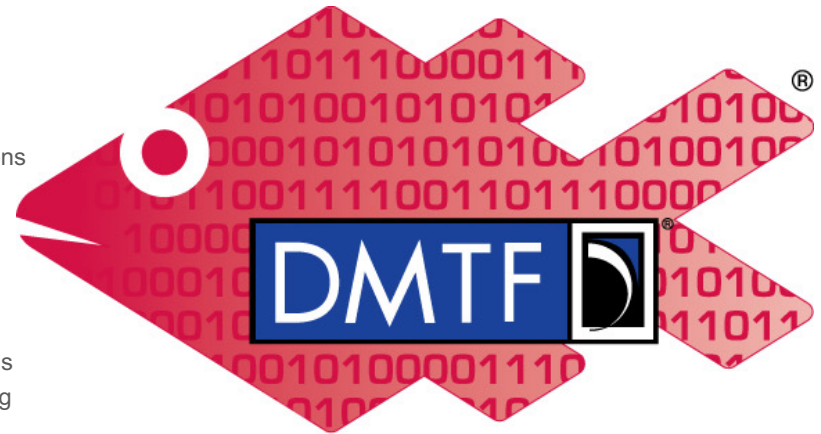# Redfish Release 2023.3

**DMTF Redfish Forum**

December 2023

Redfish Release 2023.3

- Redfish Specification v1.20.0
  - Added requirement for Outbound Connections to include the Sec-WebSocket-Protocol header as "Redfish"
  - Added requirement that services <u>shall</u> accept empty JSON objects for actions that do not have required parameters. **This change might require modification to an implementation to support this version of the specification**

- Redfish Specification v1.19.1 (errata release)
  - Clarified that users can delete their own Session resources
  - Added URI construction guidance for @Redfish.ActionInfo and OEM actions
  - Updated the <u>Members@odata.nextLink</u> clause to give guidance for handling the original query parameters and for using the $skiptoken parameter
  - Clarified the behavior of $expand query option when used with resources containing reference objects
  - Added ability to configure the support of HTTP Basic authentication

- Redfish Schema Bundle 2023.3
  - DSP8010 contains all released Redfish schemas

- Redfish Message Registry Bundle 2023.3
  - DSP8011 contains all released Redfish registries
  - Added *ActionParameterValueOutOfRange* to Base v1.18.0 message registry

- 1 New schema
  - ResolutionStep for providing a recommended step to resolve a condition (fault, error, etc.)

- 26 Updated schemas (highlights)
  - See release notes in DSP8010 for errata details

- Download all published material at: http://www.dmtf.org/standards/redfish
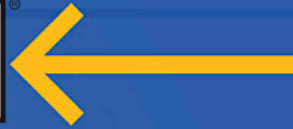
NEW ResolutionStep

- Allows a service to give programmatic guidance to clients for resolving errors, faults, or other issues

- Each *LogEntry, Event, Condition*, and *Message* object is allowed to contain a *ResolutionSteps* property

- *ResolutionSteps* is an array of objects consisting of…
    - The type of action to perform
    - The priority of the step
    - URIs and action parameters required to perform the resolution step
    - Retry policy

ResolutionStep Example

```json
{
    "Status": {
        "State": "Enabled",
        "Health": "Critical",
        "Conditions": [
            {
                "MessageId": "Contoso.1.0.TooManyFatalErrors",
                "Message": "Too many fatal errors detected on this device",
                "ResolutionSteps": [
                    {
                        "ResolutionType": "Reset",
                        "Priority": 0,
                        "ActionURI": "/redfish/v1/Systems/1/Actions/ComputerSystem.Reset",
                        "ActionParameters": [
                            {
                                "Name": "ResetType",
                                "AllowableValues": [ "ForceRestart" ]
                            }
                        ]
                    },
                    {
                        "ResolutionType": "ReplaceComponent",
                        "Priority": 1,
                        "TargetComponentURI": "/redfish/v1/Systems/1/Processors/GPU3"
                    },
                    {
                        "ResolutionType": "ContactVendor",
                        "Priority": 2
                    }
                ]
            }
        ]
    }
}
```

Release 2023.3 Minor Schema Revision Highlights

- **AccountService** v1.15.0
  - Added *HTTPBasicAuth* control property
- **Drive** v1.18.0
  - Added *RevertToOriginalFactoryState* action
- **LogService** v1.6.0
  - Added *TargetURI, UserName, Password,* and *TransferProtocol* parameters to the *CollectDiagnosticData* action to optionally push diagnostic data to a remote URI
  - Added PushDiagnosticData action
- **Processor** v1.19.0
  - Added "RISC-V" to *ProcessorArchitecture*
  - Added "RV32" and "RV64" to *InstructionSet*

Schema and Registry Guide documents

- Redfish Data Model Specification (DSP0268)
  - Document was previous titled "Redfish Schema Supplement"
  - Now includes normative statements ("LongDescription") and informative description details from schema in a single document
  - Intended for both Redfish Service and client-side developers
- Redfish Resource and Schema Guide (DSP2046)
  - Presents schema (data model) contents in a more friendly format for end users
  - Includes example payloads for each resource type
- Redfish Message Registry Guide (DSP2065)
  - Presents message registry definitions in a more human-readable format
  - Includes summary table and individual message details
- Redfish Property Guide (DSP2053)
  - Provides an alphabetical list of all properties defined in Redfish schema
  - Useful for schema writers to locate existing definitions or properties
  - Helps avoid re-defining property names already in use

Available Redfish conformance testing tools

- DMTF Redfish Forum provides open source tools for service developers to validate their conformance with the Redfish protocol, data model, and profiles
- **Redfish Protocol Validator**
  - Tests a live service for conformance to the Redfish HTTP protocol, including response headers and status codes
  - https://github.com/DMTF/Redfish-Protocol-Validator
- **Redfish Service Validator**
  - Tests a live service for conformance with Redfish schemas, ensuring the returned JSON payloads validate against the standard data models
  - Recommend that developers run this tool first, as errors in payload are more likely to cause issues for end users and interoperability
  - https://github.com/DMTF/Redfish-Service-Validator
- **Redfish Interop Validator**
  - Tests a service against a Redfish interoperability profile
  - https://github.com/DMTF/Redfish-Interop-Validator

Redfish-Publications repository

- Public GitHub repository contains an official read-only copy of the Redfish schemas and standard message registries
  - https://github.com/DMTF/Redfish-Publications
  - Creates public, durable locations for referencing specific schema or registry items in issue reports, forum postings, or other online references
  - Allows developers to automatically synchronize with new Redfish releases using normal GitHub tools and processes
- Repository will be updated as each Redfish release become public
- Contains materials published as DSP8010 and DSP8011
  - **/csdl** – Redfish schemas in OData CSDL XML format
  - **/json-schema** – Redfish schemas in JSON Schema format
  - **/openapi** – Redfish schemas in OpenAPI YAML format
  - **/dictionaries** – RDE dictionaries
  - **/registries** – Redfish standard message registries

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Redfish Schema

MINOR REVISION DETAILS

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Redfish Schema Minor Revisions (1 of 5)

- AccountService v1.15.0
  - Added *HTTPBasicAuth*
- AggregationSource v1.4.0
  - Added "CFB128_AES192" and "CFB128_AES256" to *SNMPEncryptionProtocols*
- Assembly v1.5.0
  - Added *ISOCountryCodeOfOrigin*
- Chassis v1.25.0
  - Added "PowerStrip" to *ChassisType*
  - Added *HeatingCoolingManagerURIs* and *HeatingCoolingEquipmentNames* to *Links*
- ComputerSystem v1.22.0
  - Added *EfficiencyFavorPower* and *EfficiencyFavorPerformance* to *PowerMode*
- Control v1.5.0
  - Added "Percent" and "DutyCycle" to *ControlType*
- Drive v1.18.0
  - Added "EDSFF" and "M2" to *FormFactor*
  - Added *RevertToOriginalFactoryState* action

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Redfish Schema Minor Revisions (2 of 5)

- DriveMetrics v1.2.0
  - Added *ReadIOKiBytes* and *WriteIOKiBytes*
- EthernetInterface v1.12.0
  - Added *IPv6Enabled*
- Event v1.10.0
  - Added *ResolutionSteps*
- EventDestination v1.14.0
  - Added "CFB128_AES192" and "CFB128_AES256" to *SNMPEncryptionProtocols*
- Key v1.3.0
  - Added *Comment* to *SSH*
- LogEntry v1.16.0
  - Added *ResolutionSteps*

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Redfish Schema Minor Revisions (3 of 5)

- **LogService v1.6.0**
  - Added *TargetURI, UserName, Password,* and *TransferProtocol* parameters to the *CollectDiagnosticData* action
  - Added *PushDiagnosticData* action
- **Manager v1.19.0**
  - Added *DaylightSavingTime*
- **ManagerAccount v1.12.0**
  - Added "CFB128_AES192" and "CFB128_AES256" to *SNMPEncryptionProtocols*
- **ManagerNetworkProtocol v1.10.0**
  - Added *FTP, SFTP*, and *FTPS*
  - Added *RestrictCommunityToIPv4AddressRange*, *IPv4AddressRangeLower*, and *IPv4AddressRangeUpper* to *CommunityStrings* in *SNMP*
  - Added "CFB128_AES192" and "CFB128_AES256" to *SNMPEncryptionProtocols*
  - Deprecated *CommunityAccessMode* property in *SNMP* in favor of existing *AccessMode* property in *CommunityStrings*
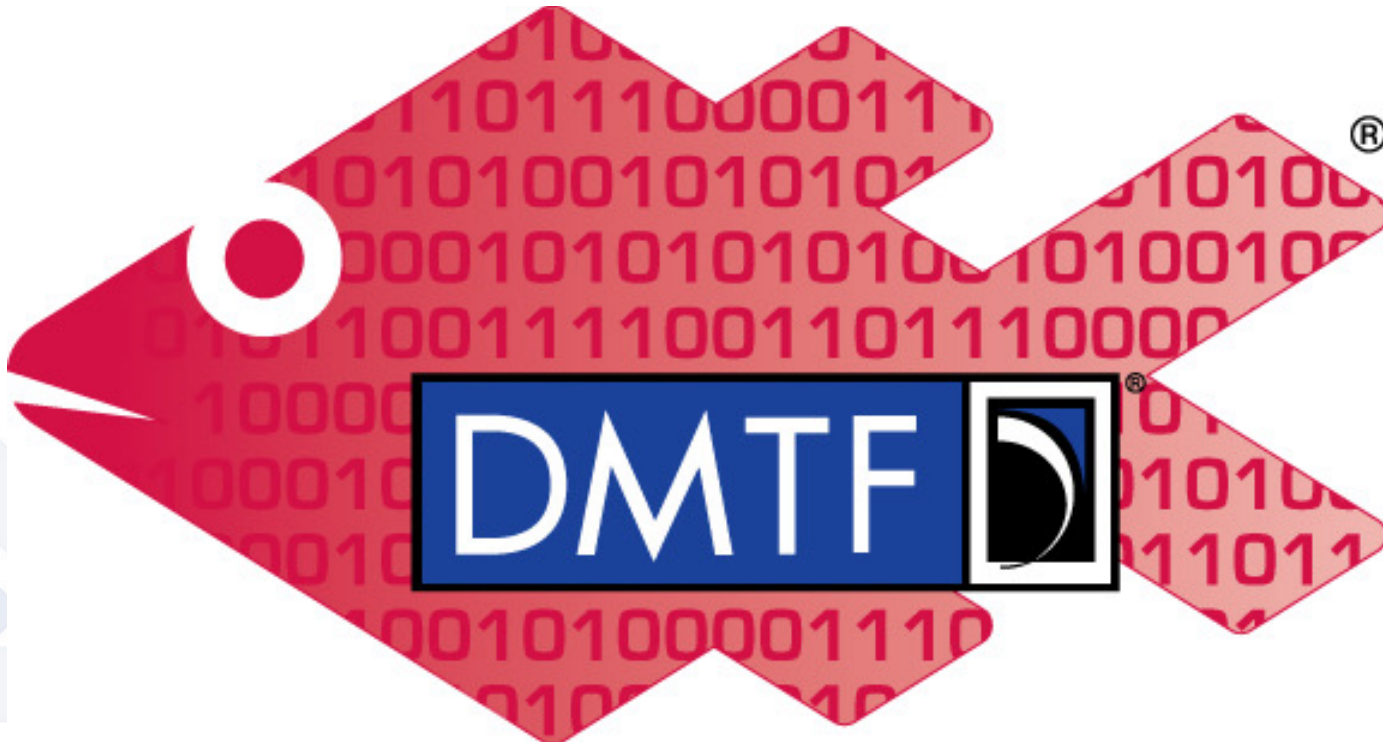
Redfish Schema Minor Revisions (4 of 5)

- Memory v1.19.0
  - Added "LPDDR5_SDRAM" to *MemoryDeviceType*
  - Deprecated *PredictedMediaLifeLeftPercent* property in favor of existing *PredictedMediaLifeLeftPercent* in *MemoryMetrics* resource

- Message v1.2.0
  - Added *ResolutionSteps*

- NetworkAdapter v1.10.0
  - Added *ActiveSoftwareImage* and *SoftwareImages* to *Links* in *Controllers*

- PCIeDevice v1.13.0
  - Added *UnsupportedRequestCount* to *PCIeErrors*

- Port v1.11.0
  - Added *SupportedCXLModes* to CXL
  - Deprecated *Reserved* in *CurrentPortConfigurationState* in favor of *FabricLink*
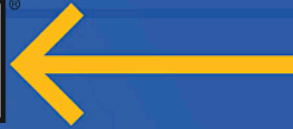
Redfish Schema Minor Revisions (5 of 5)

- Processor v1.19.0
  - Added "RISC-V" to *ProcessorArchitecture*
  - Added "RV32" and "RV64" to *InstructionSet*
  - Added "Partition" to *ProcessorType*
- Resource v1.18.0
  - Added *ResolutionSteps* to *Conditions*
- TrustedComponent v1.3.0
  - Added *TPMGetEventLog* action
- UpdateService v1.13.0
  - Added *GenerateSSHIdentityKeyPair* and *RemoveSSHIdentityKeyPair* actions
  - Added *PublicIdentitySSHKey*
  - Added *SupportedUpdateImageFormats*

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