INTERNATIONAL STANDARD

ISO/IEC 30115

First edition
2018-03

Information technology — Redfish scalable platforms management API specification

Technologies de l'information — Spécification API (interface de programmation d'applications) relative à la gestion des plates-formes évolutives Redfish



Reference number
ISO/IEC 30115:2018(E)

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Published in Switzerland

Foreword

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This document was prepared by the Distributed Management Task Force, Inc. (DMTF) (as DSP0266) and drafted in accordance with its editorial rules. It was adopted, under the JTC 1 PAS procedure, by Joint Technical Committee ISO/IEC JTC 1, *Information technology*.

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Foreword

The Redfish Scalable Platforms Management API ("Redfish") was prepared by the Scalable Platforms Management Forum of the DMTF.

DMTF is a not-for-profit association of industry members dedicated to promoting enterprise and systems management and interoperability. For information about the DMTF, see http://www.dmtf.org.

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Acknowledgments

The DMTF acknowledges the following individuals for their contributions to this document:

- Jeff Autor - Hewlett Packard Enterprise
- Patrick Boyd - Dell Inc.
- David Brockhaus - Emerson Network Power
- Richard Brunner - VMware Inc.
- Lee Calcote - Seagate Technology
- P Chandrasekhar - Dell Inc.
- Chris Davenport - Hewlett Packard Enterprise
- Gamma Dean - Emerson Network Power
- Daniel Dufresne - EMC
- Samer El-Haj-Mahmoud - Lenovo, Hewlett Packard Enterprise
- George Ericson - EMC
- Wassim Fayed - Microsoft Corporation
- Mike Garrett - Hewlett Packard Enterprise
- Steve Geffin - Emerson Network Power
- Joe Handzik - Hewlett Packard Enterprise
- Jon Hass - Dell Inc.
- Jeff Hilland - Hewlett Packard Enterprise
- Chris Hoffman - Emerson Network Power
- Steven Krig - Intel Corporation
- John Leung - Intel Corporation
- Jagan Molleti - Dell Inc.
- Milena Natanov - Microsoft Corporation
- Michael Pizzo - Microsoft Corporation
- Chris Poblete - Dell Inc.
- Michael Raineri - EMC
- Irina Salvan - Microsoft Corporation
- Hemal Shah - Broadcom Limited
- Jim Shelton - Emerson Network Power
- Tom Slaight - Intel Corporation
- Donnie Sturgeon - Emerson Network Power
- Pawel Szymanski - Intel Corporation
- Paul Vancil - Dell Inc.
- Linda Wu - Super Micro Computer, Inc.

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1. Abstract

The Redfish Scalable Platforms Management API ("Redfish") is a new specification that uses RESTful interface semantics to access data defined in model format to perform out-of-band systems management. It is suitable for a wide range of servers, from stand-alone servers to rack mount and bladed environments but scales equally well for large scale cloud environments.

There are several out-of-band systems management standards (defacto and de jour) available in the industry. They all either vary widely in implementation, were developed for single server embedded environments or have their roots in antiquated software modeling constructs. There is no single industry standard that is simple to use, based on emerging programming standards, embedded friendly and capable of meeting large scale data center & cloud needs.

2. Normative references

The following referenced documents are indispensable for the application of this document. For dated or versioned references, only the edition cited (including any corrigenda or DMTF update versions) applies. For references without a date or version, the latest published edition of the referenced document (including any corrigenda or DMTF update versions) applies.

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- SNIA TLS Specification for Storage Systems. 20 November 2014. http://www.snia.org/tls/
- DMTF DSP0270 Redfish Host Interface Specification, http://www.dmtf.org/sites/default/files/standards/documents/DSP0270_1.0.pdf

3. Terms and definitions

In this document, some terms have a specific meaning beyond the normal English meaning. Those terms are defined in this clause.

The terms "shall" ("required"), "shall not", "should" ("recommended"), "should not" ("not recommended"), "may", "need not" ("not required"), "can" and "cannot" in this document are to be interpreted as described in ISO/IEC Directives, Part 2, Annex H. The terms in parenthesis are alternatives for the preceding term, for use in exceptional cases when the preceding term cannot be used for linguistic reasons. Note that ISO/IEC Directives, Part 2, Annex H specifies additional alternatives. Occurrences of such additional alternatives shall be interpreted in their normal English meaning.

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The following additional terms are used in this document.

Term	Definition
Baseboard Management Controller	An embedded device or service, typically an independent microprocessor or System-on-Chip with associated firmware, within a Computer System used to perform systems monitoring and management-related tasks, which are commonly performed out-of-band.
Collection	See Resource Collection.
CRUD	Basic intrinsic operations used by any interface: Create, Read, Update and Delete.
Event	A record that corresponds to an individual alert.
Managed System	In the context of this specification, a managed system is a system that provides information or status, or is controllable, via a Redfish-defined interface.
Member	A Member is a single resource instance contained in a Resource Collection
Message	A complete request or response, formatted in HTTP/HTTPS. The protocol, based on REST, is a request/response protocol where every Request should result in a Response.
Operation	The HTTP request methods that map generic CRUD operations. These are POST, GET, PUT/PATCH, HEAD and DELETE.
OData	The Open Data Protocol, as defined in OData-Protocol.
OData Service Document	The name for a resource that provides information about the Service Root. The Service Document provides a standard format for enumerating the resources exposed by the service that enables generic hypermedia-driven OData clients to navigate to the resources of the Redfish Service.
Redfish Alert Receiver	The name for the functionality that receives alerts from a Redfish Service. This functionality is typically software running on a remote system that is separate from the managed system.
Redfish Client	Name for the functionality that communicates with a Redfish Service and accesses one or more resources or functions of the Service.
Redfish Protocol	The set of protocols that are used to discover, connect to, and inter-communicate with a Redfish Service.

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Term	Definition
Redfish Schema	The Schema definitions for Redfish resources. It is defined according to OData Schema representation that can be directly translated to a JSON Schema representation.
Redfish Service	Also referred to as the "Service". The set of functionality that implements the protocols, resources, and functions that deliver the interface defined by this specification and its associated behaviors for one or more managed systems.
Redfish Service Entry Point	Also referred to as "Service Entry Point". The interface through which a particular instance of a Redfish Service is accessed. A Redfish Service may have more than one Service Entry Point.
Request	A message from a Client to a Server. It consists of a request line (which includes the Operation), request headers, an empty line and an optional message body.
Resource	A Resource is addressable by a URI and is able to receive and process messages. A Resource can be either an individual entity, or a Collection that acts as a container for several other entities.
Resource Collection	A Resource Collection is a Resource that acts as a container of other Resources. The Members of a Resource Collection usually have similar characteristics. The container processes messages sent to the container. The Members of the container process messages sent only to that Member without affecting other Members of the container.
Resource Tree	A Resource Tree is a tree structure of JSON encoded resources accessible via a well-known starting URI. A client may discover the resources available on a Redfish Service by following the resource links from the base of the tree. **NOTE** for Redfish client implementation: Although the resources are a tree, the references between resources may result in graph instead of a tree. Clients traversing the resource tree must contain logic to avoid infinite loops.
Response	A message from a Server to a Client in response to a request message. It consists of a status line, response headers, an empty line and an optional message body.
Service Root	The term Service Root is used to refer to a particular resource that is directly accessed via the service entry point. This resource serves as the starting point for locating and accessing the other resources and associated metadata that together make up an instance of a Redfish Service.
Subscription	The act of registering a destination for the reception of events.

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