OCP SUMMIT

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DMTF Standards for OCP Platforms Management

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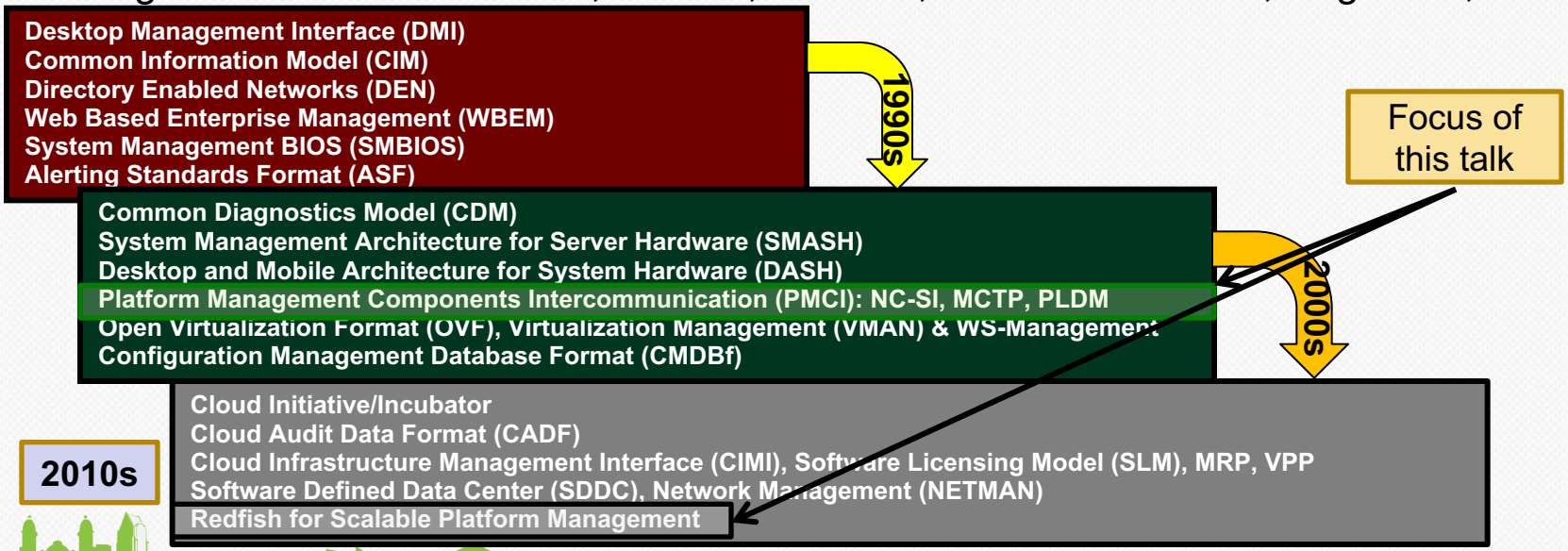
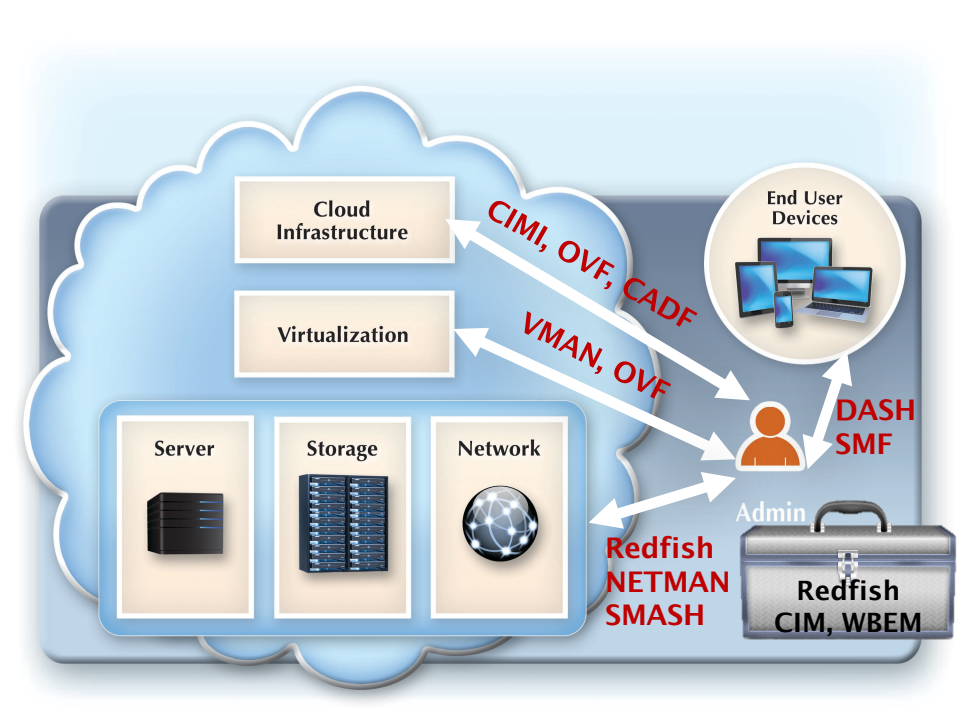
DMTF Background

- Distributed Management Task Force (DMTF)
  - Formed in 1992, Evolved from desktop management to web based enterprise/cloud management

- Evolving work includes Protocols, Profiles, Schema, Internal Interfaces, Registries, etc.



DMTF Technologies



Infrastructure Management
- Cloud
- Virtualization
- Data Center

Platform Management
- Server & Network
- Storage (SNIA)
- Desktop & Mobile

Services Management
- Network services
- Software Entitlement
- Security & audit

Protocols & Data Models
- WS-Man/CIM-XML
- REST (Redfish & CIM-RS)
- CIM & Diagnostics
- PLDM, MCTP, NC-SI

DMTF - International Standards Leader

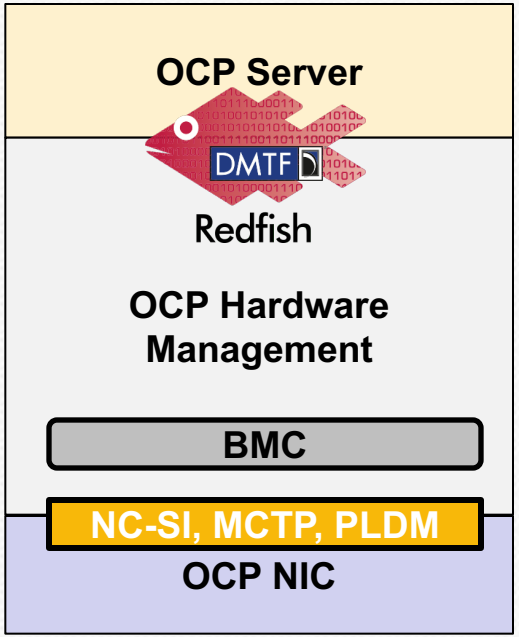
DMTF continues to grow its global presence

- Local bodies in China/Japan & Capitalizing on reach of members from 43 countries
- Members on:
  - ✓ISO JTC1/SC 38 representation
  - ✓ISO PAS submitter (only one of nine organizations in the world)

Open and Collaborative

- Industry input on standards welcome via the DMTF Feedback Portal
- Open source development enabled within GitHub
  - DMTF invites review and contributions to its tools in public GitHub repositories
- Standards adopted by open source projects, including
  - Open Linux Management Infrastructure (OpenLMI), Open Management Interface (OMI), OpenBMC, OpenDRIM, OpenPegasus, OpenStack Ceilometer, OpenStack Ironic, Small Footprint CIM Broker (SFCB), and more

DMTF Standards Applicability to OCP Platforms



Redfish Client

Redfish is a REST based external facing interface for remote management of a server platform

Network Controller Sideband Interface (NC-SI)
Management Component Transport Protocol (MCTP)
Platform Level Data Model (PLDM) are

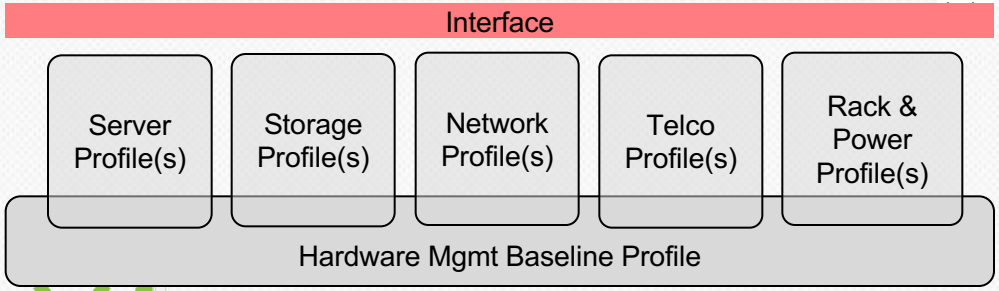
Internal facing interfaces and protocols for platform management subsystem communications

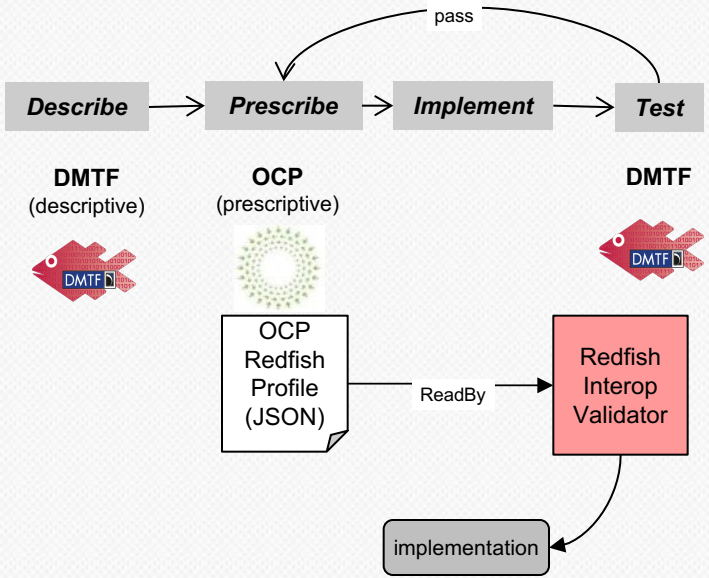
Redfish Interface and OCP Profiles[1]

Redfish is a RESTful interface for remote management of a platform

- Interface definition (HTTP, JSON, schema)
- Models for managed resources (compute, storage, network and DC facility devices)

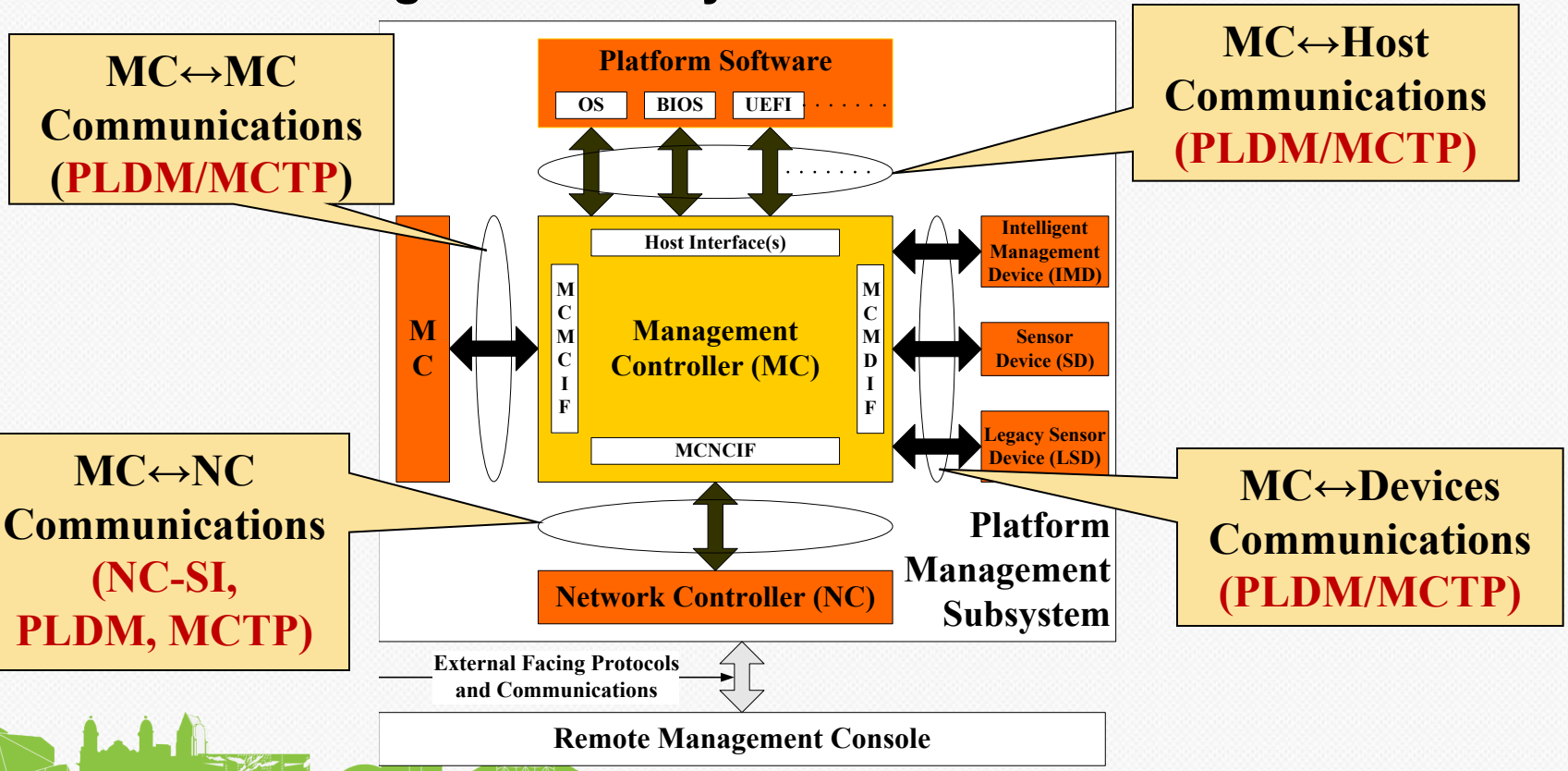
Redfish OCP profiles Specify required elements (objects and properties)





[1]"Redfish API and Interoperability Profiles" - Jeff Autor
[2]github.com/DMTF

Platform Management Subsystem



PMCI Working Group of DMTF

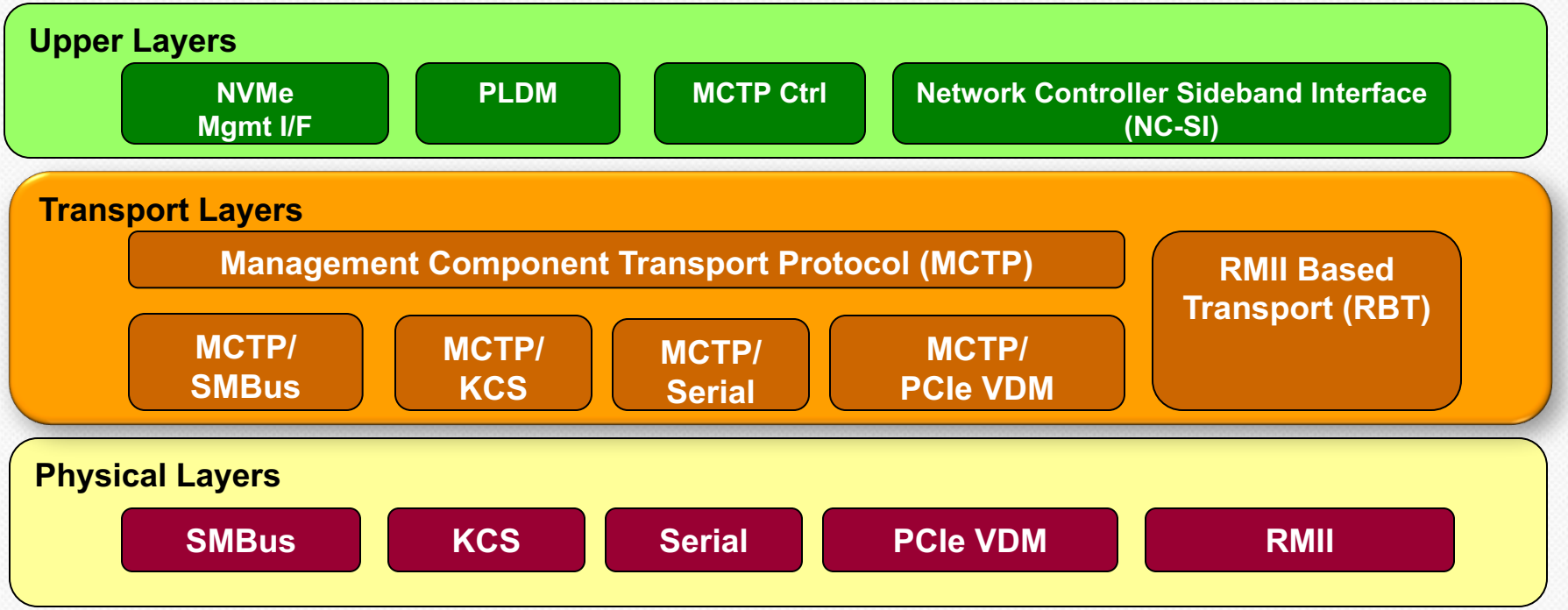
Platform Management Component Intercommunications (PMCI)

Scope: “Inside the box” communication and functional interfaces between components within the platform management subsystem

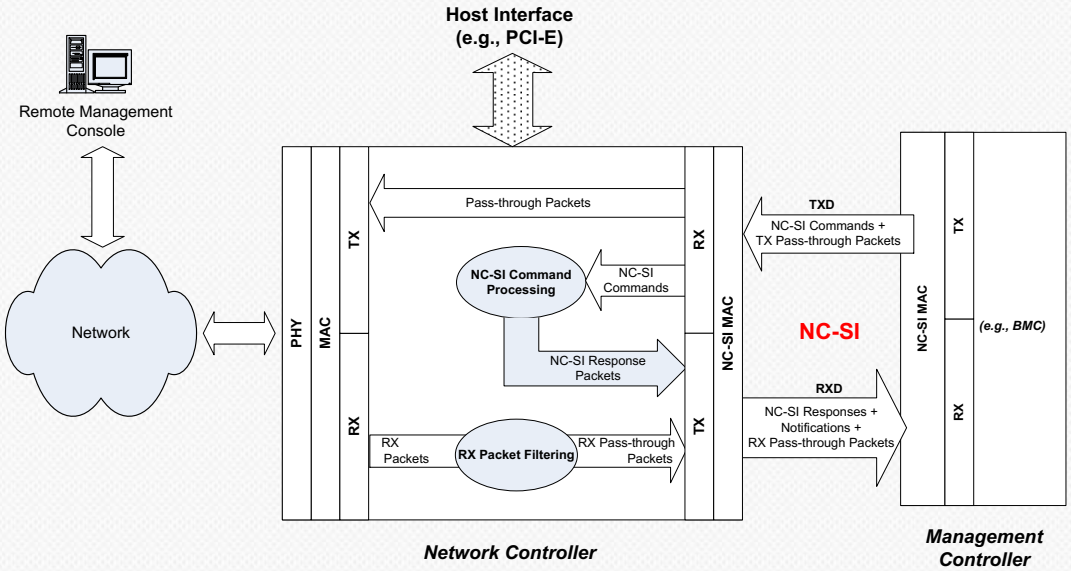
Builds on learning from SMBIOS, ASF, & NC-SI

Leverages SMBus, PCIe & other industry technologies

PMCI Protocol Stack



NC-SI – Sideband Interface for OCP Mezz 2.0 and OCP NIC 3.0



NC-SI Communications

- Pass-through
- Commands/Responses
- Notifications

NC-SI over RBT

- Physical-level I/F RMII
- Media-level I/F Ethernet
- Defines HW arb scheme

NC-SI over MCTP

- Enables NC-SI comms over an MCTP network

Management Component Transport Protocol (MCTP)

- Base transport for “inside-the-box” communication.
- Carries multiple message types: MCTP Control, PLDM, NC-SI, NVMe
- Suitable for use with multiple media: SMBus, PCIe, etc.
- Suitable for all computer platform types
- Supports logical addressing based on Endpoint IDs
- Provides simple message fragmentation/reassembly
- Built-in capability discovery and supports path transmission unit discovery

Platform Level Data Model (PLDM)

- An effective interface & data model for efficient access to:
  - Low-level platform inventory, BIOS, and config data
  - Platform monitoring/control, alerting, event log, etc.
- Defines low level data representations and commands
- Provides transport independent Request/Response Model
- Supports a subtype to distinguish types of PLDM Msgs
  - Allows messages to be grouped based on the functions
  - Allows the discovery of the functionality supported
- PLDM specs: Base, IDs & Codes, SMBIOS data transfer, BIOS control and configuration, Platform Monitoring and Control, FRU, and Firmware Update

How to Work with the DMTF

- DMTF
  - Scope of the DMTF is clear: it's all about management
  - Drive specifications through TC, conformance through the forums, messaging through the Marketing
  - Ground breaking areas through Incubators and International partnerships through Alliance and Regional Chapters
- Membership
  - Active participation brings about standards based on best practices
  - Drive standards through participation
  - Consider bringing work into the DMTF
- Alliance Partners (e.g. OCP)
  - DMTF Originated Work
    - Feedback from the DMTF: DSP Acquisition, Work In Progress Release capability
    - Feedback into the DMTF: Alliance Liaison, Joint Members, DMTF Technology Adoption, DMTF Feedback Portal
  - Alliance Partner Originated Work
    - Similar mechanisms would speed things along if you wish DMTF input
- Academic Partners

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Thank you!