Informatica®
10.5

Mapping Specification Guide

Informatica Mapping Specification Guide
10.5
March 2021

© Copyright Informatica LLC 2009, 2021

This software and documentation are provided only under a separate license agreement containing restrictions on use and disclosure. No part of this document may be reproduced or transmitted in any form, by any means (electronic, photocopying, recording or otherwise) without prior consent of Informatica LLC.

U.S. GOVERNMENT RIGHTS Programs, software, databases, and related documentation and technical data delivered to U.S. Government customers are "commercial computer software" or "commercial technical data" pursuant to the applicable Federal Acquisition Regulation and agency-specific supplemental regulations. As such, the use, duplication, disclosure, modification, and adaptation is subject to the restrictions and license terms set forth in the applicable Government contract, and, to the extent applicable by the terms of the Government contract, the additional rights set forth in FAR 52.227-19, Commercial Computer Software License.

Informatica, the Informatica logo **[and any other Informatica-owned trademarks appearing in the document]** are trademarks or registered trademarks of Informatica LLC in the United States and many jurisdictions throughout the world. A current list of Informatica trademarks is available on the web at https://www.informatica.com/trademarks.html. Other company and product names may be trade names or trademarks of their respective owners.

Portions of this software and/or documentation are subject to copyright held by third parties. Required third party notices are included with the product.

The information in this documentation is subject to change without notice. If you find any problems in this documentation, report them to us at infa_documentation@informatica.com.

Informatica products are warranted according to the terms and conditions of the agreements under which they are provided. INFORMATICA PROVIDES THE INFORMATION IN THIS DOCUMENT "AS IS" WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING WITHOUT ANY WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND ANY WARRANTY OR CONDITION OF NON-INFRINGEMENT.

Publication Date: 2021-04-08

Table of Contents

Preface 6

Informatica Resources. 6

Informatica Network. 6

Informatica Knowledge Base. 6

Informatica Documentation. 7

Informatica Product Availability Matrices. 7

Informatica Velocity. 7

Informatica Marketplace. 7

Informatica Global Customer Support. 7

Chapter 1: Introduction to Mapping Specifications. 8

Mapping Specifications Overview. 8

Mapping Specification Example. 9

Design Workspace. 10

Column Mapping Panel. 10

Properties Panel. 10

Data Preview Panel. 12

SQL Query Panel. 13

Profile Summary Panel. 13

Mapping Specification Types. 13

Mapping Specification Development. 14

Chapter 2: Mapping Specification Configuration. 15

Mapping Specification Configuration. 15

Creating a Mapping Specification. 16

Editing a Mapping Specification. 16

Map Source and Target Columns. 17

Mapping Source and Target Columns by Name or Position. 17

Mapping to Selected Columns. 17

Finding Columns. 18

Removing Column Relationships. 18

Mapping Specification Validation. 18

Validation Errors During Mapping Specification Development. 19

Validation Errors During Data Preview. 19

Validation Errors During a Load Operation to the Target. 19

SQL Query. 20

Adding an SQL Query. 20

Editing an SQL Query. 20

Chapter 3: Mapping Specification Objects. 21
Mapping Specification Objects Overview. 21
Mapping Specification Sources. 22
Adding and Editing a Source. 22
Mapping Specification Target. 22
Mapping Specification Target Datatypes. 23
Edit Options for Targets. 23
Editing the Target. 23
Mapping Specification Aggregators. 24
Aggregator Properties. 24
Adding and Editing a Simple Aggregator. 25
Adding and Editing an Advanced Aggregator. 25
Mapping Specification Rules. 26
Applying a Rule. 26
Creating a Mapping Specification Rule. 27
Rule Properties. 27
Editing a Reusable Rule. 28
Mapping Specification Filters. 28
Adding and Editing a Simple Filter. 29
Adding and Editing an Advanced Filter. 29
Mapping Specification Lookups. 30
Lookup Conditions. 30
Lookup Properties. 30
Adding a Lookup. 31
Editing a Lookup. 32
Mapping Specification Joins. 32
Adding and Editing a Simple Join. 33
Adding an Editing an Advanced Join. 33

Chapter 4: Mapping Specification Profiles. 35
Mapping Specification Profiles Overview. 35
Running a Column Profile. 35
Profile Summary. 36
Column Values. 36
Column Patterns. 37
Column Statistics. 37
Viewing Column Profile Results. 37

Chapter 5: Sharing Mapping Specification Logic. 39
Sharing Mapping Specification Logic Overview. 39
Mapping Specification Export to Microsoft Excel. 40
Exporting a Mapping Specification to Microsoft Excel. 40

Mapping Specifications in Microsoft Excel. 40
Mapping Specification Export to PowerCenter. 41
PowerCenter Repository Connection Properties. 42
Exporting a Mapping Specification to PowerCenter. 43
Mapping Specification Export as a Virtual Table. 43
Exporting a Mapping Specification as a Virtual Table. 44
Mapping Specification Export to a Table Definition. 44
Exporting a Mapping Specification to a Table Definition. 44
Loading Mapping Specification Results to a Table. 45
Loading the Results of a Mapping Specification to a Flat File. 45
Rules and Guidelines for Loading Mapping Specification Results to a Flat File. 46

Index. 47

Preface

Use the *Informatica® Mapping Specification Guide* to learn how to use Informatica Analyst to create mapping specifications to define the logic for data integration projects within an organization. A mapping specification describes the movement and transformation of data from a source to a target. Mapping specifications are design assets that contain reusable logic you can use to collaborate on data integration projects.

This guide is written for business analysts who design business logic and collaborate with developers to accelerate data integration projects.

Informatica Resources

Informatica provides you with a range of product resources through the Informatica Network and other online portals. Use the resources to get the most from your Informatica products and solutions and to learn from other Informatica users and subject matter experts.

Informatica Network

The Informatica Network is the gateway to many resources, including the Informatica Knowledge Base and Informatica Global Customer Support. To enter the Informatica Network, visit https://network.informatica.com.

As an Informatica Network member, you have the following options:

- Search the Knowledge Base for product resources.
- View product availability information.
- Create and review your support cases.
- Find your local Informatica User Group Network and collaborate with your peers.

Informatica Knowledge Base

Use the Informatica Knowledge Base to find product resources such as how-to articles, best practices, video tutorials, and answers to frequently asked questions.

To search the Knowledge Base, visit https://search.informatica.com. If you have questions, comments, or ideas about the Knowledge Base, contact the Informatica Knowledge Base team at KB_Feedback@informatica.com.

Informatica Documentation

Use the Informatica Documentation Portal to explore an extensive library of documentation for current and recent product releases. To explore the Documentation Portal, visit https://docs.informatica.com.

If you have questions, comments, or ideas about the product documentation, contact the Informatica Documentation team at infa_documentation@informatica.com.

Informatica Product Availability Matrices

Product Availability Matrices (PAMs) indicate the versions of the operating systems, databases, and types of data sources and targets that a product release supports. You can browse the Informatica PAMs at https://network.informatica.com/community/informatica-network/product-availability-matrices.

Informatica Velocity

Informatica Velocity is a collection of tips and best practices developed by Informatica Professional Services and based on real-world experiences from hundreds of data management projects. Informatica Velocity represents the collective knowledge of Informatica consultants who work with organizations around the world to plan, develop, deploy, and maintain successful data management solutions.

You can find Informatica Velocity resources at http://velocity.informatica.com. If you have questions, comments, or ideas about Informatica Velocity, contact Informatica Professional Services at ips@informatica.com.

Informatica Marketplace

The Informatica Marketplace is a forum where you can find solutions that extend and enhance your Informatica implementations. Leverage any of the hundreds of solutions from Informatica developers and partners on the Marketplace to improve your productivity and speed up time to implementation on your projects. You can find the Informatica Marketplace at https://marketplace.informatica.com.

Informatica Global Customer Support

You can contact a Global Support Center by telephone or through the Informatica Network.

To find your local Informatica Global Customer Support telephone number, visit the Informatica website at the following link:
https://www.informatica.com/services-and-training/customer-success-services/contact-us.html.

To find online support resources on the Informatica Network, visit https://network.informatica.com and select the eSupport option.

CHAPTER 1

Introduction to Mapping Specifications

This chapter includes the following topics:

- Mapping Specifications Overview, 8
- Mapping Specification Example, 9
- Design Workspace, 10
- Mapping Specification Types, 13

Mapping Specifications Overview

A mapping specification describes the movement and transformation of data from a source to a target. Use a mapping specification to collaborate on projects and define business logic that populates a target with data. You can then leverage that target to report on the data.

A mapping specification is a Design asset. Create mapping specifications in the **Design** workspace of the Analyst tool.

Based on the business logic that you want to use, you can create mapping specifications with multiple sources, with another mapping specification as a source, or with no target. You can also share the mapping specification logic with other analysts and developers.

After you create a mapping specification, you can view or edit the mapping specification. You can add aggregators, filters, joins, lookups, rules, rule definitions, and sources to a mapping specification to develop the business logic. You can edit the aggregators, filters, joins, lookups, rules, and target in a mapping specification.

After you create the mapping specification, you can perform the following tasks:

- Run a column profile on the mapping specification source and target to analyze the structure and quality of data.
- Run a SQL query against source or target columns in a mapping specification and view the query results in a data preview.
- Load the results of the mapping specification to a relational or flat file target.
- Export the mapping specification logic to Microsoft Excel to document and share the mapping specification logic with other analysts and developers.

- Export the mapping specification logic to PowerCenter® to share the mapping specification logic with a PowerCenter developer.
- Export the mapping specification logic as a virtual table that analysts and developers can use to run SQL queries against the data.

Mapping Specification Example

As an analyst, you can develop business logic that can populate a target table with the current balance for each branch in a financial organization. You can export this business logic to PowerCenter to share it with a PowerCenter developer. You can export this business logic to a virtual table to run SQL queries against the data in the virtual table.

Use the following high-level steps to generate current balance data for active customer accounts for a set of financial products in the target table:

1. You can create a mapping specification named Customer_Data.
2. You can select customer tables for accounts and products and perform a normal join to display customer accounts that have purchased a financial product.
3. You want the target table in the mapping specification to have the same structure as the Current_Balance table that is in the Model repository. You can select the Current_Balance table as the target for the mapping specification when you create the mapping specification.
4. You want to view data for active accounts in the mapping specification. You can add a simple filter to the mapping specification to hide the inactive accounts and display the active accounts. You can add the following simple filter condition:

   ```
   Customer_Accounts.Status = 'Active'
   ```
5. You can preview the data in the mapping specification. The data contains active customer accounts for the checking, savings, and money market product categories. You want to view data for the savings and money market product categories. You can collaborate with a developer to create an advanced filter for the mapping specification. The mapping specification appears as a logical data object in the Developer tool. The developer copies the logical data object and edits it to add a filter condition that displays customer accounts for the savings and money market product categories. The developer adds the following advanced filter condition:

   ```
   Customer_Products.Category = 'Savings' OR Customer_Products.Category = 'Money_Market'
   ```
6. You can view the logical data object that contains the advanced filter condition as a logical data object in the Analyst tool. You can add it as a source to the mapping specification.
7. You can edit the Current_Balance target table to add a rule that sums the balances from the savings and money market product categories.
8. You can preview the data in the mapping specification and load the results of the mapping specification to a target table that matches the structure of the Current_Balance target table in the mapping specification.
9. You can choose to export the mapping specification logic to PowerCenter. You can select a target in the Model repository to share the mapping specification logic with a PowerCenter developer.
10. You can choose to export the mapping specification logic as a virtual table that appears in a virtual database in the Administrator tool. You can run SQL queries against the data in the virtual table.

Design Workspace

Use the **Design** workspace in the Analyst tool to design business logic that helps analysts and developers collaborate. Create and manage Design assets such as mapping specifications, reference tables, and rule specifications to develop the business logic.

The **Design** workspace is a permanent workspace that you can access through a tab. The workspace tab has a hover menu that you can use to access multiple panels in the workspace or create and manage assets in the workspace. You can also open the **Library** workspace from the hover menu.

You can access the following panels on the **Design** workspace:

Design Home

Default page for the **Design** workspace. Describes the Design assets that you can use in the workspace and contains a link to the online help.

New Assets

Lists the assets you can create in the **Design** workspace. You can create mapping specifications, reference tables, and rule specifications.

Recently Opened

Lists the recently opened assets. Click an asset to open and edit the asset.

Getting Started

View a video about the **Design** workspace.

Column Mapping Panel

When you select or create a mapping specification, it opens in the **Design** workspace. You can develop the logic for a mapping specification on the **Column Mapping** panel.

The following mapping specification properties appear on the **Column Mapping** panel:

Source Column

Lists source table name and column names.

Transformation

Lists which source column has a relationship with a target column. Lists which source, rule, aggregator, lookup, and join column has a relationship with a target column.

Transformation Description

Description of a row in the target table.

Target Column

Target column name.

Properties Panel

View the properties for a mapping specification on the **Properties** panel. The **Properties** panel also appears as a panel on the bottom panel of the **Column Mapping** panel. The **Properties** panel also displays mapping specification properties in the **Where Used**, **Target Columns**, and **Rules** panels.

The following mapping specification properties appear on the **Properties** panel:

Name

Name of the mapping specification.

Type

Object type. Displays Mapping Specification for a mapping specification.

Description

Description of the mapping specification.

Location

Location of the project or folder that contains the mapping specification.

Created on

Date that the mapping specification was created.

Created by

Name of the user who created the mapping specification.

Source columns

Source tables used in the mapping specification.

Target columns copied from

Data object used to create the target columns.

Last modified on

Date that the mapping specification was last modified.

Last modified by

Name of the user who last modified the mapping specification.

Job Status

Displays the status of the load operation that loads the results of the mapping specification to the target.

Last loaded to target

Displays the date that the mapping specification results were last loaded to the target.

Last target loaded

Displays the last target that the mapping specification results were loaded to.

PowerCenter folder

Displays the folder in PowerCenter where the mapping specification was exported.

Target object

Type of target that the data in the mapping specification was loaded to.

Tags

Lists tags used in the mapping specification.

Virtual database

Virtual database name for the mapping specification exported as a virtual table.

Virtual table

Virtual table name for the mapping specification exported as a virtual table.

JDBC URL

JDBC URL for the mapping specification exported as a virtual table.

Last Loaded

Date the mapping specification logic was last exported as a virtual table.

The following mapping specification property appears on the **Where Used** panel:

Name

Lists the mapping specification name that is used as a source. Lists where objects in the mapping specification are used in other projects.

The following mapping specification properties appear on the **Target Columns** panel:

Target Name

Target column name.

Datatype

Target column datatype.

Precision

Target column precision.

Scale

Target column scale.

Nullable

Property for a relational database column that determines if the column can contain null values.

Key

Key column in the target.

The following mapping specification properties appear on the **Rules** panel:

Rules

Rule column name. Displays input and output column names.

Column

Rule column name.

Datatype

Rule column datatype.

Precision

Rule column precision.

Scale

Rule column scale.

Data Preview Panel

View the results of a mapping specification or the data in a mapping specification source or target on the **Data Preview** panel.

The **Data Preview** panel appears in the following locations in the mapping specification:

- On the **Column Mapping** panel in a mapping specification.

- On panels for mapping specification objects in the **Edit Mapping Specification** wizard.
- On sources and target selections in the **New Mapping Specification** wizard.

You can preview the results for the business logic that you apply to a mapping specification during mapping specification development.

When you edit a mapping specification, you can preview the data for the mapping specification objects that you add or edit. The Analyst tool previews the data in the mapping specification target. After you preview the results of the mapping specification, you can load the results to a target.

When you create a mapping specification, you can preview the data in the sources and target you select. When you select a transformation object and perform a data preview, the Analyst tool returns a data preview for the transformation object and any transformation objects added before this object.

SQL Query Panel

You can preview the results of an SQL query for a mapping specification on the **SQL Query** panel.

You can view and edit existing SQL queries. You can add SQL queries to a mapping specification. The **SQL Query** panel displays the results of an SQL query as a data preview.
You can click icons on the view to display the SQL query used in the mapping specification, edit the SQL query in an editor, and preview the data in the SQL query.

Profile Summary Panel

You can view the profile summary for a source or target, and the values, patterns, and statistics for each profile column on the **Profile Summary** panel.

Use the **Profile Summary** panel to run a column profile on a mapping specification source or target.

The following tooltip and icons appear on the **Profile Summary** panel:

Profile Summary

The profile summary describes the profile results such as the number of unique and null values expressed as a number and percentage.

Sampling policy icon

The Analyst tool sampling policy for the profiled object. The Analyst tool displays the sampling policy for the object when you mouse over the icon.

View details icon

View the values, patterns, and statistics for each profile result.

Refresh icon

Run the column profile again.

Mapping Specification Types

You can create different types of mapping specifications based on the business logic you want to develop.

You can create the following types of mapping specifications:

Mapping specification with no target

You can create a mapping specification with a source or multiple sources and no target during the initial phase of mapping specification development. The mapping specification is not valid and you cannot preview it or load the results of the mapping specification to the target. However, you can edit the mapping specification to configure the target and validate it.

Mapping specification with multiple sources

You can create a mapping specification with two or more sources and a target. When you use multiple sources you must specify a join condition for the sources.

Mapping specification with another mapping specification as a source

You can create a mapping specification that uses another mapping specification as a source. During incremental development of a mapping specification, you may need to configure complex filters and rules. You can create separate mapping specifications to break down the complex logic. You can add each mapping specification as a source to develop the logical flow.

Mapping Specification Development

Develop a mapping specification to define the business logic that transforms data from source to target. After you develop the mapping specification, you can load the results of the mapping specification to a target or export the mapping specification results or logic to share with other analysts or developers.

Complete the following steps to develop a mapping specification:

1. Create a mapping specification.
2. Configure the mapping specification to add aggregators, filters, joins, lookups, rules, and sources and edit the aggregators, filters, joins, lookups, rules, and target.
3. Validate the mapping specification.
4. Preview the mapping specification results.
5. After you develop a mapping specification, you can complete the following steps:
   - Share the mapping specification with a developer.
   - Load the results of the mapping specification to a target.
   - Export the mapping specification logic as documentation to Excel.
   - Export the mapping specification logic to PowerCenter.
   - Export the mapping specification logic as a virtual table.

CHAPTER 2

Mapping Specification Configuration

This chapter includes the following topics:

- Mapping Specification Configuration, 15
- Creating a Mapping Specification, 16
- Editing a Mapping Specification, 16
- Map Source and Target Columns, 17
- Finding Columns, 18
- Removing Column Relationships, 18
- Mapping Specification Validation, 18
- SQL Query, 20

Mapping Specification Configuration

After you create a mapping specification, you can configure the objects that you want to use in the mapping specification.

After you add objects to the mapping specification, you can edit the objects in the mapping specification. You can add sources, rules, filters, lookups, or joins to a mapping specification. You can search for data objects when you add a source or lookup to a mapping specification. You can also search for reusable rules when you apply a rule to a mapping specification. You can compile a rule specification as a reusable rule and then add it to a mapping specification.

If you create a mapping specification without a target, the Analyst tool creates an empty target. You can edit the target to configure the target fields. You can validate the mapping specification to verify that the mapping specification has no errors.

After you add objects to a mapping specification, the Analyst tool maps a relationship from the object columns to the target columns. You can remove the relationship between the columns.

You can also run an SQL query against source or target columns in a mapping specification to view the query results in a data preview.

Creating a Mapping Specification

Create a mapping specification as a container for the business logic that transforms and moves data from source to target. You can choose to create a mapping specification from the **New** menu or from the **New Assets** panel in the **Design** workspace.

Before you create a mapping specification, verify that the sources you want to use exist in a project.

1. From the **New Assets** panel in the **Design** workspace, click **Mapping Specification**.

   The **New Mapping Specification** wizard appears.
2. Enter a unique name and an optional description.
3. Select the project or folder where you want to create the mapping specification.
4. Click **Next**.
5. On the **Sources** panel, click the **Add** icon.

   The **Add Source Object** wizard appears.
6. On the **Source Object** panel, select a source or multiple sources.
7. Optionally, select a source and click **Data Preview** to preview the source data.
8. Optionally, select a source and click **Properties** to view the source properties.
9. Click **OK**, and then click **Next**.
10. If you selected multiple sources, click the **New Join** icon to create a join and select the edit options to configure the join.
11. Click **OK**, and then click **Next**.
12. Choose to use a virtual target or a target from the **Target Object** panel.
    - Use a virtual target if you do not know the structure of the target data object.
    - Use a target from the **Target Object** panel if you know the structure of the data object. If you load the mapping specification results to a table, the structure of this target must match the structure of the target table.
13. Optionally, select a target and click **Data Preview** to preview the target data.
14. Optionally, select a target and click **Properties** to view the target properties.
15. Click **Finish**.

Editing a Mapping Specification

Edit the mapping specification to configure the mapping specification rules, filter, transformation objects, and target.

1. From the **Actions** menu, click **Edit** > **General**.

   The **Edit Mapping Specification** wizard appears.
2. Edit the name and optional description for the mapping specification.
3. Optionally, click the **Sources**, **Joins**, **Lookups**, **Rules**, **Filter**, **Aggregator**, or **Target** tabs and configure the edit options.
4. Click **Save**.

Map Source and Target Columns

The Analyst tool can map source and target columns in a mapping specification based on column names and column positions. The Analyst tool can also map columns based on advanced criteria that you enter for column names and column positions. You can also select each source and target column to map the columns.

Use the **Advanced** mode in the **Automap** window to enter the column mapping criteria.

When you map by column name, the Analyst tool maps columns by name. For example, the Analyst tool maps ACCOUNTS to ACCOUNTS.

When you map by column position, the Analyst tool maps the first or last source column with the target column you select. For example, the Analyst tool maps the first source column ACCOUNTS_PAID to the target column ACCOUNTS.

Mapping Source and Target Columns by Name or Position

When you map source and target columns by column name, the Analyst tool ignores source and target prefixes and suffixes. When you map source and target columns by column position, the Analyst tool maps the first or last source column with the target column you select.

1. From the **Actions** menu, click the **Automap Columns** icon.

   The **Automap** wizard appears.
2. Choose to map columns in simple or advanced mode.
   - To map columns in the simple mode, select **Simple**.
   - To map columns in the advanced mode, select **Advanced** and choose to map columns by name or column position.

   In the Simple mode, the Analyst tool maps columns with the same name or position. In the Advanced mode, the Analyst tool maps columns based on either name or position.
3. Optionally, on the **Transformation and Target Columns** panel, click **Refresh** to update the mapping specification with mapped columns, and click **OK**.
4. Click **Save**.

Mapping to Selected Columns

You can select each source column to map it to a target column in the mapping specification.

1. On the **Sources** panel, select a source column.
2. On the **Transformations and Target Columns** panel, select a target column.
3. Click the **Map to Selected Columns** icon between the **Sources** and the **Transformations and Target Columns** panels.

Finding Columns

Search for columns in a mapping specification to find columns that you want to edit or add to objects.

▶ On the **Column Mapping** panel, click the **Find** icon to find objects. The following table describes the choices for objects that you can find:

Option	Description
Source Columns	On the **Sources** panel, enter a source column name.
Target Columns	On the **Transformations and Target Columns** panel, enter a target column name.
Transformations Columns	On the **Transformations and Target Columns** panel, enter a transformation column name.
Transformations Descriptions	On the **Transformations and Target Columns** panel, enter a description for transformation objects.

Removing Column Relationships

When you add objects to a mapping specification, the Analyst tool maps a relationship between the object columns and the target columns. You can remove the relationships between these columns.

1. On the **Transformations and Target Columns** panel, select a column from the **Transformations** panel.
2. Click **Actions** > **Clear Transformation** to remove the relationship for the column.

Mapping Specification Validation

Validate the mapping specification to verify that the mapping specification has no errors. You can validate a mapping specification during different stages of the mapping specification development cycle. You must load a valid mapping specification to a target.

You can validate a mapping specification at the following stages of development:

- During the mapping specification development cycle.
- When you preview the results of the mapping specification.
- When you load the results of the mapping specification to the target.
- When you export the mapping specification logic to PowerCenter.
- When you export the mapping specification logic as a virtual table.

When a validation error occurs, the mapping specification is not valid. The Analyst tool cannot load the results of the mapping specification to the target, or export the mapping specification logic as a virtual table or to PowerCenter .

Validation Errors During Mapping Specification Development

Validation errors might occur during mapping specification development.

The following validation errors can occur during the mapping specification development cycle:

- The mapping specification does not contain a target.
- The mapping specification contains expressions, rules, aggregators, filters, lookups, or joins that are not valid.
- The mapping specification contains a source that was deleted or modified in the Model repository.
- The mapping specification contains source and target column relationships that are not valid because of incompatible datatypes.

Validation Errors During Data Preview

Validation errors might occur when you preview the results of a mapping specification.

The following validation errors can occur when you preview the results of a mapping specification:

- The mapping specification contains expressions, rules, aggregators, filters, lookups, or joins that are not valid.
- The mapping specification contains source and target column relationships that are not valid.

Validation Errors During a Load Operation to the Target

Validation errors might occur when you load the results of a mapping specification to the target.

The following validation errors can occur when you load the results of a mapping specification to the target:

- The mapping specification contains expressions, rules, aggregators, filters, lookups, or joins that are not valid.
- The mapping specification contains source and target column relationships that are not valid because of incompatible datatypes.
- The structure and properties of the mapping specification target does not match the structure and properties of the target data object.
- The target data object does not exist in the Model repository.
- The database connection for the target data object contains incorrect database connection properties.
- The database connection for the target data object is deleted.
- You do not have permission to use the database connection for the target data object.
- The Data Integration Service for the Analyst Service is disabled or becomes disabled during the load operation.
- The Model Repository Service is disabled or becomes disabled during the load operation.
- The Mapping Service module for the Data Integration Service is not available.
- The source data object in the mapping specification is the same as the target data object to which you want to load the mapping specification results.
- The mapping specification contains Developer tool sources that are not valid.

SQL Query

Run an SQL query against source or target columns in a mapping specification to view the query results in a data preview.

If a source contains a large number of columns, analysts can run an SQL query against select source columns to view the query results as a subset of the source data. Analysts can run an SQL query against target columns to validate the mapping specification logic before exporting the mapping specification as a virtual table.

The Analyst tool adds the following default query to select all columns from the mapping specification target:

```
SELECT * from [MAPPING SPECIFICATION NAME]
```

Adding an SQL Query

Add an SQL query to query the source or target data in a mapping specification.

1. From the Actions menu, click **SQL Query**.

   The **SQL Query** wizard appears.
2. On the **Columns** panel, select a source or target column and click the arrow icon to add it to the **SQL Query** editor.
3. Optionally, enter an SQL Query in the **SQL Query** editor to modify the query.
4. Optionally, click the **Validate** icon to validate the SQL query.
5. Click **Run SQL Query** to run the SQL query.

Editing an SQL Query

Edit an SQL query to modify the query statement or to query another source or target column.

1. On the **SQL Query** panel, click the **Edit** icon.

   The **SQL Query** wizard appears.
2. Modify the SQL query in the SQL Query editor.
3. Click **Run SQL Query** to run and save the SQL query.

CHAPTER 3

Mapping Specification Objects

This chapter includes the following topics:

- Mapping Specification Objects Overview, 21
- Mapping Specification Sources, 22
- Mapping Specification Target, 22
- Mapping Specification Aggregators, 24
- Mapping Specification Rules, 26
- Mapping Specification Filters, 28
- Mapping Specification Lookups, 30
- Mapping Specification Joins, 32

Mapping Specification Objects Overview

Add objects to a mapping specification to perform data transformation operations. You must edit the mapping specification to add and modify objects.

Add and edit mapping specification objects on the **Column Mapping** panel. You can add sources, target columns, filters, rules, and transformation objects such as aggregators, lookups, and joins to a mapping specification.

You can add the following objects to a mapping specification:

- Aggregators
- Filters
- Joins
- Lookups
- Rules
- Sources
- Target columns

Mapping Specification Sources

When you create a mapping specification, you must add one or more sources to it. When you add multiple source to a mapping specification, you must specify a join between the sources.

You can use tables, flat files, logical data objects, social media objects, and mapping specifications as sources.

If an external source changes, you can synchronize the changes with corresponding source objects in a mapping specification. After you synchronize the changes, the Analyst tool updates the mapping specification to match the changes in the data object. You must open the mapping specification again to view the updated source.

You can search for source columns in the mapping specification. You can add source columns to the target, rules, filters, or joins. You can also automatically map source columns to target columns based on naming conventions and column positions. You can drag multiple source columns to the target to insert between existing target columns.

You can remove a source from the mapping specification. When you remove a source that is referenced by other objects, the Analyst tool displays a lists of referenced objects. If you remove the source that has referenced objects, the mapping specification is not valid.

Adding and Editing a Source

Use the **Edit Mapping Specification** window to add or edit a source. You can add multiple sources to a mapping specification. Add sources to use additional data objects in the mapping specification. You can remove a source from a mapping specification.

1. From the Actions menu, click **Edit** > **Sources**.

   The **Edit Mapping Specification** wizard appears.
2. On the **Sources** tab, click the **Add** icon.

   The **Add Source Object** wizard appears.
3. On the **Source Object** panel, click each checkbox to select a source or sources from a project.
4. Optionally search for a source by name or tag in the search box.
5. Optionally, select a source and click **Data Preview** to preview the source.
6. Optionally, select a source and click **Properties** to view the source properties.
7. Click **OK**.
8. Optionally, select a source and click the **Delete** icon to remove it from the mapping specification, and click **OK**.
9. Click **Save**.

Mapping Specification Target

Use a target in the mapping specification to define the structure of the target data object.

You must know the structure of the target data object if you use a target in the mapping specification. If you do not know the target structure, you can choose a virtual target. The Analyst tool creates an empty target in the mapping specification. You can edit the mapping specification to configure the target.

After you finalize the mapping specification, you can load the mapping specification results to a target data object that matches the structure of the target in the mapping specification.

Note: The structure of the target columns in the mapping specification must match the structure of the columns in the target table data object.

Mapping Specification Target Datatypes

If the target contains incompatible datatypes, you cannot load the results of the mapping specification to a target or export the mapping specification logic to PowerCenter.

The following datatypes are compatible with the mapping specification target:

- Integer
- Bigint
- String
- Text
- Binary
- Decimal
- Double
- Datetime

Edit Options for Targets

When you edit the target in a mapping specification, you can select an edit option to edit it.

You can edit the target from the **Transformations and Target Columns** panel and select an edit target option to perform an edit task. You can select the edit options for the target on the **Target** tab of the **Edit Mapping Specification** window. You can also drag multiple source columns from the **Sources** panel to add to the target in the **Transformations and Target Columns** panel.

You can add a column and select a column to edit it. You can select one or more target columns and duplicate them, or move columns up or down, or delete columns.

After you edit the target, you can preview the data on the **Data Preview** tab and view the target properties on the **Properties** tab.

Editing the Target

Edit the target in a mapping specification to add target columns or modify the properties of the target columns.

1. From the Actions menu, click **Edit** > **Target**.

   The **Edit Mapping Specification** wizard appears.
2. Select an edit target option to perform an edit task.
3. Optionally, click the **Refresh** in the **Data Preview** panel to preview the target data.

Mapping Specification Aggregators

Add an aggregator to a mapping specification to perform aggregate calculations on multiple rows of data. You can add multiple aggregate functions to the aggregator.

When you add an aggregator, you can perform aggregate calculations on groups of columns or all columns. When you group by columns, you can apply the aggregate conditions and rules to multiple columns. You can include filters, rules, conditional clauses, and nested expressions in an aggregator. You can also add different aggregators to multiple columns.

You can add, edit, or delete an aggregator. You can also preview data in an aggregator.

You can add the following types of aggregators:

Simple aggregator

Aggregates data by applying conditions and rules to multiple columns. You can add lookup, rule, and source columns to the conditions in a simple aggregator.

Advanced aggregator

Aggregates data by applying aggregate functions and expressions to multiple columns. You can add lookup, rule, and source columns to the expression in a condition in an advanced aggregator.

Aggregator Properties

Configure aggregator properties when you add or edit an aggregator.

You can configure the following aggregator properties:

Functions

Configure the following properties for aggregator functions:

- Function. Type of aggregate function.
- Aggregate Source Name. Source, lookup, or rule name for the column on which to apply the aggregate function.
- Aggregate Column Name. Source, lookup, or rule column name on which to apply the aggregate function.
- Target Column Name. Column name in the mapping specification target that returns the results of the aggregate function.

Conditions

Use aggregator conditions to reduce the number of rows in the aggregator. Configure the source, lookup, rule column, operator, and value for an aggregator condition.

Functions and Conditions

Configure the following properties for functions and conditions:

- Expression. Expression in the aggregator that contains the aggregate functions and conditions.
- Target Column Name. Name of the target column that contains the results of the aggregator.

Adding and Editing a Simple Aggregator

Add a simple aggregator to apply conditions and rules to aggregate data on columns. Edit a simple aggregator to modify the conditions, rules, and group by columns.

1. From the Actions menu, click **Edit** > **Aggregator**.

   The **Edit Mapping Specification** wizard appears.
2. Choose to add or edit an aggregator.
   - To add an aggregator, click the **New** icon.
   - To edit an aggregator, click the **Edit** icon.
3. To add or edit a simple aggregator, click **Simple**.
4. On the **Functions** panel, click the **Add Rule** icon and select the **Function**, **Aggregate Source Name**, **Aggregate Column Name**, and **Target Column Name** columns.
5. On the **Conditions** panel, select a column, operator, and enter a value to create a condition.
6. Click **Next**.
7. Optionally, on the **Columns** panel, select the columns you want to group together to perform aggregate calculations on groups of columns.

   To select multiple columns press the Shift or Ctrl key and click each column.
8. Click the arrow icon to add the columns to the **Group by** panel.
9. Optionally, on the **Data Preview** panel, click **Show** to preview the data that is grouped together based on matching values in the group by columns.
10. Click **Finish** and then click **Save**.

Adding and Editing an Advanced Aggregator

Add an advanced aggregator to apply conditions and expressions to aggregate data on columns. Edit an advanced aggregator to modify the conditions, expressions, and group by columns.

1. From the Actions menu, click **Edit** > **Aggregator**.

   The **Edit Mapping Specification** wizard appears.
2. Choose to add or edit an aggregator.
   - To add an aggregator, click the **New** icon.
   - To edit an aggregator, click the **Edit** icon.
3. To add or edit an advanced editor, click **Advanced**.
4. On the **Functions and Conditions** panel, click the **Add Condition** icon.
5. Select a target column name.
6. On the **Functions** tab, select a function, click the arrow icon, and select a column to add the function to the Expression editor.
7. Optionally, on the **Rules** tab, select a column and datatype and click the arrow icon to add the rule column to the Expression editor.
8. Optionally, on the **Lookup** tab, select a column and datatype and click the arrow icon to add the Lookup column to the Expression editor.
9. Click **OK** and then click **Next**.

10. Optionally, on the **Columns** panel, select the columns you want to group together to perform aggregate calculations on groups of columns.

    To select multiple columns press the Shift or Ctrl key and click each column.
11. Click the arrow icon to add the columns to the **Group by** panel.
12. Optionally, on the **Data Preview** panel, click **Show** to preview the data that is grouped together based on matching values in the group by columns.
13. Click **Finish** and then click **Save**.

Mapping Specification Rules

Create a rule that defines the business logic for target columns in a mapping specification. When you create a rule, you can add expression functions to the rule. Apply a rule to a mapping specification to add existing rule logic to target columns.

You can create a rule for a mapping specification or apply a rule to a mapping specification. After you create a rule for a mapping specification, you can make it reusable. You can preview the results of the rule.

You can apply a rule specification as a reusable rule in a mapping specification. A rule specification is the logic that you define to generate a rule. When you compile the rule specification, the Analyst tool converts it to a reusable rule. You can apply this reusable rule to the mapping specification.

When you apply a rule to a mapping specification, the Analyst tool maps a relationship between the columns in the rule to the columns in the target. You can remove the relationship from the rule columns to the target columns. However, the rule columns remain in the mapping specification. You can delete a rule from the mapping specification. The Analyst tool removes the relationship from the rule columns to the target columns and deletes the rule column from the mapping specification.

Applying a Rule

Apply a reusable rule to a target column in the mapping specification to apply the rule logic to the column. The rule must exist in the Model repository.

1. From the Actions menu, click **Edit** > **Rules**.

   The **Edit Mapping Specification** wizard appears.
2. Select the **New** icon.

   The **New Rule** wizard appears.
3. Select **Apply a Rule**.
4. Click **Next**.
5. In the **Rules** panel, select a reusable rule from a project or folder.

   The **Inputs** and **Outputs** panels display the properties for the input and output columns for the rule.
6. Click **Next**.
7. Enter a rule column name.
8. Optionally, enter a description.
9. On the **Inputs** panel, select the input column for the rule.
10. On the **Outputs** panel, select a target column in the mapping specification.

11. Click **Finish**.
12. Click **Yes** in the message that appears to replace transformation objects and then click **Save**.

Creating a Mapping Specification Rule

Create a rule for a target column in a mapping specification to develop business logic for the column. When you create a rule, you configure the edit options for the rule. You can also choose to make the rule reusable.

1. From the Actions menu, click **Edit** > **Rules**.

   The **Edit Mapping Specification** wizard appears.
2. Select the **New** icon.

   The **New Rule** wizard appears.
3. Select **Create a Rule**.
4. Click **Next**.
5. Enter a name and an optional description.
6. Select a target column name to apply the rule to.
7. To make the rule reusable, select **Save the rule** and select a project to save the rule.
8. On the **Functions** tab, select a function, click the arrow icon, and select a column to add the function to the Expression editor.
9. Optionally, on the Columns tab. select a target column and click the arrow icon to add it to the Expression editor.
10. Optionally, on the **Rules** tab, select a column and datatype and click the arrow icon to add the rule column to the Expression editor.
11. Optionally, on the **Lookup** tab, select a column and datatype and click the arrow icon to add the Lookup column to the Expression editor.
12. Click **Finish**.
13. Click **Yes** to replace the transformation object and click **Save**.

Rule Properties

Open a reusable rule from the **Library** workspace and view properties for a reusable rule in the **Design** workspace. You can edit the properties in each panel for a reusable rule.

The following reusable rule properties appear on the **Properties** panel:

Name

Name of the rule.

Type

Type of asset.

Description

Description of the rule.

Location

Location of the rule in the project or folder.

The following reusable rule properties appear on the **Input** panel and **Output** panel:

Name

Input or output column name.

Datatype

Input or output column datatype.

Description

Input or output column description.

Precision

Input or output column precision.

Scale

Input of output column scale.

The following reusable rule property appears on the **Expression** panel:

Syntax

Expression syntax of the rule.

Editing a Reusable Rule

Edit a reusable rule to change the rule properties, input column, output column, or rule expression.

1. From the **Library** workspace, open a reusable rule.

   The reusable rule opens in the **Design** workspace.
2. Click **Edit** from the **Properties**, **Inputs**, **Outputs**, and **Expression** panels.

   The **Edit Rule** wizard appears.
3. Optionally, click the **General** tab, to modify the general properties for the rule.
4. Optionally, click the **Ports** tab to modify the input and output column properties.
5. Optionally, click the **Expression** tab to modify the rule expression.
6. Click **Save**.

Mapping Specification Filters

Add filters to a mapping specification to limit the data that appears in the mapping specification results. When you add a filter, you can specify the filter conditions to use in the filter.

You can add the following types of filters:

- Simple filter. Applies to multiple values and operators on source columns.
- Advanced filter. Applies to expressions, functions, and rules on source columns.

Adding and Editing a Simple Filter

Add a simple filter to filter data by a fixed value on a column. After you add a simple filter, you can edit it to modify the filter values and target columns.

1. From the Actions menu, click **Edit** > **Filter**.

   The **Edit Mapping Specification** wizard appears.
2. Chose to add or edit a filter.
   - To add a filter, click the **New** icon.
   - To edit a filter, click the **Edit** icon.

   The **New Filter** or **Edit Filter** wizard appears.
3. Select **Simple** filter.
4. On the **Condition** panel, select a column, operator, and enter a value.
5. Optionally, on the **Data Preview** panel, click the **Refresh** icon to preview the data.
6. Click **OK**.

   The **Filter Properties** panel displays the filter condition.
7. Optionally, click the **Edit** icon or the **Delete** icon to edit or delete the filter.
8. Click **Save**.

Adding and Editing an Advanced Filter

Add an advanced filter to filter data by multiple values on columns. After you add an advanced filter, you can edit it to modify the filter values and target columns.

1. From the Actions menu, click **Edit** > **Filter**.

   The **Edit Mapping Specification** wizard appears.
2. Select **Advanced Filter**.
3. On the **Functions** tab, select a function, click the arrow icon and select a column, and click **OK** to add the function to the **Expression** editor.
4. Optionally, in the **Columns** tab, select a column and click the add icon to add the column to the **Expression** editor.
5. Select one of the following optional choices to perform a filter task:
   - Optionally, on the **Rules** tab, select a rule and click the add icon to add the rule column to the **Expression** editor.
   - Optionally, on the **Lookup** tab, select a lookup and click the add icon to add the lookup column to the **Expression** editor.
   - Optionally, enter an expression in the **Expression** editor.
   - Optionally, click **Validate** to validate the expression.
   - Optionally, click **Refresh** to preview the data.
6. Click **OK** and **Save**.

Mapping Specification Lookups

Use a lookup in a mapping specification to look up data in a data object. The Analyst tool queries the lookup source based on the lookup inputs and a lookup condition.

You can use multiple lookups in a mapping specification. After you add a lookup, you can edit it.

You can perform a lookup on the following sources:

- Flat file
- Relational table
- Logical data object
- Reference table

When you add a lookup to a mapping specification, the lookup returns the result of lookup to the target column. You can configure the lookup to return a single row or multiple rows. You can edit the lookups that you add to a mapping specification to modify how lookups are used in the mapping specification.

You can perform the following tasks with a lookup:

- Get a related value. Retrieve a value from the lookup based on a value in the source. For example, you can look up an employee ID and return the employee name.
- Get multiple values. Retrieve multiple rows from a lookup. For example, you can look up a department cost center and return all the employees in a department.
- Perform a calculation. Retrieve a value from a lookup and use it in a calculation. For example, you can look up a sales tax percentage, calculate a tax, and return the tax to a target column.

Lookup Conditions

When you configure a lookup condition, you compare the value of one or more columns in the source data with values in the lookup.

For example, the source data contains an employee_number. The lookup source table contains employee_ID, first_name, and last_name. You configure the following lookup condition:

```
employee_ID = employee_number
```

For each employee_number, the Analyst tool returns the employee_ID, last_name, and first_name column from the lookup.

The Analyst tool can return multiple rows from the lookup that match the lookup condition. You configure the following lookup condition:

```
employee_ID > employee_number
```

The Analyst tool returns rows for all employee_ID numbers greater than the source employee number.

Lookup Properties

Configure lookup properties when you add or edit a lookup.

Configure the following lookup properties:

Name

Lookup name.

Description

Description of the lookup.

On multiple matches

Determines which rows to return when the lookup finds multiple rows that match the lookup condition. Select one of the following options:

- Return first row. Returns the first row that matches the lookup condition.
- Return last row. Returns the last row that matches the lookup condition.
- Return any row. Returns any row that matches the lookup condition.
- Return all rows. Returns all rows that match the lookup condition.
- Report error. The Analyst tool reports an error and does not return a row.

Lookup Condition

Configure the following properties in a lookup condition:

- Source Column Name. Name of the source column to compare values with a lookup column .
- Operator. Comparison operators for the lookup condition.
- Lookup Column Name. Name of the lookup column to look up values.

Output

Configure the following output properties:

- Lookup Column Name. Name of the lookup column to look up values.
- Target Column Name. Name of the target column to output the results of the lookup.

Adding a Lookup

Add a lookup to a mapping specification to look up data in a data object.

Before you add a lookup to a mapping specification, verify that the data source exists in a project in the Analyst tool.

1. From the Actions menu, click **Edit** > **Lookups**.

   The **Edit Mapping Specification** wizard appears.
2. Click the **New** icon.

   The **New Lookup** wizard appears.
3. Enter a name and an optional description.
4. Click **Next**.
5. On the **Lookup Source** panel, select a lookup from a project.
6. Optionally, choose to search for a lookup by name or tag in the search box.
7. Optionally, click **Data Preview** to preview the lookup data.
8. Optionally, click **Properties** to view the lookup properties.
9. Click **Next**.
10. Enter the lookup conditions and properties.
11. Click **Finish**.

Editing a Lookup

Edit the lookups that you add to a mapping specification to modify how lookups are used in the mapping specification.

1. From the Actions menu, click **Edit** > **Lookups**.

   The **Edit Mapping Specification** wizard appears.
2. Select a lookup and click the **Edit** icon.

   The **Edit Lookup** wizard appears.
3. Enter the lookup conditions and properties.
4. Click **Finish**.

Mapping Specification Joins

When you use more than one source in a mapping specification, you can select a join type between sources and specify the join criteria. The Analyst tool recommends join conditions for a join between sources. You can also select other join conditions.

After you create and name a join, you can use this join object to join between another join object. You can edit a join to modify the join condition that you specify for a join.

Add a join to add multiple sources to a mapping specification. Edit a join to modify the join condition between the sources.

You can add the following types of join conditions:

Simple join

Uses a single operator in a join condition.

Advanced join

Uses expression functions in the join condition.

When you join between sources, you join the columns from the detail table and the master table.

The following table describes the type of joins:

Join Type	Description
Normal	Discards all rows of data from the master and detail source that do not match, based on the condition.
Master Outer	Keeps all rows of data from the detail source and the matching rows from the master source. Discards the unmatched rows from the master source.
Detail Outer	Keeps all rows of data from the master source and the matching rows from the detail source. Discards the unmatched rows from the detail source.
Full Outer	Keeps all rows of data from both the master and detail sources.

Note: When you create a join between two or more relational tables that have the same column or table names, the Analyst tool uses the table name and column name to create a unique name. For example: TableName.ColumnName.

Adding and Editing a Simple Join

Add a simple join condition to use a single operator in a join condition. Edit a simple join to modify the join condition between sources.

1. From the Actions menu, click **Edit** > **Joins**.

   The **Edit Mapping Specification** wizard appears.
2. On the **Join** panel, select one of the following choices:
   - To add a join, click the **New** icon.
   - To edit a join, select the join and click the **Edit** icon.

   The **New Join** or **Edit Join** wizard appears.
3. Enter a name and an optional description.
4. Select a join type from the **Join Type** field.
5. Select a master data object from the **Master** field.
6. Select a detail data object from the **Detail** field.
7. Select **Simple Join**.
8. Choose to add edit a join condition on the **Join Condition** panel.
   - To add a join condition, click the **New** icon and select a Master Column Name, Operator, and Detail Column Name.
   - To edit a join condition, modify the **Master Column Name**, **Operator**, and **Detail Column Name**.
9. Optionally, click the **Validate** icon to validate the join condition.
10. Optionally, click the **Refresh** icon to preview the data.
11. Click **OK**.

Adding an Editing an Advanced Join

Add an advanced join to use expression functions in the join condition. Edit a simple join to modify the expression in the Expression editor.

1. From the Actions menu, click **Edit** > **Joins**.

   The **Edit Mapping Specification** wizard appears.
2. On the **Join** panel, select one of the following choices:
   - To add a join, click the **New** icon.
   - To edit a join, select the join and click the**Edit** icon.

   The **New Join** or **Edit Join** wizard appears.
3. Enter a name and an optional description.
4. Select a join type from the **Join Type** field.
5. Select a master data object from the **Master** field.
6. Select a detail data object from the **Detail** field.
7. Select **Advanced Join**.
8. On the **Functions** tab, select a function, click the **arrow** icon, select a column, and click **OK** to add the function to the Expression editor.
9. Optionally, on the **Master Columns** tab, select a column and click the **arrow** icon to add it as a master column to the Expression editor.

10. Optionally, on the **Detail Columns** tab, select a column and click the **arrow** icon to add it as a detail column to the Expression editor.
11. Optionally, click the **Validate** icon to validate the expression.
12. Optionally, on the **Data Preview** panel, click the **Refresh** icon to preview the data.
13. Click **OK**.

CHAPTER 4

Mapping Specification Profiles

This chapter includes the following topics:

- Mapping Specification Profiles Overview, 35
- Running a Column Profile, 35
- Profile Summary, 36
- Viewing Column Profile Results, 37

Mapping Specification Profiles Overview

Run a column profile on a mapping specification source to understand the structure and quality of the source data. Run a column profile on the mapping specification target to understand the data that the mapping specification logic generates.

Analysts can perform the following profiling tasks on a mapping specification:

- Run a column profile on a mapping specification source.
- Run a column profile on the mapping specification target.
- View a profile summary of a source or target in a mapping specification.
- View values, patterns, and statistics for each column in the profile summary.

Running a Column Profile

Run a column profile on a mapping specification source or target to analyze the structure and quality of the data.

1. Choose a source or target column to run a column profile on.
   - To choose a source column, select a column on the **Sources** panel.
   - To choose a target column, select a column from the **Transformations and Target Columns** panel.
2. Click the **Profile Summary** tab.

   The Analyst tool displays the column profile results.
3. Optionally, click the **Refresh** icon to run the column profile again.

Profile Summary

You can view the summary for a profile run on the **Profile Summary** panel. The profile summary describes the profile results such as the number of unique and null values expressed as a number and percentage.

You can click each profile summary property to sort on values of the property. The following table describes the profile summary properties:

Property	Description
Name	Name of the column in the profile.
Unique Values	Number of unique values for the column in the sampled data set based on the sampling policy.
Unique %	Percentage of unique values for the column.
NULL	Number of null values for the column.
NULL %	Percentage of null values for the column.
Inferred Datatype	Datatype derived from the values for the column. The Analyst tool can derive the following datatypes from the datatypes of values in columns: - String - Varchar - Decimal - Integer - "-" for Nulls
Inferred %	Percentage of values that match the data type inferred by the Analyst tool. Not displayed in the Developer tool.
Documented Datatypes	Data type declared for the column in the profiled object.
Maximum Value	Maximum value in the column.
Minimum Value	Minimum value in the column.

Column Values

After you run a column profile, you can select a column on the **Profile Summary** tab and view the column values. The column values include values for columns and the frequency in which the value appears for the column.

The following table describes the properties for the column values:

Property	Description
Value	Displays 200 values for the column in the profile.
Frequency	Number of times a value appears for a column, expressed as a number.
Percent	Percentage that a value appears for a column.
Chart	Chart for the percentage.

Note: You can sort the **Frequency** column by selecting the column.

Column Patterns

After you run a column profile, you can select a column on the **Profile Summary** tab and view the column patterns. The column patterns include the value patterns for the columns and the frequency in which the pattern appears.

The following table describes the properties for the column patterns:

Property	Description
Pattern	Pattern for the column in the profile.
Frequency	Number of times a pattern appears for a column, expressed as a number.
Percentage	Percentage that a pattern appears for a column.
Chart	Chart for the percentage.

Column Statistics

After you run a column profile, you can select a column on the **Profile Summary** tab and view the column statistics. The column statistics include statistics about the column values, such as length, and top and bottom values.

The following table describes the types of column statistics:

Statistic	Description
Average	Average value for the column.
Standard Deviation	Standard deviation of the values for the column.
Maximum Length	Length of the longest value for the column.
Minimum Length	Length of the shortest value for the column.
Bottom (5)	Lowest values for the column.
Top (5)	Highest values for the column.

Viewing Column Profile Results

You can view the values, patterns, and statistics for each profiled column on the **Profile Summary** panel.

1. On the **Profile Summary** panel, select a profiled column.
2. Click the **View** icon.

   The **Column Profiling Details** wizard appears.

3. Click the **Values**, **Patterns**, or **Statistics** tabs to view the values, patterns, or statistics for the column.

CHAPTER 5

Sharing Mapping Specification Logic

This chapter includes the following topics:

- Sharing Mapping Specification Logic Overview, 39
- Mapping Specification Export to Microsoft Excel, 40
- Mapping Specification Export to PowerCenter, 41
- Mapping Specification Export as a Virtual Table, 43
- Mapping Specification Export to a Table Definition, 44
- Loading Mapping Specification Results to a Table, 45
- Loading the Results of a Mapping Specification to a Flat File, 45
- Rules and Guidelines for Loading Mapping Specification Results to a Flat File, 46

Sharing Mapping Specification Logic Overview

After you create a mapping specification and build the business logic for the mapping specification target, you can share the logic or results of the mapping specification with other analysts and developers.

You can share the mapping specification logic and results in the following ways:

Export the mapping specification logic to Microsoft Excel.

Share the mapping specification to document and review the mapping specification with other analysts and developers to modify the mapping specification with the review feedback.

Export the mapping specification logic to PowerCenter.

Share the mapping specification logic or share an XML file that contains the mapping specification logic with a PowerCenter developer to use in a mapplet or mapping.

During the export to PowerCenter process, an analyst who does not have permissions to export the mapping specification to a PowerCenter repository can choose to export the mapping specification logic as an XML file. The analyst can download this file and provide it to a PowerCenter developer to import as a mapplet or mapping in the PowerCenter repository.

Export the mapping specification logic as a virtual table.

Share the mapping specification logic in a virtual table to run SQL queries against the data.

Export the mapping specification target as a table definition.

Share the mapping specification target as a table definition. The Analyst tool generates an SQL script that contains the table definition. The SQL script is based on the structure of the mapping specification target. You can provide the script to a developer to create the mapping specification target as a table in a database.

Load the mapping specification results to a table.

Share the mapping specification results with other analysts and developers in a relational table. The structure of the mapping specification target must match the structure of the relational target.

Load the mapping specification results to a flat file.

Share the mapping specification results with other analysts and developers in a flat file. When you load the mapping specification results to a flat file, the Analyst tool generates a flat file that you can download locally.

Mapping Specification Export to Microsoft Excel

Export the mapping specification logic to Microsoft Excel to share the mapping specification logic with business teams who do not have access to the Analyst tool.

After you export the mapping specification logic to Microsoft Excel, you can choose to open the file in Microsoft Excel, or save the file to another location. Analysts can edit the file and upload it to a shared location for further review. Analysts can then edit the mapping specification to incorporate the review comments.

Exporting a Mapping Specification to Microsoft Excel

Export the mapping specification logic to Microsoft Excel to document, share, and review the mapping specification logic.

1. From the **Actions** menu, select **Export**.

   The **Export** wizard appears.
2. Select **Excel**.
3. Click **Next**.
4. Enter a name for the Microsoft Excel file.

   By default, the Analyst tool uses the mapping specification name to name the Microsoft Excel file.
5. Click **Finish**.

   A browser pop-up enables you to open or save the file.

Mapping Specifications in Microsoft Excel

After you export the mapping specification logic to Microsoft Excel, you can view the mapping specification objects, properties, and relationships between objects in separate worksheets in an Excel workbook.

The following mapping specification logic appears in the Microsoft Excel workbook:

Column Mapping

Contains the following information that appears in the **Column Mapping** view of the mapping specification:

- Mapping specification name
- Sources
- Transformation and target columns

Contains hyperlinks for any columns related to mapping specification objects. Click a hyperlink to access the related object in another worksheet.

Properties

Contains the mapping specification properties.

Expressions

Contains any expressions that appear in aggregators, lookups, and rules.

Filters

Contains the expressions that appear in filters.

Joins

Contains the following join information between sources:

- Join Name. Name of the join.
- Join type. The type of join.
- Master. The master data object for the join.
- Detail. The detail data object for the join.
- Condition. Join condition for the join.

Mapping Specification Export to PowerCenter

Export a mapping specification to PowerCenter to share the mapping specification logic with a PowerCenter developer. When you export a mapping specification to PowerCenter you can take advantage of capabilities that are exclusive to PowerCenter such as partitioning, web services, and recovery.

When you export a mapping specification to PowerCenter, you can choose to use the target in the mapping specification or select a target that exists in the Model repository.

If you do not select a target in the mapping specification during export, the Analyst tool exports the mapping specification as a mapplet to PowerCenter. The PowerCenter developer can use this mapplet as a source in a mapping and select a target. The developer can create a session, workflow, and connection objects. The developer can run the workflow.

If you select a target in the Model repository during export, the Analyst tool exports the mapping specification as a mapping to PowerCenter. The Analyst tool export process creates a non-reusable session for this mapping in a workflow. Before the developer runs the workflow, the developer must create the connection objects for the sources and the target in the mapping.

When you export a mapping specification to PowerCenter, you can choose to the following export options:

Export to a PowerCenter Repository

You must specify the PowerCenter repository connection properties and the folder in the PowerCenter repository where you want to export the mapping specification. The connection information for sources and target are not exported.

Export to an XML File

If you do not have permissions to export the mapping specification to a PowerCenter repository, you can choose to export the mapping specification to an XML file. You can download the XML file and share it with a PowerCenter developer. The developer can import the XML file into the PowerCenter repository and use the mapping specification logic as a mapplet or mapping.

In the PowerCenter Designer, the mapping specification objects appear in the appropriate node in the folder. For example, the mapping specification target appears in the Targets node.

PowerCenter developers can view descriptions about mapping specification objects after the mapping specification logic is exported to PowerCenter. Viewing descriptions about mapping specification objects enables PowerCenter developers to understand the logical flow of a mapping specification. In PowerCenter, these descriptions appear in the transformation properties or in the descriptions of the ports in a transformation.

PowerCenter Repository Connection Properties

When you export the mapping specification logic to PowerCenter, you must specify connection properties to connect to the PowerCenter repository.

Configure the PowerCenter repository connection properties:

Host Name

PowerCenter domain gateway host name.

Port Number

PowerCenter domain gateway port number.

User Name

Repository user name.

Password

Password for repository user name.

Security Domain

LDAP security domain name, if one exists. Otherwise, enter "Native."

Repository Name

PowerCenter repository name.

Code Page

Repository code page.

PowerCenter Version

Version of the PowerCenter repository.

Exporting a Mapping Specification to PowerCenter

Export the mapping specification logic to a PowerCenter repository or an XML file if you do not have permissions on the PowerCenter repository.

1. From the **Actions** menu, select **Export**.

   The **Export** wizard appears.
2. Select **PowerCenter**.
3. Click **Next**.
4. Choose to export the mapping specification as a mapplet or a mapping to PowerCenter.
   - To export the mapping specification as a mapplet, select the option to use the target in the mapping specification.
   - To export the mapping specification as a mapping, select a target from the **Target Objects** panel.
5. Optionally, click **Data Preview** to preview the target data.
6. Optionally, click **Properties** to view the target properties.
7. Click **Next**.
8. Choose to export the mapping specification to an XML file or to a PowerCenter repository.
9. Enter the export properties.
10. Click **Next**.
11. Optionally, enter another name for the mapping specification.
12. Optionally, enter a description.
13. If you chose to export the mapping specification to a PowerCenter repository, select a folder in the PowerCenter repository to export the mapping specification.
14. Click **Finish**.

    The Export to PowerCenter process creates a mapplet or mapping based on the target selected during export in the PowerCenter repository. If you choose to export to an XML file, you can download the file and provide it to a Powercenter developer.

Mapping Specification Export as a Virtual Table

Export the mapping specification logic as a virtual table in a virtual database that analysts and developers can use to run SQL queries against the data.

A virtual table is a table in a virtual database. A virtual database defines uniform views of data and makes the data available for end users to query. A virtual database contains the virtual schemas that contain the virtual tables that define the database structure. End users can run SQL queries against the virtual tables as if they were physical database tables.

When you export the mapping specification logic as a virtual table, you can create a virtual database or select an existing virtual database. The Analyst tool creates a virtual table in the virtual database and displays parameters to use as connection information for an ODBC or JDBC connection. You can use an ODBC or JDBC client tool to access the virtual table. You can view the virtual database as an application for the Data Integration Service in the Administrator tool. You can use a JDBC client tool to run SQL queries against the virtual table. You must install the Informatica JDBC driver on the machine that you connect to the virtual database from.

After you export the mapping specification logic as a virtual table, you can edit the mapping specification and export the logic to the same virtual table in the same virtual database. The Analyst tool updates the existing virtual table in the virtual database with the modified logic of the mapping specification.

Exporting a Mapping Specification as a Virtual Table

Export the mapping specification logic as a virtual table that analysts and developers can query.

1. From the **Actions** menu, select **Export**.

   The **Export** wizard appears.
2. Select **Virtual table**.
3. Click **Next**.
4. Choose to select an existing virtual database or another virtual database.
   - To choose an existing virtual database, select a virtual database.
   - To choose another virtual database, click **New virtual database** and enter a name and an optional description and click **OK**.
5. Optionally, view the virtual database properties in the **Properties** panel.
6. Click **Next**.
7. Enter the name and an optional description for the virtual table.
8. Click **Finish**.
9. Optionally, copy the connection parameters to your clipboard.

   You can use these connection parameters to create an ODBC or JDBC connection to access the virtual table.

Mapping Specification Export to a Table Definition

Export the mapping specification target as a table definition that developers can use to create a table in a database.

When you export the mapping specification target as a table definition, you can select the database type for the table definition. The Analyst tool generates an SQL script that contains the table definition based on the structure of the mapping specification target.

You can download this SQL script and provide it to a developer who can run the script to create the table in a database. In PowerCenter, a developer can use the table to create a table definition in a mapping. In the Developer tool, a developer can import the table as a physical data object to use in a mapping.

Exporting a Mapping Specification to a Table Definition

Export a mapping specification to a table definition that a developer can use to create a table in a database.

1. From the **Actions** menu, select **Export**.

   The **Export** wizard appears.
2. Select **Table Definition**.
3. Click **Next**.

4. Select a database type.
5. Click **Finish**.

   The Analyst tool displays a pop up to open or save an SQL script file.

Loading Mapping Specification Results to a Table

Load the results of the mapping specification to a target table data object that exists in the Model repository.

1. From the **Actions** menu, select **Export**.

   The **Export** wizard appears.
2. Select the **Table** option.
3. Click **Next**.
4. Optionally, enter a name for the load operation.
5. Click **Next**.
6. Optionally, select the **Truncate target data** option to truncate data in the target.
7. In the **Target Object** panel, select a target.
8. Optionally, click **Data Preview** to preview the data in the target.
9. Optionally, click **Properties** to view the target properties.
10. Click **Finish**.

Loading the Results of a Mapping Specification to a Flat File

Select the .csv or .txt file format to load the results of a mapping specification. If you select .txt, the Analyst tool creates a flat file with tab separated values.

1. From the **Actions** menu, select **Export**.

   The **Export** wizard appears.
2. Select the **Flat File** option.
3. Click **Next**.
4. Optionally, enter a name.
5. Optionally, select **Export to first line**, to export the column names from the first line.
6. Select a file format to save the file.
7. Select a code page.
8. Click **Finish**.

   Note: The Analyst tool may take some time to generate the flat file. Do not close the mapping specification before the prompts to download the flat file appear. Use Microsoft Notepad to download this file.

Rules and Guidelines for Loading Mapping Specification Results to a Flat File

Due to differences in flat file formats, some mapping specification results may not be loaded to a flat file.

Use the following rules and guidelines when you load the mapping specification results to a flat file:

Verify that the load file name does not contain non-English characters.

If you select a file name that contains non-English characters during the load process, the generated .txt or .csv flat file displays incorrect file and column names and incorrect data. Specify a file name that contains English characters.

Verify the number of rows in the mapping specification results.

If the results of a mapping specification contain a very large number of rows, the load operation may take a while to complete. If the load operation hangs, contact an administrator to disable and recycle the Analyst Service and cancel the load job from the Data Integration Service.

INDEX

A

adding and editing an advanced filter
  mapping specification configuration 29
  mapping specification filters 29
aggregator properties
  mapping specification aggregators 24
Analyst Tool workspace
  Design workspace 10
automatic source and target column mapping
  mapping specification configuration 17

C

Column Mapping panel
  mapping specification properties 10
column patterns
  mapping specification profiles 37
column profile
  mapping specification 35
column statistics
  mapping specification profiles 37
column values
  mapping specification profiles 36

D

Data Preview panel
  mapping specification properties 12
  mapping specification results 12
Design workspace
    Design workspace
        Design workspace object
          rule specification 10
      reference table 10
  mapping specification 10

F

flat files
  loading mapping specification results to a flat file 45

L

logical data object
  mapping specification 8
lookup conditions
  mapping specification lookups 30
lookup properties
  mapping specification lookups 30
lookups
  adding a lookup 31

M

mapping selected columns
  mapping specification configuration 17
mapping specification
  column profile 35
  creating a mapping specification 16
  editing a mapping specification 16
  editing an SQL query 20
  lmapping specification example 9
  logical data object 8
  mapping specification configuration 15
  mapping specification development 14
  mapping specification objects 21
  mapping specification types 13
  mapping specification validation 18
  SQL query 20
  view a mapping specification in Excel 40
mapping specification aggregators
  adding a simple aggregator 25
  adding an advanced aggregator 25
  aggregator properties 24
  editing a simple aggregator 25
  editing an advanced aggregator 25
  mapping specification objects 24
mapping specification configuration
  adding a lookup 31
  adding a source 22
  adding an SQL query 20
  adding and editing a rule 26
  adding and editing an advanced filter 29
  automatic source and target column mapping 17
  automatically map columns 17
  creating and editing a rule 27
  editing a lookup 32
  editing a source 22
  editing the target 23
  loading mapping specification results to a flat file 45
  loading mapping specification results to a table 45
  mapping selected columns 17
  mapping specification 15
  mapping specification export 39
  removing column relationships 18
mapping specification development
  mapping specification 14
mapping specification example
  mapping specification 9
mapping specification export
  export mapping specification results as a virtual table 43
  export to a table definition 44
  export to Excel 40
  export to PowerCenter 41
  exporting mapping specification logic as a virtual table 44
  exporting mapping specification logic to a table definition 44
  exporting mapping specification logic to Excel 40
  exporting mapping specification logic to PowerCenter 43

mapping specification export *(continued)*
mapping specification configuration 39
PowerCenter repository connection properties 42
mapping specification filters
adding a simple filter 29
adding an advanced filter 29
adding and editing an advanced filter 29
editing a filter 29
mapping specification objects 28
mapping specification joins
adding and editing a simple join 33
mapping specification objects 32
mapping specification lookups
lookup conditions 30
lookup properties 30
mapping specification objects 30
mapping specification objects
mapping specification 21
mapping specification aggregators 24
mapping specification filters 28
mapping specification joins 32
mapping specification lookups 30
mapping specification rules 26
mapping specification sources 22
mapping specification target 22
mapping specification profiles
column patterns 37
column statistics 37
column values 36
profile summary 36
running a column profile 35
viewing column profile results 37
mapping specification properties
Column Mapping panel 10
Data Preview panel 12
Profile Summary panel 13
Properties panel 10
SQL Query panel 13
mapping specification results
Data Preview panel 12
Profile Summary panel 13
SQL Query panel 13
mapping specification rules
adding and editing a rule 26
creating and editing a rule 27
editing a reusable rule 28
mapping specification objects 26
reusable rule properties 27
mapping specification sources
finding columns 18
mapping specification objects 22
mapping specification target
edit options for targets 23
editing the target 23
finding columns 18
mapping specification objects 22
target datatypes 23
mapping specification types
mapping specification 13
mapping specification validation
mapping specification 18
validation errors during a load operation 19
mapping specification validation *(continued)*
validation errors during data preview 19
validation errors during mapping specification development 19

P

PowerCenter repository connection
PowerCenter repository connection properties 42
profile summary
mapping specification profiles 36
Profile Summary panel
mapping specification properties 13
mapping specification results 13
Properties panel
mapping specification properties 10
rule properties 10
target properties 10
Where Used 10

R

rule properties
Properties panel 10

S

SQL query
adding an SQL query 20
editing an SQL query 20
mapping specification 20
SQL Query panel
mapping specification properties 13
mapping specification results 13

T

tables
loading mapping specification results to a table 45
target datatypes
mapping specification targets 23
target properties
Properties panel 10

V

validation errors
during a load operation 19
during data preview 19
during mapping specification development 19

W

Where Used
Properties panel 10