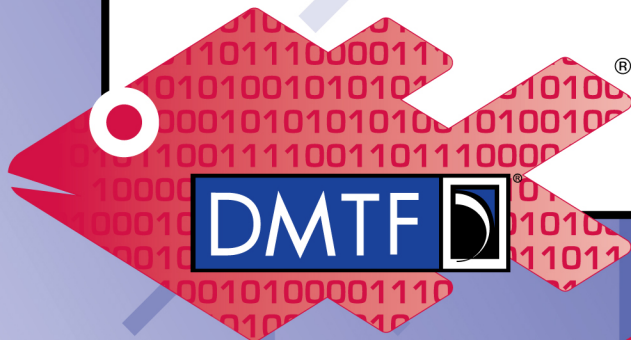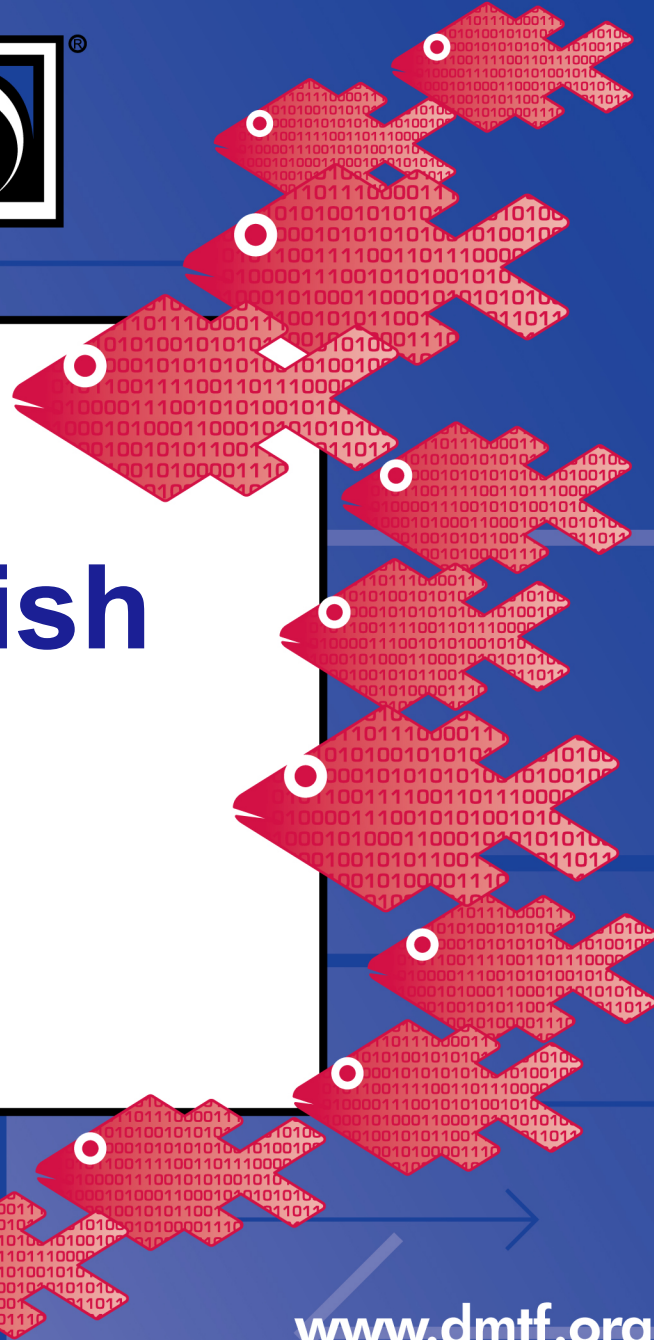# OData Client Support in Redfish

Mike Raineri

Dell Inc.

www.dmtf.org

OData Support Documents

- Two resources must be available for OData clients to discover and understand a service
  - /redfish/v1/$metadata
  - /redfish/v1/odata
- The $metadata document is used to describe to an OData client the schemas used by the service
- The odata document is used as a starting point by an OData client for entering the service

$metadata Resource

- This resource contains a list of all schema files and namespaces used by the service
- It also contains the EntityContainer definition for the implementation
  - EntityContainer is used by OData to describe the top level entry points for the services available
  - In Redfish, this shows the entry point for things like "AccountService", "SessionService", "Chassis", etc
- The $metadata resource is used by OData clients to dynamically discover and build a data model for the given service

$metadata Construction in Redfish

- The $metadata resource is an XML document that is formatted like a schema file
- For a given implementation, the document will consist of all schemas the service supports, in addition to OEM schemas
  - A service may host the schema files locally so a client doesn't have to download them from an external source
  - The document should include the namespaces referenced by "@odata.type" and "@odata.context" properties in the service's responses
  - Including all schemas and namespaces is valid, but not necessary
- The $metadata resource will also define the formal EntityContainer definition of the service
  - Unless a service is using OEM extensions to the Service Root Resource, this will just be a reference to the EntityContainer called "ServiceContainer" found in the Service Root schema

OData Service Document

- This resource contains a list of top level resources an OData client is able to access, including the reference URIs

- The contents follow the EntityContainer definition for the service
  - The EntityContainer can define constructs such Singletons, EntitySets, ActionImports, and FunctionImports for the service
  - However, Redfish only uses Singletons within its definition

- The base definition can be found in ServiceRoot_v1.xml

- Each item that can be found in the Service Root resource is part of the EntityContainer definition
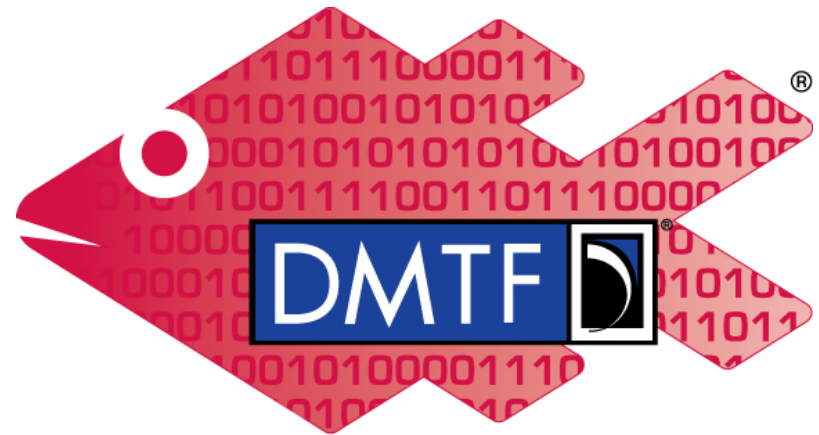
OData Annotations in Responses

- Responses from a service will always contain three inline annotations
- "@odata.context" is used to describe the contents of the payload in reference to the $metadata resource
- "@odata.type" is used identify the specific type definition of the payload
- "@odata.id" is used to identify the URI of the resource in the response

- Example response from a service for Service Root

```
{
    "@odata.context": "/redfish/v1/$metadata#ServiceRoot.ServiceRoot",
    "@odata.id": "/redfish/v1/",
    "@odata.type": "#ServiceRoot.v1_1_1.ServiceRoot",
    ...
}
```

Thank you for watching!

- **Redfish Standards**
  - Schemas, Specs, Mockups, White Papers, FAQ, Educational Material & more
  - http://www.dmtf.org/standards/redfish
- **Redfish Developer Hub**
  - Redfish Interactive Explorer, Hosted Schema at Namespace & other links
  - http://redfish.dmtf.org
- **SPMF (WG that defines Redfish)**
  - Companies involved, Upcoming Schedules & Future work, Charter, Information on joining.
  - http://www.dmtf.org/standards/spmf