



Developing Standards that enable Interoperable IT Management

The Growing Importance of Management Standards for IT

With the ever-increasing need for flexibility, availability and performance in today's distributed enterprises, management standards are now more important than ever for IT personnel. Deploying systems, tools and solutions that support management standards helps reduce system management complexity and lower overall IT costs. By selecting solutions that support standards, IT personnel can deploy the best mix of systems and tools that meet their business or customer needs and still minimize their TCO (total cost of ownership). As the IT management landscape continues to evolve, and companies are faced with the need to do more with less, standards become critical to reduce the cost of managing computing and networking environments while retaining flexibility for future requirements.



As the global industry organization leading the development, adoption and promotion of management standards and interoperable systems management, The Distributed Management Task Force (DMTF) enables more effective management of millions of IT systems worldwide. By facilitating IT industry collaboration, DMTF quickly develops standards that meet current IT management needs and support vendors to implement interoperable standards-based solutions in a variety of areas, including desktop and server management, virtualization and cloud computing. DMTF management standards are critical to enabling management interoperability among multi-vendor systems, tools and solutions within the enterprise. DMTF is comprised of more than 160 member companies and alliance partners, and its 4000+ active participants represent 43 countries around the world.

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DMTF Standards Simplify IT Management and Lower Costs

Standards become even more crucial with increasing pressure to ensure that technology investments remain viable for years to come. Standards allow forward-thinking CIOs and IT managers to select the products that best suit their needs today—regardless of vendor—while helping to ensure that no proprietary constraints arise when new systems are put in place in the future.

DMTF is committed to protecting companies' IT investments by creating standards that promote multi-vendor interoperability. Our dedication to fostering collaboration within the industry provides a win-win situation for vendors and IT personnel alike. DMTF standards enable vendors to leverage work done by the organization, reducing development and design costs. This in turn allows individual vendors to focus on specific features of their products, rather than on more basic capabilities. By bringing the industry together to drive the development and adoption of system management standards, DMTF provides increased choice, reduced cost and improved interoperability of management systems within the enterprise.

“Our mission is to create standards that enable interoperable IT management. DMTF members and alliance partners represent all facets of the enterprise computing sector, from major hardware and software vendors to companies specializing in the development of tools for managing the enterprise system. This widespread collaboration enables open development of standards critical to providing interoperable IT management.”

- Winston Bumpus
President, DMTF

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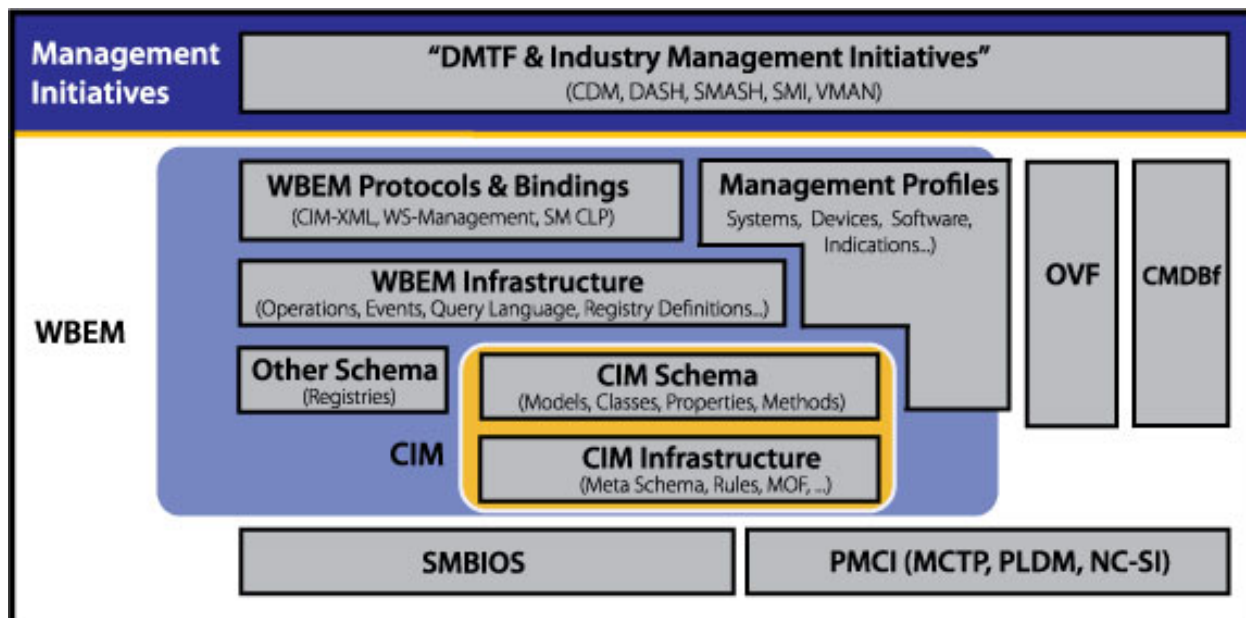
The DMTF members collaborate to develop IT management standards that promote multi-vendor interoperability worldwide. Together with a broad range of alliance partners, the group is at the center of the systems-management industry, developing standards that are continually improving the IT management landscape. DMTF standards primarily serve:

- **IT Personnel** – DMTF provides increased choice, reduced cost, and improved interoperability for heterogeneous IT management infrastructures.
- **IT Solutions Vendors** – DMTF standards reduce development and design costs by enabling companies to dedicate resources



Standards for End-to-End Management Solutions

The DMTF's technologies are designed to work together to address the industry's needs and requirements for interoperable distributed management. These standards provide well-defined interfaces that build upon each other, delivering end-to-end management capabilities and interoperability. The interrelationships between the DMTF technologies in this diagram deliver incremental value throughout the stack, building added value with each additional layer that is implemented.



DMTF works to standardize key areas of systems management to benefit the entire IT ecosystem to simplify IT management:

- **Common Information Model (CIM)** is a proven, object-oriented model for describing computing, networking and storage environments. It defines “rules” and provides the details for integration with other management models. CIM is the foundation for many management standards by providing the basis for set of management tools and applications for fostering interoperability within IT environments.
- **Web-Based Enterprise Management (WBEM)** is a set of management and Internet standards developed to unify the management of computing environments. WBEM provides the ability for the industry to deliver a well-integrated set of standard-based management tools for distributed management, facilitating the exchange of data across boundaries.

- **Management Profiles** define the CIM model and associated behavior for a particular management domain (including the CIM classes, associations, indications, methods and properties). This provides a unified way of describing the IT management use cases in CIM, which contributes to interoperability and helps with ease of use.
- **Open Virtualization Format (OVF)** is a platform-independent, extensible, open, packaging and distribution format that enables simplified and error-free deployment of virtual appliances across multiple virtualized environments.
- **Configuration Management Database Federation (CMDBf)** is a specification that facilitates the sharing of information between configuration management databases (CMDBs) and other management data repositories (MDRs). The CMDBf standard enables organizations to federate and access information from complex, multi-vendor infrastructures.
- **Platform Management Component Intercommunications (PMCI)** is a set of specifications that standardize communications between the various components of a management subsystem and includes a set of standard protocols, interfaces, and platform-level data models across a full range of platforms – including traditional desktop systems, mobile, laptop and server computers, bladed PCs and thin clients.
- **System Management BIOS (SMBIOS)** is a specification that addresses how motherboard and system vendors present management information about their products in a standard format by extending the BIOS interface on x86 architecture systems.

Industry Initiatives to Enable and Promote Standards-Based Solutions

Management initiatives within the DMTF and its alliance partners build on DMTF technologies. An initiative combines a management standard with activities designed to promote the standard within the industry and to help vendors develop interoperable solutions based on that standard. The goal of each DMTF initiative is to accelerate the adoption of its associated standard by the industry and to help end users understand the benefits of products that support the standards.



DMTF initiatives include:

- **Common Diagnostic Model (CDM):** CDM is used to evaluate the health of computer system components in multi-vendor environments. It specifies diagnostic instrumentation that can be utilized by vendors (OEMs and system builders) and platform management applications to determine the health of a computer system component. Because it uses CIM as its foundation, CDM diagnostic tests can be integrated into critical management functions.

The CDM Initiative strives to make it easy for component vendors to implement CDM diagnostics tests and ultimately deliver more robust, easy to manage systems to users.

- **Desktop and mobile Architecture for System Hardware (DASH) Initiative:** DASH is a suite of specifications that takes advantage of the DMTF's Web Services for Management (WS-Management) standard – delivering a web services-based standard for desktop and mobile management. DASH provides the next generation of standards for secure, in-band, out-of-band and remote management of desktop and mobile systems. The DASH initiative strives to promote the DASH standard in the industry and enable vendors to implement compliant, interoperable DASH solutions.
- **Systems Management Architecture for Server Hardware (SMASH) Initiative:** This suite of specifications, which also takes advantage of the WS-Management standard, delivers architectural semantics, industry standard protocols and profiles to unify the management of data center systems, including servers, blades and racks. SMASH specifies a programmatic web services interface for secure in-band, out-of-band and remote management of server hardware, which enables server hardware management in both out-of-service and out-of-band environments. SMASH also describes a Command Line Protocol (CLP) that provides a standard command line interface for managing heterogeneous servers in the data center independent of machine state, operating system state, server system topology or access method. The SMASH initiative strives to promote the SMASH standard in the industry and enable vendors to implement compliant, interoperable SMASH solutions.
- **Virtualization Management (VMAN) Initiative:** VMAN unleashes the power of virtualization by delivering broadly supported interoperability and portability standards to virtual computing environments. As another initiative based on the CIM and WBEM standards, the suite of management standards helps IT managers deploy virtual computer systems, discover/inventory virtual computer systems, manage the lifecycle of virtual computer systems, create/modify/delete virtual resources and monitor virtual systems for health and performance. The VMAN initiative strives to promote standards for virtualization management within the industry and enable vendors to implement compliant, interoperable virtualization management solutions.
- **Storage Management Initiative (SMI-S):** SMI-S is a Storage Networking Industry Association (SNIA) initiative to standardize interoperable storage management technologies, based on the rich foundation provided by the DMTF's CIM and WBEM standards.

Joining Forces through Strategic Alliances

DMTF brings the industry together to collaborate in all aspects of distributed management specification development and refinement. By forming strategic alliances with affiliated industry organizations, the DMTF encourages the open development of standards to address the challenge of providing interoperable distributed management.

DMTF Works with its alliance partners to:

- Deliver management standards most relevant to IT
- Enable vendors to develop superior solutions based on management standards
- Help IT managers realize the full benefit of interoperable systems Management.

The DMTF works closely with standards bodies in many related industries, such as:

- Blades
- Cloud Computing
- Grids
- Network/Telecom
- Peripherals
- Power and Cooling
- Security
- Storage

By encouraging participation in the development of DMTF standards, the Alliance Partner Program is an important way the DMTF is helping unify management initiatives and develop more solid partnerships.

- For more information about the DMTF Alliance Partner Work Registers, visit: www.dmtf.org/about/register/
- If you are involved with an industry organization that would like to join forces with the DMTF, please contact the Vice President of Alliances at: vp-alliances@dmtof.org.

DMTF Academic Alliances

With more than 40 alliances with academic institutions from around the world, DMTF values input from the academic world and is open to providing information to faculty and students who are studying and researching management standards. An Academic Alliance membership allows access to work groups and their documents based on the interest of the particular institution.

- To view the full list of DMTF Academic Alliance partners, please visit: www.dmtf.org/about/lists
- If you are interested in joining DMTF as an Academic Alliance partner, please contact Vice President of Alliances at: vp-alliances@dmtof.org



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