In This Section:

- Roadmap
- Showcase
- DMTF Member List
- DMTF Officers
- Working Groups
- Policies
- FAQs
  - CIM
  - CIM Certification
  - WBEM
  - DEN
  - DMI Certification
- Contact Us

Home > About the DMTF > FAQs > CIM

CIM FAQs

What is CIM?
CIM stands for Common Information Model. It is a conceptual information model for describing management that is not bound to a particular implementation. This allows for the interchange of management information between management systems and applications. This can be either "agent to manager" and "manager to manager" communications that provides for Distributed System Management. There are two parts to CIM: The CIM Specification and the CIM Schema.

The CIM Specification describes the language, naming, Meta Schema and mapping techniques to other management models such as SNMP MIBs, and DMTF MIFs etc. The Meta Schema is a formal definition of the model. It defines the terms used to express the model and their usage and semantics. The elements of the Meta Schema are Classes, Properties, and Methods. The Meta Schema also supports Indications and Associations as types of Classes and References as types of Properties.

The CIM Schema provides the actual model descriptions. The CIM Schema supplies a set of classes with properties and associations that provide a well-understood conceptual framework within which it is possible to organize the available information about the managed environment.

The CIM Schema itself is structured into three distinct layers:

1. The **Core Schema** is an information model that captures notions that are applicable to all areas of management
2. **Common Schemas** are information models that capture notions that are common to particular management areas, but independent of a particular technology or implementation. The common areas are systems, devices, networks, applications, metrics, databases, the physical environment, event definition and handling, management of a CIM infrastructure (the Interoperability Model), users and security, policy and trouble ticketing/ knowledge exchange (the Support Model). These models define classes addressing each of the management areas in a vendor-neutral manner.
3. **Extension Schemas** represent organizational or vendor-specific extensions of the Common Schema. These schemas can be specific to environments, such as operating systems (for example, UNIX® or Microsoft Windows®). Extension Schema fall into two categories, Technology-Specific areas such UNIX98 or Product-Specific areas that are unique to a particular product such as Windows.

The formal definition of the CIM Schema is expressed in a Managed Object File (MOF) which is an ASCII or UNICODE file that can be used as input into an MOF editor, parser or compiler for use in an application.

The Unified Modeling Language (UML) is used to visually portray the structure of the CIM Schema.

Analysis

This is the first time in this industry that a common and consistent method of describing ALL management information has been agreed and followed through with implementation.

Collecting the data to manage a given environment is but a small piece of the management problem. Another huge effort is normalizing and organizing that data. For example, a person knows that "Good", "Functional", "Operational" and "Working" are all synonyms for a status of "OK". But, how does a computer program know this? Even worse, how does a computer program know where to look to find this information?

The problem does not end with locating data and determining semantics. There is a growing need to operate and manage a business in terms of the business' processes and services (both required and provided). In this environment, the low level detail of a "bad fan" may not be very important. Instead, it becomes critical to understand what service is lost, or what process cannot be completed (or must be failed over) due to the fan's failure.

End-to-end management, across multiple components, in a distributed environment is also a reality and requirement. It is not sufficient to manage personal computers, subnets, the network core and individual systems in isolation. These components all interoperate to provide connectivity and services. Information passes between these boundaries. Management must pass across these boundaries as well.

These are the problems addressed by the CIM Schema. The goals of the model are to address both FCAPS management (fault, configuration, accounting, performance and security management) and to support the abstraction and decomposition of services and functionality. The information model defines and organizes common and consistent semantics for networking and computing equipment, and services. The data's organization is based on an object-oriented paradigm - promoting the use of inheritance, relationships, abstraction, and encapsulation to improve the quality and consistency of management data.

There are two major areas that will implement the Common Information Model:

1. As a source of management information from agents or instrumentation (providers of data) to managers
2. As the method to communicate management data between elements of a truly distributed management system (I.E., manager to manager).

Where can I find the CIM Specification?
The CIM Specification describes the language, naming, Meta Schema and mapping techniques to other management models such as SNMP MIBs, and DMTF MIFs etc. The Meta Schema is a formal definition of the model. It defines the terms used to express the model and their usage and semantics. The elements of the Meta Schema are Classes, Properties, and Methods. The Meta Schema also supports Indications and Associations as types of Classes and References as types of Properties.

The CIM Specification, CIM Schemas, and links to tools and open-source are available from this site.

How do I join a CIM working group?
Please visit the working groups and committees page for details.

You must be an employee of a DMTF Board, Contributing or Associate member company.

When was CIM released?
The CIM Specification V2.0 has been available since June, 1999. CIM Schemas Versions 2.0 through V2.7 have been available since 1998. The Schemas are located on the DMTF web site at www.dmtf.org/standards/cim.

Note that the CIM Schema releases are backward compatible. This means that modifications are made in ways that do not break existing class definitions. For example, new classes or properties may exist in newer versions of the CIM schema.

How are CIM and WBEM related?
CIM defines the data that is transported via the encoding and transport definitions of WBEM.

What is CIM Compliance?
CIM Compliance is defined by the DMTF Standard document, DSP0105, available from the web page, www.dmtf.org/standards/published_documents.