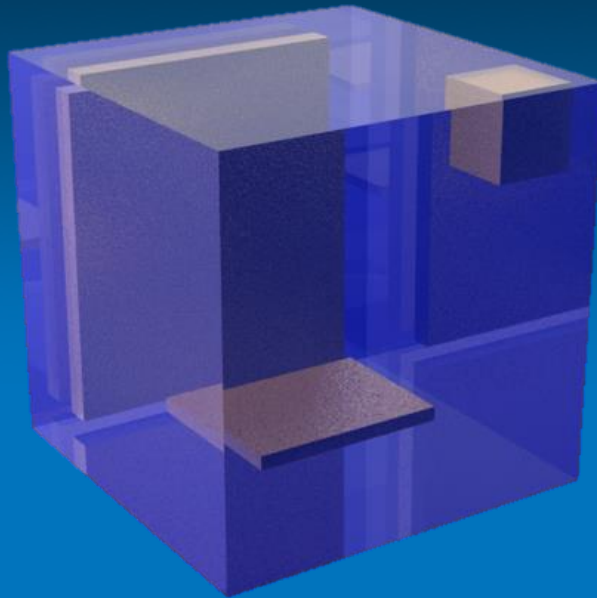


The Developer Side of Master Data Service 2012

The sequel of the Developer Side of Microsoft Business Intelligence!
- SQLBits 7 in York -



by
Sascha Lorenz (PSG)

MDM
Patterns
Methodology
Coaching
BI Architecture
BI Strategy
Reporting Services
Data Quality
Analysis Services
Data Warehouse
ETL
Consulting
OLAP
Dimensional Modeling
Skill Improvement
BI Lifecycle
Data Profiling
Coaching

About me...

- Sascha Lorenz
- Lead Consultant, Coach & Trainer
- PSG Projekt Service GmbH, Hamburg
- Our Customers are German Federal Agencies, Shipping Companies and Banks (Fonds Administration & NPL)
- Support Microsoft as vTSP in EPG engagements
- Engaged in German PASS Chapter (Hamburg)

Follow me on **Facebook, Twitter (@SaschaLorenz)** and
<http://saschalorenz.blogspot.com>

A word cloud of business intelligence and data management terms. The words are arranged in a horizontal, slightly curved layout. The most prominent words are 'BI Architecture' and 'Coaching', which are larger than the others. Other visible words include 'MDM Patterns', 'Methodology', 'BI Strategy', 'Reporting Services', 'Data Quality', 'Analysis Services', 'Data Warehouse', 'ETL', 'OLAP', 'Dimensional Modeling', 'Skill Improvement', 'Data Profiling', 'BI Lifecycle', 'Consulting', and 'Coaching' (repeated). The words are in various shades of white and light blue against a dark blue background.

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Agenda

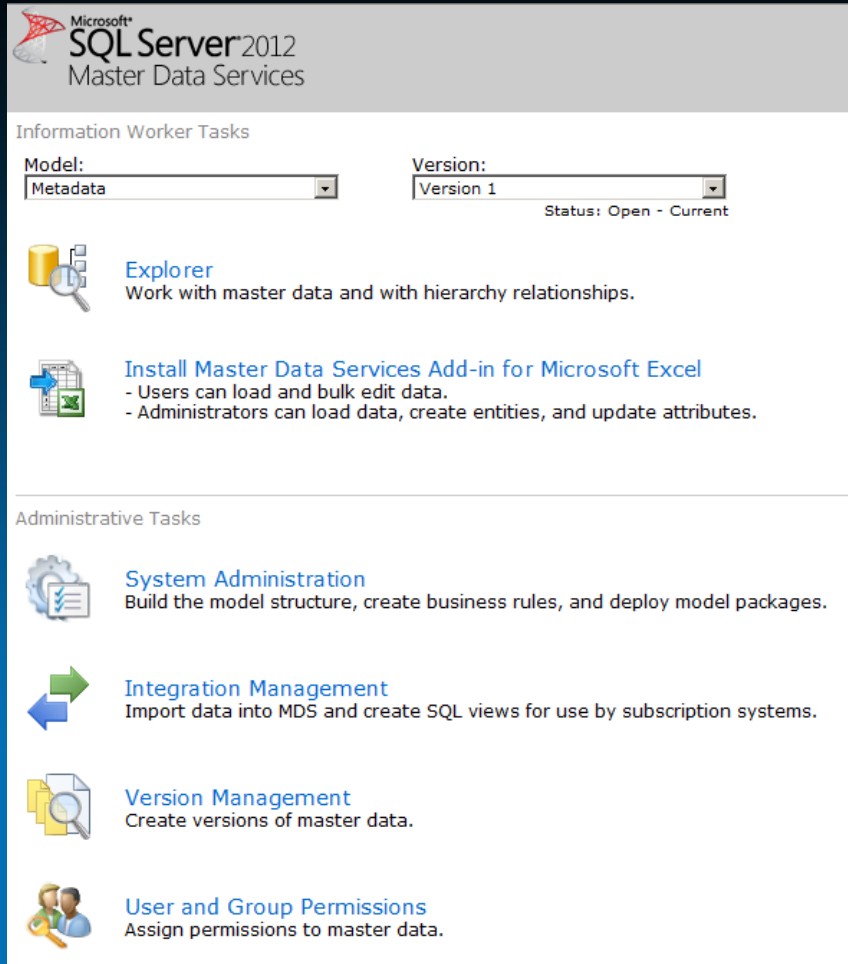
- What is MDS? (Short Version, really...)
- Why again the Developer Side of something?
- How to get data in and out MDS?
 - Staging
 - Direct Access
 - WCF
- Custom Workflow / External action



A word cloud of various terms related to Business Intelligence (BI) and data management. The terms are arranged in a horizontal, slightly overlapping manner. The most prominent terms include 'BI Architecture', 'Data Warehouse', 'OLAP', 'ETL', 'Reporting Services', 'Data Quality', 'Analysis Services', 'BI Strategy', 'Skill Improvement', 'Data Profiling', 'Coaching', 'MDM', 'Patterns', 'Methodology', 'Consulting', 'Dimensional Modeling', and 'BI Lifecycle'.

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What is MDS?



- A Master Data Management Solution
- What are Master Data ?

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What is MDS?

Master Data Services Configuration Manager: MYSERVER

Microsoft SQL Server 2012
Master Data Services Configuration Manager

MYSERVER

Database Configuration

Web Configuration

Database Configuration

Current Database

SQL Server instance: MYSERVER

Master Data Services database: MDS

Master Data Services database version: 11.1.0.0

Create Database...

Select Database...

Upgrade Database...

Repair Database...

System Settings

Database connection time-out (in seconds): 60

Database command time-out (in seconds): 3600

Web service time-out (in seconds): 120000

Client time-out (in seconds): 300

Copy only committed versions: Yes

Number of rows per batch: 50

Log all staging transactions (SQL Server 2008 R2 only): Off

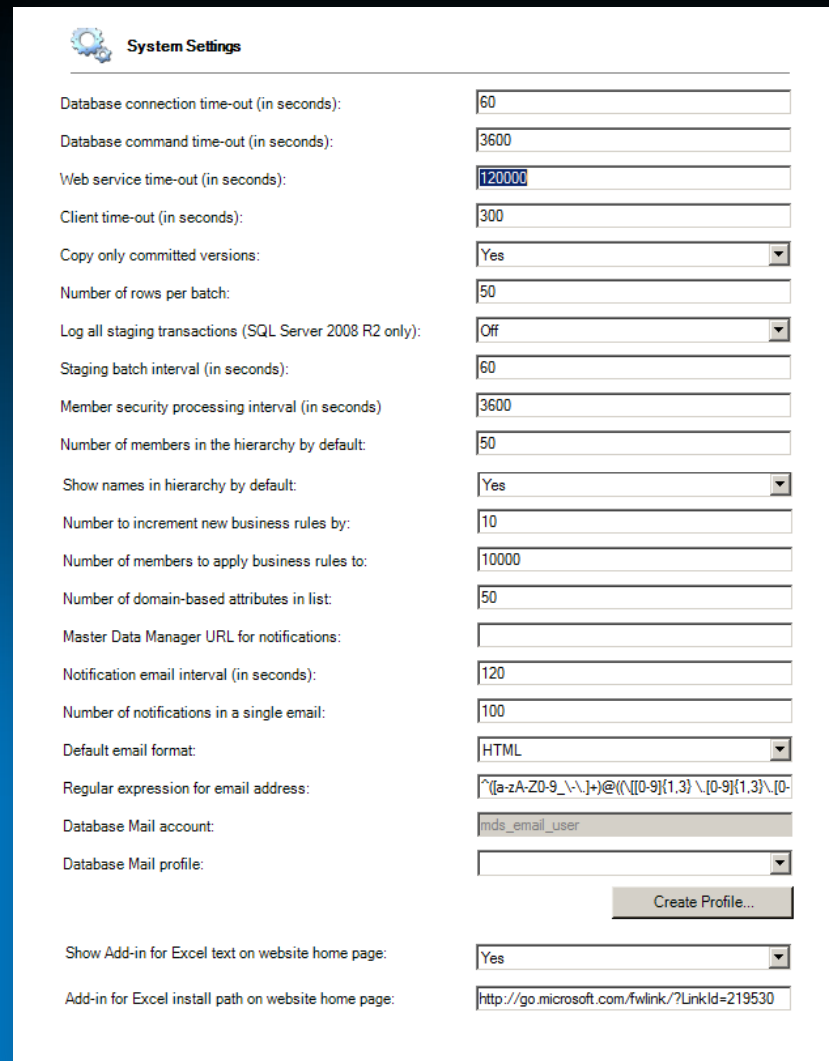
Staging batch interval (in seconds): 60

Member security processing interval (in seconds): 3600

Number of members in the hierarchy by default: 50

Apply Exit

What is MDS?



System Settings

Database connection time-out (in seconds):	60
Database command time-out (in seconds):	3600
Web service time-out (in seconds):	120000
Client time-out (in seconds):	300
Copy only committed versions:	Yes
Number of rows per batch:	50
Log all staging transactions (SQL Server 2008 R2 only):	Off
Staging batch interval (in seconds):	60
Member security processing interval (in seconds):	3600
Number of members in the hierarchy by default:	50
Show names in hierarchy by default:	Yes
Number to increment new business rules by:	10
Number of members to apply business rules to:	10000
Number of domain-based attributes in list:	50
Master Data Manager URL for notifications:	
Notification email interval (in seconds):	120
Number of notifications in a single email:	100
Default email format:	HTML
Regular expression for email address:	^[a-zA-Z0-9_\.\-]+\@(\[0-9]{1,3} \[0-9]{1,3} \[0-
Database Mail account:	mds_email_user
Database Mail profile:	
Create Profile...	
Show Add-in for Excel text on website home page:	Yes
Add-in for Excel install path on website home page:	http://go.microsoft.com/fwlink/?LinkId=219530

MDM

Patterns

Methodology

Architecture

Coaching

Data Profiling

Coaching

Skill Improvement

BI Lifecycle

Dimensional Modeling

OLAP

Analysis Services

Reporting Services

Consulting ETL Data Warehouse

Why talking about a developer side of Master Data Services?

- MDS is the first service in SQL Server with a clear business process !
- MDS needs no customization & coding to use !
- MDS is a great tool for (BI/EIM) developer ! 😊

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Why talking about a developer side of Master Data Services?

- Use cases for the developer side:
 - Better integration in data/information flows & business processes
 - Integration in existing frontends (ERP, HR, CRM...)
 - Building our own frontends
 - For much more automation

A word cloud of various terms related to Business Intelligence (BI) and data management. The terms are arranged in a horizontal, slightly curved layout. The most prominent terms are 'BI Architecture' and 'Coaching', which are larger than the others. Other terms include 'MDM', 'Patterns', 'Methodology', 'Coaching', 'Data Profiling', 'BI Lifecycle', 'Skill Improvement', 'Reporting Services', 'OLAP', 'Data Warehouse', 'ETL', 'Consulting', 'Analysis Services', 'Data Quality', 'BI Strategy', 'Dimensional Modeling', and 'Consulting'.

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Objects in MDS

- Meta Data like
 - Models
 - Entities
 - Attributes
 - Hierarchies
 - Versions
 - Security
- Members

A word cloud of various terms related to Business Intelligence (BI) and Master Data Services (MDS). The terms are arranged in a horizontal, slightly curved layout. The most prominent terms are 'BI Architecture' and 'Coaching', which are the largest. Other significant terms include 'Data Warehouse', 'ETL', 'OLAP', 'Reporting Services', 'Data Quality', 'Analysis Services', 'BI Strategy', 'Skill Improvement', 'Data Profiling', 'Methodology', 'Patterns', 'MDM', 'Consulting', 'Dimensional Modeling', and 'BI Lifecycle'. The words are in different shades of blue and white, with some appearing in a lighter font than others.

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Transactions

- [„MDS“].[mdm].[tblTransaction]
- Very useful feature of MDS ! Record all changes of the member data.
- You can use it for your SCD Type 2 challenge !

A word cloud of various business intelligence and data management terms. The words are arranged in a horizontal, slightly overlapping manner. The most prominent words are 'ETL', 'Data Warehouse', 'OLAP', 'BI Architecture', and 'Coaching'. Other visible terms include 'Consulting', 'Analysis Services', 'Data Quality', 'Reporting Services', 'BI Strategy', 'Skill Improvement', 'Data Profiling', 'BI Lifecycle', 'Methodology', 'Patterns', and 'MDM'.

Consulting ETL Data Warehouse OLAP Analysis Services Data Quality Reporting Services BI Strategy Skill Improvement Data Profiling BI Lifecycle Methodology Patterns MDM Coaching

Access the schema

- [„MDS“].[mdm].[tblModel]
- [„MDS“].[mdm].[tblEntity]
- [„MDS“].[mdm].[tblAttribute]
- [„MDS“].[mdm].
[viw_SYSTEM_
“Model”_
“Entity”_CHILDATTRIBUTES]

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Access the schema

- --Custom attributes
- ,T.[Name] AS [Name]
- ,T.[Code] AS [Code]
- ,T.[uda_69_2025] AS [A1]
- ,T.[uda_69_2026] AS [A2]
- ,T.[uda_69_2027] AS [A3]
- FROM mdm.[tbl_19_69_EN] AS T

Demo

Access the schema



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Staging Tables

- New feature in SQL 2012
- stg schema
- batch tag (I love batches)
 - But, you can also change single member !
- Later is no way to change the name !



A word cloud of various business intelligence and data-related terms. The words are arranged in a horizontal, slightly curved layout. The most prominent words are 'BI Architecture' and 'Coaching', which are larger than the others. Other visible words include 'ETL', 'Data Warehouse', 'OLAP', 'Reporting Services', 'Data Quality', 'Analysis Services', 'Consulting', 'Dimensional Modeling', 'Skill Improvement', 'Data Profiling', 'BI Lifecycle', 'Methodology', 'Patterns', and 'MDM'.

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Import Types

Import Type	Operation
0	Merge Optimistic
1	Insert
2	Merge Overwrite
3	Delete
4	Purge
5	Delete Automatic
6	Purge Automatic

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Import Types

```
INSERT INTO stg.E1_leaf
  ( importtype ,
    importstatus_id ,
    BatchTag ,
    Code ,
    name ,
    A1 ,
    A2 ,
    A3
  )
VALUES ( 1 ,
        0 ,
        'New Member' ,
        '3' ,
        'Name 3' ,
        null ,
        'M2' ,
        'M3'
      );
```

```
INSERT INTO stg.E1_leaf
  ( importtype ,
    importstatus_id ,
    BatchTag ,
    Code ,
    name ,
    A1 ,
    A2 ,
    A3
  )
VALUES ( 0 ,
        0 ,
        'Update Member' ,
        ,3' ,
        null ,
        null ,
        'M8' ,
        null
      );
```

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Meta Data / WCF

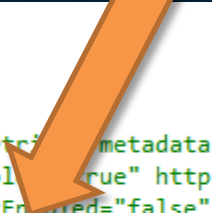
- Our Models / Schema are „Meta Data“ !



A word cloud of business intelligence and data-related terms. The words are arranged in a horizontal, slightly overlapping manner. The largest and most prominent words are 'BI Architecture' and 'Coaching'. Other significant words include 'Data Warehouse', 'OLAP', 'Reporting Services', 'Data Quality', 'Analysis Services', 'ETL', 'Consulting', 'MDM', 'Patterns', 'Methodology', 'Coaching', 'Data Profiling', 'Skill Improvement', 'BI Lifecycle', 'Dimensional Modeling', 'BI Strategy', and 'Data Quality'.

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Meta Data / WCF



```
<system.serviceModel>
  <behaviors>
    <serviceBehaviors>
      <behavior name="mdsWsHttpBehavior">
        <!-- Enable to allow clients to retrieve metadata (WSDL) about the service endpoints. -->
        <!-- If not using SSL (httpGetEnabled="true" httpsGetEnabled="false") to expose service metadata.-->
        <!-- If SSL is being used (httpGetEnabled="false" httpsGetEnabled="true") to expose service metadata.-->
        <serviceMetadata httpGetEnabled="true" httpsGetEnabled="false"/>
        <!-- Enable to allow clients to see service exception details -->
        <serviceDebug includeExceptionDetailInFaults="false"/>
        <serviceThrottling maxConcurrentSessions="400"/>
        <dataContractSerializer maxItemsInObjectGraph="999999999"/>
      </behavior>
    </serviceBehaviors>
  </behaviors>
</system.serviceModel>
```

C:\Program Files\Microsoft SQL Server\110\Master Data
Services\WebApplication\web.config.xml

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Meta Data / WCF



MDSGui001.MDSService - Dienstverweiseinstellungen [?] [X]

Client

Adresse:

Zugriffsebene für generierte Klassen:

☒ Generieren asynchroner Vorgänge zulassen

☒ Task-basierte Vorgänge generieren

☐ Asynchrone Vorgänge generieren

Datentyp

☒ Meldungsverträge immer generieren

Auflistungstyp:

Wörterbuchauflistungstyp:


☒ Typen in Assemblys, auf die verwiesen wird, wiederverwenden

☒ Typen in allen Assemblys, auf die verwiesen wird, wiederverwenden

☐ Typen in folgenden Assemblys, auf die verwiesen wird, wiederverwenden:

- ☐ Microsoft.CSharp
- ☐ mscorlib
- ☐ System
- ☐ System.Core
- ☐ System.Data
- ☐ System.Data.DataSetExtensions
- ☐ System.Deployment
- ☐ System.Drawing
- ☐ System.Runtime.Serialization
- ☐ System.ServiceModel

OK Abbrechen



Meta Data / WCF

```
private static ServiceClient CreateMdsProxy(string mdsURL)
{
    System.ServiceModel.EndpointAddress endptAddress = new System.ServiceModel.EndpointAddress(mdsURL);

    System.ServiceModel.WSHttpBinding wsBinding = new System.ServiceModel.WSHttpBinding();

    return new ServiceClient(wsBinding, endptAddress);
}
```

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Meta Data / WCF New Model

```
private void button1_Click(object sender, EventArgs e)
{
    mdsProxy = CreateMdsProxy("http://localhost/MDS/service/Service.svc");

    MetadataCreateRequest request = new MetadataCreateRequest();
    MetadataCreateResponse response = new MetadataCreateResponse();

    request.Metadata = new Metadata();
    request.Metadata.Models = new Collection<Model>() { new Model() };
    request.Metadata.Models[0].Identifier = new Identifier();
    request.Metadata.Models[0].Identifier.Name = textBox1.Text;

    response = mdsProxy.MetadataCreate(request);
}
```

Meta Data / WCF

New Entity

```
private void NewEntity_Click(object sender, EventArgs e)
{
    mdsProxy = CreateMdsProxy("http://localhost/MDS/service/Service.svc");

    MetadataCreateRequest request = new MetadataCreateRequest();
    MetadataCreateResponse response = new MetadataCreateResponse();

    request.Metadata = new Metadata();
    request.Metadata.Entities = new Collection<Entity>();

    request.Metadata.Entities.Add(new Entity
    {
        IsFlat = true,
        Identifier = new ModelContextIdentifier
        {
            Name = textBox2.Text,
            ModelId = new Identifier { Name = textBox1.Text }
        }
    });

    response = mdsProxy.MetadataCreate(request);
}
```

+ 2 Att.

Meta Data / WCF

New Attribute

```
private void NewAtt_Click(object sender, EventArgs e)
{
    mdsProxy = CreateMdsProxy("http://localhost/MDS/service/Service.svc");

    MetadataCreateRequest request = new MetadataCreateRequest();
    MetadataCreateResponse response = new MetadataCreateResponse();

    request.Metadata = new Metadata();
    request.Metadata.Attributes = new Collection<MetadataAttribute>();

    request.Metadata.Attributes.Add(new MetadataAttribute
    {

        Identifier = new MemberTypeContextIdentifier
        {
            Name = textBox3.Text,
            MemberType = MDSService.MemberType.Leaf,
            ModelId = new Identifier { Name = textBox1.Text },
            EntityId = new Identifier { Name = textBox2.Text }
        },
        DataType = AttributeDataType.Text,
        DisplayWidth = 100
    });
}
```

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Meta Data / WCF

Modify Meta Data

```
private void GetGuid_Click(object sender, EventArgs e)
{
    mdsProxy = CreateMdsProxy("http://localhost/MDS/service/Service.svc");

    MetadataGetRequest request = new MetadataGetRequest();
    MetadataGetResponse response = new MetadataGetResponse();

    request.SearchCriteria = new MetadataSearchCriteria();
    request.SearchCriteria.Models = new Collection<Identifier>() { new Identifier() };
    request.SearchCriteria.Models[0].Name = textBox1.Text;

    request.ResultOptions = new MetadataResultOptions();
    request.ResultOptions.Models = ResultType.Identifiers;

    response = mdsProxy.MetadataGet(request);

    String productModelGUID = response.Metadata.Models[0].Identifier.Id.ToString();

    listBox1.Items.Add(productModelGUID);
}
```

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Meta Data / WCF Delete Model

```
private void delModel_Click(object sender, EventArgs e)
{
    mdsProxy = CreateMdsProxy("http://localhost/MDS/service/Service.svc");

    MetadataGetRequest request = new MetadataGetRequest();
    MetadataGetResponse response = new MetadataGetResponse();

    request.SearchCriteria = new MetadataSearchCriteria();
    request.SearchCriteria.Models = new Collection<Identifier>() { new Identifier() };
    request.SearchCriteria.Models[0].Name = textBox1.Text;

    request.ResultOptions = new MetadataResultOptions();
    request.ResultOptions.Models = ResultType.Identifiers;

    response = mdsProxy.MetadataGet(request);

    String productModelGUID = response.Metadata.Models[0].Identifier.Id.ToString();

    listBox1.Items.Add(productModelGUID);

    MetadataDeleteRequest drequest = new MetadataDeleteRequest();
    MetadataDeleteResponse dresponse = new MetadataDeleteResponse();

    drequest.Metadata = response.Metadata;

    dresponse = mdsProxy.MetadataDelete(drequest);
    MessageBox.Show("Done");
}
```

Meta Data / WCF

Dealing with Members

```
private void GetMember_Click(object sender, EventArgs e)
{
    mdsProxy = CreateMdsProxy("http://localhost/MDS/service/Service.svc");

    EntityMembersGetRequest request = new EntityMembersGetRequest();
    EntityMembersGetCriteria Criteria = new EntityMembersGetCriteria();

    Criteria.ModelId = new Identifier { Name = textBox1.Text };
    Criteria.VersionId = new Identifier { Name = "VERSION_1" };
    Criteria.EntityId = new Identifier { Name = textBox2.Text };
    Criteria.MemberType = MemberType.Leaf;

    Criteria.MemberReturnOption = MemberReturnOption.DataAndCounts;
    Criteria.PageNumber = 1;
    Criteria.PageSize = 1;
    Criteria.SortColumnId = new Identifier { Name = "Name" };
    Criteria.SortDirection = SortDirection.Asc;

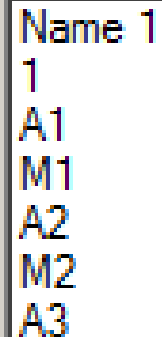
    request.MembersGetCriteria = Criteria;

    EntityMembersGetResponse Response = mdsProxy.EntityMembersGet(request);

    Collection<Member> members = new Collection<Member>();

    if (Response.EntityMembers.Members.Count > 0)
    {
        foreach (Member individualMember in Response.EntityMembers.Members)
        {
            listBox1.Items.Add(individualMember.MemberId.Name);
            listBox1.Items.Add(individualMember.MemberId.Code);

            foreach (MDSService.Attribute att in individualMember.Attributes)
            {
                listBox1.Items.Add(att.Identifier.Name);
                listBox1.Items.Add(att.Value.ToString());
            }
        }
    }
    else { listBox1.Items.Add("Empty"); }
}
```



Name 1
1
A1
M1
A2
M2
A3

Meta Data / WCF

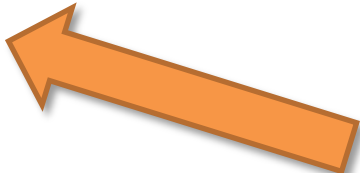
Dealing with Members II.

```
if (Response.EntityMembers.Members.Count > 0)
{
    foreach (Member Members in Response.EntityMembers.Members)
    {
        listBox1.Items.Add(Members.MemberId.Name);
        listBox1.Items.Add(Members.MemberId.Code);

        foreach (MDSService.Attribute att in Members.Attributes)
        {
            listBox1.Items.Add(att.Identifier.Name);
            listBox1.Items.Add(att.Value.ToString());
            if (checkBox1.Checked)
            {
                att.Value = "myNewValue";
            }
        }
    }

    if (checkBox1.Checked)
    {
        EntityMembersUpdateRequest UpdateRequest = new EntityMembersUpdateRequest();
        EntityMembersUpdateResponse UpdateResponse = new EntityMembersUpdateResponse();

        UpdateRequest.Members = Response.EntityMembers;
        mdsProxy.EntityMembersUpdate(UpdateRequest);
    }
}
```



Demo WCF

Meta Data / Members



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Business Rules / External Action

Microsoft®
SQL Server® 2012
Master Data Services

Model View **Manage** System

←

Business Rule Maintenance

Model:
SQLBits

Entity:
SQLBits

Member type:
Leaf

Attribute:
All

+ [Diagram] [Pencil] [X]

Priority	Excluded	Name	Description	Expression	Status	Notification
10	<input type="checkbox"/>	New rule (1)			Rule not defined	

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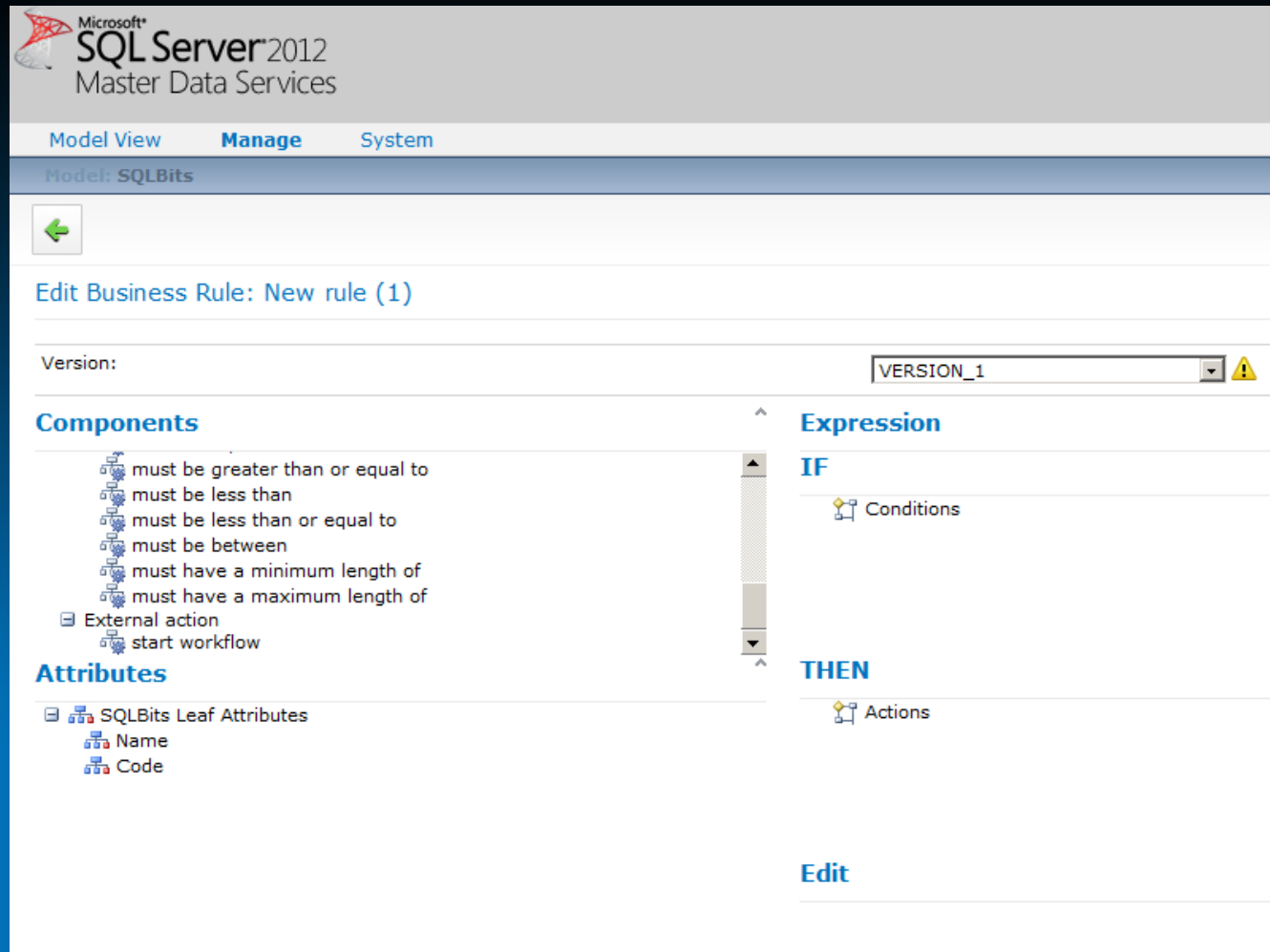
Data Quality

BI Strategy

Reporting Services

BI Architecture

Business Rules / External Action



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Business Rules / External Action

Components

- must be greater than or equal to
- must be less than
- must be less than or equal to
- must be between
- must have a minimum length of
- must have a maximum length of
- External action
- start workflow

Attributes

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Business Rules / External Action

Edit Action

Select attribute




start workflow

Workflow type:
SPWF

☐ Include member data in the message

Workflow site:

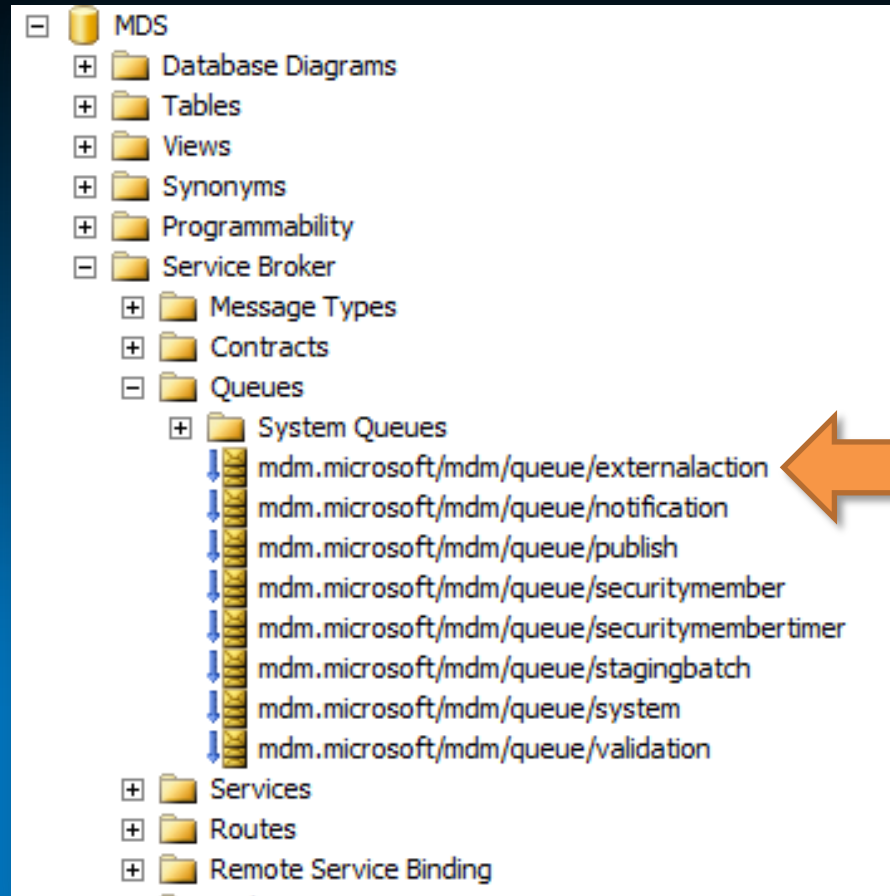
Workflow name:



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Business Rules / External Action



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Business Rules / External Action


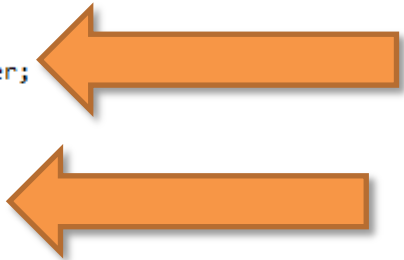
```
using System;
using System.Collections.Generic;
using System.Linq;
using System.Text;
using System.IO;
using System.Data.SqlClient;
using System.Xml;
using Microsoft.MasterDataServices.WorkflowTypeExtender;

namespace MDSWorkflowDemo
{
    public class WorkflowTest : IWorkflowTypeExtender
    {
        #region IWorkflowTypeExtender Members

        public void StartWorkflow(string workflowType, System.Xml.XmlElement dataElement)
        {
            Console.WriteLine("Name : " + dataElement.GetElementsByTagName("Name")[0].InnerText);
            Console.WriteLine("Code : " + dataElement.GetElementsByTagName("Code")[0].InnerText);

            Console.WriteLine(dataElement.OuterXml);
        }

        #endregion
    }
}
```



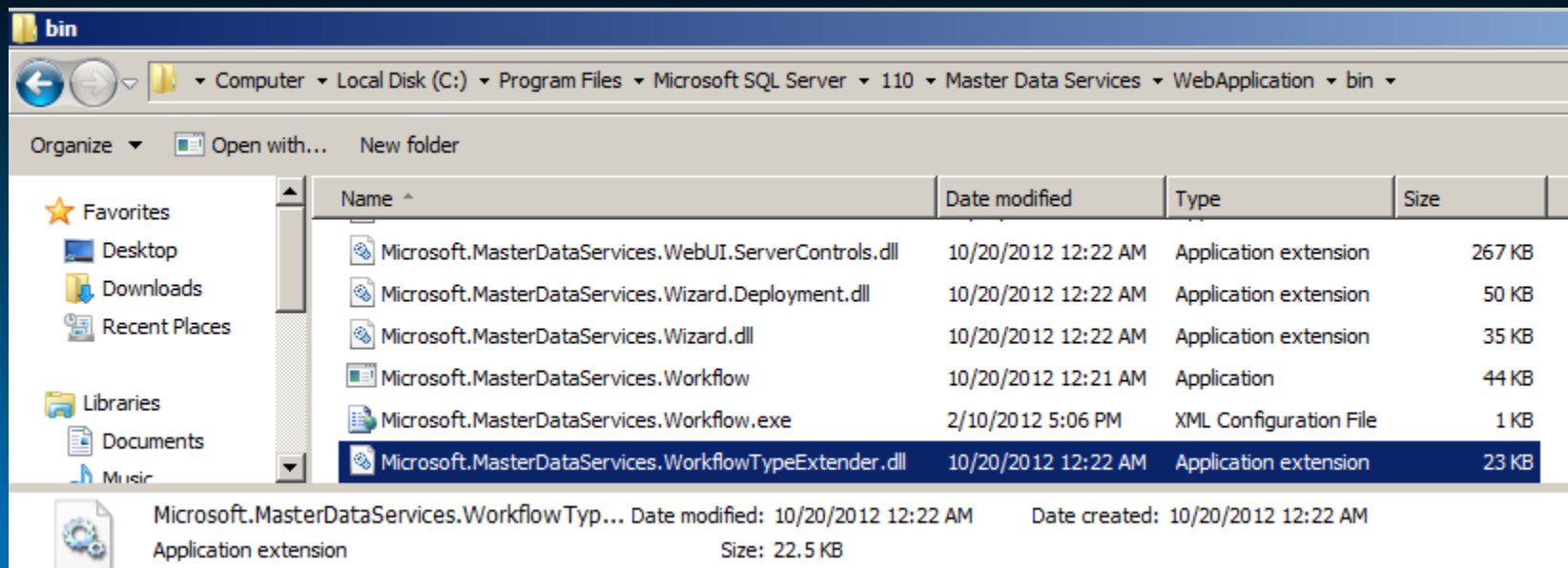
MDSWorkflowDemo.dll

Business Rules / External Action

Software Protection	Enables the download, installation and enforcement of li...	Started	Automatic (D...	Net
Special Administration Console Helper	Allows administrators to remotely access a command pro...		Manual	Loc
SPP Notification Service	Provides Software Licensing activation and notification		Manual	Loc
SQL Full-text Filter Daemon Launcher (MSSQ...	Service to launch full-text filter daemon process which will...	Started	Manual	NT
SQL Server (MSSQLSERVER)	Provides storage, processing and controlled access of da...	Started	Automatic	NT
SQL Server Agent (MSSQLSERVER)	Executes jobs, monitors SQL Server, fires alerts, and allo...	Started	Automatic	NT
SQL Server Analysis Services (MSSQLSERVER)	Supplies online analytical processing (OLAP) and data mini...	Started	Automatic	FO
SQL Server Browser	Provides SQL Server connection information to client com...		Disabled	Loc
SQL Server Distributed Replay Client	One or more Distributed Replay client computers that wor...		Manual	NT
SQL Server Distributed Replay Controller	Provides trace replay orchestration across multiple Distrib...		Manual	NT
SQL Server Integration Services 11.0	Provides management support for SSIS package storage ...	Started	Automatic	NT
SQL Server Reporting Services (MSSQLSERV...	Manages, executes, renders, schedules and delivers rep...	Started	Automatic	NT
SQL Server VSS Writer	Provides the interface to backup/restore Microsoft SQL s...	Started	Automatic	Loc

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Business Rules / External Action



```
C:\Program Files\Microsoft SQL Server\110\Master Data Services\WebApplication\bin>C:\Windows\Microsoft.NET\Framework\v4.0.30319\InstallUtil Microsoft.MasterDataServices.WorkflowTypeExtender.dll
```

ETL Data Warehouse OLAP

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Business Rules / External Action

SQL Server MDS Workflow Integration

Supports integration between Master Data Services and SharePoint workflows

```
<?xml version="1.0" encoding="utf-8" ?>
<configuration>
  <configSections>
    <sectionGroup name="applicationSettings" type="System.Configuration.Applicat
      <section name="Microsoft.MasterDataServices.Workflow.Properties.Settings"
    </sectionGroup>
  </configSections>
  <applicationSettings>
    <Microsoft.MasterDataServices.Workflow.Properties.Settings>
      <setting name="ConnectionString" serializeAs="String">
        <value>Server=.;Database=MDS;Integrated Security=SSPI</value>
      </setting>
      <setting name="WorkflowTypeExtenders" serializeAs="String">
        <value>MDSDEMO=MDSWorkflowDemo.WorkflowTest, MDSWorkflowDemo</value>
      </setting>
    </Microsoft.MasterDataServices.Workflow.Properties.Settings>
  </applicationSettings>
</configuration>
```


Microsoft.MasterDataServices.Workflow.exe.config.xml

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Microsoft.MasterDataServices.Workflow.exe -console

```
C:\Program Files\Microsoft SQL Server\110\Master Data Services\WebApplication\bin>Microsoft.MasterDataServices.Workflow.exe -console
Running in console mode. Press ENTER to exit.
Loading workflow type extenders. For test purposes you may use: Microsoft.Master
DataServices.Workflow.WorkflowTypeTest, Microsoft.MasterDataServices.Workflow, U
ersion=11.0.0.0, Culture=neutral, PublicKeyToken=89845dcd8080cc91
Loading workflow type extender: MDSDEMO=MDSWorkflowDemo.WorkflowTest, MDSWorkflo
wDemo
Loaded workflow type extender for: MDSDEMO
Testing database connection.
Database connection successfully tested.
```



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```
C:\Program Files\Microsoft SQL Server\110\Master Data Services\WebApplication\bin>Microsoft.MasterDataServices.Workflow.exe -console
Running in console mode. Press ENTER to exit.
Loading workflow type extenders. For test purposes you may use: Microsoft.MasterDataServices.Workflow.TypeTest, Microsoft.MasterDataServices.Workflow.Version=11.0.0.0, Culture=neutral, PublicKeyToken=89845dcd8080cc91
Loading workflow type extender: MDSDEMO=MDSTestWorkflowDemo.WorkflowTest, MDSTestWorkflowDemo
Loaded workflow type extender for: MDSDEMO
Testing database connection.
Database connection successfully tested.
[05/03/2013 11:24:11] Workflow on
Dispatching using extender: MDSDEMO
Name : Name 1
Code : 1
<ExternalAction><Type>MDSDEMO</Type><SendData>1</SendData><Server_URL /><Action_ID /><Model_ID>19</Model_ID><Model_Name>Demo</Model_Name><Entity_ID>69</Entity_ID><Entity_Name>E1</Entity_Name><Version_ID>20</Version_ID><MemberType_ID>1</MemberType_ID><Member_ID>1</Member_ID><MemberData><ID>1</ID><Version_ID>20</Version_ID><ValidationStatus_ID>3</ValidationStatus_ID><ChangeTrackingMask>0</ChangeTrackingMask><EnterDTM>2013-05-02T21:46:51.423</EnterDTM><EnterUserID>0</EnterUserID><EnterVersionId>20</EnterVersionId><EnterVersionName>VERSION_1</EnterVersionName><EnterVersionMuid>582D609A-7B07-4802-BF1A-9BFDEF7D1E0D</EnterVersionMuid><LastChgDTM>2013-05-02T21:53:50.143</LastChgDTM><LastChgUserID>0</LastChgUserID><LastChgVersionId>20</LastChgVersionId><LastChgVersionName>VERSION_1</LastChgVersionName><LastChgVersionMuid>582D609A-7B07-4802-BF1A-9BFDEF7D1E0D</LastChgVersionMuid><Name>Name 1</Name><Code>1</Code><A1>M1</A1><A2>M2</A2></MemberData></ExternalAction>
[05/03/2013 11:24:11] Workflow on
Dispatching using extender: MDSDEMO
Name : Name 2
Code : 2
<ExternalAction><Type>MDSDEMO</Type><SendData>1</SendData><Server_URL /><Action_ID /><Model_ID>19</Model_ID><Model_Name>Demo</Model_Name><Entity_ID>69</Entity_ID><Entity_Name>E1</Entity_Name><Version_ID>20</Version_ID><MemberType_ID>1</MemberType_ID><Member_ID>2</Member_ID><MemberData><ID>2</ID><Version_ID>20</Version_ID><ValidationStatus_ID>3</ValidationStatus_ID><ChangeTrackingMask>0</ChangeTrackingMask><EnterDTM>2013-05-02T21:46:51.423</EnterDTM><EnterUserID>0</EnterUserID><EnterVersionId>20</EnterVersionId><EnterVersionName>VERSION_1</EnterVersionName><EnterVersionMuid>582D609A-7B07-4802-BF1A-9BFDEF7D1E0D</EnterVersionMuid><LastChgDTM>2013-05-02T21:46:51.423</LastChgDTM><LastChgUserID>0</LastChgUserID><LastChgVersionId>20</LastChgVersionId><LastChgVersionName>VERSION_1</LastChgVersionName><LastChgVersionMuid>582D609A-7B07-4802-BF1A-9BFDEF7D1E0D</LastChgVersionMuid><Name>Name 2</Name><Code>2</Code><A1>M1</A1><A2>M2</A2></MemberData></ExternalAction>
```

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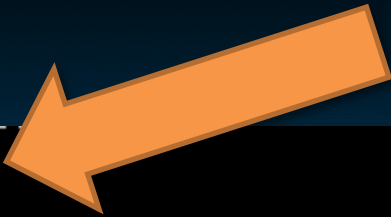
ETL Data Warehouse

Consulting

BI Architecture

BI Strategy

Business Rules / External Action



```
[05/03/2013 11:24:11] Workflow on
Dispatching using extender: MDSDEMO
Name : Name 1
Code : 1
<ExternalAction><Type>MDSDEMO</Type><SendData>1</SendData><Server_URL /><Action_
ID /><Model_ID>19</Model_ID><Model_Name>Demo</Model_Name><Entity_ID>69</Entity_I
D><Entity_Name>E1</Entity_Name><Version_ID>20</Version_ID><MemberType_ID>1</Memb
erType_ID><Member_ID>1</Member_ID><MemberData><ID>1</ID><Version_ID>20</Version_
ID><ValidationStatus_ID>3</ValidationStatus_ID><ChangeTrackingMask>0</ChangeTrac
kingMask><EnterDTM>2013-05-02T21:46:51.423</EnterDTM><EnterUserID>0</EnterUserID
><EnterVersionId>20</EnterVersionId><EnterVersionName>VERSION_1</EnterVersionNam
e><EnterVersionMuid>582D609A-7B07-4802-BF1A-9BFDEF7D1E0D</EnterVersionMuid><Last
ChgDTM>2013-05-02T21:53:50.143</LastChgDTM><LastChgUserID>0</LastChgUserID><Last
ChgVersionId>20</LastChgVersionId><LastChgVersionName>VERSION_1</LastChgVersionN
ame><LastChgVersionMuid>582D609A-7B07-4802-BF1A-9BFDEF7D1E0D</LastChgVersionMuid
><Name>Name 1</Name><Code>1</Code><A1>M1</A1><A2>M2</A2></MemberData></ExternalA
ction>
```

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Summary...

- Master Data Services is an open service
- We can integrate MDS seamlessly in our business & technical processes



A word cloud of various business intelligence and data management terms. The words are arranged in a horizontal, slightly overlapping manner. The most prominent words are 'BI Architecture' and 'Coaching', which are larger than the others. Other visible words include 'MDM', 'Patterns', 'Methodology', 'Coaching', 'Data Profiling', 'BI Lifecycle', 'Skill Improvement', 'Reporting Services', 'Data Quality', 'Analysis Services', 'Data Warehouse', 'ETL', 'Consulting', 'OLAP', 'Dimensional Modeling', and 'BI Strategy'.

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So long...

Any Questions?



A word cloud of various business intelligence and data management terms. The words are arranged in a horizontal, slightly curved layout. The largest and most prominent words are 'ETL', 'Data Warehouse', 'OLAP', 'BI Architecture', and 'Coaching'. Other visible terms include 'Consulting', 'Analysis Services', 'Data Quality', 'Reporting Services', 'BI Strategy', 'Skill Improvement', 'Data Profiling', 'BI Lifecycle', 'Dimensional Modeling', 'Methodology', 'Patterns', and 'MDM'. The words are in different shades of blue and white, with varying font sizes and orientations.

Consulting ETL Data Warehouse OLAP Analysis Services Data Quality Reporting Services BI Strategy Skill Improvement Data Profiling BI Lifecycle Dimensional Modeling Methodology Patterns MDM BI Architecture Coaching

The End

Thank you!

Follow me on Facebook, Twitter and
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Questions? Send me a mail -> lorenz@psg.de !

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