Redfish Release 2023.3

DMTF Redfish Forum
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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 shall 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 Members@odata.nextLink 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](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

  - 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](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](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](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](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
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
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`
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