

CMDB Federation Working Group

Dated March 25, 2008

DRAFT

Management Problem(s) and Environment

Many organizations are striving to base IT management on a CMDB (Configuration Management Database). A CMDB contains data describing managed resources like computer systems and application software, process artifacts like incident, problem and change records, and the relationships among these entities. The data may include authorized configuration baselines or snapshots of the current state of the IT environment. The contents of the CMDB are often managed by a service asset and configuration management process, and serve as a foundation and integration point for other IT management processes, such as change management and availability management.

A CMDB may be part of a configuration management system. It may integrate other management data repositories (MDRs), including other CMDBs. The usefulness of a CMDB is dependent on the quality, reliability and security of the data organized through the CMDB. In practice this goal is challenging because the management data are stored in MDRs that use different data models and that support different access interfaces. Examples of potential MDRs include CIMOMs, vendor tools, and customer in-house data stores.

A solution that assumes the conversion of all data to a single data model or consolidation of all data in a single repository is neither practical nor desirable. What is needed is a solution to federate heterogeneous MDRs, including linking together all the data about an IT resource, even when the data for a resource may be dispersed across multiple MDRs. IT resources include configuration items (e.g., computers, software, services, buildings), process artifacts (e.g., incident records and request for change forms), and relationships between them. Each resource, including relationships, may have a separately managed lifecycle and its state may be represented by a set of properties.

Working Group Charter

The goals of the CMDB Federation Working Group are to define a platform independent, industry standard specification that:

- Defines the XML schema for federating management data repositories in a model and protocol neutral fashion.
- Defines encapsulating XML elements for items (Configuration Items and/or process artifacts), relationships, and data records associated to the items and relationships. The data model of the encapsulated data is not defined.

- Defines a query interface and expression format through which clients may request item and relationship data from CMDBs and other management data repositories, and that facilitates queries involving the navigation of graphs consisting of items and relationships.
- Defines protocol-specific bindings, reusing existing standards where applicable.
- Defines methodologies and interfaces for accessing data sources and their capabilities.

The working group will also provide non-normative information that describes ways the specification may be implemented and used, and best practices for federating disparate data models.

The following are outside the scope of the workgroup.

- The mechanisms used by each management data repository to acquire data. For example, the mechanisms could be external instrumentation or proprietary federation and replication function.
- The mechanisms and formats used to store data. The specification is concerned only with the exchange of data. A possible implementation is a relational database that stores data in tables. Another possible implementation is a front-end that accesses the data on demand from an external provider, similar to a commonly used CIMOM/provider pattern.
- The model and representation of the exchanged data.
- The processes used to maintain the data in the federated CMDB. The goal of the specification is to enable IT processes to manage this data, but not to require or dictate specific processes.
- The mechanisms used to change the actual configuration of the IT resources and their relationships. The goal of the specification is to provide means to represent changes but not to be the agent that makes the change.

Alliance Partnerships

None

Reliance/Coordination with other Working Groups

The working group will take into account existing protocols and schemas that might be relevant to the development of the CMDB Federation specification.

The working group will coordinate to share best practices with other working groups.

The working group is part of the Infrastructure Subcommittee.

Prior Work

Source of information that will provide the seeds for initiating the development in this Work Group are:

- CMDB Federation White Paper
- CMDB Federation Specification V1.0

These may be found at and downloaded from the CMDBf Web site:
www.cmdbf.org

These works have been submitted using the DMTF Technology Adoption Policy

Current Work – Overview, Deliverables and Timeline

Phase 1 Deliverables:

- Convert the technology submission specification to a DMTF template and publish it, along with accompanying XSD and WSDL files, as a Work in Progress.
- Deliver one or more committee draft specifications submitted for Preliminary Standard for CMDB Federation.
- Deliver a white paper to accompany the Preliminary standard. The white paper would describe ways the specification may be implemented and used, and best practices for federating disparate data models.
- Deliver at least two reference implementations. At least one will federate CIM model elements.

Phase 2 Candidate Deliverables:

- A subsequent version of the specification(s). Candidates for extensions may include, but is not limited to, added or improved support for:
 - Distributed queries [nothing in v1 prevents them, but neither are there features to specifically enable them] & contextual search
 - Pub/sub notification between Clients, Federating CMDBs, and Management Data Repositories

DMTF Contacts

Chairs can be contacted at cmdbf-chair@dmtof.org.

The working group is part of the Infrastructure Subcommittee, whose pages can be accessed at:

<http://www.dmtf.org/apps/org/workgroup/infrastructure-sc/index.php>

No subteams are envisioned.

To join the DMTF, see <http://www.dmtf.org/join/>

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