Managing Network Infrastructure with Redfish
Disclaimer

- The information in this presentation represents a snapshot of work in progress within the Distributed Management Task Force (DMTF)
- This information is subject to change without notice. The standard specifications remain the normative reference for all information
- For additional information, see the DMTF website (dmtf.org)
Network Management Focus Areas

- Complex and disparate toolsets, protocols and systems
- Resource intensive and time consuming
- Proprietary vendor implementations
- Poor portability of skillsets across compute, storage and networking
- Lack of interoperability with rest of infrastructure
Solution: Expose YANG Models within Redfish

Why YANG?

- Large body of existing work
  - Extensive coverage from multiple SDOs (IETF, IEEE, OCP, OpenConfig, ODL) as well as many vendor proprietary models
  - Many man-years of work by industry experts across all networking feature sets
- Basis for general network industry manageability
- IETF & IEEE are the primary standards bodies
  - IETF – YANG is the standard for all new network management modeling
  - IEEE – Adopted YANG as a modeling language
  - Other consortiums and bodies have also adopted YANG for network models
- Model-driven approach to network management
- DMTF wants to leverage the networking industry’s expertise

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Why Redfish for Networking

• Completes the converged infrastructure management API story
  • Switches have platform components in common with servers and storage
  • Rapid expansion of open Network Operating System (NOS) solutions
  • Network Functions Virtualization (NFV) will need common manageability for compute and networking

• Enable common inventory and control for orchestration systems
• Redfish provides a prescriptive model for the system/platform management

• Allows partnership with IETF
  • Specify a prescriptive baseline of YANG models for networking
  • Reduce overlap and clarify manageability domains
Collateral

- **YANG-to-CSDL Mapping specification**
  - Specifies mapping of YANG models to CSDL schema
  - Retain YANG terminology CSDL Term library (RedfishYangExtensions.xml)
- Results in Redfish conformant JSON messages and schema
- Example(s) of YANG model converted to Redfish CSDL
  - RFC7223 (Interfaces)
More on Redfish:

- Join the SPMF
  - Help shape the standard
  - http://www.dmtf.org/join/spmf

- We want your Feedback
  - On the Standard or Works in Progress
  - http://www.dmtf.org/standards/feedback

- Redfish Standards
  - Schemas, Specs, Mockups, White Papers, FAQ, Educational Material & more
  - http://www.dmtf.org/standards/redfish

- Redfish Developer Portal
  - 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