DLF Networking

LFN Developer & Testing Forum

Introduction To ODIM

A Community Overview

OPEN DISTRIBUTED INFRASTRUCTURE MANAGEMENT

ODIM Community



Open Distributed Infrastructure Management (ODIM)



- A Linux Foundation Project
- Part of LF Networking (pending)
- Formed in July 2020
- First release January 2021



Manageability Challenges



LFN Developer & Testing Forum

MANAGEMENT OF EDGE-TO-CORE DISTRIBUTED, PHYSICAL INFRASTRUCTURE MINIMAL ALIGNMENT ACROSS DIVERSE, VENDOR-DECENTRALIZED INFRASTRUCTURE **REQUIREMENT DIVERSITY** SPECIFIC INFRASTRUCTURE MANAGEMENT APIS Aggregation Facilities Inconsistent interface implementations Inconsistent models Composition Cost Vendor centricity Scaled operation Scale Heterogeneity Performance API proliferation Vendor Neutrality Security RAS Consumer Edge Cloud ---> Access Edge ---Core SNMP Consumer Edge Access Edge Core Cloud YANG Redfiel IPMI Data Processing NETCONF Infrastructure Management APIs Space Cost Constraints Constraints Data plane optimization Sources: GSMA Intelligence, ACG Research, 2019

Environmental

Needs

Scale out

Reduce

Vendor Lock-

Today's Physical Resource Management Landscape







ODIM Simplifies Physical Resource Management...







ODIM Goals



- Enable wide adoption across Enterprise, Telecom, Cloud and other markets
- Deliver a reference implementation of DMTF Redfish® APIs
- Create an ecosystem of hardware platform management and MANO plugins/adapters
- Facilitate integration with upstream
 MANO solutions
- Enable management API interoperability between vendors of of distributed, heterogeneous physical infrastructure





Key Use Cases

- Multi-site, multi-vendor physical infrastructure lifecycle management from edge to core
- End-to-end remote, distributed management across multiple locations
- Vendor-neutral discovery, exposure/visibility and control of infrastructure resources and their capabilities
- Closed loop automation of the physical infrastructure lifecycle management (OODA, MAPI, etc.)
- Batching and grouping of distributed management operations





ODIM and MANO Ecosystem







ODIM and DMTF Redfish®



DMTF Redfish[®] APIs and data model are foundational to ODIM

- ODIM-exposed interfaces are based on DMTF Redfish[®] specification
- ODIM abstracts downstream physical infrastructure that is not DMTF Redfish[®] aligned
- Initial focus is on Compute, Storage, Acceleration and Fabrics APIs



ODIM Synergies











ODIM Architecture







Distributed ODIM At Scale



Upstream **COTS/OSS Management** os ONAP **OpenStack** Cloud Kubernetes Other COTS/OSS MANO Offerings **Clients/Users** Telemetry Actions Composition Telemetry Actions Composition Example Upstream Integration Functions and Interfaces Example Upstream Integration Functions and Interfaces DMTF Redfish® Interfaces DMTF Redfish® Services Resource API Adapters (w)) A DMTF Redfish® Data Model DMTF Redfish® Data DMTF Redfish® Services Model Resource API Adapters **ODIM** management DMTF Redfish® Services DMTF Redfish® Data Resource API Adapters Model functions and interfaces DMTF Redfish® Data DMTF Redfish® Services DMTF Redfish® Data Model Mode Resource API Adapters DMTF Redfish® Services distributed for open, DMTE Redfish® Services DMTF Redfish® Data Resource API Adapters Resource API Adapter Model standards-based scalability DMTF Redfish® Services Resource API Adapters DMTF Redfish® Data DMTF Redfish® Data Mode Mode DMTF Redfish® Services DMTF Redfish® Services Resource API Adapters Resource API Adapters DMTF Redfish® Data Model DMTF Redfish® Services DMTE Redfish® Data Resource API Adapters Model DMTF Redfish® Services Resource API Adapters ((12) ø **Consumer Edge** <-Access Edge Core Cloud



ODIM Contribution Areas





Release Plan



• Major releases only, no maintenance releases

CAUTION

WORK

- Two releases a year for 2021, three releases starting in 2022
- First release completed in January 2021





Would You Like To Know More?



- Attend additional LFN DTF ODIM-related sessions...
 - ODIM Build & Run
 - ODIM Release 1
 - ODIM Use Cases For ONAP
- We invite community and TSC participation
 - Website: <u>https://odim.io/</u>
 - WIKI: <u>https://wiki.odim.io</u>
 - Mailing list: https://lists.odim.io/g/odim-general



NETWORKING

