True if certificate validation is not required.

Redfish service provides Lifecycle and Alert events. Lifecycle events may occur when resources are created, modified, or destroyed. Alert events occur when a resource needs to indicate a significant event. Alert events may be either directly or indirectly pertaining to the resource. Examples of these kinds of event are a chassis being opened, button being pressed, cable being unplugged, or threshold being exceeded. iDRAC supports up to 20 event subscriptions.

**NOTE:** In this release, iDRAC supports only Alert event notifications.

If an event delivery fails, the event service of iDRAC retries delivering the failed event. The number of retries and delivery intervals can be configured using the following attributes:

- `iDRAC.RedfishEventing.DeliveryRetryAttempts`
- `iDRAC.RedfishEventing.DeliveryRetryIntervalInSeconds`

## Event delivery retry settings in RACADM

`iDRAC.RedfishEventing.DeliveryRetryAttempts` (Read or Write)

<b>Description</b>	Specifies the number of retry attempts made for Redfish event delivery
<b>Legal values</b>	Value ranges from 0 to 5
<b>Default value</b>	3
<b>Write privilege</b>	Configure iDRAC

`iDRAC.RedfishEventing.DeliveryRetryIntervalInSeconds` (Read or Write)

<b>Description</b>	Specifies the intervals (in seconds) of retry attempts made for Redfish event delivery
<b>Legal values</b>	Value ranges from 5 to 60
<b>Default value</b>	30
<b>Write privilege</b>	Configure iDRAC

## Eventing operations

The Redfish event service provides the following URIs:

**Table 2. Eventing operations**

HTTP method type	Description	URI	Metadata reference
GET	Get detailed information about Event Service	/redfish/v1/EventService	EventService.xml
PATCH	Property Name: ServiceEnabled Indicates whether this service is enabled	/redfish/v1/EventService	EventService_v1.xml
POST	Register an event notification receiver	/redfish/v1/EventService/Subscriptions	EventDestination.xml
DELETE	Remove a subscription	/redfish/v1/EventService/Subscriptions/<Subscription ID>	EventService.xml

## PowerEdge FX2 and FX2s chassis management using iDRAC Redfish

On a PowerEdge FX2/FX2s chassis, iDRAC can monitor and manage chassis components such as fans, power supplies, and so on. Redfish service provides information about chassis components when **Chassis Management and Monitoring** is set to **Enabled** on iDRAC. This setting allows you to monitor and manage the chassis even if the CMC is not on the network. On an FX2/FX2s CMC, ensure that the **Chassis Management at Server** setting is set to **Monitor** or **Manage and Monitor**. While this feature is enabled, iDRAC also generates Redfish notifications for chassis events.

## Configuring chassis management and monitoring using iDRAC web interface

- 1 In iDRAC web interface, navigate to **Overview > iDRAC Settings > CMC**.
- 2 In this section, enable chassis management and monitoring from iDRAC.

## Configuring chassis management and monitoring using iDRAC RACADM

To enable chassis management and monitoring using RACADM, use the following command:

```
racadm set system.chassiscontrol.chassismanagementmonitoring Enabled
```

For more information about chassis management and monitoring, see the iDRAC User's Guide available at [dell.com/idracmanuals](http://dell.com/idracmanuals).

# Redfish resources

This section describes the resource URIs and related operations that are available in the iDRAC implementation of a Redfish service API.

## Topics:

- [AccountService](#)
- [AttributeRegistry](#)
- [BaseMessages](#)
- [BIOS](#)
- [Chassis](#)
- [ComputerSystem](#)
- [DellBootSources](#)
- [DellBootSourcesRegistry](#)
- [DellJob](#)
- [EthernetInterfaces](#)
- [EventDestination](#)
- [EventService](#)
- [JSONSchemas](#)
- [LogEntry](#)
- [LogService](#)
- [Manager](#)
- [ManagerAccount](#)
- [ManagerNetworkProtocol](#)
- [Role](#)
- [SerialInterfaces](#)
- [Memory collection](#)
- [Messages](#)
- [NetworkAdapter collection](#)
- [NetworkInterface collection](#)
- [OEMManager](#)
- [Power](#)
- [SecureBoot](#)
- [ServiceRoot](#)
- [Session](#)
- [SessionService](#)
- [Storage collection](#)
- [Processor](#)
- [SimpleStorage](#)
- [VLANNetworkInterface](#)
- [TaskService](#)
- [Thermal](#)

- UpdateService
- VirtualMedia

## AccountService

### Description

This resource is used to represent a management account service for a Redfish implementation.

### URL

```
/redfish/v1/Managers/<ID>/AccountService
```

### Methods and privileges

Table 3. HTTP methods and privileges for AccountService

HTTP method	Required privilege
GET	Login

## AttributeRegistry

### Description

An Attribute Registry is a set of key-value pairs that are specific to a particular implementation or product. This schema describes the structure of a registry and also includes mechanisms for building user interfaces allowing consistent navigation of the contents.

### URL

```
/redfish/v1/Systems/<ID>/Bios/BiosRegistry
```

### Supported HTTP methods and privileges

Table 4. HTTP methods and privileges for AttributeRegistry

HTTP method	Required privilege
GET	Login

# Supported status codes

Table 5. Status codes and error message codes for AttributeRegistry

HTTP status code	Extended information
200	Base.1.0.Success
500	Base.1.0.InternalError

# BaseMessages

## Description

This resource is used to represent the base message registry for a Redfish implementation.

## URL

`/redfish/v1/Registries/BaseMessages`

## HTTP methods and privileges

Table 6. HTTP methods and privileges for BaseMessages

HTTP method	Required privilege
GET	Login

## Status codes

Table 7. Status codes for BaseMessages

HTTP status code
200
400
500

# BIOS

## Description

This resource is used for representing the BIOS configuration and the related resources to Reset BIOS, Change Password, and the Settings resource.

## URL

```
/redfish/v1/Systems/<ID>/Bios
```

## Methods and privileges

Table 8. Methods and privileges for BIOS

HTTP method	Required privilege
GET	Login

## Status codes

Table 9. Status codes for BIOS

HTTP status code	Extended information
200	
500	Base.1.0.InternalError

## Supported action — ResetBIOS

### Description

This action is used for resetting the BIOS attributes to default.

### URL

```
/redfish/v1/Systems/<ID>/Bios/Actions/Bios.ResetBios
```

## Methods and privileges

Table 10. Methods and privileges for ResetBIOS

HTTP method	Required privilege
POST	SystemControl

## Status codes

Table 11. Status codes for ResetBIOS

HTTP status code	Extended information
200	Base.1.0.Success
400	<ul style="list-style-type: none"><li>Base.1.0.PropertyValueTypeError</li><li>Base.1.0.PropertyValueNotInList</li></ul>
403	Base.1.0.InsufficientPrivilege
404	Base.1.0.ResourceMissingAtURI
500	Base.1.0.InternalError

## Supported action — ChangePassword

### Description

This action is used for changing the BIOS passwords.

### URL

```
/redfish/v1/Systems/<ID>/Bios/Actions/Bios.ChangePassword
```

## Methods and privileges

Table 12. Methods and privileges for ChangePassword

HTTP method	Required privilege
POST	SystemControl

## Updatable properties

Table 13. Parameters for ChangePassword

Property	Description
PasswordName	The name of the BIOS password to change
OldPassword	The value of the existing password
NewPassword	The value of the new BIOS password

## Status codes

Table 14. Status codes for ChangePassword

HTTP status code	Extended information
200	Base.1.0.Success
400	<ul style="list-style-type: none"><li>Base.1.0.PropertyValueTypeError</li><li>Base.1.0.PropertyValueNotInList</li></ul>
403	Base.1.0.InsufficientPrivilege
404	Base.1.0.ResourceMissingAtURI
500	Base.1.0.InternalError

## Supported action — ClearPending

### Description

This action is used for clearing the pending values.

### URL

```
/redfish/v1/Systems/<ID>/Bios/Actions/Oem/DellManager.ClearPending
```

## HTTP methods and privileges

Table 15. HTTP methods and privileges for ClearPending

HTTP method	Required privilege
POST	SystemControl

# Status codes

Table 16. Status codes for ClearPending

HTTP status code	Extended information
200	Base.1.0.Success
400	<ul style="list-style-type: none"><li>Base.1.0.PropertyValueTypeError</li><li>Base.1.0.PropertyValueNotInList</li></ul>
403	Base.1.0.InsufficientPrivilege
404	Base.1.0.ResourceMissingAtURI
500	Base.1.0.InternalError

# Settings resource

## Description

This resource is used for representing the BIOS pending configuration and related resources to clear pending and navigation to Jobs resource.

## URL

`/redfish/v1/Systems/<ID>/Bios/Settings`

## HTTP methods and privileges

Table 17. HTTP methods and privileges for the Settings resource

HTTP method	Required privilege
GET	Login
PATCH	SystemControl

## Updatable properties

Table 18. Properties for the Settings resource

Property	Description
Attributes	Collection of all the attributes and their values supported by the BIOS configuration

# Status codes

Table 19. Status codes for the Settings resource

HTTP status code	Extended information
200	Base.1.0.Success
400	<ul style="list-style-type: none"><li>Base.1.0.PropertyValueTypeError</li><li>Base.1.0.PropertyValueNotInList</li></ul>
403	Base.1.0.InsufficientPrivilege
500	Base.1.0.InternalError

# Chassis

## Description

This resource is used to represent a chassis or other physical enclosure for a Redfish implementation.

## URL

`/redfish/v1/Chassis`

## HTTP methods and privileges

Table 20. HTTP methods and privileges for Chassis

HTTP method	Required privilege
GET	Login

## Navigation URL

`/redfish/v1/Chassis/<ID>`

## HTTP methods and privileges

Table 21. HTTP methods and privileges for instance of Chassis

HTTP method	Required privilege
PATCH	ConfigureManager

# Status codes

Table 22. Status codes for Chassis

HTTP status code	Extended information
200	Base.1.0.success
400	<ul style="list-style-type: none"><li>Base.1.0.PropertyValueTypeError</li><li>Base.1.0.PropertyValueNotInList</li><li>Base.1.0.PropertyUnknown</li><li>Base.1.0.PropertyNotWritable</li><li>Base.1.0.PropertyValueFormatError</li></ul>
500	Base.1.0.InternalError

# Updatable properties

Table 23. Properties and values for Chassis

Property	Values
ResetType	<ul style="list-style-type: none"><li>On</li><li>ForceOff</li></ul>
IndicatorLed	<ul style="list-style-type: none"><li>Blinking</li><li>Off</li></ul>
ChassisType	<ul style="list-style-type: none"><li>Rack</li><li>StandAlone</li><li>Blade</li><li>Enclosure</li><li>Sled</li></ul>

# Supported action — Reset

## URL

`/redfish/v1/Chassis/System.Embedded.1/Actions/Chassis.Reset`

## Description

This action is used to reset the chassis.

## HTTP methods and privileges

Table 24. HTTP methods and privileges for Reset

HTTP method	Required privilege
POST	ConfigureComponent

## Properties and values

Table 25. Properties and values for Reset

Property	Value
ResetType	<ul style="list-style-type: none"><li>On</li><li>ForceOff</li></ul>

## Status codes

Table 26. Status codes for Reset

HTTP status code	Extended information
204	
400	<ul style="list-style-type: none"><li>Base.1.0.PropertyValueTypeError</li><li>Base.1.0.PropertyValueNotInList</li><li>Base.1.0.PropertyUnknown</li><li>Base.1.0.PropertyNotWritable</li><li>Base.1.0.PropertyValueFormatError</li></ul>
500	Base.1.0.InternalError
503	

## URL

/redfish/v1/Chassis/<ID>/Sensors/Voltages/<ID>

## HTTP methods and privileges

Table 27. HTTP methods and privileges for the instance

HTTP method	Required privilege
GET	Login

## Status codes

Table 28. Status codes for the instance

HTTP status code
200
400
500

**NOTE:** On PowerEdge FX2 systems, iDRAC can display additional instrumentation data from the sensors on the server only if the Chassis Monitoring setting is set to enabled on iDRAC and CMC.

## Contained resources

- Power
- Thermal

# ComputerSystem

## Description

This resource is used to represent resources that represent a computing system in the Redfish specification.

## URL

/redfish/v1/Systems

## HTTP methods and privileges

Table 29. HTTP methods and privileges for ComputerSystem

HTTP method	Required privilege
GET	Login

## Navigation URL

/redfish/v1/Systems/<ID>

# HTTP methods and privileges

Table 30. HTTP methods and privileges for the instance of the resource

HTTP method	Required privilege
PATCH	ConfigureManager, ConfigureSelf

# Status codes

Table 31. Status codes for ComputerSystem

HTTP status code	Extended information
200	Base.1.0.success
400	<ul style="list-style-type: none"><li>Base.1.0.PropertyValueTypeError</li><li>Base.1.0.PropertyValueNotInList</li><li>Base.1.0.PropertyUnknown</li><li>Base.1.0.PropertyNotWritable</li><li>Base.1.0.PropertyValueFormatError</li></ul>
500	Base.1.0.InternalError

# Updatable properties

Table 32. Properties and values for ComputerSystem

Property	Values
ResetType	<ul style="list-style-type: none"><li>On</li><li>ForceOff</li><li>GracefulRestart</li><li>PushPowerButton</li><li>NMI</li></ul>
PowerState	<ul style="list-style-type: none"><li>On</li><li>Off</li></ul>
SystemType	Physical
BootSource	<ul style="list-style-type: none"><li>Pxe</li><li>Floppy</li><li>Cd</li><li>USB</li><li>Hdd</li><li>Utilities</li><li>UefiTarget</li></ul>

Property	Values
	<ul style="list-style-type: none"> <li>BiosSetup</li> </ul>
BootSourceOverrideMode	<ul style="list-style-type: none"> <li>UEFI</li> <li>Legacy</li> </ul>
BootSourceOverrideEnabled	<ul style="list-style-type: none"> <li>Disabled</li> <li>Once</li> <li>Continuous</li> </ul>
UefiTargetBootSourceOverride	Any valid UEFI-device path
IndicatorLed	<ul style="list-style-type: none"> <li>Lit</li> <li>Off</li> </ul>

## Implementation notes

Some of the properties in this schema are dependent on the installed BIOS version. If a compatible BIOS version is not installed, the `UefiTargetBootSourceOverride` property is not supported in this resource.

## Supported action — Reset

### Description

Resets computer system.

### URL

```
/redfish/v1/Systems/<ID>/Actions/ComputerSystem.Reset
```

## HTTP methods and privileges

**Table 33. HTTP methods and privileges for Reset**

HTTP method	Required privilege
POST	ConfigureComponent, ConfigureSelf

## Properties and values

**Table 34. Properties and values for Reset**

Property	Value
ResetType	<ul style="list-style-type: none"> <li>On</li> <li>ForceOff</li> </ul>

Property	Value
	<ul style="list-style-type: none"> <li>GracefulRestart</li> <li>PushPowerButton</li> <li>NMI</li> </ul>

## Status codes

Table 35. Status codes for Reset

HTTP status code	Extended information
200	
400	<ul style="list-style-type: none"> <li>Base.1.0.PropertyValueTypeError</li> <li>Base.1.0.PropertyValueNotInList</li> <li>Base.1.0.PropertyUnknown</li> <li>Base.1.0.PropertyNotWritable</li> <li>Base.1.0.PropertyValueFormatError</li> </ul>
500	Base.1.0.InternalError

## Contained resources

- Processor
- EthernetInterfaces
- SimpleStorage
- LogService

# DellBootSources

## Description

This resource is used to represent the Dell Boot Sources Configuration and the related resources to the settings resource.

## URL

`/redfish/v1/Systems/<ID>/BootSources`

## HTTP methods and privileges

Table 36. HTTP methods and privileges for DellBootSources

HTTP method	Required privilege
GET	Login

# Status codes

Table 37. Status codes for DellBootSources

HTTP status code	Extended information
200	
500	Base.1.0.InternalError

## Supported action — ClearPending

### Description

This action is used to clear the pending values.

### URL

`/redfish/v1/Systems/<ID>/BootSources/Actions/Oem/DellManager.ClearPending`

## HTTP methods and privileges

Table 38. HTTP methods and privileges for ClearPending

HTTP method	Required privilege
POST	SystemControl

## Status codes

Table 39. Status codes for ClearPending

HTTP status code	Extended information
200	Base.1.0.Success
400	<ul style="list-style-type: none"><li>Base.1.0.PropertyValueTypeError</li><li>Base.1.0.PropertyValueNotInList</li></ul>
403	Base.1.0.InsufficientPrivilege
404	Base.1.0.ResourceMissingAtURI
500	Base.1.0.InternalError

# Settings resource

## Description

This resource is used to represent the Boot Sources pending configuration and related resources to clear pending and navigation to Jobs resource.

## URL

```
/redfish/v1/Systems/<ID>/BootSources/Settings
```

## HTTP methods and privileges

Table 40. HTTP methods and privileges for the Settings resource

HTTP method	Required privilege
GET	Login
PATCH	SystemControl

## Updatable properties

Table 41. Properties for the Settings resource

Property	Description
Attributes	Collection of all the attributes and their values supported for Boot Sources.

## Status codes

Table 42. Status codes for the Settings resource

HTTP status code	Extended information
200	Base.1.0.Success
400	<ul style="list-style-type: none"><li>Base.1.0.PropertyValueTypeError</li><li>Base.1.0.PropertyValueNotInList</li></ul>
403	Base.1.0.InsufficientPrivilege
404	Base.1.0.ResourceMissingAtURI
500	Base.1.0.InternalError

# DellBootSourcesRegistry

## Description

A Boot Sources Registry is a set of key-value pairs that are specific to a particular implementation or product. This schema describes the structure of a registry and also includes mechanisms for building user interfaces allowing consistent navigation of the contents.

## URL

```
/redfish/v1/Systems/<ID>/BootSources/BootSourcesRegistry
```

## HTTP methods and privileges

Table 43. HTTP methods and privileges for DellBootSourcesRegistry

HTTP method	Required privilege
GET	Login

## Status codes

Table 44. Status codes for DellBootSourcesRegistry

HTTP status code	Extended information
200	Base.1.0.Success
500	Base.1.0.InternalError

# DellJob

## Description

This resource represents the Dell-specific implementation of a scheduling resource for pending configuration.

## URL

```
/redfish/v1/Managers/<ID>/Jobs
```

# HTTP methods and privileges

Table 45. HTTP methods and privileges for DellJob

HTTP method	Required privilege
GET	Login
POST	SystemControl

# Properties required for job creation

Table 46. Properties required for job creation for DellJob

Parameter	Description
TargetSettingsURI	Settings object resource URI
StartTime	Scheduled start time
EndTime	Scheduled end time

# Status codes

Table 47. Status codes for DellJob

HTTP status code	Extended information
200	Base.1.0.Success
400	<ul style="list-style-type: none"><li>Base.1.0.PropertyValueTypeError</li><li>Base.1.0.PropertyValueNotInList</li></ul>
403	Base.1.0. InsufficientPrivilege
404	Base.1.0.ResourceMissingAtURI
500	Base.1.0.InternalError

# Navigation URL

/redfish/v1/Managers/<ID>/Jobs

# HTTP methods and privileges

Table 48. HTTP methods and privileges for the instance of the resource

HTTP method	Required privilege
GET	Login
DELETE	SystemControl

# Status codes

Table 49. Status codes for the instance of the resource

HTTP status code	Extended information
200	Base.1.0.Success
400	<ul style="list-style-type: none"><li>Base.1.0.PropertyValueTypeError</li><li>Base.1.0.PropertyValueNotInList</li></ul>
403	Base.1.0.InsufficientPrivilege
404	Base.1.0.ResourceMissingAtURI
500	Base.1.0.InternalError

# EthernetInterfaces

## Description

This resource is used to represent NIC resources as part of the Redfish specification. It also updates the properties of Manager Ethernet Interface.

**NOTE:** Only device FQDDs that are associated with physical network controllers are displayed. If iSM is installed and running, and there are only software Ethernet interfaces available on the system, a response code of 200 and an empty collection is returned.

## URL

/redfish/v1/Managers/<ID>/EthernetInterfaces

# HTTP methods and privileges

Table 50. HTTP methods and privileges for EthernetInterfaces

HTTP method	Required privilege
GET	Login

## Ethernet — Instance

### URL

/redfish/v1/Managers/<ManagerInstanceID>/EthernetInterfaces/<EthernetInstanceID>

## HTTP methods and privileges

Table 51. HTTP methods and privileges for instance of EthernetInterfaces

HTTP method	Required privilege
PATCH	ConfigureManager

## Properties

Table 52. Properties for EthernetInterfaces

Property	Description
Hostname	Updates hostname
IPv4	Updates IPv4
IPv6	Updates IPv6
IPv6Static	Updates IPv6Static

## Status codes and error message codes

Table 53. Status codes and error message codes for EthernetInterfaces

HTTP status code	Extended information	Error Message Code
200	Base.1.0.success	
400	<ul style="list-style-type: none"><li>Base.1.0.PropertyValueTypeError</li><li>Base.1.0.PropertyValueNotInList</li><li>Base.1.0.PropertyUnknown</li><li>Base.1.0.PropertyNotWritable</li></ul>	<ul style="list-style-type: none"><li>ISM0013</li><li>RAC0253</li><li>RAC0254</li><li>RAC0255</li></ul>

HTTP status code	Extended information	Error Message Code
	<ul style="list-style-type: none"> <li>Base.1.0.PropertyValueFormatError</li> </ul>	<ul style="list-style-type: none"> <li>RAC0259</li> <li>SWC0296</li> </ul>
500	Base.1.0.InternalError	

## Reference Properties

### /Systems/<ServiceTag+nodeid>/EthernetInterfaces

## Description

This resource is used to represent NIC resources as part of the Redfish specification.

## HTTP methods and privileges

Table 54. HTTP methods and privileges

HTTP method	Required privilege
GET	Login

## Status codes

Table 55. Status codes

HTTP status code
200
400
500

## Implementation notes

Some of the properties in this schema are dependent on the installed BIOS and iDRAC Service Module (iSM) version. If a compatible version of BIOS is not installed, **UefiDevicePath** is not supported in this resource. If a compatible version of iSM is not installed, certain properties may not be supported.

## EventDestination

## Description

This property contains a URL to the destination where the events are sent.

# URL

/redfish/v1/EventService/Subscriptions

## HTTP methods and privileges

Table 56. HTTP methods and privileges for EventDestination

HTTP method	Required privilege
GET	Login
POST	ConfigureManager

## Properties

Table 57. Properties for EventDestination

Property	Description
Destination	Destination IP to send event
EventTypes	Contains the type of the event
Context	Client-supplied string — Optional
Protocol	Protocol type used by event

## Status codes

Table 58. Status codes for EventDestination

HTTP status code	Extended information
200	
201	
400	<ul style="list-style-type: none"><li>· Base.1.0.PropertyValueTypeError</li><li>· Base.1.0.PropertyValueNotInList</li><li>· Base.1.0.PropertyUnknown</li><li>· Base.1.0.PropertyNotWritable</li><li>· Base.1.0.PropertyValueFormatError</li></ul>
404	Base.1.0.ResourceMissingAtURI
500	Base.1.0.InternalError
503	

# EventService

## Description

It represents the properties for the service itself and has links to the actual list of subscriptions.

**NOTE:** You can use the `IgnoreCertificateErrors` attribute in `OEMAttributes` to ignore certificate errors.

## URL

`/redfish/v1/EventService`

## HTTP methods and privileges

Table 59. HTTP methods and privileges for EventService

HTTP method	Required privilege
GET	Login

## Status codes

Table 60. Status codes for EventService

HTTP status code
200
400
500

# JSONSchemas

## Description

This resource is used for representing the Schema File locator resource for a Redfish implementation.

## URL

`/redfish/v1/JSONSchemas`

# HTTP methods and privileges

Table 61. HTTP methods and privileges for JSONSchemas

HTTP method	Required privilege
GET	Login

## Status codes

Table 62. Status codes for JSONSchemas

HTTP status code
200
400
500

## LogEntry

### Description

This resource represents the log format for log services in a Redfish implementation.

### URL

`/redfish/v1/Managers/<ID>/Logs`

# HTTP methods and privileges

Table 63. HTTP methods and privileges for LogEntry

HTTP method	Required privilege
GET	Login

# Status codes

Table 64. Status codes for LogEntry

HTTP status code
200
400
500

## Reference Properties

[/redfish/v1/Managers/<ID>/Logs/Lclog](#)

### Description

This resource represents the Lifecycle Controller logs for the manager in a Redfish implementation.

## HTTP methods and privileges

Table 65. HTTP methods and privileges for the resource

HTTP method	Required privilege
GET	Login

## Status codes

Table 66. Status codes for the resource

HTTP status code	Extended information
200	
400	
500	

## Logs — System Event Logs

### URL

[/redfish/v1/Managers/<ID>/Logs/SEL](#)

## Description

This resource represents the System Event Logs for the manager in a Redfish implementation.

## HTTP methods and privileges

Table 67. HTTP methods and privileges for the resource

HTTP method	Required privilege
GET	Login

## Status codes

Table 68. Status codes for the resource

HTTP status code	Extended information
200	
400	
500	

# LogService

## Description

This resource is used to represent a log service for a Redfish implementation.

## URL

`/redfish/v1/Managers/<ID>/LogService`

## HTTP methods and privileges

Table 69. HTTP methods and privileges for LogService

HTTP method	Required privilege
GET	Login

# Status codes

Table 70. Status codes for LogService

HTTP status code
200
400
500

## Reference Properties

### /redfish/v1/Managers/<ID>/LogServices/Lclog

#### Description

This resource represents the Lifecycle Controller log service in a Redfish implementation.

## HTTP methods and privileges

Table 71. HTTP methods and privileges for the resource

HTTP method	Required privilege
GET	Login

# Status codes

Table 72. Status codes for the resource

HTTP status code
200
400
500

### /redfish/v1/Managers/<ID>/LogServices/Sel

#### Description

This resource represents the SEL log service in a Redfish implementation.

## HTTP methods and privileges

Table 73. HTTP methods and privileges for resource

HTTP method	Required privilege
GET	Login

## Status codes

Table 74. Status codes for the resource

HTTP status code
200
400
500

## Supported action — ClearLog

### URL

`/redfish/v1/Managers/<ID>/LogServices/Sel/Actions/LogService.ClearLog`

### Description

Performs clear operation on logs.

## HTTP methods and privileges

Table 75. HTTP methods and privileges for ClearLog

HTTP method	Required privilege
POST	ConfigureManager

## Status codes

Table 76. Status codes for ClearLog

HTTP status code	Extended information
204	
400	<ul style="list-style-type: none"><li>Base.1.0.PropertyValueTypeError</li><li>Base.1.0.PropertyValueNotInList</li></ul>

## HTTP status code

500

## Extended information

- Base.1.0.PropertyUnknown
- Base.1.0.PropertyNotWritable
- Base.1.0.PropertyValueFormatError

Base.1.0.InternalError

# Manager

## Description

This resource is used to represent a management sub-system for a Redfish implementation.

## URL

/redfish/v1/Managers

## HTTP methods and privileges

Table 77. HTTP methods and privileges for Manager

HTTP method	Required privilege
GET	Login

## Status codes

Table 78. Status codes for Manager

HTTP status code
200
400
500

## Updatable properties

Table 79. Properties and values for Manager

Property	Values
ManagerType	BMC
CommandConnectTypesSupported	<ul style="list-style-type: none"><li>• SSH</li><li>• Telnet</li></ul>

Property	Values
GraphicalConnectTypesSupported	<ul style="list-style-type: none"> <li>IPMI</li> </ul>
ResetType	<ul style="list-style-type: none"> <li>KVMIP</li> <li>GracefulRestart</li> </ul>

## Supported action — Reset

### Description

This defines the name of the custom action supported when used in conjunction with a POST operation to this resource. When issued, this operation performs a reset of the manager.

### URL

```
/redfish/v1/Managers/<ID>/Actions/Manager.Reset
```

## HTTP methods and privileges

Table 80. HTTP methods and privileges for Reset

HTTP method	Required privilege
POST	ConfigureManager

## Updatable properties

Table 81. Properties and values for Reset

Property	Value
ResetType	GracefulRestart

## Status codes

Table 82. Status codes for Reset

HTTP status code	Extended information
204	
400	<ul style="list-style-type: none"> <li>Base.1.0.PropertyValueTypeError</li> <li>Base.1.0.PropertyValueNotInList</li> <li>Base.1.0.PropertyUnknown</li> <li>Base.1.0.PropertyNotWritable</li> <li>Base.1.0.PropertyValueFormatError</li> </ul>

**HTTP status code**

500

**Extended information**

Base.1.0.InternalError

# ManagerAccount

## Description

This resource represents the BMC user accounts collection for a Redfish implementation.

## URL

```
/redfish/v1/Managers/<ID>/Accounts
```

## HTTP methods and privileges

**Table 83. HTTP methods and privileges for ManagerAccount**

HTTP method	Required privilege
GET	Login

## Navigation URL

```
/redfish/v1/Managers/<ID>/Accounts/<Account-id>
```

## HTTP methods and privileges

**Table 84. HTTP methods and privileges for the instance of the resource**

HTTP method	Required privilege
PATCH	ConfigureManager

## Updatable properties

**Table 85. Properties and values for instance of the resource**

Property	Value
UserName	Updates account user name
Password	Updates account password
RoleId	Updates account role
Enabled	Enables or disables the user

# Status codes

Table 86. Status codes for the instance of the resource

HTTP status code	Error message code
200	
400	<ul style="list-style-type: none"><li>· RAC0288</li><li>· RAC0291</li></ul>
404	
500	

## Contained resources

Role

# ManagerNetworkProtocol

## Description

This object is used to represent the network service settings for the manager.

## URL

`/redfish/v1/Managers/<ID>/NetworkProtocol`

## HTTP methods and privileges

Table 87. HTTP methods and privileges for ManagerNetworkProtocol

HTTP method	Required privilege
GET	Login
PATCH	ConfigureManager

# Updatable properties

**Table 88. Properties for ManagerNetworkProtocol**

Property
FGDN
Hostname
HTTP
HTTPS
IPMI
KVMIP
SNMP
SSH
Telnet
VirtualMedia

# Status codes

**Table 89. Status codes for ManagerNetworkProtocol**

HTTP status code	Extended information
200	Base.1.0.success
400	<ul style="list-style-type: none"><li>Base.1.0.PropertyValueTypeError</li><li>Base.1.0.PropertyValueNotInList</li><li>Base.1.0.PropertyUnknown</li><li>Base.1.0.PropertyNotWritable</li><li>Base.1.0.PropertyValueFormatError</li></ul>
403	Insufficient privilegess.
500	Base.1.0.InternalError

# Role

## Description

This resource is used to represent resources that represent the user role for the user account.

## URL

`/redfish/v1/Managers/<ID>/Roles`

# HTTP methods and privileges

Table 90. HTTP methods and privileges for Role

HTTP method	Required privilege
GET	Login

## Status codes

Table 91. Status codes for Role

HTTP status code
200
400
500

# SerialInterfaces

## Description

This resource is used to represent serial resources as part of the Redfish specification.

## URL

`/redfish/v1/Managers/<ID>/SerialInterfaces`

# HTTP methods and privileges

Table 92. HTTP methods and privileges for SerialInterfaces

HTTP method	Required privilege
GET	Login

## Navigation URL

`/redfish/v1/Managers/<ID>/SerialInterfaces/<Serial-key>`

# HTTP methods and privileges

Table 93. HTTP methods and privileges for the instance of the resource

HTTP method	Required privilege
PATCH	ConfigureManager

# Updatable properties

Table 94. Properties for the instance of the resource

Property	Description
BitRate	Updates the bit-rate
InterfaceEnabled	Updates InterfaceEnabled

# Status codes

Table 95. Status codes for the instance of the resource

HTTP status code	Extended information
200	Base.1.0.success
400	<ul style="list-style-type: none"><li>Base.1.0.PropertyValueTypeError</li><li>Base.1.0.PropertyValueNotInList</li><li>Base.1.0.PropertyUnknown</li><li>Base.1.0.PropertyNotWritable</li><li>Base.1.0.PropertyValueFormatError</li></ul>
500	Base.1.0.InternalError

# Updatable properties

Table 96. Properties and values for SerialInterfaces

Property	Values
SignalType	Rs232
BitRate	<ul style="list-style-type: none"><li>9600</li><li>19200</li><li>38400</li><li>57600</li><li>115200</li></ul>

Property	Values
Parity	None
DataBits	8
StopBits	1
FlowControl	Hardware
PinOut	Cisco
ConnectorType	DB9 Male

## Memory collection

### Description

This resource is used to represent the collection of server memory, including DIMMs and nonvolatile DIMMs (NVDIMMs), for a Redfish implementation.

### URL

`/redfish/v1/Systems/System.Embedded.1/Memory`

### HTTP methods and privileges

**Table 97. HTTP methods and privileges for the resource**

HTTP method	Required privilege
GET	Login

### Status codes

**Table 98. Status codes**

HTTP status code	Extended information	Error message code
200	Base.1.0.0.Success	
405	Base.1.0.GeneralError	SYS402
500	Base.1.0.InternalError	

# Memory — Instance

## Description

This resource is used to represent the memory instance for a Redfish implementation.

## URL

`/redfish/v1/Systems/System.Embedded.1/Memory/iDRAC.Embedded.1#DIMMSlotA1/`

## HTTP methods and privileges

Table 99. HTTP methods and privileges for the instance of the resource

HTTP method	Required privilege
GET	Login

## Status codes

Table 100. Status codes

HTTP status code	Extended information	Error message code
200	Base.1.0.0.Success	
404	Base.1.0.InternalError	SYS403
405	Base.1.0.GeneralError	SYS402
500	Base.1.0.InternalError	

# Memory — Metrics

## Description

This resource is used to represent the memory statistics of a single memory instance for a Redfish implementation.

## URL

`/redfish/v1/Systems/System.Embedded.1/Memory/iDRAC.Embedded.1#DIMMSlotA1/Metrics`

## HTTP methods and privileges

Table 101. HTTP methods and privileges for the resource

HTTP method	Required privilege
GET	Login

## Status codes

Table 102. Status codes

HTTP status code	Extended information	Error message code
200	Base.1.0.0.success	RAC0690
405	Base.1.0.GeneralError	SYS402
500	Base.1.0.InternalError	

## Messages

### Description

This resource is used to represent a Event and Error message registry for a Redfish implementation.

### URL

/redfish/v1/Registries/Messages

## HTTP methods and privileges

Table 103. HTTP methods and privileges for Messages

HTTP method	Required privilege
GET	Login

## Status codes

Table 104. Status codes for Messages

HTTP status code
200
400
500

## NetworkAdapter collection

### Description

This resource is used to represent the collection of server network adapters for a Redfish implementation.

**NOTE:** The Manufacturer, Model, Serial Number, and Part Number attributes are not applicable for embedded NICs.

## URL

`/redfish/v1/Systems/System.Embedded.1/NetworkAdapters`

## HTTP methods and privileges

**Table 105. HTTP methods and privileges for NetworkAdapter**

HTTP method	Required privilege
GET	Login

## Status codes

**Table 106. Status codes**

HTTP status code	Extended information	Error message code
200		
405	Base.1.0.GeneralError	SYS402
500	Base.1.0.InternalError	

## NetworkAdapter — Instance

### Description

This resource is used to represent an instance of a server network adapter for a Redfish implementation.

## URL

`/redfish/v1/Systems/System.Embedded.1/NetworkAdapters/<NetworkAdapter-Id>`

## HTTP methods and privileges

**Table 107. HTTP methods and privileges for the instance of NetworkAdapter**

HTTP method	Required privilege
GET	Login

# Status codes

Table 108. Status codes

HTTP status code	Extended information	Error message code
200		
405	Base.1.0.GeneralError	SYS402
500	Base.1.0.InternalError	

# NetworkPort

## Description

This resource is used to represent the collection of NetworkPort.

## URL

/redfish/v1/Systems/System.Embedded.1/NetworkInterfaces/<NetworkInterface-Id>/NetworkPorts (Logical)

/redfish/v1/Systems/System.Embedded.1/NetworkAdapters/<NetworkAdapters-Id>/NetworkPorts (Physical)

## HTTP methods and privileges

Table 109. HTTP methods and privileges for NetworkPort

HTTP method	Required privilege
GET	Login

# Status codes

Table 110. Status codes

HTTP status code	Extended information	Error message code
200		
405	Base.1.0.GeneralError	SYS402
500	Base.1.0.InternalError	

# NetworkPort — Instance

## Description

This resource is used to represent discrete physical port capable of connecting to a network.

## URL

/redfish/v1/Systems/System.Embedded.1/NetworkAdapters/<NetworkAdapters-Id>/NetworkPorts/<NetworkPort-Id>

## HTTP methods and privileges

Table 111. HTTP methods and privileges for the instance of NetworkPort

HTTP method	Required privilege
GET	Login

## Status codes

Table 112. Status codes

HTTP status code	Extended information	Error message code
200		
405	Base.1.0.GeneralError	SYS402
500	Base.1.0.InternalError	

## NetworkPort — Settings

### Description

This resource is used to set new values and create jobs to update the attributes of the discrete physical port.

### URL

```
/redfish/v1/Systems/System.Embedded.1/NetworkAdapters/<NetworkAdapters-Id/NetworkPorts/  
<NetworkPort-Id>/Settings
```

## HTTP methods and privileges

Table 113. HTTP methods and privileges for the resource

HTTP method	Required privilege
GET	Login

## Status codes

Table 114. Status codes

HTTP status code	Extended information
200	
400	
500	Base.1.0.InternalError

## NetworkDeviceFunctions

### Description

This resource is used to represent the collection of NetworkDeviceFunction.

## URL

/redfish/v1/Systems/System.Embedded.1/NetworkAdapters/<NetworkAdapters-Id/NetworkDeviceFunctions

## HTTP methods and privileges

Table 115. HTTP methods and privileges for NetworkDeviceFunctions

HTTP method	Required privilege
GET	Login

## Status codes

Table 116. Status codes

HTTP status code	Extended information	Error message code
200		
405	Base.1.0.GeneralError	SYS402
500	Base.1.0.InternalError	

## NetworkDeviceFunctions — Instance

### Description

This resource is used to represent a logical interface exposed by the network adapter.

## URL

/redfish/v1/Systems/System.Embedded.1/NetworkAdapters/<NetworkAdapters-Id/NetworkDeviceFunctions/<NetworkDeviceFunction-Id>

## HTTP methods and privileges

Table 117. HTTP methods and privileges for the instance of NetworkDeviceFunctions

HTTP method	Required privilege
GET	Login

## Status codes

Table 118. Status codes

HTTP status code	Extended information	Error message code
200		
405	Base.1.0.GeneralError	SYS402
500	Base.1.0.InternalError	

## NetworkDeviceFunctions — Settings

### Description

This resource is used to set the new value and create job to update the attributes of the logical interface exposed by the network adapter.

### URL

```
/redfish/v1/Systems/System.Embedded.1/NetworkAdapters/<NetworkAdapters-Id>/NetworkDeviceFunctions/<NetworkDeviceFunction-Id>/Settings
```

### HTTP methods and privileges

Table 119. HTTP methods and privileges for the resource

HTTP method	Required privilege
GET	Login
PATCH	Login + SystemControl

### Required parameters

Table 120. Parameters for NetworkDeviceFunction Settings

Parameter	Type	Description
Status		
MaxVirtualFunctions	Int64	The number of virtual functions (VFs) that are available for this Network Device Function.
NetDevFuncCapabilities	Collection(NetworkDeviceFunction.v1_0_0.NetworkDeviceTechnology)	Capabilities of this network device function. <b>NOTE:</b> The values of <b>NetDevFuncCapabilities</b> are determined by the port that the partition belongs to. The values of <b>NetDevFuncCapabilities</b> for all the partitions belonging to a particular port are the same.
NetDevFuncType	NetworkDeviceFunction.v1_0_0.NetworkDeviceTechnology	The configured capability of this network device function.
<b>FibreChannel</b>		
WWPN	String	The effective current World-Wide Port Name (WWPN) of this network device function (physical function). If an assignable WWPN is not supported, WWPN is a read only alias of the PermanentWWPN.
PermanentWWPN	String	PermanentWWPN is the permanent WWPN address assigned to this network device function (physical function).

Parameter	Type	Description
WWNN	String	The effective current World-Wide Node Name (WWNN) of this network device function (physical function). If an assignable WWNN is not supported, WWNN is a read only alias of the PermanentWWNN.
WWNSource	NetworkDeviceFunction.v1_0_0.WWNSource	The configuration source of the World-Wide Names (WWNs) for this connection (WWPN and WWNN).
FCoELocalVLANId	Int64	For FCoE connections, The VLAN ID configured locally by setting this property. This value shall be used for FCoE traffic to this network device function during boot unless AllowFIPVLANDiscovery is true and a valid FCoE VLAN ID is found via the FIP VLAN Discovery Protocol.
FCoEActiveVLANId	Int64	The active FCoE VLAN ID.
<b>BootTargets</b>		
WWPN	String	World-Wide Port Name (WWPN) to boot from.
LUNID	String	The Logical Unit Number (LUN) ID to boot from on the device referred to by the corresponding WWPN.
<b>Ethernet</b>		
MACAddress	String	The effective current MAC Address of this network device function. If an assignable MAC address is not supported, this is a read-only alias of the PermanentMACAddress.
PermanentMACAddress	String	This is the permanent MAC address assigned to this network device function (physical function).
MTUSize	Int64	The Maximum Transmission Unit (MTU) configured for this Network Device Function. This value serves as a default for the OS driver when booting. The value only takes effect on boot.
<b>iSCSIBoot</b>		
IPAddressType	NetworkDeviceFunction.v1_0_0.IPAddressType	The type of IP address (IPv6 or IPv4) being populated in the iSCSIBoot IP address fields. Mixing of IPv6 and IPv4 addresses on the same network device function shall not be permissible.
InitiatorIPAddress	String	The IPv6 or IPv4 address of the iSCSI boot initiator.
InitiatorName	String	The iSCSI boot initiator name.

Parameter	Type	Description
InitiatorDefaultGateway	String	The IPv6 or IPv4 iSCSI boot default gateway.
InitiatorNetmask	String	The IPv6 or IPv4 netmask of the iSCSI boot initiator.
TargetInfoViaDHCP	String	A boolean indicating whether the iSCSI boot target name, LUN, IP address, and netmask should be obtained from DHCP.
PrimaryTargetName	String	The name of the primary iSCSI boot target (iSCSI Qualified Name, IQN).
PrimaryTargetIPAddress	String	The IP address (IPv6 or IPv4) for the primary iSCSI boot target.
PrimaryTargetTCPPort	Int64	The TCP port for the primary iSCSI boot target.
PrimaryLUN	Int64	The logical unit number (LUN) for the primary iSCSI boot target.
PrimaryVLANEnable	Boolean	It indicates if this VLAN is enabled for the primary iSCSI boot target.
PrimaryVLANId	Int64	The 802.1q VLAN ID to use for iSCSI boot from the primary target. This VLAN ID is only used if PrimaryVLANEnable is true.
PrimaryDNS	String	The IPv6 or IPv4 address of the primary DNS server for the iSCSI boot initiator.
SecondaryTargetName	String	The name of the Secondary iSCSI boot target (iSCSI Qualified Name, IQN).
SecondaryTargetIPAddress	String	The IP address (IPv6 or IPv4) for the Secondary iSCSI boot target.
SecondaryTargetTCPPort	Int64	The TCP port for the Secondary iSCSI boot target.
SecondaryLUN	Int64	The logical unit number (LUN) for the Secondary iSCSI boot target.
SecondaryVLANEnable	Boolean	It indicates if this VLAN is enabled for the Secondary iSCSI boot target.
SecondaryVLANId	Int64	The 802.1q VLAN ID to use for iSCSI boot from the Secondary target. This VLAN ID is only used if SecondaryVLANEnable is true.
SecondaryDNS	String	The IPv6 or IPv4 address of the Secondary DNS server for the iSCSI boot initiator.
IPMaskDNSViaDHCP	Boolean	A boolean indicating whether the iSCSI boot initiator uses DHCP to obtain the initiator name, IP address, and netmask.
AuthenticationMethod	NetworkDeviceFunction.v1_0_0.AuthenticationMethod	The iSCSI boot authentication method for this network device function.
CHAPUsername	String	The username for CHAP authentication.

Parameter	Type	Description
CHAPSecret	String	The shared secret for CHAP authentication.

## Status codes

**Table 121. Status codes**

HTTP status code	Extended information	Error message code
200		
202		
400	<ul style="list-style-type: none"> <li>Base.1.0.PropertyValueTypeError</li> <li>Base.1.0.PropertyUnknown</li> </ul>	
403	Base.1.0.InsufficientPrivilege	RAC0506
405	Base.1.0.GeneralError	SYS402
500	Base.1.0.InternalError	

# NetworkInterface collection

## Description

This resource is used to represent the collection of the Network subsystem under ComputerSystem.

## URL

/redfish/v1/Systems/System.Embedded.1/NetworkInterfaces

## HTTP methods and privileges

**Table 122. HTTP methods and privileges for NetworkInterface**

HTTP method	Required privilege
GET	Login

## Status codes

**Table 123. Status codes**

HTTP status code	Extended information	Error message code
200		
405	Base.1.0.GeneralError	SYS402

HTTP status code	Extended information	Error message code
500	Base.1.0.InternalError	

## NetworkInterface — Contained resources

### Description

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

### URL

```
/redfish/v1/Systems/System.Embedded.1/NetworkInterfaces/<NetworkInterface-Id>
```

### HTTP methods and privileges

Table 124. HTTP methods and privileges for instance of NetworkInterface

HTTP method	Required privilege
GET	Login

### Status codes

Table 125. Status codes

HTTP status code	Extended information	Error message code
200		
405	Base.1.0.GeneralError	SYS402
500	Base.1.0.InternalError	

## OEMManager

### Description

This resource is used to export, import, and preview the Server Configuration Profile (SCP) files Redfish implementation.

**NOTE:** For SCP export, import, and preview, if Lifecycle Controller is disabled, ensure that you enable Lifecycle Controller and retry the operation. To enable Lifecycle Controller, run the following command:

```
racadm set LifecycleController.LCAttributes.LifecycleControllerState 1
```

Redfish SCP is an OEM action and requires OEM privileges ALL and role as ADMIN. Redfish privileges are not applicable for SCP.

For more information about this schema, the location header, and other details, see the *RESTful Server Configuration with iDRAC REST API* white paper at [www.delltechcenter.com](http://www.delltechcenter.com).

# Supported action — Export, Import, and Preview

Table 126. Supported HTTP methods and features

HTTP method	Feature
POST	Exporting configuration
POST	Importing configuration
POST	Preview configuration

## Export resource URL and response details

### URL

redfish/v1/Managers/<id>/Actions/Oem/EID\_674\_Manager.ExportSystemConfiguration

### Supported status codes

Table 127. Status codes for the action

HTTP status code	Extended information
202	Accepted

### Supported properties and values

Table 128. Properties and values for the action

Property	Values
ExportFormat	XML, JSON
ExportUse	Default, Clone, Replace
IncludeInExport	Default, IncludeReadOnly, IncludePasswordHashValues
ShareParameters	See <a href="#">Share parameters and values</a> .

## Import resource URL and response details

### URL

redfish/v1/Managers/<id>/Actions/Oem/EID\_674\_Manager.ImportSystemConfiguration

### Supported status codes

Table 129. Status codes for the action

HTTP status code	Extended information
202	Accepted

## Supported properties and values

Table 130. Supported properties and values for the action

Property	Values
ImportBuffer	Buffer content to perform import. Required only for local store and not required for CIFS, NFS, HTTP, or HTTPS.
ShutdownType	Graceful, Forced, NoReboot
HostPowerState	On, Off
TimeToWait	The time to wait for the host to shut down. Default and minimum value is 300 seconds. Maximum value is 3600 seconds.
ShareParameters	See <a href="#">Share parameters and values</a> .

## Preview resource URL and response details

### URL

```
redfish/v1/Managers/<id>/Actions/Oem/EID_674_Manager.ImportSystemConfigurationPreview
```

### Status codes

Table 131. Status codes for the action

HTTP status code	Extended information
202	Accepted

## Share parameters and values

Table 132. Share parameters and values

Parameter	Values
IPAddress	IP address of the network share
ShareName	Name of network share
FileName	File name for the SCP
ShareType	CIFS, NFS
Username	User name to log on to the share — for CIFS share only.
Password	Password to log on to the share — for CIFS share only.
Workgroup	Workgroup name to log on to the share
Target	Can be the component name or an FQDD. The default value is ALL.

# Power

## Description

This resource is used to represent a power metrics resource for a Redfish implementation.

## URL

```
/redfish/v1/Chassis/<ID>/Power
```

## HTTP methods and privileges

Table 133. HTTP methods and privileges for Power

HTTP method	Required privilege
GET	Login

## Status codes

Table 134. Status codes for Power

HTTP status code	Extended information
200	Base.1.0.Success
400	<ul style="list-style-type: none"><li>Base.1.0.PropertyValueTypeError</li><li>Base.1.0.PropertyValueNotInList</li><li>Base.1.0.PropertyUnknown</li><li>Base.1.0.PropertyNotWritable</li><li>Base.1.0.PropertyValueFormatError</li></ul>
403	Insufficient privileges.
500	

## Reference Properties

### URL

```
/redfish/v1/Chassis/<ID>/Power/PowerControl
```

## Description

Updates the properties of PowerControl in Chassis Collection.

## HTTP methods and privileges

Table 135. HTTP methods and privileges for the action

HTTP method	Required privilege
GET	Login
PATCH	ConfigureManager

## Updatable properties

Table 136. Properties and values for the action

Property	Description
PowerLimit	Updates PowerLimit

## Status codes

Table 137. Status codes for the action

HTTP status code	Extended information
200	Base.1.0.success
400	<ul style="list-style-type: none"><li>Base.1.0.PropertyValueTypeError</li><li>Base.1.0.PropertyValueNotInList</li><li>Base.1.0.PropertyUnknown</li><li>Base.1.0.PropertyNotWritable</li><li>Base.1.0.PropertyValueFormatError</li></ul>
500	Base.1.0.InternalError

## Power — Power Supply Units

### URL

/redfish/v1/Chassis/<ID>/Power/PowerSupplies/<ID>

### Description

Provides details of the power supplies that are associated with the system or device.

## HTTP methods and privileges

Table 138. HTTP methods and privileges for PowerSupplies

HTTP method	Required privilege
GET	Login

## Status codes

Table 139. Status codes for PowerSupplies

HTTP status code	Extended information
200	
400	
403	Insufficient privileges.
500	

## Power — Voltage Sensor

### URL

```
/redfish/v1/Chassis/<ID>/Sensors/Voltages/<ID>
```

### Description

Provides the voltage sensor information.

## HTTP methods and privileges

Table 140. HTTP methods and privileges for Voltages Sensor

HTTP method	Required privilege
GET	Login

## Status codes

Table 141. Status codes for Voltages Sensor

HTTP status code
200
400
500

**NOTE:** On PowerEdge FX2 systems, iDRAC can display additional instrumentation data from the sensors on the server only if the Chassis Monitoring setting is set to enabled on iDRAC and CMC.

# Power — Redundancy

## URL

/redfish/v1/Chassis/<ID>/Power/Redundancy/<ID>

## Description

This object represents the Redundancy element property.

## HTTP methods and privileges

Table 142. HTTP methods and privileges for Power Redundancy

HTTP method	Required privilege
GET	Login

## Status codes

Table 143. Status codes for Power Redundancy

HTTP status code
200
400
500

# SecureBoot

## Description

This resource contains UEFI Secure Boot information. It represents properties for managing the UEFI Secure Boot functionality of a system.

## URL

/redfish/v1/Systems/<ID>/SecureBoot

## HTTP methods and privileges

Table 144. HTTP methods and privileges for SecureBoot

HTTP method	Required privilege
GET	Login
PATCH	SystemControl

# Updatable properties

Table 145. Properties and values for SecureBoot

Property	Description
SecureBootEnable	Enable or disable UEFI Secure Boot (takes effect on next boot).

# Status codes

Table 146. Status codes for SecureBoot

HTTP status code	Extended information
200	Base.1.0.Success
400	<ul style="list-style-type: none"><li>Base.1.0.PropertyValueTypeError</li><li>Base.1.0.PropertyValueNotInList</li></ul>
403	Base.1.0.InsufficientPrivilege
404	Base.1.0.ResourceMissingAtURI
500	Base.1.0.InternalError

# Supported action — ResetKeys

## Description

This action is used to reset the Secure Boot keys.

## URL

```
/redfish/v1/Systems/<ID>/SecureBoot/Actions/SecureBoot.ResetKeys
```

# Supported HTTP methods and privileges

Table 147. HTTP methods and privileges for the action

HTTP method	Required privilege
POST	SystemControl

## Updatable properties

Table 148. Updatable properties

Parameter	Description
ResetKeysType	ResetAllKeysToDefault
	DeleteAllKeys
	DeletePK

## Supported status codes

Table 149. Status codes and error messages for the action

HTTP status code	Extended information
200	Base.1.0.Success
400	Base.1.0.PropertyValueTypeError
	Base.1.0.PropertyValueNotInList
403	Base.1.0.InsufficientPrivilege
404	Base.1.0.ResourceMissingAtURI
500	Base.1.0.InternalError

**NOTE:** The SecureBoot resource and the ResetKeys action is available only on systems that have a supported BIOS installed.

## ServiceRoot

### Description

This object represents the root Redfish service. All values for resources in this schema must comply with the requirements described in the Redfish specification.

### URL

/redfish/v1

# HTTP methods and privileges

Table 150. HTTP methods and privileges for ServiceRoot

HTTP method	Required privilege
GET	Login

## Status codes

Table 151. Status codes for ServiceRoot

HTTP status code	Extended information
200	
400	
403	Insufficient privileges.
500	

## Session

### URL

/redfish/v1/Sessions

### Description

This resource is used to represent a session for a Redfish implementation.

# HTTP methods and privileges

Table 152. HTTP methods and privileges for Session

HTTP method	Required privilege
GET	Login
POST	ConfigureManager

# Updatable properties

Table 153. Properties and values for Session

Parameter	Description
username	User name
password	Password

# Status codes

Table 154. Status codes for Session

HTTP status code	Extended information
200	
201	
400	<ul style="list-style-type: none"><li>· Base.1.0.PropertyValueTypeError</li><li>· Base.1.0.PropertyValueNotInList</li><li>· Base.1.0.PropertyUnknown</li><li>· Base.1.0.PropertyNotWritable</li><li>· Base.1.0.PropertyValueFormatError</li></ul>
500	Base.1.0.InternalError

# Action — Delete

## URL

`/redfish/v1/Sessions/<session-id>`

## Description

Performs delete operation on the session ID.

# HTTP methods and privileges

Table 155. HTTP methods and privileges for Delete

HTTP method	Required privilege
DELETE	Login

## Status codes

Table 156. Status codes for Delete

HTTP status code
200
400
500

## SessionService

### Description

This resource is used to represent the Session Service properties for a Redfish implementation.

### URL

`/redfish/v1/SessionService`

## HTTP methods and privileges

Table 157. HTTP methods and privileges for SessionService

HTTP method	Required privilege
GET	Login
PATCH	ConfigureManager

**NOTE:** The properties for this resource are inherited from the web-server properties.

## Updatable properties

Table 158. Properties and values for SessionService

Property	Description
SessionTimeout	Updates web server timeout

# Status codes

Table 159. Status codes for SessionService

HTTP status code	Extended information
200	Base.1.0.success
400	<ul style="list-style-type: none"><li>Base.1.0.PropertyValueTypeError</li><li>Base.1.0.PropertyValueNotInList</li><li>Base.1.0.PropertyUnknown</li><li>Base.1.0.PropertyNotWritable</li><li>Base.1.0.PropertyValueFormatError</li></ul>
500	Base.1.0.InternalError

# Storage collection

## Description

This resource is used to represent the collection of the storage subsystem under ComputerSystem.

## URL

`/redfish/v1/Systems/System.Embedded.1/Storage`

# HTTP methods and privileges

Table 160. HTTP methods and privileges for Storage

HTTP method	Required privilege
GET	Login

# Status codes

Table 161. Status codes

HTTP status code	Extended information	Error message code
200		
405	Base.1.0.GeneralError	SYS402
500	Base.1.0.InternalError	

**NOTE:** For more information on supported storage devices and operations, see the iDRAC User's Guide available at [www.dell.com/idracmanuals](http://www.dell.com/idracmanuals).

## Storage — Instance

### Description

This resource is used to return the status of the storage subsystem. It also returns the navigation URLs to the StorageController, Drive, and Volume collections, and the link to Chassis.

**NOTE:** AutoExpand is True for StorageController.

### URL

```
/redfish/v1/Systems/System.Embedded.1/Storage/<StorageController-Id>
```

### HTTP methods and privileges

Table 162. HTTP methods and privileges for the instance of Storage

HTTP method	Required privilege
GET	Login

### Status codes

Table 163. Status codes

HTTP status code	Extended information	Error message code
200		
405	Base.1.0.GeneralError	SYS402
500	Base.1.0.InternalError	

## StorageController

### Description

This resource is used to represent the properties of the storage controller.

**NOTE:** The Links property represents NULL, because the Redundancy is not supported for StorageController.

**NOTE:** StorageController is not applicable for NVMe.

## URL

/redfish/v1/Systems/System.Embedded.1/StorageControllers/<StorageController-Id>

## HTTP methods and privileges

Table 164. HTTP methods and privileges for StorageController

HTTP method	Required privilege
GET	Login

## Status codes

Table 165. Status codes

HTTP status code	Extended information	Error message code
200		
405	Base.1.0.GeneralError	SYS402
500	Base.1.0.InternalError	

## Volume

### Description

This resource is used to represent the collection of Volumes, as presented in the operating system.

**NOTE:** The POST operation on the Volume collection is supported only on RAID, software RAID, and BOSS controllers.

## URL

/redfish/v1/Systems/System.Embedded.1/Storage/<StorageController-Id>/Volumes/

## HTTP methods and privileges

Table 166. HTTP methods and privileges for Volume

HTTP method	Required privilege
GET	Login
POST	Login + SystemControl

## Parameters

Table 167. Parameters for POST operation

Parameter	Description
VolumeType	The type of the associated volume
CapacityBytes	The size in bytes of this volume — Optional
Name	Name of the virtual disk — Optional
OptimumIOSizeBytes	Stripe size for virtual disk — Optional
Drives	An array of references to the drives that contain this volume. This references drives that either wholly or partly contain this volume.

## Status codes

Table 168. Status codes

HTTP status code	Extended information	Error message code
200		
202		
400	<ul style="list-style-type: none"><li>Base.1.0.PropertyValueTypeError</li><li>Base.1.0.PropertyUnknown</li></ul>	
403	Base.1.0.InsufficientPrivilege	RAC0506
405	Base.1.0.GeneralError	SYS402
500	Base.1.0.InternalError	

## Volume — Instance

### Description

Volume instance represent the properties used to describe a volume. The volume can be a virtual disk or other logical storage entities as presented to the operating system.

**NOTE:** The DELETE operation on an instance of Volume is supported only on RAID, software RAID, and BOSS controllers.

### URL

```
/redfish/v1/Systems/System.Embedded.1/Storage/<StorageController-Id>/Volumes/<Volume-Id>
```

### Settings URL

```
/redfish/v1/Systems/System.Embedded.1/Storage/<StorageController-Id>/Volumes/<Volume-Id>/Settings
```

## HTTP methods and privileges

**Table 169. HTTP methods and privileges for the instance of Volume**

HTTP method	Required privilege
GET	Login
PATCH	Login + SystemControl
DELETE	Login + SystemControl

## Required parameters

**Table 170. Required parameters**

Parameter	Description
Encrypted	Whether the volume is encrypted.
@Redfish.SettingsApplyTime	Defines when the settings are applied. This is supported on the Settings URL. — Optional

## Status codes

**Table 171. Status codes**

HTTP status code	Extended information	Error message code
200		
202		
400	<ul style="list-style-type: none"><li>Base.1.0.PropertyValueTypeError</li><li>Base.1.0.PropertyUnknown</li></ul>	
403	Base.1.0.InsufficientPrivilege	RAC0506
405	Base.1.0.GeneralError	SYS402
500	Base.1.0.InternalError	

## Supported action — Initialize

### Description

This action is used to prepare the contents of the volume for use by the system.

### URL

```
/redfish/v1/Systems/System.Embedded.1/Storage/<StorageController-Id>/Volumes/<Volume-Id>/Actions/Volume.Initialize
```

### HTTP methods and privileges

**Table 172. HTTP methods and privileges for the action**

HTTP method	Required privilege
POST	Login + SystemControl

### Required parameters

**Table 173. Required parameter for the action**

Parameter	Description
InitializeType	The type of initialization to be performed either Fast or Slow

Status codes

**Table 174. Status codes**

HTTP status code	Extended information	Error message code
202		
400	<ul style="list-style-type: none"> <li>Base.1.0.PropertyValueTypeError</li> <li>Base.1.0.PropertyUnknown</li> </ul>	
403	Base.1.0.InsufficientPrivilege	RAC0506
405	Base.1.0.GeneralError	SYS402
500	Base.1.0.InternalError	

## Supported action — CheckConsistency

Description

This action is used to force a check of the volume's parity or redundant data to ensure it matches the calculated values. It does not require any input parameters.

To check the status of the operation, use the task that is created when you start the action. You can also check the **Operations** property in the response body.

URL

```
/redfish/v1/Systems/System.Embedded.1/Storage/<StorageController-Id>/Volumes/<Volume-Id>/Actions/Volume.CheckConsistency
```

HTTP methods and privileges

**Table 175. HTTP methods and privileges for the action**

HTTP method	Required privilege
POST	Login + SystemControl

Status codes

**Table 176. Status codes**

HTTP status code	Extended information	Error message code
202		
400	<ul style="list-style-type: none"> <li>Base.1.0.PropertyValueTypeError</li> <li>Base.1.0.PropertyUnknown</li> </ul>	
403	Base.1.0.InsufficientPrivilege	RAC0506
405	Base.1.0.GeneralError	SYS402
500	Base.1.0.InternalError	

# Drives

## Description

This resource is used to represent the physical disks such as HDDs, SSDs, and NVMe SSDs.

## URL

`/redfish/v1/Systems/System.Embedded.1/Storage/<StorageController-Id>/Drives/<Drive-Id>`

## HTTP methods and privileges

**Table 177. HTTP methods and privileges for Drives**

HTTP method	Required privilege
GET	Login

## Status codes

**Table 178. Status codes**

HTTP status code	Extended information	Error message code
200		
405	Base.1.0.GeneralError	SYS402
500	Base.1.0.InternalError	

## Supported action — SecureErase

### Description

This action is used to perform instant Secure Erase on ISE-compliant HDDs, SEDs, SSDs, and NVME SSDs. It does not require any input parameters.

### URL

`/redfish/v1/Systems/System.Embedded.1/Storage/<StorageController-Id>/Drives/<Drive-Id>/Actions/Drive.SecureErase`

## HTTP methods and privileges

**Table 179. HTTP methods and privileges for SecureErase**

HTTP method	Required privilege
POST	Login + SystemControl

## Status codes

Table 180. Status codes

HTTP status code	Extended information	Error message code
202		
400	<ul style="list-style-type: none"><li>Base.1.0.PropertyValueTypeError</li><li>Base.1.0.PropertyUnknown</li></ul>	
403	Base.1.0.InsufficientPrivilege	RAC0506
405	Base.1.0.GeneralError	SYS402
500	Base.1.0.InternalError	

## Storage chassis

### Description

This resource is used to represent storage chassis such as backplanes and JBODs.

 **NOTE:** The storage chassis does not support Chassis Reset .

### URL

```
/redfish/v1/Chassis/<Chassis-Id>
```

### HTTP methods and privileges

Table 181. HTTP methods and privileges for the resource

HTTP method	Required privilege
GET	Login

## Status codes

Table 182. Status codes

HTTP status code	Extended information	Error message code
200		
405	Base.1.0.GeneralError	SYS402
500	Base.1.0.InternalError	

# Processor

## Description

This schema defines the processor resource. It represents the properties of a processor attached to a system.

## URL

```
/redfish/v1/Systems/<ID>/Processors
```

## HTTP methods and privileges

Table 183. HTTP methods and privileges for Processor

HTTP method	Required privilege
GET	Login

## Status codes

Table 184. Status codes for Processor

HTTP status code
200
400
500

## Properties and values

Table 185. Properties and values for Processor

Property	Values
ProcessorType	CPU
ProcessorArchitecture	x86
InstructionSet	x86-64

## Implementation notes

Some of the properties in this schema depend on the installed BIOS version. If a compatible BIOS version is not installed, some of the properties may not be supported on this resource.

# SimpleStorage

## Description

This property contains the UEFI device path used to identify and locate a specific storage controller.

## URL

```
/redfish/v1/Systems/System.Embedded.1/SimpleStorage/Controllers
```

## HTTP methods and privileges

**Table 186. HTTP methods and privileges for SimpleStorage**

HTTP method	Required privilege
GET	Login

## Status codes

**Table 187. Status codes for SimpleStorage**

HTTP status code	Extended information
200	
400	
403	Insufficient privileges.
500	

# VLANNetworkInterface

## Description

The value of this property indicates if VLAN is enabled for this interface.

## URL

```
/redfish/v1/Systems/<ID>/EthernetInterfaces/<EthernetInstanceID>/Vlans
```

# HTTP methods and response content type

Table 188. HTTP methods and response content type for VlanNetworkInterface

HTTP method	Response content type
GET	application/json

## Status codes

Table 189. Status codes for VlanNetworkInterface

HTTP status code
200
400
500

## TaskService

### Description

This resource represents a task service for a Redfish implementation.

### URL

`/redfish/v1/TaskService`

## HTTP methods and privileges

Table 190. HTTP methods and privileges for TaskService

HTTP method	Required privilege
GET	Login

# Status codes

Table 191. Status codes for TaskService

HTTP status code
200
400
500

## Tasks

### URL

/redfish/v1/TaskService/Tasks/<TaskID>

## Status codes

Table 192. Status codes for Tasks

HTTP status code	Extended information
200	Ok
202	Accepted
404	Not Found

## Thermal

### Description

This resource is used to represent the thermal matrices resource for a Redfish implementation.

### URL

/redfish/v1/Chassis/<ID>/Thermal

# HTTP methods and privileges

Table 193. HTTP methods and privileges for Thermal

HTTP method	Required privilege
GET	Login

## Status codes

Table 194. Status codes for Thermal

HTTP status code
200
400
500

## Reference properties

[/redfish/v1/Chassis/<ID>/Sensors/Fans/<ID>](#)

## Description

Provides details of the fan that is associated with the system or chassis.

## HTTP methods and privileges

Table 195. HTTP methods and privileges for Fans

HTTP method	Required privilege
GET	Login

## Status codes

Table 196. Status codes for Fans

HTTP status code
200
400
500

**NOTE:** On PowerEdge FX2 systems, iDRAC can display additional instrumentation data from the sensors on the server only if the Chassis Monitoring setting is set to enabled on iDRAC and CMC.

## Thermal — Temperatures sensors

### URL

/redfish/v1/Chassis/<ID>/Sensors/Temperatures/<ID>

### Description

Represents the properties for temperature sensors.

### HTTP methods and privileges

Table 197. HTTP methods and privileges for Temperatures Sensors

HTTP method	Required privilege
GET	Login

### Status codes

Table 198. Status codes for Temperatures Sensors

HTTP status code
200
400
500

**NOTE:** On PowerEdge FX2 systems, iDRAC can display additional instrumentation data from the sensors on the server only if the Chassis Monitoring setting is set to enabled on iDRAC and CMC.

## Thermal — Redundancy

### URL

/redfish/v1/Chassis/<ID>/Thermal/Redundancy/<ID>

### Description

Provides redundant information that is available for fans and other elements in this resource.

### HTTP methods and privileges

Table 199. HTTP methods and privileges for Redundancy

HTTP method	Required privilege
GET	Login

## Status codes

Table 200. Status codes for Redundancy

HTTP status code	Extended information
200	
400	
403	Insufficient privileges.
500	

# UpdateService

## Description

This represents the properties of the update service for the Redfish implementation.

## URL

`/redfish/v1/UpdateService`

## HTTP methods and privileges

Table 201. HTTP methods and privileges for UpdateService

HTTP method	Required privilege
GET	Login

## Required parameters

Table 202. Parameters for UpdateService

Parameter	Description
ImageURI	The URI of the software image to be installed.

# Status codes

Table 203. Status codes for UpdateService

HTTP status code	Extended information	Error Message Code
200		OSD35, SUP024
403	Base.1.0. InsufficientPrivilege	RAC0506
405	Base.1.0.GeneralError	
404	Base.1.0. ResourceMissingAtURI	SYS403
500	Base.1.0.InternalError	RAC964

## Supported action — SimpleUpdate

### Description

This resource is used to represent extension of the UpdateService schema of Redfish.

You can use the this action to update only one component at a time. If you attempt to update multiple components at once, error SYS442 is returned. To update multiple components, perform the updates one at a time.

If you use this action to update iDRAC, the update is applied immediately and the system reboots. For other components, the update is applied at the next reboot.

### URL

`/redfish/v1/UpdateService/Actions/UpdateService.SimpleUpdate`

## HTTP methods and privileges

Table 204. HTTP methods and privileges for SimpleUpdate

HTTP method	Required privilege
POST	<ul style="list-style-type: none"><li>• <b>.d9</b> file type — ConfigureManager</li><li>• <b>.pm</b> file type — ConfigureManager</li><li>• <b>.exe</b> file type — ConfigureSelf</li></ul>

## Status codes

Table 205. Status codes for SimpleUpdate

HTTP status code	Extended information	Error Message Code
202		SYS408
400		SUP024, SYS406, OSD35
400	Base.1.0. PropertyValueTypeError	
400	Base.1.0. PropertyMissing	
400	Base.1.0.MalformedJSON	SYS405
403	Base.1.0.InsufficientPrivilege	RAC0506
403		LIC501
404	Base.1.0. ResourceMissingAtURI	SYS403
415		SYS401
500	Base.1.0.InternalError	RAC964
503		SUP0108

## VirtualMedia

### Description

This resource is used to represent a virtual media service for a Redfish implementation.

### URL

`/redfish/v1/Managers/<ID>/VirtualMedia`

### HTTP methods and privileges

Table 206. HTTP methods and privileges for VirtualMedia

HTTP method	Required privilege
GET	Login

# Status codes

Table 207. Status codes for VirtualMedia

HTTP status code	Extended information
200	
400	
403	Insufficient privileges.
500	

# Properties and values

Table 208. Properties and values for VirtualMedia

Property	Values
MediaTypes	<ul style="list-style-type: none"><li>· CD</li><li>· DVD</li><li>· USBStick</li></ul>
ConnectedVia	<ul style="list-style-type: none"><li>· NotConnected</li><li>· Applet</li></ul>

# Examples

**NOTE:** For more information about Redfish and detailed examples, see the white papers available at <https://www.dmtf.org/standards/redfish>.

The following table provides usage examples for the HTTP supported methods such as GET, POST, PATCH, and DELETE:

Topics:

- [Example for GET](#)
- [Example for PATCH](#)
- [Example for POST](#)
- [Example for DELETE](#)
- [Example of Job Creation](#)

## Example for GET

URL	<code>/redfish/v1/Managers/iDRAC.Embedded.1/SerialInterfaces</code>
Output	<pre>{   "@odata.context": "/redfish/v1/\$metadata#Managers/Members/iDRAC.Embedded.1/SerialInterfaces/\$entity",   "@odata.count": 1,   "@odata.id": "/redfish/v1/Managers/iDRAC.Embedded.1/SerialInterfaces",   "@odata.type": "#SerialInterface.1.0.0.SerialInterfaceCollection",   "Description": "Collection of Serial Interfaces for this System",   "Members": [     {       "@odata.id": "/redfish/v1/Managers/iDRAC.Embedded.1/SerialInterfaces/iDRAC.Embedded.1#Serial.1"     }   ],   "Name": "Serial Interface Collection" }</pre>

## Example for PATCH

URL	<code>/redfish/v1/Managers/iDRAC.Embedded.1/Accounts/&lt;Account-id&gt;</code>
Input	<code>{"Password": "123", "UserName": "reader"}</code>
Output	<pre>{   "Success": {     "Message": "Successfully Completed Request",     "MessageId": "Base.1.0.Success",     "Resolution": "None",     "Severity": "Ok"   } }</pre>

```
}  
}
```

## Example for POST

URL `/redfish/v1/Systems/System.Embedded.1/Actions/ComputerSystem.Reset`

Input `{"ResetType": "GracefulRestart"}`

Output `204: No Content`

## Example for DELETE

URL `/redfish/v1/EventService/Subscriptions/<SubscriptionId>`

Output `200 Ok  
{  
 "INFO": "<SubscriptionId> subscription deleted successfully"  
}`

## Example of Job Creation

### Request

Method `POST`

URI `https://100.101.18.90/redfish/v1/Managers/iDRAC.Embedded.1/Jobs`

#### Headers

Authorization: Basic cm9vdDpjYWx2aW4=

Content-Type: application/json

#### Body

```
{  
  "TargetSettingsURI" : "/redfish/v1/Systems/System.Embedded.1/Bios/Settings",  
  "StartTime" : "TIME_NOW",  
  "EndTime" : "TIME_NA"  
}
```

Or

```
{  
  "TargetSettingsURI" : "/redfish/v1/Systems/System.Embedded.1/Bios/Settings",  
  "StartTime" : "2017-08-21T18:11:00",  
  "EndTime" : "2017-08-21T20:11:00"  
}
```

# Response

HTTP Status code: 200

## Headers

```
OData-Version: 4.0
Keep-Alive: timeout=60, max=199
Content-Type: application/json;odata.metadata=minimal;charset=utf-8
Server: Appweb/4.5.4
Location: /redfish/v1/Managers/iDRAC.Embedded.1/Jobs/JID_471269252011
Date: Thu, 06 Jan 2000 02:48:49 GMT
Cache-Control: no-cache
Content-Length: 501
Connection: Keep-Alive Access-Control-Allow-Origin: *
Accept-Ranges: bytes
```

## BODY

```
{
  "@Message.ExtendedInfo": [
    {
      "Message": "Successfully Completed Request",
      "MessageArgs": [],
      "MessageArgs@odata.count": 0,
      "MessageId": "Base.1.0.Success",
      "RelatedProperties": [],
      "RelatedProperties@odata.count": 0,
      "Resolution": "None",
      "Severity": "OK"
    },
    {
      "Message": "The operation successfully completed.",
      "MessageArgs": [],
      "MessageArgs@odata.count": 0,
      "MessageId": "iDRAC.1.5.SYS413",
      "RelatedProperties": [],
      "RelatedProperties@odata.count": 0,
      "Resolution": "No response action is required.",
      "Severity": "Informational"
    }
  ]
}
```