



Informatica®

Informatica® Test Data Management  
10.5.6

# Administrator Guide

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# Preface

Use the Informatica *Test Data Management Administrator Guide* to learn how to perform administrator tasks in Test Data Management. Understand how to assign permissions, create connections, and configure Test Data Management settings.

## 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.

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# CHAPTER 1

## Introduction to TDM Administration

This chapter includes the following topics:

- [TDM Administration Overview, 10](#)
- [TDM Architecture, 11](#)
- [Test Data Warehouse Architecture, 15](#)
- [Test Data Manager, 16](#)

### TDM Administration Overview

Test Data Management (TDM) provides data masking, data subset, data discovery, and data generation capabilities to manage non production data in your organization. You can create a test data warehouse and create and store data sets from Test Data Manager.

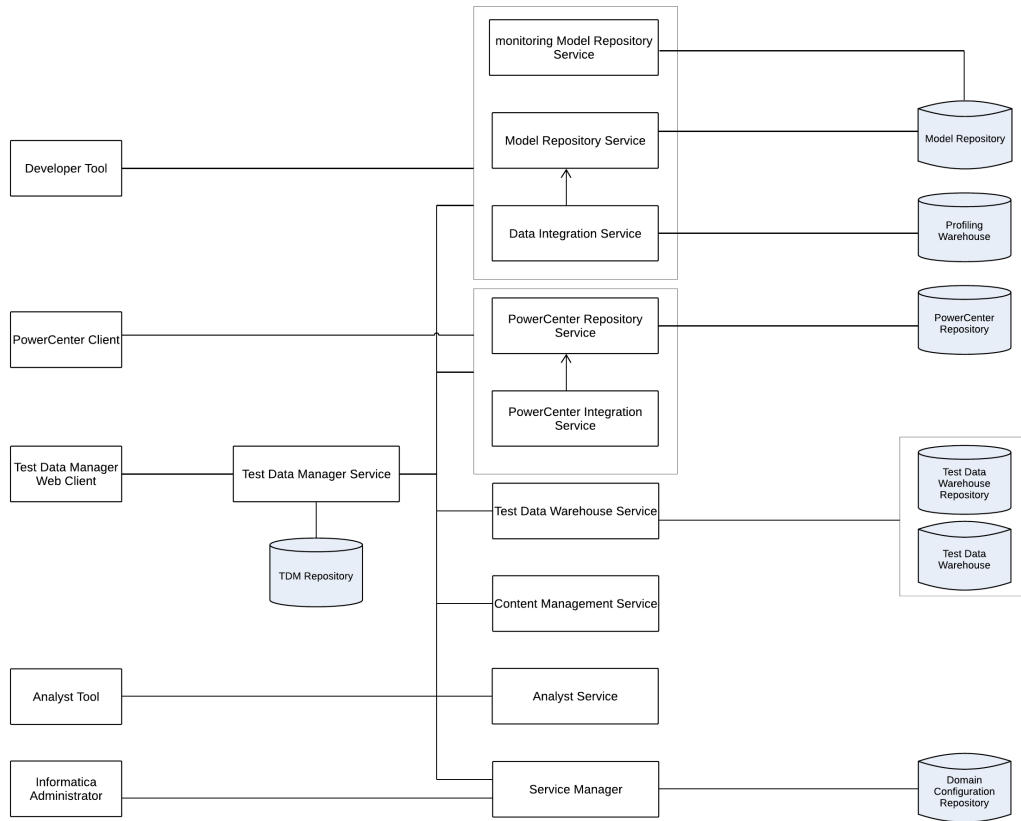
As a TDM administrator, you can perform the following tasks:

- Manage security and users. Create roles and assign privileges and roles to users from Informatica Administrator to distribute duties among users and restrict user access.
- Configure system preferences. You can set system preferences to configure workflows for optimum performance. You can also set system preferences to configure data domain sensitivity levels for tracking the sensitive data that users want to mask.
- Create connections. Create connections to application services to perform data masking, data subset, data discovery, and data generation operations. Create connections to the source and target databases to perform these operations.
- Create a connection to the Test Data Warehouse Service to store data sets in the test data warehouse.
- Integrate a test tool with TDM. Integrate a test tool to directly copy flat file results to the test tool.
- Create and manage pass phrases. Create and manage pass phrases to use in format preserving encryption masking operations.
- Create and manage global parameters. Use global parameters in plans and entities across Test Data Manager.
- Perform server management tasks. You can configure licenses and restart the TDM Server from Informatica Administrator.
- Configure log level settings. You can set severity levels to generate logs for the different TDM operations.

# TDM Architecture

The TDM architecture consists of tools, the Test Data Manager Service and other application services, and databases.

The following image shows the components of TDM:



The following table describes the architecture components:

| Component                           | Description   |
|-------------------------------------|---|
| Test Data Manager                   | A web-based client that you can use to perform data discovery, data subset, data masking, data generation operations, and operations on data sets in the test data warehouse. |
| Developer Tool                      | A thick client that you use to create and run profiles to analyze the data.   |
| PowerCenter Client                  | The PowerCenter Client application consists of the tools to manage the repository and to design mappings, mapplets, and sessions to load the data.                            |
| Informatica Administrator           | A web application that you can use to manage, monitor, deploy, and undeploy data flows.   |
| Model Repository Service            | An application service that manages the Model repository.   |
| monitoring Model Repository Service | A Model Repository service that monitors statistics for Data Integration Service jobs.  |

| Component                       | Description  |
|---------------------------------|--|
| Data Integration Service        | An application service that performs data integration tasks for the Developer tool and external clients and data coverage tasks for the test data warehouse.   |
| Test Data Manager Service       | An application service that runs Test Data Manager and manages connections between service components and Test Data Manager users.   |
| PowerCenter Repository Service  | An application service that manages the PowerCenter repository where the metadata for workflows and mappings that you generate in Test Data Manager are stored.  |
| PowerCenter Integration Service | An application service that runs sessions and workflows that you run from Test Data Manager.   |
| Test Data Warehouse Service     | An application service that runs the test data warehouse and manages the test data warehouse repository and the test data warehouse.   |
| Content Management Service      | An application service that manages reference data.  |
| Analyst Service                 | An application service that manages the connections between service components and the users that have access to the Business Glossary.  |
| Service Manager                 | The Informatica Service that manages all domain operations and manages the domain configuration repository.  |
| TDM repository                  | A relational database that stores the components that you define in Test Data Manager, such as policies, projects, entities, and rules. The TDM repository stores metadata that you import into Test Data Manager from a source database or from the PowerCenter repository.   |
| Test data warehouse repository  | A relational database that stores the source table metadata and project metadata for data sets that you create.  |
| Test data warehouse             | A relational database that stores the source data that you include in a data set.  |
| Profiling warehouse             | A relational database that stores profile results.   |
| Model repository                | A relational database that stores the table metadata for data discovery profiles. The Model repository also stores connection information for connections that you create in TDM.  |
| Domain configuration repository | A relational database that stores the connections used to run profiles, users for the Informatica domain, and metadata for the Informatica domain.   |
| PowerCenter repository          | A relational database that stores the metadata for workflows and mappings that you generate from Test Data Manager. It stores information required to extract, transform, and load data. It also stores administrative information such as permissions and privileges for users and groups that have access to the repository. |

## TDM Tools

TDM tools consist of Test Data Manager, Informatica Developer, Informatica Administrator, and the PowerCenter Client.

You can use the following tools to perform administrative tasks for TDM:

**Test Data Manager**

A web-based application that you can use to create connections, integrate a test tool with TDM, and manage preferences and dictionaries.

**Informatica Developer**

A client application that you use to create and export profiles for data discovery.

**Informatica Administrator**

A web-based client that a domain administrator uses to manage application services and create users and user groups.

**PowerCenter Client**

A client application that you use to configure permissions on folders and connection objects for the PowerCenter repository.

## TDM Server

The TDM Server runs TDM and integrates with the Test Data Manager Service and other Informatica application services to perform data subset, data masking, data generation, and data discovery operations.

## TDM Services

TDM application services consist of the Test Data Manager Service, profiling services, and PowerCenter application services. The application services are created in the Administrator tool.

TDM requires the following services:

**PowerCenter Repository Service**

An application service that manages the PowerCenter repository. The PowerCenter Repository Service accepts requests from the PowerCenter Integration Service when a workflow runs.

**PowerCenter Integration Service**

An application service that runs workflows that users generate in Test Data Manager for TDM operations.

**Model Repository Service**

An application service that manages the Model repository for data discovery operations.

**monitoring Model Repository Service**

A Model Repository service that monitors statistics for Data Integration Service jobs.

**Data Integration Service**

An application service that performs data discovery operations. The Data Integration Service connects to the Model Repository Service to store metadata from data discovery profiles in the Model repository. When you run a profile, the Data Integration Service also stores data from data discovery profiles in the profiling warehouse. The Data Integration Service performs data movement and data masking operations in the Hadoop environment. To run a Hadoop plan, TDM uses the Data Integration Service to push down the transformation logic into Hadoop clusters.

**Analyst Service**

An application service that manages the Analyst tool. TDM uses the Analyst tool to link TDM global objects to objects in the Business Glossary. The license for the Analyst Service must support Business Glossary.

### **Test Data Warehouse Service**

An application service that manages the test data warehouse repository and the test data warehouse. The Test Data Warehouse Service connects to the test data warehouse repository to copy the metadata created when you create a data set. It creates the tables for data sets in the test data warehouse.

### **Test Data Manager Service**

The TDM application service that manages the TDM repository. Test Data Manager accesses the Test Data Manager Service to use database content from the TDM repository and to connect to other services to perform TDM operations.

## TDM Databases

The databases component of TDM consists of the TDM repository, the Model repository, the PowerCenter repository, the profiling warehouse, the test data warehouse repository, and the domain configuration repository.

TDM uses the following databases:

### **TDM repository**

A relational database that contains tables that TDM requires to run and the tables that store metadata.

### **Model repository**

A relational database that stores table metadata for data discovery profiles and the connections that you create in Test Data Manager.

### **PowerCenter repository**

A relational database that stores all of the metadata required to run workflows.

### **Profiling warehouse**

A relational database that stores profile results for data discovery.

### **Test data warehouse repository**

A relational database that stores the source table metadata and project metadata for data sets that you store in the test data warehouse.

### **Test data warehouse**

A relational database that stores the source data that you include in data sets that you store in the test data warehouse.

### **Domain configuration repository**

A relational database that stores the connections used to run profiles, users for the Informatica domain, and metadata for the Informatica domain.

## TDM Connections

To perform data discovery, data subset, data masking, and data generation operations, you need a profiling connection, a repository connection, and source and target database connections.

To perform data discovery operations, an application requires connections to a database source and a Data Integration Service. To perform data subset and masking operations, workflows that you generate from plans require connections to services, the TDM repository, the PowerCenter repository, and source and target databases. To perform data generation operations, workflows that you generate from plans require connections to services, the TDM repository, the PowerCenter repository, and target schema metadata. To create data sets and to perform operations on data sets TDM requires a connection to a source and to a Test Data Warehouse Service.

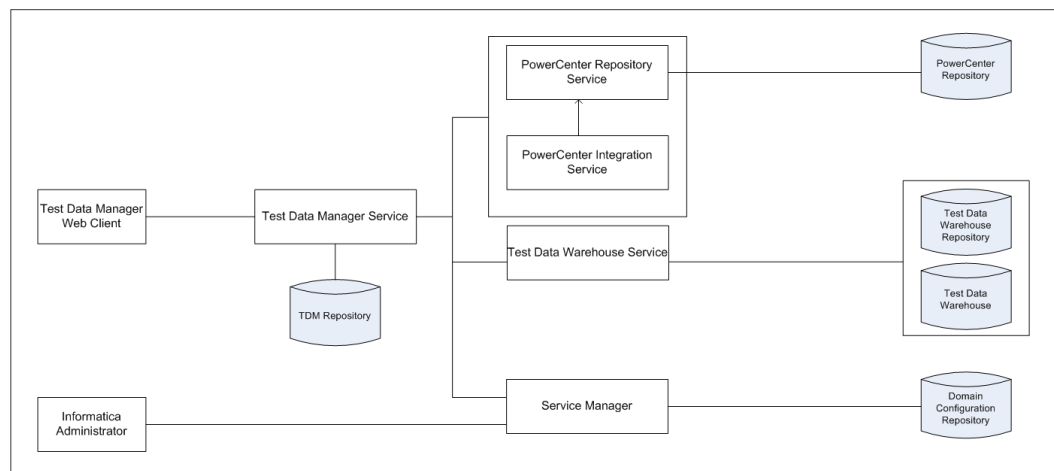
TDM uses the following connections:

- Profiling connection. Create a connection to the Data Integration Service that you want to run data discovery operations. The profiling connection includes connection details for the Model Repository Service associated with the Data Integration Service.
- TDM repository connection. Create a connection to the TDM repository when you create the Test Data Manager Service from the Administrator tool. Test Data Manager uses the TDM repository to store the metadata from sources that you import.
- PowerCenter repository connection. Create a connection to the PowerCenter repository that you want to store workflow metadata. If the TDM repository and the PowerCenter repository exist in the same schema, copy the connection information for the TDM repository.
- Test data warehouse connection. Create a connection to the test data warehouse repository and the test data warehouse when you create the Test Data Warehouse Service.
- Database connections. Create connections to the source and target databases to perform data discovery, data subset, and data masking operations. Import target metadata schema into the TDM repository to perform data generation operations. When you create a database connection in Test Data Manager, you define connection information for workflows and profiles. When you run a workflow or profile, Test Data Manager uses the connection information to create connection objects in the PowerCenter repository or the Model repository.
- Test tool connection. To run workflows to copy flat file results to a test tool, you must first integrate the test tool server with TDM. TDM connects to the integrated server to copy the flat file to the configured location.

## Test Data Warehouse Architecture

The test data warehouse architecture consists of tools, services, and databases.

The following image shows the architecture components for the test data warehouse:



When you run a plan to create a data set, the Test Data Warehouse Service stores the project and source table metadata in the test data warehouse repository. The service creates the tables in the test data warehouse. The PowerCenter Integration Service then moves the data into the tables in the test data warehouse.

The following table describes the architecture components:

| Component                       | Description  |
|---------------------------------|--|
| Test Data Manager               | A web-based client that you can use to perform data discovery, data subset, data masking, and data generation operations.  |
| Informatica Administrator       | A web application that you can use to manage, monitor, deploy, and undeploy data flows.  |
| Test Data Manager Service       | An application service that runs Test Data Manager and manages connections between service components and Test Data Manager users.   |
| PowerCenter Repository Service  | An application service that manages the PowerCenter repository where the metadata for workflows and mappings that you generate in Test Data Manager are stored.  |
| PowerCenter Integration Service | An application service that runs sessions and workflows that you run from Test Data Manager.   |
| Test Data Warehouse Service     | An application service that runs the test data warehouse and manages the test data warehouse repository and the test data warehouse.   |
| Service Manager                 | The Informatica Service that manages all domain operations and manages the domain configuration repository. The Informatica Service that manages all domain operations and manages the domain configuration repository.  |
| TDM repository                  | A relational database that stores the components that you define in Test Data Manager, such as policies, projects, entities, and rules. The TDM repository stores metadata that you import into Test Data Manager from a source database or from the PowerCenter repository. |
| Test data warehouse repository  | A relational database that stores the source table metadata and project metadata for data sets that you create in Test Data Manager.   |
| Test data warehouse             | A relational database that stores the source data that you include in a data set.  |
| Domain configuration repository | A relational database that stores the connections used to run profiles, users for the Informatica domain, and metadata for the Informatica domain.   |
| PowerCenter repository          | A relational database that stores the metadata for workflows and mappings that you generate from Test Data Manager.  |

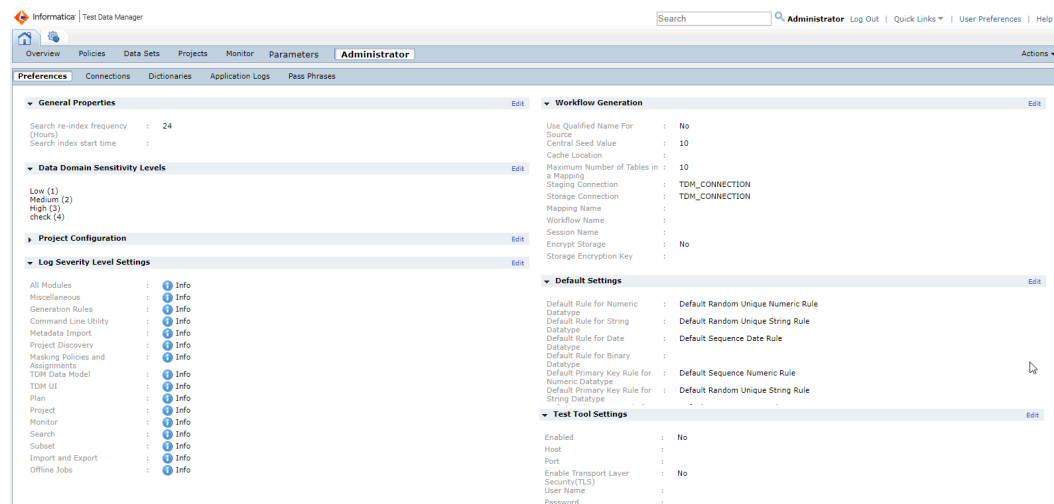
## Test Data Manager

Test Data Manager is a web-based interface that you use to manage connections, preferences and workflow settings.

Access Test Data Manager from a web browser.



The following image shows Test Data Manager:



A workspace is a container for Test Data Manager components. You can click on connections and other Test Data Manager components to open them in another workspace.

Test Data Manager contains views. By default, an administrator can access the **Administrator** view of Test Data Manager. To access the other views in Test Data Manager, assign the privileges for the other views to the administrator account.

The **Administrator** view contains the following tabs:

#### Preferences

Configure connections to application services and configure workflow preferences, data domain sensitivity levels, data discovery profiling, Hive properties, and default settings for data generation.

#### Connections

Configure connections to source and target databases.

#### Dictionaries

View and manage dictionaries to use in masking rules.

#### Application Logs

View and search application level logs.

#### Pass Phrases

Create and manage pass phrases to use in format preserving encryption masking operations.

The contents panel shows an overview of the items in a view.

The details panel shows additional details for a single item in the contents panel.

## Logging In to Test Data Manager

To access Test Data Manager, enter the host name and port number of the TDM Server in a web browser.

To log in, enter a user name and password defined in Informatica Administrator.

1. In the address bar of a web browser, enter the Test Data Manager URL.

- Use the following format if Transport Layer Security is enabled:

`https://hostname:portnumber/tdm/`

- Use the following format if Transport Layer Security is not enabled:

```
http://hostname:portnumber/tdm/
```

Where:

- *hostname* is the host name or IP address of the machine where you installed the TDM Server.
- *portnumber* is the port number. The default is 6643 if Transport Layer Security is enabled. The default is 6605 if Transport Layer Security is not enabled.

For example, you might enter the following URL:

```
http://TXW1779:6643/tdm/
```

The **Login** dialog box of Test Data Manager appears.

2. Enter the user name and password.

Select the security domain. If the Informatica domain is configured to use LDAP authentication, the default security domain **Native**.

3. Click **Login**.

Test Data Manager opens.

To log out of Test Data Manager, click **Logout**.

## Changing Passwords

To change the password for the administrator account and for other users, use the Administrator tool.

## CHAPTER 2

# User and Role Administration

This chapter includes the following topics:

- [User and Role Administration Overview, 19](#)
- [User and User Group Management, 20](#)
- [Privileges, 20](#)
- [PowerCenter Permissions, 37](#)
- [Project Permission, 38](#)
- [Data Set Permission, 39](#)

## User and Role Administration Overview

Test Data Manager users are stored in the Informatica domain. To perform tasks in the Test Data Manager, users need roles, privileges, and permissions. User roles, privileges, and permissions are assigned through the Administrator tool and the PowerCenter Client.

The Informatica administrator creates users and groups in the Administrator tool. Work with the Informatica administrator to edit any user or group in the Administrator tool. You cannot edit users or groups in the Test Data Manager.

Users need the following types of roles, privileges, and permissions:

### **Informatica privileges**

Includes privileges to change passwords and to generate and start workflows. The Informatica administrator assigns privileges in the Administrator tool.

### **Test Data Manager Service roles and privileges**

Includes roles and privileges to perform actions in the Test Data Manager. Assign Test Data Manager Service roles and privileges in the Administrator tool.

### **Test Data Warehouse Service roles and privileges**

Includes roles and privileges to perform actions to create and modify data sets in the test data warehouse. Assign Test Data Warehouse Service roles and privileges in the Administrator tool.

### **PowerCenter permissions**

To generate and start workflows, users need folder and connection object permissions. Use the PowerCenter Client to assign permissions to users.

The Informatica administrator and the TDM administrator perform the following tasks to manage TDM users:

1. The Informatica administrator creates Test Data Manager users in the domain and assigns privileges to them.
2. The TDM administrator assigns Test Data Manager and Test Data Warehouse roles and privileges.
3. The Informatica administrator assigns folder and connection object permissions in the PowerCenter Client.

You can manage user roles, privileges, and permissions from the Administrator Tool. For more information, see the *Informatica Administrator Guide*.

## User and User Group Management

After the Informatica administrator creates domain users, you can create users and grant access to Test Data Manager actions through roles and privileges.

After you install, the Informatica administrator has administrative privileges. Use the Informatica administrator to create users and user groups.

**Note:** Before you can create users and groups, the default Informatica administrator user must assign Security Administration privileges to the Test Data Administrator user.

## Privileges

Privileges determine the tasks that users can perform in the Test Data Manager. Users require domain privileges and Test Data Manager privileges.

The Informatica administrator assigns domain privileges, and you assign Test Data Manager Service privileges. Domain privileges work in conjunction with Test Data Manager Service privileges. For example, a developer that creates data masking or data generation plans needs Test Data Manager Service privileges to create the plans in the Test Data Manager. The developer also needs domain privileges to generate and run the data masking or data generation operations.

**Note:** Administrators can create custom roles that contain privileges and assign roles to users from the Informatica Administrator.

## Data Integration Service Privilege

The following table lists the actions that users can perform with the privilege in the Application Administration privilege group:

| Privilege Name      | Description   |
|---------------------|---|
| Manage Applications | User can perform the following actions: <ul style="list-style-type: none"> <li>- Back up and restore an application to a file.</li> <li>- Deploy an application to a Data Integration Service and resolve name conflicts.</li> <li>- Start an application after deployment.</li> <li>- Find an application.</li> <li>- Start or stop objects in an application.</li> <li>- Configure application properties.</li> </ul> |

The following table lists the required permissions and the actions that users can perform with the privilege in the Profiling Administration privilege group:

| Privilege Name               | Permission On   | Description  |
|------------------------------|---|--|
| Drilldown and Export Results | Read on project<br>Execute on relational data source connection is also required to drill down on live data | User can perform the following actions: <ul style="list-style-type: none"> <li>- Drill down profiling results.</li> <li>- Export profiling results.</li> </ul> |

## Model Repository Service Privileges

The Model repository object permissions determine the tasks that users can perform on objects in projects.

The following table lists the required permissions and the actions that users can perform with the Model Repository Service privileges:

| Privilege                         | Permission       | Description   |
|-----------------------------------|------------------|---|
| N/A                               | Read on project  | User can view projects and objects in projects.   |
| N/A                               | Write on project | User can create, edit, and delete objects in projects.  |
| N/A                               | Grant on project | User can grant and revoke permissions on projects for users and groups.   |
| Access Developer                  | N/A              | User can access the Model repository from the Developer tool.   |
| Create, Edit, and Delete Projects | N/A              | User can perform the following actions: <ul style="list-style-type: none"> <li>- Create projects.</li> <li>- Upgrade the Model Repository Service.</li> </ul>   |
| Create, Edit, and Delete Projects | Write on project | User can perform the following actions: <ul style="list-style-type: none"> <li>- Edit projects.</li> <li>- Delete projects if the user created the projects.</li> </ul>                               |
| Show Security Details             | N/A              | User can view the following details: <ul style="list-style-type: none"> <li>- Names of projects for which users do not have read permission.</li> <li>- Error and warning message details.</li> </ul> |

# Informatica Privileges

The Informatica administrator assigns PowerCenter Repository Service privileges to users that need to perform subset, masking, and generation operations. All users need the domain privilege to change passwords. Users do not need domain privileges to perform profiling operations.

**Note:** If the server is on a non EN locale, you require permission on the PowerCenter Repository Service in addition to service privileges. You require this permission to upload mappings in a workflow. Assign permission from the **Security > Users > Permissions** tab on the Administrator tool.

## PowerCenter Repository Service Privileges to Perform Subset, Masking, and Generation Operations

The following table lists the PowerCenter Repository Service privileges that users need to perform data subset, data masking, and data generation operations:

| Privilege Group     | Privileges   |
|---------------------|--|
| Runtime Objects     | Create, Edit, and Delete<br>Monitor<br>Execute   |
| Tools               | Access Designer<br>Access Repository Manager<br>Access Workflow Manager<br>Access Workflow Monitor             |
| Design Objects      | Create, Edit, and Delete   |
| Sources and Targets | Create, Edit, and Delete   |
| Folders             | Create, Copy, and Manage Versions  |
| Global Objects      | Create Connections<br>Manage Deployment Groups<br>Execute Deployment groups<br>Create Labels<br>Create Queries |

## PowerCenter Repository Service Administrator Role to Generate and Run Workflows

To generate and run workflows, users must have the system-defined role **Administrator** on the PowerCenter Repository Service in addition to the required TDM privileges.

## Privilege to Change Passwords

Test Data Manager users need the domain privilege, Access Informatica Administrator, to change their passwords in the Administrator tool.

## Test Data Manager Service Privileges

Test Data Manager Service privileges determine the actions that users can perform using Test Data Manager. Configure privileges on the **Security** tab of the Administrator tool.

The following table describes each Test Data Manager privilege group:

| Privilege Group | Description  |
|-----------------|--|
| Administration  | Includes privileges to create and manage connections, pass phrases, roles and assign privileges to users and user groups from the Informatica Administrator, manage repositories, add licenses, and set up workflow and project attributes.<br><b>Note:</b> Before you can create users and groups, the default Informatica administrator user must assign Security Administration privileges to the Test Data Administrator user. |
| Data Domains    | Includes privileges to view and manage data domains in the Test Data Manager.  |
| Data Masking    | Includes privileges to view and manage masking rules and policy assignments in the Test Data Manager.  |
| Data Subset     | Includes privileges to view and manage subset objects including entities, groups and templates in the Test Data Manager.   |
| Policies        | Includes privileges to view and manage policies in the Test Data Manager.  |
| Projects        | Includes privileges to view and manage projects, audit and import metadata, and execute plans and workflows in the Test Data Manager.  |
| Rules           | Includes privileges to view and manage masking and generation rules in the Test Data Manager.  |
| Data Generation | Includes privileges to view and manage test data generation in the Test Data Manager.  |

## Administration Privilege Group

The privileges in the Administration privilege group determine the administration tasks that Test Data Administrators can perform.

The following table lists the privileges in the Administration privilege group and the permissions required to perform a task on an object:

| Privilege          | Includes Privileges | Permission | Description   |
|--------------------|---------------------|------------|---|
| Manage Preferences | -                   | Write      | <p>User can perform the following actions on the Informatica Administrator and Test Data Manager:</p> <ul style="list-style-type: none"> <li>- Create roles.</li> <li>- Edit roles.</li> <li>- Delete roles.</li> <li>- View roles.</li> <li>- Associate roles to users.</li> <li>- Associate privileges to users.</li> <li>- Associate roles to user groups.</li> <li>- Associate privileges to user groups.</li> <li>- Create pass phrases.</li> <li>- Edit pass phrases.</li> <li>- Delete pass phrases.</li> <li>- Edit pass phrase permissions.</li> <li>- Create global parameters.</li> <li>- Edit global parameters.</li> <li>- Delete global parameters.</li> <li>- Import global parameter files.</li> <li>- Add licenses.</li> <li>- Set up the TDM repository.</li> <li>- Set up the PowerCenter repository.</li> <li>- Set up data domain sensitivity levels.</li> <li>- Configure a test data warehouse repository.</li> <li>- Configure a test data warehouse.</li> <li>- Set up project custom attributes.</li> <li>- Set up workflow generation attributes.</li> <li>- Enable data discovery.</li> <li>- Set up profiling services.</li> <li>- View administration objects.</li> <li>- Configure keyword search indexing options.</li> </ul> |
| View Connections   | -                   | Read       | <p>User can perform the following actions on the Connections page in the Test Data Manager:</p> <ul style="list-style-type: none"> <li>- View connections.</li> <li>- Test connections.</li> </ul>  |
| Manage Connections | View Connections    | Write      | <p>User can perform the following actions on the Connections page in the Test Data Manager:</p> <ul style="list-style-type: none"> <li>- Create connections.</li> <li>- Edit connections.</li> <li>- Delete connections.</li> <li>- View connections.</li> <li>- Test connections.</li> <li>- Configure a test data warehouse repository.</li> <li>- Configure a test data warehouse.</li> </ul>  |



## Data Domains Privilege Group

The privileges in the Data Domains privilege group determine the tasks that users can perform on data domains on the Policies page of the Test Data Manager.

The following table lists the privileges in the Data Domains privilege group and the permissions required to perform a task on an object:

| Privilege           | Includes Privileges | Permission | Description  |
|---------------------|---------------------|------------|--|
| View Data Domains   | -                   | Read       | User can view data domains in the Test Data Manager.   |
| Manage Data Domains | View Data Domains   | Write      | User can perform the following actions on data domains in the Test Data Manager: <ul style="list-style-type: none"><li>- Create data domains.</li><li>- Edit data domains.</li><li>- Delete data domains.</li><li>- View data domains.</li></ul> |

## Data Masking Privilege Group

The privileges in the Data Masking privilege group determine the tasks that users can perform on the Project | Define | Data Masking view of the Test Data Manager. You can assign rules and policies to table columns from this view.

The following table lists the privileges in the Data Masking privilege group and the permissions required to perform a task on an object:

| Privilege           | Includes Privileges | Permission | Description  |
|---------------------|---------------------|------------|--|
| View Data Masking   | -                   | Read       | User can view data masking assignments in the Test Data Manager.   |
| Manage Data Masking | View Data Masking   | Write      | User can perform the following data masking assignment actions in the Test Data Manager: <ul style="list-style-type: none"><li>- Add rule and policy assignments.</li><li>- Delete rule and policy assignments.</li><li>- Override rule properties.</li><li>- View data masking assignments.</li></ul> |

## Data Subset Privilege Group

The privileges in the Data Subset privilege group determine the tasks that users can perform on data subset objects in the Test Data Manager.

The following table lists the privileges in the Data Subset privilege group and the permissions required to perform a task on an object:

| Privilege          | Includes Privileges | Permission | Description   |
|--------------------|---------------------|------------|---|
| View Data Subset   | -                   | Read       | User can perform the following data subset actions in the Test Data Manager: <ul style="list-style-type: none"><li>- View groups.</li><li>- View templates</li><li>- View entities.</li><li>- View recent project objects.</li></ul>  |
| Manage Data Subset | View Data Subset    | Write      | User can perform the following data subset actions in the Test Data Manager: <ul style="list-style-type: none"><li>- Create groups.</li><li>- Edit groups.</li><li>- Delete groups.</li><li>- Add group parameters.</li><li>- Create templates.</li><li>- Edit templates.</li><li>- Delete templates.</li><li>- Add template parameters.</li><li>- Create entity.</li><li>- Edit entity.</li><li>- Delete entity.</li><li>- Add entity criteria.</li><li>- Enable relationships.</li><li>- Disable relationships.</li><li>- Edit relationships</li><li>- Review and act on changes.</li><li>- Mark change review as complete.</li></ul> |

## Policies Privilege Group

The privileges in the Policies privilege group determine the tasks that users can perform on Policies in the Test Data Manager.

The following table lists the privileges in the Policies privilege group and the permissions required to perform a task on an object:

| Privilege       | Includes Privileges | Permission | Description  |
|-----------------|---------------------|------------|--|
| View Policies   | -                   | Read       | User can view policies in the Test Data Manager.   |
| Manage Policies | View Policies       | Write      | User can perform the following policy actions policies in the Test Data Manager: <ul style="list-style-type: none"><li>- Create policies.</li><li>- Edit policies.</li><li>- Delete policies.</li><li>- View policies.</li></ul> |

## Projects Privilege Group

The privileges in the Projects privilege group determine the tasks that users can perform on Projects in the Test Data Manager.

The following table lists the privileges in the Projects privilege group and the permissions required to perform a task on an object:

| Privilege      | Includes Privileges | Permission | Description  |
|----------------|---------------------|------------|--|
| View Project   | -                   | Read       | User can perform the following actions on projects in the Test Data Manager: <ul style="list-style-type: none"> <li>- View projects.</li> <li>- View plans.</li> <li>- View plan detail reports.</li> <li>- View plan audit reports.</li> <li>- View recent projects.</li> <li>- Create test data warehouse plans</li> <li>- Manage test data warehouse plans</li> <li>- Generate test data warehouse plans</li> <li>- Execute test data warehouse plans</li> </ul>  |
| Manage Project | View Project        | Write      | User can perform the following actions on projects in the Test Data Manager: <ul style="list-style-type: none"> <li>- Create projects</li> <li>- Edit projects.</li> <li>- Delete projects</li> <li>- View projects.</li> <li>- Create parameters</li> <li>- Edit parameters</li> <li>- Delete parameters</li> <li>- Associate users to projects.</li> <li>- Associate user groups to projects.</li> <li>- Associate or remove rules to projects.</li> <li>- Associate or remove policies to projects</li> <li>- Create plans.</li> <li>- Edit plans.</li> <li>- Delete plans.</li> <li>- Generate plans.</li> </ul> |

| Privilege        | Includes Privileges | Permission | Description   |
|------------------|---------------------|------------|---|
| Discover Project | -                   | Write      | <p>User can perform the following discover actions on projects in the Test Data Manager:</p> <ul style="list-style-type: none"> <li>- Classify tables.</li> <li>- Mark discovery as complete.</li> <li>- Associate data domains to columns.</li> <li>- Mark columns as restricted.</li> <li>- Mark columns as sensitive</li> <li>- Set similar value column</li> <li>- Remove similar value columns</li> <li>- Add primary keys</li> <li>- Remove primary Keys</li> <li>- Create logical constraints</li> <li>- View logical constraints</li> <li>- Edit logical Constraints</li> <li>- Delete Logical Constraints</li> <li>- View projects.</li> <li>- View profiled data domains.</li> <li>- Approve or reject profile data domains.</li> <li>- Mark data domain classification as complete.</li> <li>- View profiled primary keys.</li> <li>- Approve or reject profiled primary keys.</li> <li>- Mark primary key discovery as complete.</li> <li>- View profiled entities.</li> <li>- Approve or reject profiled entities.</li> <li>- Mark entity discovery as complete.</li> <li>- View project risk analysis.</li> <li>- View recent project sensitive data distribution.</li> <li>- Delete tables.</li> </ul> |
| Generate Project | -                   | Write      | User can generate workflows in the Test Data Manager.   |
| Execute Project  | -                   | Write      | <p>User can perform the following execute actions on projects in the Test Data Manager:</p> <ul style="list-style-type: none"> <li>- Execute plans.</li> <li>- Execute workflows.</li> <li>- Stop workflows.</li> <li>- Abort workflows.</li> <li>- Recover workflows.</li> <li>- View plan execution.</li> </ul>   |
| Monitor Project  | -                   | Read       | <p>User can perform the following monitor actions on projects in the Test Data Manager:</p> <ul style="list-style-type: none"> <li>- Monitor project jobs.</li> <li>- View project job logs.</li> <li>- Monitor jobs across projects.</li> <li>- View job logs across projects.</li> </ul>  |
| Audit Project    | -                   | Read       | User can view recent activity on projects and plans in the Test Data Manager.   |
| Import Metadata  | -                   | Write      | <p>User can perform the following actions on projects in the Test Data Manager:</p> <ul style="list-style-type: none"> <li>- Import sources.</li> <li>- Delete sources.</li> <li>- Delete tables.</li> </ul>  |

**Note:** A user with Manage Project privilege must have at least the following levels of privileges to be able to create a plan with each component.

- View connection from the Administration privilege group. To create a plan.
- View data subset from the Data Subset privilege group. To create a plan with subset components.
- View masking rules from the Rules privilege group. To create a plan with masking components.
- View generation rules from the Rules privilege group. To create a plan with generation components.

## Rules Privilege Group

The privileges in the Rules privilege group determine the tasks that users can perform on data masking and data generation rules in the Test Data Manager.

The following table lists the privileges in the Data Masking privilege group and the permissions required to perform a task on an object:

| Privilege               | Includes Privileges   | Permission | Description  |
|-------------------------|-----------------------|------------|--|
| View Masking Rules      | -                     | Read       | User can view masking rules in the Test Data Manager.  |
| Manage Masking Rules    | View Masking Rules    | Write      | User can perform the following actions on data masking rules in the Test Data Manager: <ul style="list-style-type: none"> <li>- Create masking rules.</li> <li>- Edit masking rules.</li> <li>- Delete masking rules.</li> <li>- View masking rules.</li> </ul>                |
| View Generation Rules   | -                     | Read       | User can view generation rules in the Test Data Manager.   |
| Manage Generation Rules | View Generation Rules | Write      | User can perform the following actions on data generation rules in the Test Data Manager: <ul style="list-style-type: none"> <li>- Create generation rules.</li> <li>- Edit generation rules.</li> <li>- Delete generation rules.</li> <li>- View generation rules.</li> </ul> |

## Data Generation Privilege Group

The privileges in the Data Generation privilege group determine the test data generation tasks that users can perform in the Test Data Manager.

The following table lists the privileges in the Data Generation privilege group and the permissions required to perform a task on an object:

| Privilege              | Includes Privileges  | Permission | Description  |
|------------------------|----------------------|------------|--|
| View Data Generation   | -                    | Read       | User can view data generation rule assignments in the Test Data Manager.   |
| Manage Data Generation | View Data Generation | Write      | User can perform the following actions on data generation in the Test Data Manager: <ul style="list-style-type: none"> <li>- View data generation rule assignments</li> <li>- Add data generation rule assignments.</li> <li>- Delete data generation rule assignments.</li> <li>- Override data generation rule assignments.</li> </ul> |

## Test Data Warehouse Service Privileges

Test Data Warehouse Service privileges determine the test data warehouse tasks that users can perform using Test Data Manager. Configure privileges on the **Security** tab of the Administrator tool.

The Test Data Warehouse privilege group includes the Data Sets privilege group.

The privileges in the Data Sets privilege group determine the tasks that users can perform on data sets in Test Data Manager.

The following table lists the privileges in the Data Sets privilege group and the permissions required to perform a task on an object:

| Privilege             | Includes Privileges | Permission | Description   |
|-----------------------|---------------------|------------|---|
| View Data Set         | -                   | Read       | User can perform the following actions on data sets in Test Data Manager: <ul style="list-style-type: none"> <li>- View</li> <li>- Create data coverage tasks</li> </ul>  |
| Manage Data Set       | View Data Set       | Write      | User can perform the following actions on data sets in Test Data Manager: <ul style="list-style-type: none"> <li>- View</li> <li>- Create</li> <li>- Edit</li> <li>- Delete</li> <li>- Classify tables</li> <li>- Create a subset of a data set</li> </ul> <p><b>Note:</b> With Read permission</p> <ul style="list-style-type: none"> <li>- Publish a data pack to the self-service portal from a plan.</li> </ul> |
| View Data in Data Set | View Data Set       | Read       | User can open data sets and view the data set metadata and the data in data sets.   |

| Privilege               | Includes Privileges  | Permission | Description  |
|-------------------------|--|------------|--|
| Manage Data in Data Set | <ul style="list-style-type: none"> <li>- View Data Set</li> <li>- View Data in Data Set</li> </ul> | Write      | User can perform the following actions on data sets in Test Data Manager: <ul style="list-style-type: none"> <li>- View data sets</li> <li>- View data in tables</li> <li>- Insert data in tables</li> <li>- Update data in tables</li> <li>- Delete data in tables</li> <li>- Tag data in tables</li> <li>- Perform Fill Cell jobs in a data coverage task</li> </ul> |
| Reset Data Set          | View Data Set  | Execute    | User can perform the following actions on data sets in Test Data Manager: <ul style="list-style-type: none"> <li>- View data sets</li> <li>- Reset data sets</li> </ul>  |

## Self-Service Portal Privileges

To perform tasks in the self-service portal you require certain privileges. Test Data Warehouse Service privileges determine the tasks that you can perform in the self-service portal. Configure privileges on the **Security** tab of the Administrator tool.

The Test Data Warehouse privilege group includes the Data Sets privilege group.

The privileges in the Data Sets privilege group determine the tasks that you can perform in the self-service portal.

The following table lists the privileges in the Data Sets privilege group and the self-service portal tasks that you can perform with each privilege:

| Privilege             | Includes Privileges | Description   |
|-----------------------|---------------------|---|
| View Data Set         | -                   | User can perform the following actions in the self-service portal: <ul style="list-style-type: none"> <li>- View data pack</li> <li>- Monitor</li> </ul>  |
| Manage Data Set       | View Data Set       | User can perform the following actions in the self-service portal: <ul style="list-style-type: none"> <li>- View data pack</li> <li>- Manage data pack</li> <li>- Create a copy of a data pack</li> <li>- Create a subset of a data pack</li> <li>- Monitor</li> </ul>                                    |
| View Data in Data Set | View Data Set       | User can perform the following actions in the self-service portal: <ul style="list-style-type: none"> <li>- View data pack</li> <li>- View related data</li> <li>- View data in a data pack</li> <li>- Export data in a data pack</li> <li>- Perform data coverage analysis</li> <li>- Monitor</li> </ul> |

| Privilege               | Includes Privileges  | Description  |
|-------------------------|--|--|
| Manage Data in Data Set | <ul style="list-style-type: none"> <li>- View Data Set</li> <li>- View Data in Data Set</li> </ul> | <p>User can perform the following actions in the self-service portal:</p> <ul style="list-style-type: none"> <li>- View data pack</li> <li>- View related data</li> <li>- View data in a data pack</li> <li>- Manage data in a data pack</li> <li>- Export data in a data pack</li> <li>- Perform data coverage analysis</li> <li>- Monitor</li> </ul> |
| Reset Data Set          | View Data Set  | <p>User can perform the following actions in the self-service portal:</p> <ul style="list-style-type: none"> <li>- View data pack</li> <li>- Deploy data pack</li> <li>- Reset a data pack</li> <li>- Monitor</li> </ul>   |

The following tasks require permission and privileges in addition to the Data Sets privileges:

| Task                           | Additional Permission or Privilege  |
|--------------------------------|---|
| Create a copy of a data pack   | <p>You require the following additional privileges and permission:</p> <ul style="list-style-type: none"> <li>- PowerCenter Repository Service privileges</li> <li>- Permission on the folder in the PowerCenter repository</li> <li>- View Connection privilege in the Test Data Manager Service privileges</li> </ul> |
| Create a subset of a data pack | <p>You require the following additional privileges and permission:</p> <ul style="list-style-type: none"> <li>- PowerCenter Repository Service privileges</li> <li>- Permission on the folder in the PowerCenter repository</li> <li>- View Connection privilege in the Test Data Manager Service privileges</li> </ul> |
| View related data              | <p>You require the following additional privileges and permission:</p> <ul style="list-style-type: none"> <li>- PowerCenter Repository Service privileges</li> <li>- Permission on the folder in the PowerCenter repository</li> </ul>  |
| Deploy a data pack             | <p>You require the following additional privileges and permission:</p> <ul style="list-style-type: none"> <li>- PowerCenter Repository Service privileges</li> <li>- Permission on the folder in the PowerCenter repository</li> </ul>  |
| Reset a data pack              | <p>You require the following additional privileges and permission:</p> <ul style="list-style-type: none"> <li>- View Connection privilege in the Test Data Manager Service privileges</li> <li>- Execute permission on the connection</li> </ul>  |

## Optional Privileges

Based on the tasks performed, you might need to assign additional privileges to some users.

Users can link TDM global objects with business terms from a business glossary. To create, edit, and delete links to business terms, users need Model Repository Service and Analyst Services privileges. Users must have at least read permission on the glossary or the specific business term that they access. You can configure permission from the Analyst Tool.

Users can view terms linked to any object they have view privileges on. To create, edit, or delete a link to an object, users must have Manage privilege on the object.



The following table lists the minimum Model Repository Service privileges that users need to perform asset linking tasks:

| Privilege Group                         | Privileges                                 |
|---|--|
| Model Repository Service Administration | Access Analyst<br>Access the Analyst Tool. |

The following table lists the minimum Analyst Service privileges that users need to perform asset linking tasks:

| Privilege Group  | Privileges   |
|------------------|--|
| Workspace Access | Glossary Workspace<br>Access the glossary workspace within the Analyst Tool. |

Users must have access permission to the Analyst Service to view or edit linked business terms. Assign a user access permission from the **Security** view in Informatica Administrator. To assign multiple users or user groups access permission, select the service in the Domain Navigator of the Informatica Administrator. Select the **Permissions** view and edit direct permissions.

For information on assigning permission from Informatica Administrator, see the *Informatica Administrator Guide*.

## Test Data Manager Custom Roles

The Test Data Manager custom roles include the Test Data Administrator, Test Data Developer, Test Data Project DBA, Test Data Project Developer, Test Data Project Owner, Test Data Risk Manager, Test Data Specialist, and Test Engineer.

### Test Data Administrator

The following table lists the default privileges assigned to the Test Data Administrator custom role:

| Privilege Group | Privilege Name   |
|-----------------|--|
| Projects        | Audit Project  |
| Administration  | <ul style="list-style-type: none"> <li>- View Connections</li> <li>- Manage Connections</li> <li>- Manage Preferences</li> </ul> |

## Test Data Developer

The following table lists the default privileges assigned to the Test Data Developer custom role:

| Privilege Group | Privilege Name  |
|-----------------|---|
| Policies        | <ul style="list-style-type: none"><li>- View Policies</li><li>- Manage Policies</li></ul>   |
| Data Domains    | <ul style="list-style-type: none"><li>- View Data Domains</li><li>- Manage Data Domains</li></ul>   |
| Rules           | <ul style="list-style-type: none"><li>- View Masking Rules</li><li>- Manage Masking Rules</li><li>- View Generation Rules</li><li>- Manage Generation Rules</li></ul> |
| Projects        | Audit Project   |

## Test Data Project DBA

The following table lists the default privileges assigned to the Test Data Project DBA custom role:

| Privilege Group | Privilege Name   |
|-----------------|--|
| Projects        | <ul style="list-style-type: none"><li>- View Project</li><li>- Execute Project</li><li>- Monitor Project</li><li>- Audit Project</li></ul> |
| Administration  | <ul style="list-style-type: none"><li>- View Connections</li><li>- Manage Connections</li></ul>  |
| Data Sets       | <ul style="list-style-type: none"><li>- View Data Set</li><li>- View Data in Data Set.</li></ul>   |

## Test Data Project Developer

The following table lists the default privileges assigned to the Test Data Project Developer custom role:

| Privilege Group | Privilege Name  |
|-----------------|---|
| Policies        | View Policies   |
| Rules           | <ul style="list-style-type: none"><li>- View Masking Rules</li><li>- View Generation Rules</li><li>- Manage Generation Rules</li></ul>  |
| Data Domains    | View Data Domains   |
| Projects        | <ul style="list-style-type: none"><li>- View Project</li><li>- Discover Project</li><li>- Execute Project</li><li>- Monitor Project</li><li>- Audit Project</li><li>- Import Metadata</li></ul> |

| Privilege Group | Privilege Name   |
|-----------------|--|
| Data Masking    | <ul style="list-style-type: none"> <li>- View Data Masking</li> <li>- Manage Data Masking</li> </ul>       |
| Data Subset     | <ul style="list-style-type: none"> <li>- View Data Subset</li> <li>- Manage Data Subset</li> </ul>         |
| Data Generation | <ul style="list-style-type: none"> <li>- View Data Generation</li> <li>- Manage Data Generation</li> </ul> |
| Administration  | <ul style="list-style-type: none"> <li>- View Connections</li> <li>- Manage Connections</li> </ul>         |
| Data Sets       | <ul style="list-style-type: none"> <li>- View Data Set</li> <li>- View Data in Data Set</li> </ul>         |

### Test Data Project Owner

The following table lists the default privileges assigned to the Test Data Project Owner custom role:

| Privilege Group | Privilege Name   |
|-----------------|--|
| Policies        | View Policies  |
| Rules           | <ul style="list-style-type: none"> <li>- View Masking Rules</li> <li>- View Generation Rules</li> <li>- Manage Generation Rules</li> </ul>   |
| Data Domains    | View Data Domains  |
| Projects        | <ul style="list-style-type: none"> <li>- View Project</li> <li>- Manage Project</li> <li>- Discover Project</li> <li>- Execute Project</li> <li>- Monitor Project</li> <li>- Audit Project</li> <li>- Import Metadata</li> </ul> |
| Data Masking    | <ul style="list-style-type: none"> <li>- View Data Masking</li> <li>- Manage Data Masking</li> </ul>   |
| Data Subset     | <ul style="list-style-type: none"> <li>- View Data Subset</li> <li>- Manage Data Subset</li> </ul>   |
| Data Generation | <ul style="list-style-type: none"> <li>- View Data Generation</li> <li>- Manage Data Generation</li> </ul>   |

| Privilege Group | Privilege Name   |
|-----------------|--|
| Administration  | <ul style="list-style-type: none"> <li>- View Connections</li> <li>- Manage Connections</li> </ul>   |
| Data Sets       | <ul style="list-style-type: none"> <li>- View Data Set</li> <li>- View Data in Data Set</li> <li>- Manage Data Set</li> <li>- Manage Data in Data Set</li> <li>- Reset Data Set</li> </ul> |

### Test Data Risk Manager

The following table lists the default privileges assigned to the Test Data Risk Manager custom role:

| Privilege Group | Privilege Name  |
|-----------------|---|
| Policies        | View Policies   |
| Rules           | <ul style="list-style-type: none"> <li>- View Masking Rules</li> <li>- View Generation Rules</li> </ul> |
| Data Domains    | View Data Domains   |
| Projects        | Audit Project   |

### Test Data Specialist

The following table lists the default privileges assigned to the Test Data Specialist custom role:

| Privilege Group | Privilege Name   |
|-----------------|--|
| Policies        | View Policies  |
| Rules           | <ul style="list-style-type: none"> <li>- View Masking Rules</li> <li>- Manage Masking Rules</li> <li>- View Generation Rules</li> <li>- Manage Generation Rules</li> </ul>   |
| Data Domains    | <ul style="list-style-type: none"> <li>- View Data Domains</li> <li>- Manage Data Domains</li> </ul>   |
| Projects        | <ul style="list-style-type: none"> <li>- View Project</li> <li>- Manage Project</li> <li>- Discover Project</li> <li>- Execute Project</li> <li>- Monitor Project</li> <li>- Audit Project</li> <li>- Import Metadata</li> </ul> |
| Data Masking    | <ul style="list-style-type: none"> <li>- View Data Masking</li> <li>- Manage Data Masking</li> </ul>   |
| Data Subset     | <ul style="list-style-type: none"> <li>- View Data Subset</li> <li>- Manage Data Subset</li> </ul>   |

| Privilege Group | Privilege Name   |
|-----------------|--|
| Data Generation | <ul style="list-style-type: none"> <li>- View Data Generation</li> <li>- Manage Data Generation</li> </ul>   |
| Administration  | <ul style="list-style-type: none"> <li>- View Connections</li> <li>- Manage Connections</li> </ul>   |
| Data Sets       | <ul style="list-style-type: none"> <li>- View Data Set</li> <li>- View Data in Data Set</li> <li>- Manage Data Set</li> <li>- Manage Data in Data Set</li> <li>- Reset Data Set</li> </ul> |

## Test Engineer

The following table lists the default privileges assigned to the Test Engineer custom role:

| Privilege Group | Privilege Name   |
|-----------------|--|
| Projects        | <ul style="list-style-type: none"> <li>- View Project</li> <li>- Monitor Project</li> </ul>  |
| Data Sets       | <ul style="list-style-type: none"> <li>- View Data Set</li> <li>- Manage Data Set</li> <li>- Reset Data Set</li> <li>- View Data in Data Set</li> <li>- Manage Data in Data Set</li> </ul> |

# PowerCenter Permissions

To generate workflows, users need folder and connection object permissions. Assign permissions in the PowerCenter Client.

## Folder Permissions

Each project created in Test Data Manager is associated with a folder in the PowerCenter repository. Each data set task that you perform, such as reset and data set subset, is associated with a folder in the PowerCenter repository. To view objects in the folder and run workflows for objects in the folder, users need folder permissions.

When you create a project, the TDM Server creates a folder in the PowerCenter repository for the project. By default, the owner of a project is also the owner of the folder and has read, write, and execute permissions for the folder.

When you run a reset or data set subset task on a data set, the TDM server creates a folder corresponding to the data set in the PowerCenter repository. By default, the user who runs the first task on the data set is also the owner of the folder and has read, write, and execute permissions for the folder.

Work with the Informatica administrator to assign folder permissions in the PowerCenter Repository Manager.

## Connection Object Permissions

Users need connection object permissions to generate and run workflows.

Work with the Informatica administrator to assign the read and execute permissions to users that run workflows requiring the connection object. Assign write permissions to users that have the privilege to manage connections in the Test Data Manager.

Alternatively, the Informatica administrator can specify a default set of permissions for connection objects in the Workflow Manager. If enhanced security is enabled in the Workflow Manager, the Workflow Manager assigns the default permissions to users and user groups.

## Project Permission

You can assign project permissions to control access to projects. A project owner and the domain administrator can assign and edit permission to users and user groups.

You can access and perform tasks in a project based on the permissions that you have.

Projects have the following levels of permission:

- Read
- Write
- Execute

To perform any task in a project, you must also have the minimum required level of privileges as a TDM user.

The following table lists the project permission levels, the tasks that you can perform with each level, and the minimum required privileges for each task:

| Permission | Description  | Minimum Required Privilege  |
|------------|--|---|
| Read       | <ul style="list-style-type: none"><li>- Open and view the project.</li><li>- Monitor logs for the project workflows.</li></ul>   | <ul style="list-style-type: none"><li>- View project</li><li>- Monitor project</li><li>- Audit project</li></ul>  |
| Write      | <ul style="list-style-type: none"><li>- Open and view the project.</li><li>- Monitor logs for the project workflows.</li><li>- Import metadata.</li><li>- Delete tables.</li><li>- Create entities, groups, and templates.</li><li>- Assign rules.</li><li>- Generate workflows.</li><li>- Run profiles.</li><li>- Copy the project.</li><li>- Delete the project.</li></ul> | <ul style="list-style-type: none"><li>- View project</li><li>- Monitor project</li><li>- Audit project</li><li>- Import metadata</li><li>- Generate project</li><li>- Manage project</li><li>- Discover project</li></ul> |
| Execute    | <ul style="list-style-type: none"><li>- Open and view the project.</li><li>- Monitor logs for the project workflows.</li><li>- Run workflows.</li></ul>  | <ul style="list-style-type: none"><li>- View project</li><li>- Monitor project</li><li>- Audit project</li><li>- Execute project</li></ul>  |

Assign and edit project permission from the **Permissions** tab in a project in Test Data Manager.

# Data Set Permission

You can assign permissions to control access to data sets that you store in the test data warehouse.

When you run the plan that creates the data set, you become the owner of the data set. A data set owner and the domain administrator can add users and user groups and assign the required level of access. You can access data sets based on the permissions that you have. If you do not have the required permissions, you cannot open data sets that appear in search results.

Data sets have the following levels of permission:

- Read
- Write
- Execute

To perform any task that uses the data set, you must also have the minimum required level of privileges as a TDM user.

The following table lists the permission levels, the tasks that you can perform with each level, and the minimum required privileges for each task:

| Permission | Description  | Minimum Required Privilege   |
|------------|--|--|
| Read       | <ul style="list-style-type: none"> <li>- Open and view the data set.</li> <li>- Monitor logs for the data set.</li> <li>- View the data in tables in the data set</li> <li>- Create and delete data coverage tasks</li> <li>- Generate and execute a data set subset plan</li> </ul>   | <ul style="list-style-type: none"> <li>- View Data Set</li> <li>- View Data in Data Set</li> </ul>   |
| Write      | <ul style="list-style-type: none"> <li>- Open and view the data set.</li> <li>- Monitor logs for the data set.</li> <li>- View the data in tables in the data set</li> <li>- Create a data set.</li> <li>- Edit the description and tags of the data set.</li> <li>- Classify tables in a data set.</li> <li>- Edit, delete, and add data in the tables in a data set.</li> <li>- Add and edit tags to data in a data set.</li> <li>- Delete a data set.</li> <li>- Perform Fill Cell jobs in data coverage tasks</li> <li>- Create a data set subset plan.</li> </ul> | <ul style="list-style-type: none"> <li>- View Data Set</li> <li>- View Data in Data Set</li> <li>- Manage Data Set</li> <li>- Manage Data in Data Set</li> </ul> |
| Execute    | <ul style="list-style-type: none"> <li>- Open and view the data set.</li> <li>- Monitor logs for the data set.</li> <li>- View the data in tables in the data set</li> <li>- Reset a data set.</li> </ul>  | <ul style="list-style-type: none"> <li>- View Data Set</li> <li>- View Data in Data Set</li> <li>- Reset Data Set</li> </ul>                                     |

The owner and the administrator can lock and unlock a data set to restrict edit of the data set, edit of data in the data set, and reset of the data set.

## CHAPTER 3

# Security Administration

This chapter includes the following topics:

- [Security Administration Overview, 40](#)
- [Kerberos Authentication for Test Data Manager, 40](#)
- [TDM Server Security, 41](#)
- [Password Encryption, 42](#)
- [Session Timeout, 43](#)

## Security Administration Overview

To add security to the TDM Server, you can configure Kerberos authentication, password encryption, the Secure Sockets Layer (SSL) protocol, and the Transport Layer Security (TLS) protocol.

You can implement Kerberos authentication for the Test Data Manager. TDM also supports Kerberos authentication for specific source and connection types.

You can also configure the TDM Server to use SSL and TLS. When you configure SSL and TLS, you ensure secure communication with the Informatica domain.

TDM also supports SSL authentication for source and target connections.

Implement password encryption for additional security. Use the command line interface to encrypt the repository password. If you implement SSL, you can also use the command line interface to encrypt the keystore password and the password for the command line interface

To log users out of the Test Data Manager after a period of inactivity, configure session timeout.

## Kerberos Authentication for Test Data Manager

Kerberos is a computer network authentication protocol that uses cryptography to verify the identity of clients and servers. If you use Kerberos to authenticate Test Data Manager users, you must edit configuration files for the TDM Server.

You can enable Kerberos authentication in a domain that runs on a Windows network. The network must use Microsoft Active Directory Domain Services (AD DS) as the Kerberos principal database.



The Kerberos server uses the Kerberos tickets created during the Windows authentication process to verify the identity of the TDM Server and the Test Data Manager users before establishing a secure connection between the two.

To use Kerberos authentication, configure the following files for the TDM Server:

- `krb5.conf`. Contains configuration information for Kerberos. This file is stored in the following location: `<INFA_HOME>/TDM/datadirect`.
- `org.eclipse.virgo.kernel.authentication.config`. Contains authentication properties for the TDM Server, including driver information. This file is stored in the following location: `<INFA_HOME>/TDM/configuration`.

If you have multiple TDM servers, you must configure the files on each server.

You can use Test Data Management in an Informatica domain configured to use Kerberos cross-realm authentication. Kerberos cross-realm authentication enables Informatica clients that belong to one Kerberos realm to authenticate with nodes and application services that belong to another Kerberos realm.

For information about how to configure Kerberos network authentication and to configure the Informatica domain to use Kerberos cross-realm authentication, see the *Informatica 10.4.0 Security Guide*.

## TDM Server Security

TDM communication with the Informatica domain depends on the configuration of the domain. If the domain is configured to run in TLS mode, the communication with the domain is secure. You can configure TLS and SSL to ensure secure a connection for the Test Data Manager web application.

You configure TLS and SSL when you create the Test Data Manager Service. If you disable TLS and SSL when you create the service, you can configure TLS and SSL by editing the service properties. You must also create a keystore file. The keystore file stores security certificates for SSL encryption. Specify the security certificate that you want to use for SSL when you create the keystore file, and set a password for the keystore file.

### Creating a Keystore File for SSL

Before you can enable SSL, you must export the SSL certificate that you want to use. Use the `keytool` utility bundled with Java to create a keystore file.

1. Open a command prompt in Windows or a terminal in Linux or UNIX.
2. Run the following command:

```
keytool -import -file company_certificate.cer -keystore client.ks
```

3. The utility prompts you to enter a keystore password.  
The command creates a keystore file called `client.ks`.
4. Save the keystore file to a directory. You must provide the location of the keystore file when you create or edit the Test Data Manager Service properties.

## Configuring TLS and SSL

Enable TLS and SSL for the Test Data Manager web application. Enable TLS and SSL when you create the Test Data Manager Service or edit the Test Data Manager Service properties.

1. Log in to the Informatica Administrator.
2. Select the Test Data Manager Service and click **Edit the Test Data Manager Server Configuration** tab.
3. Select the Enable Transport layer Security (TLS) check box and enter the following properties.
  - HTTPS Port. Port number for the HTTPS connection. The default is 6643.
  - Keystore File. The path for the keystore file with relation to the TDM installation directory.
  - Keystore Password. The keystore password.
  - SSL Protocol. Secure Sockets Layer protocol to use. Default is TLS.

## Configuring SSL for the Command Line Interface

Edit the `userConfig.ilm` file to enable SSL and TLS for the command line interface.

1. Open the following file in a text editor:

```
<TDM Installation Directory>\utilities\ilmcli\conf\userConfig.ilm
```
2. Set the following property to true:

```
isHTTPS=true
```
3. Save the `userConfig.ilm` file.
4. Restart the TDM Server.

## Password Encryption

Use the command line interface to encrypt the keystore password, the PowerCenter repository password, and the password used by the command line interface to access the TDM repository.

Then, update the following configuration file that store the password:

- `<TDM Installation Directory>\utilities\ilmcli\conf\userConfig.ilm`. Stores the password used by the command line interface to access the TDM repository

After you edit the configuration files, restart the TDM Server.

## Creating an Encrypted Password

Use the command line interface to create an encrypted password.

1. At the command line, switch to the directory where the command line executable is located. By default, the executable is installed in the following directory:

```
<TDM Installation Directory>\utilities\ilmcli\bin
```

2. Enter the following command:

```
ilmcmd -Encrypt password_to_encrypt
```

The command returns the encrypted password.

## Encrypting the Password for the Command Line Interface

You can encrypt the password used by the the command line interface to access the TDM repository. The password for the command line interface is stored in the `userConfig.ilm` file.

1. Open the following file in a text editor:

```
<TDM Installation Directory>\utilities\ilmcli\conf\userConfig.ilm
```

2. Set the password to the encrypted value from the command line interface.  
For example, you might enter the following value for the password:

```
password=uWlm059lmcj6QyLVzfpu6rK0BzpePJ472MBYOS85x6I=
```

3. Set the value of the following line to true:

```
isPasswordEncrypted=true
```

4. Save the `userConfig.ilm` file.

## Session Timeout

To determine how long an inactive user stays logged into the Test Data Manager, configure the session timeout.

The Test Data Manager logs a user out after a period of inactivity. You can alter the `web.xml` configuration file to change the amount of time that a user can remain inactive in the Test Data Manager.

The default session timeout is two minutes. The minimum is two minutes. Enter -1 to disable session timeout.

## Configuring Session Timeout

Configure the Test Data Manager session timeout in the `web.xml` file.

1. Go to the TDM configuration directory:

```
<TDM Installation Directory>/TDM/configuration
```

2. Find the web configuration file:

```
web.xml
```

Back up the file before you make any changes.

3. Use a text editor to edit the `web.xml` file. To change the session timeout, find the `session-timeout` property.

The `session-timeout` property has a default of two minutes, as shown in the following example:

```
<session-config>  
  <session-timeout>2</session-timeout>  
</session-config>
```

Change the session timeout to the amount of time in minutes that you want a user to remain inactive before the Test Data Manager logs out the user. Enter -1 to disable session timeout.

4. Save the `web.xml` file.
5. Restart the TDM Server.

## CHAPTER 4

# System Preferences

This chapter includes the following topics:

- [System Preferences Overview, 44](#)
- [General Properties, 44](#)
- [Data Domain Sensitivity, 45](#)
- [Project Configuration, 45](#)
- [Workflow Generation, 45](#)
- [Naming Convention for Workflows, Mappings and Sessions, 48](#)
- [Default Settings, 50](#)
- [Log Severity Level Settings, 51](#)
- [Data Discovery, 52](#)
- [Test Tool Integration, 53](#)
- [Hive Properties, 54](#)

## System Preferences Overview

System preferences determine global options that appear for all users of Test Data Manager. Configure system preferences for Test Data Manager before users complete any subset, masking, or generation operations.

System preferences include search index properties, data domain sensitivity levels, custom project fields, log severity level settings, default settings for data generation, test tool integration settings, and global workflow properties.

You configure system preferences in the **Administrator | Preferences** view.

## General Properties

You cannot perform a search from the search field unless you index objects in the TDM repository at least once. You can schedule a date and time to perform a complete indexing of TDM objects. You can change the rate at which TDM indexes objects to optimize the keyword search return times.

You can set the start time for search indexing and the frequency of indexing from the **Administrator | Preferences** view. To define general properties, click **Edit** in the **General Properties** section.

The following table describes the general properties:

| Property                          | Description   |
|-----------------------------------|---|
| Search re-index frequency (Hours) | The rate at which TDM indexes objects. Enter the frequency in hours. The default is 24 hours.   |
| Search index start time           | The date and time at which TDM starts to index objects. You can choose to start indexing immediately or schedule indexing for a future date and time. Click the calendar to enter the value and then click <b>Done</b> . <ul style="list-style-type: none"><li>- Now. Select <b>Now</b> to begin indexing.</li><li>- Browse the calendar and select a date and time to schedule indexing at a future date and time.</li></ul> |

You can also click **Start Search Indexer** from the Actions menu on the **Administrator | Preferences** view to begin indexing.

## Data Domain Sensitivity

When users create a data domain, they select the sensitivity level for all columns in the domain. By default, users can select a high, medium, or low sensitivity level. You can configure additional sensitivity levels available for all data domains.

You can configure additional sensitivity levels and edit the labels for the default levels. For example, you might want to add a level for critically sensitive columns such as columns that contain a Social Security number. You can add an additional sensitivity level named Critical.

When you change the sensitivity levels, the changed levels appear for all data domains in the TDM repository.

To configure sensitivity levels, click **Edit** in the **Data Domain Sensitivity Levels** section.

## Project Configuration

A project is the top-level container that you can use to organize the components for data discovery, masking, subset, and generation operations. You can add custom optional fields that appear for all projects.

For example, you might want to add a custom optional field named "Business Unit" or "Organization ID" to all projects. The added fields display for all projects in the TDM repository. Users enter values for the optional project fields when they create or edit a project.

To add custom optional fields to all projects, click **Edit** in the **Project Configuration** section.

## Workflow Generation

Before users generate workflows, define properties for all data subset and data masking workflows.

To define workflow properties, click **Edit** in the **Workflow Generation** section.

The following table describes the workflow generation properties:

| Property                          | Description   |
|-----------------------------------|---|
| Central seed value is a parameter | Select this option to enter a central seed value as a parameter.  |
| Central Seed Value                | <p>Number that overrides the individual seed values that are configured for repeatable output for data masking components. Enter a central seed value to ensure that data masking components return the same masked values in different plans. When you set a central seed value, the PowerCenter Integration Service uses that value for all data masking components with repeatable output. The seed value modifies the logic which is used in data masking operations.</p> <p>For example, to mask the same CUST_ID column in four tables, such that all of them output the same masked values, set a central seed value. If you use a different seed value for each column, each column returns different masked values. The seed values that you specify ensure that columns return masked values consistently.</p> <p>Valid values are from 1 through 999. You can enter the central seed value as a parameter.</p> |
| Cache Location                    | <p>Directory for index and data cache files that the PowerCenter Integration Service uses when it runs workflows.</p> <p>Default is &lt;Informatica _Installation_Directory&gt;/server/infra_shared/cache.</p>  |
| Maximum Tables in a Mapping       | <p>Maximum number of tables that all workflows create for each session. You can override this value when you create a workflow.</p> <p>If you run the PowerCenter Integration Service on a machine with a fast processor, increase the number of tables to optimize performance.</p> <p>Default is 20.</p>  |
| Storage Connection                | <p>A connection to a database that contains storage tables. The Data Masking transformation maintains storage tables for repeatable substitution and expression masking between sessions. A storage table row contains the source column and a masked value pair. The storage tables for substitution and expression masking are separate tables IDM_SUBSTITUTION_STORAGE and IDM_EXPRESSION_STORAGE.</p>   |
| Staging Connection                | <p>A connection to a database for creating temporary staging tables. The default set in the Workflow Generation section appears during plan creation. You can change the connection used in a plan. Use this connection for scenarios that involve Cyclic Subset, Tending to Cyclic subset, Inplace Batch Updates, Non Relational Shuffle, and Hierarchical PWX.</p>  |
| Mapping Name                      | <p>Format of the mapping name that TDM creates when you run a plan. You can enter an expression to create a naming format. TDM creates all mappings with names in the same format. Use the expression editor to create the format. If you do not enter a format, the plan assigns a random name.</p>  |
| Workflow Name                     | <p>Format of the workflow name that TDM creates when you run a plan. You can enter an expression to create a naming format. TDM creates all workflows with names in the same format. Use the expression editor to create the format. If you do not enter a format, the plan assigns a random name.</p>  |
| Session Name                      | <p>Format of the session name that TDM creates. You can enter an expression to create a naming format. TDM creates all sessions with names in the same format. Use the expression editor to create the format. If you do not enter a format, the plan assigns a random name.</p>  |

| Property                      | Description   |
|-------------------------------|---|
| Encrypt Storage               | <p>Encrypts storage tables, such as IDM_SUBSTITUTION_STORAGE and IDM_EXPRESSION_STORAGE. Verify that you have encrypted data in storage tables before you enable the encrypt storage property.</p> <p>Default is No. If you do not want to encrypt the storage tables, select Yes.</p> <p>If the IDM_SUBSTITUTION_STORAGE and IDM_EXPRESSION_STORAGE tables contain data that is not encrypted, the workflow run fails. You must manually truncate the table in the database.</p> <p>In a non Windows environment, if the IDM_SUBSTITUTION_STORAGE and IDM_EXPRESSION_STORAGE tables contain data that is not encrypted, the workflow run fails and does not generate an exception.</p> |
| Modify Storage Encryption Key | Appears if you choose to encrypt the storage tables. Modifies the storage encryption if selected.   |
| Storage Encryption Key        | Appears if you choose to encrypt the storage tables. The Data Masking transformation encrypts the storage based on the storage encryption key. Use the same encryption key for each session run of the same Data Masking transformation instance.   |

## Storage Tables for Repeatable Masking

To perform expression masking or substitution masking with repeatable values, you must assign a storage table for the repeatable values. You can create the table in the TDM repository database or in another database. Test Data Management creates a default storage connection and creates storage tables for this connection.

If you choose to use a different storage connection, you must set this connection as the default connection and create the storage tables for the connection. Set the connection as the default storage and staging connections and create storage tables in Test Data Manager.

Staging connections and storage connections can be on Oracle, Sybase, IBM DB2, PostgreSQL, or Microsoft SQL Server databases. You can create a staging connection on Teradata and Teradata Parallel Transporter connections.

You can create the storage tables for the required staging and storage connection from the **Administrator** view in Test Data Manager.

You can also use the SQL scripts that Informatica provides to create the storage tables. Use your database client tool to run the SQL script and create the table in the database. For example, you can use the SQL\*Plus client for Oracle to create the storage table in an Oracle database.

Run the storage table SQL script for your database. For example, to create the substitution storage table in a Microsoft SQL Server database, run the *Substitution\_SQL\_Server.sql* file. The SQL scripts to create the storage table for repeatable expression masking are installed in the following TDM directory:

```
<Informatica installation directory>/TDM/storage_script/expression_storage
```

After you run the expression storage script, verify that the script created the IDM\_EXPRESSION\_STORAGE table in the database. The SQL scripts to create the storage table for repeatable substitution masking are installed in the following TDM directory:

```
<Informatica installation directory>/TDM/storage_script/substitution_storage
```

After you run the substitution storage script, verify that the script created the IDM\_SUBSTITUTION\_STORAGE table in the database.

**Important:** The expression and substitution storage tables can contain original values from the source database and the corresponding masked values from the target database. Ensure that access to the storage

table is secure. Alternatively, you can create the expression or substitution storage table in a database with limited user access.

## Creating the Storage Tables

Create storage tables if you do not want to use the default staging and storage connection and storage tables that TDM creates.

1. Log in to Test Data Manager.
2. In the **Administrator | Preferences** view, click **Edit** in the **Workflow Generation** section. The **Edit Preferences** dialog box appears.
3. Select the required default storage connection from the list.
4. Click **Create Storage Tables** to create the storage tables for this connection.

## Naming Convention for Workflows, Mappings and Sessions

To standardize names, you can customize the naming convention for the workflows, mappings, and sessions that TDM creates. All plans that you run use the format that you create. If you do not enter a format, the plan assigns a random name.

You can configure the naming format on the **Workflow Generation** tab of the **Administrator | Preferences** view. You can use functions and variables available in the expression editor to create an expression to define the naming format.

You can use the following functions in an expression:

| Function                 | Description   |
|--------------------------|---|
| CONCAT(string1, string2) | Creates a single character string by joining two or more strings.   |
| LOWER(str)               | Converts a string to lowercase.   |
| SUBSTR(str,m,n)          | Returns a portion of a string, beginning and ending at specified positions in the string. m = start index and n = end index. Indexes start from 0. The substring is calculated from start index to end index-1. |
| UPPER(STR,m,n)           | Converts a string to uppercase.   |

You can use the following variables in an expression:

| Variable Name | Description              |
|---------------|--------------------------|
| \$PROJECTNAME | The name of the project. |
| \$PLANNAME    | The name of the plan.    |



| Variable Name          | Description   |
|------------------------|---|
| \$SOURCECONNECTIONNAME | The name of the source connection in the plan.  |
| \$TARGETCONNECTIONNAME | The name of the target connection in the plan.  |
| \$SOURCESCHEMANAME     | The name of the source schema in the plan.  |
| \$TARGETSCHEMANAME     | The name of the target schema in the plan.  |
| \$TABLENAME            | The name of the table in the workflow.<br>If you use the variable \$TABLENAME in an expression, the variable is ignored in the name in the following situations: <ul style="list-style-type: none"> <li>- The expression defines the naming format for workflows and the workflow contains more than one table.</li> <li>- The expression defines the naming format for mappings and the mapping contains more than one table.</li> <li>- The expression defines the naming format for sessions, and the session contains more than one table, and there are multiple tables with the same name.</li> </ul> |

For example, the following expressions use the CONCAT function with variables:

- `CONCAT('w_', $PLANNAME, '_', $SOURCECONNECTIONNAME, '_', $SOURCESCHEMANAME)`  
When used as the format for workflow names, generates workflow names that begin with "w\_" and include the plan, source connection, and source schema names.
- `CONCAT('m_', $PLANNAME, '_', $SOURCECONNECTIONNAME, '_', $TARGETSCHEMANAME)`  
When used as the format for mapping names, generates mapping names that begin with "m\_" and include the plan, source connection, and target schema names.
- `CONCAT('s_', $PROJECTNAME, '_', $SOURCECONNECTIONNAME, '_', $SOURCESCHEMANAME)`  
When used as the format for session names, generates session names that begin with "s\_" and include the project, source connection, and target schema names.

When you create a format that uses variables, TDM uses information that you enter in the plan settings section of the plan creation workflow.

A plan appends a counter to mapping and session names if the names are not unique across the plan. It appends a counter to workflow names if the plan contains multiple workflows or if a workflow by the same name exists. The name of a workflow, mapping, or session can be a maximum of 75 characters. In addition to this, a counter is appended if required.

**Note:** To prevent overwriting of workflows, ensure that you create an expression that generates unique workflow names.

## Creating a Naming Format For Workflows, Mappings and Sessions

Create a format for workflow, mapping, and session names to standardize names of workflow objects and to easily identify objects. If you do not create a format, plans assign a random name.

1. Open the **Administrator | Preferences** view.
2. Click **Actions > Edit** and click the **Workflow Generation** tab.
3. Click Edit in the **Mapping Name**, **Workflow Name**, or **Session Name** field.  
The **Configure Expression** dialog box opens.

4. Select the required functions and variables from the **Functions** and **Variables** tabs and click the transfer arrow to move them to the **Expression** tab.
5. Configure the expression as required.
6. Click the **Validate Expression** button to verify that the expression is valid.
7. Click **OK**.

## Default Settings

Before you create a plan to generate data, you define default plan settings in the **Administrator | Preferences** view. You can configure and update the settings when you create the plan. Use default settings to generate data for the columns that you have not assigned specific generation rules to.

To configure default settings, click **Edit** in the **Default Settings** section.

The following table describes the properties to configure the default settings:

| Property                                      | Description   |
|---|---|
| Default Rule for Numeric Datatype             | The default rule that you can select to generate data for numeric data types.             |
| Default Rule for String Datatype              | The default rule that you can select to generate data for string data types.              |
| Default Rule for Date Datatype                | The default rule that you can select to generate data for date data types.                |
| Default Rule for Binary Datatype              | The default rule that you can select to generate data for binary data types.              |
| Default Primary Key Rule for Numeric Datatype | The default primary key rule that you can select to generate data for numeric data types. |
| Default Primary Key Rule for String Datatype  | The default primary key rule that you can select to generate data for string data types.  |
| Default Primary Key Rule for Date Datatype    | The default primary key rule that you can select to generate data for date data types.    |
| Default Primary Key Rule for Binary Datatype  | The default primary key rule that you can select to generate data for binary data types.  |
| Default Unique Key Rule for Numeric Datatype  | The default unique key rule that you can select to generate data for numeric data types.  |
| Default Unique Key Rule for String Datatype   | The default unique key rule that you can select to generate data for string data types.   |
| Default Unique Key Rule for Date Datatype     | The default unique key rule that you can select to generate data for date data types.     |
| Default Unique Key Rule for Binary Datatype   | The default unique key rule that you can select to generate data for binary data types.   |

| Property  | Description   |
|---|---|
| Apply Default Rule to                                 | The default rule that you can apply to all the columns without generation rules. You can also apply the default rule to the columns that do not have null values.   |
| Default Character Set                                 | The character set that you can select. Default is ASCII.  |
| Minimum   | The minimum number of child records for a parent record. Default is 1.  |
| Maximum   | The maximum number of child record for a parent record. Default is 1.   |
| Parent Records Without Children                       | The number of parent records that have no child.  |
| Child Records Without a Parent                        | The number of child records that have no parent.  |
| Default Value for Unbounded MaxOccurs in a Source XSD | <p>Calculates a default value for the maximum occurrences field when the MaxOccurs value is Unbounded or infinite in the source XSD. Adds the default value that you enter to the MinOccurs value to calculate the MaxOccurs value to use in place of unbounded or -1.</p> <p>For example, if an element has a MinOccurs value of 1 and a MaxOccurs value of -1, and you set the default value as 10, the MaxOccurs value is calculated as:<br/> <math>1+10=11</math></p> |

## Log Severity Level Settings

You can set or update the log severity level of TDM modules to view logs and troubleshoot errors.

Some of the information or warning messages might not display the root cause of the problem. You can change the log levels for a module depending on the level of detail that you need. You can set the following severity levels:

- Error
- Warning
- Info
- Debug
- Trace

To set the log severity level of the modules in the application, click **Edit** in the **Log Severity Level Settings** section.

You can set log severity levels for the following modules:

### All Modules

Contains logs from all the TDM modules. You can select a common severity level for all the TDM modules at a time.

### Miscellaneous

Contains preferences management, connection management, asset linking, data source deletion, expression validation, authentication, and privileges and permissions logs.

**Generation Rules**

Contains data generation rules and components logs.

**Command Line Utility**

Contains command line program logs.

**Metadata Import**

Contains metadata import UI logs.

**Project Discovery**

Contains all the logs from the **Discover** tab of a project.

**Masking Policies and Assignments**

Contains masking policies, data domains, masking rules, masking rule assignments, policy assignment, and masking rule simulation logs.

**TDM Data Model**

Contains all the logs when you write to or read from the TDM data model.

**TDM UI**

Contains all the logs generated while rendering the TDM UI.

**Plan**

Contains plan management logs.

**Project**

Contains project management logs.

**Monitor**

Contains all the monitoring logs.

**Search**

Contains global search logs.

**Subset**

Contains logs from the data subset components such as entity, group, and template.

**Import and Export**

Contains XML import and export logs from UI and command line programs.

**Offline Jobs**

Contains offline import and workflow management job logs.

## Data Discovery

TDM uses a Data Integration Service to perform data discovery. You must connect to a Data Integration Service within the Informatica domain and enable data profiling before users can run data discovery profiles. By default, data profiling is disabled in Test Data Manager.

You can connect to a Data Integration Service within the Informatica domain. Specify the Data Integration Service to connect to and enable data profiling when you create the Test Data Manager Service from the

Administrator tool. You can edit the Test Data Manager Service properties and connect to a different Data Integration Service in the domain if you need to.

See the Informatica *Test Data Management Installation Guide* for information on how to edit the Test Data Manager Service.

## Test Tool Integration

You can integrate the HP Application Lifecycle Management (ALM) tool with TDM. You can then copy flat file target results in TDM to a project in the integrated HP ALM server. You can copy results of subset, masking, and generation operations that have flat file targets. Use this feature to directly copy and maintain flat file results in an HP ALM server. You can then use the data to create and run test cases in HP ALM.

You can also integrate an HP ALM server that uses an HTTPS connection. TDM runs a separate job in the same workflow to copy the flat file to the HP ALM server in addition to the TDM server. You cannot export a flat file if you enable version control on the HP ALM server. You must disable version control and then run the TDM workflow.

You must run the workflow from Test Data Manager. The test tool integration job does not run when you run the workflow from the PowerCenter client.

To copy flat file results to an HP ALM server, you must configure the server information in TDM. Configure the server settings from the **Test Tool Settings** tab in the **Administrator | Preferences** view.

The following table describes the test tool integration properties:

| Property                              | Description   |
|---------------------------------------|---|
| Test Tool Integration                 | Select this option to enable test tool integration.   |
| User Name                             | Required. The HP ALM server user name.  |
| Password                              | Required. The password for the HP ALM server user name.   |
| Target File Location                  | The default target folder location that TDM uses when you enable test tool integration. TDM sets the following target location:<br><code>\${INFA_HOME}\TDM\tti</code><br>You cannot edit this location. |
| Host                                  | Required. Host name of the HP ALM server.   |
| Port                                  | Required. Port number of the HP ALM server. For example, 8080.  |
| Enable Transport Layer Security (TLS) | Select this option if the HP ALM server has secure access enabled.  |
| HTTPS Port                            | Required if you enable TLS. Port number of the HP ALM server. For example, 8443.  |
| Keystore File                         | Required if you enable TLS. You must copy the keystore file to the TDM server. Enter the complete path and the file name of the keystore file on the TDM server.  |
| Keystore Password                     | Required if you enable TLS. Enter the password to the keystore file on the TDM server.  |

# Hive Properties

Set the Hive properties from the **Administrator | Preferences** view. You can modify the Hive properties at the plan level.

You can configure the following Hive properties:

## **Connection**

The Hadoop connection that you need to run a Hadoop plan.

## **Persist Mapping**

Optional. Stores the mappings in the Model repository for future use.

## **High Group List Directory Location**

The path to the High Group List directory on the Hadoop cluster. The High Group List contains the Social Security numbers that are issued by the Social Security Administration.

## Persist Mapping

You can choose to store the mappings in the Model repository.

You can enable the Persist Mapping option from the Hive Properties in the **Administrator | Preferences** view. Default is disabled. A TDM user can override this setting at the plan level. You can choose to persist mappings in the Model repository so that the mappings are available for future use. You can persist mapping if you want to troubleshoot a problem. After you persist mapping, you can view and edit the mappings.

# CHAPTER 5

## TDM Server Administration

This chapter includes the following topics:

- [Starting and Stopping the TDM Server, 55](#)
- [Logs, 55](#)
- [License Management, 59](#)

### Starting and Stopping the TDM Server

The TDM Server runs as the Test Data Manager Service in the Informatica domain. You can start and stop the TDM Server by enabling and disabling the Test Data Manager Service from the Administrator tool.

When you edit the TDM Server configuration files, you must restart the server to implement the changes.

You can change the startup and shutdown ports through the Test Data Manager Server Configuration properties page of the Test Data Manager Service.

### Logs

TDM log files record events and tasks that the TDM Server and the Test Data Manager perform. You can configure log levels, log sizes, and archive settings for log files.

The TDM Server creates the following types of log files:

#### Client logs

Contain information about actions performed in Test Data Manager. The client logs also include log information about successful and failed login tries, timeouts, and actions that users perform.

The client logs are stored in the following location:

```
<Informatica installation directory>/TDM/logs/tdm.log
```

You can view information about successful logins, session timeout, and logout information from the **Application Logs** tab of the **Administrator** view in Test Data Manager. You can also view log information on unsuccessful login tries. The Owner column does not display information for unsuccessful login tries.

#### Event logs

Contain TDM Server events, including startup information for the TDM Server.

The event logs are stored in the following location:

<Informatica installation directory>/TDM/logs/events.log

### **Server logs**

Contain detailed information about all the actions that the TDM Server performs. You can find log information about user activities, such as the creation of rules and policies.

The server logs are stored in the following location:

<Informatica installation directory>/TDM/logs/log.log

### **Job logs**

Contain detailed information about all the jobs that the TDM Server performs. You can find log information about every job that a user performs in TDM.

The job logs are stored in the following location:

<Informatica installation directory>/TDM/logs/jobLogs/job\_<ID>.log

### **Console logs**

Contain detailed information for all the jobs that the TDM Server performs. You can find log information about each job when TDM triggers a job. You can view the console logs even when the job logs are not present.

The console logs are stored in the following location:

<Informatica installation directory>/TDM/logs/jobLogs/console\_<ID>.log

### **Profiling logs**

Contain detailed information for all the profiling jobs that the TDM Server performs.

The profiling logs are stored in the following location:

<Informatica\_Home>/tomcat/bin/disLogs

### **Test data warehouse application logs**

Contain information about test data warehouse actions that users perform.

The client logs are stored in the following location:

<Informatica installation directory>/logs/node01/services/TDWService/<Service\_Name>/tdw.log

### **Test Data Manager Service logs**

Contain detailed information for all the Test Data Manager Service startup, shut down, content creation, and content upgrade actions.

You can access all the Test Data Manager Service logs from the **Logs | Services** view of the Informatica Administrator tool.

### **Test Data Warehouse Service Logs**

Contain detailed information for all the Test Data Warehouse Service startup, shut down, content creation, and content upgrade actions.

You can access all the Test Data Warehouse Service logs from the **Logs | Services** view of the Informatica Administrator tool.



## Log Configuration

TDM uses the logback logging system to perform logging for the TDM Server. You can configure log levels and the location of log files.

To configure log files, modify the log configuration file. The log configuration file is stored in the following location: <TDM Installation Directory>/configuration/logback.xml

The changes that you make to `logback.xml` take effect when you restart the TDM Server.

**Note:** You can find out more information about the logback logging system at the following site: <http://logback.qos.ch/>

## Log Levels

You can configure the level of logging for the client log, the event log, and the server log. You can set the severity levels for the TDM modules in Test Data Manager.

When you configure `logback.xml`, you can change the logging levels through the `logger level` property. If the log level for a particular log file is not specified, the TDM Server uses the value specified in the `root level` property as the log level.

The following table describes the log levels that you can set:

| Log Level | Description  |
|-----------|--|
| ALL       | Contains messages for all log levels.  |
| DEBUG     | Indicates TDM Server operations at a detailed level. Debug messages generally record the success or failure of server operations. Debug messages have the lowest severity level. |
| INFO      | Indicates that the TDM Server is performing an operation that does not indicate errors or problems. Information messages have the second lowest severity level.                  |
| WARN      | Indicates that the TDM Server is performing an operation that may cause an error. Warning messages have the third highest severity level.  |
| ERROR     | Indicates that the TDM Server failed to perform an operation or respond to a request from a client application. Error messages have the second highest severity level.           |
| FATAL     | Fatal error occurred. Fatal error messages have the highest security level.  |
| TRACE     | Indicates TDM Server operations at a more specific level than the debug logs. Trace messages are generally trace code paths. Trace messages have the lowest severity level.      |
| OFF       | Turns logging off.   |

## Log Location and Archives

You can change the location where the TDM Server writes log files. You can also configure log file archiving.

When you configure `logback.xml`, you can configure archiving for the client log, event log, the server log.

The following table describes the properties that you configure for the log location and archiving:

| Property        | Description  |
|-----------------|--|
| file            | The file path for the log file with reference to the TDM installation directory.   |
| FileNamePattern | The file path and the naming convention for archived log files with reference to the TDM installation directory. Use the %i modifier archive files by number. Use the %d modifier to archive files by date. To save directory space, use .gz or .zip when you archive files.<br>For example, you might specify the following file name pattern: <TDM installation directory>/configuration/logs/tdm_%i.log |
| MaxFileSize     | The maximum size for a log file. You can configure a file size in bytes, kilobytes, megabytes, or gigabytes. Default is 10 MB.   |
| MaxIndex        | The maximum number of log files that the TDM Server will create. The TDM Server will not create more than 12 log files even if you configure a size greater than 12. Default is 4.   |

## Archive Example

Your organization wants to configure the archive specification for the server log, `tdm.log`.

You configure the maximum file size to be 8 MB, and you configure the maximum number of files to be seven. The TDM Server uses the following process to manage the server log:

1. The first time you start the TDM Server, it creates a file named `tdm.log`.
2. It continues to write to the file until the file reaches a size of 8 MB.
3. When the file reaches 8 MB, it renames the file to `tdm_1.log.zip`, and it creates another log named `tdm.log`.
4. When `TDM.log` reaches 8 MB, it renames `tdm_n.log.zip` to `tdm_{n+1}.log.zip`, and it creates another server log named `tdm.log`.
5. The TDM Server continues to rename the log files until it reaches the maximum index of seven, and it overwrites the oldest log file.

The following snippet of code shows the configuration for the server log.

```
<appender name="TDM LOG FILE" class="ch.qos.logback.core.rolling.RollingFileAppender">
  <file>logs/tdm.log</file>
  <rollingPolicy class="ch.qos.logback.core.rolling.FixedWindowRollingPolicy">
    <FileNamePattern>logs/tdm_%i.log</FileNamePattern>
    <MinIndex>1</MinIndex>
    <MaxIndex>10</MaxIndex>
  </rollingPolicy>
  <triggeringPolicy class="ch.qos.logback.core.rolling.SizeBasedTriggeringPolicy">
    <MaxFileSize>10MB</MaxFileSize>
  </triggeringPolicy>
  <encoder class="ch.qos.logback.classic.encoder.PatternLayoutEncoder">
    <Pattern>[%d{yyyy-MM-dd HH:mm:ss.SSS}]\t[%logger]\t[%X{username}]\t[%X{context}]\t[%level]\t[%msg %ex]\n</Pattern>
  </encoder>
</appender>
```

## Application Logs

Application logs record the internal errors that occur within Test Data Manager. Application logs do not contain any job-related logs.

Application logs contain the following severity levels: Debug, Info, Warning, and Error. View the application logs from the **Application Logs** tab. You can perform search, sort, and filter operations based on the date

range, context, severity level, error description, and owner name. When you select an error message, the row expands to display the details of the error message. You can scroll down to 1000 lines to view the complete log. To refresh the log messages, click **Refresh**. To download the log file, click **Download**.

## License Management

You can view details for license keys, and you can add or remove license keys from the Informatica Administrator.

For information on how to manage licenses from the Informatica Administrator, see the *Informatica Administrator Guide*.

# CHAPTER 6

## Connections

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# Connections Overview

Create connections to databases to perform data subset, masking, and generation operations, and to run profiles for discovery operations.

You can create connections in TDM. You can also import connections that you created in PowerCenter and Informatica Administrator. When you create a connection in Test Data Manager, TDM stores the connection information in the Model repository.

Connection requirements depend on the operations that you need to perform. To perform a data discovery operation, TDM requires a connection to a database source. To perform data subset and data masking, TDM requires connections to source and target databases. To perform data generation, TDM requires a connection to a target database.

TDM supports some databases for certain TDM operations only. When you create a connection, relevant properties appear in the connection configuration wizard. For example, if you create a connection to a database that you cannot run a profile on, the wizard does not provide the unique profiling connection parameters.

To create a connection for a MySQL database, you use the ODBC connection type. If you use the connection as a target in a plan in which you disable and enable the constraints, you must enter a target JDBC connection. You enter a target JDBC connection in the plan to provide a JDBC connection string. Use the JDBC connection type to create a MySQL connection to enter as the target JDBC connection. You cannot use a connection that you create using the JDBC connection type as a source or target connection.

TDM supports SSL authentication for source and target connections. TDM supports Kerberos network authentication for some connection types. You can enable Kerberos authentication in the connection configuration wizard.

To restrict access to connections, you can assign permissions to connections that you create in Test Data Manager.

Create and manage connections from the **Administrator | Connections** view in Test Data Manager.

## Connection Permissions

When you create a connection in Test Data Manager you become the owner of the connection. As the owner of the connection, you can add users and user groups and assign the required levels of permission. You can change the owner of the connection. The domain administrator can also add and edit connection permissions and can change the owner of the connection.

You can access connections based on the permissions that you have.

Connections have the following levels of permission:

- Read
- Write
- Execute

To perform any task that uses the connection, you must also have the minimum required level of privileges as a TDM user.

The following table lists the connection permission levels, the tasks that you can perform with each level, and the minimum required privileges for each task:

| Permission | Description  | Minimum Required Privilege   |
|------------|--|--|
| Read       | <ul style="list-style-type: none"> <li>- View the connection in Test Data Manager.</li> </ul>  | <ul style="list-style-type: none"> <li>- View connections</li> </ul>                               |
| Write      | <ul style="list-style-type: none"> <li>- View the connection in Test Data Manager.</li> <li>- Update and delete the connection.</li> </ul>   | <ul style="list-style-type: none"> <li>- View connections</li> <li>- Manage connections</li> </ul> |
| Execute    | <ul style="list-style-type: none"> <li>- View the connection in Test Data Manager.</li> <li>- Update and delete the connection.</li> <li>- Import metadata.</li> <li>- Run profiles.</li> <li>- Generate workflows.</li> <li>- Run workflows.</li> <li>- Use relational dictionaries.</li> <li>- Perform rule simulation.</li> </ul> | <ul style="list-style-type: none"> <li>- View connections</li> <li>- Manage connections</li> </ul> |

## Connection Management

You can create, copy, import, remove, and validate source and target connections in Test Data Manager.

You can manage connections in the **Administrator | Connections** view.

You can import connections from the PowerCenter repository and the domain configuration repository.

Select a connection, and click **Actions > Test Connection** to validate the connection.

You cannot assign an owner to connections that you create in the Administrator tool. When you import connections created in the Administrator tool, the user name that you enter when you create the Test Data Manager Service displays as the connection owner.

If the owner of the connection is not found in TDM or Workflow Manager, the user name that you enter when you create the Test Data Manager Service displays as the connection owner.

## Creating a Connection

You can create a source or target connection in Test Data Manager.

Before you can test a Teradata or a Teradata Parallel Transporter connection, you must add the Teradata JDBC JAR files `tdgssconfig.jar` and `terajdbc4.jar` to the following location: `<Informatica installation directory>\TDM\lib\thirdparty`. Restart the Test Data Manager Service after you add the files.

**Note:** If you reuse the name of a connection previously created and deleted in Test Data Manager, a workflow that you use the connection in might fail. The workflow might fail because a connection object with the same name and different properties exists in the domain repository.

1. In the **Administrator | Connections** view, select **New Connection** from the **Actions** menu.  
A tab opens to display the new connection properties.
2. Select the connection type and define the connection name, description, and user information.  
The connection name must begin with an alphabetic character. If you enter a connection name that begins with a numeric character, a workflow that includes the connection might fail.
3. Optional. Click **Change Owner** and select a different user as the connection owner.
4. Click **Next**.
5. Enter the connection properties.
6. Click **Test Connection** to test the connection.
7. Click **Finish** to save the connection.  
The connection is visible in the **Administrator | Connections** view.
8. Optional. Select the connection in the **Administrator | Connections** view, and click **Actions > Test Connection** to validate the connection.

## Copying a Connection

You can create a copy of a connection. You might make a copy of a connection when you need to define a connection that is similar to an existing connection.

1. In the **Administrator | Connections** view, select a connection to copy.  
Do not open the connection.
2. Click **Actions > Duplicate**.  
The **Duplicate** dialog box appears.
3. Change the name and description for the connection.
4. Click **Save**.  
The connection appears in the connections list.

## Importing a Connection

You can import a source or target connection in Test Data Manager.

1. In the **Administrator | Connections** view, select **Import Connections** from the **Actions** menu.  
The available source and target connections are imported into Test Data Manager from PowerCenter and the Model repository.
2. Go to the **Administrator | Connections** view to see a list of imported connections.

## Editing a Connection

You can edit a connection to modify the connection properties.

1. In the **Administrator | Connections** view, click the connection that you want to edit.  
The connection opens in another tab.

2. Click **Actions > Edit**.
3. Modify the connection properties.
4. Click **Test Connection**.
5. Click **Save**.

## Editing Connection Permission

Connection permissions determine the tasks that you can perform using the connection. You can edit the connection permission assigned to users and user groups from the **Permissions** tab of the connection.

1. In the **Administrator | Connections** view, click the connection that you want to edit.  
The connection opens in another tab.
2. Click the **Permissions** tab.  
A list of the TDM users or user groups with permissions for the connection appears.
3. Click **Edit** on the **Users** or **User Groups** tab.  
The **Edit Connection Permissions** dialog box opens.
4. To edit the permission of a user or user group, select the user or user group from the list and edit the permission as required. You must save the changes for each user or user group.
5. To delete a user or user group, select the user or user group from the list and click **Delete**.
6. To add a user or a user group:
  - a. Click **Add Users** or **Add User Groups**.
  - b. Select one or more users or user groups.
  - c. Optional. From the list of permissions, select the required permissions if either of the following statements is true:
    - You selected a single user or user group.
    - You want to assign the same levels of permission to all selected users or user groups.
  - d. Click **OK**. TDM adds the users or user groups to the list.
  - e. Select each user or user group and assign the required permission levels. You must save the changes for each user or user group. Skip this step if you performed step c.
7. Click **OK**.

## Deleting a Connection

You can delete a connection in Test Data Manager. When you delete a connection in Test Data Manager, the connection gets deleted from TDM, but the connection object does not get deleted from the domain repository. Consider editing the connection properties instead of deleting the connection.

1. In the **Administrator | Connections** view, select the connection that you want to delete.
2. Click **Actions > Delete**.
3. In the **Delete Connection** dialog box, click **Yes** to delete the connection.



# AzureDWv3 Connections

You can create an AzureDWv3 connection in Test Data Manager to perform data masking operations. Use this connection type to create connections to Microsoft Azure SQL Data Warehouse databases for data masking tasks. To use a Microsoft Azure SQL Data Warehouse database for data subset, data generation, and test data warehouse tasks, use the Microsoft SQL Server connection type.

The following table describes the database connection properties for a DB2 for Linux, UNIX and Windows database:

| Property                | Description   |
|-------------------------|---|
| Name                    | Required. Name of the connection. The name is not case sensitive and must be unique within the domain. It cannot exceed 128 characters, start with a number, contain spaces, or contain the following special characters:<br>~ ` ! \$ % ^ & * ( ) - + = { [ ]   \ ; : " ' < , > . ? / |
| Connection Type         | Required. The connection type. Select AzureDWv3.  |
| Description             | The description of the connection. The description cannot exceed 255 characters.  |
| Owner                   | The owner of the connection. Default is the user who creates the connection. You can change the owner of the connection.  |
| Azure DW JDBC URL       | Microsoft Azure SQL Data Warehouse JDBC connection string.<br>For example, you can enter the following connection string:<br>jdbc:sqlserver://<Server>.database.windows.net:1433;database=<Database>  |
| Azure DW JDBC User name | User name to connect to the Microsoft Azure SQL Data Warehouse account.   |
| Azure DW JDBC Password  | Password to connect to the Microsoft Azure SQL Data Warehouse account.  |
| Azure DW Schema Name    | Name of the schema in Microsoft Azure SQL Data Warehouse.   |
| Azure Blob Account Name | Name of the Microsoft Azure Storage account to stage the files.   |
| Azure Blob Account Key  | Microsoft Azure Storage access key to stage the files.  |

# DB2 for Linux, UNIX and Windows Connections

You can create a DB2 for Linux, UNIX and Windows connection in Test Data Manager to perform data discovery, data subset, and data masking operations. Use this connection to create a connection to a DB2 for zOS database to import source metadata directly into Test Data Manager.

The following table describes the database connection properties for a DB2 for Linux, UNIX and Windows database:

| Property                      | Description  |
|-------------------------------|--|
| Name                          | Required. Name of the connection. The name is not case sensitive and must be unique within the domain. It cannot exceed 128 characters, start with a number, contain spaces, or contain the following special characters:<br>~ ` ! \$ % ^ & * ( ) - + = { [ ]   \ ; " ' < , > . ? /                |
| Connection Type               | Required. The connection type. Select DB2 for Linux, UNIX and Windows.   |
| Description                   | The description of the connection. The description cannot exceed 255 characters.   |
| Use Kerberos Authentication   | Enables Kerberos Authentication. You cannot enter a user name and password if you select this check box.   |
| User Name                     | Required. The database user name.  |
| Use Parameter in Password     | Indicates the password for the database user name is a session parameter. <i>\$ParamName</i> . Define the password in the workflow or session parameter file, and encrypt it using the <i>mpasswd</i> CRYPT_DATA option.<br>Used for data subset and data masking operations. Default is disabled. |
| Password                      | Required. The password for the database user name.   |
| Owner                         | The owner of the connection. Default is the user who creates the connection. You can change the owner of the connection.   |
| Metadata Connection String    | Required. The JDBC connection URL used to access metadata from the database. Enter <code>jdbc:informatica:db2://&lt;hostname&gt;:50000;databaseName=&lt;dbname&gt;</code> .<br>Used for all operations.  |
| JDBC Login Password           | Required if Use Parameter in Password is selected. The password for the JDBC user.<br>Used for import from source and data discovery operations.   |
| Driver Name                   | Indicates the JDBC driver name to interact with the database.<br>Default values for the database:<br>- DB2 for Linux, UNIX, and Windows: <code>com.informatica.jdbc.db2.DB2Driver</code><br>- DB2 for zOS: <code>com.ibm.db2.jcc.DB2Driver</code>  |
| Data Access Connection String | The connection string used to access data from the database. Enter <code>&lt;database name&gt;</code> .<br>Used for all operations.  |
| Code Page                     | Code page the Integration Service uses to read from a source database or write to a target database or file.<br>Used for all operations.   |

| Property                      | Description  |
|-------------------------------|--|
| Connection Environment Type   | Default is <code>Native</code> .<br>For DB2 for zOS databases, choose <code>zOS</code> .   |
| Environment SQL               | SQL commands to set the database environment when you connect to the database. The Integration Service runs the connection environment SQL each time it connects to the database. Used for all operations.   |
| Transaction SQL               | SQL commands to set the database environment when you connect to the database. The Integration Service runs the transaction environment SQL at the beginning of each transaction. Used for all operations.   |
| Connection Retry Period       | Number of seconds the Integration Service attempts to reconnect to the database if the connection fails. If the Integration Service cannot connect to the database in the retry period, the operation fails.<br>Used for all operations. Default is 0.   |
| Tablespace                    | The tablespace name of the database.<br>Used for all operations.   |
| Pass Through Security Enabled | Enables pass-through security for the connection. When you enable pass-through security for a connection, the domain uses the client user name and password to log into the corresponding database, instead of the credentials defined in the connection object.<br>Used for data discovery operations. Default is disabled. |

## Hadoop HDFS Connection

Use a Hadoop HDFS connection in a TDM plan to generate PowerCenter mappings and write to the target. Create and manage Hadoop connections from Test Data Manager.

The following table describes the Hadoop HDFS connection properties that you can configure:

| Property        | Description  |
|-----------------|--|
| Name            | Required. Name of the connection. The name is not case sensitive and must be unique within the domain. The name cannot exceed 128 characters, contain spaces, or contain the following special characters:<br>~ ` ! \$ % ^ & * ( ) - + = { [ ]   \ : ; " ' < , > . ? / |
| Connection Type | Required. The connection type. Select Hadoop HDFS.   |
| Description     | The description of the connection. The description cannot exceed 4000 characters.  |

| Property                  | Description   |
|---------------------------|---|
| HDFS Connection URI       | <p>Required. The URI to access HDFS.</p> <p>Use the following format to specify the NameNode URI in Cloudera and Hortonworks distributions:</p> <pre>hdfs://&lt;namenode&gt;:&lt;port&gt;</pre> <p>Where</p> <ul style="list-style-type: none"> <li>- &lt;namenode&gt; is the host name or IP address of the NameNode.</li> <li>- &lt;port&gt; is the port that the NameNode listens for remote procedure calls (RPC).</li> </ul> <p>Use one of the following formats to specify the NameNode URI in MapR distribution: -</p> <ul style="list-style-type: none"> <li>- maprfs:///</li> <li>- maprfs:///mapr/my.cluster.com/</li> </ul> <p>Where my.cluster.com is the cluster name that you specify in the mapr-clusters.conf file.</p> |
| HIVE URL                  | <p>Required. The URL to the Hive host.</p> <p>Specify the URL in the following format:</p> <pre>jdbc:hive://hostname:portnumber/default</pre>   |
| HIVE Username             | The Hive user name.   |
| Use Parameter in Password | Uses a parameter in the password for the Hive user.   |
| HIVE Password             | The password for the Hive user.   |
| Hadoop Distribution       | <p>Required. The name of the Hadoop distribution. You can choose one of the following options:</p> <ul style="list-style-type: none"> <li>- Cloudera CDH</li> <li>- Hortonworks HDP</li> <li>- MapR</li> <li>- Microsoft HDInsight</li> <li>- IBM BigInsights</li> <li>- Amazon EMR</li> </ul> <p>Default is Cloudera CDH.</p>  |
| Directory                 | Required. The path to the HDFS directory.   |

## Configuring PowerCenter for Kerberos-Enabled Hadoop HDFS Cluster

You must configure PowerCenter for a Kerberos-enabled Hadoop cluster before you create and use a Hadoop HDFS connection that uses Kerberos authentication. TDM generates PowerCenter mappings when you use a Hadoop HDFS connection.

Before you configure PowerCenter for a Kerberos-enabled cluster, perform the following prerequisite tasks:

- Install the latest version of JCE policy files.
- Ensure that the KRB5\_CONFIG environment variable contains the `krb5.conf` file location. Ensure that the entries are correct in the `krb5.conf` file. Copy the `krb5.conf` file in the following path:  

```
<Informatica installation directory>/TDM/datadirect
```

- Ensure that you have read permissions to the ticket cache file.
1. Create a directory in the location where you install Informatica with the PowerCenter Integration Service running so that the Informatica administrator user has read/write access to the folder. For example, create a directory in the following location:
 

```
<Informatica installation directory>/hadoophdfs/conf/
```
  2. Copy the following files from a Hadoop cluster to the directory that you created:
    - /etc/hadoop/conf/core-site.xml
    - /etc/hadoop/conf/mapred-site.xml
    - /etc/hadoop/conf/hdfs-site.xml
    - /etc/hive/conf/hive-site.xml
  3. Ensure that the Informatica administrator user exists on all Hadoop cluster nodes and has the same UID. To create the Kerberos ticket cache file, run the kinit command on all nodes.
  4. To create the Kerberos ticket cache file, run the kinit command on the Informatica node where the PowerCenter Integration Service is running.
 

The ticket cache file is in the following format:

```
/tmp/krb5cc_<UID>
```

Use the kinit command to verify, validate, and renew the tickets.
  5. Edit the core-site.xml file in the directory and add the following parameters:
 

```
<property>
<name>hadoop.security.kerberos.ticket.cache.path</name>
<value>/tmp/REPLACE_WITH_CACHE_FILENAME</value>
<description>Path to the Kerberos ticket cache.</description>
</property>
```
  6. In the Administrator tool, select the PowerCenter Integration Service and click the **Processes** tab.
  7. On the **Environment Variables** tab, click **Edit**. In the CLASSPATH environment variable, add the directory that you created.
  8. Restart the PowerCenter Integration Service.
- You can use a Hadoop HDFS connection that uses Kerberos authentication.

## Hadoop Connections

A Hadoop connection is a cluster type connection. In the Administrator tool, you must create a cluster configuration for the Hadoop clusters. Create and manage Hadoop connections from Test Data Manager.

When you select the Hadoop connection in a Hadoop plan, TDM uses the Data Integration Service to run mappings on a Hadoop cluster.

The following table describes Hadoop connection properties:

| Property                    | Description  |
|-----------------------------|--|
| Name                        | Required. Name of the connection. The name is not case sensitive and must be unique within the domain. The name cannot exceed 128 characters, contain spaces, or contain the following special characters:<br>~ ` ! \$ % ^ & * ( ) - + = { [ ]   \ : ; " ' < , > . ? /             |
| ID                          | String that the Data Integration Service uses to identify the connection. The ID is not case sensitive. It must be 255 characters or less and must be unique in the domain. You cannot change this property after you create the connection. Default value is the connection name. |
| Connection Type             | Required. The connection type. Select Hadoop.  |
| Description                 | The description of the connection. The description cannot exceed 4000 characters.  |
| Use Kerberos Authentication | Enables Kerberos authentication for Hadoop connections.  |

## Hadoop Properties

The following table describes the cluster and connection properties that you configure for Hadoop:

| Property                      | Description   |
|-------------------------------|---|
| Cluster Configuration         | The name of the cluster configuration object associated with the Hadoop environment.  |
| Cloud Provisioning Connection | Name of the cloud provisioning configuration associated with a cloud platform such as Amazon AWS or Microsoft Azure.<br>Required if you do not configure the Cluster Configuration.   |
| Cluster Environment Variable  | Environment variables used in the cluster.<br>Specify any custom environment variables in the Hadoop connection. During runtime, the specified environment variables are combined with the default environment variables based on the cluster configuration associated with the Hadoop connection.<br>For example, you can specify ORACLE_HOME, ODBC_HOME, or DB2_HOME. |
| Cluster Library Path          | The path for shared libraries on the cluster.<br>The \$DEFAULT_CLUSTER_LIBRARY_PATH variable contains a list of default directories.  |
| Cluster Class Path            | The classpath to access the Hadoop jar files and the required libraries.<br>The \$DEFAULT_CLUSTER_CLASSPATH variable contains a list of paths to the default jar files and libraries.   |
| Cluster Executable Path       | The classpath to access the Hadoop jar files and the required libraries.<br>The \$DEFAULT_CLUSTER_CLASSPATH variable contains a list of paths to the default jar files and libraries.   |

| Property                          | Description   |
|-----------------------------------|---|
| Impersonation User Name           | <p>Required if the Hadoop cluster uses Kerberos authentication. Hadoop impersonation user. The user name that the Data Integration Service impersonates to run mappings in the Hadoop environment.</p> <p>The Data Integration Service runs mappings based on the user that is configured. Refer to the following order to determine which user the Data Integration Services uses to run mappings:</p> <ol style="list-style-type: none"> <li>1. Operating system profile user. The mapping runs with the operating system profile user if the profile user is configured. If there is no operating system profile user, the mapping runs with the Hadoop impersonation user.</li> <li>2. Hadoop impersonation user. The mapping runs with the Hadoop impersonation user if the operating system profile user is not configured. If the Hadoop impersonation user is not configured, the Data Integration Service runs mappings with the Data Integration Service user.</li> <li>3. Informatica services user. The mapping runs with the operating user that starts the Informatica daemon if the operating system profile user and the Hadoop impersonation user are not configured.</li> </ol> |
| Temporary Table Compression Codec | <p>Hadoop compression library for a compression codec class name.</p> <p><b>Note:</b> The Spark engine does not support compression settings for temporary tables. When you run mappings on the Spark engine, the Spark engine stores temporary tables in an uncompressed file format.</p>  |
| Codec Class Name                  | Codec class name that enables data compression and optimizes performance on temporary staging tables.   |
| Hive Staging Database Name        | <p>Namespace for Hive staging tables. Use the name default for tables that do not have a specified database name.</p> <p>If you do not configure a namespace, the Data Integration Service uses the Hive database name in the Hive target connection to create staging tables.</p>  |
| Hadoop Engine Custom Properties   | <p>Custom properties that are unique to the Hadoop connection. You can specify multiple properties.</p> <p>Click the <b>Add</b> button to add the required number of rows. Enter the property name in the <b>Name</b> field and the value in the <b>Value</b> field.</p> <p>If more than one Hadoop connection is associated with the same cluster configuration, you can override configuration set property values.</p> <p>Use Informatica custom properties only at the request of Informatica Global Customer Support.</p>  |
| Write Reject Files to Hadoop      | <p>If you use the Blaze engine to run mappings, select the check box to specify a location to move reject files. If checked, the Data Integration Service moves the reject files to the HDFS location listed in the property, Reject File Directory.</p> <p>By default, the Data Integration Service stores the reject files based on the RejectDir system parameter.</p>   |
| Reject Files Directory            | The directory for Hadoop mapping files on HDFS when you run mappings.   |

## Hive Configuration

**Note:** Effective in version 10.2.2, Informatica dropped support for the Hive engine. Do not configure the properties related to the Hive engine.

You can use the values for Hive configuration properties from hive-site.xml or mapred-site.xml located in the following directory on the Hadoop cluster: `/etc/hadoop/conf/`.

The following table describes the connection properties that you configure to push mapping logic to the Hadoop cluster:

| Property                         | Description   |
|----------------------------------|---|
| Environment SQL                  | <p>SQL commands to set the Hadoop environment. The Data Integration Service executes the environment SQL at the beginning of each Hive script generated in a Hive execution plan.</p> <p>The following rules and guidelines apply to the usage of environment SQL:</p> <ul style="list-style-type: none"> <li>- Use the environment SQL to specify Hive queries.</li> <li>- Use the environment SQL to set the classpath for Hive user-defined functions and then use environment SQL or PreSQL to specify the Hive user-defined functions. You cannot use PreSQL in the data object properties to specify the classpath. The path must be the fully qualified path to the JAR files used for user-defined functions. Set the parameter <code>hive.aux.jars.path</code> with all the entries in <code>infapdo.aux.jars.path</code> and the path to the JAR files for user-defined functions.</li> <li>- You can use environment SQL to define Hadoop or Hive parameters that you want to use in the PreSQL commands or in custom queries.</li> <li>- If you use multiple values for the environment SQL, ensure that there is no space between the values.</li> </ul> |
| Hive Warehouse Directory on HDFS | <p>Required. The absolute HDFS file path of the default database for the warehouse that is local to the cluster.</p> <p>If you do not configure the Hive warehouse directory, the Hive engine first tries to write to the directory specified in the cluster configuration property <code>hive.metastore.warehouse.dir</code>. If the cluster configuration does not have the property, the Hive engine writes to the default directory <code>/user/hive/warehouse</code>.</p>  |
| Hive JDBC Connection String      | <p>The JDBC URI to connect to the Hive server.</p> <p>To connect to HiveServer, specify the connection string in the following format:<br/> <code>jdbc:hive2://&lt;hostname&gt;:&lt;port&gt;/&lt;db&gt;</code></p> <p>Where</p> <ul style="list-style-type: none"> <li>- <code>&lt;hostname&gt;</code> is name or IP address of the machine on which HiveServer2 runs.</li> <li>- <code>&lt;port&gt;</code> is the port number on which HiveServer2 listens.</li> <li>- <code>&lt;db&gt;</code> is the database name to which you want to connect. If you do not provide the database name, the Data Integration Service uses the default database details.</li> </ul>  |
| Engine Type                      | <p>The engine that the Hadoop environment uses to run a mapping on the Hadoop cluster. You can choose MRv2 or Tez. You can select Tez if it is configured for the Hadoop cluster. Default is MRv2.</p>  |
| Hive Engine Custom Properties    | <p>Custom properties that are unique to the Hive connection.</p> <p>You can specify multiple properties.</p> <p>Click the <b>Add</b> button to add the required number of rows. Enter the property name in the <b>Name</b> field and the value in the <b>Value</b> field.</p> <p>If more than one Hive connection is associated with the same cluster configuration, you can override configuration set property values.</p> <p>Use Informatica custom properties only at the request of Informatica Global Customer Support.</p>   |



## Blaze Engine

The following table describes the connection properties that you configure for the Blaze engine:

| Property                         | Description   |
|----------------------------------|---|
| Blaze Staging Directory          | The HDFS file path of the directory that the Blaze engine uses to store temporary files. Verify that the directory exists. The YARN user, Blaze engine user, and mapping impersonation user must have write permission on this directory.<br>Default is <code>/blaze/workdir</code> . If you clear this property, the staging files are written to the Hadoop staging directory <code>/tmp/blaze_&lt;user name&gt;</code> .   |
| Blaze Service User Name          | The operating system profile user name for the Blaze engine.  |
| Minimum Port                     | The minimum value for the port number range for the Blaze engine. Default is 12300.   |
| Maximum Port                     | The maximum value for the port number range for the Blaze engine. Default is 12600.   |
| YARN Queue Name                  | The YARN scheduler queue name used by the Blaze engine that specifies available resources on a cluster.   |
| Blaze Job Monitor Address        | The host name and port number for the Blaze Job Monitor. Use the following format:<br><code>&lt;hostname&gt;:&lt;port&gt;</code><br>Where<br>- <code>&lt;hostname&gt;</code> is the host name or IP address of the Blaze Job Monitor server.<br>- <code>&lt;port&gt;</code> is the port on which the Blaze Job Monitor listens for remote procedure calls (RPC).<br>For example, enter: <code>myhostname:9080</code>          |
| Blaze Yarn Node Label Expression | Node label that determines the node on the Hadoop cluster where the Blaze engine runs. If you do not specify a node label, the Blaze engine runs on the nodes in the default partition.<br>If the Hadoop cluster supports logical operators for node labels, you can specify a list of node labels. To list the node labels, use the operators <code>&amp;&amp;</code> (AND), <code>  </code> (OR), and <code>!</code> (NOT). |
| Blaze Service Custom Properties  | Custom properties that are unique to the Blaze engine.<br>Click the <b>Add</b> button to add the required number of rows. Enter the property name in the <b>Name</b> field and the value in the <b>Value</b> field.<br>Use Informatica custom properties only at the request of Informatica Global Customer Support.  |

## Spark Engine

The following table describes the connection properties that you configure for the Spark engine:

| Property                  | Description   |
|---------------------------|---|
| Spark Staging Directory   | The HDFS file path of the directory that the Spark engine uses to store temporary files for running jobs. The YARN user, Data Integration Service user, and mapping impersonation user must have write permission on this directory.<br>By default, the temporary files are written to the Hadoop staging directory <code>/tmp/spark_&lt;user name&gt;</code> . |
| Spark Event Log Directory | Optional. The HDFS file path of the directory that the Spark engine uses to log events.   |

| Property                   | Description   |
|----------------------------|---|
| YARN Queue Name            | The YARN scheduler queue name used by the Spark engine that specifies available resources on a cluster. The name is case sensitive.   |
| Spark Execution Parameters | <p>An optional list of configuration parameters to apply to the Spark engine. You can change the default Spark configuration properties values, such as <code>spark.executor.memory</code> or <code>spark.driver.cores</code>.</p> <p>Click the <b>Add</b> button to add the required number of rows. Enter the property name in the <b>Name</b> field and the value in the <b>Value</b> field.</p> <p>You might notice a decrease in performance on the Spark engine.</p> <p>To optimize performance, configure the following Spark engine configuration properties:</p> <p><b>spark.executor.cores</b></p> <p>Indicates the number of cores that each executor process uses to run tasklets on the Spark engine.</p> <p>Set to: <code>spark.executor.cores=1</code></p> <p><b>spark.executor.instances</b></p> <p>Indicates the number of instances that each executor process uses to run tasklets on the Spark engine.</p> <p>Set to: <code>spark.executor.instances=1</code></p> |

## HDFS Connections

You can add and use Hadoop Distributed File System (HDFS) connections.

Use an HDFS connection to access data in the Hadoop cluster. The HDFS connection is a file system type connection.

In the Administrator tool, you must create a cluster configuration for the Hadoop clusters. Create and manage HDFS connections in Test Data Manager.

The following table describes HDFS connection properties:

| Property        | Description   |
|-----------------|---|
| Name            | <p>Required. Name of the connection. The name is not case sensitive and must be unique within the domain. The name cannot exceed 128 characters, contain spaces, or contain the following special characters:</p> <p>~ ` ! \$ % ^ &amp; * ( ) - + = { [ ]   \ : ; " ' &lt; , &gt; . ? /</p> |
| Connection Type | Required. The connection type. Select HDFS.   |
| Description     | The description of the connection. The description cannot exceed 765 characters.  |
| Owner           | The owner of the connection. Default is the user who creates the connection. You can change the owner of the connection.  |
| User Name       | Required. User name to access HDFS.   |

| Property     | Description  |
|--------------|--|
| NameNode URI | <p>Required. The URI to access HDFS.</p> <p>Use the following format to specify the NameNode URI in Cloudera and Hortonworks distributions:<br/> <code>hdfs://&lt;namenode&gt;:&lt;port&gt;</code></p> <p>Where</p> <ul style="list-style-type: none"> <li>- &lt;namenode&gt; is the host name or IP address of the NameNode.</li> <li>- &lt;port&gt; is the port that the NameNode listens for remote procedure calls (RPC).</li> </ul> <p>Use one of the following formats to specify the NameNode URI in MapR distribution: -</p> <ul style="list-style-type: none"> <li>- <code>maprfs:///</code></li> <li>- <code>maprfs:///mapr/my.cluster.com/</code></li> </ul> <p>Where <code>my.cluster.com</code> is the cluster name that you specify in the <code>mapr-clusters.conf</code> file.</p> |
| Directory    | Required. The path to the HDFS directory.  |

## Hive Connections

Use the Hive connection to access a Hive database. A Hive connection is a database type connection. In the Administrator tool, you must create a cluster configuration for the Hadoop clusters. Create and manage Hive connections from Test Data Manager.

The following table describes Hive connection properties:

| Property                    | Description  |
|-----------------------------|--|
| Name                        | <p>Required. Name of the connection. The name is not case sensitive and must be unique within the domain. The name cannot exceed 128 characters, contain spaces, or contain the following special characters:</p> <p><code>~ \ ! \$ % ^ &amp; * ( ) - + = { [ ]   \ : ; " ' &lt; , &gt; . ? /</code></p> |
| ID                          | <p>String that the Data Integration Service uses to identify the connection. The ID is not case sensitive. It must be 255 characters or less and must be unique in the domain. You cannot change this property after you create the connection. Default value is the connection name.</p>                |
| Connection Type             | Required. The connection type. Select Hive.  |
| Description                 | The description of the connection. The description cannot exceed 4000 characters.  |
| Use Kerberos Authentication | Enables Kerberos authentication for Hadoop connections.  |
| Cluster Configuration       |  |

| Property                               | Description  |
|--|--|
| User Name                              | <p>The name of the user that the Data Integration Service impersonates to run mappings on a Hadoop cluster. The user name depends on the JDBC connection string that you specify in the Metadata Connection String or Data Access Connection String for the native environment.</p> <p>If the Hadoop cluster uses Kerberos authentication, the principal name for the JDBC connection string and the user name must be the same. Otherwise, the user name depends on the behavior of the JDBC driver. With Hive JDBC driver, you can specify a user name in many ways and the user name can become a part of the JDBC URL.</p> <p>If the Hadoop cluster does not use Kerberos authentication, the user name depends on the behavior of the JDBC driver.</p> <p>If you do not specify a user name, the Hadoop cluster authenticates jobs based on the following criteria:</p> <ul style="list-style-type: none"> <li>- The Hadoop cluster does not use Kerberos authentication. It authenticates jobs based on the operating system profile user name of the machine that runs the Data Integration Service.</li> <li>- The Hadoop cluster uses Kerberos authentication. It authenticates jobs based on the SPN of the Data Integration Service.</li> </ul>   |
| Password                               | Password for the username.   |
| Environment SQL                        | <p>SQL commands to set the Hadoop environment. In native environment type, the Data Integration Service executes the environment SQL each time it creates a connection to a Hive metastore. If you use the Hive connection to run profiles on a Hadoop cluster, the Data Integration Service executes the environment SQL at the beginning of each Hive session.</p> <p>The following rules and guidelines apply to the usage of environment SQL in both connection modes:</p> <ul style="list-style-type: none"> <li>- Use the environment SQL to specify Hive queries.</li> <li>- Use the environment SQL to set the classpath for Hive user-defined functions and then use environment SQL or PreSQL to specify the Hive user-defined functions. You cannot use PreSQL in the data object properties to specify the classpath. If you use Hive user-defined functions, you must copy the .jar files to the following directory:<br/> <pre>&lt;Informatica installation directory&gt;/services/shared/hadoop/&lt;Hadoop distribution name&gt;/extras/hive-auxjars</pre> </li> <li>- You can use environment SQL to define Hadoop or Hive parameters that you want to use in the PreSQL commands or in custom queries.</li> <li>- If you use multiple values for the Environment SQL property, ensure that there is no space between the values.</li> </ul> |
| SQL Identifier Character To Use        | <p>The type of character used to identify special characters and reserved SQL keywords, such as WHERE. The Data Integration Service places the selected character around special characters and reserved SQL keywords. The Data Integration Service also uses this character for the <b>Support mixed-case identifiers</b> property.</p>   |
| Observe Fine Grained SQL Authorization | <p>When you select the option to observe fine grained authorization in a Hive source, the mapping observes the following:</p> <ul style="list-style-type: none"> <li>- Row and column level restrictions. Applies to Hadoop clusters where Sentry or Ranger security modes are enabled.</li> <li>- Data masking rules. Applies to masking rules set on columns containing sensitive data by Dynamic Data Masking.</li> </ul> <p>If you do not select the option, the Blaze and Spark engines ignore the restrictions and masking rules, and results include restricted or sensitive data.</p>  |
| JDBC Driver Class Name                 | <p>Name of the Hive JDBC driver class. If you leave this option blank, the Developer tool uses the default Apache Hive JDBC driver shipped with the distribution. If the default Apache Hive JDBC driver does not fit your requirements, you can override the Apache Hive JDBC driver with a third-party Hive JDBC driver by specifying the driver class name.</p>   |

| Property                      | Description   |
|-------------------------------|---|
| Metadata Connection String    | <p>The JDBC connection URI used to access the metadata from the Hadoop server.</p> <p>You can use PowerExchange for Hive to communicate with a HiveServer service or HiveServer2 service. To connect to HiveServer, specify the connection string in the following format:</p> <pre>jdbc:hive2://&lt;hostname&gt;:&lt;port&gt;/&lt;db&gt;</pre> <p>Where</p> <ul style="list-style-type: none"> <li>- &lt;hostname&gt; is name or IP address of the machine on which HiveServer2 runs.</li> <li>- &lt;port&gt; is the port number on which HiveServer2 listens.</li> <li>- &lt;db&gt; is the database name to which you want to connect. If you do not provide the database name, the Data Integration Service uses the default database details.</li> </ul> <p>To connect to HiveServer2, use the connection string format that Apache Hive implements for that specific Hadoop Distribution. For more information about Apache Hive connection string formats, see the Apache Hive documentation.</p> <p>For user impersonation, you must add <code>hive.server2.proxy.user=&lt;xyz&gt;</code> to the JDBC connection URI. If you do not configure user impersonation, the current user's credentials are used connect to the HiveServer2.</p> <p>If the Hadoop cluster uses SSL or TLS authentication, you must add <code>ssl=true</code> to the JDBC connection URI. For example: <code>jdbc:hive2://&lt;hostname&gt;:&lt;port&gt;/&lt;db&gt;;ssl=true</code></p> <p>If you use self-signed certificate for SSL or TLS authentication, ensure that the certificate file is available on the client machine and the Data Integration Service machine. For more information, see the <i>Data Engineering Integration Guide</i>.</p> |
| Bypass Hive JDBC Server       | <p>JDBC driver mode. Select the check box to use the embedded JDBC driver mode.</p> <p>To use the JDBC embedded mode, perform the following tasks:</p> <ul style="list-style-type: none"> <li>- Verify that Hive client and Informatica services are installed on the same machine.</li> <li>- Configure the Hive connection properties to run mappings on a Hadoop cluster.</li> </ul> <p>If you choose the non-embedded mode, you must configure the Data Access Connection String. Informatica recommends that you use the JDBC embedded mode.</p>   |
| Data Access Connection String | <p>The connection string to access data from the Hadoop data store. To connect to HiveServer, specify the non-embedded JDBC mode connection string in the following format:</p> <pre>jdbc:hive2://&lt;hostname&gt;:&lt;port&gt;/&lt;db&gt;</pre> <p>Where</p> <ul style="list-style-type: none"> <li>- &lt;hostname&gt; is name or IP address of the machine on which HiveServer2 runs.</li> <li>- &lt;port&gt; is the port number on which HiveServer2 listens.</li> <li>- &lt;db&gt; is the database to which you want to connect. If you do not provide the database name, the Data Integration Service uses the default database details.</li> </ul> <p>To connect to HiveServer2, use the connection string format that Apache Hive implements for the specific Hadoop Distribution. For more information about Apache Hive connection string formats, see the Apache Hive documentation.</p> <p>For user impersonation, you must add <code>hive.server2.proxy.user=&lt;xyz&gt;</code> to the JDBC connection URI. If you do not configure user impersonation, the current user's credentials are used connect to the HiveServer2.</p> <p>If the Hadoop cluster uses SSL or TLS authentication, you must add <code>ssl=true</code> to the JDBC connection URI. For example: <code>jdbc:hive2://&lt;hostname&gt;:&lt;port&gt;/&lt;db&gt;;ssl=true</code></p> <p>If you use self-signed certificate for SSL or TLS authentication, ensure that the certificate file is available on the client machine and the Data Integration Service machine. For more information, see the <i>Data Engineering Integration Guide</i>.</p>  |

# Informix Connections

You can create an Informix connection in the Test Data Manager to perform data subset and data masking operations.

The following table describes the database connection properties for an Informix database:

| Property                      | Description  |
|-------------------------------|--|
| Name                          | Required. Name of the connection. The name is not case sensitive and must be unique within the domain. It cannot exceed 128 characters, start with a number, contain spaces, or contain the following special characters:<br>~`!\$%^&*()-+={[] \:;'"'<, >. ? /                                     |
| Connection Type               | Required. The connection type. Select Informix.  |
| Description                   | The description of the connection. The description cannot exceed 255 characters.   |
| User Name                     | Required. The database user name.  |
| Use Parameter in Password     | Indicates the password for the database user name is a session parameter. <i>\$ParamName</i> . Define the password in the workflow or session parameter file, and encrypt it using the <i>mpasswd</i> CRYPT_DATA option.<br>Used for data subset and data masking operations. Default is disabled. |
| Password                      | Required. The password for the database user name.   |
| Owner                         | The owner of the connection. Default is the user who creates the connection. You can change the owner of the connection.   |
| JDBC Login Password           | Required if Use Parameter in Password is selected. The password for the JDBC user.<br>Used for import from source and data discovery operations.   |
| Code Page                     | Code page the Integration Service uses to read from a source database or write to a target database or file.   |
| Data Access Connection String | The connection string used to access data from the database. Enter <database name>.  |
| Environment SQL               | SQL commands to set the database environment when you connect to the database. The PowerCenter Integration Service runs the connection environment SQL each time it connects to the database.  |
| Transaction SQL               | SQL commands to set the database environment when you connect to the database. The PowerCenter Integration Service runs the transaction environment SQL at the beginning of each transaction.  |
| Connection Retry Period       | Number of seconds the Integration Service attempts to reconnect to the database if the connection fails. If the Integration Service cannot connect to the database in the retry period, the operation fails.<br>Default is 0.  |

# JDBC Connections in a Non-Hadoop Plan

Create a JDBC connection to use in a non-Hadoop plan if the target ODBC connection requires a JDBC connection string.

For example, to create a connection for a MySQL database, you use the ODBC connection type. If you use the connection as a target in a plan in which you disable the indexes and constraints, you must enter a target JDBC connection. You enter a target JDBC connection in the **Target JDBC Connection** field in the plan to provide a JDBC connection string.

Use the JDBC connection type to create a MySQL database connection to use as the target JDBC connection.

**Note:** You cannot use a JDBC connection type as a source, target, or dictionary connection in a non-Hadoop plan.

The following table describes the database connection properties for a JDBC database:

| Property        | Description   |
|-----------------|---|
| Name            | Required. Name of the connection. The name is not case sensitive and must be unique within the domain. It cannot exceed 128 characters, start with a number, contain spaces, or contain the following special characters:<br>~ ` ! \$ % ^ & * ( ) - + = { [ ]   \ : ; " ' < , > . ? /   |
| Connection Type | Required. The connection type. Select JDBC.   |
| Description     | The description of the connection. The description cannot exceed 255 characters.  |
| User Name       | Required. The database user name.   |
| Password        | Required. The password for the database user name.  |
| Owner           | The owner of the connection. Default is the user who creates the connection. You can change the owner of the connection.  |
| Used for Hadoop | Configures the connection properties based on how you want to use the connection. To use the connection in a non-Hadoop plan, choose <b>No</b> .  |
| Database Type   | Required. The type of database to which JDBC connects. The options are:<br>- MySQL<br>- Oracle<br>- Microsoft SQL Server<br>- DB2 for Linux, UNIX, and Windows<br>- PostgreSQL<br>- Teradata<br>Default is MySQL.   |
| Driver Name     | Indicates the JDBC driver name to interact with the database.<br>Default values:<br>- MySQL. <code>com.mysql.jdbc.Driver</code><br>- Oracle. <code>com.informatica.jdbc.oracle.OracleDriver</code><br>- Microsoft SQL Server. <code>com.informatica.jdbc.sqlserver.SQLServerDriver</code><br>- DB2 for Linux, UNIX, and Windows. <code>com.informatica.jdbc.db2.DB2Driver</code><br>- PostgreSQL. <code>org.postgresql.Driver</code><br>- Teradata. <code>com.teradata.jdbc.TeraDriver</code> . |

| Property                        | Description  |
|---------------------------------|--|
| JDBC String                     | <p>Required. The JDBC connection URL used to access metadata from the database. Enter the correct connection string for the database:</p> <ul style="list-style-type: none"> <li>- MySQL: jdbc:mysql://&lt;hostname&gt;:&lt;port&gt;/&lt;dbname&gt;</li> <li>- Oracle: jdbc:informatica:oracle://&lt;hostname&gt;:&lt;port&gt;;SID=&lt;sid&gt;</li> <li>- Microsoft SQL Server: jdbc:informatica:sqlserver://&lt;hostname&gt;:1433;SelectMethod=cursor;databaseName=&lt;dbname&gt;</li> <li>- DB2 for Linux, UNIX, and Windows: jdbc:informatica:db2://&lt;hostname&gt;:50000;databaseName=&lt;dbname&gt;</li> <li>- PostgreSQL: jdbc:postgresql://&lt;hostname&gt;:5432/&lt;dbname&gt;</li> <li>- Teradata: jdbc:teradata://ServerHost/database=MyDatabaseName,tmode=ANSI,charset=UTF8</li> </ul> |
| Data Access Connection String   | The connection string used to access data from the database. Enter <database name>.  |
| Environment SQL                 | SQL commands to set the database environment when you connect to the database. The Data Integration Service runs the connection environment SQL each time it connects to the database. Used for all operations.  |
| Transaction SQL                 | SQL commands to set the database environment when you connect to the database. The Data Integration Service runs the transaction environment SQL at the beginning of each transaction. Used for all operations.  |
| SQL Identifier Character To Use | <p>Required. The type of character used to identify special characters and reserved SQL keywords, such as WHERE.</p> <p>The Data Integration Service places the selected character around special characters and reserved SQL keywords. The Data Integration Service also uses this character for the Support Mixed-case Identifiers property.</p> <p>Select one of the following characters based on the database in the connection:</p> <ul style="list-style-type: none"> <li>- Double quotes " "</li> <li>- Single quotes ' '</li> <li>- Back quotes ` `</li> <li>- Brackets [ ]</li> </ul> <p>Used for data discovery operations.</p>   |
| Support Mixed Case Identifiers  | <p>When enabled, the Data Integration Service places identifier characters around table, view, schema, synonym, and column names when generating and executing an SQL against these objects in the connection.</p> <p>Use if the objects have mixed-case or lowercase names. By default, this option is not selected.</p> <p>Used for data discovery operations.</p>   |



# JDBC Connections in a Hadoop Plan

You can create a JDBC connection to use as a source, target ,or dictionary in a Hadoop plan to perform data masking operations.

The following table describes the JDBC connection properties that you can configure:

| Property            | Description   |
|---------------------|---|
| Name                | Required. Name of the connection. The name is not case sensitive and must be unique within the domain. It cannot exceed 128 characters, start with a number, contain spaces, or contain the following special characters:<br>~ ` ! \$ % ^ & * ( ) - + = { [ ]   \ : ; " ' < , > . ? /   |
| Connection Type     | Required. The connection type. Select JDBC.   |
| Description         | The description of the connection. The description cannot exceed 255 characters.  |
| User Name           | Required. The database user name.   |
| Password            | Required. The password for the database user name.  |
| Owner               | The owner of the connection. Default is the user who creates the connection. You can change the owner of the connection.  |
| Used for Hadoop     | Configures the connection properties based on how you want to use the connection. To use the connection in a Hadoop plan, choose <b>Yes</b> .   |
| Driver Name         | Indicates the JDBC driver name to interact with the database.<br>Enter the appropriate driver name for the database:<br><ul style="list-style-type: none"> <li>- DB2 for Linux, UNIX, and Windows: <code>com.informatica.jdbc.db2.DB2Driver</code></li> <li>- MySQL: <code>com.informatica.jdbc.sqlserver.SQLServerDriver</code></li> <li>- Oracle: <code>com.informatica.jdbc.oracle.OracleDriver</code></li> <li>- Sybase: <code>com.informatica.jdbc.sybase.SybaseDriver</code></li> </ul>   |
| JDBC String         | Required. The JDBC connection URL used to access metadata from the database. Enter the appropriate connection string for the database:<br><ul style="list-style-type: none"> <li>- DB2 for Linux, UNIX, and Windows: <code>jdbc:informatica:db2://&lt;hostname&gt;:&lt;port number&gt;/&lt;dbname&gt;</code></li> <li>- MySQL: <code>jdbc:informatica:sqlserver://&lt;hostname&gt;:&lt;port number&gt;;SelectMethod=cursor;&lt;dbname&gt;</code></li> <li>- Oracle: <code>jdbc:informatica:oracle://&lt;hostname&gt;:&lt;port number&gt;/&lt;dbname&gt;</code></li> <li>- Sybase: <code>jdbc:informatica:sybase://&lt;hostname&gt;:&lt;port number&gt;/&lt;dbname&gt;</code></li> </ul> |
| Use Sqoop Connector | Select the version of Sqoop Connector that you want to use to connect to the database.  |

| Property                        | Description  |
|---------------------------------|--|
| Sqoop Arguments                 | <p>Enabled when you choose to use Sqoop Connector. Enter the appropriate Sqoop arguments that you want to use to connect to the database and process data:</p> <ul style="list-style-type: none"> <li>- <b>DB2 for Linux, UNIX, and Windows:</b> <code>--connect jdbc:db2://&lt;hostname&gt;:&lt;port number&gt;/&lt;dbname&gt; --verbose</code></li> <li>- <b>MySQL:</b> <code>--connect jdbc:mysql://&lt;hostname&gt;:&lt;port number&gt;/&lt;dbname&gt; --verbose</code></li> <li>- <b>Oracle:</b> <code>--connect jdbc:oracle:thin:@&lt;hostname&gt;:&lt;port number&gt;/&lt;dbname&gt; --verbose</code></li> <li>- <b>Sybase:</b> <code>--connect jdbc:sybase:Tds:&lt;hostname&gt;:&lt;port number&gt;/&lt;dbname&gt; --verbose</code></li> </ul> |
| Environment SQL                 | <p>SQL commands to set the database environment when you connect to the database. The Data Integration Service runs the connection environment SQL each time it connects to the database. Used for all operations.</p>   |
| Transaction SQL                 | <p>SQL commands to set the database environment when you connect to the database. The Data Integration Service runs the transaction environment SQL at the beginning of each transaction. Used for all operations.</p>   |
| SQL Identifier Character To Use | <p>Required. The type of character used to identify special characters and reserved SQL keywords, such as WHERE.</p> <p>The Data Integration Service places the selected character around special characters and reserved SQL keywords. The Data Integration Service also uses this character for the Support Mixed-case Identifiers property.</p> <p>Select one of the following characters based on the database in the connection:</p> <ul style="list-style-type: none"> <li>- Double quotes " "</li> <li>- Single quotes ' '</li> <li>- Back quotes ` `</li> <li>- Brackets [ ]</li> </ul> <p>Used for data discovery operations.</p>   |
| Support Mixed Case Identifiers  | <p>When enabled, the Data Integration Service places identifier characters around table, view, schema, synonym, and column names when generating and executing an SQL against these objects in the connection.</p> <p>Use if the objects have mixed-case or lowercase names. By default, this option is not selected. Used for data discovery operations.</p>  |

## Microsoft SQL Server Connections

You can create a Microsoft SQL Server connection in Test Data Manager to perform data discovery, data subset, data generation, and data masking operations.

Use a Microsoft SQL Server connection to create connections to Microsoft SQL Server and Microsoft Azure SQL databases. To use a Microsoft Azure SQL Data Warehouse database for data masking tasks, use the AzureDWv3 connection type.

The following table describes the database connection properties for a Microsoft SQL Server connection:

| Property                      | Description   |
|-------------------------------|---|
| Name                          | Required. Name of the connection. The name is not case sensitive and must be unique within the domain. It cannot exceed 128 characters, start with a number, contain spaces, or contain the following special characters:<br>~ ` ! \$ % ^ & * ( ) - + = { [ ]   \ ; : " ' < , > . ? /               |
| Connection Type               | Required. The connection type. Select Microsoft SQL Server.   |
| Description                   | The description of the connection. The description cannot exceed 255 characters.  |
| Use Kerberos Authentication   | Enables Kerberos Authentication. You cannot enter a user name and password if you choose Kerberos authentication.   |
| User Name                     | Required. The database user name.   |
| Use Parameter in Password     | Indicates the password for the database user name is a session parameter. <i>\$ParamName</i> . Define the password in the workflow or session parameter file, and encrypt it using the <i>pmpasswd</i> CRYPT_DATA option.<br>Used for data subset and data masking operations. Default is disabled. |
| Password                      | Required. The password for the database user name.  |
| Owner                         | The owner of the connection. Default is the user who creates the connection. You can change the owner of the connection.  |
| Metadata Connection String    | Required. The JDBC connection URL used to access metadata from the database. Enter <code>jdbc:informatica:sqlserver://&lt;hostname&gt;:1433;SelectMethod=cursor;databaseName=&lt;dbname&gt;</code> .<br>Used for data discovery operations.   |
| JDBC Login Password           | Required if Use Parameter in Password is selected. The password for the JDBC user.<br>Used for import from source and data discovery operations.  |
| Code Page                     | Code page the Integration Service uses to read from a source database or write to a target database or file.<br>Used for all operations.  |
| Data Access Connection String | The connection string used to access data from the database. Enter <code>&lt;servername@dbname&gt;</code> .<br>Used for all operations.   |
| Environment SQL               | SQL commands to set the database environment when you connect to the database. The PowerCenter Integration Service runs the connection environment SQL each time it connects to the database.<br>Used for all operations.   |
| Transaction SQL               | SQL commands to set the database environment when you connect to the database. The PowerCenter Integration Service runs the transaction environment SQL at the beginning of each transaction.<br>Used for all operations.   |
| Connection Retry Period       | Number of seconds the Integration Service attempts to reconnect to the database if the connection fails. If the Integration Service cannot connect to the database in the retry period, the operation fails.<br>Used for all operations. Default is 0.  |

| Property                      | Description  |
|-------------------------------|--|
| Domain Name                   | The name of the domain.<br>Used for all operations.  |
| Owner Name                    | The name of the owner of the schema.   |
| Schema Name                   | The name of the schema in the database.<br>Required in the following cases:<br>- For the profiling warehouse and staging database if the schema name is different than the database user name<br>- When you want to create and run a column profile<br>Used for all operations.  |
| Pass Through Security Enabled | Enables pass-through security for the connection. When you enable pass-through security for a connection, the domain uses the client user name and password to log into the corresponding database, instead of the credentials defined in the connection object.<br>Used for data discovery operations. Default is disabled. |
| Use Trusted Connection        | The Data Integration Service uses Windows authentication to access the Microsoft SQL Server database. The user name that starts the Data Integration Service must be a valid Windows user with access to the Microsoft SQL Server database.  |
| Database Name                 | Required. Name of the database. If you do not enter a database name, connection-related messages do not show a database name when the default database is used.<br>Used for all operations.  |
| Server Name                   | Required. Database server name.<br>Used for data subset and data masking operations.   |
| Packet Size                   | Packet size for the transmission of data. Used to optimize the native Microsoft SQL Server drivers.<br>Used for all operations. Default is 0.  |

## Rules and Guidelines for a Kerberos Environment

Read the following rules and guidelines before you create the connection in a Kerberos environment:

- Add the JDBC driver details in the `org.eclipse.virgo.kernel.authentication.config` file. This file is stored in the following location: `<INFA_HOME>/TDM/configuration`.

The following code represents sample information required:

```
JDBC_DRIVER_01 {
    com.sun.security.auth.module.Krb5LoginModule required
    doNotPrompt=<Enter true or false>
    useKeyTab=<Enter true or false>
    keyTab="file:<path to the user keytab file>"
    principal="<The user name that must be used as the principal.>"
    storeKey=<Enter true or false>
    debug=<Enter true or false>;
};
```

- If you create the connection in a multi-realm Kerberos environment, the `default_realm` property in the `krb5.conf` file must be the name of the realm in which you install the database.  
The `krb5.conf` file contains configuration information for Kerberos. This file is stored in the following location: `<INFA_HOME>/TDM/datadirect`.
- Restart the Test Data Manager Service after you update the files.

# Netezza Connections

You can create a Netezza connection in the Test Data Manager to perform data subset and data masking operations.

The following table describes the database connection properties for a Netezza database:

| Property                      | Description  |
|-------------------------------|--|
| Name                          | Required. Name of the connection. The name is not case sensitive and must be unique within the domain. It cannot exceed 128 characters, start with a number, contain spaces, or contain the following special characters:<br>~`!\$%^&*()-+={[] \:;'"<, >. ? /                                      |
| Connection Type               | Required. The connection type. Select Netezza.   |
| Description                   | The description of the connection. The description cannot exceed 255 characters.   |
| User Name                     | Required. The database user name.  |
| Use Parameter in Password     | Indicates the password for the database user name is a session parameter. <i>\$ParamName</i> . Define the password in the workflow or session parameter file, and encrypt it using the <i>mpasswd</i> CRYPT_DATA option.<br>Used for data subset and data masking operations. Default is disabled. |
| Password                      | Required. The password for the database user name.   |
| Owner                         | The owner of the connection. Default is the user who creates the connection. You can change the owner of the connection.   |
| Metadata Connection String    | Required. The JDBC connection URL used to access metadata from the database. Enter <code>jdbc:netezza://&lt;host&gt;:5480/&lt;databasename&gt;</code> .<br>Used for all operations.  |
| JDBC Login Password           | Required if Use Parameter in Password is selected. The password for the JDBC user.<br>Used for import from source and data discovery operations.   |
| Code Page                     | Code page the Integration Service uses to read from a source database or write to a target database or file.   |
| Data Access Connection String | The connection string used to access data from the database. Enter <code>&lt;database name&gt;</code> .  |
| Environment SQL               | SQL commands to set the database environment when you connect to the database. The PowerCenter Integration Service runs the connection environment SQL each time it connects to the database.  |
| Transaction SQL               | SQL commands to set the database environment when you connect to the database. The PowerCenter Integration Service runs the transaction environment SQL at the beginning of each transaction.  |
| Connection Retry Period       | Number of seconds the Integration Service attempts to reconnect to the database if the connection fails. If the Integration Service cannot connect to the database in the retry period, the operation fails.<br>Default is 0.  |

You can transfer data in Netezza by using bulk mode. Use bulk mode to increase session performance.

In bulk mode, the PowerCenter Integration Service reads and writes Netezza data through an external table. An external table definition is stored within the Netezza database but the data is saved externally in a location that is accessible to the Netezza host or the client system. Create external tables to structure your loading operation and manipulate data by using Netezza SQL.

The following table describes Bulk Writer properties that you can enter for a Netezza connection to use the bulk loader option to write data:

| Property               | Description  |
|------------------------|--|
| Delimiter              | The delimiter separates successive input fields. Set the delimiter to any value supported. The value must not be a part of the input data. Default is  .   |
| Null value             | The null value parameter of the external table. The PowerCenter Integration Service uses the null value internally. Maximum value is one character. Default is blank.  |
| Escape Character       | Escape character of the external table. If the data contains NULL, CR, and LF characters in the Char or Varchar field, you need to add an escape character for these fields before loading. Enter a backslash (\) as the escape character.   |
| Quoted Value           | The quoted value parameter of the external table. Select SINGLE or DOUBLE to enclose the field in single or double quotes. Select NO to omit quotes. Default is NO. The quoted value is not a part of the data.  |
| Ignore Key Constraints | Ignores constraints on primary key fields. When you select this option, the PowerCenter Integration Service can write duplicate rows with the same primary key to the target. Default is disabled. The PowerCenter Integration Service ignores this value when the target operation is "update as update" or "update else insert."   |
| Duplicate Row Handling | Determines how the PowerCenter Integration Service handles duplicate rows. Select one of the following values: <ul style="list-style-type: none"> <li>- First Row. The PowerCenter Integration Service passes the first row to the target and rejects the rows that follow with the same primary key.</li> <li>- Last Row. The PowerCenter Integration Service passes the last duplicate row to the target and discards the rest of the rows.</li> </ul> Default is First Row. |
| Bad File Name          | Directory where the PowerCenter Integration Service creates a reject file. The file contains the rejected records.<br>By default, the PowerCenter Integration Service creates a bad file in the following directory:<br>\$PMBadFileDir   |
| Socket Buffer Size     | Buffer size that the PowerCenter Integration Service uses to write data. Set the socket buffer size to 25 to 50 % of the DTM buffer size to increase session performance. You might need to test different settings for optimal performance. Enter a value between 4096 and 2147483648 bytes.<br>Default is 8388608 bytes.   |
| Control Character      | The control character parameter of the external table to transfer data containing control characters. You can enter control characters for Char and Varchar fields. If you enter a control character, you must add an escape character for the NULL, CR, and LF fields. Default is TRUE.   |
| CRINSTRING             | The CRinstring parameter to transfer data containing carriage returns (CR). You can enter a non escape CR in Char or Varchar fields. To load the control characters present in the Char and Varchar fields, set the CTRLCHARS and CRINSTRING parameters to TRUE in the session properties for the Netezza source.<br>Default is TRUE.  |

| Property                 | Description   |
|--------------------------|---|
| Pipe Directory Path      | <p>Path for the PowerCenter Integration Service to create the pipe for the external table. If you do not specify the path, the PowerCenter Integration Service uses the following directory to create the pipe for the external table:</p> <pre>&lt;Informatica installation directory&gt;/server/bin</pre> <p>Required if the machine hosting the PowerCenter Integration Service is on HP-UX and the following directory is on an NFS-mounted directory:</p> <pre>&lt;Informatica installation directory&gt;/server/bin&gt;</pre> <p>Enter a path that does not use an NFS mount.</p> |
| Error Log Directory Name | <p>Error log directory can reside on the machine where the PowerCenter Integration Service runs. For example, you can use the following directory:</p> <pre>\$PMBadFileDir</pre> <p>By default, the PowerCenter Integration Service creates the error log in the following directory on the machine hosting the NetezzaPerformance Server:</p> <pre>/tmp</pre> <p>The PowerCenter Integration Service creates a reject file in the error log directory if the data is not valid.</p>  |

The following table describes Bulk Reader properties that you can enter for a Netezza connection to use the bulk loader option to read data:

| Property            | Description   |
|---------------------|---|
| Delimiter           | The delimiter separates successive input fields. Set the delimiter to any value supported. The value must not be a part of the input data. Default is  .  |
| Null value          | The null value parameter of the external table. The PowerCenter Integration Service uses the null value internally. Maximum value is one character. Default is blank.   |
| Escape Character    | Escape character of the external table. If the data contains NULL, CR, and LF characters in the Char or Varchar field, you need to add an escape character for these fields before loading. Enter a backslash (\) as the escape character.  |
| Socket Buffer Size  | Buffer size that the PowerCenter Integration Service uses to read data. Set the socket buffer size to 25 to 50% of the DTM buffer size to increase session performance. You might need to test different settings for optimal performance. Enter a value between 4096 and 2147483648 bytes. Default is 8388608 bytes.   |
| Pipe Directory Path | <p>Path for the PowerCenter Integration Service to create the pipe for the external table. If you do not specify the path, the PowerCenter Integration Service uses the following directory to create the pipe for the external table:</p> <pre>&lt;Informatica installation directory&gt;/server/bin</pre> <p>Required if the machine hosting the PowerCenter Integration Service is on HP-UX and the following directory is on an NFS-mounted directory:</p> <pre>&lt;Informatica installation directory&gt;/server/bin&gt;</pre> <p>Enter a path that does not use an NFS mount.</p> |

# ODBC Connections

You can create an ODBC connection in Test Data Manager to perform data discovery, data subset, and data masking operations.

The following table describes the connection properties for an ODBC database:

| Property                      | Description   |
|-------------------------------|---|
| Name                          | Required. Name of the connection. The name is not case sensitive and must be unique within the domain. It cannot exceed 128 characters, start with a number, contain spaces, or contain the following special characters:<br>~ ` ! \$ % ^ & * ( ) - + = { [ ]   \ : ; " ' < , > . ? /                                     |
| Connection Type               | Required. The connection type. Select ODBC.   |
| Description                   | The description of the connection. The description cannot exceed 255 characters.  |
| User Name                     | Required. The database user name.   |
| Password                      | Required. The password for the database user name.  |
| Owner                         | The owner of the connection. Default is the user who creates the connection. You can change the owner of the connection.  |
| Code Page                     | The code page used to read from a source database or write to a target database or file. Used for all operations.   |
| Data Access Connection String | The connection string used to access data from the database. Enter <database name>. Used for all operations.  |
| Environment SQL               | SQL commands to set the database environment when you connect to the database. The Integration Service runs the connection environment SQL each time it connects to the database. Used for all operations.  |
| Transaction SQL               | SQL commands to set the database environment when you connect to the database. The Integration Service runs the transaction environment SQL at the beginning of each transaction. Used for all operations.  |
| Connection Retry Period       | Number of seconds the Integration Service tries to reconnect to the database if the connection fails. If the Integration Service cannot connect to the database in the retry period, the integration object fails. Used for all operations. Default is 0.   |
| Pass Through Security Enabled | Enables pass-through security for the connection. When you enable pass-through security for a connection, the domain uses the client user name and password to log into the corresponding database, instead of the credentials defined in the connection object. Used for data discovery operations. Default is disabled. |



| Property                        | Description  |
|---------------------------------|--|
| ODBC Provider                   | <p>Required. The type of database to which ODBC connects. For pushdown optimization, specify the database type to enable the Integration Service to generate native database SQL. The options are:</p> <ul style="list-style-type: none"> <li>- Other</li> <li>- MS SQL Server</li> <li>- SAP HANA</li> <li>- Sybase</li> </ul> <p>Used for all operations. Default is Sybase.</p> <p>To create a connection for a PostgreSQL, Snowflake, Microsoft Azure Data Warehouse or Amazon Redshift database, choose Other.</p>  |
| SQL Identifier Character To Use | <p>Required. The type of character used to identify special characters and reserved SQL keywords, such as WHERE.</p> <p>The Data Integration Service places the selected character around special characters and reserved SQL keywords. The Data Integration Service also uses this character for the Support Mixed-case Identifiers property.</p> <p>Select the following characters based on the database in the connection.</p> <ul style="list-style-type: none"> <li>- Double quotes " "</li> <li>- Single quotes ' '</li> <li>- Back quotes ` `</li> <li>- Brackets [ ]</li> </ul> <p>Used for data discovery operations.</p> <p>If you use MongoDB or Cassandra connections with special characters in the names, you must select the double quotes.</p> <p>You can use the following special characters for MongoDB sources: / + - ~ ? ,   @ #</p> |
| Support Mixed Case Identifiers  | <p>When enabled, the Data Integration Service places identifier characters around table, view, schema, synonym, and column names when generating and executing SQL against these objects in the connection.</p> <p>Use if the objects have mixed-case or lowercase names. By default, this option is not selected.</p> <p>Used for data discovery operations.</p>  |

**Note:** Use the following driver version for MongoDB:

SimbdaMongoDBODBC Driver Version: 1.8.x.xxx

# Oracle Connections

You can create an Oracle connection in the Test Data Manager to perform data discovery, data subset, and data masking operations.

The following table describes the connection properties for an Oracle database:

| Property                      | Description  |
|-------------------------------|--|
| Name                          | Required. Name of the connection. The name is not case sensitive and must be unique within the domain. It cannot exceed 128 characters, start with a number, contain spaces, or contain the following special characters:<br>~ ` ! \$ % ^ & * ( ) - + = { [ ]   \ ; " ' < , > . ? /                |
| Connection Type               | Required. The connection type. Select Oracle.  |
| Description                   | The description of the connection. The description cannot exceed 255 characters.   |
| Use Kerberos Authentication   | Enables Kerberos Authentication. You cannot enter a user name and password if you select this check box.   |
| User Name                     | Required. The database user name.  |
| Use Parameter in Password     | Indicates the password for the database user name is a session parameter. <i>\$ParamName</i> . Define the password in the workflow or session parameter file, and encrypt it using the <i>mpasswd</i> CRYPT_DATA option.<br>Used for data subset and data masking operations. Default is disabled. |
| Password                      | Required. The password for the database login. The password can contain a semicolon (;).   |
| Owner                         | The owner of the connection. Default is the user who creates the connection. You can change the owner of the connection.   |
| Metadata Connection String    | Required. The JDBC connection URL used to access metadata from the database. Enter <code>jdbc:informatica:oracle://&lt;hostname&gt;:1521;SID=&lt;sid&gt;</code> .<br>Used for all operations.  |
| JDBC Login Password           | Required if Use Parameter in Password is selected. The password for the JDBC user.<br>Used for import from source and data discovery operations.   |
| Code Page                     | Code page the Integration Service uses to read from a source database or write to a target database or file.<br>Used for all operations.   |
| Data Access Connection String | The native connection string to the database. Connection string to preview data and run mappings. Enter <code>dbname.world</code> from the TS NAMES entry.<br>Used for all operations.   |
| Environment SQL               | SQL commands to set the database environment when you connect to the database. The Integration Service executes the connection environment SQL each time it connects to the database.<br>Used for all operations.  |

| Property                      | Description   |
|-------------------------------|---|
| Transaction SQL               | SQL commands to set the database environment when you connect to the database. The Integration Service runs the transaction environment SQL at the beginning of each transaction. Used for all operations.  |
| Connection Retry Period       | Number of seconds the Integration Service attempts to reconnect to the database if the connection fails. If the Integration Service cannot connect to the database in the retry period, the operation fails. Used for all operations. Default is 0.   |
| Enable Parallel Mode          | Enables parallel processing when loading data into a table in bulk mode. Used for all operations. Default is disabled.  |
| Pass Through Security Enabled | Enables pass-through security for the connection. When you enable pass-through security for a connection, the domain uses the client user name and password to log into the corresponding database, instead of the credentials defined in the connection object. Used for data discovery operations. Default is disabled. |

## PowerExchange DB2 for i5/OS Connections

You can create a PowerExchange® DB2 for i5/OS connection in Test Data Manager to perform data subset and data masking operations.

The following table describes the database connection properties for a PowerExchange DB2 for i5/OS database:

| Property        | Description   |
|-----------------|---|
| Name            | Required. Name of the connection. The name is not case sensitive and must be unique within the domain. It cannot exceed 128 characters, start with a number, contain spaces, or contain the following special characters:<br>~ ` ! \$ % ^ & * ( ) - + = { [ ]   \ ; " ' < , > . ? / |
| Connection Type | Required. The connection type. Select PWX DB2 for i5/OS.  |
| Description     | The description of the connection. The description cannot exceed 255 characters.  |
| User Name       | Required. The database user name.   |
| Password        | Required. The password for the database user name.  |
| Owner           | The owner of the connection. Default is the user who creates the connection. You can change the owner of the connection.  |
| Code Page       | The code page that the Integration Service uses to extract data from the source database.   |

| Property                         | Description   |
|----------------------------------|---|
| Library List                     | List of libraries that PowerExchange searches to qualify the table name for Select, Insert, Delete, or Update statements. PowerExchange searches the list if the table name is unqualified. If you specify multiple libraries, separate the library names with spaces and enclose the list in quotation marks (for example, "TGTLIB1 TGTLIB2 TGTLIB3").<br><b>Note:</b> If you specify Library List and Database File Overrides and a table exists in both, Database Files Overrides takes precedence.  |
| Isolation Level                  | Commit scope of the transaction. Select one of the following values: <ul style="list-style-type: none"> <li>- None.</li> <li>- CS. Cursor stability.</li> <li>- RR. Repeatable read.</li> <li>- CHG. Change.</li> <li>- ALL.</li> </ul> Default is None.  |
| Array Size                       | Db2 fetch array size, in number of rows, for DB2 bulk data movement operations that use the DB2 access method. The array size pertains to the DB2 multiple-row FETCH statements that PowerExchange uses to read data from the DB2 source tables. Valid values are from 1 through 100000.<br>Default is 25. Informatica recommends that you enter an array size no greater than 100.   |
| Environment SQL                  | SQL commands to set the database environment when you connect to the database. The PowerCenter Integration Service runs the connection environment SQL each time it connects to the database.   |
| Connection Retry Period          | Number of seconds the Integration Service attempts to reconnect to the data source or target if the connection fails. If the Integration Service cannot connect to the database in the retry period, the operation fails.<br>Default is 0.  |
| Database Name                    | DB2 subsystem or database instance name.  |
| Compression                      | Select to compress source data during the PowerCenter session.<br>Default is disabled.  |
| Encryption Type                  | The type of encryption that the Integration Service uses. Select one of the following values: <ul style="list-style-type: none"> <li>- None.</li> <li>- RC2.</li> <li>- DES.</li> </ul> Default is None.  |
| Encryption Level                 | The level of encryption that the Integration Service uses. If you select RC2 or DES for Encryption Type, select one of the following values to indicate the encryption level. <ul style="list-style-type: none"> <li>- 1. Uses a 56-bit encryption key for DES and RC2.</li> <li>- 2. Uses a 168-bit triple encryption key for DES. Uses a 64-bit encryption key for RC2.</li> <li>- 3. Uses a 168-bit triple encryption key for DES. Uses a 128-bit encryption key for RC2.</li> </ul> Ignored if you do not select an encryption type.<br>Default is 1. |
| Interpret As Rows                | Interprets the pacing size as rows or kilobytes. Select to represent the pacing size in number of rows. If you clear this option, the pacing size represents kilobytes.<br>Default is disabled.   |
| Convert Character Data As String | Convert character fields to string fields so that embedded nulls in data are processed as spaces.<br>Default is disabled.   |

| Property                | Description   |
|-------------------------|---|
| Write Mode              | <p>Mode in which the Integration Service sends data to the PowerExchange Listener. Configure one of the following write modes:</p> <ul style="list-style-type: none"> <li>- Confirm Write On. Sends data to the PowerExchange Listener and waits for a response before sending more data. Select if error recovery is a priority. This option might decrease performance.</li> <li>- Confirm Write Off. Sends data to the PowerExchange Listener without waiting for a response. Use this option when you can reload the target table if an error occurs.</li> <li>- Asynchronous With Fault Tolerance. Sends data to the PowerExchange Listener without waiting for a response. This option also provides the ability to detect errors. This provides the speed of Confirm Write Off with the data integrity of Confirm Write On.</li> </ul> <p>Default is Confirm Write On.</p>   |
| Reject File             | <p>Overrides the default prefix of PWXR for the reject file. PowerExchange creates the reject file on the target machine when the write mode is asynchronous with fault tolerance. To prevent the creation of the reject files, specify PWXDISABLE.</p>   |
| PWX Override            | <p>Specifies PowerExchange connection override values, separated by semicolons, including the following overrides:</p> <ul style="list-style-type: none"> <li>- TCPIP_OP_TIMEOUT= network_operation_timeout ;</li> <li>- TCPIP_CON_TIMEOUT= connection_timeout</li> </ul>   |
| Pacing Size             | <p>Amount of data that the source system can pass to the PowerExchange Listener. Configure the pacing size if an external application, database, or the Integration Service node is a bottleneck. The lower the value, the faster the performance. Enter 0 for maximum performance.</p> <p>Default is 0.</p>  |
| Location                | <p>Location of the PowerExchange Listener node. The location is defined in the first parameter of the NODE statement in the PowerExchange dbmover.cfg configuration file.</p>   |
| Database file overrides | <p>Specifies the i5/OS database file override. The format is:</p> <pre>from_file/to_library/to_file/to_member</pre> <p>Where:</p> <ul style="list-style-type: none"> <li>- from_file is the file to be overridden.</li> <li>- to_library is the new library to use.</li> <li>- to_file is the file in the new library to use.</li> <li>- to_member is optional and is the member in the new library and file to use. *FIRST is used if nothing is specified.</li> </ul> <p>You can specify up to 8 unique file overrides on a single connection. A single override applies to a single source or target. When you specify more than one file override, enclose the string of file overrides in double quotes and include a space between each file override.</p> <p><b>Note:</b> If both Library List and Database file overrides are specified and a table exists in both, the Database file overrides takes precedence.</p> |

# PowerExchange DB2 for Linux, UNIX and Windows Connections

You can create a PowerExchange DB2 for Linux, UNIX and Windows connection in Test Data Manager to perform data subset and data masking operations.

The following table describes the database connection properties for a PowerExchange DB2 for Linux, UNIX and Windows database:

| Property                | Description   |
|-------------------------|---|
| Name                    | Required. Name of the connection. The name is not case sensitive and must be unique within the domain. It cannot exceed 128 characters, start with a number, contain spaces, or contain the following special characters:<br>~ ` ! \$ % ^ & * ( ) - + = { [ ]   \ ; ; " ' < , > . ? / |
| Connection Type         | Required. The connection type. Select PWX DB2 for Linux, UNIX and Windows.  |
| Description             | The description of the connection. The description cannot exceed 255 characters.  |
| User Name               | Required. The database user name.   |
| Password                | Required. The password for the database user name.  |
| Owner                   | The owner of the connection. Default is the user who creates the connection. You can change the owner of the connection.  |
| Code Page               | The code page that the Integration Service uses to extract data from the source database.   |
| Environment SQL         | SQL commands to set the database environment when you connect to the database. The PowerCenter Integration Service runs the connection environment SQL each time it connects to the database.   |
| Transaction SQL         | SQL commands to set the database environment when you connect to the database. The PowerCenter Integration Service runs the transaction environment SQL at the beginning of each transaction.   |
| Connection Retry Period | Number of seconds the Integration Service attempts to reconnect to the data source or target if the connection fails. If the Integration Service cannot connect to the database in the retry period, the operation fails.<br>Default is 0.  |
| Database Name           | DB2 subsystem or database instance name.  |
| Server Name             | Database server name.   |
| Compression             | Select to compress source data during the PowerCenter session.<br>Default is disabled.  |
| Encryption Type         | The type of encryption that the Integration Service uses. Select one of the following values:<br>- None.<br>- RC2.<br>- DES.<br>Default is None.  |

| Property                         | Description   |
|----------------------------------|---|
| Encryption Level                 | <p>The level of encryption that the Integration Service uses. If you select RC2 or DES for Encryption Type, select one of the following values to indicate the encryption level.</p> <ul style="list-style-type: none"> <li>- 1. Uses a 56-bit encryption key for DES and RC2.</li> <li>- 2. Uses a 168-bit triple encryption key for DES. Uses a 64-bit encryption key for RC2.</li> <li>- 3. Uses a 168-bit triple encryption key for DES. Uses a 128-bit encryption key for RC2.</li> </ul> <p>Ignored if you do not select an encryption type.<br/>Default is 1.</p>  |
| Interpret As Rows                | <p>Interprets the pacing size as rows or kilobytes. Select to represent the pacing size in number of rows. If you clear this option, the pacing size represents kilobytes.<br/>Default is disabled.</p>   |
| Convert Character Data As String | <p>Convert character fields to string fields so that embedded nulls in data are processed as spaces.<br/>Default is disabled.</p>   |
| Write Mode                       | <p>Mode in which the Integration Service sends data to the PowerExchange Listener. Configure one of the following write modes:</p> <ul style="list-style-type: none"> <li>- Confirm Write On. Sends data to the PowerExchange Listener and waits for a response before sending more data. Select if error recovery is a priority. This option might decrease performance.</li> <li>- Confirm Write Off. Sends data to the PowerExchange Listener without waiting for a response. Use this option when you can reload the target table if an error occurs.</li> <li>- Asynchronous With Fault Tolerance. Sends data to the PowerExchange Listener without waiting for a response. This option also provides the ability to detect errors. This provides the speed of Confirm Write Off with the data integrity of Confirm Write On.</li> </ul> <p>Default is Confirm Write On.</p> |
| Reject File                      | <p>Overrides the default prefix of PWXR for the reject file. PowerExchange creates the reject file on the target machine when the write mode is asynchronous with fault tolerance. To prevent the creation of the reject files, specify PWXDISABLE.</p>   |
| PWX Override                     | <p>Specifies PowerExchange connection override values, separated by semicolons, including the following overrides:</p> <ul style="list-style-type: none"> <li>- TCPIP_OP_TIMEOUT= network_operation_timeout ;</li> <li>- TCPIP_CON_TIMEOUT= connection_timeout</li> </ul>   |
| Pacing Size                      | <p>Amount of data that the source system can pass to the PowerExchange Listener. Configure the pacing size if an external application, database, or the Integration Service node is a bottleneck. The lower the value, the faster the performance. Enter 0 for maximum performance.<br/>Default is 0.</p>   |
| Location                         | <p>Location of the PowerExchange Listener node. The location is defined in the first parameter of the NODE statement in the PowerExchange dbmover.cfg configuration file.</p>   |

# PowerExchange DB2 for z/OS Connections

You can create a PowerExchange DB2 for z/OS connection in Test Data Manager to perform data subset and data masking operations.

The following table describes the database connection properties for a PowerExchange DB2 for z/OS database:

| Property            | Description   |
|---------------------|---|
| Name                | Required. Name of the connection. The name is not case sensitive and must be unique within the domain. It cannot exceed 128 characters, start with a number, contain spaces, or contain the following special characters:<br>~ ` ! \$ % ^ & * ( ) - + = { [ ]   \ ; ; " ' < , > . ? /   |
| Connection Type     | Required. The connection type. Select PWX DB2 for z/OS.   |
| Description         | The description of the connection. The description cannot exceed 255 characters.  |
| User Name           | Required. The database user name.   |
| Password            | Required. The password for the database user name.  |
| Owner               | The owner of the connection. Default is the user who creates the connection. You can change the owner of the connection.  |
| Code Page           | The code page that the Integration Service uses to extract data from the source database.   |
| DB2 Subsystem ID    | Required. Name of the DB2 subsystem.  |
| Correlation ID      | Value to use as the DB2 Correlation ID for DB2 requests. This value overrides the value that you specify for the SESSID statement in the DBMOVER configuration file.  |
| Array Size          | DB2 fetch array size, in number of rows, for DB2 bulk data movement operations that use the DB2 access method. The array size pertains to the DB2 multiple-row FETCH statements that PowerExchange uses to read data from the DB2 source tables. Valid values are from 1 through 100000.<br>Default is 25.<br><b>Note:</b> You must have DB2 Version 8 new-function mode or a later DB2 version to use multiple-row FETCH statements. |
| Off Load Processing | For DB2 Version 8 new-function mode and later, specifies whether to use offload processing to move PowerExchange bulk data processing from the source system to the Integration Service machine. Select one of the following values:<br>- No. Do not use offload processing.<br>- Yes. Use offload processing.<br>- Auto. PowerExchange determines whether to use offload processing.<br>Default is No.                               |
| Worker Threads      | When offload processing is enabled, specifies the number of threads that PowerExchange uses on the Integration Service machine to process bulk data.<br>For optimal performance, this value should not exceed the number of installed or available processors on the Integration Service machine.<br>Valid values are 1 through 64. Default is 0, which disables multithreading.  |



| Property                         | Description   |
|----------------------------------|---|
| Environment SQL                  | SQL commands to set the database environment when you connect to the database. The PowerCenter Integration Service runs the connection environment SQL each time it connects to the database.   |
| Connection Retry Period          | Number of seconds the Integration Service attempts to reconnect to the data source or target if the connection fails. If the Integration Service cannot connect to the database in the retry period, the operation fails.<br>Default is 0.  |
| Database Name                    | DB2 subsystem or database instance name.  |
| Compression                      | Select to compress source data during the PowerCenter session.  |
| Encryption Type                  | The type of encryption that the Integration Service uses. Select one of the following values:<br>- None.<br>- RC2.<br>- DES.<br>Default is None.  |
| Encryption Level                 | The level of encryption that the Integration Service uses. If you select RC2 or DES for Encryption Type, select one of the following values to indicate the encryption level.<br>- 1. Uses a 56-bit encryption key for DES and RC2.<br>- 2. Uses a 168-bit triple encryption key for DES. Uses a 64-bit encryption key for RC2.<br>- 3. Uses a 168-bit triple encryption key for DES. Uses a 128-bit encryption key for RC2.<br>Ignored if you do not select an encryption type.<br>Default is 1.   |
| Interpret As Rows                | Interprets the pacing size as rows or kilobytes. Select to represent the pacing size in number of rows. If you clear this option, the pacing size represents kilobytes.<br>Default is disabled.   |
| Convert Character Data As String | Convert character fields to string fields so that embedded nulls in data are processed as spaces.<br>Default is disabled.   |
| Write Mode                       | Mode in which the Integration Service sends data to the PowerExchange Listener. Configure one of the following write modes:<br>- Confirm Write On. Sends data to the PowerExchange Listener and waits for a response before sending more data. Select if error recovery is a priority. This option might decrease performance.<br>- Confirm Write Off. Sends data to the PowerExchange Listener without waiting for a response. Use this option when you can reload the target table if an error occurs.<br>- Asynchronous With Fault Tolerance. Sends data to the PowerExchange Listener without waiting for a response. This option also provides the ability to detect errors. This provides the speed of Confirm Write Off with the data integrity of Confirm Write On.<br>Default is Confirm Write On. |
| Reject File                      | Overrides the default prefix of PWXR for the reject file. PowerExchange creates the reject file on the target machine when the write mode is asynchronous with fault tolerance. To prevent the creation of the reject files, specify PWXDISABLE.  |
| PWX Override                     | Specifies PowerExchange connection override values, separated by semicolons, including the following overrides:<br>- TCPIP_OP_TIMEOUT= network_operation_timeout ;<br>- TCPIP_CON_TIMEOUT= connection_timeout   |

| Property               | Description   |
|------------------------|---|
| Pacing Size            | Amount of data that the source system can pass to the PowerExchange Listener. Configure the pacing size if an external application, database, or the Integration Service node is a bottleneck. The lower the value, the faster the performance. Enter 0 for maximum performance. Default is 0.  |
| Location               | Required. Location of the PowerExchange Listener node. The location is defined in the first parameter of the NODE statement in the PowerExchange dbmover.cfg configuration file.  |
| Bulk Load              | Whether PowerExchange loads data to the DB2 for z/OS targets with the DB2 LOAD utility. If you select this option, you can configure the remaining connection attributes that apply to the DB2 LOAD utility. Otherwise, PowerExchange ignores these attributes. Default is disabled.  |
| File Name              | The data set prefix PowerExchange uses to create the temporary files needed with the DB2 LOAD utility to load data into a DB2 table.  |
| Space                  | Whether to allocate MVS space in tracks or cylinders:<br><ul style="list-style-type: none"> <li>- TRACK.</li> <li>- CYLINDER.</li> </ul> Default is TRACK.  |
| Primary Space          | Value for the primary space on MVS.<br>Default is 5.  |
| Secondary Space        | Value for the secondary space on MVS.<br>Default is 0.  |
| Delete Temporary Files | How PowerExchange should handle the temporary files it creates with the DB2 LOAD utility to load data into a DB2 table. Select one of the following values:<br><ul style="list-style-type: none"> <li>- NO. Does not delete the temporary files.</li> <li>- BEFORE. Deletes the temporary files before running the utility.</li> <li>- AFTER SUCCESS. Deletes the temporary files after running the utility if it ends with a return code 0.</li> <li>- AFTER. Deletes the temporary files after running the utility.</li> </ul> Default is NO. |
| JCL Template           | The name of the JCL template for the DB2 LOAD utility on the PowerExchange target system.<br>Default is DB2LDJCL.   |
| CTL Template           | The name of the control file template for the DB2 LOAD utility on the PowerExchange target system.<br>Default is DB2LDCTL.  |
| Load Options           | How PowerExchange should handle the data with the DB2 LOAD utility to load data into a DB2 table. Select one of the following values:<br><ul style="list-style-type: none"> <li>- INSERT.</li> <li>- REPLACE.</li> </ul> Default is INSERT.   |

| Property  | Description  |
|-----------|--|
| Mode Type | <p>How PowerExchange should run the DB2 LOAD utility to load data into a DB2 table. Select one of the following values:</p> <ul style="list-style-type: none"> <li>- TASK. Runs the LOAD utility as a sub-task under the PowerExchange Listener.</li> <li>- JOB. Submits a separate job to run the DB2 LOAD utility.</li> <li>- NOSUBMIT. Creates the files and JCL to run the DB2 LOAD utility, unless Mode Time is DATAONLY. Does not submit the load job. You must submit the job manually.</li> </ul> <p>Default is TASK.</p>  |
| Mode Time | <p>How PowerExchange handles the execution of the DB2 LOAD utility. Select one of the following values:</p> <ul style="list-style-type: none"> <li>- WAIT. Waits for the job to end before returning control to PowerCenter. WAIT can only be specified with Mode Type JOB or TASK.</li> <li>- NO WAIT. Returns to PowerCenter without waiting for the job to end. NO WAIT can only be specified with Mode Type JOB or NO SUBMIT.</li> <li>- TIMED. Waits the number of seconds specified in Time before returning control to PowerCenter. TIMED can only be specified with Mode Type JOB.</li> <li>- DATA ONLY creates the data file only. Does not create the files and JCL to run the DB2 LOAD utility. Usually, this option is used with a Mode Type of NOSUBMIT.</li> </ul> <p>Default is WAIT.</p> <p><b>Note:</b> If you enter WAIT, PowerExchange uses 99,999 seconds as the network operation timeout value instead of the value specified by the TCPIP_OP_TIMEOUT parameter of the PWX Override connection attribute. If you enter TIMED, PowerExchange adds 5 minutes to the network operation timeout value specified by the connection attribute.</p> |
| Time      | <p>The wait time in seconds when you select JOB for the Mode Type and TIMED for Mode Time. Valid values are 1 to 99998.</p> <p>Default is 0.</p>   |

## PowerExchange Microsoft SQL Server Connections

You can create a PowerExchange Microsoft SQL Server connection in Test Data Manager to perform data subset and data masking operations.

The following table describes the database connection properties for a PowerExchange Microsoft SQL Server database:

| Property        | Description  |
|-----------------|--|
| Name            | <p>Required. Name of the connection. The name is not case sensitive and must be unique within the domain. It cannot exceed 128 characters, start with a number, contain spaces, or contain the following special characters:</p> <p>~ ` ! \$ % ^ &amp; * ( ) - + = { [ ]   \ ; ' ' &lt; , &gt; . ? /</p> |
| Connection Type | Required. The connection type. Select PWX Microsoft SQL Server.  |
| Description     | The description of the connection. The description cannot exceed 255 characters.   |
| User Name       | Required. The database user name.  |
| Password        | Required. The password for the database user name.   |

| Property                         | Description   |
|----------------------------------|---|
| Owner                            | The owner of the connection. Default is the user who creates the connection. You can change the owner of the connection.  |
| Code Page                        | The code page that the Integration Service uses to extract data from the source database.<br><b>Note:</b> In Unicode mode, PWXPC sets the code page with this value overriding any code page specification in the PowerExchange configuration file.   |
| Array Size                       | Specifies the size of the storage array, in number of records, for Microsoft SQL Server bulk loads. Valid values are from 1 through 100000.<br>Default is 50.   |
| Environment SQL                  | SQL commands to set the database environment when you connect to the database. The PowerCenter Integration Service runs the connection environment SQL each time it connects to the database.   |
| Connection Retry Period          | Number of seconds the Integration Service attempts to reconnect to the data source or target if the connection fails. If the Integration Service cannot connect to the database in the retry period, the operation fails.<br>Default is 0.  |
| Database Name                    | Name of the database in the SQL Server instance.  |
| Server Name                      | Name of the SQL Server instance.  |
| Compression                      | Select to compress source data during the PowerCenter session.<br>Default is disabled.  |
| Encryption Type                  | The type of encryption that the Integration Service uses. Select one of the following values:<br>- None.<br>- RC2.<br>- DES.<br>Default is None.  |
| Encryption Level                 | The level of encryption that the Integration Service uses. If you select RC2 or DES for Encryption Type, select one of the following values to indicate the encryption level.<br>- 1. Uses a 56-bit encryption key for DES and RC2.<br>- 2. Uses a 168-bit triple encryption key for DES. Uses a 64-bit encryption key for RC2.<br>- 3. Uses a 168-bit triple encryption key for DES. Uses a 128-bit encryption key for RC2.<br>Ignored if you do not select an encryption type.<br>Default is 1. |
| Interpret As Rows                | Interprets the pacing size as rows or kilobytes. Select to represent the pacing size in number of rows. If you clear this option, the pacing size represents kilobytes.<br>Default is disabled.   |
| Convert Character Data As String | Convert character fields to string fields so that embedded nulls in data are processed as spaces.<br>Default is disabled.   |

| Property     | Description   |
|--------------|---|
| Write Mode   | <p>Mode in which the Integration Service sends data to the PowerExchange Listener. Configure one of the following write modes:</p> <ul style="list-style-type: none"> <li>- Confirm Write On. Sends data to the PowerExchange Listener and waits for a response before sending more data. Select if error recovery is a priority. This option might decrease performance.</li> <li>- Confirm Write Off. Sends data to the PowerExchange Listener without waiting for a response. Use this option when you can reload the target table if an error occurs.</li> <li>- Asynchronous With Fault Tolerance. Sends data to the PowerExchange Listener without waiting for a response. This option also provides the ability to detect errors. This provides the speed of Confirm Write Off with the data integrity of Confirm Write On.</li> </ul> <p>Default is Confirm Write On.</p> |
| Reject File  | <p>Overrides the default prefix of PWXR for the reject file. PowerExchange creates the reject file on the target machine when the write mode is asynchronous with fault tolerance. To prevent the creation of the reject files, specify PWXDISABLE.</p>   |
| PWX Override | <p>Specifies PowerExchange connection override values, separated by semicolons, including the following overrides:</p> <ul style="list-style-type: none"> <li>- TCPIP_OP_TIMEOUT= network_operation_timeout ;</li> <li>- TCPIP_CON_TIMEOUT= connection_timeout</li> </ul>   |
| Pacing Size  | <p>Amount of data that the source system can pass to the PowerExchange Listener. Configure the pacing size if an external application, database, or the Integration Service node is a bottleneck. The lower the value, the faster the performance. Enter 0 for maximum performance.</p> <p>Default is 0.</p>  |
| Location     | <p>Required. Location of the PowerExchange Listener node. The location is defined in the first parameter of the NODE statement in the PowerExchange dbmover.cfg configuration file.</p>   |

## PowerExchange NRDB Batch Connections

You can create a PowerExchange NRDB Batch connection in Test Data Manager to perform data subset and data masking operations.

The following table describes the database connection properties for a PowerExchange NRDB Batch database:

| Property        | Description  |
|-----------------|--|
| Name            | <p>Required. Name of the connection. The name is not case sensitive and must be unique within the domain. It cannot exceed 128 characters, start with a number, contain spaces, or contain the following special characters:</p> <pre>~ ` ! \$ % ^ &amp; * ( ) - + = { [ ]   \ : ; " ' &lt; , &gt; . ? /</pre> |
| Connection Type | <p>Required. The connection type. Select PWX NRDB Batch.</p>   |
| Description     | <p>The description of the connection. The description cannot exceed 255 characters.</p>  |
| User Name       | <p>Required. The database user name.</p>   |

| Property                | Description   |
|-------------------------|---|
| Password                | Required. The password for the database user name.  |
| Owner                   | The owner of the connection. Default is the user who creates the connection. You can change the owner of the connection.  |
| Code Page               | The code page that the Integration Service uses to extract data from the source database.<br><b>Note:</b> In Unicode mode, PWXPC sets the code page with this value overriding any code page specification in the PowerExchange configuration file.   |
| Array Size              | Storage array size, in number of records, that is used for partitioned or multithreaded sessions. For partitioned sessions, this array size is shared across the partitions. Valid values are from 1 through 100000.<br>Default is 25.<br><b>Note:</b> To tune partitioned sessions, particularly when the Write Mode attribute specifies Confirm Write On, increase the array size.  |
| Write Mode              | Mode in which the Integration Service sends data to the PowerExchange Listener. Configure one of the following write modes: <ul style="list-style-type: none"> <li>- Confirm Write On. Sends data to the PowerExchange Listener and waits for a response before sending more data. Select if error recovery is a priority. This option might decrease performance.</li> <li>- Confirm Write Off. Sends data to the PowerExchange Listener without waiting for a response. Use this option when you can reload the target table if an error occurs.</li> <li>- Asynchronous With Fault Tolerance. Sends data to the PowerExchange Listener without waiting for a response. This option also provides the ability to detect errors. This provides the speed of Confirm Write Off with the data integrity of Confirm Write On.</li> </ul> Default is Confirm Write On. |
| Off Load Processing     | Controls whether to use offload processing. Offload processing transfers PowerExchange bulk data processing from the source system to the Integration Service machine. Select one of the following values: <ul style="list-style-type: none"> <li>- No. Do not use offload processing.</li> <li>- Auto. PowerExchange determines whether to use offload processing.</li> <li>- Filter After. Offloads the bulk data processing to the PowerCenter Integration Service machine, including the filtering of data.</li> <li>- Filter Before. Offloads processing to the PowerCenter Integration Service machine but continues to filter data on the source system.</li> </ul> If you select Filter Before for an IMS unload file data source, PowerExchange changes the selection to Filter After.<br>Default is No.   |
| Worker Threads          | The number of threads that PowerExchange uses on the Integration Service machine to process bulk data. For optimal performance, this value should not exceed the number of installed or available processors on the Integration Service machine. Valid values are from 1 through 64.<br>Default is 0, which disables multithreading. If you use reader or writer pipeline partitioning, accept the default value of 0. You cannot use both multiple worker threads and partitioning.  |
| Connection Retry Period | Number of seconds the Integration Service attempts to reconnect to the data source or target if the connection fails. If the Integration Service cannot connect to the database in the retry period, the operation fails.<br>Default is 0.  |
| Compression             | Select to compress source data during the PowerCenter session.<br>Default is disabled.  |

| Property                         | Description  |
|----------------------------------|--|
| Encryption Type                  | The type of encryption that the Integration Service uses. Select one of the following values: <ul style="list-style-type: none"> <li>- None.</li> <li>- RC2.</li> <li>- DES.</li> </ul> Default is None.   |
| Encryption Level                 | The level of encryption that the Integration Service uses. If you select RC2 or DES for Encryption Type, select one of the following values to indicate the encryption level. <ul style="list-style-type: none"> <li>- 1. Uses a 56-bit encryption key for DES and RC2.</li> <li>- 2. Uses a 168-bit triple encryption key for DES. Uses a 64-bit encryption key for RC2.</li> <li>- 3. Uses a 168-bit triple encryption key for DES. Uses a 128-bit encryption key for RC2.</li> </ul> Ignored if you do not select an encryption type.<br>Default is 1.  |
| Interpret As Rows                | Interprets the pacing size as rows or kilobytes. Select to represent the pacing size in number of rows. If you clear this option, the pacing size represents kilobytes.<br>Default is disabled.  |
| Convert Character Data As String | Convert character fields to string fields so that embedded nulls in data are processed as spaces.<br>Default is disabled.  |
| PWX Override                     | PowerExchange connection override values, separated by semicolons. You can enter any of the following overrides: <pre>TCPIP_OP_TIMEOUT=network_operation_timeout; TCPIP_CON_TIMEOUT=connection_timeout; WRT_ERROR_HANDLING=Y</pre> If you use write partitioning and set the Write Mode attribute to Confirm Write On, you can specify <code>WRT_ERROR_HANDLING=Y</code> to use an alternative method of error handling that is more efficient than the default method when the input data contains many errors. You can also specify this statement in the <code>dbmover.cfg</code> configuration file. |
| Pacing Size                      | Amount of data that the source system can pass to the PowerExchange Listener. Configure the pacing size if an external application, database, or the Integration Service node is a bottleneck. The lower the value, the faster the performance. Enter 0 for maximum performance.<br>Default is 0.  |
| Location                         | Required. Location of the PowerExchange Listener node. The location is defined in the first parameter of the NODE statement in the PowerExchange <code>dbmover.cfg</code> configuration file.  |
| Get PowerExchange Log Entries    | Specifies whether PWXPC writes PowerExchange messages related to a CDC session in the PowerCenter session log.<br>Default is disabled.   |

# PowerExchange Oracle Connections

You can create a PowerExchange Oracle connection in Test Data Manager to perform data subset and data masking operations.

The following table describes the database connection properties for a PowerExchange Oracle database:

| Property                | Description   |
|-------------------------|---|
| Name                    | Required. Name of the connection. The name is not case sensitive and must be unique within the domain. It cannot exceed 128 characters, start with a number, contain spaces, or contain the following special characters:<br>~ ` ! \$ % ^ & * ( ) - + = { [ ]   \ ; : " ' < , > . ? /   |
| Connection Type         | Required. The connection type. Select PWX Oracle.   |
| Description             | The description of the connection. The description cannot exceed 255 characters.  |
| User Name               | Required. The database user name.   |
| Password                | Required. The password for the database user name.  |
| Owner                   | The owner of the connection. Default is the user who creates the connection. You can change the owner of the connection.  |
| Code Page               | The code page that the Integration Service uses to extract data from the source database.<br><b>Note:</b> In Unicode mode, PWXPC sets the code page with this value overriding any code page specification in the PowerExchange configuration file.   |
| Environment SQL         | SQL commands to set the database environment when you connect to the database. The PowerCenter Integration Service runs the connection environment SQL each time it connects to the database.   |
| Connection Retry Period | Number of seconds the Integration Service attempts to reconnect to the data source or target if the connection fails. If the Integration Service cannot connect to the database in the retry period, the operation fails.<br>Default is 0.  |
| Compression             | Select to compress source data during the PowerCenter session.<br>Default is disabled.  |
| Encryption Type         | The type of encryption that the Integration Service uses. Select one of the following values:<br>- None.<br>- RC2.<br>- DES.<br>Default is None.  |
| Encryption Level        | The level of encryption that the Integration Service uses. If you select RC2 or DES for Encryption Type, select one of the following values to indicate the encryption level.<br>- 1. Uses a 56-bit encryption key for DES and RC2.<br>- 2. Uses a 168-bit triple encryption key for DES. Uses a 64-bit encryption key for RC2.<br>- 3. Uses a 168-bit triple encryption key for DES. Uses a 128-bit encryption key for RC2.<br>Ignored if you do not select an encryption type.<br>Default is 1. |



| Property                         | Description   |
|----------------------------------|---|
| Interpret As Rows                | Interprets the pacing size as rows or kilobytes. Select to represent the pacing size in number of rows. If you clear this option, the pacing size represents kilobytes.<br>Default is enabled.  |
| Convert Character Data As String | Convert character fields to string fields so that embedded nulls in data are processed as spaces.<br>Default is disabled.   |
| Write Mode                       | Mode in which the Integration Service sends data to the PowerExchange Listener. Configure one of the following write modes: <ul style="list-style-type: none"> <li>- Confirm Write On. Sends data to the PowerExchange Listener and waits for a response before sending more data. Select if error recovery is a priority. This option might decrease performance.</li> <li>- Confirm Write Off. Sends data to the PowerExchange Listener without waiting for a response. Use this option when you can reload the target table if an error occurs.</li> <li>- Asynchronous With Fault Tolerance. Sends data to the PowerExchange Listener without waiting for a response. This option also provides the ability to detect errors. This provides the speed of Confirm Write Off with the data integrity of Confirm Write On.</li> </ul> Default is Confirm Write On. |
| Reject File                      | Overrides the default prefix of PWXR for the reject file. PowerExchange creates the reject file on the target machine when the write mode is asynchronous with fault tolerance. To prevent the creation of the reject files, specify PWXDISABLE.  |
| PWX Override                     | Specifies PowerExchange connection override values, separated by semicolons, including the following overrides: <ul style="list-style-type: none"> <li>- TCPIP_OP_TIMEOUT= network_operation_timeout ;</li> <li>- TCPIP_CON_TIMEOUT= connection_timeout</li> </ul>  |
| Pacing Size                      | Amount of data that the source system can pass to the PowerExchange Listener. Configure the pacing size if an external application, database, or the Integration Service node is a bottleneck. The lower the value, the faster the performance. Enter 0 for maximum performance. D<br>Default is 0.   |
| Location                         | Required. Location of the PowerExchange Listener node. The location is defined in the first parameter of the NODE statement in the PowerExchange dbmover.cfg configuration file.  |
| TNS Name                         | Oracle SID (instance name).   |

# PowerExchange Sybase Connections

You can create a PowerExchange Sybase connection in Test Data Manager to perform data subset and data masking operations.

The following table describes the database connection properties for a PowerExchange Sybase database:

| Property                | Description   |
|-------------------------|---|
| Name                    | Required. Name of the connection. The name is not case sensitive and must be unique within the domain. It cannot exceed 128 characters, start with a number, contain spaces, or contain the following special characters:<br>~ ` ! \$ % ^ & * ( ) - + = { [ ]   \ ; " ' < , > . ? / |
| Connection Type         | Required. The connection type. Select PWX Sybase.   |
| Description             | The description of the connection. The description cannot exceed 255 characters.  |
| User Name               | Required. The database user name.   |
| Password                | Required. The password for the database user name.  |
| Owner                   | The owner of the connection. Default is the user who creates the connection. You can change the owner of the connection.  |
| Code Page               | The code page that the Integration Service uses to extract data from the source database.<br><b>Note:</b> In Unicode mode, PWXPC sets the code page with this value overriding any code page specification in the PowerExchange configuration file.                                 |
| Environment SQL         | SQL commands to set the database environment when you connect to the database. The PowerCenter Integration Service runs the connection environment SQL each time it connects to the database.   |
| Connection Retry Period | Number of seconds the Integration Service attempts to reconnect to the data source or target if the connection fails. If the Integration Service cannot connect to the database in the retry period, the operation fails.<br>Default is 0.  |
| Database Name           | Name of the database in the Sybase instance.  |
| Server Name             | Name of the Sybase instance.  |
| Compression             | Select to compress source data during the PowerCenter session.<br>Default is disabled.  |
| Encryption Type         | The type of encryption that the Integration Service uses. Select one of the following values:<br>- None.<br>- RC2.<br>- DES.<br>Default is None.  |

| Property                         | Description   |
|----------------------------------|---|
| Encryption Level                 | <p>The level of encryption that the Integration Service uses. If you select RC2 or DES for Encryption Type, select one of the following values to indicate the encryption level.</p> <ul style="list-style-type: none"> <li>- 1. Uses a 56-bit encryption key for DES and RC2.</li> <li>- 2. Uses a 168-bit triple encryption key for DES. Uses a 64-bit encryption key for RC2.</li> <li>- 3. Uses a 168-bit triple encryption key for DES. Uses a 128-bit encryption key for RC2.</li> </ul> <p>Ignored if you do not select an encryption type.<br/>Default is 1.</p>  |
| Interpret As Rows                | <p>Interprets the pacing size as rows or kilobytes. Select to represent the pacing size in number of rows. If you clear this option, the pacing size represents kilobytes.<br/>Default is enabled.</p>  |
| Convert Character Data As String | <p>Convert character fields to string fields so that embedded nulls in data are processed as spaces.<br/>Default is disabled.</p>   |
| Write Mode                       | <p>Mode in which the Integration Service sends data to the PowerExchange Listener. Configure one of the following write modes:</p> <ul style="list-style-type: none"> <li>- Confirm Write On. Sends data to the PowerExchange Listener and waits for a response before sending more data. Select if error recovery is a priority. This option might decrease performance.</li> <li>- Confirm Write Off. Sends data to the PowerExchange Listener without waiting for a response. Use this option when you can reload the target table if an error occurs.</li> <li>- Asynchronous With Fault Tolerance. Sends data to the PowerExchange Listener without waiting for a response. This option also provides the ability to detect errors. This provides the speed of Confirm Write Off with the data integrity of Confirm Write On.</li> </ul> <p>Default is Confirm Write On.</p> |
| PWX Override                     | <p>Specifies PowerExchange connection override values, separated by semicolons, including the following overrides:</p> <ul style="list-style-type: none"> <li>- TCPIP_OP_TIMEOUT= network_operation_timeout ;</li> <li>- TCPIP_CON_TIMEOUT= connection_timeout</li> </ul>   |
| Pacing Size                      | <p>Amount of data that the source system can pass to the PowerExchange Listener. Configure the pacing size if an external application, database, or the Integration Service node is a bottleneck. The lower the value, the faster the performance. Enter 0 for maximum performance.<br/>Default is 0.</p>   |
| Location                         | <p>Required. Location of the PowerExchange Listener node. The location is defined in the first parameter of the NODE statement in the PowerExchange dbmover.cfg configuration file.</p>   |

# Sybase Connections

You can create a Sybase connection in Test Data Manager to perform data subset and data masking operations.

The following table describes the database connection properties for a Sybase database:

| Property                      | Description  |
|-------------------------------|--|
| Name                          | Required. Name of the connection. The name is not case sensitive and must be unique within the domain. It cannot exceed 128 characters, start with a number, contain spaces, or contain the following special characters:<br>~ `!\$%^ & * () - + = { [ ]   \ ; ; " ' < , > . ? /   |
| Connection Type               | Required. The connection type. Select Sybase.  |
| Description                   | The description of the connection. The description cannot exceed 255 characters.   |
| Use Kerberos Authentication   | Enables Kerberos Authentication. You cannot enter a user name and password if you select this check box.   |
| User Name                     | Required. The database user name.  |
| User Parameter in Password    | Indicates the password for the database user name is a session parameter. <i>\$ParamName</i> . Define the password in the workflow or session parameter file, and encrypt it using the <i>pmpasswd</i> CRYPT_DATA option.<br>Used for data subset and data masking operations. Default is disabled.  |
| Password                      | Required. The password for the database user name.   |
| Owner                         | The owner of the connection. Default is the user who creates the connection. You can change the owner of the connection.   |
| Metadata Connection String    | Required. The JDBC connection URL used to access metadata from the database. Enter <code>jdbc:informatica:sybase://&lt;hostname&gt;:5000;DatabaseName=&lt;databasename&gt;</code> .  |
| JDBC Login Password           | Required if Use Parameter in Password is selected. The password for the JDBC user.<br>Used for import from source and data discovery operations.   |
| Code Page                     | Code page the Integration Service uses to read from a source database or write to a target database or file.   |
| Data Access Connection String | The connection string used to access data from the database. Enter <code>&lt;database name&gt;</code> .  |
| Environment SQL               | SQL commands to set the database environment when you connect to the database. The Integration Service runs the connection environment SQL each time it connects to the database.<br><br>To run workflows with table or column names that are case sensitive, or contain special characters, or reserved keywords, you must set the value to <code>SET QUOTED_IDENTIFIER ON</code> . |
| Transaction SQL               | SQL commands to set the database environment when you connect to the database. The Integration Service runs the transaction environment SQL at the beginning of each transaction.  |

| Property                | Description   |
|-------------------------|---|
| Connection Retry Period | Number of seconds the Integration Service attempts to reconnect to the database if the connection fails. If the Integration Service cannot connect to the database in the retry period, the operation fails.<br>Default is 0. |
| Database Name           | Required. Name of the database. If you do not enter a database name, connection-related messages do not show a database name when the default database is used.<br>Used for all operations.                                   |
| Server Name             | Required. Database server name.   |
| Packet Size             | Packet size for the transmission of data. Use to optimize the native drivers.<br>Default is 0.  |

## Teradata Connections

You can create a Teradata connection in Test Data Manager to perform data subset and data masking operations.

The following table describes the database connection properties for a Teradata database:

| Property                  | Description   |
|---------------------------|---|
| Name                      | Required. Name of the connection. The name is not case sensitive and must be unique within the domain. It cannot exceed 128 characters, start with a number, contain spaces, or contain the following special characters:<br>~`!\$%^&*()-+={[] \:;"'<, >. ? /                                       |
| Connection Type           | Required. The connection type. Select Teradata.   |
| Description               | The description of the connection. The description cannot exceed 255 characters.  |
| User Name                 | Required. The database user name.   |
| Use Parameter in Password | Indicates the password for the database user name is a session parameter. <i>\$ParamName</i> . Define the password in the workflow or session parameter file, and encrypt it using the <i>pmpasswd</i> CRYPT_DATA option.<br>Used for data subset and data masking operations. Default is disabled. |
| Password                  | Required. The password for the database user name.  |
| Owner                     | The owner of the connection. Default is the user who creates the connection. You can change the owner of the connection.  |
| JDBC Login Password       | Required if Use Parameter in Password is selected. The password for the JDBC user.<br>Used for import from source and data discovery operations.  |
| Code Page                 | Code page the Integration Service uses to read from a source database or write to a target database or file.  |

| Property                      | Description   |
|-------------------------------|---|
| Data Access Connection String | The connection string used to access data from the database. Enter <database name>.   |
| Environment SQL               | SQL commands to set the database environment when you connect to the database. The PowerCenter Integration Service runs the connection environment SQL each time it connects to the database.                                 |
| Transaction SQL               | SQL commands to set the database environment when you connect to the database. The PowerCenter Integration Service runs the transaction environment SQL at the beginning of each transaction.                                 |
| Connection Retry Period       | Number of seconds the Integration Service attempts to reconnect to the database if the connection fails. If the Integration Service cannot connect to the database in the retry period, the operation fails.<br>Default is 0. |
| Database Name                 | Name of the database. This overrides the default database name in the ODBC entry. If you do not enter a database name, the Integration Service uses the default database name in the ODBC entry.                              |
| Data Source Name              | Name of the Teradata ODBC data source.  |

## Teradata FastExport Connections

You can create a Teradata FastExport connection in Test Data Manager to perform data subset and data masking operations.

The following table describes the database connection properties to access Teradata through FastExport:

| Property                  | Description   |
|---------------------------|---|
| Name                      | Required. Name of the connection. The name is not case sensitive and must be unique within the domain. It cannot exceed 128 characters, start with a number, contain spaces, or contain the following special characters:<br>~ ` ! \$ % ^ & * ( ) - + = { [ ]   \ : ; " ' < , > . ? /               |
| Connection Type           | Required. The connection type. Select Teradata FastExport.  |
| Description               | The description of the connection. The description cannot exceed 255 characters.  |
| User Name                 | Required. The database user name.   |
| Use Parameter in Password | Indicates the password for the database user name is a session parameter. <i>\$ParamName</i> . Define the password in the workflow or session parameter file, and encrypt it using the <i>pmpasswd</i> CRYPT_DATA option.<br>Used for data subset and data masking operations. Default is disabled. |
| Password                  | Required. The password for the database user name.  |

| <b>Property</b>     | <b>Description</b>   |
|---------------------|--|
| Owner               | The owner of the connection. Default is the user who creates the connection. You can change the owner of the connection.   |
| JDBC Login Password | Required if Use Parameter in Password is selected. The password for the JDBC user. Used for import from source and data discovery operations.  |
| Code Page           | The code page that the Integration Service uses to extract data from the source database.  |
| Database Name       | The name of the Teradata database you want to connect to. The Integration Service generates the SQL statement using the database name as a prefix to the table name.   |
| TDPID               | Teradata database ID.  |
| Tenacity            | Number of hours that FastExport tries to log on to the Teradata database. When FastExport tries to log on but the maximum number of Teradata sessions is already running, FastExport waits for the amount of time defined by the Sleep option. After the Sleep time, FastExport tries to log on to the Teradata database again. FastExport repeats this process until it has either logged on for the required number of sessions or exceeded the Tenacity hours time period.<br>Default is 4. |
| Max Sessions        | Maximum number of FastExport sessions per FastExport job. Max Sessions must be between 1 and the total number of access module processes (AMPs) on your system.<br>Default is 4.   |
| Sleep               | Number of minutes FastExport pauses before retrying a login. FastExport attempts a login until the login succeeds or the Tenacity hours elapse.<br>Default is 6.   |
| Data Encryption     | Enables data encryption for FastExport. You can use data encryption with the version 8 Teradata client.<br>Default is disabled.  |
| Block Size          | Maximum block size to use for the exported data.<br>Default is 6400.   |
| Log Table Name      | Restart log table name. The FastExport utility uses the information in the restart log table to restart jobs that halt because of a Teradata database or client system failure. Each FastExport job should use a separate log table. If you specify a table that does not exist, the FastExport utility creates the table and uses it as the restart log. PowerCenter does not support restarting FastExport, but if you stage the output, you can restart FastExport manually.                |
| Executable Name     | Teradata command used to read the source data. Use the default value.<br>Default is fexp.  |

# Teradata FastLoad Connections

You can create a Teradata FastLoad connection in Test Data Manager to perform data subset and data masking operations.

The following table describes the database connection properties to access Teradata through FastLoad:

| Property                  | Description  |
|---------------------------|--|
| Name                      | Required. Name of the connection. The name is not case sensitive and must be unique within the domain. It cannot exceed 128 characters, start with a number, contain spaces, or contain the following special characters:<br>~ ` ! \$ % ^ & * ( ) - + = { [ ]   \ ; " ' < , > . ? /  |
| Connection Type           | Required. The connection type. Select Teradata FastLoad.   |
| Description               | The description of the connection. The description cannot exceed 255 characters.   |
| User Name                 | Required. The database user name.  |
| Use Parameter in Password | Indicates the password for the database user name is a session parameter. \$ParamName. Define the password in the workflow or session parameter file, and encrypt it using the <i>mpasswd</i> CRYPT_DATA option.<br>Used for data subset and data masking operations. Default is disabled.   |
| Password                  | Required. The password for the database user name.   |
| Owner                     | The owner of the connection. Default is the user who creates the connection. You can change the owner of the connection.   |
| Code Page                 | The code page that the Integration Service uses to extract data from the source database.  |
| Database Name             | The name of the Teradata database you want to connect to. The Integration Service generates the SQL statement using the database name as a prefix to the table name.   |
| TDPID                     | Teradata database ID.  |
| Tenacity                  | Number of hours that FastLoad tries to log in to the required FastLoad sessions when the maximum number of load jobs are already running on the Teradata database. When FastLoad tries to log in to a new session, and the Teradata database indicates that the maximum number of load sessions is already running, FastLoad logs off all new sessions that were logged in, delays for the number of minutes specified in the Sleep attribute, and then retries the login. FastLoad keeps trying until it logs in for the required number of sessions or exceeds the number of hours specified in the Tenacity attribute.<br>Default is 4. |
| Max Sessions              | Maximum number of FastLoad sessions per FastLoad job. Max Sessions must be between one and the total number of access module processes (AMPs) on your system.<br>Default is 1.   |
| Sleep                     | Number of minutes FastLoad pauses before retrying a login. FastLoad attempts a login until the login succeeds or the Tenacity hours elapse.<br>Default is 6.   |
| Error Limit               | Maximum number of rows that FastLoad rejects before it stops loading data to the database table.<br>Default is 1,000,000.  |



| Property                   | Description   |
|----------------------------|---|
| Check Point                | Number of rows transmitted to the Teradata database between checkpoints. If processing stops while a FastLoad job is running, you can restart the job at the most recent checkpoint. Default is 0. If you enter 0, FastLoad does not perform checkpoint operations. |
| Drop Error Tables          | Drops the FastLoad error tables before beginning the next session. FastLoad will not run if non-empty error tables exist from a prior job. Select this option to drop the tables, or clear it to keep the tables.   |
| External Loader Executable | Name and optional file path of the Teradata external loader executable. If the external loader executable directory is not in the system path, you must enter the full path.  |
| Is Staged                  | Method of loading data. Select Is Staged to load data to a flat file staging area before loading to the database. Otherwise, the data is loaded to the database using a named pipe.   |
| Error Database             | Error database name. Use this attribute to override the default error database name. If you do not specify a database name, the Integration Service uses the target table database.   |
| Truncate Target Table      | Truncates the target database table before beginning the FastLoad job. FastLoad cannot load data to non-empty tables.   |

## Teradata MultiLoad Connections

You can create a Teradata MultiLoad connection in Test Data Manager to perform data subset and data masking operations.

The following table describes the database connection properties to access Teradata through MultiLoad:

| Property                  | Description   |
|---------------------------|---|
| Name                      | Required. Name of the connection. The name is not case sensitive and must be unique within the domain. It cannot exceed 128 characters, start with a number, contain spaces, or contain the following special characters:<br>~ ` ! \$ % ^ & * ( ) - + = { [ ]   \ : ; " ' < , > . ? /           |
| Connection Type           | Required. The connection type. Select Teradata MultiLoad.   |
| Description               | The description of the connection. The description cannot exceed 255 characters.  |
| User Name                 | Required. The database user name.   |
| Use Parameter in Password | Indicates the password for the database user name is a session parameter. <i>\$ParamName</i> . Define the password in the workflow or session parameter file, and encrypt it using the <i>mpasswd</i> CRYPT_DATA option. Used for data subset and data masking operations. Default is disabled. |
| Password                  | Required. The password for the database user name.  |
| Owner                     | The owner of the connection. Default is the user who creates the connection. You can change the owner of the connection.  |

| Property            | Description   |
|---------------------|---|
| JDBC Login Password | Required if Use Parameter in Password is selected. The password for the JDBC user. Used for import from source and data discovery operations.   |
| Database Name       | Name of the database. If you do not specify a database name, the Integration Service uses the target table database name defined in the mapping.  |
| TDPID               | Teradata database ID.   |
| Tenacity            | Amount of time, in hours, MultiLoad tries to log in to the required sessions. If a login fails, MultiLoad delays for the number of minutes specified in the Sleep attribute, and then retries the login. MultiLoad keeps trying until the login succeeds or the number of hours specified in the Tenacity attribute elapses.<br>Default is 10000.   |
| Max Sessions        | Maximum number of MultiLoad sessions per MultiLoad job. Max Sessions must be between 1 and 32,767.<br>Running multiple MultiLoad sessions causes the client and database to use more resources. Therefore, setting this value to a small number may improve performance.<br>Default is 1.   |
| Sleep               | Number of minutes MultiLoad waits before retrying a login. MultiLoad tries until the login succeeds or the number of hours specified in the Tenacity attribute elapses.<br>Sleep must be greater than 0. If you specify 0, MultiLoad issues an error message and uses the default value, 6 minutes.<br>Default is 6.  |
| Log Table Name      | Log table database name. Use this attribute to override the default log table database name. If you do not specify a database name, the Integration Service uses the target table database.   |
| Date Format         | Date format. The date format in the connection object must match the date format you define in the target definition. The Integration Service supports the following date formats:<br>- DD/MM/YYYY<br>- MM/DD/YYYY<br>- YYYY/DD/MM<br>- YYYY/MM/DD  |
| Error Limit         | Total number of rejected records that MultiLoad can write to the MultiLoad error tables. Uniqueness violations do not count as rejected records.<br>An error limit of 0 means that there is no limit on the number of rejected records.   |
| Check Point         | Interval between checkpoints. You can set the interval to the following values:<br>- 60 or more. MultiLoad performs a checkpoint operation after it processes each multiple of that number of records.<br>- 1-59. MultiLoad performs a checkpoint operation at the specified interval, in minutes.<br>- 0. MultiLoad does not perform any checkpoint operation during the import task.  |
| Load Mode           | Mode to generate SQL commands: Insert, Delete, Update, Upsert, or Data Driven.<br>When you select Data Driven loading, the Integration Service follows instructions in an Update Strategy or Custom transformation to determine how to flag rows for insert, delete, or update. The Integration Service writes a column in the target file or named pipe to indicate the update strategy. The control file uses these values to determine how to load data to the target.<br>Default is Upsert. |

| Property                   | Description   |
|----------------------------|---|
| Drop Error Tables          | Drops the MultiLoad error tables before beginning the next session. Select this option to drop the tables or clear it to keep the tables.<br>Default is disabled.   |
| External Loader Executable | Name and optional file path of the Teradata external loader executable. If the external loader executable directory is not in the system path, you must enter the full path.                                  |
| Is Staged                  | Method of loading data. Select Is Staged to load data to the flat file staging area before loading to the database. Otherwise, the data is loaded to the database using a named pipe.<br>Default is disabled. |
| Error Database             | Error database name. Use this attribute to override the default error database name. If you do not specify a database name, the Integration Service uses the target table database.                           |
| Work Table Database        | Work table database name. Use this attribute to override the default work table database name. If you do not specify a database name, the Integration Service uses the target table database.                 |
| User Variables             | User-defined variable used in the default control file.   |

## Teradata Parallel Transporter Connections

You can create a Teradata Parallel Transporter connection in Test Data Manager to perform data subset and data masking operations. You cannot perform inplace masking and other tasks that require update override queries on Teradata Parallel Transporter connections.

The following table describes the database connection properties for a Teradata Parallel Transporter database:

| Property                  | Description   |
|---------------------------|---|
| Name                      | Required. Name of the connection. The name is not case sensitive and must be unique within the domain. It cannot exceed 128 characters, start with a number, contain spaces, or contain the following special characters:<br>~ ` ! \$ % ^ & * ( ) - + = { [ ]   \ ; : " ' < , > . ? /               |
| Connection Type           | Required. The connection type. Select Teradata Parallel Transporter.  |
| Description               | The description of the connection. The description cannot exceed 255 characters.  |
| User Name                 | Required. The database user name.   |
| Use Parameter in Password | Indicates the password for the database user name is a session parameter. <i>\$ParamName</i> . Define the password in the workflow or session parameter file, and encrypt it using the <i>pmpasswd</i> CRYPT_DATA option.<br>Used for data subset and data masking operations. Default is disabled. |
| Password                  | Required. The password for the database user name.  |

| Property                      | Description   |
|-------------------------------|---|
| Owner                         | The owner of the connection. Default is the user that creates the connection. You can change the owner of the connection.   |
| JDBC Login Password           | Required if Use Parameter in Password is selected. The password for the JDBC user. Used for import from source and data discovery operations.   |
| Code Page                     | Code page associated with the database. When you run a session that extracts from a Teradata source, the code page of the Teradata PT API connection must be the same as the code page of the Teradata source.  |
| Data Access Connection String | The connection string used to access data from the database. Enter <database name>.   |
| Database Name                 | Teradata database name. If you do not enter a database name, Teradata PT API uses the default login database name.  |
| TDPID                         | Name of the Teradata database machine.  |
| Tenacity                      | Amount of time, in hours, that Teradata PT API continues trying to log on when the maximum number of operations runs on the Teradata database. Must be a positive, non-zero integer. Default is 4.  |
| Max Sessions                  | Maximum number of sessions that Teradata PT API establishes with the Teradata database. Must be a positive, non-zero integer. Default is 4.   |
| Min Sessions                  | Minimum number of Teradata PT API sessions required for the Teradata PT API job to continue. Must be a positive integer between 1 and the Max Sessions value. Default is 1.   |
| Sleep                         | Amount of time, in minutes, that Teradata PT API pauses before it retries to log on when the maximum number of operations runs on the Teradata database. Must be a positive, non-zero integer. Default is 6.  |
| Data Encryption               | Enables full security encryption of SQL requests, responses, and data. Default is disabled.   |
| Block Size                    | Maximum block size, in bytes, Teradata PT API uses when it returns data to the Integration Service. Default is 6400.  |
| System Operator               | System operator to extract or load data. Select one of the following values: <ul style="list-style-type: none"> <li>- Stream. Performs update, insert, upsert, and delete operations against Teradata database tables in near real-time mode.</li> <li>- Load. Bulk loads data into an empty Teradata database table.</li> <li>- Update. Performs update, insert, upsert, and delete operations against Teradata database tables.</li> <li>- Export. Extracts data from Teradata.</li> </ul> Default is Stream. |

# CHAPTER 7

## Pass Phrases

This chapter includes the following topics:

- [Pass Phrase Overview, 117](#)
- [Pass Phrase Permissions, 117](#)
- [Pass Phrase Management, 118](#)

### Pass Phrase Overview

A pass phrase is a key that you use in a data masking plan that includes the encryption masking technique with the format preserving encryption type.

You can create and manage pass phrases in Test Data Manager. When you create a pass phrase, TDM stores the pass phrase information in the TDM repository.

The pass phrase generates a key to encrypt or decrypt data. After you encrypt the source data, you can use the same format preserving encryption masking rule configuration and the same pass phrase in a plan to decrypt it to get back the original data.

Create and manage pass phrases from the **Administrator | Pass Phrases** view in Test Data Manager.

### Pass Phrase Permissions

When you create a pass phrase in Test Data Manager you become the owner of the pass phrase. As the owner of the pass phrase, you can assign the required levels of permission to users and user groups. You can change the owner of the pass phrase.

Pass phrases have the following levels of permission:

- Read
- Write
- Execute

To perform any task that uses the pass phrase, you must also have the minimum required level of privileges as a TDM user.

The following table lists the pass phrase permission levels, the tasks that you can perform with each level, and the minimum required privileges for each task:

| Permission | Description   | Minimum Required Privilege |
|------------|---|----------------------------|
| Read       | - View the pass phrase  | Manage Preferences         |
| Write      | - View the pass phrase<br>- Edit the pass phrase<br>- Delete the pass phrase  | Manage Preferences         |
| Execute    | - View the pass phrase<br>- Edit the pass phrase<br>- Delete the pass phrase<br>- Use the pass phrase in a format preserving encryption masking operation | Manage Preferences         |

## Pass Phrase Management

You can create, edit, and delete pass phrases in Test Data Manager.

By default, you are the owner of pass phrases that you create. You can also change the owner of a pass phrase.

You can assign pass phrase permissions to users or user groups.

You can manage pass phrases in the **Administrator | Pass Phrases** view.

### Creating a Pass Phrase

You can create a pass phrase in Test Data Manager.

1. In the **Administrator | Pass Phrases** view, select **New Pass Phrase** from the **Actions** menu or click the **New Pass Phrase** button.

The **New Pass Phrase** dialog box appears.

2. Enter the name and description of the pass phrase.
3. Specify the value of the pass phrase.

The length of the pass phrase value must be between 8 to 128 characters.

4. Optional. Click **Change Owner** to change the owner of the pass phrase.

By default, the user who creates a pass phrase is the owner of the pass phrase.

The **Select Owner** dialog box appears.

5. Optional. Select a user and click **OK**.
6. Click **Finish**.

## Editing a Pass Phrase

You can edit a pass phrase. When you edit a pass phrase, you can change the name, description, and owner of the pass phrase. You cannot change the pass phrase value after you create a pass phrase.

1. In the **Administrator | Pass Phrases** view, click the name of the pass phrase that you want to edit.  
The pass phrase opens in another tab with the pass phrase properties and permission details.
2. To change the pass phrase properties, click **Edit**.  
The edit pass phrase dialog box appears.
3. Edit the required properties.
4. To change the owner of the pass phrase, click **Change Owner**.  
The **Select Owner** dialog box appears.
5. Select the owner name from the list of user names and click **OK**.
6. Click **OK**.

## Edit Pass Phrase Permissions

Pass phrase permissions determine the tasks that you can perform with the pass phrase. You can edit the pass phrase permissions assigned to users and user groups from the **Permissions** tab of the pass phrase.

1. In the **Administrator | Pass Phrases** view, click the name of the pass phrase that you want to edit.  
The pass phrase opens in another tab with the pass phrase properties and permission details.
2. Click the **Permissions** tab.  
A list of the TDM users and user groups with permissions for the pass phrase appears.
3. Click **Edit** on the **Users** or **User Groups** tab.  
The **Edit Pass Phrase Permissions** dialog box appears.
4. To edit the permissions of a user or user group, select the user or user group from the list and edit the permissions as required. You must save the changes for each user or user group.
5. To add a user or a user group:
  - a. Click **Add Users** or **Add User Groups**.
  - b. Select one or more users or user groups.
  - c. Optional. From the list of permissions, select the required permissions if either of the following statements is true:
    - You selected a single user or user group.
    - You want to assign the same levels of permission to all selected users or user groups.
  - d. Click **OK**.  
TDM adds the users or user groups to the list.
  - e. Select each user or user group and assign the required permission levels.  
You must save the changes for each user or user group. Skip this step if you performed step c.
6. To delete a user or user group, select the user or user group from the list and click **Delete**.
7. Click **OK**.

## Deleting a Pass Phrase

You can delete a pass phrase.

1. In the **Administrator | Pass Phrases** view, select the pass phrase that you want to delete.
2. Click **Actions > Delete**.  
The delete pass phrase dialog box appears.
3. Click **Yes** to delete the pass phrase.



## CHAPTER 8

# Global Parameters

This chapter includes the following topics:

- [Global Parameters Overview, 121](#)
- [Global Parameter Management, 121](#)

## Global Parameters Overview

You can create and use parameters to vary the output of a workflow without updating the plan.

Parameters work as placeholders that point to a value. When you add a parameter in a plan, the workflow uses the value that the parameter points to at run time. You can change the value to change the value that the workflow uses.

You can create global parameters in Test Data Manager. You can use global parameters in entities and plans across Test Data Manager. Choose to import a global parameter in to a project or use the parameter in an entity or plan without importing it into the project.

You can create the following types of global parameters:

- Connection parameter. A placeholder for source or target connections.
- Owner parameter. A placeholder for source or target schema owner names.
- Criteria parameter. A placeholder for values that you include in filter criteria in an entity.

Users with Administrator roles and privileges can create and manage global parameters.

## Global Parameter Management

Create global parameters to use in entities and plans across Test Data Manager.

You can create, edit, and delete global parameters. You can export global parameters in a CSV file from Test Data Manager and import global parameters from a CSV file into Test Data Manager. For example, you can export and import a parameter file to back it up or to use in a different system.

## Creating a Global Parameter

Create global parameters to create parameters that you can use across projects in Test Data Manager.

1. Click **Parameters** to open the **Parameters** view.
2. Click the **Create Global Parameter** button to open the **New Parameter** window.
3. Enter a name and optional description.
4. Select the parameter type from the list.  
You can create criteria, connection, and owner parameters.
5. The parameter name is generated in the required convention based on the name you enter.  
The naming convention depends on the parameter type.
  - Criteria parameters begin with '\$\$'.
  - Connection parameters begin with '\$DBConnection'.
  - Owner parameters begin with '\$Param'.
6. Select the data type.  
You can create a parameter with String, Numeric, or Date data types.
7. If you choose the Date data type, enter an expression to define how a function uses the parameter.  
For example, *TO\_DATE(\$\$CRIT1,MM-DD-YYYY)* where \$\$CRIT1 is the parameter name.
8. Enter a default value. Required if you do not choose to allow override.
9. Choose to allow override of the default value.  
You cannot change the parameter value when you run the workflow if you do not allow override.
10. Click **Finish** to create the parameter.

## Editing a Global Parameter

You can update a global parameter that you create.

1. Click **Parameters** to open the **Parameters** view.
2. Click the parameter name to open the required parameter.  
The parameter properties page opens.
3. Click the **Edit** button or click **Actions > Edit**.  
The Edit Parameter dialog box opens.
4. Update the properties as required.  
You cannot change the parameter type or the data type.
5. Click **OK**.  
A list of entities and plans that include the parameter appears. To update the changes in the plans, generate and run the plans again.
6. Optional. To download the list in a .csv file, click **Export**.  
The file contains a list of the entities and plans with the description and the project information.
7. Click **Continue**.

## Deleting a Global Parameter

You can delete a global parameter that you create.

1. Click **Parameters** to open the **Parameters** view.
2. Click to select the required parameter check boxes.
3. Click **Actions > Delete**.
4. Click **Yes** to confirm the delete.

A list of entities and plans that include the parameters appears. To update the changes in the plans, generate and run the plans again.

5. Optional. To download the list in a .csv file, click **Export**.  
The file contains a list of the entities and plans with the description and the project information.
6. Click **Continue**.

## Exporting Global Parameters

You can export global parameters to a CSV file and import the CSV file to another TDM repository.

1. To access the parameters, click **Parameters**.  
The **Parameters** view opens with a list of global parameters.
2. Click **Actions > Export**.  
The file downloads to the default download location. You can use a text editor to view the parameter file from the location provided.
3. If you configure the browser to prompt for a download location, you must enter a file path and file name.  
Click **Save** to export the file.

## Importing a Global Parameter File

You can import global parameters that you backed up or exported from a different TDM repository.

1. To access the parameters, click **Parameters**.  
The **Parameters** view opens with a list of global parameters.
2. Click **Actions > Import**.
3. Click **Browse** and select the CSV file that you want to import.
4. Click **Finish** to import the parameters.  
The parameters appear in the list of parameters. If required, click **Refresh** to update the list of parameters.

## CHAPTER 9

# Dictionaries

This chapter includes the following topics:

- [Dictionaries Overview, 124](#)
- [Relational Dictionaries, 124](#)
- [Flat File Dictionaries, 125](#)
- [Dictionary Management, 126](#)

## Dictionaries Overview

A dictionary is a flat file or relational table that contains substitute data and a serial number. You can use a dictionary to replace sensitive data in a table. You can use data from a dictionary to generate data.

Add a dictionary in the **Administrator | Dictionaries** view that you want to use in data masking or data generation rules. When you create a masking rule, you can define the dictionary that you want to use to mask sensitive data. Before you create a data generation rule, you must add dictionary to TDM.

The Integration Service generates a number and retrieves a dictionary row based on the serial number from the dictionary. It generates a hash key for repeatable masking or a random number for non-repeatable masking. You can configure an additional lookup condition if you configure repeatable masking.

You can create a generation rule to load the dictionary into target databases. The binary data type contains a serial number column that increases performance. You can configure serial number for relational databases when you create a data generation rule for binary data type.

## Relational Dictionaries

A relational dictionary is a database table that you use as a dictionary. You can use a relational dictionary with email address and substitution masking. Use a relational dictionary when you create generation rules for string, date, numeric, and binary datatypes.

When you add a relational dictionary, you must define the datasource.

## Adding a Relational Dictionary

Add a relational dictionary to use in masking rules. When you add a relational dictionary, you can define the connection to the dictionary.

1. In the **Administrator | Dictionaries** view, click **Actions > New Dictionary**.  
The **New Dictionary** tab appears.
2. Enter the name of the dictionary, an optional description of the dictionary, and the type of the dictionary.
3. Click **Select** to define a connection.  
The **Select Relational Dictionary** dialog box appears.
4. Select a datasource connection from the menu, and click **Next**.
5. Select a datasource, and click **Next**.
6. Select a table from the list of tables in the datasource, and click **Finish**.
7. Review the **Connection**, **Schema**, and **Table** properties you selected.
8. Click **Save**.  
A tab with the dictionary properties opens and the dictionary appears in the **Administrator | Dictionaries** view.

## Flat File Dictionaries

A flat file dictionary is a file that contains dictionary information. You can use a flat file dictionary with email address and substitution masking. You can use a flat file dictionary to generate data for string, numeric, and date datatypes.

TDM installs with sample dictionary files that you can use for names and addresses. You can find the dictionary files in the following location:

```
<TDM installation directory>/TDM/infa_shared/LkpFiles
```

When you use a dictionary file in a masking or a generation rule, the Test Data Manager imports the structure of the dictionary file and stores the column names.

The following text shows a sample flat file dictionary that contains first name and gender:

```
SNO,GENDER,FIRSTNAME  
1,M,Adam  
2,M,Adeel  
3,M,Adil  
4,F,Alice  
5,F,Alison
```

In this dictionary, the first field in the row is the serial number, and the second field is gender. The PowerCenter Integration Service looks up a dictionary record by serial number. You can add gender as a lookup condition. The PowerCenter Integration Service retrieves a row from the dictionary using a hash key, and it finds a row with a gender that matches the gender in the source data.

You cannot use flat file dictionaries when you want to mask Hadoop data.

## Flat File Dictionary Properties

Specify flat file dictionary properties to add a dictionary in the Test Data Manager.

The following table describes the properties of a flat file dictionary:

| Property                         | Description   |
|----------------------------------|---|
| Name                             | The name of the dictionary.                             |
| Description                      | An optional description of the dictionary.              |
| Type                             | The type of dictionary. Select Flat File.               |
| File Location                    | The absolute path to the dictionary to import the file. |
| Overwrite File if Already Exists | Enable to overwrite a dictionary with the same name.    |
| File Encoding                    | The file encoding type.                                 |

## Adding a Flat File Dictionary

Add a flat file dictionary to use in masking rules. When you add a flat file dictionary, you can browse for and select a dictionary from your local computer.

1. In the **Administrator | Dictionaries** view, click **Actions > New Dictionary**.  
The **New Dictionary** tab appears.
2. Enter a name and optional description for the dictionary. Select **Flat File** as the dictionary type.
3. Click **Choose File** to browse to the location of the dictionary. Select the dictionary file, and click **Open**.
4. Optionally, select to overwrite the file if a dictionary with the same name exists.
5. Select the file encoding type.
6. Click **Save**.

A tab with the dictionary properties opens and the dictionary appears in the **Administrator | Dictionaries** view.

## Dictionary Management

You can add, edit, delete, sort, and filter dictionaries in the **Administrator | Dictionaries** view.

The **Administrator | Dictionaries** view contains a list of imported dictionaries. You can view the dictionary description and the dictionary type. You can filter the dictionaries by name, description, and type.

Select a dictionary to view the dictionary properties in the **Properties** pane below the dictionary list. Click **Used in Rules** to view the rules that use the dictionary. Click **Used in Projects** to view the projects that have rule assignments that use the dictionary.

You can edit and delete a dictionary through the **Actions** menu.

The following image shows the **Administrator | Dictionaries** view:

The screenshot displays the Informatica Test Data Manager interface. At the top, the breadcrumb navigation shows 'Administrator | Dictionaries'. Below this, there are tabs for 'Preferences', 'Connections', 'Dictionaries', and 'Application Logs'. The 'Dictionaries' tab is active, showing a table of dictionary entries. The table has three columns: 'Name', 'Description', and 'Type'. The first row, 'DIC\_MOREREC\_NEW', is highlighted in green. Other rows include 'EMPLOYEE', 'FLAT\_DIC\_MOREREC\_NEW.dic', 'VALID\_DOMAIN', 'VALID\_DOMAIN.txt', 'firstNames.dic', and 'lastNames.dic'. The 'Type' column indicates whether each dictionary is 'Relational' or a 'Flat File'.

| <input type="checkbox"/> | Name                     | Description | Type       |
|--------------------------|--------------------------|-------------|------------|
| <input type="checkbox"/> | DIC_MOREREC_NEW          |             | Relational |
| <input type="checkbox"/> | EMPLOYEE                 |             | Relational |
| <input type="checkbox"/> | FLAT_DIC_MOREREC_NEW.dic |             | Flat File  |
| <input type="checkbox"/> | VALID_DOMAIN             |             | Relational |
| <input type="checkbox"/> | VALID_DOMAIN.txt         |             | Flat File  |
| <input type="checkbox"/> | firstNames.dic           |             | Flat File  |
| <input type="checkbox"/> | lastNames.dic            |             | Flat File  |

# CHAPTER 10

## User-Defined Datatypes

This chapter includes the following topics:

- [User-Defined Datatypes Overview, 128](#)
- [Properties File, 128](#)
- [Creating Functions for User-Defined Datatypes in Oracle Applications, 130](#)

### User-Defined Datatypes Overview

A user-defined datatype (UDT) contains data with a format or structure defined by a user.

You can read from a relational source or write to a relational target that contains user-defined datatypes. Since the user-defined datatype is not a standard data type defined by the database server, you must provide a conversion method so that the PowerCenter Integration Service can process the data correctly.

You can configure a properties file to define how to convert user-defined datatypes. There must be a separate properties file for each type of database used as a source or target.

To use user-defined datatypes with Oracle Applications, run SQL scripts to create functions in the database and add additional lines to the properties file.

### Properties File

The user-defined data type properties file contains the list of user-defined data types and the parameters required to convert the data types to a format that the PowerCenter Integration Service can process.

The name of the properties file must use the following format:

*DatabaseType\_UDT\_Native\_Conversions.properties*

You can use a properties file to define conversion parameters for the following database types:

- Oracle. The properties file must be named `Oracle_UDT_Native_Conversions.properties`.
- Microsoft SQL Server. The properties file must be named `Microsoft_SQL_Server_UDT_Native_Conversions.properties`.
- IBM DB2. The properties file must be named `DB2_UDT_Native_Conversions.properties`.
- Sybase. The properties file must be named `Sybase_UDT_Native_Conversions.properties`.

The PowerCenter Integration Service looks for the properties files in the following folder:



<TDMInstallationDirectory>/utilities/mapgen/config

UDT functions for Oracle are available in TDM. To handle user-defined data types on other databases, you must write the functions.

## Datatype Conversion Parameters

The properties file uses parameters to define how the PowerCenter Integration Service converts user-defined datatypes.

The datatype conversion parameters in the properties file must be in the following format:

```
UDTname=Datatype;Precision;SourceSQLFunction;TargetSQLFunction
```

The following table describes the parameters in the properties file:

| Parameter         | Description   |
|-------------------|---|
| UDTName           | Name of the user-defined datatype used in the data source or target.  |
| Datatype          | Datatype to which the user-defined datatype is converted in PowerCenter.  |
| Precision         | Precision of the data after conversion.   |
| SourceSQLFunction | SQL function used to convert the user-defined datatype in the data source to the datatype in PowerCenter. The source database must support the SQL function. The SQL functions that you can use depend on the database type of the data source. |
| TargetSQLFunction | SQL function used to convert the datatype in PowerCenter to the user-defined datatype in the target. The target database must support the SQL function. The SQL functions that you can use depend on the database type of the target.           |

The following example shows the datatype conversion parameters defined in a user-defined datatype properties file:

```
AMV_AQ_MSG_OBJECT_TYPE=clob;4000;SYS_XMLGEN(%port%)
.GETCLOBVAL();CX_AMVAQMSGOBJECTTYPE(%port%)
AQ$_JMS_TEXT_MESSAGE=clob;4000;SYS_XMLGEN(%port%).GETCLOBVAL();CX_AQ$JMSTEXTMESSAGE(%port%)
AQ$_SIG_PROP=clob;4000;SYS_XMLGEN(%port%).GETCLOBVAL();CX_AQ$SIGPROP(%port%)
AR_REV_REC_TYP=clob;4000;SYS_XMLGEN(%port%).GETCLOBVAL();CX_ARREVRECTYP(%port%)
ASO_ORDER_FEEDBACK_TYPE=clob;4000;SYS_XMLGEN(%port%)
.GETCLOBVAL();CX_ASOORDERFEEDBACKTYPE(%port%)
CACHESYNC_MESSAGE=clob;4000;SYS_XMLGEN(%port%).GETCLOBVAL();CX_CACHESYNCMESSAGE(%port%)
XNP_MESSAGE_TYPE=clob;4000;SYS_XMLGEN(%port%).GETCLOBVAL();CX_XNPMESSTAGETYPE(%port%)
ROWID=varchar;255;ROWIDTOCHAR(%port%);CHARTOROWID(%port%)
TIMESTAMP(6)=varchar;255;to_char(%port%,'dd/mm/yyyy
hh24:mi:ss.ffffff');to_timestamp(%port%,'dd/mm/yyyy hh24:mi:ss.ffffff')
xmltype=clob;4000;SYS_XMLGEN(%port%).GETCLOBVAL();xmltype(%port%)
```

## Setting Up the Properties File for User-Defined Datatypes

If you use sources and targets that contain user-defined datatypes, you must set up the properties file to define how to convert the datatypes.

1. Verify that the TDM installation directory contains the following folder: <TDMInstallationDirectory>/utilities/mapgen/config

If the folder does not exist, create it.

2. Create the user-defined datatype properties file.  
The properties file name must match the database for the source or target.
3. Add the list of user-defined datatypes to the properties file.  
Set the parameters for the user-defined datatypes.

When you generate a workflow, the PowerCenter Integration Service checks for user-defined datatypes in the sources and targets. It uses the conversion information in the properties file to convert user-defined datatypes in sources to PowerCenter datatypes and convert PowerCenter datatypes to user-defined datatypes in targets.

## Creating Functions for User-Defined Datatypes in Oracle Applications

If you have a user-defined datatype and you want to use data subset or data masking with Oracle Applications, you must run SQL scripts to create functions in the database and print output that you add to the Oracle\_UDT\_Native\_Conversions.properties file.

1. Run the CreateReplaceClobString.sql SQL script. You can find the SQL script in the following location:  
`<TDMInstallationDirectory>\Content\Accelerators\Oracle Apps\SQL\`
2. Run the OracleUDT\_FunctionCreation.sql SQL script. OracleUDT\_FunctionCreation.sql is in the same directory as CreateReplaceClobString.sql.  
OracleUDT\_FunctionCreation.sql creates TargetSQLFunction and prints output.
3. Open the Oracle\_UDT\_Native\_Conversions.properties file and add the output from OracleUDT\_FunctionCreation.sql to the properties file.

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