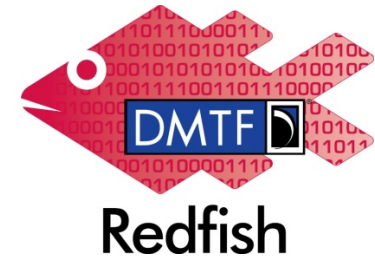# Managing Network Infrastructure with Redfish

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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)

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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

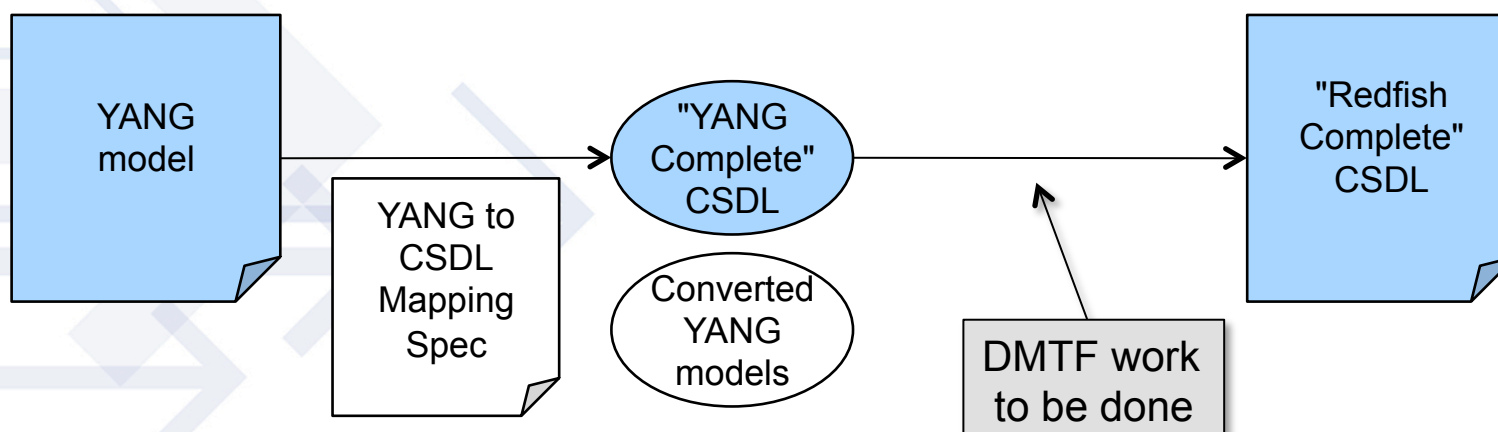# Solution: Expose YANG Models within Redfish

- 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

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
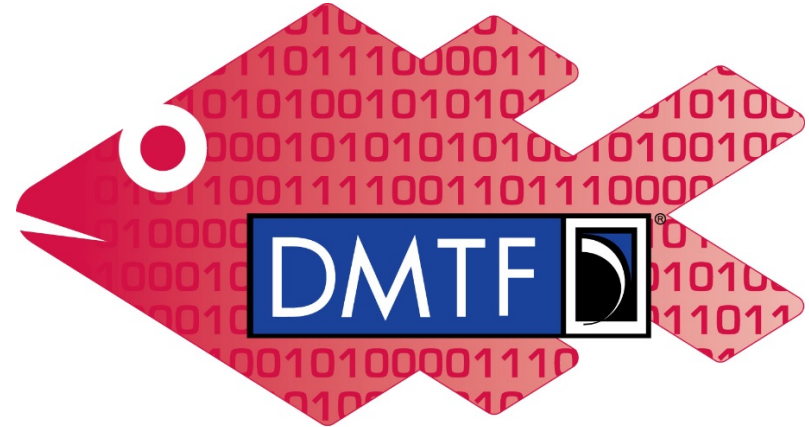
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Collateral

- 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)

YANG model → YANG to CSDL Mapping Spec → "YANG Complete" CSDL → "Redfish Complete" CSDL

Converted YANG models

DMTF work to be done

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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

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