Platform Management Components Intercommunications (PMCI)

PMCI Working Group

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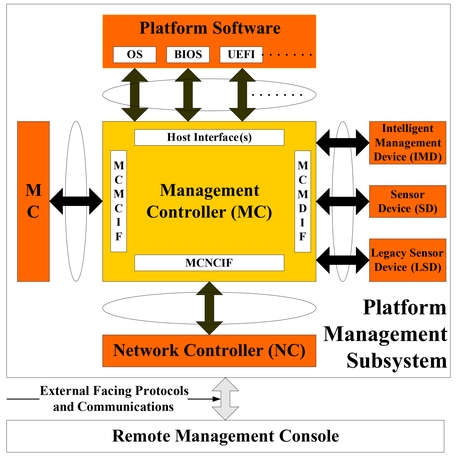
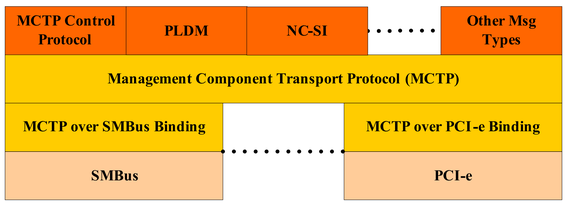
The Platform Management Components Intercommunications (PMCI) Working Group defines protocols, platform level data models, and interfaces for intercommunication between components within a platform management subsystem and mappings between the Common Information Model (CIM) and the platform level data models.



Platform Management Subsystem

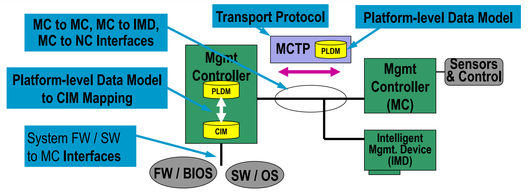
PMCI WG Scope: "Inside the box" communication and functional interfaces between components within the platform management subsystem
•Management Controller to Management Controller
•Management Controller to Intelligent Devices
•Management Controller to Network Controller
•Platform Firmware/Software to Management Controller



PMCI Protocol Stack

Management Component Transport Protocol (MCTP) Overview

- Base transport for 'inside the box' communication
- Carries multiple message types
  - MCTP Control, Platform Level Data Model, NC-SI…
- Suitable for use with multiple media
  - SMBus, PCI-e…
- Suitable to all computer platform types
- Designed to enable low-cost micro-controllers
- Supports logical addressing based on Endpoint IDs
- Provides simple message fragmentation/reassembly
- Built-in Capability discovery
- Supports path transmission unit discovery

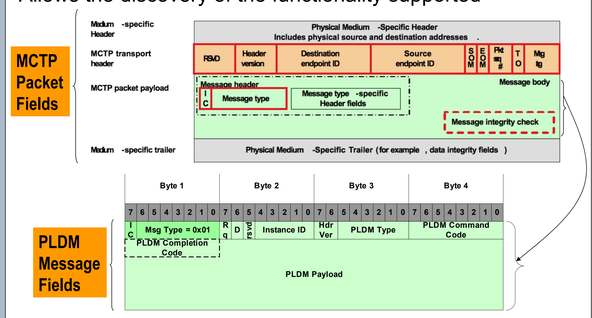


MCTP – where it fits

Platform Level Data Model (PLDM) Overview

What is PLDM?
•An effective interface and data model that provides efficient access to
- Low-level platform inventory, BIOS control and configuration data
- Platform monitoring and control functions, alerting and event log data…

•Defines data representations and commands that abstract platform mgmt subsystem components
•Provides transport independent Request/Response Style Messaging Model
•Allow messages to be grouped based on the functions
•Allows the discovery of the functionality supported



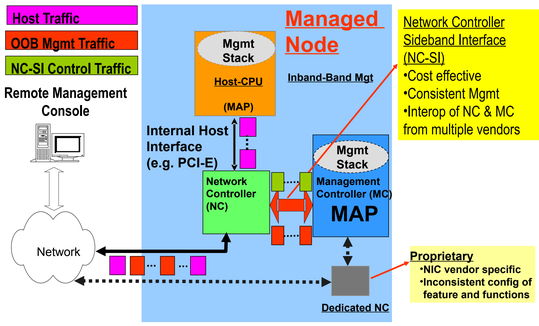
PLDM Type	Description
PLDM Messaging Control and Discovery	PLDM Messages used to support communication control and discovery operations for PLDM.
PLDM for SMBIOS	PLDM Messages used to support SMBIOS data Transfer.
PLDM for Platform Monitoring and Control	PLDM Messages used to support platform monitoring and control.
PLDM for BIOS Control and Configuration	PLDM Messages used to support BIOS control and configuration data transfer between the BIOS and the MC.
PLDM for FRU Data	PLDM Messages used to support FRU data transfer
Reserved	
OEM Specific	Reserved for OEM-specific PLDM Commands

Network Controller-Sideband Interface (NC-SI) Overview

NC-SI is a common interoperable sideband interface and protocol to transfer management traffic between a management controller (MC) & network controller (NC).

NC-SI Traffic Types
•Pass-Thru Management Traffic
•NC-SI Command/Response
- MC is a Requester and NC is a Responder
- Control, Configuration, Status, Statistics…

•NC-SI Notifications
- Generated and sent by NC to MC
- OS/Link Status Change, NC Soft Reset



NC-SI Architecture

NC-SI/MCTP Overview (Work-In-Progress)

NC-SI over MCTP mapping allows communication between an MC and multiple NCs over standard interconnects PCIe/SMBus
•Allows OOB communication through NICs.
•Support the ability to migrate the NC-SI and pass-through traffic seamlessly from PCIe to SMBus

Usage Model
•Use MCTP over PCIe while in S0
•Use MCTP over SMBus while in Sx
•Provides a tradeoff between bandwidth and power

Design Goals
•Preserve NC-SI/RMII control command definitions with minimal changes to accommodate for the new mapping
•Improve control command efficiency by eliminating unnecessary Ethernet packet overhead from command messages.
•Enable improved buffering and message handling by defining control messages (short) and pass-through messages (long) as separate MCTP message types.
•Keep the push model of NC-SI/RMII, where each side sends packets independently (no reads, only writes).

PMCI Specifications

DSP#	Rev	Document	Status
NC-SI SPECS			
DSP0222	1.0	Network Controller Sideband Interface (NC-SI) Specification	DMTF Standard
DSP0261	1.0	NC-SI over MCTP Binding Specification	In development
MCTP SPECS			
DSP0236	1.0 1.1	Management Component Transport Protocol (MCTP) Base Specification	DMTF Standard
DSP0237	1.0	Management Component Transport Protocol SMBus/I2C Transport Binding Specification	DMTF Standard
DSP0238	1.0	Management Component Transport Protocol (MCTP) PCIe VDM Transport Binding Specification	DMTF Standard
DSP0239	1.0 1.1	Management Component Transport Protocol (MCTP) IDs and Codes	DMTF Standard
DSP0253	1.0	MCTP Serial Transport Binding	DMTF Standard
DSP0254	1.0	MCTP KCS Transport Binding	DMTF Standard
DSP0256	1.0	MCTP Host Interface	DMTF Standard
PLDM SPECIFICATIONS			
DSP0240	1.0	PLDM Base Specification - common formats for PLDM messages, and common terminology and conventions for PLDM specifications	DMTF Standard
DSP0241	1.0	PLDM Over MCTP Binding - how PLDM messages are transported using MCTP	DMTF Standard
DSP0245	1.0	PLDM IDs and Codes - codes and values that are common across the PLDM specifications	DMTF Standard
DSP0246	1.0	PLDM for SMBIOS Data Transfer	DMTF Standard
DSP0247	1.0	PLDM for BIOS Control and Configuration	DMTF Standard
DSP0248	1.0	PLDM for Platform Monitoring and Control	DMTF Standard
DSP0249	1.0	PLDM States Sets Specification - definition of enumerated State Sets and Entity types used by PLDM for reporting state/identifying types of managed entities	DMTF Standard
DSP0248	1.0	PLDM for FRU Data Transfer	In development
WHITE PAPERS			
DSP2015		Platform Management Component Intercommunications (PMCI) Architecture White Paper	Published
DSP2016		Management Component Transport Protocol (MCTP) Overview White Paper	Published

Relevant Websites

DMTF Published Standards
http://dmtf.org/standards/published_documents

DMTF Work in Progress Specifications
http://dmtf.org/standards/wip

Contact information

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