DMTF Management Initiatives for Academics

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Agenda

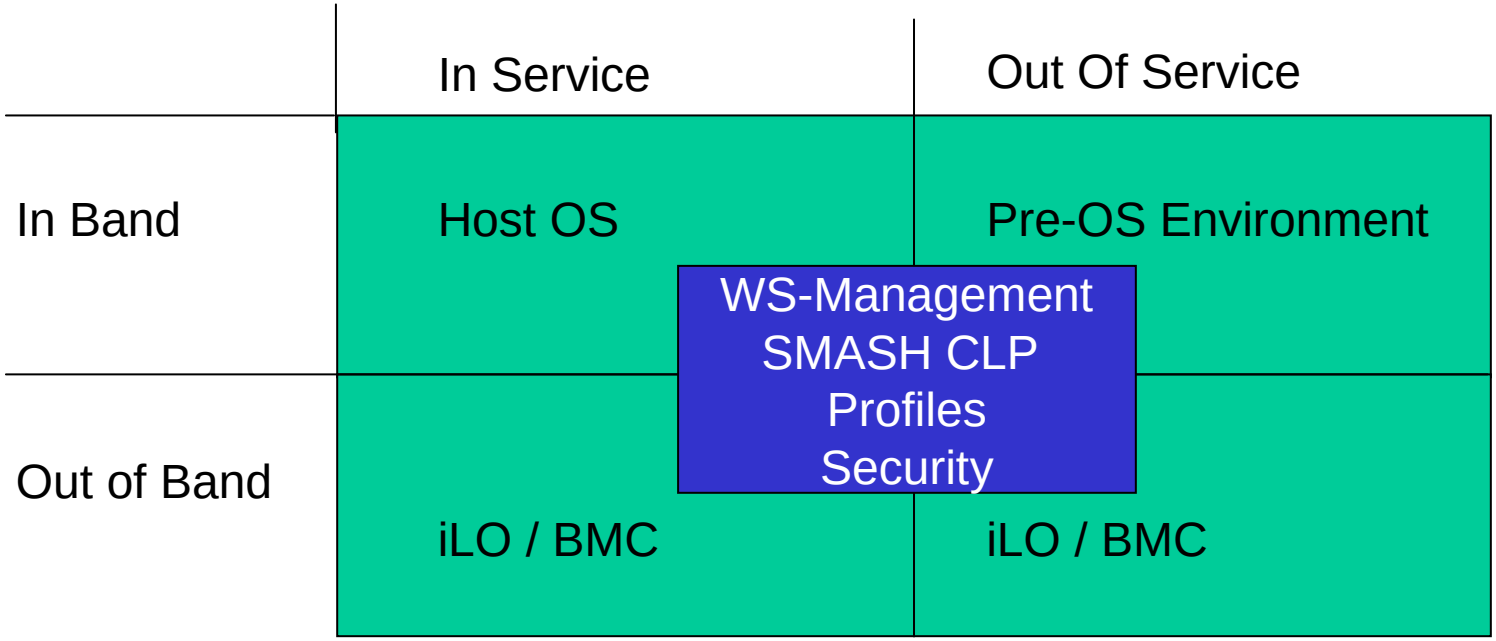
- DMTF Management Initiatives
  - SMASH
  - DASH
  - CDM
- Additional DMTF Standardization
  - Protocols, Profiles, Generic Operations, Registries
  - Embedded Environment Standards
  - Virtualization
  - Power & Cooling
- Summary

DMTF Management Initiatives

- DMTF currently has 3 Management Initiatives
  - SMASH – Systems Management Architecture for Server Hardware
  - DASH – Desktop and mobile Architecture for System Hardware
  - CDM – Common Diagnostics Model
- DMTF Recognizes SMI as a Management Initiative

Industry Standard Manageability Alignment

- DMTF is driving a consistent interface and view, regardless of machine state or access method.



- Industry is aligning around key elements:
  - Protocols (Transport) – WS-Management & CLP
  - Profiles (Data Model) – SMASH & SMI-S Profiles

What is SMASH?

- SMASH Stands for Systems Management Architecture for Server Hardware
  - SMASH is a suite of specifications that deliver industry standard protocols and profiles to unify the management of the data center.
    - Vendor independent
    - Platform neutral
    - Independent of machine state
- The SMASH specifications utilize the CIM data model and industry standard transports and security mechanisms.
  - Align out-of-service with in-service manageability.
  - Align in-band with out-of-band manageability.
  - Customer Driven
- 1.0 Standard completed Dec, 2006
  - Made public at Manageability Developers Conference
- 2.0 Standard completed Sep 2007
  - Made public at Intel Developers Forum

State of the SMASH

- 1.0 Specs Architecture White Paper
  - SM CLP at 1.0 Final Standard
  - SM ME Addressing at 1.0 Preliminary Standard
  - Profiles & Mapping Specs at 1.0 Preliminary Standard
    - www.dmtf.org/standards/smash
- Interoperability Forum formed in the DMTF
  - SMASH 1.0 CLP: tester completed, tests 40% complete
  - DASH 1.0, SMASH 2.0: choosing platform to test through WS-Management
  - Infrastructure: developing certification repository
- 2.0 released 9/2007
  - Including WS-Management Support
  - Added Discovery
  - Additional Profiles
  - Added reference to SIM-S Host Hardware Raid Profile
  - Updated White Paper
- Planning on periodic “train” to add features/functions

SMASH Profiles

High-level Profiles

1. **CLP Service**
2. **Base Server**
3. **Modular System**
4. **Chassis Manager**
5. Physical Asset
6. Boot Control
7. SM CLP Admin Domain
8. SMASH Collection
9. CPU
10. System Memory
11. Fan
12. LED
13. Power Supply
14. Power State Management
15. Record Log
16. Sensor
17. Watchdog
18. Host Hardware Raid (Reference)
19. OS Status
20. PCI Device
21. Software Update
22. Software Inventory
23. Host LAN Network Port
24. IP Interface
25. Ethernet Port
26. DHCP Client
27. DNS Client
28. SSH Service
29. Telnet Service
30. Role-Based Authorization
31. Simple Identity Management
32. Shared Device Management
33. Pass-Through Module
34. Device Tray
35. Text Console Redirection
36. KVM Redirection
37. Profile Registration
38. Computer System

What is DASH?

- DASH Stands for Desktop and mobile Architecture for System Hardware
  - Ultra light weight programmatic interface for desktop to mobile environment, including bladed PCs.
  - Utilizes the CIM Data Model, leveraging the DMTF Profiles & Architecture gives this effort a head start.
  - First revision maps to ASF functionality.
- DASH consists of:
  - Architecture White Paper
  - WS-Management
  - DASH Implementation Requirements Specification
  - Profiles (over 20 of them).
- Standard completed Apr, 2007
    - www.dmtf.org/standards/dash
  - Made public at Microsoft Management Summit (MMS), 2007
  - Plans include a rolling “train” model for updates.

Management Functionality Overview

DASH 1.0

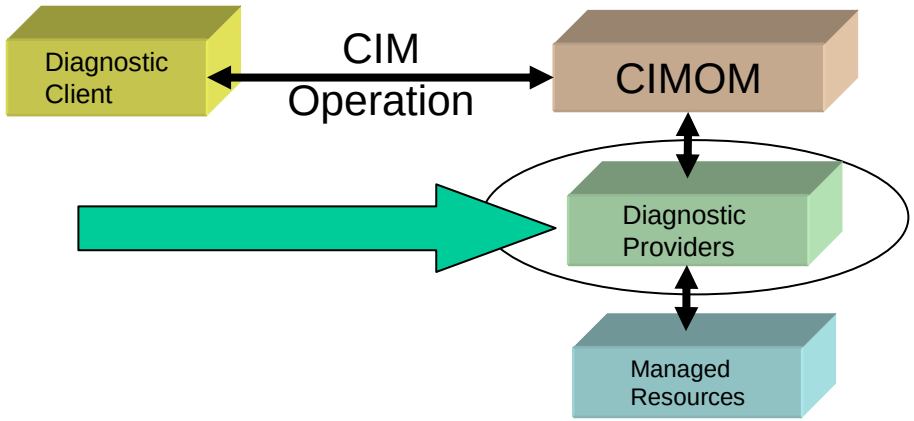
- Power control
- Boot Control
- WS Eventing Push Indications
- FW Version info
- HW info
    - Chassis model/serial, CPU, Memory, Fan, Power Supply, Sensor
- Login credentials and Roles
- Profile Registration Profile

Functionality being considered for future versions

- Wired/Wireless NIC Management
- VLAN Management
- FW/SW Update
- BIOS Management
- Opaque Data (Offline Mailbox/Data Store)
- Text Console Redirection
- Certificate Management
- OS Status
- Battery
- Video Controller
- KVM Redirection Service
- Media Redirection Service
- Port and Device Management
    - PCI, USB, Serial, Parallel, IR, 1394, Card Bus, Optical Drives
- TPM
- Storage Management

CDM (Common Diagnostics Model)

- A common industry standard diagnostics interface that enables seamless integration of vendor-supplied diagnostic services into system and SAN management frameworks that is Platform and OS independent:
  - *discover, configure and execute diagnostic tests*
  - *view progress and control test execution*
  - *view and manage test execution results*
- Not intended to be directly customer visible
  - Internal interface provider libraries to integrate in other tools via programmatic interfaces
  - Initial benefit from factory diags



Protocols, Bindings, Generic Operations

- Protocols currently being developed in the DMTF
  - CIM/XML
    - Continues refinement – working on update to take to ISO
  - WS-Management
    - Nearing Final
  - WSDM
- Completing the specifications required
  - WS-CIM Binding Specifications
    - Nearing Final
  - Discovery
    - Expanding to include all WBEM Protocols
  - Generic Operations
    - Nearing Preliminary

Profiles & Registries

- Profile Development continues
  - PUG/PRP continues
    - PRP 1.0 has gone final
    - Development of a PUG 2.0 under way.
  - “Higher level” profiles under way
    - Enabled Logical Element Profile
    - Computer System
    - Working on CIM Server & other services.
- DMTF tackling Registries
  - Develop schema & repositories for Messages
    - DSP8007 – Platform Message Registry
  - Working on others as well
    - Message, Metrics and others under consideration

PMCI & NC-SI

- Platform Management Control Interface Specifications
  - Released (July & August, 2007)
  - Management Component Transport Protocol (MCTP) Specification is a chip-to-chip interface with transport mapping to standard signaling technologies
    - First of these specifications has been released:
    - Base transport, IDs, two transport mapping (PCIe, SMBus)
  - Platform Level Data Model (PLDM) encapsulated in transport for translation to CIM
    - Development of this standard is still under way.
- Network Controller – Sideband Interface Specification
  - Released July, 2007
  - Specifies control signaling for “sharing” NIC

Virtualization, Partitioning & Clustering

- System Virtualization, Clustering and Partitioning effort currently under way
  - First DMTF Virtualization Profiles Released
    - Virtual System (includes support for Partitioning)
    - Resource Allocation (update coming)
  - More under way
    - System Virtualization (hyper-visor)
    - CPU & Memory Virtualization
    - IO Virtualization
    - Virtual Switch
- OVF Submission
  - Open Virtualization Format Specification submitted for standardization
- Clustering Specifications
  - Continue to develop the model with consideration of SAF

Power & Cooling

- Power & Cooling Allocation model is being developed
  - Application of Resource Allocation Setting Data profile to Power & Cooling
  - Specification development & accompanying MOF changes beginning to make progress.

Summary

- Customer Advantages of Standards-Based Management for Data Center
  - Reduced Cost
  - Increased Choice
  - Improved Interoperability
- Industry is working together to improve Management of the Data Center
  - DMTF working on SMASH, DASH, CDM but also non-solution specific internal & external interfaces
    - Profiles, Protocols, Discovery, Registries
    - PMCI & NC-SI
- You can help by demanding & driving standardized solutions and getting involved in their adoption
- For more information www.dmtf.org

Questions?

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