

iDRAC9 with Lifecycle Controller Version 3.11.11.11

Redfish API 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:

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

What is new in this release

- Redfish Specification v1.0.2 (errata).
- Server Configuration Profile (SCP) with JSON and HTTP/HTTPS.
- Redfish 2016:1 including BIOS, Secure Boot configuration, UEFI certificates management, and iDRAC configuration.
- iDRAC Attribute Registry, Firmware inventory, BIOS Boot sequence, UEFI Boot sequence, hard-drive boot sequence, iDRAC reset to defaults, and job management.
- Redfish 2016.2 for firmware update.
- Eventing using CA certificates.
- Enhanced RESTful server configuration with access via HTTP, HTTPS, streamed local file, and SCP in JSON format.

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](#)

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 the following screen:
 - 13th generation of PowerEdge servers: **Overview > iDRAC Settings > Network > Services**
 - 14th generation of PowerEdge servers: **iDRAC Settings > Services > Redfish**
- 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 and FirmwareInventory URIs. |
| If-None-Match | Supported only for AccountService, FirmwareInventory, and metadata URIs. |
| Content-Length | Returned on all responses except responses that have Transfer-Encoding: chunked. |
| Content-Type | <ul style="list-style-type: none">Responses other than OData metadata—application/json;charset=utf-8OData responses—application/xml;charset=utf-8 |
| ETag | Supported on AccountService, FirmwareInventory, 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 Redfish authentication and authorization . |

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.

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.

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.

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)

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

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

| | |
|------------------------|--|
| Description | Specifies the intervals (in seconds) of retry attempts made for Redfish event delivery |
| Legal values | Value ranges from 5 to 60 |
| Default value | 30 |
| Write privilege | 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 Event Service detailed information | <code>/redfish/v1/EventService</code> | EventService.xml |
| POST | Register an event notification receiver | <code>/redfish/v1/EventService/Subscriptions</code> | EventDestination.xml |
| DELETE | Remove a subscription | <code>/redfish/v1/EventService/Subscriptions/<Subscription ID></code> | EventService.xml |

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](#)
- [BIOS](#)
- [Chassis](#)
- [ComputerSystem](#)
- [DellAttributes](#)
- [DellBootSources](#)
- [DellBootSourcesRegistry](#)
- [DellCertificates](#)
- [DellJob](#)
- [DellManager](#)
- [DellServiceRoot](#)
- [DellUpdateService](#)
- [EthernetInterfaces](#)
- [EventDestination](#)
- [EventService](#)
- [JSONSchemas](#)
- [LogEntry](#)
- [LogService](#)
- [Manager](#)
- [ManagerAccount](#)
- [ManagerNetworkProtocol](#)
- [Role](#)
- [SerialInterfaces](#)
- [MessageRegistry](#)
- [OEMManager](#)
- [Power](#)
- [SecureBoot](#)
- [ServiceRoot](#)
- [Session](#)
- [SessionService](#)
- [SoftwareInventory](#)
- [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
```

Supported HTTP methods and privileges

| 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/Registries/ManagerAttributeRegistry/ManagerAttributeRegistry.v1_0_0.json  
/redfish/v1/Systems/<ID>/Bios/BiosRegistry
```

Supported HTTP methods and privileges

| HTTP method | Required privilege |
|-------------|--------------------|
| GET | Login |

Supported status codes

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

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
```

Supported HTTP methods and privileges

| HTTP method | Required privilege |
|-------------|--------------------|
| GET | Login |

Supported status codes

| 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
```

Supported HTTP methods and privileges

| HTTP method | Required privilege |
|-------------|--------------------|
| POST | SystemControl |

Supported status codes

| 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 |

Supported action — ChangePassword

Description

This action is used for changing the BIOS passwords.

URL

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

Supported HTTP methods and privileges

| HTTP method | Required privilege |
|-------------|--------------------|
| POST | SystemControl |

Updatable properties

| Parameter | 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 |

Supported status codes

| HTTP status code | Extended information |
|------------------|---------------------------------|
| 200 | Base.1.0.Success |
| 400 | Base.1.0.PropertyValueTypeError |

| HTTP status code | Extended information |
|------------------|---------------------------------|
| | Base.1.0.PropertyValueNotInList |
| 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
```

Supported HTTP methods and privileges

| HTTP method | Required privilege |
|-------------|--------------------|
| POST | SystemControl |

Supported status codes

| 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 |

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

Supported HTTP methods and privileges

| HTTP method | Required privilege |
|-------------|--------------------|
| GET | Login |
| PATCH | SystemControl |

Updatable properties

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

Supported status codes

| HTTP status code | Extended information |
|------------------|--|
| 200 | Base.1.0.Success |
| 400 | Base.1.0.PropertyValueTypeError Base.1.0.PropertyValueNotInList |
| 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

Supported HTTP methods and privileges

| HTTP method | Required privilege |
|-------------|--------------------|
| GET | Login |

Navigation URL

/redfish/v1/Chassis/<ID>

Supported HTTP methods and privileges

| HTTP method | Required privilege |
|-------------|--------------------|
| PATCH | ConfigureManager |

Supported status codes

| HTTP status code | Extended information |
|------------------|---|
| 200 | Base.1.0.success |
| 400 | Base.1.0.PropertyValueTypeError Base.1.0.PropertyValueNotInList Base.1.0.PropertyUnknown Base.1.0.PropertyNotWritable Base.1.0.PropertyValueFormatError |
| 500 | Base.1.0.InternalError |

Supported properties and values

| Property | Values |
|--------------|--|
| ResetType | On ForceOff |
| IndicatorLed | Blinking Off |
| ChassisType | Rack StandAlone Blade Enclosure Sled |

Supported action — Reset

URL

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

Description

This action is used to reset the chassis.

Supported HTTP methods and privileges

| HTTP method | Required privilege |
|-------------|--------------------|
| POST | ConfigureComponent |

Updatable properties

| Property | Value |
|-----------|----------------|
| ResetType | On ForceOff |

Supported status codes

| HTTP status code | Extended information |
|------------------|---|
| 204 | |
| 400 | Base.1.0.PropertyValueTypeError Base.1.0.PropertyValueNotInList Base.1.0.PropertyUnknown Base.1.0.PropertyNotWritable Base.1.0.PropertyValueFormatError |
| 500 | Base.1.0.InternalError |
| 503 | |

URL

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

Supported HTTP methods and privileges

| HTTP method | Required privilege |
|-------------|--------------------|
| GET | Login |

Supported status codes

| 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

Supported HTTP methods and privileges

| HTTP method | Required privilege |
|-------------|--------------------|
| GET | Login |

Navigation URL

/redfish/v1/Systems/<ID>

Supported HTTP methods and privileges

| HTTP method | Required privilege |
|-------------|--------------------|
| PATCH | ConfigureManager |

Supported status codes and error messages

| HTTP status code | Extended information |
|------------------|---|
| 200 | Base.1.0.success |
| 400 | Base.1.0.PropertyValueTypeError Base.1.0.PropertyValueNotInList Base.1.0.PropertyUnknown Base.1.0.PropertyNotWritable Base.1.0.PropertyValueFormatError |
| 500 | Base.1.0.InternalError |

Supported properties and values

| Property | Values |
|------------------------|--|
| ResetType | <ul style="list-style-type: none">OnForceOffGracefulRestartPushPowerButtonNMI |
| PowerState | <ul style="list-style-type: none">OnOff |
| SystemType | Physical |
| BootSource | <ul style="list-style-type: none">PXEFloppyCDUSBHDDUtilitiesUefiTargetBiosSetup |
| BootSourceOverrideMode | <ul style="list-style-type: none">UEFILegacy |

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

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
```

Supported HTTP methods and privileges

| HTTP method | Required privilege |
|-------------|--------------------|
| POST | ConfigureComponent |

Updatable properties

| Property | Value |
|-----------|---|
| ResetType | <ul style="list-style-type: none"> On ForceOff GracefulRestart PushPowerButton NMI |

Supported status codes

| HTTP status code | Extended information |
|------------------|---|
| 200 | |
| 400 | Base.1.0.PropertyValueTypeError Base.1.0.PropertyValueNotInList Base.1.0.PropertyUnknown Base.1.0.PropertyNotWritable Base.1.0.PropertyValueFormatError |
| 500 | Base.1.0.InternalError |

Contained resources

- [Processor](#)
- [EthernetInterfaces](#)
- [SimpleStorage](#)
- [LogService](#)

DellAttributes

Description

This resource is used to represent the iDRAC Configuration and the related settings resource for pending configuration.

URL

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

Supported HTTP methods and privileges

| HTTP method | Required privilege |
|-------------|--------------------|
| GET | Login |
| PATCH | SystemControl |

Updatable properties

| Property | Description |
|------------|---|
| Attributes | Collection of all the attributes and their values supported by the iDRAC configuration. |

Supported status codes

| HTTP status code | Extended information |
|------------------|--|
| 200 | Base.1.0.Success |
| 400 | Base.1.0.PropertyValueNotInList Base.1.0.PropertyValueTypeError |
| 500 | Base.1.0.InternalError |

Supported action — ClearPending

Description

This action is used to clear the pending values.

URL

```
/redfish/v1/Managers/<ID>/Attributes/Settings/Actions/Oem/DellManager.ClearPending
```

Supported HTTP methods and privileges

| HTTP method | Required privilege |
|-------------|--------------------|
| POST | SystemControl |

Supported status codes

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

Settings Resource

Description

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

URL

/redfish/v1/Managers/<ID>/Attributes/Settings

Supported HTTP methods and privileges

| HTTP method | Required privilege |
|-------------|--------------------|
| GET | Login |
| PATCH | SystemControl |

Updatable properties

| Property | Description |
|------------|---|
| Attributes | Collection of all the attributes and their values supported by the iDRAC configuration. |

Supported status codes

| HTTP status code | Extended information |
|------------------|--|
| 200 | Base.1.0.Success |
| 400 | Base.1.0.PropertyValueTypeError Base.1.0.PropertyValueNotInList |
| 500 | Base.1.0.InternalError |

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

Supported HTTP methods and privileges

| HTTP method | Required privilege |
|-------------|--------------------|
| GET | Login |

Supported status codes

| HTTP status code | Error message code |
|------------------|------------------------|
| 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
```

Supported HTTP methods and privileges

| HTTP method | Required privilege |
|-------------|--------------------|
| POST | SystemControl |

Supported status codes

| 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 |

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
```

Supported HTTP methods and privileges

| HTTP method | Required privilege |
|-------------|--------------------|
| GET | Login |
| PATCH | SystemControl |

Updatable properties

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

Supported status codes

| 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 |

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

Supported HTTP methods and privileges

| HTTP method | Required privilege |
|-------------|--------------------|
| GET | Login |

Supported status codes

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

DellCertificates

Description

This resource is used to represent Secure Boot certificates for a Redfish implementation.

URL

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

Supported HTTP methods and privileges

| HTTP method | Required privilege |
|-------------|--------------------|
| GET | Login |

Supported status codes

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

URL

/redfish/v1/Systems/<ID>/SecureBoot/Certificates/<CertificateStore-ID>

Supported HTTP methods and privileges

| HTTP method | Required privilege |
|-------------|--------------------|
| GET | Login |
| POST | SystemControl |

Updatable properties

| Parameter | Description |
|-------------------|---|
| CryptographicHash | A string providing the Cryptographic Hash value of SHA256, SHA384, or SHA512. |

Supported status codes

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

URL

/redfish/v1/Systems/<ID>/SecureBoot/Certificates/<CertificateStore-ID>/<Certificate-ID>

Supported HTTP methods and privileges

| HTTP method | Required privilege |
|-------------|--------------------|
| GET | Login |
| DELETE | SystemControl |

NOTE: By default, GET requests on the Certificate member resource generate an output of application/json. Use GET request with Accept header application/pkix-cert to download certificate and use application/octet-stream to download the Hash files.

Supported status codes

| HTTP status code | Extended information |
|------------------|--|
| 200 | Base.1.0.Success |
| 400 | Base.1.0.PropertyValueTypeError Base.1.0.PropertyValueNotInList |
| 403 | Base.1.0.InsufficientPrivilege |
| 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
```

Supported HTTP methods and privileges

| HTTP method | Required privilege |
|-------------|--------------------|
| GET | Login |
| POST | SystemControl |

Properties required for job creation

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

Supported status codes

| 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 |

Navigation URL

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

Supported HTTP methods and privileges

| HTTP method | Required privilege |
|-------------|--------------------|
| GET | Login |
| DELETE | SystemControl |

Supported status codes

| 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 |

DellManager

Description

This resource is used to represent a Redfish OEM extension of management sub-system.

URL

/redfish/v1/Managers

Supported action — ResetToDefaults

Description

This defines the name of the OEM action supported when used in conjunction with a POST operation to this resource. When issued, this operation resets the Manager attributes to default settings.

URL

/redfish/v1/Managers/<ID>/Actions/Oem/DellManager.ResetToDefaults

Supported HTTP methods and privileges

| HTTP method | Required privilege |
|-------------|--------------------|
| POST | SystemControl |

Supported status codes

| HTTP status code | Extended information |
|------------------|--|
| 200 | Base.1.0.Success |
| 400 | Base.1.0.PropertyValueTypeError Base.1.0.PropertyValueNotInList |
| 500 | Base.1.0.InternalError |

Supported properties and values

| Property | Values |
|-----------|--|
| ResetType | All ResetAllWithRootDefaults Default |

DellServiceRoot

Description

This object represents the Redfish OEM extensions for root service.

URL

```
/redfish/v1
```

Supported HTTP methods and privileges

| HTTP method | Required privilege |
|-------------|--------------------|
| GET | Login |

Supported properties and values

| Property | Description |
|-------------------|--------------------|
| ManagerMACAddress | iDRAC MAC address |
| IsBranded | Integer |
| ServiceTag | System Service Tag |

DellUpdateService

Description

This action is used to perform firmware updates.

Supported action — Install

Description

This resource is used to represent extension of Update Service schema of Redfish.

URL

```
/redfish/v1/UpdateService/Actions/Oem/DellUpdateService.Install
```

Supported HTTP methods and privileges

| HTTP method | Required privilege |
|-------------|---|
| POST | .d9 file type — ConfigureManager |
| | .pm file type — ConfigureManager |
| | .exe file type — ConfigureSelf |

Supported properties and values

| Property | Values |
|-------------|--------------|
| InstallUpon | Now |
| | NowAndReboot |
| | NextReboot |

Supported status codes

| 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 |

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

Supported HTTP methods and privileges

| HTTP method | Required privilege |
|-------------|--------------------|
| GET | Login |

URL

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

Supported HTTP methods and privileges

| HTTP method | Required privilege |
|-------------|--------------------|
| PATCH | ConfigureManager |

Updatable properties

| Property | Description |
|------------|--------------------|
| HostName | updates HostName |
| IPv4 | updates IPv4 |
| IPv6 | updates IPv6 |
| IPv6Static | updates IPv6Static |

Supported status codes and Error Message Codes

| HTTP status code | Extended information | Error Message Code |
|------------------|---------------------------------|--------------------|
| 200 | Base.1.0.success | |
| 400 | Base.1.0.PropertyValueTypeError | ISM0013 |
| | Base.1.0.PropertyValueNotInList | RAC0253 |
| | Base.1.0.PropertyUnknown | RAC0254 |
| | Base.1.0.PropertyNotWritable | RAC0255 |

| HTTP status code | Extended information | Error Message Code |
|------------------|-----------------------------------|--------------------|
| | Base.1.0.PropertyValueFormatError | RAC0259 |
| | | SWC0296 |
| 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.

Supported HTTP methods and privileges

| HTTP method | Required privilege |
|-------------|--------------------|
| GET | Login |

Supported 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 an URL to the destination where the events are sent.

URL

/redfish/v1/EventService/Subscriptions

Supported HTTP methods and privileges

| HTTP method | Required privilege |
|-------------|--------------------|
| GET | Login |
| POST | ConfigureManager |

Updatable properties

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

Supported status codes

| HTTP status code | Extended information |
|------------------|---|
| 200 | |
| 201 | |
| 400 | Base.1.0.PropertyValueTypeError Base.1.0.PropertyValueNotInList Base.1.0.PropertyUnknown Base.1.0.PropertyNotWritable Base.1.0.PropertyValueFormatError |
| 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

Supported HTTP methods and privileges

| HTTP method | Required privilege |
|-------------|--------------------|
| GET | Login |

Supported status codes

| 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

Supported HTTP methods and privileges

| HTTP method | Required privilege |
|-------------|--------------------|
| GET | Login |

Supported status codes

| 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`

Supported HTTP methods and privileges

| HTTP method | Required privilege |
|-------------|--------------------|
| GET | Login |

Supported status codes

| 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.

Supported HTTP methods and privileges

| HTTP method | Required privilege |
|-------------|--------------------|
| GET | Login |

Supported status codes

| HTTP status code | Extended information |
|------------------|----------------------|
| 200 | |
| 400 | |
| 500 | |

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

Description

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

Supported HTTP methods and privileges

| HTTP method | Required privilege |
|-------------|--------------------|
| GET | Login |

Supported status codes

| 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

Supported HTTP methods and privileges

| HTTP method | Required privilege |
|-------------|--------------------|
| GET | Login |

Supported status codes

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.

Supported HTTP methods and privileges

| HTTP method | Required privilege |
|-------------|--------------------|
| GET | Login |

Supported status codes

HTTP status code

200
400
500

[/redfish/v1/Managers/<ID>/LogServices/Sel](#)

Description

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

Supported HTTP methods and privileges

| HTTP method | Required privilege |
|-------------|--------------------|
| GET | Login |

Supported status codes

| 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.

Supported HTTP methods and privileges

| HTTP method | Required privilege |
|-------------|--------------------|
| POST | ConfigureManager |

Supported status codes

| HTTP status code | Extended information |
|------------------|---|
| 204 | |
| 400 | Base.1.0.PropertyValueTypeError Base.1.0.PropertyValueNotInList Base.1.0.PropertyUnknown Base.1.0.PropertyNotWritable Base.1.0.PropertyValueFormatError |
| 500 | Base.1.0.InternalError |

Manager

Description

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

URL

/redfish/v1/Managers

Supported HTTP methods and privileges

| HTTP method | Required privilege |
|-------------|--------------------|
| GET | Login |

Supported status codes

| HTTP status code |
|------------------|
| 200 |
| 400 |
| 500 |

Supported properties and values

| Property | Values |
|--------------------------------|-----------------------|
| ManagerType | BMC |
| CommandConnectTypesSupported | SSH Telnet IPMI |
| GraphicalConnectTypesSupported | KVMIP |
| ResetType | GracefulRestart |

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
```

Supported HTTP methods and privileges

| HTTP method | Required privilege |
|-------------|--------------------|
| POST | ConfigureManager |

Updatable properties

| Property | Value |
|-----------|-----------------|
| ResetType | GracefulRestart |

| HTTP status code | Extended information |
|------------------|---|
| 204 | |
| 400 | Base.1.0.PropertyValueTypeError Base.1.0.PropertyValueNotInList Base.1.0.PropertyUnknown Base.1.0.PropertyNotWritable Base.1.0.PropertyValueFormatError |
| 500 | Base.1.0.InternalError |

ManagerAccount

Description

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

URL

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

Supported HTTP methods and privileges

| HTTP method | Required privilege |
|-------------|--------------------|
| GET | Login |

Navigation URL

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

Supported HTTP methods and privileges

| HTTP method | Required privilege |
|-------------|--------------------|
| PATCH | ConfigureManager |

Updatable properties

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

Supported status codes

| HTTP status code | Error message code |
|------------------|--------------------|
| 200 | |
| 400 | RAC0288 RAC0291 |
| 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`

Supported HTTP methods and privileges

| HTTP method | Required privilege |
|-------------|--------------------|
| GET | Login |
| PATCH | ConfigureManager |

Updatable properties

| Property |
|--------------|
| FQDN |
| Hostname |
| HTTP |
| HTTPS |
| IPMI |
| KVMIP |
| SNMP |
| SSH |
| Telnet |
| VirtualMedia |

Supported status codes and error messages

| HTTP status code | Extended information |
|------------------|---|
| 200 | Base.1.0.success |
| 400 | Base.1.0.PropertyValueTypeError Base.1.0.PropertyValueNotInList Base.1.0.PropertyUnknown Base.1.0.PropertyNotWritable Base.1.0.PropertyValueFormatError |
| 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
```

Supported HTTP methods and privileges

| HTTP method | Required privilege |
|-------------|--------------------|
| GET | Login |

Supported status codes

| 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
```

Supported HTTP methods and privileges

| HTTP method | Required privilege |
|-------------|--------------------|
| GET | Login |

Navigation URL

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

Supported HTTP methods and privileges

| HTTP method | Required privilege |
|-------------|--------------------|
| PATCH | ConfigureManager |

Updatable properties

| Property | Description |
|------------------|--------------------------|
| BitRate | Updates the bit-rate |
| InterfaceEnabled | Updates InterfaceEnabled |

Supported status codes

| HTTP status code | Extended information |
|------------------|---------------------------------|
| 200 | Base.1.0.success |
| 400 | Base.1.0.PropertyValueTypeError |
| | Base.1.0.PropertyValueNotInList |
| | Base.1.0.PropertyUnknown |

| HTTP status code | Extended information |
|------------------|-----------------------------------|
| 500 | Base.1.0.PropertyNotWritable |
| | Base.1.0.PropertyValueFormatError |
| | Base.1.0.InternalError |

Supported properties and values

| Property | Values |
|---------------|---|
| SignalType | Rs232 |
| BitRate | <ul style="list-style-type: none"> · 9600 · 19200 · 38400 · 57600 · 115200 |
| Parity | None |
| DataBits | 8 |
| StopBits | 1 |
| FlowControl | Hardware |
| PinOut | Cisco |
| ConnectorType | DB9 Male |

MessageRegistry

Description

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

URL

`/redfish/v1/Registries/Messages/En`

Supported HTTP methods and privileges

| HTTP method | Required privilege |
|-------------|--------------------|
| GET | Login |

Supported status codes

HTTP status code

200
400
500

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.

Supported action — Export, Import, and Preview

Table 3. 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

HTTP status code

202

Extended information

Accepted

Supported properties and values

| Property | Values |
|-----------------|---|
| ExportFormat | XML, JSON |
| ExportUse | Default, Clone, Replace |
| IncludeInExport | Default, IncludeReadOnly, IncludePasswordHashValues |
| ShareParameters | See Share parameters and values . |

Import resource URL and response details

URL

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

Supported status codes

| HTTP status code | Extended information |
|------------------|----------------------|
| 202 | Accepted |

Supported properties and values

| 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 Share parameters and values . |

Preview resource URL and response details

URL

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

Supported status codes

| HTTP status code | Extended information |
|------------------|----------------------|
| 202 | Accepted |

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, HTTP, HTTPS |
| 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
```

Supported HTTP methods and privileges

| HTTP method | Required privilege |
|-------------|--------------------|
| GET | Login |

Supported status codes

| HTTP status code | Extended information |
|------------------|-----------------------------------|
| 200 | Base.1.0.Success |
| 400 | Base.1.0.PropertyValueTypeError |
| | Base.1.0.PropertyValueNotInList |
| | Base.1.0.PropertyUnknown |
| | Base.1.0.PropertyNotWritable |
| | Base.1.0.PropertyValueFormatError |

| HTTP status code | Extended information |
|------------------|--------------------------|
| 403 | Insufficient privileges. |
| 500 | |

Reference Properties

[/redfish/v1/Chassis/<ID>/Power/PowerControl](#)

Description

Updates the properties of PowerControl in Chassis Collection.

Supported HTTP methods and privileges

| HTTP method | Required privilege |
|-------------|--------------------|
| GET | Login |
| PATCH | ConfigureManager |

Updatable properties

| Property | Description |
|------------|--------------------|
| PowerLimit | Updates PowerLimit |

Supported status codes

| HTTP status code | Extended information |
|------------------|-----------------------------------|
| 200 | Base.1.0.success |
| 400 | Base.1.0.PropertyValueTypeError |
| | Base.1.0.PropertyValueNotInList |
| | Base.1.0.PropertyUnknown |
| | Base.1.0.PropertyNotWritable |
| | Base.1.0.PropertyValueFormatError |
| 500 | Base.1.0.InternalError |

[/redfish/v1/Chassis/<ID>/Power/PowerSupplies/<ID>](#)

Description

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

Supported HTTP methods and privileges

| HTTP method | Required privilege |
|-------------|--------------------|
| GET | Login |

Supported status codes

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

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

Description

Provides the voltage sensor information.

Supported HTTP methods and privileges

| HTTP method | Required privilege |
|-------------|--------------------|
| GET | Login |

Supported status codes

| 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.

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

Description

This object represents the Redundancy element property.

Supported HTTP methods and privileges

| HTTP method | Required privilege |
|-------------|--------------------|
| GET | Login |

Supported status codes

| 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

Supported HTTP methods and privileges

| HTTP method | Required privilege |
|-------------|--------------------|
| GET | Login |
| PATCH | SystemControl |

Updatable properties

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

Supported status codes

| 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 |

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

| HTTP method | Required privilege |
|-------------|--------------------|
| POST | SystemControl |

Updatable properties

| Parameter | Description |
|--------------|--|
| ResetKeyType | ResetAllKeysToDefault DeleteAllKeys DeletePK ResetPK ResetKEK ResetDB ResetDBX |

Supported status codes

| HTTP status code | Extended information |
|------------------|--|
| 200 | Base.1.0.Success |
| 400 | Base.1.0.PropertyValueTypeError Base.1.0.PropertyValueNotInList |
| 500 | Base.1.0.InternalError |

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

Supported HTTP methods and privileges

| HTTP method | Required privilege |
|-------------|--------------------|
| GET | Login |

Supported status codes

| 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.

Supported HTTP methods and privileges

| HTTP method | Required privilege |
|-------------|--------------------|
| GET | Login |
| POST | ConfigureManager |

Updatable properties

| Parameter | Description |
|-----------|-------------|
| username | User name |
| password | Password |

Supported status codes

| HTTP status code | Extended information |
|------------------|---|
| 200 | |
| 201 | |
| 400 | Base.1.0.PropertyValueTypeError Base.1.0.PropertyValueNotInList Base.1.0.PropertyUnknown Base.1.0.PropertyNotWritable Base.1.0.PropertyValueFormatError |
| 500 | Base.1.0.InternalError |

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

Description

Performs delete operation on the session ID.

Supported HTTP methods and privileges

| HTTP method | Required privilege |
|-------------|--------------------|
| DELETE | Login |

Supported status codes

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

Updatable properties

| Property | Description |
|----------------|----------------------------|
| SessionTimeout | Updates web server timeout |

Supported HTTP methods and privileges

| HTTP method | Required privilege |
|-------------|--------------------|
| GET | Login |
| PATCH | ConfigureManager |

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

Supported status codes

| HTTP status code | Extended information |
|------------------|--|
| 200 | Base.1.0.success |
| 400 | Base.1.0.PropertyValueTypeError Base.1.0.PropertyValueNotInList Base.1.0.PropertyUnknown |

| HTTP status code | Extended information |
|------------------|---|
| 500 | Base.1.0.PropertyNotWritable Base.1.0.PropertyValueFormatError Base.1.0.InternalError |

SoftwareInventory

Description

This represents the inventory of firmware components.

URL

`/redfish/v1/UpdateService/FirmwareInventory`

Supported HTTP methods and privileges

| HTTP method | Required privilege |
|-------------|--|
| GET | Login |
| POST | .d9 file type — ConfigureManager .pm file type — ConfigureManager .exe file type — ConfigureSelf |

Navigation URL

`/redfish/v1/UpdateService/FirmwareInventory/<ID>`

Supported HTTP methods and privileges

| HTTP method | Required privilege |
|-------------|--|
| GET | Login |
| DELETE | .d9 file type — ConfigureManager .pm file type — ConfigureManager .exe file type — ConfigureSelf |

Supported status codes

| HTTP status code | Extended information | Error message code |
|------------------|--------------------------------|---------------------------------------|
| 200 | | RAC0604, SYS422 |
| 200 | Base.1.0.Success | SYS413 |
| 201 | Base.1.0.Created | SYS414 |
| 304 | | |
| 400 | | OSD35, SYS400, SYS404, SYS406, SYS434 |
| 403 | Base.1.0.InsufficientPrivilege | RAC0506 |
| 403 | | LIC501 |
| 404 | Base.1.0.ResourceMissingAtURI | SYS403 |
| 405 | | SYS402 |
| 415 | | SYS401 |
| 500 | Base.1.0.InternalError | RAC964 |
| 503 | | SUP0108 |

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
```

Supported HTTP methods and privileges

| HTTP method | Required privilege |
|-------------|--------------------|
| GET | Login |

Supported status codes

| HTTP status code |
|------------------|
| 200 |
| 400 |

HTTP status code

500

Supported properties and values

| 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/<ID>/Storage/Controllers
```

Supported HTTP methods and privileges

| HTTP method | Required privilege |
|-------------|--------------------|
| GET | Login |

Supported status codes

| 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
```

Supported HTTP methods and response content type

| HTTP method | Response content type |
|-------------|-----------------------|
| GET | application/json |

Supported status codes

| HTTP status code |
|------------------|
| 200 |
| 400 |
| 500 |

TaskService

Description

This resource represents a task service for a Redfish implementation.

URL

```
/redfish/v1/TaskService
```

Supported HTTP methods and privileges

| HTTP method | Required privilege |
|-------------|--------------------|
| GET | Login |

Supported status codes

HTTP status code

200

400

500

Tasks

URL

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

Supported status codes

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`

Supported HTTP methods and privileges

HTTP method

Required privilege

GET

Login

Supported status codes

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.

Supported HTTP methods and privileges

HTTP method

Required privilege

| | |
|-----|-------|
| GET | Login |
|-----|-------|

Supported status codes

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.

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

Description

Represents the properties for temperature sensors.

Supported HTTP methods and privileges

HTTP method

Required privilege

| | |
|-----|-------|
| GET | Login |
|-----|-------|

Supported status codes and error messages

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.

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

Description

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

Supported HTTP methods and privileges

HTTP method

Required privilege

GET

Login

Supported status codes

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

Supported HTTP methods and privileges

| HTTP method | Required privilege |
|-------------|--------------------|
| GET | Login |

Supported status codes

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

VirtualMedia

Description

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

URL

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

Supported HTTP methods and privileges

| HTTP method | Required privilege |
|-------------|--------------------|
| GET | Login |

Supported status codes

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

Supported properties and values

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

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/<Account-id></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"
    }
  ]
}
```