# Status Report: Redfish Conformance Checker

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# Overview

- Improvements in running time
- Identification of potential bugs
- Results from the APTS Plugfest
- OpenAPI support
- Next steps

# Progress - Functional Assertions

## Completed Assertions

- Account Service
- Actioninfo
- Assembly
- Boot Option

- Collection Capabilities
- Computer Systems
- Bios
- Protocol Details

# Challenge- Choosing Functional Assertions

- ● Most shall requirements are checked by the service validator

- ● Requirement is to identify assertions that generally requires HTTP requests

Shall Requirements

Logical Assertions
8.0%

Syntactical Assertions
92.0%
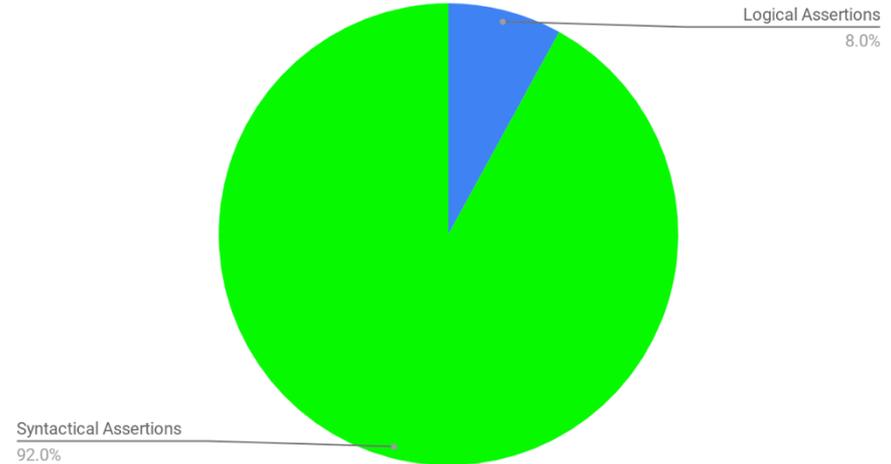
# Progress - General

### Runtime

- Significant reduction in run time as a result of caching many of the HTTP GET requests.

- Better debugging support as a result of caching the list of URI's.

# Attention areas

## Caching

- Some assertions may falsely fail as a result of resources updating during testing.

- Recheck failing assertions without caching.

## Assertions

- Security and Service Details assertions requires further development.
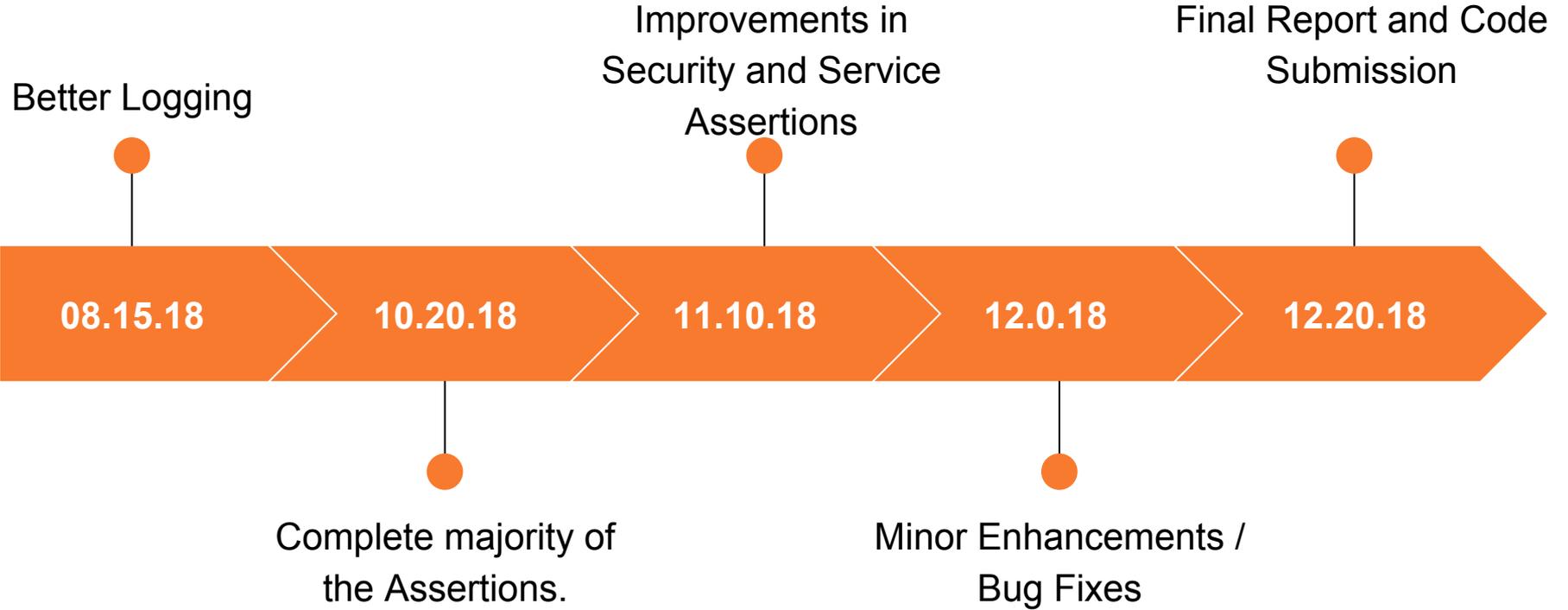
# Swagger Codegen - OpenAPI

## Purpose

- Create YAML file from JSON-to-OpenAPI-converter tool

- Generation of API client libraries

## Challenges

- Lack of support for OpenAPI v3

- Difficulty automating the logical assertions

# Schedule

# Next steps

**Enhance Log Output**
- Generate an output similar to Redfish Service Validator
  - Augment logger.py to generate HTML
  - Produce JSON that could be consumed by a HTML generator

**Caching**
- Fixes for duplicate cache entries
- Removal of arbitrary number of cache size

# Conformance Checker - Log File

| | A | B | C | D | E |
|---|---|---|---|---|---|
| 156 | **Rule ID** | **Section 6.5.4.5 :Primitive Properties** | | | **Comments** |
| 157 | | Primitive properties shall be returned as JSON values according to the following table.<br><br>Type    JSON Representation<br><br>Edm.Boolean    Boolean<br>Edm.DateTimeOffset    String, formatted as specified in DateTime Values<br>Edm.Decimal    Number, optionally containing a decimal point<br>Edm.Double    Number, optionally containing a decimal point and optionally containing an exponent<br>Edm.Guid    String, matching the pattern ([0-9a-f]{8}-[0-9a-f]{4}-[0-9a-f]{4}-[0-9a-f]{4}-[0-9a-f]{12})<br>Edm.Int64    Number with no decimal point<br>Edm.String    String<br><br>6.5.20 | | | Doubt. How the testing can be done to check this?<br>Go to all the metadata files one by one for each resource, in that go through all the properties/tags and make sure the type of those is primitive type.<br>If any property /tag has property of all primitive properties and then come back and check with the JSON value. |
| 158 | **Rule ID** | **Section 6.5.4.5.1 :DateTime Values** | | | **Comments** |
| 159 | | DateTime values shall be returned as JSON strings according to the ISO 8601 "extended" format, with time offset or UTC suffix included, of the form:<br>YYYY-MM-DD T hh:mm:ss[.SSS] (Z \| (+ \| - ) hh:mm)<br>6.5.21 | | | Doubt. How to test the values ? Check in the log to check date time values. |
| 160 | 6.5.22 | The 'T' separator and 'Z' suffix shall be capitals. | | | Doubt. How to do the testing for this? |
| 161 | **Rule ID** | **Section 6.5.4.7 :Collection Properties** | | | **Comments** |
| 162 | | Collection-valued properties may contain a subset of the members of the full collection. In this case, the collection-valued property shall be annotated with a next link property. The property representing the next link shall be a peer of the collection-valued property, with the name of the collection-valued property suffixed with "@odata.nextLink". . The value of the next link property shall be an opaque URL that the client can use to retrieve the next set of collection members<br>6.5.23 | | | Not anymore in the current spec. |
| 163 | 6.5.23.1 | The next link property shall only be present if the number of resources requested is greater than the number of resources returned. | | | Assertion Written but not able t0 check this./redfish/v1/Managers/iDRAC.Embedded.1/L |
| 164 | | Collection-valued properties shall be annotated with a count. The property representing the count is a peer of the collection-valued property, with the name of the collection-valued property suffixed with "Members@odata.count". The value of the count is the total number of members available in the collection.<br>6.5.24 | | | Assertion Tested |
| 165 | | Collection-valued properties shall not be null. Empty collections shall be returned in JSON as an empty array.<br>6.5.25 | | | Assertions Tested |
| 166 | **Rule ID** | **Section 6.5.4.8.1 :Action Representation** | | | **Comments** |
| 167 | | Actions are represented by a property nested under "Actions" whose name is the unique URI that identifies the action. This URI shall be of the form:<br>#Namespace.ActionName<br>where<br>• Namespace = The namespace used in the reference to the Redfish Schema in which the action is defined. For Redfish resources this shall be the version-independent namespace.<br>• ActionName = The name of the action<br>6.5.26 | | | Assertion Tested |

# Service Validator - Log File

| /redfish/v1 (response time: 0.093787s) (ServiceRoot v1_1_0) | | | | |
|---|---|---|---|---|
| /redfish/v1 (response time: 0.093787s) **Show results** | | Schema File: /redfish/v1/$metadata#ServiceRoot.ServiceRoot Resource Type: ServiceRoot v1_1_0 | GET Success | pass: 19 passGet: 1 reflink: 1 repeat: 2 skipOptional: 5 |

| Property Name | Value | Type | Exists? | Result |
|---|---|---|---|---|
| @odata.context | /redfish/v1/$metadata#ServiceRoot.ServiceRoot | string | Yes | PASS |
| @odata.id | /redfish/v1 | string | Yes | PASS |
| @odata.type | #ServiceRoot.v1_1_0.ServiceRoot | string | Yes | PASS |
| StorageSystems | - | link to: StorageSystemCollection | No | Optional |
| StorageServices | - | link to: StorageServiceCollection | No | Optional |
| Fabrics | - | link to: FabricCollection | No | Optional |
| UpdateService | Link: /redfish/v1/UpdateService | link to: UpdateService | Yes | PASS |
| RedfishVersion | 1.0.2 | string | Yes | PASS |
| UUID | - | GUID | No | Optional |
| Systems | Link: /redfish/v1/Systems | link to: ComputerSystemCollection | Yes | PASS |
| Chassis | Link: /redfish/v1/Chassis | link to: ChassisCollection | Yes | PASS |
| Managers | Link: /redfish/v1/Managers | link to: ManagerCollection | Yes | PASS |
| Tasks | Link: /redfish/v1/TaskService | link to: TaskService | Yes | PASS |
| SessionService | Link: /redfish/v1/SessionService | link to: SessionService | Yes | PASS |
| AccountService | Link: /redfish/v1/Managers/iDRAC.Embedded.1/AccountService | link to: AccountService | Yes | PASS |
| EventService | Link: /redfish/v1/EventService | link to: EventService | Yes | PASS |
| Registries | Link: /redfish/v1/Registries | link to: MessageRegistryFileCollection | Yes | PASS |
| JsonSchemas | Link: /redfish/v1/JSONSchemas | link to: JsonSchemaFileCollection | Yes | PASS |
| Links | [JSON Object] | ServiceRoot.v1_0_0.Links | Yes | complex |
| Links.Sessions | Link: /redfish/v1/Sessions | link to: SessionCollection | Yes | PASS |
| Links.Oem | - | Resource.Oem | No | Optional |
| Id | RootService | string | Yes | PASS |
| Description | Root Service | string | Yes | PASS |
| Name | Root Service | string | Yes | PASS |
| Oem | [JSON Object] | Resource.Oem | Yes | complex |
| Oem.Dell | [JSON Object] | Resource.OemObject | Yes | complex |
| Oem.Dell.ManagerMACAddress | 84:7b:eb:f4:dd:a6 | string | Yes | PASS |
| Oem.Dell.ServiceTag | NNPNST1 | string | Yes | PASS |
| Oem.Dell.IsBranded | 0 | number | Yes | PASS |
| Oem.Dell.@odata.type | #DellServiceRoot.v1_0_0.ServiceRootSummary | string | Yes | PASS |

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# Thank you