# Redfish Release 2024.4

DMTF Redfish Forum

December 2024

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- Redfish Specification 1.21.1 (errata release)
  - Corrected *$expand* with *$select* query parameter example and clarified the supporting text
  - Added "OpenCompute" to the OEM exception list
- Redfish Schema Bundle 2024.4
  - DSP8010 contains all released Redfish schemas
- Redfish Message Registry Bundle 2024.4
  - DSP8011 contains all released Redfish registries
  - **NEW AccountSecurity** and **ServiceCommunications** message registries
  - Added messages for liquid cooling equipment events
- **NEW StorageMetrics** schema
  - Performance and error metrics for storage subsystems
- 20 Updated schemas (highlights)
  - See release notes in DSP8010 for errata details
  - Added *LeakDetectors* to **Chassis** to consolidate locations for leak detection resources
  - Added actions for controlling liquid cooling equipment
  - Added Security ID (SID) related properties to **Storage**
- Download all published material at: http://www.dmtf.org/standards/redfish

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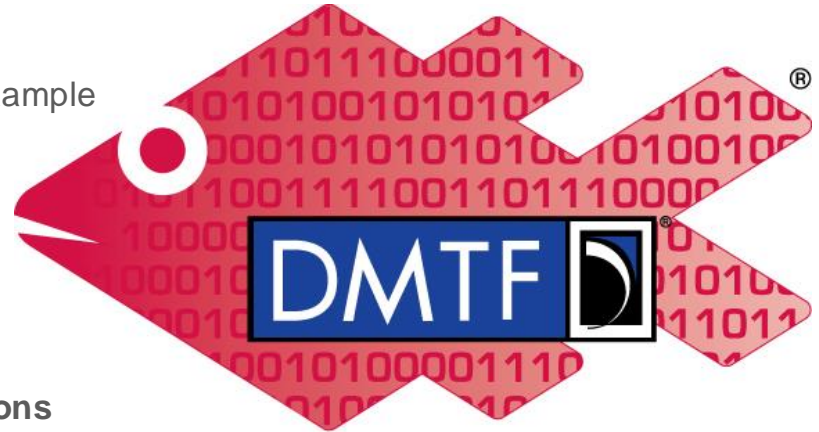
Coolant Distribution Unit (CDU) Controls

- **NEW** *FlowControlLitersPerMinute, SupplyTemperatureControlCelsius, ReturnTemperatureControlCelsius, DeltaPressureControlkPa,* and *DeltaTemperatureControlCelsius* added to **CoolantConnector**
  - Allows a users to configure target set points for a coolant connector
  - The CDU regulates itself to achieve the desired set point
    - Example: A user sets *FlowControlLitersPerMinute* on a secondary coolant connector and the CDU adjusts its pump speeds to match the desired flow rate
  - Depending on the design of the CDU, configuring one control may disable others
    - Example: Controlling to a target flow rate might be mutually exclusive with controlling to a target differential pressure
- **NEW** *SetMode* action was added to **Pump**
  - Allows a user to enable or disable a pump
  - Primary usage is for servicing hot-swappable pumps
    - Example: A user needs to disable a pump prior to removing it from the CDU

Control Examples

User sets a target flow rate on a secondary coolant connector

```
PATCH /redfish/v1/ThermalEquipment/CDUs/1/SecondaryCoolantConnectors/1 HTTP/1.1

{
    "FlowControlLitersPerMinute": {
        "SetPoint": 45,
        "ControlMode": "Override"
    }
}
```

User disables a pump

```
POST /redfish/v1/ThermalEquipment/CDUs/1/Pumps/3 HTTP/1.1

{
    "Mode": "Disabled"
}
```

Message registry additions

- **NEW AccountSecurity**
  - Contains messages intended for audit logs and security event notification
  - Not intended for use in error responses to clients
  - Examples: *InvalidCredentials, AccountLocked, UserCertificateReplaced*
- **NEW ServiceCommunications**
  - Messages used to indicate communication problems with clients or other services
- **Environmental** v1.1.0
  - Messages added to support liquid cooling equipment and the related subsystems
  - Adds specific messages for reporting issues with pressure, flow rate, and fluid level
  - Adds leak detection and pump-related messages
- **HearbeatEvent** v1.1.0
  - Added *RedfishServiceStarted* and *RedfishServiceShuttingDown*
- **Platform** v1.1.0
  - Added *PlatformReset* and *PlatformResetWatchdogTimer*

Message registry additions, continued

- **StorageDevice** v1.4.0
  - Security ID (SID) related messages
  - Added *BlockSecurityIDIssued, BlockSecurityIDFailed,*and *BlockSecurityIDRemoved* messages
- **Base** v1.20.0
  - Added *AccessUnauthorized* and *AccessForbidden*

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

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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

Redfish Schema Minor Revisions (1 of 4)

- AccountService v1.17.0
  - Added *EnforcePasswordHistoryCount*
- Chassis v1.26.0
  - Added *LeakDetectors*
- Connection v1.4.0
  - Added *AddVolumeInfo* and *RemoveVolumeInfo* actions
- Control v1.6.0
  - Added *LiquidFlowLPM* to *ControlType*
- CoolantConnector v1.1.0
  - Added *FlowControlLitersPerMinute*, *SupplyTemperatureControlCelsius*, *ReturnTemperatureControlCelsius*, *DeltaPressureControlkPa*, and *DeltaTemperatureControlCelsius*
- CoolingUnit v1.2.0
  - Added *SetMode* action

Redfish Schema Minor Revisions (2 of 4)

- Drive v1.21.0
  - Added *HardwareVersion*
  - Clarified usage of the *Revision* property for non-SCSI drives
- LeakDetection v1.1.0
  - Added *Status* to *LeakDetectorGroup*.
  - Deprecated *LeakDetectors* property in favor of link in **Chassis**
- LeakDetector v1.3.0
  - Added *Enabled*
- Manager v1.20.0
  - Added *DateTimeSource*
- PCIeDevice v1.17.0
  - Added "EDSFF" to *SlotType*
- Port v1.15.0
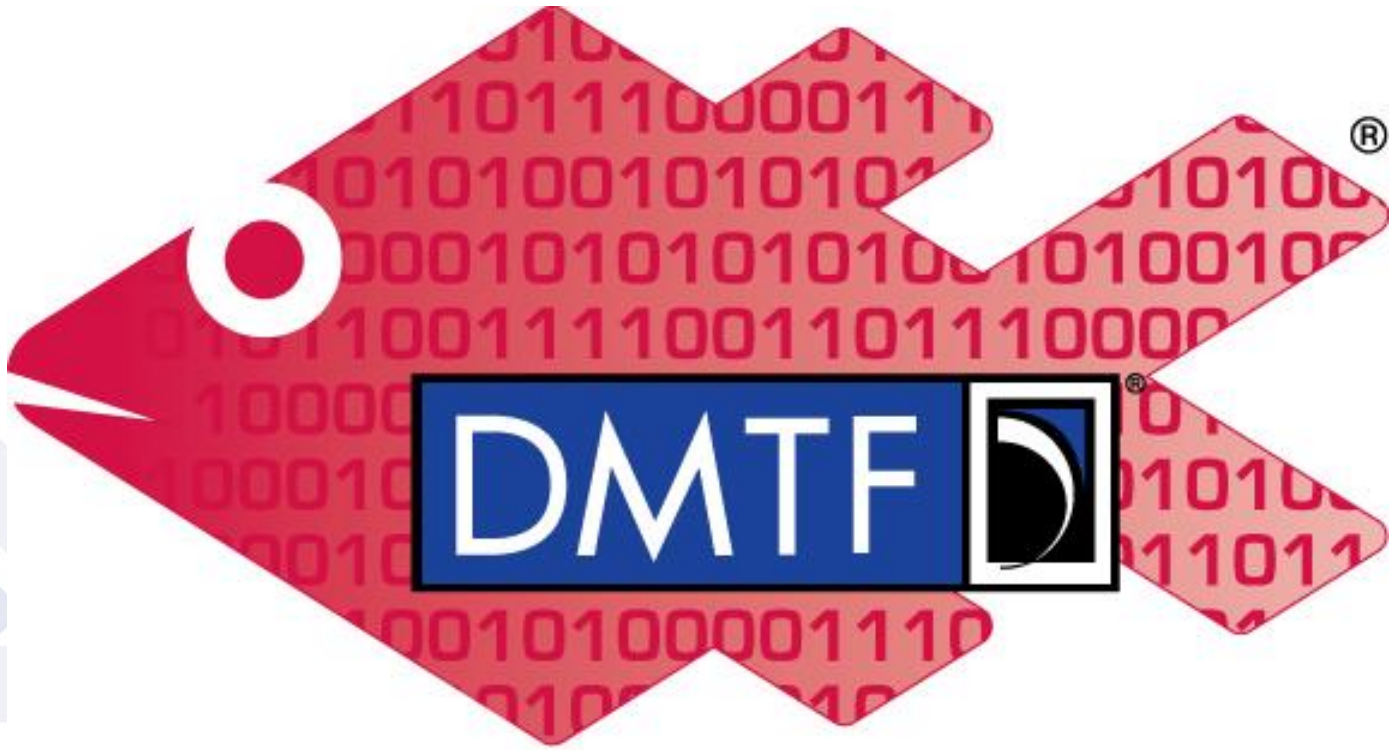 - Added *HostDevice*

Redfish Schema Minor Revisions (3 of 4)

- Pump v1.2.0
  - Added *SetMode* action
  - Added *InletPressurekPa*
- Redundancy v1.5.0
  - Added *GroupName* to *RedundantGroup*
- Resource v1.21.1
  - Added FullPowerCycle to *ResetType*
  - Added *Oem* to *Conditions* in *Status*
- Session v1.8.0
  - Added *ExpirationTime*
- SessionService v1.2.0
  - Added *AbsoluteSessionTimeout* and *AbsoluteSessionTimeoutEnabled*

Redfish Schema Minor Revisions (4 of 4)

- Storage v1.18.0
  - Added *BlockSecurityIDEnabled* and *Metrics*
  - Added *BlockSecurityIDUnsupportedDrives* and *BlockSecurityIDUpdateUnsuccessfulDrives* to *Links*

- StorageController v1.9.0
  - Added *DiscoveryTransportServiceId* to *NVMeControllerProperties*

- UpdateService v1.15.0
  - Deprecated *HttpPushUri*, *HttpPushUriTargets*, *HttpPushUriTargetsBusy*, *HttpPushUriOptions*, and *HttpPushUriOptionsBusy* in favor of *MultipartHttpPushUri*

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