SAP MDM Central Master Data Management

Purpose

Maintaining a subset of master data attributes is sometimes insufficient. Therefore SAP MDM also supports the central maintenance of a complete object definition, including dependencies to other objects, on the master data server. This scenario applies to product master data. Maintenance in local systems now happens only rarely or not at all. Active status management updates each of the individual distribution steps, so that the distribution process can be handled and traced in a controlled and transparent manner.

For more information about the functional scope related to Product master data, see the SAP Help Portal.

Prerequisites

To run SAP MDM, the following prerequisites must be fulfilled:

- You have installed the SAP MDM software and hardware infrastructure as described in the SAP MDM Installation Guide.
- You have configured SAP MDM as described in the SAP MDM Central Master Data Management Configuration Guide. During configuration, you also set up the Publish/Subscribe messaging model by which the target clients for inbound (data transfer from client to SAP MDM) and outbound (data distribution to target clients) processes are derived.

SAP Enterprise Portal is the medium for user interaction within SAP MDM scenarios and processes. This user interaction within the process flow shown below is role-based and includes special worksets for the roles Master Data Administrator, Master Data Manager, Master Data Specialist, and Local Data Manager. The additional role Master Data User does not necessarily use SAP Enterprise Portal. The roles in master data management are described separately.

For purposes of simplification, the following process flow only includes the main roles Master Data Administrator, Master Data Manager, and Local Data Manager.

The delivery scope of SAP MDM includes adaptors for the following client systems:

- SAP R/3 4.6C
- SAP R/3 Enterprise
- CRM 4.0
- SRM 3.0

Adaptors to other client systems are subject to implementation on a project basis.

Process Flow

The complete process within the Central Master Data Management scenario consists of two major process flows: first, it starts with the initial upload, consolidation, merge and initial distribution of master data (Product), and then, continues with the ongoing master data harmonization and central maintenance. The following two graphics illustrate the overall process.

The following graphics describe a general process flow in Central Master Data Management without focusing on any particular master data object. However,
when applied to specific master data objects, some process steps may be
subject to change.

**Graphic: Central Master Data Management (Part 1): Initial Upload and
Distribution**

1. Provide master data in client systems
   Client systems, such as SAP R/3, CRM or non-SAP systems, to be incorporated into
master data management (referred to as master data clients, MDC) use master data
objects (Product) within their individual environment. It is not very likely that each client system uses the same data model, or, if so, quality and usage of master data may differ from system to system.

2. Upload existing master data from client systems to SAP MDM

Master data records are extracted from a client system and uploaded into SAP MDM:

- As an initial upload, when a client system is connected for the first time
- On a periodical basis, to update SAP MDM with master data information that has been created/changed at client site subsequent to the initial upload

Within SAP MDM, the Master Data Administrator triggers the extraction of master data records using specific selection criteria and filters. During the implementation of SAP MDM, the various client systems need to be defined as Master Data Clients (MDC) – they are technically routed and the mapping between different data models must be predefined using the SAP Exchange Infrastructure (SAP XI). As a result, the extracted master data records are stored in SAP MDM based on the typical data model in SAP MDM for the given object.

If the client systems use different catalog hierarchies (profile) to categorize the product masters, you must load these profiles in SAP MDM. To allow a company-wide or global spend analysis in the SAP Business Warehouse, you must make a map the profiles to a standard reporting profile.

Based on this profile mapping, product master data is categorized by the system (whereby it is possible to manually reconfigure the data, see 4) and recorded in the spend analysis.

3. Start master data consolidation in SAP MDM

Within SAP MDM, the unaligned master data from the client systems is available for further processing. The Master Data Manager is responsible for consolidating this information based on the common data model on the central instance.

SAP MDM then starts an automatic matching run to identify possible identical master data records. For this purpose, SAP delivers templates containing a typical set of rules for identifying identical records. Such a rule usually uses known identifying attributes (such as the supplier part number for products). To get the best matching result, the matching template must be adjusted on project basis according to given requirements.

As a result of the matching run, the Master Data Manager receives a clearing list of possible identical records. According to the identification algorithm applied, the system provides a results list indicating where it has determined a certain degree of similarity between compared records above which the Master Data Manager must decide from the business context whether or not these records are identical. Compared records that have achieved a very high degree of similarity do not require manual confirmation. If the system detects true duplicates (that is, redundant master data records within one client system), the Local Data Manager or Master Data Manager can view this information.

4. Provide consolidated master data

SAP MDM accumulates the knowledge of master data and dependencies between identical master data records dispersed over several client systems. This information can be used for further processing.

You can re-categorize product master data, that was assigned to different category hierarchies (profiles) in the client system or assigned to a standard reporting profile by SAP MDM. This is a prerequisite for global spend analysis in the SAP Business Information Warehouse. Additional prerequisites, such as profile upload and profile mapping, are described in 2.

5. Merge identical objects and build reference record
During the automatic merge, *SAP MDM* builds a reference record, which derives the relevant attributes from the compared records. (This derivation is based on rules that must be defined during product implementation). Unique master data records are taken over as they are.

6. Check and complete reference record

The *Master Data Manager* checks and completes the reference record, and then releases it for initial distribution.

With completion of this step, harmonized master data resides in *SAP MDM*, with *SAP MDM* being the central instance for data administration.

7. Distribute reference record

The system distributes the reference record to the relevant clients. The original reference record data remain in *SAP MDM*.

8. Receive data

The client systems receive the data and either create a replicate, or update existing master data.

After the initial distribution of consolidated and merged master data, which is the starting point for continued data harmonization and central master data management, the clients can initiate the ongoing harmonization process. This is done by sending a creation request to *SAP MDM*. 
9. Obtain harmonized master data in client system (after initial receipt of master data)

The **Local Data Manager** (or **Master Data User**) completes and dispatches a Web form to request the creation of a master data record. If required, **SAP MDM** checks the given information and searches for possible identical records and duplicates. If a true duplicate is found, the request will be denied and the relevant information provided to the requester. If an identical record is found, this will be proposed for usage. If there is
no identical record, the *Master Data Manager* receives the request as a workflow item. He or she completes or verifies and saves the data. These steps are accompanied by a system search for duplicates. Once the requested new record has been registered on *SAP MDM*, the requester receives an approval message.

10. Distribute harmonized master data to client systems

The *Master Data Manager* releases the data for distribution. *SAP MDM* determines the relevant target systems, maps the data with the relevant target format and finally distributes it to the derived systems.

**Result**

The connected target systems obtain a harmonized data stock through ongoing central master data maintenance.

For new objects needed in local client systems, the *Local Data Manager* can send new creation requests to *SAP MDM*.

Harmonized master data can be transferred to *SAP BW* to run cross-company evaluations.