



Distributed Management Task Force, Inc.

Developing management standards & promoting interoperability for enterprise & Internet environments

Common Diagnostic Model: Cost-Effective System Health Management



Simplifying System Maintenance

Today's businesses rely on complex and powerful computer systems and applications to provide business value. However, these systems often lack a diagnostic framework that is robust enough to address the complexities that go along with the advanced functionality. A standard diagnostic schema such as the Common Diagnostic Model (CDM) is a great leap towards simplifying system maintenance.

"AMD is committed to helping drive broad industry adoption of common diagnostic testing tools." — Randy Allen, corporate vice president, Server and Workstation Division, Microprocessor Solutions Sector, AMD

Attempts to create robust systems can be costly and confusing due to component disparities among multiple vendors and platforms. Integrating and troubleshooting systems currently requires the use of uncoordinated diagnostic tools from various vendors. With dissimilar user interfaces and varying levels of functionality, these disparate proprietary diagnostic tools are too complex for users to manage effectively.

The result is a troubling effect on maintenance costs and business efficiency. Escalating costs and unserviceable systems increasingly drain component manufacturers' and system integrators' budgets and development resources, as well as the desire to use those systems.

High Costs... or CDM?

Annual outlays for maintenance, repairs, and operations far exceed total hardware and software costs, for both individuals and corporations. With a majority of these problems caused by operator error, CDM can dramatically reduce this cost for both component suppliers and OEMs through greater operator success and self-repairing systems. CDM-compliant components prevent diagnostic discrepancies and unnecessary product returns, leading to a significant increase in first-call resolution of problems.

Complex and Redundant Tools... or CDM?

Complex and varied component diagnostic interfaces increase the cost of system development and integration of commonly available technologies (CPU, memory, storage, I/O). Each component and system product requires a redundant investment in another specialized diagnostic solution, sapping resources from each company.

OEMs must write and re-write vendor-specific diagnostic client applications for each multi-vendor, multi-platform system. Interpretation of diagnostic tests varies from

CDM FORUM INDUSTRY SUPPORT

| | | |
|---------|-------|----------------|
| Adaptec | HP | PC Doctor |
| AMD | IBM | Symantec |
| Dell | Intel | WBEM Solutions |

component supplier to OEM to end user. All three suffer from the high cost of support, a high return rate on working components, and low customer satisfaction.

Component suppliers can use CDM to standardize access to existing interfaces and to develop new CDM-compliant interfaces that can be reused to reduce development costs and time to market.

CDM as the Solution

Comprehensive system health management and component interoperability are benchmarks for high quality robust systems. Such systems can be achieved through the common diagnostics of CDM version 2. CDM 2 enables component suppliers to provide a standard interface for their existing diagnostic tools and to create new CDM-compliant diagnostic tools. The CDM Forum, a Distributed Management Task Force (DMTF) sub-group, provides the tools and expertise to facilitate creation of these interoperable CDM modules.

CDM 2 simplifies component integration into OEM tools. Component suppliers and OEMs both minimize development time of their respective tools. Both increase competitiveness by focusing resources on value-add features rather than redundant diagnostic features.

Consistent and accurate problem determination eliminates the discrepancies between diagnostic interpretation at the component and system levels. In doing so, CDM 2 leads to greater operator success and self-repairing systems that were previously difficult to achieve. Self-repairing systems help drive automation in support of end users' grid and utility computing objectives. Costs are significantly reduced while customer satisfaction increases.

Increasing Business Value

The CDM Forum brings together vast resources including independent hardware vendors (IHV), independent software vendors (ISV), and original equipment manufacturers (OEM). All organizations in the computer industry benefit from participating in the CDM Forum.

As a sub-group of the DMTF Interoperability Committee, the CDM Forum defines and delivers tools and guidelines necessary to facilitate creation and adoption of

JOIN THE CDM FORUM INITIATIVE

Influence the future of system diagnostics and benefit from CDM by joining the CDM Forum.

- Rally and pool industry resources to ease the high cost of development and maintenance.
- Acquire development tools to simplify and minimize the cost of CDM adoption.
- Promote broad industry adoption of CDM to maximize the benefit.
- Use compliance testing tools and certification to promote interoperable diagnostics that conform to CDM 2.

The CDM Forum owns and drives the development of products such as the CDM 2 SDK and compliance testing tools.

For information on the CDM Forum, send e-mail to cdm-forum-chair@dmf.org or visit www.dmtf.org/standards/cdm.

interoperable diagnostic modules. The CDM 2 software development kit streamlines development and integration of diagnostic modules.

"Dell is committed to helping customers simplify the diagnosis of disparate systems in the data center by reducing the number of tools and processes needed to manage standards-based servers. CDM offers a widely used starting point, which will allow us to streamline IT operations in customers' environments." — Pete Morowski, vice president, Software Solutions, Dell

Participating in the CDM Forum early enables companies to influence the CDM 2 implementation as it is developed. Early CDM module development experience naturally leads to preferred vendor status. Access to CDM Forum development tools makes the benefits easy to achieve.

Component Supplier Benefits

Independent hardware vendors benefit from CDM by having a single code base design with a known level of customer acceptance. This greatly reduces diagnostic development investment, allowing for greater investment

in the development of true product offerings. Resulting components are more competitive in a market of OEMs expecting CDM-compliant modules for easier integration.

By using CDM to develop product diagnostic tools, component suppliers realize the following benefits:

- Faster time to market
- Lower development costs by re-using common diagnostic building blocks
- Simplified integration into OEM tools
- Access to existing diagnostic tests through a standard API
- Greater competitiveness by focusing resources on value-add features rather than redundant diagnostic features

Integrator and Enterprise Management Benefits

Original equipment manufacturers benefit from CDM by gaining an improved level of vendor support. Expertise from multiple suppliers can easily be integrated into OEM diagnostic offerings and automated troubleshooting solutions. This improves diagnostic effectiveness while still offering the end user seamless, holistic diagnostics.

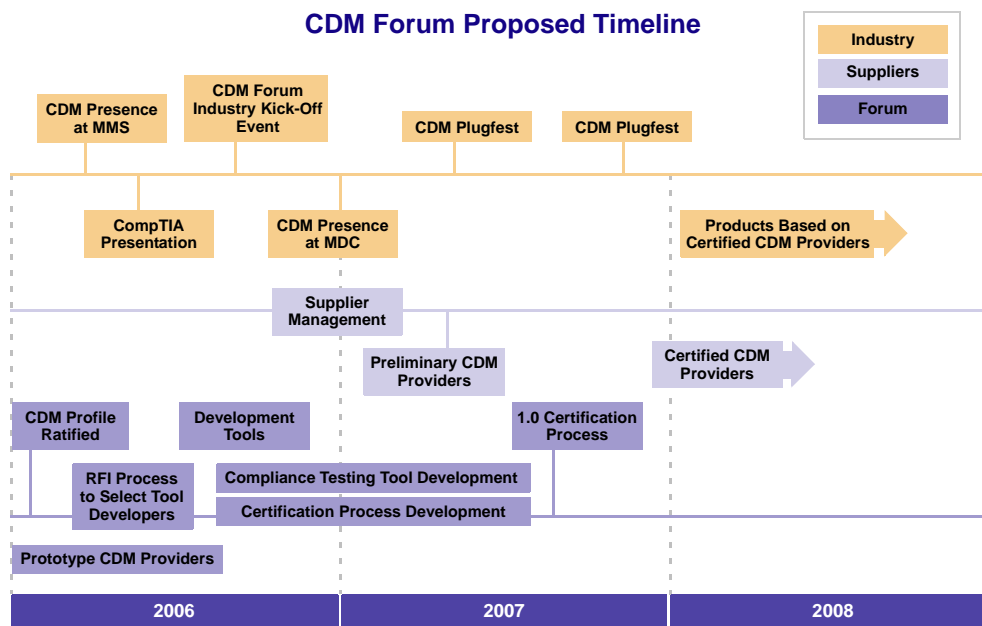
Independent software vendors benefit from CDM by having a vehicle to integrate diagnostic content into their products.

System integrators such as Enterprise Management organizations and OEMs often spend a disproportionately high percentage of their costs on maintenance and warranty. Each system component typically has its own proprietary diagnostic tool that collects and returns information differently from other components in the system. Incorrect diagnoses and failure to diagnose problems result in unnecessary support and component replacement.

By using CDM-compliant components, system integrators realize the following benefits:

- Faster time to market by using a common interface for all product diagnostic tools across multi-vendor components and platforms
- Simplified, more powerful system health management applications
- Lower component integration costs
- Reduced warranty costs and increased customer satisfaction by ensuring accurate diagnostics and system health

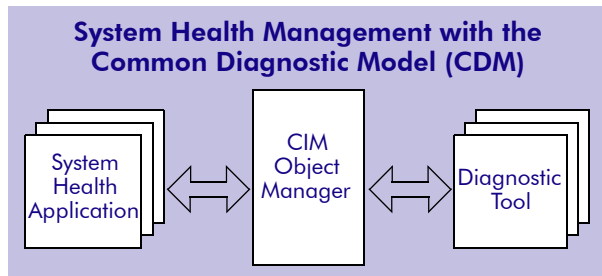
CDM benefits ultimately keep consumers satisfied with greater product quality, reduced system downtime, and reduced total cost of ownership.



CDM — An Interoperable, Standard Diagnostics Implementation

The Common Diagnostic Model (CDM) specification is an extension of the DMTF Common Information Model (CIM). It is used within the industry to evaluate the health of computer systems in multi-vendor environments by:

- Discovering diagnostics and their capabilities
- Controlling diagnostic execution
- Retrieving diagnostics results



CDM creates diagnostic instrumentation that can be utilized by platform management applications. Its tight synergy with the other CIM manageability domains further enables integration of diagnostics into critical management functions.

Widespread industry adoption of CDM allows suppliers to create diagnostic modules that have broad usage. It allows users to integrate CDM modules from various sources into their applications with little or no change. The computer industry realizes far-reaching benefits in manageability, system health, and interoperability.

What Is CDM Compliance?

CDM 2 includes a normative implementation of the standard that shows which parts of the common diagnostic model are required for a module to be considered CDM-compliant.

Key Elements of CDM Forum Membership

CDM Forum member companies gain the benefit of interoperable diagnostic solutions through four elements:

- **Software Development Kit (CDM 2 SDK):** Membership provides access to technical know-how that facilitates tool development. For even easier development, an optional software development kit can be used as a CDM-compliant wrapper for existing tools.
- **Use Cases and Profiles:** CDM 2 includes a diagnostics profile — a normative implementation of the standard. It includes use cases and shows which parts of CDM are required and optional for CDM-compliance.
- **Compliance Testing Tools:** Member companies use CDM Forum-developed tools for validating modules.
- **Certification:** CDM 2 Certification-registered users have their compliance testing results posted to a server where customers can validate the certification, authenticated by a unique signature encoded into the solution.

ABOUT THE DMTF

With more than 3,500 active participants representing 39 countries and nearly 200 organizations, the Distributed Management Task Force, Inc. (DMTF) is the industry organization leading the development of management standards and the promotion of interoperability for enterprise and Internet environments. DMTF standards provide common management infrastructure components for instrumentation, control and communication in a platform-independent and technology-neutral way.

DMTF standards include the Common Information Model (CIM), communication/control protocols like Web-Based Enterprise Management (WBEM) and Web Services for Management (WS-Management), and the Systems Management Architecture for Server Hardware (SMASH) initiative.

Find information about DMTF's standards and activities at www.dmtf.org.

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DMTF Interoperability Committee, CDM Forum

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