



Data Quality Monitor Installation and Configuration Guide

Version 3.2 and Higher

DN3502240.0318

Active Technologies, EDA, EDA/SQL, FIDEL, FOCUS, Information Builders, the Information Builders logo, iWay, iWay Software, Parlay, PC/FOCUS, RStat, Table Talk, Web390, WebFOCUS, WebFOCUS Active Technologies, and WebFOCUS Magnify are registered trademarks, and DataMigrator and Hyperstage are trademarks of Information Builders, Inc.

Adobe, the Adobe logo, Acrobat, Adobe Reader, Flash, Adobe Flash Builder, Flex, and PostScript are either registered trademarks or trademarks of Adobe Systems Incorporated in the United States and/or other countries.

Due to the nature of this material, this document refers to numerous hardware and software products by their trademarks. In most, if not all cases, these designations are claimed as trademarks or registered trademarks by their respective companies. It is not this publisher's intent to use any of these names generically. The reader is therefore cautioned to investigate all claimed trademark rights before using any of these names other than to refer to the product described.

Copyright © 2018, by Information Builders, Inc. and iWay Software. All rights reserved. Patent Pending. This manual, or parts thereof, may not be reproduced in any form without the written permission of Information Builders, Inc.

Contents

| | |
|---|-----------|
| Preface | 5 |
| Documentation Conventions | 5 |
| Related Publications | 6 |
| Customer Support | 6 |
| Help Us to Serve You Better | 6 |
| User Feedback | 8 |
| iWay Software Training and Professional Services | 8 |
| 1. Installing and Configuring Data Quality Monitor | 11 |
| Overview and Prerequisites | 11 |
| Starting Elasticsearch | 11 |
| Configuring the Data Quality Monitor Server | 12 |
| Reference: Sample dqmservice.properties File | 13 |
| Reference: Sample dqconfig.xml File | 14 |
| Configuring Rules and Policies for WS02 Identity Server | 18 |
| Enabling the Data Quality Monitor Menu Item | 18 |
| Providing Permissions to View Specific Dimensions for Specific User Roles and Domains | 19 |
| Providing Permissions to View Specific Measures for Specific User Roles and Domains | 22 |
| Providing Permissions to View Specific Tabs for Specific User Roles and Domains | 25 |
| Starting the OmniGen Application | 28 |
| Viewing the Dashboard | 29 |
| Administration Views | 29 |
| DQM Filters View | 29 |
| DQM Breakouts View | 31 |
| Configuring Breakout By Drop-down Fields | 31 |
| Configuring Show By Drop-down Fields | 33 |
| DQM Grid View | 35 |
| Administration Settings | 37 |
| Configuring Trend Days | 37 |

Preface

This documentation provides prerequisites and instructions to install and configure Data Quality Monitor (DQM).

How This Manual Is Organized

This manual includes the following chapters:

| Chapter/Appendix | Contents |
|---|--|
| 1 Installing and Configuring Data Quality Monitor | Describes how to install and configure Data Quality Monitor (DQM). |

Documentation Conventions

The following table lists and describes the documentation conventions that are used in this manual.

| Convention | Description |
|--|---|
| <code>THIS TYPEFACE</code> or <code>this typeface</code> | Denotes syntax that you must type exactly as shown. |
| <i>this typeface</i> | Represents a placeholder (or variable), a cross-reference, or an important term. It may also indicate a button, menu item, or dialog box option that you can click or select. |
| <u>underscore</u> | Indicates a default setting. |
| Key + Key | Indicates keys that you must press simultaneously. |
| { } | Indicates two or three choices. Type one of them, not the braces. |
| | Separates mutually exclusive choices in syntax. Type one of them, not the symbol. |
| ... | Indicates that you can enter a parameter multiple times. Type only the parameter, not the ellipsis (...). |

| Convention | Description |
|------------|--|
| . | Indicates that there are (or could be) intervening or additional commands. |

Related Publications

Visit our Technical Documentation Library at <http://documentation.informationbuilders.com>. You can also contact the Publications Order Department at (800) 969-4636.

Customer Support

Do you have questions about this product?

Join the Focal Point community. Focal Point is our online developer center and more than a message board. It is an interactive network of more than 3,000 developers from almost every profession and industry, collaborating on solutions and sharing every tips and techniques. Access Focal Point at <http://forums.informationbuilders.com/eve/forums>.

You can also access support services electronically, 24 hours a day, with InfoResponse Online. InfoResponse Online is accessible through our website, <http://www.informationbuilders.com>. It connects you to the tracking system and known-problem database at the Information Builders support center. Registered users can open, update, and view the status of cases in the tracking system and read descriptions of reported software issues. New users can register immediately for this service. The technical support section of www.informationbuilders.com also provides usage techniques, diagnostic tips, and answers to frequently asked questions.

Call Information Builders Customer Support Services (CSS) at (800) 736-6130 or (212) 736-6130. Customer Support Consultants are available Monday through Friday between 8:00 A.M. and 8:00 P.M. EST to address all your questions. Information Builders consultants can also give you general guidance regarding product capabilities. Be prepared to provide your six-digit site code (xxxx.xx) when you call.

To learn about the full range of available support services, ask your Information Builders representative about InfoResponse Online, or call (800) 969-INFO.

Help Us to Serve You Better

To help our consultants answer your questions effectively, be prepared to provide specifications and sample files and to answer questions about errors and problems.

The following table lists the environment information that our consultants require.

| | |
|-------------------------|--|
| Platform | |
| Operating System | |
| OS Version | |
| JVM Vendor | |
| JVM Version | |

The following table lists additional questions to help us serve you better.

| Request/Question | Error/Problem Details or Information |
|---|---|
| Did the problem arise through a service or event? | |
| Provide usage scenarios or summarize the application that produces the problem. | |
| When did the problem start? | |
| Can you reproduce this problem consistently? | |
| Describe the problem. | |
| Describe the steps to reproduce the problem. | |
| Specify the error messages. | |
| Any change in the application environment: software configuration, EIS/database configuration, application, and so forth? | |

| Request/Question | Error/Problem Details or Information |
|--|--------------------------------------|
| Under what circumstance does the problem <i>not</i> occur? | |

The following is a list of error and problem files that might be applicable.

- Input documents (XML instance, XML schema, non-XML documents)
- Transformation files
- Error screen shots
- Error output files
- Trace files
- Custom functions and agents in use
- Diagnostic Zip
- Transaction log

User Feedback

In an effort to produce effective documentation, the Technical Content Management staff welcomes your opinions regarding this document. Please use the Reader Comments form at the end of this document to communicate your feedback to us or to suggest changes that will support improvements to our documentation. You can also contact us through our website, <http://documentation.informationbuilders.com/connections.asp>.

Thank you, in advance, for your comments.

iWay Software Training and Professional Services

Interested in training? Our Education Department offers a wide variety of training courses for iWay Software and other Information Builders products.

For information on course descriptions, locations, and dates, or to register for classes, visit our website, <http://education.informationbuilders.com>, or call (800) 969-INFO to speak to an Education Representative.

Interested in technical assistance for your implementation? Our Professional Services department provides expert design, systems architecture, implementation, and project management services for all your business integration projects. For information, visit our website, <http://www.informationbuilders.com/consulting>.

Installing and Configuring Data Quality Monitor

This section describes how to install and configure Data Quality Monitor (DQM).

In this chapter:

- [Overview and Prerequisites](#)
 - [Starting Elasticsearch](#)
 - [Configuring the Data Quality Monitor Server](#)
 - [Configuring Rules and Policies for WSO2 Identity Server](#)
 - [Starting the OmniGen Application](#)
 - [Viewing the Dashboard](#)
 - [Administration Views](#)
 - [Administration Settings](#)
-

Overview and Prerequisites

Data Quality Monitor (DQM) is a component of Omni-Gen that allows you to monitor the data quality of records in a system and its impact on business. This information can be used for further analysis and provides a basis for business decisions.

You must your existing Apache Tomcat application sever instance that has been configured with Omni-Gen.

DQM uses Elasticsearch, which requires an updated Java version. The recommended version is Java 8 update 73 or higher. Elasticsearch will not start if an incompatible version of Java is used.

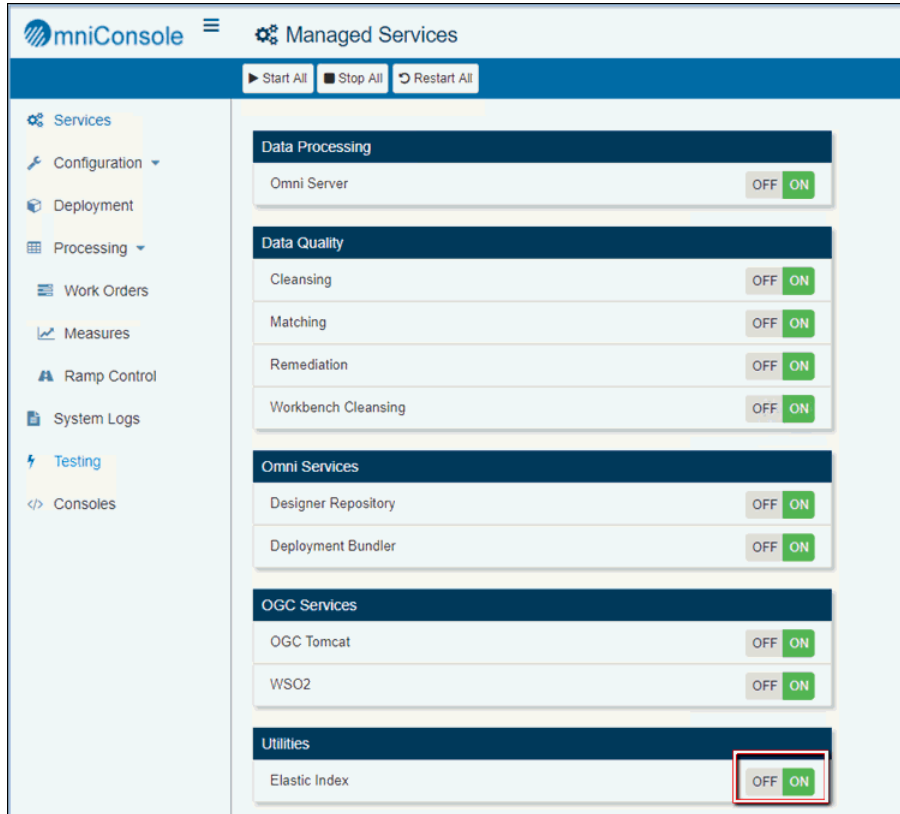
Starting Elasticsearch

Data Quality Monitor (DQM) uses Elasticsearch to store and search your data. You can find a fully configured Elasticsearch instance within the *DataQualityMonitor* directory (on FTP).

Important: The recommended Java version is Java 8 update 73 or higher. Elasticsearch will not start if an incompatible version of Java is used.

Procedure: How to Start Elasticsearch

1. Navigate to the Omni Console and verify that Elasticsearch is started, as shown in the following image.



2. If Elasticsearch is not started, then click the ON switch to start the service.

Configuring the Data Quality Monitor Server

To configure the Data Quality Monitor (DQM) server:

1. Copy the *DQMService.war* file to the following Apache Tomcat directory:

`\webapps`

2. Edit the *context.xml* file using a text editor.
3. Add the following new environment property:

```
<Environment override="true" type="java.lang.String"
name="dqm.service.configPropertiesFile"
value="yourPath\dqmservice.properties" />
```

The `dqm.service.configPropertiesFile` property specifies the path to the `dqm.service.properties` file, which defines all of the configuration information required to start the DQM service.

The following is a sample path:

```
c:\omnigen\OmniGenData\OmniGovConsole\data\dqm.service
```

To view the complete structure of the `dqm.service.properties` file, see [Reference: Sample `dqm.service.properties` File](#) on page 13.

In the `dqm.service.properties` file, the `dqconfigXmlFile` property specifies the path to `dqconfig.xml` file, which defines all of the information about measures, dimensions, rules, and so on. The file is formed during the deployment bundle process.

To view the complete structure of the `dqconfig.xml` file, see [Reference: Sample `dqconfig.xml` File](#) on page 14.

4. Save the `context.xml` file.

Reference: Sample `dqm.service.properties` File

The following syntax shows the structure and format of a sample `dqm.service.properties` file.

```
#-----
#ELASTICSEARCH CONNECTION CONFIGURATION
#-----
#Connection host.
#By default it is set to 'localhost'.
elasticsearch.host=localhost
#Connection port.
#By default it is set to '9300'.
elasticsearch.port=9300
#Elasticsearch port that listens to rest requests
elasticsearch.rest.port=9200
#Elasticsearch cluster name.
elasticsearch.cluster=elasticsearch
#-----
#DATA QUALITY MONITOR SERVICE CONFIGURATION
#-----
#Path to 'dqconfig.xml' file.
#This file has all information about dimensions and measures to calculate Business
Impact values.
dqconfigXmlFile=C://dqconfig.xml
#Reserved fields from Omni Designer. Those fields are the same in every domain, so in
Elasticsearch mappings their names mustn't contain domain prefix
data.reserved.fields=id,sourceName,sourceInstanceId,sourceInstanceIdName,
status,statusReason,sourceStatusCode,sourceCreatedDate,sourceCreatedBy,so
urceModifiedDate,sourceModifiedBy,omniCreatedDate,omniModifiedDate,master
Id,timepoints,startDate,endDate,current
#Count of days meaning how many days till current moment we update records versions
per day in Elasticsearch.
data.versions.maxUpdatePerDays=40
#DQM-Updater uses this Cron expression expression to schedule data updating.
data.cronExpression=0 0/1 * 1/1 * ? *
```

Reference: Sample dqconfig.xml File

The following syntax shows the structure and format of a sample *dqconfig.xml* file.

```

<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<dqconfig>
  <dimensions>
    <dimension>
      <properties>
        <name>Validity</name>
        <description>Validity Description</description>
        <default>true</default>
      </properties>
      <model name="PatientMaster">
        <subject name="PatientMaster">
          <master>
            <logic>
              <or rule="GenderNotEmpty" />
            </logic>
            <rules>
              <rule id="GenderNotEmpty"><![CDATA[$.get('gender') != null
rule>
              && !$.get('gender').isEmpty()]]></rule>
            </rules>
            <business>
              <impact measure="Revenue">25</impact>
              <impact measure="ProductionCapacity">1</impact>
            </business>
          </master>
          <subject name="PersonAddressMaster">
            <master>
              <logic>
                <and rule="PostcodeValid" />
              </logic>
              <rules>
                <rule id="PostcodeValid">$.get('postcode') != null</
rule>
              </rules>
              <business>
                <impact measure="Revenue">7</impact>
                <impact measure="ProductionCapacity">1</impact>
              </business>
            </master>
          </subject>
        </subject>
      </model>
      <model name="ProviderMaster">
        <subject name="ProviderMaster">
          <master>

```

```

        <logic>
            <or rule="GenderNotEmpty" />
        </logic>
    </rules>
    <rule id="GenderNotEmpty"><![CDATA[ $.get('gender') != null
    && !$.get('gender').isEmpty() ]]></rule>
    </rules>
    <business>
        <impact measure="Revenue">20</impact>
        <impact measure="ProductionCapacity">1</impact>
    </business>
</master>
<subject name="PersonAddressMaster">
    <master>
        <logic>
            <and rule="PostcodeValid" />
        </logic>
        <rules>
            <rule id="PostcodeValid">$.get('postcode') != null</
rule>
            </rules>
        <business>
            <impact measure="Revenue">8</impact>
            <impact measure="ProductionCapacity">2</impact>
        </business>
    </master>
</subject>
</model>
</dimension>
<dimension>
    <properties>
        <name>Conformity</name>
        <description>Conformity Description</description>
    </properties>
    <model name="PatientMaster">
        <subject name="PatientMaster">
            <master>
                <logic>
                    <or rule="GenderNotEmpty" />
                </logic>
                <rules>
                    <rule id="GenderNotEmpty"><![CDATA[ $.get('gender') != null
    && !$.get('gender').isEmpty() ]]></rule>
                </rules>
                <business>
                    <impact measure="Revenue">15</impact>
                    <impact measure="ProductionCapacity">2</impact>
                </business>
            </master>
            <subject name="PersonAddressMaster">
                <master>
                    <logic>
                        <and rule="PostcodeValid" />
                    </logic>

```



```

<rules>
    <rule id="PostcodeValid">$.get('postcode') !
= null</rule>
    </rules>
    <business>
        <impact measure="Revenue">7</impact>
        <impact measure="ProductionCapacity">1</
impact>
    </business>
    </master>
</subject>
</subject>
</model>
<model name="ProviderMaster">
    <subject name="ProviderMaster">
        <master>
            <logic>
                <or rule="GenderNotEmpty" />
            </logic>
            <rules>
                <rule id="GenderNotEmpty"><!
[CDATA[$.get('gender') != null && !$.get('gender').isEmpty()]]></rule>
            </rules>
            <business>
                <impact measure="Revenue">10</impact>
                <impact measure="ProductionCapacity">2</impact>
            </business>
        </master>
        <subject name="PersonAddressMaster">
            <master>
                <logic>
                    <and rule="PostcodeValid" />
                </logic>
                <rules>
                    <rule id="PostcodeValid">$.get('postcode') !
= null</rule>
                </rules>
            </master>
            <business>
                <impact measure="Revenue">5</impact>
                <impact measure="ProductionCapacity">1</
impact>
            </business>
        </master>
    </subject>
</subject>
</model>
</dimension>
</dimensions>
<measures>
    <measure id="Revenue" units="EUR" />
    <measure id="ProductionCapacity" units="shipped items" />
</measures>
</dqconfig>

```

Configuring Rules and Policies for WS02 Identity Server

This section describes how to configure rules and policies for WS02 Identity Server (WS02 IS) that are required by Data Quality Monitor (DQM).

Enabling the Data Quality Monitor Menu Item

There is new menu item for Data Quality Monitor (DQM). Perform the following steps to edit the required WS02 policy and add a new rule, which will allow users to view this DQM menu item.

1. Access your WS02 IS management console.
2. Navigate to *Policy Administration*.
3. Open and edit *component-access-menuitem-policy*.
4. Add the following new rule:

```
<Rule Effect="Permit" RuleId="menuitem-dqm-component-access-rule">
  <Description>Handles the access to Data Quality Monitor menu item</
Description>
  <Target>
    <AnyOf>
      <AllOf>
        <Match MatchId="urn:oasis:names:tc:xacml:1.0:function:string-
equal">
          <AttributeValue DataType="http://www.w3.org/2001/
XMLSchema#string">menuitem_dqm</AttributeValue>
          <AttributeDesignator AttributeId="urn:oasis:names:tc:xacml:
1.0:resource:resource-id" Category="urn:oasis:names:tc:xacml:3.0:attribute-
category:resource" DataType="http://www.w3.org/2001/XMLSchema#string"
MustBePresent="false"></AttributeDesignator>
        </Match>
      </AllOf>
    </AnyOf>
  </Target>
  <Condition>
    <Apply FunctionId="urn:oasis:names:tc:xacml:1.0:function:string-at-
least-one-member-of">
      <Apply FunctionId="urn:oasis:names:tc:xacml:1.0:function:string-bag">
        <AttributeValue DataType="http://www.w3.org/2001/
XMLSchema#string">User</AttributeValue>
        <AttributeValue DataType="http://www.w3.org/2001/
XMLSchema#string">Data_Supervisor</AttributeValue>
        <AttributeValue DataType="http://www.w3.org/2001/
XMLSchema#string">Data_Steward</AttributeValue>
      </Apply>
      <AttributeDesignator AttributeId="http://wso2.org/claims/role"
Category="urn:oasis:names:tc:xacml:1.0:subject-category:access-subject"
DataType="http://www.w3.org/2001/XMLSchema#string" MustBePresent="true"></
AttributeDesignator>
    </Apply>
  </Condition>
</Rule>
```

5. Save and publish the policy (*component-access-menuitem-policy*).

Providing Permissions to View Specific Dimensions for Specific User Roles and Domains

Perform the following steps to add the required WSO2 policy, which provides permissions to view specific dimensions for specific user roles and domains.

1. Access your WSO2 IS management console.
2. Navigate to *Policy Administration*.
3. Click *Add New Entitlement Policy*.
4. Add the following policy:

```
<Policy xmlns="urn:oasis:names:tc:xacml:3.0:core:schema:wd-17" PolicyId="component-
access-dimensions-policy" RuleCombiningAlgId="urn:oasis:names:tc:xacml:1.0:rule-
combining-algorithm:first-applicable" Version="1.0">
  <Description>Policy that specifies if dimensions are available for provided
roles. Order is important first applicable result will be returned.</Description>
  <Target>
    <AnyOf>
      <AllOf>
        <Match MatchId="urn:oasis:names:tc:xacml:1.0:function:string-equal">
          <AttributeValue DataType="http://www.w3.org/2001/
XMLSchema#string">authorize-component</AttributeValue>
          <AttributeDesignator AttributeId="urn:oasis:names:tc:xacml:
1.0:action:action-id" Category="urn:oasis:names:tc:xacml:3.0:attribute-
category:action" DataType="http://www.w3.org/2001/XMLSchema#string"
MustBePresent="true"></AttributeDesignator>
        </Match>
      </AllOf>
    </AnyOf>
  </Target>
  <Rule Effect="Permit" RuleId="dimensions-validity-component-access-rule">
    <Description>Handles the access for validity dimension</Description>
    <Target>
      <AnyOf>
        <AllOf>
          <Match MatchId="urn:oasis:names:tc:xacml:1.0:function:string-equal">
            <AttributeValue DataType="http://www.w3.org/2001/
XMLSchema#string">Validity</AttributeValue>
```

```

        <AttributeDesignator AttributeId="urn:oasis:names:tc:xacml:
1.0:resource:resource-id" Category="urn:oasis:names:tc:xacml:3.0:attribute-
category:resource" DataType="http://www.w3.org/2001/XMLSchema#string"
MustBePresent="false"></AttributeDesignator>
        </Match>
    </AllOf>
</AnyOf>
</Target>
</Condition>
    <Apply FunctionId="urn:oasis:names:tc:xacml:1.0:function:and">
<Apply FunctionId="urn:oasis:names:tc:xacml:1.0:function:string-at-least-one-member-
of">
        <Apply FunctionId="urn:oasis:names:tc:xacml:1.0:function:string-bag">
            <AttributeValue DataType="http://www.w3.org/2001/
XMLSchema#string">System_Administrator</AttributeValue>
            <AttributeValue DataType="http://www.w3.org/2001/
XMLSchema#string">Data_Supervisor</AttributeValue>
            <AttributeValue DataType="http://www.w3.org/2001/
XMLSchema#string">Data_Steward</AttributeValue>
            <AttributeValue DataType="http://www.w3.org/2001/
XMLSchema#string">User</AttributeValue>
        </Apply>
        <AttributeDesignator AttributeId="http://wso2.org/claims/role"
Category="urn:oasis:names:tc:xacml:1.0:subject-category:access-subject"
DataType="http://www.w3.org/2001/XMLSchema#string" MustBePresent="true"></
AttributeDesignator>
    </Apply>
    <Apply FunctionId="urn:oasis:names:tc:xacml:1.0:function:string-at-
least-one-member-of">
        <Apply FunctionId="urn:oasis:names:tc:xacml:1.0:function:string-bag">
            <AttributeValue DataType="http://www.w3.org/2001/
XMLSchema#string">PatientMaster</AttributeValue>
            <AttributeValue DataType="http://www.w3.org/2001/
XMLSchema#string">ProviderMaster</AttributeValue>
            <AttributeValue DataType="http://www.w3.org/2001/
XMLSchema#string">FacilityMaster</AttributeValue>
        </Apply>
        <AttributeDesignator AttributeId="urn:oasis:names:tc:xacml:
1.0:environment:environment-id" Category="urn:oasis:names:tc:xacml:3.0:attribute-
category:environment" DataType="http://www.w3.org/2001/XMLSchema#string"
MustBePresent="true"></AttributeDesignator>
    </Apply>
</Apply>
</Condition>
</Rule>
<Rule Effect="Permit" RuleId="dimensions-conformity-component-access-rule">
    <Description>Handles the access for conformity dimension</Description>
    <Target>
        <AnyOf>
            <AllOf>
                <Match MatchId="urn:oasis:names:tc:xacml:1.0:function:string-equal">
                    <AttributeValue DataType="http://www.w3.org/2001/
XMLSchema#string">Conformity</AttributeValue>

```

```

<AttributeDesignator AttributeId="urn:oasis:names:tc:xacml:
1.0:resource:resource-id" Category="urn:oasis:names:tc:xacml:
3.0:attribute-category:resource" DataType="http://www.w3.org/2001/
XMLSchema#string" MustBePresent="false"></AttributeDesignator>
    </Match>
  </AllOf>
</AnyOf>
</Target>
<Condition>
  <Apply FunctionId="urn:oasis:names:tc:xacml:1.0:function:and">
    <Apply FunctionId="urn:oasis:names:tc:xacml:
1.0:function:string-at-least-one-member-of">
      <Apply FunctionId="urn:oasis:names:tc:xacml:
1.0:function:string-bag">
        <AttributeValue DataType="http://www.w3.org/2001/
XMLSchema#string">Data_Supervisor</AttributeValue>
        <AttributeValue DataType="http://www.w3.org/2001/
XMLSchema#string">Data_Steward</AttributeValue>
      </Apply>
      <AttributeDesignator AttributeId="http://wso2.org/claims/
role" Category="urn:oasis:names:tc:xacml:1.0:subject-category:access-
subject" DataType="http://www.w3.org/2001/XMLSchema#string"
MustBePresent="true"></AttributeDesignator>
    </Apply>
    <Apply FunctionId="urn:oasis:names:tc:xacml:
1.0:function:string-at-least-one-member-of">
      <Apply FunctionId="urn:oasis:names:tc:xacml:
1.0:function:string-bag">
        <AttributeValue DataType="http://www.w3.org/2001/
XMLSchema#string">PatientMaster</AttributeValue>
        <AttributeValue DataType="http://www.w3.org/2001/
XMLSchema#string">ProviderMaster</AttributeValue>
      </Apply>
    <AttributeDesignator
AttributeId="urn:oasis:names:tc:xacml:1.0:environment:environment-id"
Category="urn:oasis:names:tc:xacml:3.0:attribute-category:environment"
DataType="http://www.w3.org/2001/XMLSchema#string"
MustBePresent="true"></AttributeDesignator>
  </Apply>
</Apply>
</Condition>
</Rule>
</Policy>

```

5. Save and publish the policy.
6. Navigate to *Policy View*.
7. Enable *component-access-dimensions-policy*.

Providing Permissions to View Specific Measures for Specific User Roles and Domains

Perform the following steps to add the required WS02 policy, which provides permissions to view specific measures for specific user roles and domains.

1. Access your WS02 IS management console.
2. Navigate to *Policy Administration*.
3. Click *Add New Entitlement Policy*.
4. Add the following policy:

```
<Policy xmlns="urn:oasis:names:tc:xacml:3.0:core:schema:wd-17" PolicyId="component-
access-measures-policy" RuleCombiningAlgId="urn:oasis:names:tc:xacml:1.0:rule-
combining-algorithm:first-applicable" Version="1.0">
  <Description>Policy that specifies if measures are available for provided roles.
Order is important first applicable result will be returned.</Description>
  <Target>
    <AnyOf>
      <AllOf>
        <Match MatchId="urn:oasis:names:tc:xacml:1.0:function:string-equal">
          <AttributeValue DataType="http://www.w3.org/2001/
XMLSchema#string">authorize-component</AttributeValue>
          <AttributeDesignator AttributeId="urn:oasis:names:tc:xacml:
1.0:action:action-id" Category="urn:oasis:names:tc:xacml:3.0:attribute-
category:action" DataType="http://www.w3.org/2001/XMLSchema#string"
MustBePresent="true"></AttributeDesignator>
        </Match>
      </AllOf>
    </AnyOf>
  </Target>
  <Rule Effect="Permit" RuleId="dimensions-conformity-component-access-rule">
    <Description>Handles the access for Production Capacity measure</Description>
    <Target>
      <AnyOf>
        <AllOf>
          <Match MatchId="urn:oasis:names:tc:xacml:1.0:function:string-equal">
            <AttributeValue DataType="http://www.w3.org/2001/
XMLSchema#string">ProductionCapacity</AttributeValue>
            <AttributeDesignator AttributeId="urn:oasis:names:tc:xacml:
1.0:resource:resource-id" Category="urn:oasis:names:tc:xacml:3.0:attribute-
category:resource" DataType="http://www.w3.org/2001/XMLSchema#string"
MustBePresent="false"></AttributeDesignator>
          </Match>
        </AllOf>
      </AnyOf>
    </Target>
  </Rule>
</Policy>
```

```

<Condition>
  <Apply FunctionId="urn:oasis:names:tc:xacml:1.0:function:and">
    <Apply FunctionId="urn:oasis:names:tc:xacml:1.0:function:string-at-
least-one-member-of">
      <Apply FunctionId="urn:oasis:names:tc:xacml:1.0:function:string-bag">
        <AttributeValue DataType="http://www.w3.org/2001/
XMLSchema#string">Data_Supervisor</AttributeValue>
        <AttributeValue DataType="http://www.w3.org/2001/
XMLSchema#string">Data_Steward</AttributeValue>
      </Apply>
      <AttributeDesignator AttributeId="http://wso2.org/claims/role"
Category="urn:oasis:names:tc:xacml:1.0:subject-category:access-subject"
DataType="http://www.w3.org/2001/XMLSchema#string" MustBePresent="true"></
AttributeDesignator>
    </Apply>
    <Apply FunctionId="urn:oasis:names:tc:xacml:1.0:function:string-at-
least-one-member-of">
      <Apply FunctionId="urn:oasis:names:tc:xacml:1.0:function:string-bag">
        <AttributeValue DataType="http://www.w3.org/2001/
XMLSchema#string">PatientMaster</AttributeValue>
        <AttributeValue DataType="http://www.w3.org/2001/
XMLSchema#string">ProviderMaster</AttributeValue>
      </Apply>
      <AttributeDesignator AttributeId="urn:oasis:names:tc:xacml:
1.0:environment:environment-id" Category="urn:oasis:names:tc:xacml:3.0:attribute-
category:environment" DataType="http://www.w3.org/2001/XMLSchema#string"
MustBePresent="true"></AttributeDesignator>
    </Apply>
  </Apply>
</Condition>
</Rule>
<Rule Effect="Permit" RuleId="dimensions-conformity-component-access-rule">
  <Description>Handles the access for Production Capacity measure</Description>
  <Target>
    <AnyOf>
      <AllOf>
        <Match MatchId="urn:oasis:names:tc:xacml:1.0:function:string-equal">
          <AttributeValue DataType="http://www.w3.org/2001/
XMLSchema#string">NewTab</AttributeValue>
          <AttributeDesignator AttributeId="urn:oasis:names:tc:xacml:
1.0:resource:resource-id" Category="urn:oasis:names:tc:xacml:3.0:attribute-
category:resource" DataType="http://www.w3.org/2001/XMLSchema#string"
MustBePresent="false"></AttributeDesignator>
        </Match>
      </AllOf>
    </AnyOf>
  </Target>
</Condition>
  <Apply FunctionId="urn:oasis:names:tc:xacml:1.0:function:and">
    <Apply FunctionId="urn:oasis:names:tc:xacml:1.0:function:string-at-
least-one-member-of">
      <Apply FunctionId="urn:oasis:names:tc:xacml:1.0:function:string-bag">
        <AttributeValue DataType="http://www.w3.org/2001/
XMLSchema#string">Data_Supervisor</AttributeValue>

```

```

        <AttributeValue DataType="http://www.w3.org/2001/
XMLSchema#string">Data_Steward</AttributeValue>
        </Apply>
        <AttributeDesignator AttributeId="http://wso2.org/claims/
role" Category="urn:oasis:names:tc:xacml:1.0:subject-category:access-
subject" DataType="http://www.w3.org/2001/XMLSchema#string"
MustBePresent="true"></AttributeDesignator>
        </Apply>
        <Apply FunctionId="urn:oasis:names:tc:xacml:
1.0:function:string-at-least-one-member-of">
        <Apply FunctionId="urn:oasis:names:tc:xacml:
1.0:function:string-bag">
        <AttributeValue DataType="http://www.w3.org/2001/
XMLSchema#string">PatientMaster</AttributeValue>
        <AttributeValue DataType="http://www.w3.org/2001/
XMLSchema#string">ProviderMaster</AttributeValue>
        </Apply>
        <AttributeDesignator
AttributeId="urn:oasis:names:tc:xacml:1.0:environment:environment-id"
Category="urn:oasis:names:tc:xacml:3.0:attribute-category:environment"
DataType="http://www.w3.org/2001/XMLSchema#string"
MustBePresent="true"></AttributeDesignator>
        </Apply>
        </Apply>
    </Condition>
</Rule>
    <Rule Effect="Permit" RuleId="dimensions-validity-component-access-
rule">
        <Description>Handles the access for Revenue measure</Description>
        <Target>
            <AnyOf>
                <AllOf>
                    <Match MatchId="urn:oasis:names:tc:xacml:
1.0:function:string-equal">
                        <AttributeValue DataType="http://www.w3.org/2001/
XMLSchema#string">Revenue</AttributeValue>
                        <AttributeDesignator
AttributeId="urn:oasis:names:tc:xacml:1.0:resource:resource-id"
Category="urn:oasis:names:tc:xacml:3.0:attribute-category:resource"
DataType="http://www.w3.org/2001/XMLSchema#string"
MustBePresent="false"></AttributeDesignator>
                    </Match>
                </AllOf>
            </AnyOf>
        </Target>
        <Condition>
            <Apply FunctionId="urn:oasis:names:tc:xacml:1.0:function:and">
                <Apply FunctionId="urn:oasis:names:tc:xacml:
1.0:function:string-at-least-one-member-of">
                    <Apply FunctionId="urn:oasis:names:tc:xacml:
1.0:function:string-bag">

```



```

        <AttributeValue DataType="http://www.w3.org/2001/
XMLSchema#string">System_Administrator</AttributeValue>
        <AttributeValue DataType="http://www.w3.org/2001/
XMLSchema#string">Data_Supervisor</AttributeValue>
        <AttributeValue DataType="http://www.w3.org/2001/
XMLSchema#string">Data_Steward</AttributeValue>
        <AttributeValue DataType="http://www.w3.org/2001/
XMLSchema#string">User</AttributeValue>
    </Apply>
    <AttributeDesignator AttributeId="http://wso2.org/claims/
role" Category="urn:oasis:names:tc:xacml:1.0:subject-category:access-
subject" DataType="http://www.w3.org/2001/XMLSchema#string"
MustBePresent="true"></AttributeDesignator>
    </Apply>
    <Apply FunctionId="urn:oasis:names:tc:xacml:
1.0:function:string-at-least-one-member-of">
        <Apply FunctionId="urn:oasis:names:tc:xacml:
1.0:function:string-bag">
            <AttributeValue DataType="http://www.w3.org/2001/
XMLSchema#string">PatientMaster</AttributeValue>
            <AttributeValue DataType="http://www.w3.org/2001/
XMLSchema#string">ProviderMaster</AttributeValue>
            <AttributeValue DataType="http://www.w3.org/2001/
XMLSchema#string">FacilityMaster</AttributeValue>
        </Apply>
    <AttributeDesignator
AttributeId="urn:oasis:names:tc:xacml:1.0:environment-id"
Category="urn:oasis:names:tc:xacml:3.0:attribute-category:environment"
DataType="http://www.w3.org/2001/XMLSchema#string"
MustBePresent="true"></AttributeDesignator>
    </Apply>
    </Apply>
    </Condition>
</Rule>
</Policy>

```

5. Save and publish the policy.
6. Navigate to *Policy View*.
7. Enable *component-access-measures-policy*.

Providing Permissions to View Specific Tabs for Specific User Roles and Domains

Perform the following steps to add the required WSO2 policy, which provides permissions to view specific measures for specific user roles and domains.

1. Access your WSO2 IS management console.
2. Navigate to *Policy Administration*.
3. Click *Add New Entitlement Policy*.
4. Add the following policy:

```

<Policy xmlns="urn:oasis:names:tc:xacml:3.0:core:schema:wd-17" PolicyId="component-
access-dqm-tabs-policy" RuleCombiningAlgId="urn:oasis:names:tc:xacml:1.0:rule-
combining-algorithm:first-applicable" Version="1.0">
  <Description>Policy that specifies what page components(functionalities)are
available for passed attributes (roles, etc.). Order is important first applicable
result will be returned.</Description>
  <Target>
    <AnyOf>
      <AllOf>
        <Match MatchId="urn:oasis:names:tc:xacml:1.0:function:string-equal">
          <AttributeValue DataType="http://www.w3.org/2001/
XMLSchema#string">authorize-component</AttributeValue>
          <AttributeDesignator AttributeId="urn:oasis:names:tc:xacml:
1.0:action:action-id" Category="urn:oasis:names:tc:xacml:3.0:attribute-
category:action" DataType="http://www.w3.org/2001/XMLSchema#string"
MustBePresent="true"></AttributeDesignator>
        </Match>
      </AllOf>
    </AnyOf>
  </Target>
  <Rule Effect="Permit" RuleId="dq-tab-component-access-rule">
    <Description>Handles the access for Data Quality tab</Description>
    <Target>
      <AnyOf>
        <AllOf>
          <Match MatchId="urn:oasis:names:tc:xacml:1.0:function:string-equal">
            <AttributeValue DataType="http://www.w3.org/2001/
XMLSchema#string">dataquality</AttributeValue>
            <AttributeDesignator AttributeId="urn:oasis:names:tc:xacml:
1.0:resource:resource-id" Category="urn:oasis:names:tc:xacml:3.0:attribute-
category:resource" DataType="http://www.w3.org/2001/XMLSchema#string"
MustBePresent="false"></AttributeDesignator>
          </Match>
        </AllOf>
      </AnyOf>
    </Target>
    <Condition>
      <Apply FunctionId="urn:oasis:names:tc:xacml:1.0:function:and">
        <Apply FunctionId="urn:oasis:names:tc:xacml:1.0:function:string-at-
least-one-member-of">
          <Apply FunctionId="urn:oasis:names:tc:xacml:1.0:function:string-bag">
            <AttributeValue DataType="http://www.w3.org/2001/
XMLSchema#string">System_Administrator</AttributeValue>
            <AttributeValue DataType="http://www.w3.org/2001/
XMLSchema#string">Data_Supervisor</AttributeValue>
            <AttributeValue DataType="http://www.w3.org/2001/
XMLSchema#string">Data_Steward</AttributeValue>
            <AttributeValue DataType="http://www.w3.org/2001/
XMLSchema#string">User</AttributeValue>
          </Apply>
        </Apply>
      </Apply>
    </Condition>
  </Rule>
</Policy>

```

```

<AttributeDesignator AttributeId="http://wso2.org/claims/role"
Category="urn:oasis:names:tc:xacml:1.0:subject-category:access-subject"
DataType="http://www.w3.org/2001/XMLSchema#string" MustBePresent="true"></
AttributeDesignator>
  </Apply>
  <Apply FunctionId="urn:oasis:names:tc:xacml:1.0:function:string-at-
least-one-member-of">
    <Apply FunctionId="urn:oasis:names:tc:xacml:1.0:function:string-bag">
      <AttributeValue DataType="http://www.w3.org/2001/
XMLSchema#string">PatientMaster</AttributeValue>
      <AttributeValue DataType="http://www.w3.org/2001/
XMLSchema#string">ProviderMaster</AttributeValue>
    </Apply>
    <AttributeDesignator AttributeId="urn:oasis:names:tc:xacml:
1.0:environment:environment-id" Category="urn:oasis:names:tc:xacml:3.0:attribute-
category:environment" DataType="http://www.w3.org/2001/XMLSchema#string"
MustBePresent="true"></AttributeDesignator>
  </Apply>
</Apply>
</Condition>
</Rule>
<Rule Effect="Permit" RuleId="bi-tab-component-access-rule">
  <Description>Handles the access for Business Impact tab</Description>
  <Target>
    <AnyOf>
      <Allof>
        <Match MatchId="urn:oasis:names:tc:xacml:1.0:function:string-equal">
          <AttributeValue DataType="http://www.w3.org/2001/
XMLSchema#string">businessimpact</AttributeValue>
          <AttributeDesignator AttributeId="urn:oasis:names:tc:xacml:
1.0:resource:resource-id" Category="urn:oasis:names:tc:xacml:3.0:attribute-
category:resource" DataType="http://www.w3.org/2001/XMLSchema#string"
MustBePresent="false"></AttributeDesignator>
        </Match>
      </Allof>
    </AnyOf>
  </Target>
  <Condition>
    <Apply FunctionId="urn:oasis:names:tc:xacml:1.0:function:and">
      <Apply FunctionId="urn:oasis:names:tc:xacml:1.0:function:string-at-
least-one-member-of">
        <Apply FunctionId="urn:oasis:names:tc:xacml:1.0:function:string-bag">
          <AttributeValue DataType="http://www.w3.org/2001/
XMLSchema#string">Data_Supervisor</AttributeValue>
          <AttributeValue DataType="http://www.w3.org/2001/
XMLSchema#string">Data_Steward</AttributeValue>
        </Apply>
        <AttributeDesignator AttributeId="http://wso2.org/claims/role"
Category="urn:oasis:names:tc:xacml:1.0:subject-category:access-subject"
DataType="http://www.w3.org/2001/XMLSchema#string" MustBePresent="true"></
AttributeDesignator>
      </Apply>
    </Apply>
  </Condition>
</Rule>

```

```
        <Apply FunctionId="urn:oasis:names:tc:xacml:
1.0:function:string-at-least-one-member-of">
        <Apply FunctionId="urn:oasis:names:tc:xacml:
1.0:function:string-bag">
            <AttributeValue DataType="http://www.w3.org/2001/
XMLSchema#string">PatientMaster</AttributeValue>
            <AttributeValue DataType="http://www.w3.org/2001/
XMLSchema#string">ProviderMaster</AttributeValue>
        </Apply>
        <AttributeDesignator
AttributeId="urn:oasis:names:tc:xacml:1.0:environment:environment-id"
Category="urn:oasis:names:tc:xacml:3.0:attribute-category:environment"
DataType="http://www.w3.org/2001/XMLSchema#string"
MustBePresent="true"></AttributeDesignator>
    </Apply>
</Apply>
</Condition>
</Rule>
</Policy>
```

5. Save and publish the policy.
6. Navigate to *Policy View*.
7. Enable *component-access-dqm-tabs-policy*.

Important: Dimensions and measures should be the same as defined in the *dqconfig.xml* file. Otherwise they will not be visible in DQM.

Starting the OmniGen Application

Data Quality Monitor (DQM) functionality is packaged in the *xMC.war* file.

Important: Before deploying, ensure that your Apache Tomcat configuration is ready to work with a regular xMC application deployment.

You can find the *xMC.war* file within the delivery directory (on FTP or via replication).

You must modify your *context.xml* file before deploying the *xMC.war* file.

1. Navigate to the following Apache Tomcat directory:

```
\conf
```

2. Edit the *context.xml* file using a text editor.
3. Add the following new environment property:

```
<Environment override="true" type="java.lang.String" value="http://
localhost:8080/DQMService/"
name="dqm.service.url"/>
```

4. Save the *context.xml* file.

Your *context.xml* file should look similar to the following:

```
<<Context>
  <!-- for iFrames -->
  <Environment override="true" type="java.lang.String" value="true" name="use.in.iframes.enabled"/>

  <!-- for DQM -->
  <Environment override="true" type="java.lang.String" value="http://localhost:8082/DQMService/" name="dqm.service.url"/>
  <Environment override="true" type="java.lang.String" name="dqm.service.configPropertiesFile"
    value="C:\TOMCAT_7062\conf\dqmservice.properties"/>
  <!-- Default set of monitored resources -->
  <WatchedResource>WEB-INF/web.xml</WatchedResource>

  <Environment name="domainOrDelimiter" value="|" type="java.lang.String"/>
  <Environment override="true" type="java.lang.Boolean" value="true" name="datadictionary.enabled"/>

  <Environment override="true" type="java.lang.String" value="C:\TOMCAT_7062\conf\aso.properties" name="ssoConfigPropertiesFile"/>

  <!-- OPMC properties -->
  <!-- WSO2 properties -->
  <Environment override="true" type="java.lang.String" value="https://vm40834-1.projects.local:9443" name="is.wso2.url"/>
  <Environment override="true" type="java.lang.String" value="PRIMARY/admin" name="is.wso2.username"/>
  <Environment override="true" type="java.lang.String" value="{is.wso2.password}" name="is.wso2.password"/>
</Context>
```

5. Navigate to the Omni Console and then start OGC Tomcat from the OGC Services tab.

Important: Ensure to delete all temporary (deployed folders in \webapps) and DB files.

Ensure that Apache Tomcat does not generate any critical errors (warnings and debug messages are OK).

Note: If the OGC Tomcat service is running and you want to make changes to *dqmservice.properties*, *context.xml*, or the *.war* files, then you must first stop the OGC Tomcat service in the Omni Console.

Viewing the Dashboard

To view the dashboard, access your OmniGen application in a browser (for example, <http://localhost:9090/ogc>). Log in with your usual credentials for the application and then click *Data Quality Monitor* in the menu bar.

Note: If *Data Quality Monitor* does not appear in the menu bar, then ensure that it has been added to the WSO2 policy.

Administration Views

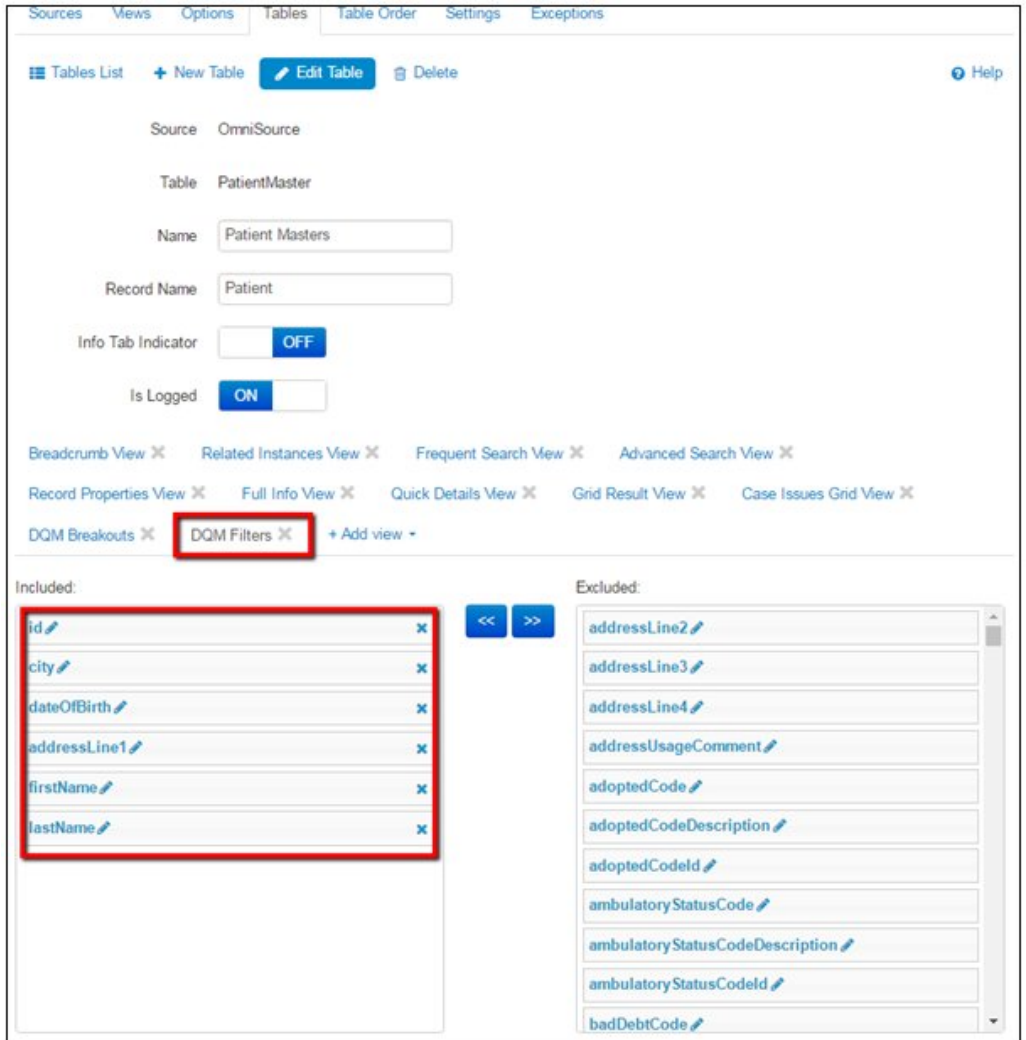
This section describes how to configure and customize various views in Data Quality Monitor (DQM).

DQM Filters View

To specify (include) fields available for filtering in DQM:

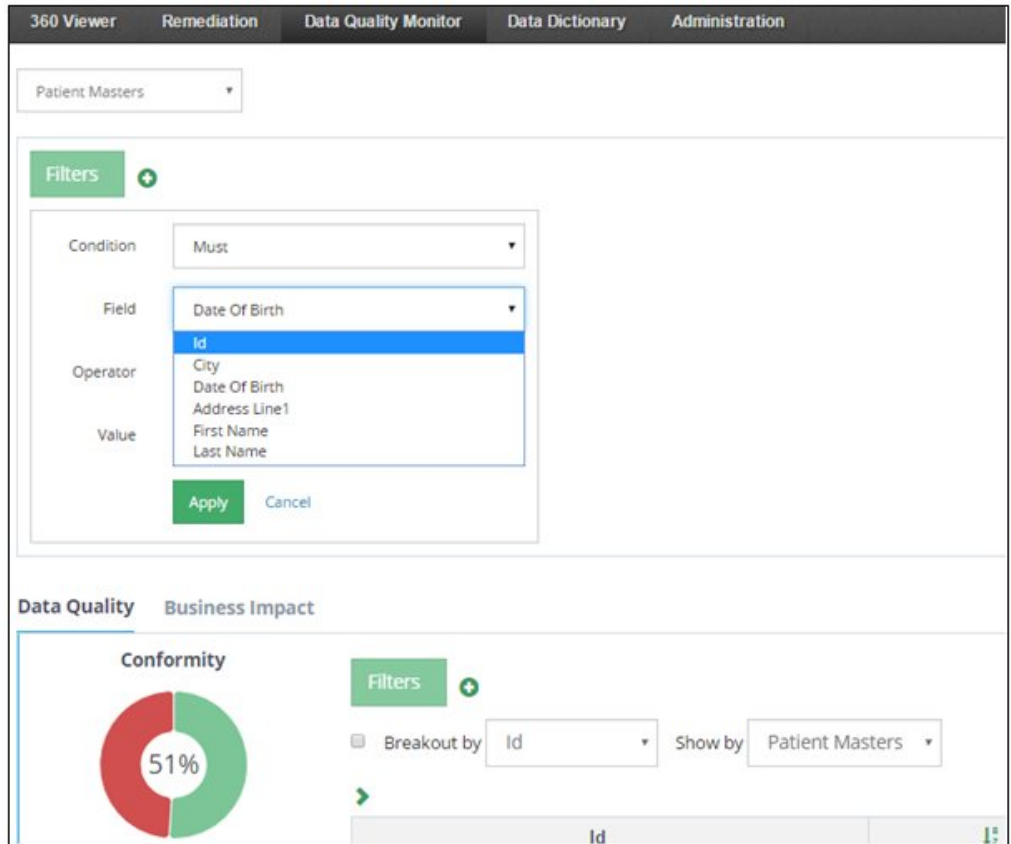
1. Navigate to *Administration*.
2. Select an appropriate domain table (for example, Patient Masters).

3. Click *Edit Table*, as shown in the following image.



4. Click *DQM Filters*.
5. Select and add the required fields from the Excluded list to the Included list.
6. Click *Update*.

After you update the table, navigate back to DQM and check whether the list of fields available for filtering are updated, as shown in the following image.



Note: These fields are defined for global and local filters (Conformity and Validity tabs).

DQM Breakouts View

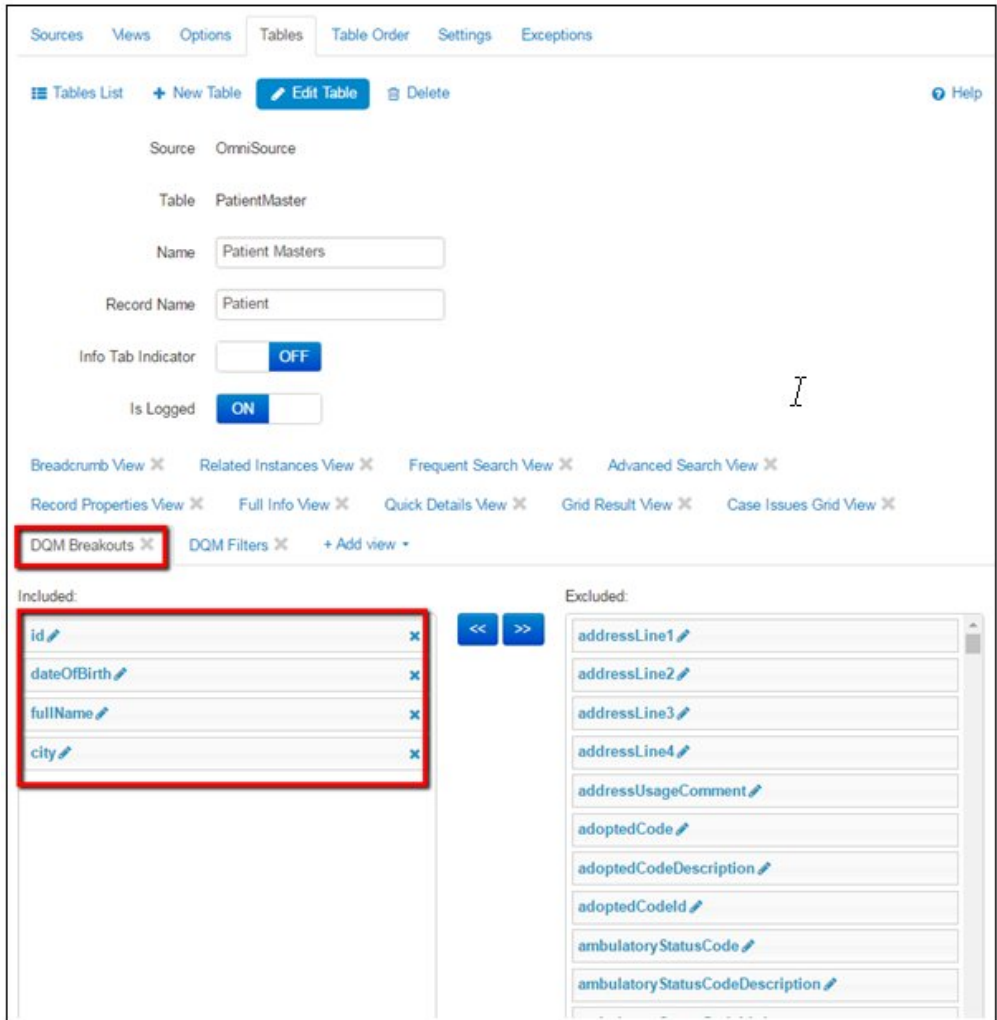
This section describes how to configure and customize the Breakouts view in DQM.

Configuring Breakout By Drop-down Fields

To specify (include) fields for the *Breakout by* drop-down in DQM:

1. Navigate to *Administration*.
2. Select an appropriate domain table (for example, Patient Masters).

3. Click *Edit Table*, as shown in the following image.



4. Select and add the required fields from the Excluded list to the Included list.
5. Click *Update*.

After you update the table, navigate back to DQM and check whether the list of fields available for the *Breakout by* drop-down are updated, as shown in the following image.

The screenshot displays the Data Quality Monitor interface for the 'Patient Masters' table. The top navigation bar includes '360 Viewer', 'Remediation', 'Data Quality Monitor', 'Data Dictionary', and 'Administration'. Below the navigation, there is a 'Patient Masters' dropdown menu and a 'Filters' button with a plus sign. The main content area is divided into 'Data Quality' and 'Business Impact' tabs. Under 'Data Quality', there are two donut charts: 'Conformity' at 51% and 'Validity' at 53%. To the right, a 'Breakout by' dropdown menu is open, showing a list of fields: 'Id', 'Date Of Birth', 'Full Name', and 'City'. The 'Id' field is selected and highlighted in blue. Below the dropdown, a table shows data rows with values 64, 93, and 18, and a 'Show by' dropdown set to 'Patient Ma'. The table footer indicates '1 to 10 of 100'.

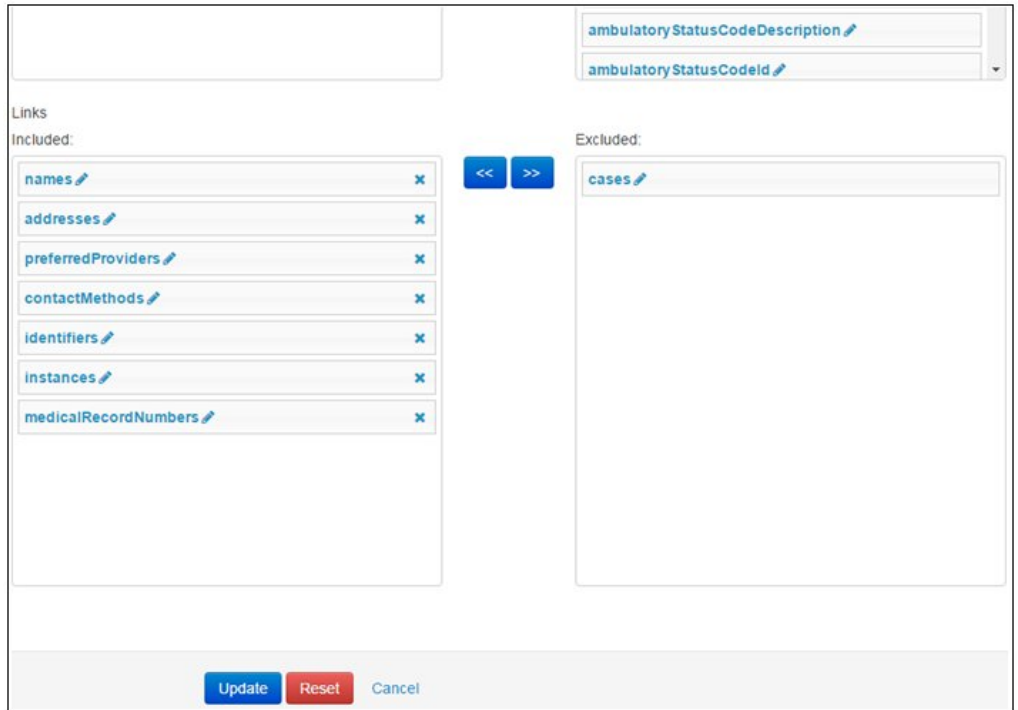
Note: These fields are defined for the Conformity and Validity tabs.

Configuring Show By Drop-down Fields

To specify (include) fields for the *Show by* drop-down in DQM:

1. Navigate to *Administration*.
2. Select an appropriate domain table (for example, Patient Masters).

3. Click *Edit Table*, as shown in the following image.



4. Select and add the required fields from the Excluded list to the Included list (Links section).
5. Click *Update*.

After you update the table, navigate back to DQM and check whether the list of fields available for the *Show by* drop-down are updated, as shown in the following image.

The screenshot displays the Data Quality Monitor interface. On the left, there are two donut charts: 'Conformity' at 51% and 'Validity' at 53%. The main area shows a table with columns for 'Id' and 'Name'. A dropdown menu is open for the 'Show by' field, listing various tables including 'Patient Masters', 'Person Name Masters', 'Person Address Masters', 'Patient Preferred Provider Masters', 'Person Contact Method Masters', 'Person Identifier Masters', 'Patients', and 'PatientMedicalRecordNumberMaster'. The 'Patient Masters' option is highlighted in blue. The table below shows rows with IDs 22, 41, 19, and 26, and names 'John McDonald' and 'Sandra Rogers'.

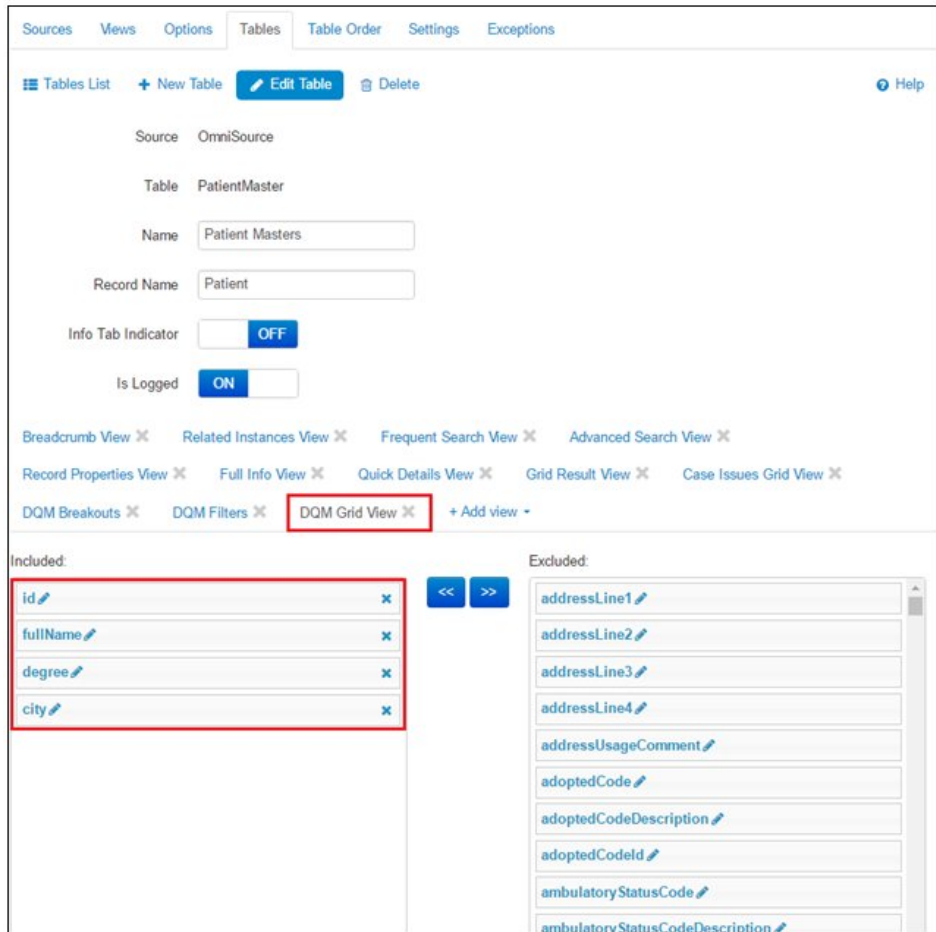
Notice that all sub-domain tables that were added to the Links Included section are displayed in the drop-down, as well as the Domain table. If required, data from those sub-domains may now be displayed in the grid.

DQM Grid View

To specify (include) columns available for search in DQM:

1. Navigate to *Administration*.
2. Select an appropriate domain table (for example, Patient Masters).

3. Click *Edit Table*, as shown in the following image.



4. Select and add the required columns from the Excluded list to the Included list.
5. Click *Update*.

After you update the table, navigate back to DQM and check whether the list of columns available for searching are updated, as shown in the following image.

The screenshot displays the DQM interface with the following elements:

- Navigation tabs: 360 Viewer, Remediation, Data Quality Monitor, Data Dictionary, Administration.
- Dropdown menu: Patient Masters.
- Filters section: A green 'Filters' button with a plus sign.
- Data Quality section: A 'Conformity' donut chart showing 51% (with a right-pointing arrow) and a 'Validity' donut chart showing 53% (with a downward-pointing arrow).
- Breakout and Show by filters: 'Breakout by' set to 'Id' and 'Show by' set to 'Patient Masters'.
- Table of results:

| Id | Full Name | Degree | City |
|----|----------------------|--------|--------------|
| 22 | George Griffin | bsc | Louisville |
| 41 | Jacqueline Alexander | bsc | Austin |
| 19 | John Mcdonald | msc | Toledo |
| 26 | Sandra Rogers | msc | Philadelphia |
- Footer: '1 to 10 of more'.

Administration Settings

This section describes how to configure administration settings in Data Quality Monitor (DQM).

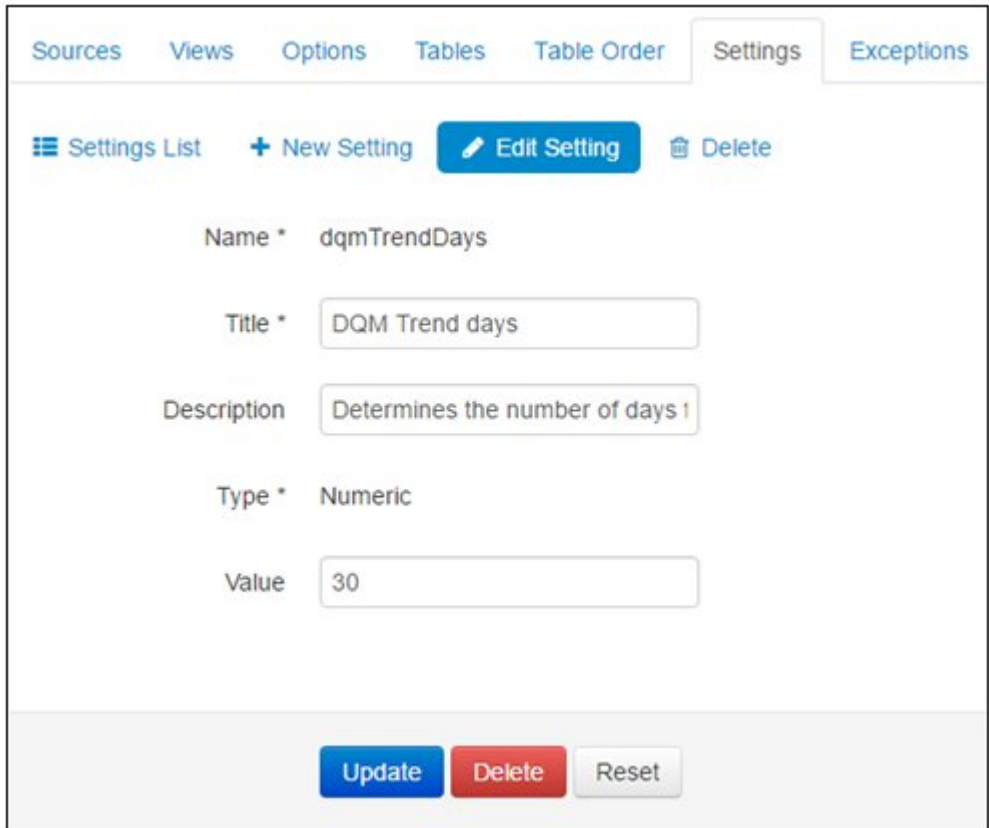
Configuring Trend Days

The trend arrows in DQM indicate how the quality of data (or business impact) has changed over time. You can specify the number of days that should be considered for trend arrows. For example, a value of 30 indicates that trend arrows will show how the data quality (or business impact) has changed from 30 days ago up to the current date.

To modify the trend value:

1. Navigate to *Administration*.
2. Click the *Settings* tab.
3. Open the *dqmTrendDays* setting.

4. Click *Edit Setting*, as shown in the following image.



The screenshot shows a web interface for editing a setting. At the top, there are navigation tabs: Sources, Views, Options, Tables, Table Order, Settings (selected), and Exceptions. Below the tabs, there is a settings list with a hamburger menu icon, 'Settings List', '+ New Setting', 'Edit Setting' (highlighted in blue), and 'Delete' (with a trash icon). The main form area contains the following fields:

- Name *: dqmTrendDays
- Title *: DQM Trend days
- Description: Determines the number of days |
- Type *: Numeric
- Value: 30

At the bottom of the form, there are three buttons: 'Update' (blue), 'Delete' (red), and 'Reset' (grey).

5. Set the required days count in the Value field.

6. Click *Update*.



Feedback

Customer success is our top priority. Connect with us today!

Information Builders Technical Content Management team is comprised of many talented individuals who work together to design and deliver quality technical documentation products. Your feedback supports our ongoing efforts!

You can also preview new innovations to get an early look at new content products and services. Your participation helps us create great experiences for every customer.

To send us feedback or make a connection, contact Sarah Buccellato, Technical Editor, Technical Content Management at Sarah_Buccellato@ibi.com.

To request permission to repurpose copyrighted material, please contact Frances Gambino, Vice President, Technical Content Management at Frances_Gambino@ibi.com.



Data Quality Monitor Installation and Configuration Guide

Version 3.2 and Higher

Information Builders
Two Penn Plaza
New York, NY 10121-2898



Printed on recycled paper in the U.S.A.