



## SAS® MDM Advanced

Create a consistent, accurate and unified view of corporate data

### What does SAS® MDM Advanced do?

SAS MDM Advanced is a multiple-domain master data management solution that includes the processes and technology needed to provide a trusted view of critical data assets. It uses an embedded data quality engine to analyze existing data sources, build a unified view and manage that data throughout all stages of its life cycle.

### Why is SAS® MDM Advanced important?

It is critical for businesses to understand who their customers are, what they purchased and how to sell more to them. Organizations, including governments and the public sector, also need to know what is being spent on materials, gain an accurate view of suppliers and view inventory information to manage and control costs. Master data management is the creation of an accurate and unified view of different types of corporate data. SAS enables the streamlining and standardization of data to form a master data hub that provides consistent and uniform control of data across the enterprise. This delivers rapid results and supports increasingly important data governance initiatives.

### For whom is SAS® MDM Advanced designed?

It is designed for data stewards and members of an organization's data integration and quality teams. The simplified and consistent interface also makes it easy for business analysts to use.

What is a business without its customers, products and employees? Master data (i.e., information about customers, products, employees or other critical business elements) is arguably the most important data that organizations hold. In order to grow, it is critical for them to understand and get the most value from all of their data, wherever it originates and is stored.

Data silos, so prevalent throughout most organizations, can be a huge barrier to producing accurate information. They result in duplicate, overlapping and conflicting data that magnifies data management problems and impedes operational and analytical efforts. The problems are numerous: reduced revenue as a result of decisions made using bad data and lost productivity as teams try to validate data. Inaccurate data also can lead to customer dissatisfaction, lower retention rates, poor product offerings and untapped opportunities.

For many organizations, obtaining a single, consistent view of an entity from data stored in so many different applications and formats seems unattainable. Such initiatives are often stalled because companies are not even sure where to begin. A phased approach is one way to alleviate the concern and provide direction for moving forward.

SAS provides a quality-based master data management solution that helps organizations ensure they are not using multiple (potentially inconsistent) versions of data in different parts of their operations or analytic applications.

### Key Benefits

- Improve revenue generation.** Linking operational systems provides consolidated customer profile and activity information that enables businesses to identify additional cross-sell, up-sell and product bundling opportunities.
- Enhance customer relationships.** A unified view of customers and other data entities enables businesses to optimize all customer interactions, including sales opportunities, customer support, billing and more.
- Make informed, fact-based decisions.** Creating a unified view of customers, suppliers, products and other entities allows reliable linking to core operational systems and provides a consolidated view of each entity. The result is more accurate and complete data for use in predictive analytics, which leads to improved, fact-based decision making.
- Reduce risk by providing governance capabilities needed for compliance.** Unified and consistent reference data is needed to meet risk objectives. SAS provides governance capabilities necessary for compliance, including validation and integrity controls as well as audit trails and lineage information.
- Provide unified, trusted data for use in SAS® solutions.** SAS MDM Advanced augments other SAS software by ensuring high-quality reference data that serves as the foundation for business analytics solutions such as SAS Customer Intelligence, SAS Fraud Management, SAS Risk Management and more.



## Product Overview

The purpose of master data management (MDM) is to identify, link and reconcile data from various sources to create a unified and trusted view of core data assets, and to provide the integration processes needed to make that data consumable by other enterprise applications. It also enables you to manage and evolve that information over time.

Whether you need a unified view of customers to support sales and marketing efforts or a single view of materials to streamline procurement, MDM can turn messy data into consistent information by creating and managing an enterprise “best record” approach.

SAS enables you to define the processes and standardize data within a central data repository for uniform control of information throughout your organization. SAS MDM Advanced provides the foundation for either a staged MDM implementation or a comprehensive initial deployment, allowing your own organizational needs to drive MDM deployment options.

## Best-in-class data quality technology

SAS MDM Advanced is built upon best-in-class data quality and data profiling technologies, including address verification, data standardization and parsing. This innovative approach ensures that data is explored, profiled, understood, cleansed, properly linked and enhanced before it is integrated into the master data repository. In addition, a fully extensible knowledge base can be customized with a GUI to ensure data cleansing rules are implemented to your specifications.

## Multiple domain data model

SAS provides a flexible, entity-based data model that can be used to create master data domains for individuals (citizens, customers, students, patients, etc.), organizations (suppliers, vendors, hospitals, facilities, etc.), site, product, asset or other data entities. Householding, peer relationships, clustering and entity hierarchies are all supported in the data model. Multiple domains provide flexibility so you are not limited to just a single domain (e.g., customers) for information. This delivers a more accurate and complete picture of each entity.

## Master data repository

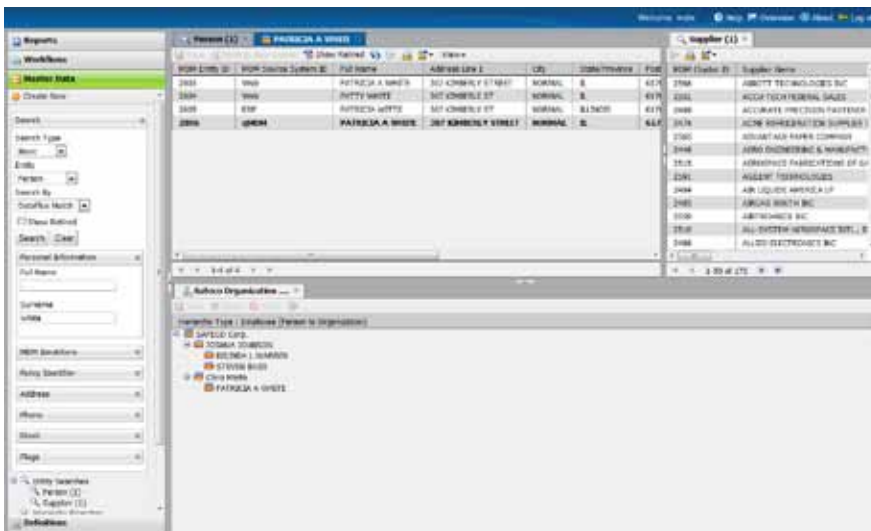
The master data repository is a configurable database that stores your master data. It enables you to create a master view of customers, products, inventory, materials, assets and virtually any other type of data. Matching and identification processes take place within this hub. The system analyzes individual records and links them based on a set of identified rules.

In addition, the hub design makes it possible to historically rebuild data views. All changes are captured and preserved along with other information such as who made modifications and when. This auditable, historical view of master records means that the relevant data history required for data governance is maintained in the solution infrastructure.

Equally important to efficiently loading data into the MDM repository is the ability to update the repository as source systems change and feed cleansed information back to operational systems. SAS provides the ability to create and manage data inside the master repository.

## Intuitive interface and browser-based stewardships console

An intuitive, browser-based GUI called the Master Data Manager makes it easy to control the master data hub, as well as the processes and job workflows that govern the creation of your master data. The interface lets you easily manipulate and visualize master data records, and can be used to search the master data hub to see what data has been merged by whom and when the merge took place. It enables you to manage interrelated data elements such as tiered and networked hierarchical structures. The Web-based console allows data stewards and business analysts to analyze existing data resources and design data governance



*A role-based, metadata-driven user interface enables data stewards and business analysts to easily manage multiple data domains, view the contributing records used to create the “best record” of an entity and develop multiple-entity hierarchies using streamlined drag-and-drop capabilities.*

workflows and business rules. Because it is easy to use, business users and IT staff members can collaborate more effectively, minimizing the time and complexity of the MDM deployment.

### **Role-based access**

Role-based access, also known as data masking, is provided so data stewards can control what information users are able to access. This protects sensitive and confidential information such as Social Security numbers and other personally identifiable information.

### **Entity resolution and matching**

Entity resolution solves the problems that arise when an organization has two or more sources of information containing records on the same set of real-world entities. If the source systems have evolved independently, it is unlikely that unique identifiers exist to link the data that is in different systems. SAS provides a patented data-matching engine to match and merge records from multiple systems. Optimally, fields from the different systems can be combined to create a “best record” of each entity.

### **Survivorship**

Determining “best” values is also called survivorship. When there are different data values, decisions must be correlated to create a “best record.” SAS uses a core matching process that combines both parsing and standardization. Using industry-leading data matching and survivorship capabilities, MDM from SAS can be configured to use virtually any kind of match rule or best-record creation rule for the process of identify resolution and management.

### **Batch and real-time deployment**

With SAS MDM Advanced, data can be loaded into the hub and searched using batch processes or real-time service-oriented architecture (SOA) interfaces.

## **Key Features**

### **Best-in-class data quality and data management capabilities**

- Standardize and rationalize data during the MDM data life cycle with capabilities that include:
  - Data access to more than 20 relational data sources, file-based sources, XML files and unstructured content.
  - Data profiling, exploration and entity resolution.
  - Data quality features for address verification, standardization, parsing, etc.
  - Data matching, linking and householding.
  - Data-rule monitoring.

### **Multiple-domain data models**

- Create master data domains for party (citizen, customer, student, patient, etc.), organization, site, supplier, product, asset or other data elements:
  - Identify and centralize key core reference data.
  - Grow from batch-oriented maintenance to real-time application integration through SOA.

### **Master data repository: hub loading and maintenance**

- Customize data models and transformation/hub-loading processes for common entities (person, organization, location, etc.).
- Support for hub loading and maintenance processes with:
  - Out-of-the-box models that are extensible and user-created models that can be easily and seamlessly integrated with other models.
  - Built-in data quality functionality such as address verification, standardization, parsing, etc.
  - Entity matching, source system record linking, cross-referencing and best-record creation.
  - Data-rule monitoring.
  - Historical tracking with changes saved for contributing records and best records.
  - Initial load and incremental transformation/load capabilities.

### **Browser-based data governance and data stewardship console**

- Control the master data hub, as well as the processes and workflows that govern the creation of master data, through an intuitive, business-focused interface that lets you:
  - Search and display entities.
  - Create a common language for business data and collaborate on the development and management of business terms across the enterprise.
  - Build and manage relationships and hierarchies across data elements through a Web-based interface.
  - Perform entity resolution and survivorship tasks with clusters of entities.
  - Manage access to attribute content by role, allowing only authorized individuals to view sensitive attribute content.
  - Manage metadata for entities, attributes and transformations.
  - View dynamic and batch reports.

### **Entity resolution and matching**

- Create and maintain the master record using a patented data-matching engine.

### **Survivorship**

- Validate master data representation through entity resolution, best-record selection and editing, and the creation of a universal identifier.

### **Batch and real-time deployment**

- Import data, service inquiries and searches into the hub through batch or real-time (service-oriented architecture) interfaces.

### **Enterprisewide data governance**

- Support the consistent maintenance and use of master data attributes through a common data model and centralized data maintenance and access processes.
- Ensure ongoing conformance with rules and quality using data profiling and business-rule monitoring.

Batch jobs derived from SAS can be repurposed as business services that accept data on a record-by-record basis. This enables enforcement of business logic, exception handling, identity management and data quality across enterprise applications.

### A standards-based, platform-independent approach

Because SAS MDM Advanced can work within virtually any IT environment, your organization can implement a master data management initiative with minimal system disruption.

### Enterprisewide data governance

With role-based access, auditable and historical views of master records, and a stewardship console that enables workflow modeling, SAS offers complete support for enterprisewide data governance projects. Combining the processes and strengths of master data management with powerful and proven business analytics from SAS, organizations can transform their disparate data into a strategic asset that empowers better decision making.

#### For More Information

To learn more about SAS MDM Advanced, view screenshots and see other related material, please visit [sas.com/mdm](http://sas.com/mdm).

NEW_ENTITY_ID	FULL_NAME	ADDRESS	CITY	STATE	PRODUCT	INSTANTID
196	TRACY KANE	5	CONROVERSE	GA	803	
196	JUNE GOVS	4 0210 ST	BARROW	AK	803	
193	MICHAEL H MARTIN	85 W 25TH AVE	INDIGO	VT	803	8030-1941
192	MARCEA MENDEL	8 JERRY BETH ROAD	BRIMFORD	RI	803	
199	BRUNDA L COLLIER-WHITE	5 HARRIS AVE	CLIFTON	CT	803	
199	EMILY SHAWSON	30 BOX 361	STONINGTON	VT	803	
199	ELSA ALDRICH	100 MOUNTWOOD ROAD	SARASOTA	FL	803	
1961	JONNY R BROWDER	25 DANFORD DR	SAND	NC	803	
1964	ERIKARD GROBE	PO BOX 344	SAVANNAH	GA	803	
1978	JOYCE WATSON	13 BETHSWAL ST	WATSON	VT	803	
1991	TRACY RUSSELL	408 WIG LANE	BARROW	AK	702	
1989	LISA WELLS	200 WINDMILL PLACE	BARTON	AK	871	
1989	MICHAEL J BRACKETT	200 WINDMILL PLACE	BARTON	AK	871	
1989	JENNIFER CRUIK	224 PINE ST	NORTH BERKLEY	AK	7047	
1110	BARBARA FITZGERALD	1022 BUSHNET RD	JANINA MARSH	AK	8714	
1130	CHRISTOPHER C GANNON	225 YON GROW DR	WICKTON	AK	8381	
1130	CAROLYN F TONDA	123 GARDEN ST	HALL COUNTY	AK	2723	
1194	BRITNEY ALBERTS	60000 200	SOUTH BERKLEY	AK	7047	
1173	LACRISIA BLISS	276 MAIN STREET	WILKES	VT	8100	
1124	ROSEMARY BODDIE	34 DANFORD STREET	TARRANT	AK	2780	
1181	JANE WARD	908 ABBOTTS RD	SOUTH PLAINFIELD	AK	7050	
1361	CAROL CAMPBELL	120 SOUTH ST 604	WINDY	VT	8080	
1369	FRYDOR CONNELL	44 WIND ST 2	WINDY	VT	8080	
1361	BRITNEY C GANNON	50 DANFORD ST	WINDY	VT	8080	
1229	DAVIDE CHILDEN	105 CEDARROCK VILLAGE	ROCHESTER	AK	2887	
1229	TERRA L YANUKA	120 E ROUTE 12	ROCHESTER	AK	2888	
1267	THOMAS DUNCAN	8 GARD ST	ROCHESTER	AK	2122	
1271	BARBARA ROMAN	122 SHIRE CHURCH	ROCHESTER	AK	2889	
1271	CAROLYN COOPER	1222 W AUGUSTA	ROCHESTER	AK	2889	8030-4004
1261	JOHN SE JOHNSON	240 WINDY DRIVE	WINDY	VT	2887	
1261	KRISTIN DEWITT	100 CREEK RD	WINDY	VT	2887	
1262	BARBARA MENDEL	PO BOX 240	WINDY	VT	2887	8030-1941

Integrated batch and dynamic reporting enables data stewards, business analysts and other users to drill into master data and identify, diagnose and resolve data quality issues.

The screenshot shows the 'Entity' configuration interface. On the left, a tree view lists various entity types like 'NEW\_ENTITY\_ID', 'NEW\_ENTITY\_CLASS\_ID', etc. The main area is titled 'Entity' and contains several configuration options:

- Name:** A dropdown menu set to 'Customer'.
- Group:** A dropdown menu set to 'Personal Information'.
- Label:** A dropdown menu set to 'Customer'.
- Label Interface:** A dropdown menu set to 'No'.
- Separator:** A text field containing 'Customer From SAS'.
- Label Type:** A dropdown menu set to 'None'.
- Length:** A text field containing '10'.
- Required:** A dropdown menu set to 'No'.
- Condition:** A text field containing 'Customer'.
- Display:** A section with several dropdown menus for display order:
  - Search Display Order: 'No'
  - Form Display Order: 'No'
  - Table Display Order: 'No'
  - Public Display Order: 'No'
  - Cluster Display Order: 'No'
  - Cluster Display Order: 'No'
  - Read Only: 'No'

Data administrators can create new entities and modify existing entities with the same simplified and consistent interface. They can also generate and publish associated SOA-enabled jobs for creating, editing and managing the master data over its entire life cycle.



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