Master Data Management with SQL Server 2012

Reza Rad
SQL Server MVP
Reza Rad

- DW/BI Architect and Consultant
- Microsoft SQL Server MVP
- Author SQL Server books
- Author of RADACAD SQL Server 2012 tutorial Videos: [www.radacad.com](http://www.radacad.com)
- MCT
Agenda

• What is Master Data?
• Master Data Management
• Master Data Services Architecture
• Modelling
• Hierarchies
• Business Rules
• Loading Master Data into Data Warehouse
• Security
What is Master Data
Master Data is the set of data objects that are at the center of business activities requiring:

- Sharing
- Ease of access
- Central repository
- Cleansing
- Central curation
Master Data Management

Governance
- Policies
- Procedures
- Infrastructure

Action
- Capture
- Integration
- Sharing

Quality
- Accuracy
- Timeliness
- Completeness
MDS Capabilities

Modeling
Entities, Attributes, Hierarchies

Validation
Authoring business rules to ensure data correctness

Authoring business rules

Enabling Integration & Sharing

Loading batched data through Staging Tables

Registering to changes through APIs

Consuming data through Views

Workflow / Notifications

Role-based Security and Transaction Annotation

Data Matching (DQS Integrated)

Versioning

Excel Add-In

Web UI

Enabling Integration & Sharing

Excel

DW

External (CRM, ..)
MDS Modelling

• Model
• Version
• Entity
  • Code and Name
• Relationship between Entities
GUIs

• Web UI
  • For Administrators and Developers
  • Permissions
  • Hierarchies

• Excel Interface
  • For Business Users
  • Handy Excel UI
Tracking Changes

- Annotation
- Transaction History
- Annotation per record or for all
Hierarchies

- Logical tree structures that represent relationships between members

- Benefits
  - Much easier to apply changes
  - Much easier to find a leaf from ancestors
  - Flatten integration Views
  - Business Understand it better
Derived Hierarchy VS. Explicit Hierarchy

Explicit Hierarchy

Derived Hierarchy
## Derived VS. Explicit

<table>
<thead>
<tr>
<th>Hierarchy Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Derived</td>
<td>Uses multiple entities. Based on domain-based attribute relationships. Level based. Hierarchy structure is designed in System Administration. Hierarchy members are updated in Explorer.</td>
</tr>
<tr>
<td>Explicit</td>
<td>Uses one entity only. Consolidated members are used to group other consolidated and leaf members. Ragged. Entity must be enabled for explicit hierarchies in System Administration. Hierarchy structure is designed in Explorer. Hierarchy members are maintained and updated in Explorer.</td>
</tr>
</tbody>
</table>
Business Rules

• Data Validation
• Conditional Structure (IF ... Then )
• Logical Operators (AND / OR)
• Run a Workflow
• Trigger Email Notification
• BRs Creates and Changes through WebUI
• Don’t Create Complex BRs
Business Rules

• Assign attribute values
  • Equals or defaults to a specific value or another attribute value
  • Generated number
  • Concatenation of attribute values or extracts of values combined with text strings

• Specify validation criteria
  • Mandatory (required) attributes
  • Set to invalid
  • Ensure uniqueness in specific attributes or attribute combinations
  • Valid attribute values, ranges
  • Minimum or maximum length
Master Data to Data Warehouse

- Integration Views as Source or reference in Lookup
- Integration Services for loading into DW
Security

- Authentication by AD
- Active Directory and User Accounts
- Authorization by MDS
- Security Set in WebUI
- Security Applies on WebUI and Excel Add-in
What is MDS Securing?

Permissions to Functions
(Role Based Permissions)

Permissions to Model Objects

Permissions to Hierarchy Members

<table>
<thead>
<tr>
<th>Members</th>
<th>Hierarchy Security</th>
</tr>
</thead>
<tbody>
<tr>
<td>DBA</td>
<td></td>
</tr>
</tbody>
</table>

Model Security

Model

Entities

Member Type
- Leaf
- Consolidated
- Collections

Collections

Hierarchy

Hierarchy Member 1

Hierarchy Member 2

Hierarchy Member n
Entity Based Staging

- Master Data can change from other systems
- Integration Services comes to help to update Master Data
References to Read More

• MDS Videos on MSDN
• MDS Book
  • [Microsoft SQL Server 2012 Master Data Services](http://msdn.microsoft.com/en-us/library/ee633763.aspx)
• MDS in MSDN
• MDS Team Blog
• MDS Tutorial Videos will be available soon:
  • [http://www.radacad.com](http://www.radacad.com)
Questions?

- If you have any question:
- [www.rad.pasfu.com](http://www.rad.pasfu.com)
Thanks