



Informatica® Test Data Management
10.5

Configuration Guide

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Preface

Follow the instructions in the Informatica *Test Data Management Configuration Guide* to configure Test Data Management. The guide also includes information on minimum requirements, pre-requisite tasks, and post installation tasks. Follow the instructions to configure the services required to work with Test Data Management in an Informatica domain.

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

Test Data Management Configuration Overview

This chapter includes the following topics:

- [Configuration Overview, 8](#)
- [Plan the Test Data Management Components, 8](#)

Configuration Overview

Test Data Management runs on a node in the Informatica domain. The Informatica domain must have Informatica services that you require to run Test Data Management processes.

Test Data Management installs with the Informatica platform. When you run the Informatica installer to install Informatica services, Test Data Management binaries are installed. Install Informatica services and then configure the services that you require in the domain.

The services that you configure depend on the product, license, and the features that you plan to use.

After you configure the Informatica domain and the required application services, create the repositories and services and configure settings for Test Data Management.

Plan the Test Data Management Components

Test Data Management requires domain application services in addition to its application services and client to work. You also use multiple Informatica clients to configure and work with Test Data Management.

Plan for the required services and clients before you configure Test Data Management.

Application Services

Application services represent server-based functionality. An application service might be required or optional, and it might require access to a database.

When you run the Informatica installer, you can choose to create some services. After you complete the installation, you create Test Data Management services.

When you plan the application services, you must account for the associated services that connect to the application service. You also must plan the relational databases that are required to create the application service.

Test Data Management requires the following Informatica application services:

Model Repository Service

The Model Repository Service manages the Model repository. The Model repository stores metadata created by Informatica products in a relational database to enable collaboration among the products. Test Data Manager stores metadata in the Model repository.

Data Integration Service

An application service that performs data integration tasks for external clients. Data integration tasks include previewing data and running profiles, SQL data services, web services, and mappings.

PowerCenter Integration Service

An application service that runs data subset, data generation, and data masking workflows. You associate the Test Data Manager Service with the PowerCenter Integration Service that runs the workflows.

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.

Content Management Service

An application service that manages reference data. The service provides reference data properties to the Data Integration Service. The service also generates maplets from rule specifications.

Analyst Service

An application service that runs the Informatica Analyst application in the Informatica domain. Manages the connections between service components and the users that log in to the Analyst tool. Required if you link TDM objects to objects in the Business Glossary.

monitoring Model Repository Service

A Model repository service that monitors statistics for Data Integration service jobs. Required if you monitor profiles and mappings that you run in the Developer tool.

For information about how to install and configure the Informatica domain and services, see the Informatica installation documentation.

Test Data Management requires the following Test Data Management services:

Test Data Manager Service

An application service that manages the TDM repository. When you access a TDM repository object or a test data warehouse object from Test Data Manager, a request is sent to the Test Data Manager Service. The Test Data Manager Service accesses the database content from the TDM repository or connects to the Test Data Warehouse Service associated with it.

Test Data Warehouse Service

An application service that manages the test data warehouse repository and the test data warehouse. When you run a workflow to create or reset a data store, Test Data Manager sends a request to the Test Data Warehouse Service.

Client Tools

You use Informatica clients to access underlying Informatica functionality in the domain. The clients make requests to the Service Manager and to application services.

The Informatica clients consist of thick client applications and thin or web client applications that you use to access services and repositories in the domain.

The following table describes the tools for Test Data Management:

Informatica Client	Description
Test Data Manager	A web application to create and manage Test Data Management projects and objects, and to run plans and workflows. You also use the client to manage and work with test data warehouse data.
Informatica Developer (the Developer tool)	A thick client application that you can use to create and run data objects, mappings, profiles, and workflows.
Informatica Administrator (the Administrator tool)	A web application to manage the domain and application services.
Informatica Analyst (the Analyst tool)	A web application to analyze, cleanse, integrate, and standardize data in an enterprise.
PowerCenter Client	A thick client application that you can use to create and run mappings, sessions, and workflows.

When you plan the installation: Determine how many instances of the PowerCenter Client and the Developer tool you want to install. You do not need to plan for the web client applications.

CHAPTER 2

Before You Configure Test Data Management

This chapter includes the following topics:

- [Read the Release Notes, 11](#)
- [Install Informatica Service, 11](#)
- [Verify the Status of the Informatica Domain, 12](#)
- [Determine Port Availability , 12](#)
- [Verify File Permissions on Windows, 12](#)
- [Set Up a Keystore File, 13](#)

Read the Release Notes

Before you install or upgrade, read the product Release Notes. The Release Notes contain important information about the product installation and upgrade process. The Release Notes also contain information about known and fixed limitations.

Install Informatica Service

Run the Informatica service installer to install Informatica domain services.

Informatica domain services installation files include the Test Data Management binaries. The binaries are installed with both traditional and Data Engineering products.

The services installer includes the client installer. Use the installer to install required clients.

See the Informatica services installation documentation for information about how to install Informatica services and clients. Installation prerequisites and steps might differ based on how you plan to use Test Data Management.

Refer to the appropriate document to ensure you configure the domain as required:

- If you use Test Data Management to run mappings only with PowerCenter, see the Informatica *Installation for PowerCenter* documentation.

- If you use Test Data Management to run mappings with PowerCenter and Data Engineering, see the *Informatica Installation for Data Engineering* documentation.

Verify the Status of the Informatica Domain

Test Data Management uses the services, databases, and connections that you configure in the Informatica domain. When you configure TDM, the domain must have the required application services and repositories to support TDM.

Verify the status of the Informatica domain and the application services in the domain.

Before you configure TDM, perform the following tasks:

- Run the Informatica service installer to create the Informatica domain.
- Create the required application services.
- Install the Informatica clients that you require.

Determine Port Availability

The Informatica service installer sets up the ports for the Test Data Management connections.

You can specify the port numbers to use or you can use the default port numbers assigned by the installer. Verify that the port numbers are available on the machine where you install Informatica service.

The following table describes the ports that Test Data Management uses:

Port Type	Description
Startup port	Port number that controls the server startup for TDM. The TDM Server listens for startup commands on this port. Default is 6605.
Shutdown port	Port number that controls the server shutdown for TDM. The TDM Server listens for shutdown commands on this port. Default is 6607.
JMX port	Port number for the JMX/RMI connections to TDM. Default is 6675.
HTTPS port	Port number to use when secure connection is enabled for TDM. Default is 6643.

Verify File Permissions on Windows

Verify that the user that runs the Informatica Windows service has full access to all TDM files in the following folder:

```
<Informatica installation directory>\TDM\configuration
```

Set Up a Keystore File

You can optionally set up a secure connection to the TDM repository and to the test data warehouse.

When you configure the Test Data Manager Service, you can configure secure communication between Test Data Manager and the TDM repository. Set up a keystore file and provide the location of the file when you create the Test Data Manager Service to create a secure connection.

When you configure the Test Data Warehouse Service, you can configure secure communication between Test Data Manager and the test data warehouse. Set up a keystore file and provide the location of the file when you create the Test Data Warehouse Service to create a secure connection.

To create the required files, you can use the following programs:

keytool

You can use keytool to create an SSL certificate or a Certificate Signing Request (CSR) as well as keystores and truststores in JKS format.

For more information about using keytool, see the documentation on the following web site:

<http://docs.oracle.com/javase/7/docs/technotes/tools/windows/keytool.html>.

OpenSSL

You can use OpenSSL to create an SSL certificate or CSR as well as convert a keystore in JKS format to PEM format.

For more information about OpenSSL, see the documentation on the following website:

<https://www.openssl.org/docs/>

For a higher level of security, send your CSR to a Certificate Authority (CA) to get a signed certificate.

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Secure Connection to Test Data Manager

Before you secure the connection to Test Data Manager, verify that the following requirements are met:

You created a certificate signing request (CSR) and private key.

You can use keytool or OpenSSL to create the CSR and private key.

If you use RSA encryption, you must use more than 512 bits.

You have a signed SSL certificate.

The certificate can be self-signed or CA signed. Informatica recommends a CA signed certificate.

You imported the certificate into a keystore in JKS format.

A keystore must contain only one certificate. If you use a unique certificate for each web application service, create a separate keystore for each certificate. Alternatively, you can use a shared certificate and keystore.

If you use the installer-generated SSL certificate for the Administrator tool, you do not need to import the certificate into a keystore in JKS format.

The keystore is in the correct directory.

The keystore must be in a directory that is accessible to the installer.

CHAPTER 3

Prepare for Application Services and Databases

This chapter includes the following topics:

- [Checklist to Prepare for Application Services, 14](#)
- [Prepare Databases for Test Data Management Overview, 14](#)
- [Set Up Database User Accounts, 15](#)
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Checklist to Prepare for Application Services

This chapter contains information about application services and databases for the Informatica environment. Use this checklist to track service planning and database preparation.

- Identify the application services that you need in your environment.
- Prepare databases for the services:
 - Create the database.
 - Create a user for the database.
 - Create environment variables.
 - Configure connectivity.

Prepare Databases for Test Data Management Overview

When you plan to create the services, you must account for the associated services that connect to the application service and plan the relational databases that the application service requires.

Create the Test Data Management services after you install and configure Informatica services. Some service properties require database information. If you create a service that requires a database, you must prepare

the database before you create the service. To prepare the databases, verify the database requirements, set up the database, and set up a user account. The database requirements depend on the services that you create.

Set Up Database User Accounts

Set up a database and user account for the repository databases.

Use the following rules and guidelines when you set up the user accounts:

- The database user account must have permissions to create and drop tables, indexes, and views, and to select, insert, update, and delete data from tables.
- Use 7-bit ASCII to create the password for the account.
- To prevent database errors in one repository from affecting any other repository, create each repository in a separate database schema with a different database user account. Do not create a repository in the same database schema as the domain configuration repository or any other repository in the domain.

Test Data Warehouse Service

The Test Data Warehouse Service runs the test data warehouse and manages the test data warehouse repository. If you create and store data sets in the test data warehouse, you must create a test data warehouse repository and a test data warehouse. Set up the databases before you create the Test Data Warehouse Service.

The following table summarizes the dependencies for products, services, and databases that are associated with the Test Data Warehouse Service.

Dependency	Summary
Products	The following products use the Test Data Warehouse Service: <ul style="list-style-type: none">- Test Data Management
Services	The Test Data Warehouse Service does not require an association with other application services.
Databases	The Test Data Warehouse Service uses the following database: <ul style="list-style-type: none">- Test data warehouse repository. Stores the source table metadata and project metadata for data sets that you create in Test Data Manager.- Test data warehouse. Stores the source data that you include in a data set.

Test Data Warehouse Repository Requirements

Before you create a test data warehouse repository, you must configure a relational database for the test data warehouse repository.

The test data warehouse repository is a relational database that stores the source table metadata and the TDM metadata that you create when you create a data set.

Set up the database before you create the Test Data Warehouse Service. Allocate 35 MB or more space based on the number of objects you plan to store. You can create a test data warehouse repository on the following databases:

- IBM DB2 UDB
- Microsoft SQL Server
- Oracle
- PostgreSQL

For more information about configuring the database, see the documentation for your database system.

IBM DB2 Database Requirements

Use the following guidelines when you set up the repository on IBM DB2:

- Set the system temporary tablespace to 32k bytes.
- On the IBM DB2 instance where you create the database, set the following parameters to ON:
 - DB2_SKIPINSERTED
 - DB2_EVALUNCOMMITTED
 - DB2_SKIPDELETED
 - AUTO_RUNSTATS
- On the database, set the configuration parameters.

The following table lists the configuration parameters that you must set:

Parameter	Value
logfilsiz	8000
maxlocks	98
locklist	50000
auto_stmt_stats	ON
applheapsz	8192
appl_ctl_heap_sz	8192

- Set the tablespace pageSize parameter to 32768 bytes.
In a single-partition database, specify a tablespace that meets the pageSize requirements. If you do not specify a tablespace, the default tablespace must meet the pageSize requirements.
In a multi-partition database, specify a tablespace that meets the pageSize requirements. Define the tablespace in the catalog partition of the database.
- Verify that the database user has CREATETAB, CONNECT, and BINDADD privileges.
- Informatica does not support IBM DB2 table aliases for repository tables. Verify that table aliases have not been created for any tables in the database.

- In the DataDirect Connect for JDBC utility, update the DynamicSections parameter to 3000.
The default value for DynamicSections is too low for the Informatica repositories. Informatica requires a larger DB2 package than the default. When you set up the DB2 database for the domain configuration repository or a Model repository, you must set the DynamicSections parameter to at least 3000. If the DynamicSections parameter is set to a lower number, you can encounter problems when you install or run Informatica services.

For more information about configuring the database, see the documentation for your database system.

Microsoft SQL Server Database Requirements

Consider the following rules and guidelines when you set up the repository:

- You must set the collation to *case insensitive* on the database.
- Set the allow snapshot isolation and read committed isolation level to ALLOW_SNAPSHOT_ISOLATION and READ_COMMITTED_SNAPSHOT to minimize locking contention.

To set the isolation level for the database, run the following commands:

```
ALTER DATABASE DatabaseName SET ALLOW_SNAPSHOT_ISOLATION ON
```

```
ALTER DATABASE DatabaseName SET READ_COMMITTED_SNAPSHOT ON
```

To verify that the isolation level for the database is correct, run the following commands:

```
SELECT snapshot_isolation_state FROM sys.databases WHERE name=[DatabaseName]
```

```
SELECT is_read_committed_snapshot_on FROM sys.databases WHERE name = DatabaseName
```

- The database user account must have the CONNECT, CREATE TABLE, and CREATE VIEW privileges.

For more information about configuring the database, see the documentation for your database system.

Oracle Database Requirements

Use the following guidelines when you set up the repository on Oracle:

- Verify that the database user has the following privileges:

```
CREATE SESSION
```

```
CREATE TABLE
```

```
CREATE VIEW
```

- Informatica does not support Oracle public synonyms for repository tables. Verify that public synonyms have not been created for any tables in the database.

For more information about configuring the database, see the documentation for your database system.

PostgreSQL Database Requirements

You can create a test data warehouse repository on a PostgreSQL database.

Use the following guidelines when you create a test data warehouse repository on PostgreSQL:

Configuration parameters

On the database, set the configuration parameters.

The following table lists the minimum and recommended values for the configuration parameters that you must set:

Parameter	Minimum Value	Recommended Value
max_connections	200	4000
shared_buffers	2 GB	16 GB
max_locks_per_transaction	1024	1024
max_wal_size	1 GB	8 GB
checkpoint_timeout	5 minutes	30 minutes

For information about configuring the database, see the documentation for the database system.

Disk Space

Ensure that PostgreSQL has sufficient disk space for the data files. By default, the data files are present in the following location:

```
<PostgreSQL installation directory>/data
```

Privileges

Verify that the database user account has CONNECT, CREATE TABLE, and CREATE VIEW privileges.

Database Schema Name

Specify the database schema name when you use PostgreSQL as the database.

Test Data Warehouse Requirements

Before you create a test data warehouse, you must configure a relational database for the test data warehouse.

The test data warehouse is a relational database that stores the source data that you include in a data set.

Set up the database before you create the Test Data Warehouse Service. Allocate 35 MB or more space based on the number of objects you plan to store. You can create a test data warehouse on the following databases:

- Oracle
- PostgreSQL

For more information about configuring the database, see the documentation for your database system.

Oracle Database Requirements

Use the following guidelines when you set up the warehouse on Oracle:

- Verify that the database user has the following privileges:
 - CREATE SESSION
 - CREATE TABLE
 - CREATE VIEW
- Informatica does not support Oracle public synonyms for repository tables. Verify that public synonyms have not been created for any tables in the database.

For more information about configuring the database, see the documentation for your database system.

PostgreSQL Database Requirements

You can create a test data warehouse on a PostgreSQL database.

Use the following guidelines when you create a test data warehouse on PostgreSQL:

Configuration parameters

On the database, set the configuration parameters.

The following table lists the minimum and recommended values for the configuration parameters that you must set:

Parameter	Minimum Value	Recommended Value
max_connections	200	4000
shared_buffers	2 GB	16 GB
max_locks_per_transaction	1024	1024
max_wal_size	1 GB	8 GB
checkpoint_timeout	5 minutes	30 minutes

For information about configuring the database, see the documentation for the database system.

Disk Space

Ensure that PostgreSQL has sufficient disk space for the data files. By default, the data files are present in the following location:

```
<PostgreSQL installation directory>/data
```

Privileges

Verify that the database user account has CONNECT, CREATE TABLE, and CREATE VIEW privileges.

Database Schema Name

Specify the database schema name when you use PostgreSQL as the database.

Test Data Manager Service

The Test Data Manager Service manages the TDM repository. When you access a TDM repository object or a test data warehouse object from Test Data Manager, it sends a request to the Test Data Manager Service. The Test Data Manager Service accesses the database content from the TDM repository or connects to the Test Data Warehouse Service associated with it.

The following table summarizes the dependencies for products, services, and databases that are associated with the Test Data Manager Service.

Dependency	Summary
Products	The following products use the Test Data Manager Service: <ul style="list-style-type: none">- Test Data Management
Services	The Test Data Manager Service requires an association with the following application services: <ul style="list-style-type: none">- Model Repository Service- Data Integration Service- PowerCenter Repository Service- PowerCenter Integration Service- Analyst Service- Test Data Warehouse Service
Databases	The Test Data Manager Service uses the following database: <ul style="list-style-type: none">- TDM repository. Stores metadata created by Test Data Manager.

TDM Repository Database Requirements

Before you create the service, set up a database and user account for the TDM repository.

When you create the Test Data Manager Service, you provide the database and user account information to create the TDM repository. The service uses JDBC to connect to the database and create the repository.

You can create the TDM repository on one of the following databases:

- Oracle
- IBM DB2
- Microsoft SQL Server
- PostgreSQL

Consider the following rules and guidelines before you set up the database and user account for the TDM repository:

- Allocate at least 35 MB disk space or more based on the number of objects you plan to store.
- To prevent database errors from affecting other repositories, create the TDM repository in a separate database schema and with a separate database user account.

Oracle Database Requirements

Use the following guidelines when you set up the repository on Oracle:

- Verify that the database user has the following privileges:
 - CREATE SESSION
 - CREATE TABLE
 - CREATE VIEW
- Informatica does not support Oracle public synonyms for repository tables. Verify that public synonyms have not been created for any tables in the database.

For more information about configuring the database, see the documentation for your database system.

IBM DB2 Database Requirements

Use the following guidelines when you set up the repository on IBM DB2:

- Set the system temporary tablespace to 32k bytes.
- On the IBM DB2 instance where you create the database, set the following parameters to ON:
 - DB2_SKIPINSERTED
 - DB2_EVALUNCOMMITTED
 - DB2_SKIPDELETED
 - AUTO_RUNSTATS
- On the database, set the configuration parameters.

The following table lists the configuration parameters that you must set:

Parameter	Value
logfilsiz	8000
maxlocks	98
locklist	50000
auto_stmt_stats	ON
applheapsz	8192
appl_ctl_heap_sz	8192

- Set the tablespace pageSize parameter to 32768 bytes.
 - In a single-partition database, specify a tablespace that meets the pageSize requirements. If you do not specify a tablespace, the default tablespace must meet the pageSize requirements.
 - In a multi-partition database, specify a tablespace that meets the pageSize requirements. Define the tablespace in the catalog partition of the database.
- Verify that the database user has CREATETAB, CONNECT, and BINDADD privileges.
- Informatica does not support IBM DB2 table aliases for repository tables. Verify that table aliases have not been created for any tables in the database.

- In the DataDirect Connect for JDBC utility, update the DynamicSections parameter to 3000.
The default value for DynamicSections is too low for the Informatica repositories. Informatica requires a larger DB2 package than the default. When you set up the DB2 database for the domain configuration repository or a Model repository, you must set the DynamicSections parameter to at least 3000. If the DynamicSections parameter is set to a lower number, you can encounter problems when you install or run Informatica services.

For more information about configuring the database, see the documentation for your database system.

Microsoft SQL Server Database Requirements

Consider the following rules and guidelines when you set up the repository:

- You must set the collation to *case insensitive* on the database.
- Set the allow snapshot isolation and read committed isolation level to ALLOW_SNAPSHOT_ISOLATION and READ_COMMITTED_SNAPSHOT to minimize locking contention.

To set the isolation level for the database, run the following commands:

```
ALTER DATABASE DatabaseName SET ALLOW_SNAPSHOT_ISOLATION ON
```

```
ALTER DATABASE DatabaseName SET READ_COMMITTED_SNAPSHOT ON
```

To verify that the isolation level for the database is correct, run the following commands:

```
SELECT snapshot_isolation_state FROM sys.databases WHERE name=[DatabaseName]
```

```
SELECT is_read_committed_snapshot_on FROM sys.databases WHERE name = DatabaseName
```

- The database user account must have the CONNECT, CREATE TABLE, and CREATE VIEW privileges.

For more information about configuring the database, see the documentation for your database system.

PostgreSQL Database Requirements

You can create a Test Data Management repository on a PostgreSQL database.

Use the following guidelines when you create a Test Data Management repository on PostgreSQL:

Configuration parameters

On the database, set the configuration parameters.

The following table lists the minimum and recommended values for the configuration parameters that you must set:

Parameter	Minimum Value	Recommended Value
max_connections	200	4000
shared_buffers	2 GB	16 GB
max_locks_per_transaction	1024	1024
max_wal_size	1 GB	8 GB
checkpoint_timeout	5 minutes	30 minutes

For information about configuring the database, see the documentation for the database system.

Disk Space

Ensure that PostgreSQL has sufficient disk space for the data files. By default, the data files are present in the following location:

```
<PostgreSQL installation directory>/data
```

Privileges

Verify that the database user account has CONNECT, CREATE TABLE, and CREATE VIEW privileges.

Database Schema Name

Specify the database schema name when you use PostgreSQL as the database.

Test Data Management creates a default storage connection and creates storage tables for the connection on the Test Data Management repository database. The storage connection and tables are required for expression masking and substitution masking with repeatable values.

Test Data Management creates a connection with the following details:

- Name of the connection: *TDM_CONNECTION*
- Connection type: *JDBC*

To use the storage connection created on a PostgreSQL database, you must add an entry to the following file:<Informatica installation directory>/ODBC7.1/odbc.ini

The following code includes a sample entry:

```
[TDM_534_B465_1]
Driver=/home/orallg/Informatica/105_B465/ODBC7.1/lib/DWpsql27.so
Description=DataDirect 7.1 PostgreSQL Wire Protocol
Database=TDM_534_B465_1
HostName=<host name>
PortNumber=5432
Workarounds2=2
```

Configure Native Connectivity on Service Machine

To establish native connectivity between an application service and a database, install the database client software for the database that you want to access.

Native drivers are packaged with the database server and client software. Configure connectivity on the machines that need to access the databases. To ensure compatibility between the application service and the database, install a client software that is compatible with the database version and use the appropriate database client libraries.

The Test Data Manager Service uses native connectivity to connect to the following databases:

- Source and target databases. Reads data from source databases and writes data to target databases.
- Profiling source databases. Reads from relational source databases to run profiles against the sources.
- Dictionary connections. Reads from dictionary connections and writes to target databases.

Install Database Client Software

You must install the database clients on the required machines based on the types of databases that the application services access.

To ensure compatibility between the application service and the database, use the appropriate database client libraries and install a client software that is compatible with the database version.

Install the following database client software based on the type of database that the application service accesses:

IBM DB2 Client Application Enabler (CAE)

Configure connectivity on the required machines by logging in to the machine as the user who starts Informatica services.

Microsoft SQL Server 2014 Native Client

Download the client from the following Microsoft website:
<http://www.microsoft.com/en-in/download/details.aspx?id=42295>.

Oracle client

Install compatible versions of the Oracle client and Oracle database server. You must also install the same version of the Oracle client on all machines that require it. To verify compatibility, contact Oracle.

PostgreSQL client (psql)

Install and run the PostgreSQL interactive terminal program called psql, which allows you to interactively enter, edit, and run SQL commands.

psql is a terminal-based front-end to PostgreSQL. You can type in queries interactively, issue the queries to PostgreSQL, and check the query results. Or, the input can be from a file or from command line arguments.

You can install psql client application for PostgreSQL to work only on Linux or Windows.

Install and run the required software dependency packages to build PostgreSQL, such as GCC compiler package, readline and readline-devel packages, and zlib-devel compression library package. After you install the packages from the GNU Readline library, psql remembers each command you type, and you can use arrow keys to recall and edit previous commands.

You can also run the required library files with the yum install commands.

PostgreSQL on Windows

On Windows, download the psql client from the following link:

<https://www.enterprisedb.com/downloads/postgres-postgresql-downloads>

You must verify that PostgreSQL libraries are present in the following directories on Windows:

- Installation directory: C:\Program Files\PostgreSQL\10
- Command line tools installation directory: C:\Program Files\PostgreSQL\10
- pgAdmin4 installation directory: C:\Program Files\PostgreSQL\10\pgAdmin 4

PostgreSQL on Linux

On Linux, you also need to install the required postgresQL libraries,
postgresql10-10.10-1PGDG.rhel7.x86_64 and postgresql10-libs-10.10-1PGDG.rhel7.x86_64

For more information about psql, see the psql client documentation in the following link:

<https://www.postgresql.org/docs/10/app-psql.html>

CHAPTER 4

Create the Application Services

This chapter includes the following topics:

- [Checklist to Create and Configure Application Services, 25](#)
- [Create and Configure the Application Services Overview, 25](#)
- [Log In to Informatica Administrator, 26](#)
- [Create and Configure the Test Data Warehouse Service, 26](#)
- [Create and Configure the Test Data Manager Service, 30](#)
- [Logging in to Test Data Manager, 33](#)

Checklist to Create and Configure Application Services

This chapter contains instructions to create and configure application services. Even if you created services during installation, you might still need to configure some services. Use this checklist to track completion of application service configuration.

- Review your notes for planning the application services.
- Create and configure other services that you want in the domain.

Create and Configure the Application Services Overview

Use the Administrator tool to create the application services for Test Data Management.

Before you create the application services, you must prepare the following databases:

- Test Data Management repository
- Test Data Warehouse repository
- Test Data Warehouse

Some application services depend on other application services. When you create these dependent application services, you must provide the name of other running application services. Review the application service dependencies to determine the order that you must create the services.

Before you create the application services, verify that you have completed the prerequisite tasks required by the installation and configuration process.

Log In to Informatica Administrator

You must have a user account to log in to the Informatica Administrator web application.

In Microsoft Internet Explorer and Google Chrome, add the URL of the Informatica web application to the list of trusted sites. If you are using Chrome version 80.0.39x or later, you must also set the AuthServerWhitelist and AuthNegotiateDelegateWhitelist policies.

1. Start a Microsoft Internet Explorer or Google Chrome browser.
2. In the **Address** field, enter the URL for the Administrator tool:
 - If the Administrator tool is not configured to use a secure connection, enter the following URL:
`http://<fully qualified host name>:<http port>/administrator/`
 - If the Administrator tool is configured to use a secure connection, enter the following URL:
`https://<fully qualified host name>:<http port>/administrator/`

Host name and port in the URL represent the host name and port number of the master gateway node. If you configured secure communication for the domain, you must use HTTPS in the URL to ensure that you can access the Administrator tool.

3. Enter the user name, password, and security domain for your user account, and then click **Login**.
The **Security Domain** field appears when the Informatica domain contains an LDAP security domain. If you do not know the security domain that your user account belongs to, contact the Informatica domain administrator.

Note: If this is the first time you log in with the user name and password provided by the domain administrator, change your password to maintain security.

Create and Configure the Test Data Warehouse Service

The Test Data Warehouse Service manages the test data warehouse repository and the test data warehouse. When you run a workflow to create or reset a data store, the Test Data Manager Service sends a request to the Test Data Warehouse Service.

Work with the Informatica domain administrator to create a Test Data Manager Service from Informatica Administrator.

Creating the Test Data Warehouse Service

Use the service creation wizard in the Administrator tool to create the service.

Before you create the Test Data Warehouse Service, verify that you have created the following services:

Model Repository Service

Data Integration Service

PowerCenter Repository Service

PowerCenter Integration Service

1. In the Administrator tool, click the **Manage** tab.
2. Click the **Services and Nodes** view.
3. Click **Actions > New > Test Data Warehouse Service**.
The **New Test Data Warehouse Service** dialog box appears.
4. On the **New Test Data Warehouse Service - Step 1 of 4** page, enter the following properties:

Property	Description
Name	Name of the service. The name is not case sensitive and must be unique within the domain. It cannot exceed 128 characters or begin with @. It also cannot contain spaces or the following special characters: ` ~ % ^ * + = { } \ ; : ' " / ? . , < > ! () [] You cannot change the name of the service after you create it.
Description	Description of the service. The description cannot exceed 765 characters.
Location	Domain and folder where the service is created. Click Browse to choose a different folder. You can move the service after you create it.
License	License object that allows use of the service.
Node	Node on which the service runs.

5. Click **Next**.
The **New Test Data Warehouse Service - Step 2 of 4** page appears.
6. Enter the following properties for the test data warehouse repository database:

Property	Description
Repository Name	Name of the test data warehouse repository.
Database Type	The type of database for the test data warehouse repository. <ul style="list-style-type: none">- Oracle- Microsoft SQL Server- DB2- PostgreSQL
User Name	User account for the test data warehouse repository database. Set up this account using the appropriate database client tools.
Password	Password for the test data warehouse repository database user. Must be in 7-bit ASCII.

Property	Description
JDBC URL	JDBC connection URL used to access the test data warehouse repository database. Enter the JDBC URL in one of the following formats: <ul style="list-style-type: none"> - Oracle: jdbc:informatica:oracle://<host name>:<port>;SID=<database name> - IBM DB2: jdbc:informatica:db2://<host name>:<port>;DatabaseName=<database name> - Microsoft SQL Server: jdbc:informatica:sqlserver://<host name>:<port>;SelectMethod=cursor;DatabaseName=<database name> - PostgreSQL: jdbc:Informatica:postgresql://<host name>:<port number>;DatabaseName=<database name>
Schema Name	Available for Microsoft SQL Server. Optional. Name of the schema for the database. If not selected, the service creates the tables in the default schema.
Tablespace Name	Available for DB2. Name of the tablespace in which to create the tables. You must define the tablespace on a single node and the page size must be 32 KB. In a multipartition database, you must select this option. In a single-partition database, if you do not select this option, the installer creates the tables in the default tablespace.
Content creation options for the new Test Data Warehouse Service	Options to create content, or use existing content, and upgrade existing content. <ul style="list-style-type: none"> - Do not create new content. Creates the repository without creating content. Select this option if the database content exists. If the content is of a previous version, the service prompts you to upgrade the content to the current version. - Create new content. Creates repository content. Choose to create new content.

- Choose to enable the Test Data Warehouse Service.
- Click **Next**.
The **New Test Data Warehouse Service - Step 3 of 4** page appears.
- Enter the following properties for the test data warehouse database:

Property	Description
Test Data Warehouse Name	Name of the test data warehouse.
Description	Description of the test data warehouse. The description cannot exceed 765 characters.
Connection Type	The type of connection for the test data warehouse. <ul style="list-style-type: none"> - Oracle - ODBC
Target Connection	The database connection to use as the test data warehouse.
Connection Database Type	The type of database for the test data warehouse. Required if you choose the ODBC connection type. <ul style="list-style-type: none"> - PostgreSQL

Property	Description
JDBC Connection for ODBC	The connection that the ODBC test data warehouse uses for the JDBC connection string.
Staging Schema	The schema to use for creation of staging tables. Some jobs that you run from the self-service portal require a staging connection for staging tables. The test data warehouse connection must have access to the schema.

10. Select the required connection from the list of target connections.
11. Click **Next**.
The **New Test Data Warehouse Service - Step 4 of 4** page appears.
12. Enter the following properties for the test data warehouse server configuration:

Property	Description
HTTP Port	Port number of the Test Data Warehouse Service. The default is 7705.
Enable Transport Layer Security (TLS)	Secures communication between the Test Data Warehouse Service and the domain.
HTTPS Port	Port number for the HTTPS connection.
Keystore File	Path and file name of the keystore file. The keystore file contains the keys and certificates required if you use the SSL security protocol with the test data warehouse. Required if you select Enable Transport Layer Security.
Keystore Password	Password for the keystore file. Required if you select Enable Secured Socket Layer.
SSL Protocol	Secure Sockets Layer protocol to use. Default is TLS.
JVM Params	The heap size allocated for the Test Data Warehouse Service processes. - Xms256m -Xmx512m -XX:MaxMetaspaceSize=256m The time after which database connections are renewed if the Test Data Warehouse Service remains idle. Required if you modified the database configuration settings to values less than the test data warehouse defaults. Configure the following test data warehouse values to be less than the database values: - IDLE_TIME. -DIDLE_TIME=<seconds>. Default is 300 seconds. - CONNECT_TIME. DCONNECT_TIME=<seconds>. Default is 5000 seconds.

13. Click **Finish**.
The domain creates the Test Data Warehouse Service, starts the service, and creates content for the test data warehouse repository.

Create and Configure the Test Data Manager Service

Before you can use TDM, you must create and configure a Test Data Manager Service from Informatica Administrator.

The Test Data Manager Service manages the TDM repository. When you access a TDM repository object or a test data warehouse object from Test Data Manager, it sends a request to the Test Data Manager Service. The Test Data Manager Service accesses the database content from the TDM repository or connects to the Test Data Warehouse Service associated with it.

Work with the Informatica domain Administrator to create a Test Data Manager Service from Informatica Administrator.

Creating the Test Data Manager Service

Use the service creation wizard in the Administrator tool to create the service.

Before you create the Test Data Manager Service, verify that you have created the following services:

- Model Repository Service
- Data Integration Service
- PowerCenter Repository Service
- PowerCenter Integration Service
- Test Data Warehouse Service

1. In the Administrator tool, click the **Manage** tab.
2. Click the **Services and Nodes** view.
3. Click **Actions > New > Test Data Manager Service**.

The **New Test Data Manager Service** dialog box appears.

4. On the **New Test Data Manager Service - Step 1 of 5** page, enter the following properties:

Property	Description
Name	Name of the service. The name is not case sensitive and must be unique within the domain. It cannot exceed 128 characters or begin with @. It also cannot contain spaces or the following special characters: ` ~ % ^ * + = { } \ ; : ' " / ? . , < > ! () [] You cannot change the name of the service after you create it.
Description	Description of the service. The description cannot exceed 765 characters.
Location	Domain and folder where the service is created. Click Browse to choose a different folder. You can move the service after you create it.
License	License object that allows use of the service.
Node	Node on which the service runs.

5. Click **Next**.

6. On the **New Test Data Manager Service - Step 2 of 5** page, enter the following properties:

Property	Description
PowerCenter Repository Service	The PowerCenter Repository Service that the Test Data Manager Service uses to load metadata into the TDM repository.
PowerCenter Integration Service	The PowerCenter Integration Service that runs the workflows that you generate in Test Data Manager for TDM operations.
Model Repository Service	The Model Repository Service associated with the Test Data Manager Service.
User Name	The user name of the Model repository database.
Password	The password of the Model repository database user.
Security Domain	The name of the security domain that the user belongs to. Select the security domain from the list.
Data Integration Service	The Data Integration Service associated with the Test Data Manager Service. The Data Integration Service runs the workflows that you generate when you perform data discovery operations in Test Data Manager. If you have enabled profiling, or if you use Hadoop connections, you must select the Data Integration Service in the domain.
Analyst Service	The Analyst Service associated with the Test Data Manager Service. The Analyst Service connects to the Analyst tool, a flat file cache directory to store uploaded flat files and a business glossary export file directory. Required if you want to link TDM global objects to Business Glossary assets.
Test Data Warehouse Service	The Test Data Warehouse Service associated with the Test Data Manager Service. The Test Data Warehouse Service manages the test data warehouse repository. Required if you want to create and store data sets in the test data warehouse.

7. Enable data profiling to perform data discovery tasks in TDM, and click **Next**.
8. On the **New Test Data Manager Service - Step 3 of 5** page, enter the following properties:
The repository connection information must be valid for the service to work.

Property	Description
Database Type	Type of database for the TDM repository. <ul style="list-style-type: none"> - Oracle - Microsoft SQL Server - DB2 - PostgreSQL <p>Note: If you use a Microsoft SQL Server database, you must set the collation to <i>case insensitive</i> on the database.</p>
Use Trusted Connection	Available for Microsoft SQL Server. Select this if you want to log in using Windows login credentials.

Property	Description
Custom Driver Class	Custom JDBC parameters. Required if you select Custom database type. Enter the custom JDBC driver parameters.
Username	User account for the TDM repository database.
Password	Password for the TDM repository database. Must be in 7-bit ASCII. To apply changes, restart the Test Data Manager Service.
JDBC URL	JDBC connection URL used to access the TDM repository database. Enter the JDBC URL in the following format: <ul style="list-style-type: none"> - Oracle: jdbc:informatica:oracle://<host name>:<port>;ServiceName=<service name> - IBM DB2: jdbc:informatica:db2://<host name>:<port>;DatabaseName=<database name> - Microsoft SQL Server: jdbc:informatica:sqlserver://<host name>:<port>;DatabaseName=<database name> - PostgreSQL: jdbc:Informatica:postgresql://<host name>:<port number>;DatabaseName=<database name>
Connection String	Native connect string to the TDM repository database. The Test Data Manager Service uses the connect string to create a connection object to the TDM repository and the PowerCenter repository or Model repository. To apply changes, restart the Test Data Manager Service.
Schema Name	Available for Microsoft SQL Server. Name of the schema for the database. If not selected, the service creates the tables in the default schema.
Tablespace Name	Available for DB2. Name of the tablespace in which to create the tables. You must define the tablespace on a single node and the page size must be 32 KB. In a multipartition database, you must select this option. In a single-partition database, if you do not select this option, the installer creates the tables in the default tablespace.
Creation options for the New Test Data Manager Service	Options to create content, or use existing content, and upgrade existing content. <ul style="list-style-type: none"> - Do not create new content. Creates the repository without creating content. Select this option if the database content exists. If the content is of a previous version, the service prompts you to upgrade the content to the current version. - Previous Test Data Manager Service Name: Enter the name of the previous Test Data Manager Service. Required if you create the service with a different name. <p>Note: If you create the Test Data Manager Service with a different name, the source and target connections do not appear in Test Data Manager. Import the connections again if the connections do not appear in Test Data Manager.</p> <ul style="list-style-type: none"> - Upgrade TDM Repository Contents. Upgrades the content to the current version. - Create new content. Creates repository content. <p>Choose to create new content.</p>

9. Enable the Test Data Manager Service, and click **Next**.

10. On the **New Test Data Manager Service - Step 4 of 5** page, enter the following properties:

Property	Description
HTTP Port	Port number that TDM runs on. The default is 6605.
Enable Transport Layer Security (TLS)	Secures communication between the Test Data Manager Service and the domain.
HTTPS Port	Port number for the HTTPS connection. The default is 6643.
Keystore File	Path and file name of the keystore file. The keystore file contains the keys and certificates required if you use the SSL security protocol with the Test Data Manager application. Required if you select Enable Transport Layer Security.
Keystore Password	Password for the keystore file. Required if you select Enable Secured Socket Layer.
SSL Protocol	Secure Sockets Layer protocol to use. Default is TLS.

11. Click **Next**.

12. On the **New Test Data Manager Service - Step 5 of 5** page, enter the following properties:

Property	Description
JVM Params	The heap size allocated for Test Data Manager. - Xms512m - Xmx1024m -XX:MaxPermSize=512m The time after which database connections are renewed if the Test Data Manager remains idle. Required if you modified the database configuration settings to values less than the TDM defaults. Configure the following values in TDM to be less than the database values. - IDLE_TIME. -DIDLE_TIME=<seconds>. Default is 300 seconds. - CONNECT_TIME. -DCONNECT_TIME=<seconds>. Default is 5000 seconds.
Connection Pool Size	The JDBC connection pool size.
JMX Port	Port number for the JMX/RMI connections to TDM. Default is 6675.
Shutdown Port	Port number that controls the server shutdown for TDM. The TDM Server listens for shutdown commands on this port. Default is 6607.

RELATED TOPICS:

- [“infacmd tdm Command Reference” on page 43](#)

Logging in to Test Data Manager

You must have an Informatica user account to log in to Test Data Manager. Use the Informatica Administrator to create an Informatica user account.

1. Start a Microsoft Internet Explorer or Google Chrome browser.

2. In the **Address** field, enter the URL for Test Data Manager:

```
http://<host name>:<port number>/tdm
```

host name represents the host name of the machine where TDM is installed. *port number* is the startup port number for TDM. The default port number is 6605.

If you configure TDM to use HTTPS, the URL opens the HTTPS site:

```
https://<host name>:<HTTPS port number>/tdm
```

3. On the login page, enter an Informatica user name and password.

When you initially log in after installation, you can use the Informatica administrator user account.

4. Click **Login**.

CHAPTER 5

Configure Test Data Management

This chapter includes the following topics:

- [Configure Test Data Management Overview, 35](#)
- [Rules and Guidelines for Multinode Installations, 35](#)
- [Configure the PowerCenter Integration Service for Kerberos-Enabled Hadoop HDFS Connections, 36](#)
- [Third-Party JAR Files, 37](#)
- [Storage Tables for Repeatable Masking, 38](#)
- [Configure Format Preserving Encryption Masking, 39](#)
- [Configure Format Preserving Encryption Masking in a Hadoop Environment , 39](#)

Configure Test Data Management Overview

After you create the required application services, you can configure additional options based on the features that you use.

For example, format-preserving encryption requires additional configuration files based on how you use it.

TDM creates a default connection for substitution masking with repeatable values and creates the storage tables for the connection. To use a different storage connection, you must assign the connection as the default storage connection and create storage tables for the substitution values. You can assign the connection as the default connection and create storage tables from the **Administrator | Preferences** view of Test Data Manager.

Rules and Guidelines for Multinode Installations

Consider the following rules and guidelines and understand the limitations before you create TDM services in a multinode setup:

Installation and Upgrade

- When you create a Test Data Manager Service on a node that is not a gateway node, it is recommended to retain the default Test Data Manager Server Configuration settings and the Advanced Properties.

Configuration

- The PowerCenter Integration Service creates temporary cache files on the node where you run a TDM workflow. The cache files must be available to the PowerCenter Integration Service for the workflow to run. If you configure the Test Data Manager Service and the PowerCenter Integration Service on different nodes, you must configure the TDM cache directory inside an `infa_shared` directory. The `infa_shared` directory must be accessible to all nodes that the Test Data Manager Service and the PowerCenter Integration Service use. Configure the TDM cache directory from the **Workflow Generation** tab in the **Administrator | Preferences** view in Test Data Manager.
- Configure a different cache directory within the `infa_shared` directory for each node on which you create a Test Data Manager Service. TDM generates temporary folders with the plan name in the cache directory. The plan names might conflict with plans created on other nodes.
- If you install Informatica services in a different directory structure on each node on Windows, create a soft link on the node with the PowerCenter Integration Service. The soft link must allow the node with the PowerCenter Integration Service to access the cache folder on the node that generates the workflow.
- If you install Informatica services in a different directory structure on each node on Linux, you must mount the directories. Users must have read, write, and execute permission on the mounted directories.
- After you create the Test Data Manager Service, log in to Test Data Manager and verify the default staging connection on each node. You must use different connection names on each node. Use the default `TDM_CONNECTION` only on one node.

Connection Sharing

Multiple nodes can connect to a single Model Repository Service, but the connections are not shared across the nodes. Changes to connections on one node do not impact other nodes.

Restrictions

- The Test Data Manager Service cannot connect to a PowerCenter Integration Service or a Data Integration Service that runs on a grid.
- Failover and recovery are not available with the Test Data Manager Service.

Configure the PowerCenter Integration Service for Kerberos-Enabled Hadoop HDFS Connections

If you use a Hadoop cluster with Kerberos authentication, you must configure the PowerCenter Integration Service before you can create and use a Hadoop HDFS connection in Test Data Manager.

Ensure that the `KRB5_CONFIG` environment variable contains the `krb5.conf` file location and that the `krb5.conf` file contains the correct entries.

1. Copy the `krb5.conf` file to the following location: `<Informatica installation directory>/TDM/datadirect`
2. Create a directory in the Informatica installation directory. For example: `<Informatica installation directory>/hadoophdfs/conf/`

Ensure that the PowerCenter Integration Service is running so that the Informatica administrator user has read/write access to the directory.

3. Copy the following files from the 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
4. 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.
5. To create the Kerberos ticket cache file, run the kinit command on the Informatica node where the PowerCenter Integration Service is created.

The command creates the ticket cache file with the following name format:

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

Ensure that you have read permission on the ticket cache file.

Use the kinit command to verify, validate, and renew the tickets.
6. 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>
```
7. Log in to the Administrator tool, select the PowerCenter Integration Service, and click the **Processes** tab.
8. Click **Edit** on the **Environment Variables** tab. In the CLASSPATH environment variable, add the directory that you created in step 1.
9. Restart the PowerCenter Integration Service.

Third-Party JAR Files

Ensure that you copy all required third-party JAR files to required locations.

- To use a Teradata or a Teradata Parallel Transporter connection as a staging connection, the Teradata JDBC JAR files `tdgssconfig.jar` and `terajdbc4.jar` must be present in the following location:


```
<Informatica installation directory>\TDM\utilities\mapgen\thirdpartylib.
```

Create a `thirdpartylib` folder and copy the JAR files before you configure the connection as a staging connection.
- Before you can test a Teradata or a Teradata Parallel Transporter connection, add the Teradata JDBC JAR files `tdgssconfig.jar` and `terajdbc4.jar` to the following location:


```
<Informatica installation directory>\TDM\lib\thirdparty.
```
- Before you can test a JDBC connection that you configure with a MySQL database, you must add the MySQL JDBC JAR file `mysql-connector-java-5.1.44-bin.jar` to the following location:


```
<Informatica installation directory>\TDM\lib\thirdparty.
```
- Before you can test a Netezza connection, add the Netezza JDBC JAR file `nzjdbc.jar` to the following location:


```
<Informatica installation directory>\TDM\lib\thirdparty.
```

Restart the Test Data Manager Service after you add the JAR files.

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.

Configure Format Preserving Encryption Masking

Before you can use the format preserving encryption masking type in a plan, you must configure Test Data Management.

1. Create a `tokens` folder in any location on the machine where Informatica is installed.
2. Browse to the `<Informatica installation directory>\TDM\configuration` directory.
3. Open the `softhsm2.conf` file.
4. Set the `directories.tokenidir` property to the `tokens` directory that you create in step 1 and save the change.
5. Set the `SOFTHSM2_CONF` environment variable to the `<Informatica installation directory>\TDM\configuration\softhsm2.conf` directory.
6. Set the `INFA_KEY_LOCATION` environment variable to the `<Informatica installation directory>\isp\config\keys` directory.
7. Restart the Informatica domain.

Configure Format Preserving Encryption Masking in a Hadoop Environment

Before you can use the format preserving encryption masking type in a plan, you must configure the Test Data Management machine.

1. Create a folder to store tokens on the Hadoop cluster machine. For example, create a `tokens` folder.
2. Browse to the `softhsm2.conf` file on the `<Informatica installation directory>\TDM\configuration`
3. Copy the `softhsm2.conf` file to the Hadoop cluster machine.
4. Open the `softhsm2.conf` file on the Hadoop cluster machine and set the `directories.tokenidir` property to the directory that you create in step 1 and save the change.
5. Log in to Test Data Manager and click **Administrator > Connections**.
6. Open the connection that you use to push mappings to the Hadoop machine.
You can find the Hadoop pushdown connection name from the **Administrator > Preferences > Hive Properties** tab.
7. On the **Hadoop Cluster Properties** tab, add the **Cluster Environment Variable** information:
 - Name: `SOFTHSM2_CONF`
 - Value: Enter the path to the `softhsm2.conf` file on the Hadoop cluster machine. For example, enter `/home/tmhdhp/ENCRYPTION_RELATED_DATA/softhsm2.conf`.

CHAPTER 6

Starting and Stopping Informatica Services

This chapter includes the following topics:

- [Starting and Stopping Informatica Services Overview , 40](#)
- [Starting and Stopping the Informatica Services from the Console, 40](#)
- [Stopping Informatica in Informatica Administrator, 41](#)
- [Starting or Stopping Informatica from the Control Panel, 41](#)
- [Starting or Stopping Informatica from the Start Menu, 41](#)
- [Starting or Stopping Informatica from a Command Prompt, 42](#)
- [Rules and Guidelines for Starting or Stopping Informatica, 42](#)

Starting and Stopping Informatica Services Overview

The Informatica service runs the Service Manager on the node. The Service Manager manages all domain functions and starts application services configured to run on the node. The method you use to start or stop Informatica depends on the operating system. You can use Informatica Administrator to shut down a node. When you shut down a node, you stop Informatica on the node.

The Informatica service also runs Informatica Administrator. You use Informatica Administrator to administer the Informatica domain objects and user accounts. Log in to Informatica Administrator to create the user accounts for users of Informatica and to create and configure the application services in the domain.

Starting and Stopping the Informatica Services from the Console

Run `infaservice.sh` to start and stop the Informatica daemon. By default, `infaservice.sh` is installed in the following directory:

```
<Informatica installation directory>/tomcat/bin
```

1. Go to the directory where `infaservice.sh` is located.

2. At the command prompt, enter the following command to start the daemon:

```
infaservice.sh startup
```

Enter the following command to stop the daemon:

```
infaservice.sh shutdown
```

Note: If you use a softlink to specify the location of `infaservice.sh`, set the `INFA_HOME` environment variable to the location of the Informatica installation directory.

Stopping Informatica in Informatica Administrator

When you shut down a node using Informatica Administrator, you stop the Informatica service on that node.

You can abort the processes that are running or allow them to complete before the service shuts down. If you shut down a node and abort the repository service processes running on the node, you can lose changes that have not yet been written to the repository. If you abort a node running integration service processes, the workflows will abort.

1. Log in to Informatica Administrator.
2. In the Navigator, select the node to shut down.
3. On the Domain tab **Actions** menu, select **Shutdown Node**.

Starting or Stopping Informatica from the Control Panel

The procedure to start or stop the Informatica Windows service is the same as for all other Windows services.

1. Open the Windows Control Panel.
2. Select **Administrative Tools**.
3. Right-click **Services** and select **Run as Administrator**.
4. Right-click the Informatica service.
5. If the service is running, click **Stop**.
If the service is stopped, click **Start**.

Starting or Stopping Informatica from the Start Menu

To start Informatica from the Windows Start menu, click **Programs > Informatica[Version] > Server**. Right-click **Start Informatica Services** and select **Run as Administrator**.

To stop Informatica from the Windows Start menu, click **Programs > Informatica[Version] > Server**. Right-click **Stop Informatica Services** and select **Run as Administrator**.

Starting or Stopping Informatica from a Command Prompt

You can run `infaservice.bat` from the command line to start and stop the Informatica services on Windows.

By default, `infaservice.bat` is installed in the following directory:

```
<Informatica installation directory>\tomcat\bin
```

1. Open a command prompt as administrator.
2. Go to the directory where `infaservice.bat` is located.
3. Enter the following command to start the Informatica services:

```
infaservice.bat startup
```

Enter the following command to stop the Informatica services:

```
infaservice.bat shutdown
```

Rules and Guidelines for Starting or Stopping Informatica

Consider the following rules and guidelines when starting and stopping Informatica on a node:

- When you shut down a node, the node is unavailable to the domain. If you shut down a gateway node and do not have another gateway node in the domain, the domain is unavailable.
- When you start Informatica, verify that the port used by the service on the node is available. For example, if you stop Informatica on a node, verify that the port is not used by any other process on the machine before you restart Informatica. If the port is not available, Informatica will fail to start.
- If you do not use Informatica Administrator to shut down a node, any process running on the node will be aborted. If you want to wait for all processes to complete before shutting down a node, use Informatica Administrator.
- If you have two nodes in a domain with one node configured as a primary node for an application service and the other node configured as a backup node, start Informatica on the primary node before you start the backup node. Otherwise, the application service will run on the backup node and not the primary node.

APPENDIX A

Infacmd

This appendix includes the following topics:

- [infacmd Overview, 43](#)
- [infacmd tdm Command Reference, 43](#)
- [infacmd tdw Command Reference, 54](#)
- [infacmd isp Commands for the Test Data Warehouse Service, 61](#)

infacmd Overview

infacmd is a command line program that allows you to administer services in the domain. You can create the service, add content to the service, enable the service, and disable the service with the *infacmd* command.

Use the *infacmd* command line program to administer the Test Data Manager Service and the Test Data Warehouse Service.

Run the commands from the <INFA_HOME>\isp\bin path.

You do not need to add the Username and Password options when you run the commands in Kerberos network authentication mode.

infacmd tdm Command Reference

The *infacmd* tdm program administers the Test Data Manager Service.

You can create the service, add content to the service, enable the service and disable the service with the *infacmd* tdm commands.

CreateService

Creates a Test Data Manager Service in a domain.

The *infacmd* tdm CreateService command uses the following syntax:

```
CreateService  
  
<-DomainName|-dn> domain_name  
  
<-ServiceName|-sn> service_name
```

```

<-UserName|-un> user_name
<-Password|-pd> password
[<-SecurityDomain|-sdn> security_domain]
[<-ResilienceTimeout|-re> timeout_period_in_seconds]
<-NodeName|-nn> node_name
<-LicenseName|-ln> license_name

<-PCRSServiceName|-pcrs> power_center_repo_service
<-PCISServiceName|-pcis> power_center_int_service

<-MRSServiceName|-mrs> model_repo_service
<-MRSUserName|-rsun> model_repo_service_username
<-MRSPassword|-rspd> model_repo_service_password
[<-MRSSecurityDomain|-rsdn> model_repo_security_domain]

<-AnalystService|-at> analyst_service
<-EnableProfiling|-ep> enable_profiling
<-TDWServiceName|-tdw> test_data_warehouse_service

<-DISServiceName|-dis> data_integration_service
<-db_type|-dt> database_type (ORACLE, DB2, SQLSERVER or CUSTOM)
<-DBUsername|-du> db_user
<-DBPassword|-dp> db_password
<-DBUrl|-dl> db_url
<-DBConnString|-dc> db_conn_string
[<-DbSchema|-ds> db_schema (used for SQL Server only)]
[<-DbTablespace|-db> db_tablespace (used for DB2 only)]
[<-HttpPort> http_port]
[<-HttpsPort> https_port]
[<-KeystoreFile|-kf> keystore_file_location]
[<-KeystorePassword|-kp> keystore_password]
[<-SSLProtocol|-sp> ssl_protocol]
[<-jvmParams|-jp> jvmParameters]
[<-connPoolSize|-cp> conn_pool_size]
[<-jmxPort> jmx_port]
[<-shutdownPort> shutdown_port]
[<-hadoopDistDir> Hadoop Distribution Directory]
[<-hadoopKerbSPN> Hadoop Kerberos Service Principal Name]

```

[<-hadoopKerbKeytab> Hadoop Kerberos Keytab]

The following table describes infacmd tdm CreateService options and arguments:

Option	Argument	Description
-DomainName -dn	domain_name	Required. Name of the Informatica domain. You can set the domain name with the -dn option or the environment variable INFA_DEFAULT_DOMAIN. If you set a domain name with both methods, the -dn option takes precedence.
-ServiceName -sn	service_name	Required. Name of the Test Data Manager Service. The name is not case sensitive and must be unique within the domain. The characters must be compatible with the code page of the associated repository. The name cannot exceed 230 characters, have leading or trailing spaces, or contain carriage returns, tabs, or the following characters: / * ? < > "
-UserName -un	user_name	Required if the domain uses Native or LDAP authentication. User name to connect to the domain. You can set the user name with the -un option or the environment variable INFA_DEFAULT_DOMAIN_USER. If you set a user name with both methods, the -un option takes precedence. Optional if the domain uses Kerberos authentication. To run the command with single sign-on, do not set the user name. If you set the user name, the command runs without single sign-on.
-Password -pd	password	Required if you specify the user name. Password for the user name. The password is case sensitive. You can set a password with the -pd option or the environment variable INFA_DEFAULT_DOMAIN_PASSWORD. If you set a password with both methods, the password set with the -pd option takes precedence.

Option	Argument	Description
-SecurityDomain -sdn	security_domain	Required if the domain uses LDAP authentication. Optional if the domain uses native authentication or Kerberos authentication. Name of the security domain to which the domain user belongs. You can set a security domain with the -sdn option or the environment variable INFA_DEFAULT_SECURITY_DOMAIN. If you set a security domain name with both methods, the -sdn option takes precedence. The security domain name is case sensitive. If the domain uses native or LDAP authentication, the default is Native. If the domain uses Kerberos authentication, the default is the LDAP security domain created during installation. The name of the security domain is the same as the user realm specified during installation.
-ResilienceTimeout -re	timeout_period_in_seconds	Optional. Amount of time in seconds that infacmd attempts to establish or re-establish a connection to the domain. You can set the resilience timeout period with the -re option or the environment variable INFA_CLIENT_RESILIENCE_TIMEOUT. If you set a the resilience timeout period with both methods, the -re option takes precedence. Default is 180 seconds.
-NodeName -nn	node_name	Required. Name of the node where the service will run.
-LicenseName -ln	license_name	Required. Name of the license. The name is not case sensitive and must be unique within the domain. The name cannot exceed 79 characters, have leading or trailing spaces, or contain carriage returns, tabs, or the following characters: / * ? < > "
-PCRSServicename -pcrs	power_center_repo_service	Name of the PowerCenter Repository Service to which TDM connects.
-PCISServicename -pcis	power_center_int_service	Name of the PowerCenter Integration Service to which TDM connects.
-MRSServiceName -mrs	model_repo_service	Name of the Model Repository Service to which TDM connects.
-MRSUserName -rsun	model_repo_service_username	Required. User name to connect to the Model repository.
-MRSPassword -rspd	model_repo_service_password	Required. Password for the user name to connect to the Model repository. The password is case sensitive.

Option	Argument	Description
-AnalystService -at	analyst_service	Optional. Name of the Analyst Service that TDM uses for asset linking. Required if you use the asset linking feature to link TDM global objects to the Business Glossary objects.
-MRSSecurityDomain -rsdn	model_repo_security_domain	Required if you use LDAP authentication. Name of the security domain that the user belongs to. Security domain is case sensitive. Default is Native.
-EnableProfiling -ep	enable_profiling	Indicates data discovery settings. Set to true to enable data discovery. Set to false to disable data discovery.
-TDWServiceName tdw	test_data_warehouse_service	Optional. Required if you create a test data warehouse. Name of the Test Data Warehouse Service that TDM uses to manage the test data warehouse.
-DISServiceName -dis	data_integration_service	Name of the Data Integration Service to which TDM connects.
-db_type -dt	database_type	Type of TDM repository database. Values are Oracle, SQL Server, DB2, or Custom.
-DBUsername -du	db_user	Required. Account for the repository database. Use the database client to set up this account.
-DBPassword -dp	db_password	Required. Repository database password for the database user.
-DBUrl -dl	db_url	Required. JDBC connect string to the database for the TDM repository. Use one of the following syntaxes: Oracle: jdbc:informatica:oracle: // <machineName>:<PortNo>;ServiceName=<DBName>; MaxPooledStatements=20; CatalogOptions=0; EnableServerResultCache=true DB2: jdbc:informatica:db2: //<host>:<port>; DatabaseName=<dbname>; BatchPerformanceWorkaround=true;DynamicSections=1000 SQLServer: jdbc:informatica:sqlserver: // <host>:<port>; DatabaseName=<dbname>; SnapshotSerializable=true

Option	Argument	Description
-DBConnString -dc	db_conn_string	Native connect string to the TDM repository database. The service uses the connect string to create a connection object to the Test Data Manager repository and the PowerCenter repository or Model repository.
-DbSchema -ds	db_schema	Optional. The schema name for a Microsoft SQL Server database.
-DbTablespace -db	db_tablespace	Required for a DB2 database only. When you configure a tablespace name, the Test Data Manager Service creates all repository tables in the same tablespace. You cannot use spaces in the tablespace name. The tablespace must be defined on a single node and the page size must be 32 KB. In a multipartition database, you must select this option. In a single-partition database, if you do not select this option, the installer creates the tables in the default tablespace.
-HttpPort	http_port	Required. Port number for the service.
-HttpsPort	https_port	Optional. Port number to secure the connection to the Administrator tool. Set this port number if you want to configure HTTPS for a node.
-KeystoreFile -kf	keystore_file_location]	Optional. Keystore file that contains the keys and certificates required if you use the SSL security protocol with PowerCenter.
-KeystorePassword -kp	keystore_password	Optional. If TLS is enabled, you must specify a password.
-SSLProtocol -pt	SSL Protocol	Optional. Secure Sockets Layer protocol to use. Editable if you enable Transport Layer Security (TLS).

Option	Argument	Description
-jvmParams -jp	jvmParameters	<p>JVM parameters to set:</p> <ul style="list-style-type: none"> - The heap size allocated for Test Data Manager. - The time after which database connections are renewed if the TDM UI remains idle. Required if you have modified the database configuration settings to values less than the TDM defaults. Edit the values in TDM such that the values are less than the database values. <p>Include the JVM parameters in single quotes and then in double quotes. For example, 'value' and then "value".</p> <p>The -Xms option is case sensitive. For example: "Xms512m - Xmx1024m - XX:MaxPermSize=512m" - IDLE_TIME. - DIDLE_TIME=<seconds>. Default is 300 seconds. - CONNECT_TIME. - DCONNECT_TIME=<seconds>. Default is 5000 seconds.</p>
-connPoolSize -cp	conn_pool_size	Optional. The maximum number of idle connection instances that a pool maintains for a database connection before the maximum idle time is met. Set this value to be more than the minimum number of idle connection instances. Default is 15.
-jmxPort	jmx_port	Port number for the JMX/RMI connections to TDM. Default is 6675.
-shutdownPort	shutdown_port	Port number that controls shutdown for TDM.
-hadoopDistDir -hdd	Hadoop Distribution Directory	The Hadoop distribution directory on the Test Data Manager Service node.
-hadoopKerbSPN -hks	Hadoop Kerberos Service Principal Name	Service Principal Name (SPN) of the Data Integration Service to connect to a Hadoop cluster that uses Kerberos authentication. Not required when you run the MapR Hadoop distribution. Required for other Hadoop distributions.
-hadoopKerbKeytab -hkt	Hadoop Kerberos Keytab	The file path to the Kerberos keytab file on the machine on which the Data Integration Service runs. Not required when you run the MapR Hadoop distribution. Required for other Hadoop distributions.

CreateContents

Creates repository content for the Test Data Manager repository.

The infacmd tdm CreateContents command uses the following syntax:

```
<-DomainName|-dn> domain_name

[<-SecurityDomain|-sdn> security_domain]

<-UserName|-un> user_name

<-Password|-pd> password

<-ServiceName|-sn> service_name

[<-ResilienceTimeout|-re> timeout_period_in_seconds]
```

The following table describes infacmd tdm CreateContents options and arguments:

Option	Argument	Description
-DomainName -dn	domain_name	Required. Name of the Informatica domain. You can set the domain name with the -dn option or the environment variable INFA_DEFAULT_DOMAIN. If you set a domain name with both methods, the -dn option takes precedence.
-SecurityDomain -sdn	security_domain	Required if the domain uses LDAP authentication. Optional if the domain uses native authentication or Kerberos authentication. Name of the security domain to which the domain user belongs. You can set a security domain with the -sdn option or the environment variable INFA_DEFAULT_SECURITY_DOMAIN. If you set a security domain name with both methods, the -sdn option takes precedence. The security domain name is case sensitive. If the domain uses native or LDAP authentication, the default is Native. If the domain uses Kerberos authentication, the default is the LDAP security domain created during installation. The name of the security domain is the same as the user realm specified during installation.
-UserName -un	user_name	Required if the domain uses Native or LDAP authentication. User name to connect to the domain. You can set the user name with the -un option or the environment variable INFA_DEFAULT_DOMAIN_USER. If you set a user name with both methods, the -un option takes precedence. Optional if the domain uses Kerberos authentication. To run the command with single sign-on, do not set the user name. If you set the user name, the command runs without single sign-on.
-Password -pd	password	Required if you specify the user name. Password for the user name. The password is case sensitive. You can set a password with the -pd option or the environment variable INFA_DEFAULT_DOMAIN_PASSWORD. If you set a password with both methods, the password set with the -pd option takes precedence.

Option	Argument	Description
-ServiceName -sn	service_name	Required. The Test Data Manager Service name.
-ResilienceTimeout -re	timeout_period_in_seconds	Optional. Amount of time in seconds that infacmd attempts to establish or re-establish a connection to the domain. You can set the resilience timeout period with the -re option or the environment variable INFA_CLIENT_RESILIENCE_TIMEOUT. If you set the resilience timeout period with both methods, the -re option takes precedence.

EnableService

Enables the Test Data Manager Service.

The infacmd tdm EnableService command uses the following syntax:

```
<-DomainName|-dn> domain_name
<-ServiceName|-sn> service_name
<-UserName|-un> user_name
<-Password|-pd> password
[<-SecurityDomain|-sdn> security_domain]
[<-ResilienceTimeout|-re> timeout_period_in_seconds]
```

The following table describes infacmd tdm EnableService options and arguments:

Option	Argument	Description
-DomainName -dn	domain_name	Required. Name of the Informatica domain. You can set the domain name with the -dn option or the environment variable INFA_DEFAULT_DOMAIN. If you set a domain name with both methods, the -dn option takes precedence.
-ServiceName -sn	service_name	Required. Name of the service you want to run the command against. To enter a name that contains a space or other non-alphanumeric character, enclose the name in quotation marks.
-UserName -un	user_name	Required if the domain uses Native or LDAP authentication. User name to connect to the domain. You can set the user name with the -un option or the environment variable INFA_DEFAULT_DOMAIN_USER. If you set a user name with both methods, the -un option takes precedence. Optional if the domain uses Kerberos authentication. To run the command with single sign-on, do not set the user name. If you set the user name, the command runs without single sign-on.
-Password -pd	password	Required if you specify the user name. Password for the user name. The password is case sensitive. You can set a password with the -pd option or the environment variable INFA_DEFAULT_DOMAIN_PASSWORD. If you set a password with both methods, the password set with the -pd option takes precedence.

Option	Argument	Description
-SecurityDomain -sdn	security_domain	Required if the domain uses LDAP authentication. Optional if the domain uses native authentication or Kerberos authentication. Name of the security domain to which the domain user belongs. You can set a security domain with the -sdn option or the environment variable INFA_DEFAULT_SECURITY_DOMAIN. If you set a security domain name with both methods, the -sdn option takes precedence. The security domain name is case sensitive. If the domain uses native or LDAP authentication, the default is Native. If the domain uses Kerberos authentication, the default is the LDAP security domain created during installation. The name of the security domain is the same as the user realm specified during installation.
-ResilienceTimeout -re	timeout_period_in_seconds	Optional. Amount of time in seconds that infacmd attempts to establish or re-establish a connection to the domain. If you omit this option, infacmd uses the timeout value specified in the INFA_CLIENT_RESILIENCE_TIMEOUT environment variable. If no value is specified in the environment variable, the default of 180 seconds is used.

DisableService

Disables the Test Data Manager Service. When you disable the Test Data Manager Service, all the service processes stop.

The infacmd tdm DisableService command uses the following syntax:

```
<-DomainName|-dn> domain_name
<-ServiceName|-sn> service_name
<-UserName|-un> user_name
<-Password|-pd> password
[<-SecurityDomain|-sdn> security_domain]
[<-ResilienceTimeout|-re> timeout_period_in_seconds]
<-DisableMode|-dm> disable_mode: COMPLETE|ABORT|STOP
```

The following table describes infacmd tdm DisableService options and arguments:

Option	Argument	Description
-DomainName -dn	domain_name	Required. Name of the Informatica domain. You can set the domain name with the -dn option or the environment variable INFA_DEFAULT_DOMAIN. If you set a domain name with both methods, the -dn option takes precedence.
-ServiceName -sn	service_name	Required. Name of the service you want to run the command against. To enter a name that contains a space or other non-alphanumeric character, enclose the name in quotation marks.

Option	Argument	Description
-UserName -un	user_name	Required if the domain uses Native or LDAP authentication. User name to connect to the domain. You can set the user name with the -un option or the environment variable INFA_DEFAULT_DOMAIN_USER. If you set a user name with both methods, the -un option takes precedence. Optional if the domain uses Kerberos authentication. To run the command with single sign-on, do not set the user name. If you set the user name, the command runs without single sign-on.
-Password -pd	password	Required if you specify the user name. Password for the user name. The password is case sensitive. You can set a password with the -pd option or the environment variable INFA_DEFAULT_DOMAIN_PASSWORD. If you set a password with both methods, the password set with the -pd option takes precedence.
-SecurityDomain -sdn	security_domain	Required if the domain uses LDAP authentication. Optional if the domain uses native authentication or Kerberos authentication. Name of the security domain to which the domain user belongs. You can set a security domain with the -sdn option or the environment variable INFA_DEFAULT_SECURITY_DOMAIN. If you set a security domain name with both methods, the -sdn option takes precedence. The security domain name is case sensitive. If the domain uses native or LDAP authentication, the default is Native. If the domain uses Kerberos authentication, the default is the LDAP security domain created during installation. The name of the security domain is the same as the user realm specified during installation.
-ResilienceTimeout -re	timeout_period_in_seconds	Optional. Amount of time in seconds that infacmd attempts to establish or re-establish a connection to the domain. If you omit this option, infacmd uses the timeout value specified in the INFA_CLIENT_RESILIENCE_TIMEOUT environment variable. If no value is specified in the environment variable, the default of 180 seconds is used.
-DisableMode -dm	disable_mode	Required. Defines how the service is disabled: <ul style="list-style-type: none"> - Complete. Disables the service after all service processes stop. - Abort. Stops all processes immediately, and then disables the service. - Stop. Stops all running workflows, and then disables the service.

removeService

Removes the Test Data Manager Service from the domain. Before you remove a service, you must disable it.

The infacmd tdm removeService command uses the following syntax:

```
removeService
<-DomainName|-dn> domain_name
<-UserName|-un> user_name
<-Password|-pd> password
[<-SecurityDomain|-sdn> security_domain]
[<-ResilienceTimeout|-re> timeout_period_in_seconds]
```

<-ServiceName|-sn> service_name

The following table describes infacmd tdm removeService options and arguments:

Option	Argument	Description
-DomainName -dn	domain_name	Required. Name of the Informatica domain. You can set the domain name with the -dn option or the environment variable INFA_DEFAULT_DOMAIN. If you set a domain name with both methods, the -dn option takes precedence.
-UserName -un	user_name	Required if the domain uses Native or LDAP authentication. User name to connect to the domain. You can set the user name with the -un option or the environment variable INFA_DEFAULT_DOMAIN_USER. If you set a user name with both methods, the -un option takes precedence. Optional if the domain uses Kerberos authentication. To run the command with single sign-on, do not set the user name. If you set the user name, the command runs without single sign-on.
-Password -pd	password	Required if you specify the user name. Password for the user name. The password is case sensitive. You can set a password with the -pd option or the environment variable INFA_DEFAULT_DOMAIN_PASSWORD. If you set a password with both methods, the password set with the -pd option takes precedence.
-SecurityDomain -sdn	security_domain	Required if the domain uses LDAP authentication. Optional if the domain uses native authentication or Kerberos authentication. Name of the security domain to which the domain user belongs. You can set a security domain with the -sdn option or the environment variable INFA_DEFAULT_SECURITY_DOMAIN. If you set a security domain name with both methods, the -sdn option takes precedence. The security domain name is case sensitive. If the domain uses native or LDAP authentication, the default is Native. If the domain uses Kerberos authentication, the default is the LDAP security domain created during installation. The name of the security domain is the same as the user realm specified during installation.
-ResilienceTimeout -re	timeout_period_in_seconds	Optional. Amount of time in seconds that infacmd attempts to establish or reestablish a connection to the domain. If you omit this option, infacmd uses the timeout value specified in the INFA_CLIENT_RESILIENCE_TIMEOUT environment variable. If no value is specified in the environment variable, the default of 180 seconds is used.
-ServiceName -sn	service_name	Required. Name of service you want to remove. To enter a name that contains a space or other non-alphanumeric character, enclose the name in quotation marks.

infacmd tdw Command Reference

The *infacmd* tdw program administers the Test Data Warehouse Service.

You can create the service and add content to the service with the *infacmd* tdw program.

CreateService

Creates a Test Data Warehouse Service in a domain.

The `infacmd tdw CreateService` command uses the following syntax:

```
CreateService
<-DomainName|-dn> Domain Name
<-ServiceName|-sn> Service Name
[<-ServiceDesc|-sd> Service Description]
[<-UserName|-un> Username]
[<-Password|-pd> Password]
[<-SecurityDomain|-sdn> Security Domain]
[<-ResilienceTimeout|-re> Timeout Period in seconds]
<-NodeName|-nn> Node Name
<-LicenseName|-ln> License Name
<-RepoName|-rn> Repository Name
<-RepoDBType|-rdt> Repository Database Type (ORACLE, DB2, SQLSERVER)
<-RepoDBUsername|-rdu> Repository Database User
<-RepoDBPassword|-rdp> Repository Database Password
<-RepoDBUrl|-rdl> Repository Database Url
[<-RepoDbSchema|-rds> Repository Database Schema (used for SQL Server only)]
[<-RepoDbTablespace|-rdts> Repository Database Tablespace (used for DB2 only)]
<-TDWName| -tdwn> Test Data Warehouse Name
[<-TDWDescription| -tdwdesc> Test Data Warehouse Description]
<-TDWConnType|-tdwct> Test Data Warehouse Connection Type (ORACLE/ODBC)
<-TDWConnName|-tdwcn> Test Data Warehouse Connection Name
[<-TDWConnDBType|-tdwcdbt> Test Data Warehouse Connection Database Type (POSTGRESQL)]
[<-TDWJDBCConnName|-tdwjdbccn> Test Data Warehouse JDBC Connection Name]
<-TDWStagingSchema|-tdwstsc> Test Data Warehouse Staging Schema Name
[<-HttpPort> httpPort]
[<-HttpsPort> httpsPort]
[<-KeystoreFile|-kf> Keystore File Location]
[<-KeystorePassword|-kp> Keystore Password]
[<-SSLProtocol|-sp> SSL Protocol]
[<-jvmParams|-jp> JVM Parameters]
```

The following table describes infacmd tdw CreateService options and arguments:

Option	Argument	Description
-DomainName -dn	Domain Name	Required. Name of the Informatica domain. You can set the domain name with the -dn option or the environment variable INFA_DEFAULT_DOMAIN. If you set a domain name with both methods, the -dn option takes precedence.
-ServiceName -sn	Service Name	Required. Name of the Test Data Warehouse Service. The name is not case sensitive and must be unique within the domain. The characters must be compatible with the code page of the associated repository. The name cannot exceed 230 characters, have leading or trailing spaces, or contain carriage returns, tabs, or the following characters: / * ? < > "
-ServiceDesc -sd	Service Description	Description of the service. The description cannot exceed 765 characters.
-UserName -un	Username	Required if the domain uses Native or LDAP authentication. User name to connect to the domain. You can set the user name with the -un option or the environment variable INFA_DEFAULT_DOMAIN_USER. If you set a user name with both methods, the -un option takes precedence. Optional if the domain uses Kerberos authentication. To run the command with single sign-on, do not set the user name. If you set the user name, the command runs without single sign-on.
-Password -pd	Password	Required if you specify the user name. Password for the user name. The password is case sensitive. You can set a password with the -pd option or the environment variable INFA_DEFAULT_DOMAIN_PASSWORD. If you set a password with both methods, the password set with the -pd option takes precedence.

Option	Argument	Description
-SecurityDomain -sdn	Security Domain	Required if the domain uses LDAP authentication. Optional if the domain uses native authentication or Kerberos authentication. Name of the security domain to which the domain user belongs. You can set a security domain with the -sdn option or the environment variable INFA_DEFAULT_SECURITY_DOMAIN. If you set a security domain name with both methods, the -sdn option takes precedence. The security domain name is case sensitive. If the domain uses native or LDAP authentication, the default is Native. If the domain uses Kerberos authentication, the default is the LDAP security domain created during installation. The name of the security domain is the same as the user realm specified during installation.
-ResilienceTimeout -re	Timeout Period in seconds	Optional. Amount of time in seconds that infacmd attempts to establish or re-establish a connection to the domain. You can set the resilience timeout period with the -re option or the environment variable INFA_CLIENT_RESILIENCE_TIMEOUT. If you set a the resilience timeout period with both methods, the -re option takes precedence. Default is 180 seconds.
-NodeName -nn	Node Name	Required. Name of the node where the service will run.
-LicenseName -ln	License Name	Required. Name of the license. The name is not case sensitive and must be unique within the domain. The name cannot exceed 79 characters, have leading or trailing spaces, or contain carriage returns, tabs, or the following characters: / * ? < > "
-RepoName -rn	Repository Name	Required. Name of the test data warehouse repository.
-RepoDBType -rdt	Database Type	Required. Type of database for the test data warehouse repository. Values are Oracle, SQL Server, or DB2.
-RepoDBUsername -rdu	Repository Database User	Required. Account for the repository database. Use the database client to set up this account.
-RepoDBPassword -rdp	Repository Database Password	Required. Repository database password for the database user.

Option	Argument	Description
-RepoDBUrl -rdl	Repository Database Url	<p>Required. JDBC connect string to the database for the test data warehouse repository. Use one of the following syntaxes:</p> <p>Oracle: jdbc:informatica:oracle: //<machine name>:<port number>;ServiceName=<DBName>; MaxPooledStatements=20; CatalogOptions=0; EnableServerResultCache=true</p> <p>DB2: jdbc:informatica:db2: //<host name>:<port number>; DatabaseName=<dbname>; BatchPerformanceWorkaround=true;DynamicSections=1000</p> <p>SQLServer: jdbc:informatica:sqlserver: //<host name>:<port number>; DatabaseName=<database name>; SnapshotSerializable=true</p>
-RepoDbSchema -rds	Repository Database Schema	Optional. The schema name for a Microsoft SQL Server database.
-RepoDbTablespace -rdts	Repository Database Tablespace	<p>Required for a DB2 database only. When you configure a tablespace name, the Test Data Warehouse Service creates all repository tables in the same tablespace. You cannot use spaces in the tablespace name.</p> <p>The tablespace must be defined on a single node and the page size must be 32 KB. In a multipartition database, you must select this option. In a single-partition database, if you do not select this option, the command creates the tables in the default tablespace.</p>
-TDWName -tdwn	Test Data Warehouse Name	Required. Name of the test data warehouse.
-TDWDescription -tdwdesc	Test Data Warehouse Description	Description of the test data warehouse. The description cannot exceed 765 characters.
TDWConnType -tdwct	Test Data Warehouse Connection Type (ORACLE/ODBC)	Required. Type of database connection for the test data warehouse.
TDWConnName -tdwcn	Test Data Warehouse Connection Name	Required. The database connection to use as the test data warehouse.
TDWConnDBType tdwcdbt	Test Data Warehouse Connection Database Type (POSTGRESQL)	Required if you choose ODBC connection type. The type of database to use as the test data warehouse connection.

Option	Argument	Description
TDWJDBCConnName tdwjdbccn	Test Data Warehouse JDBC Connection Name	Required if you choose ODBC connection type. The connection that the ODBC test data warehouse uses for the JDBC connection string.
TDWStagingSchema tdwstsc	Test Data Warehouse Staging Schema Name	The schema to use for creation of staging tables when required for jobs that you run from the self-service portal. The test data warehouse connection must have access to the schema.
-HttpPort	HttpPort	Required. Port number for the service.
-HttpsPort	HttpsPort	Optional. Port number to secure the connection to the Administrator tool. Set this port number if you want to configure HTTPS for a node.
-KeystoreFile -kf	Keystore File Location	Optional. Keystore file that contains the keys and certificates required if you use the SSL security protocol with PowerCenter.
-KeystorePassword -kp	Keystore Password	Optional. If TLS is enabled, you must specify a password.
-SSLProtocol -sp	SSL Protocol	Optional. Secure Sockets Layer protocol to use. Editable if you enable Transport Layer Security (TLS).
-jvmParams -jp	JVM Parameters	<p>JVM parameters to set:</p> <ul style="list-style-type: none"> - The heap size allocated for the test data warehouse. - The time after which database connections are renewed if the TDM UI remains idle. Required if you have modified the database configuration settings to values less than the TDM defaults. Edit the values in TDM such that the values are less than the database values. <p>Include the JVM parameters in single quotes and then in double quotes. For example, 'value' and then "value".</p> <p>The -Xms option is case sensitive. For example:</p> <pre>"- Xms256m - Xmx512m - XX:MaxPermSize=256m"</pre> <ul style="list-style-type: none"> - IDLE_TIME. <ul style="list-style-type: none"> -DIDLE_TIME=<seconds>. Default is 300 seconds. - CONNECT_TIME. <ul style="list-style-type: none"> -DCONNECT_TIME=<seconds>. Default is 5000 seconds.

CreateService Example

The following sample command creates a Test Data Warehouse Service with the name *tdw1*:

```
infacmd tdw createService -dn Domain -sn tdw1 -un Administrator -pd Administrator -nn
node01 -ln TDM_ALL -rn rep01 -rdt SQLSERVER -rdu test -rdp test -rdl
"jdbc:informatica:sqlserver://ExampleHost:
1433;SelectMethod=cursor;databaseName=tdw_cmd_db" -tdwn TDW1 -tdwct ORACLE -tdwcn
OrclConn -httpport 7705
```

CreateContents

Creates repository content for the test data warehouse repository.

The `infacmd tdw CreateContents` command uses the following syntax:

```
<-DomainName|-dn> Domain Name

[<-SecurityDomain|-sdn> Security Domain]

<-UserName|-un> Username

<-Password|-pd> Password

<-ServiceName|-sn> Service Name

[<-ResilienceTimeout|-re> Timeout Period in seconds]
```

The following table describes `infacmd tdw CreateContents` options and arguments:

Option	Argument	Description
-DomainName -dn	Domain Name	Required. Name of the Informatica domain. You can set the domain name with the -dn option or the environment variable <code>INFA_DEFAULT_DOMAIN</code> . If you set a domain name with both methods, the -dn option takes precedence.
-SecurityDomain -sdn	Security Domain	Required if the domain uses LDAP authentication. Optional if the domain uses native authentication or Kerberos authentication. Name of the security domain to which the domain user belongs. You can set a security domain with the -sdn option or the environment variable <code>INFA_DEFAULT_SECURITY_DOMAIN</code> . If you set a security domain name with both methods, the -sdn option takes precedence. The security domain name is case sensitive. If the domain uses native or LDAP authentication, the default is Native. If the domain uses Kerberos authentication, the default is the LDAP security domain created during installation. The name of the security domain is the same as the user realm specified during installation.

Option	Argument	Description
-UserName -un	Username	Required if the domain uses Native or LDAP authentication. User name to connect to the domain. You can set the user name with the -un option or the environment variable INFA_DEFAULT_DOMAIN_USER. If you set a user name with both methods, the -un option takes precedence. Optional if the domain uses Kerberos authentication. To run the command with single sign-on, do not set the user name. If you set the user name, the command runs without single sign-on.
-Password -pd	Password	Required if you specify the user name. Password for the user name. The password is case sensitive. You can set a password with the -pd option or the environment variable INFA_DEFAULT_DOMAIN_PASSWORD. If you set a password with both methods, the password set with the -pd option takes precedence.
-ServiceName -sn	Service Name	Required. The Test Data Warehouse Service name.
-ResilienceTimeout -re	Timeout Period in seconds	Optional. Amount of time in seconds that infacmd attempts to establish or re-establish a connection to the domain. You can set the resilience timeout period with the -re option or the environment variable INFA_CLIENT_RESILIENCE_TIMEOUT. If you set the resilience timeout period with both methods, the -re option takes precedence.

CreateContents Example

The following sample command creates the content for a Test Data Warehouse Service with the name *tdw1*:

```
infacmd tdw createContents -dn Domain -sn tdw1-un Administrator -pd Administrator
```

infacmd isp Commands for the Test Data Warehouse Service

The *infacmd isp* program administers the Informatica domain. You can enable, disable, and delete the Test Data Warehouse services with *infacmd isp* commands.

To enable the service, disable the service, and delete the service, use the *infacmd isp* commands.

EnableService

Enables the application service corresponding to the service name.

Enables the Test Data Warehouse Service and any application service type, including system services. You can also enable Informatica Administrator.

The infacmd isp EnableService command uses the following syntax:

```
EnableService
<-DomainName|-dn> domain_name
<-UserName|-un> user_name
<-Password|-pd> password
[<-SecurityDomain|-sdn> security_domain]
[<-Gateway|-hp> gateway_host1:port gateway_host2:port...]
[<-ResilienceTimeout|-re> timeout_period_in_seconds]
<-ServiceName|-sn> service_name
```

The following table describes infacmd isp EnableService options and arguments:

Option	Argument	Description
-DomainName -dn	domain_name	Required. Name of the Informatica domain. You can set the domain name with the -dn option or the environment variable INFA_DEFAULT_DOMAIN. If you set a domain name with both methods, the -dn option takes precedence.
-UserName -un	user_name	Required if the domain uses Native or LDAP authentication. User name to connect to the domain. You can set the user name with the -un option or the environment variable INFA_DEFAULT_DOMAIN_USER. If you set a user name with both methods, the -un option takes precedence. Optional if the domain uses Kerberos authentication. To run the command with single sign-on, do not set the user name. If you set the user name, the command runs without single sign-on.
-Password -pd	password	Required if you specify the user name. Password for the user name. The password is case sensitive. You can set a password with the -pd option or the environment variable INFA_DEFAULT_DOMAIN_PASSWORD. If you set a password with both methods, the password set with the -pd option takes precedence.
-SecurityDomain -sdn	security_domain	Required if the domain uses LDAP authentication. Optional if the domain uses native authentication or Kerberos authentication. Name of the security domain to which the domain user belongs. You can set a security domain with the -sdn option or the environment variable INFA_DEFAULT_SECURITY_DOMAIN. If you set a security domain name with both methods, the -sdn option takes precedence. The security domain name is case sensitive. If the domain uses native or LDAP authentication, the default is Native. If the domain uses Kerberos authentication, the default is the LDAP security domain created during installation. The name of the security domain is the same as the user realm specified during installation.
-Gateway -hp	gateway_host1:port gateway_host2:port ...	Required if the gateway connectivity information in the domains.infa file is out of date. The host names and port numbers for the gateway nodes in the domain.

Option	Argument	Description
-ResilienceTimeout -re	timeout_period_in_seconds	Optional. Amount of time in seconds that infacmd attempts to establish or re-establish a connection to the domain. If you omit this option, infacmd uses the timeout value specified in the INFA_CLIENT_RESILIENCE_TIMEOUT environment variable. If no value is specified in the environment variable, the default of 180 seconds is used.
-ServiceName -sn	service_name	Required. Name of the service you want to enable. To enter a name that contains a space or other non-alphanumeric character, enclose the name in quotation marks.

EnableService Example

The following sample command enables a Test Data Warehouse Service with the name *tdw1*:

```
infacmd isp enableService -dn Domain -un Administrator -pd Administrator -sn tdw1
```

DisableService

Disables the application service corresponding to the service name. When you disable a service, all service processes stop.

Disables the Test Data Warehouse Service and any application service type, including system services. The infacmd isp DisableService command uses the following syntax:

```
DisableService
<-DomainName|-dn> domain_name
<-UserName|-un> user_name
<-Password|-pd> password
[<-SecurityDomain|-sdn> security_domain]
[<-Gateway|-hp> gateway_host1:port gateway_host2:port...]
[<-ResilienceTimeout|-re> timeout_period_in_seconds]
<-ServiceName|-sn> service_name
<-Mode|-mo> disable_mode
```

The following table describes infacmd isp DisableService options and arguments:

Option	Argument	Description
-DomainName -dn	domain_name	Required. Name of the Informatica domain. You can set the domain name with the -dn option or the environment variable INFA_DEFAULT_DOMAIN. If you set a domain name with both methods, the -dn option takes precedence.
-UserName -un	user_name	Required. User name to connect to the domain. You can set the user name with the -un option or the environment variable INFA_DEFAULT_DOMAIN_USER. If you set a user name with both methods, the -un option takes precedence.

Option	Argument	Description
-Password -pd	password	Required if you specify the user name. Password for the user name. The password is case sensitive. You can set a password with the -pd option or the environment variable INFA_DEFAULT_DOMAIN_PASSWORD. If you set a password with both methods, the password set with the -pd option takes precedence.
-SecurityDomain -sdn	security_domain	Required if the domain uses LDAP authentication. Optional if the domain uses native authentication or Kerberos authentication. Name of the security domain to which the domain user belongs. You can set a security domain with the -sdn option or the environment variable INFA_DEFAULT_SECURITY_DOMAIN. If you set a security domain name with both methods, the -sdn option takes precedence. The security domain name is case sensitive. If the domain uses native or LDAP authentication, the default is Native. If the domain uses Kerberos authentication, the default is the LDAP security domain created during installation. The name of the security domain is the same as the user realm specified during installation.
-Gateway -hp	gateway_host1:port gateway_host2:port ...	Required if the gateway connectivity information in the domains.infa file is out of date. The host names and port numbers for the gateway nodes in the domain.
-ResilienceTimeout -re	timeout_period_in_seconds	Optional. Amount of time in seconds that infacmd attempts to establish or re-establish a connection to the domain. If you omit this option, infacmd uses the timeout value specified in the INFA_CLIENT_RESILIENCE_TIMEOUT environment variable. If no value is specified in the environment variable, the default of 180 seconds is used.
-ServiceName -sn	service_name	Required. Name of the service you want to disable. To enter a name that contains a space or other non-alphanumeric character, enclose the name in quotation marks.
-Mode -mo	disable_mode	Required. Defines how the service is disabled: <ul style="list-style-type: none"> - Complete. Disables the service after all service processes stop. - Stop. Stops all running jobs and then disables the service. - Abort. Stops all processes immediately, and then disables the service.

DisableService Example

The following sample command disables a Test Data Warehouse Service with the name *tdw1*:

```
infacmd isp disableService -dn Domain -un Administrator -pd Administrator -sn tdw1 -Mode
ABORT
```

RemoveService

Removes the Test Data Warehouse Service and other application services from the domain. Before you remove a service, you must disable it.

The infacmd isp RemoveService command uses the following syntax:

```
RemoveService
```



```

<-DomainName|-dn> domain_name

<-UserName|-un> user_name

<-Password|-pd> password

[<-SecurityDomain|-sdn> security_domain]

[<-Gateway|-hp> gateway_host1:port gateway_host2:port...]

[<-ResilienceTimeout|-re> timeout_period_in_seconds]

<-ServiceName|-sn> service_name

```

The following table describes infacmd isp RemoveService options and arguments:

Option	Argument	Description
-DomainName -dn	domain_name	Required. Name of the Informatica domain. You can set the domain name with the -dn option or the environment variable INFA_DEFAULT_DOMAIN. If you set a domain name with both methods, the -dn option takes precedence.
-UserName -un	user_name	Required if the domain uses Native or LDAP authentication. User name to connect to the domain. You can set the user name with the -un option or the environment variable INFA_DEFAULT_DOMAIN_USER. If you set a user name with both methods, the -un option takes precedence. Optional if the domain uses Kerberos authentication. To run the command with single sign-on, do not set the user name. If you set the user name, the command runs without single sign-on.
-Password -pd	password	Required if you specify the user name. Password for the user name. The password is case sensitive. You can set a password with the -pd option or the environment variable INFA_DEFAULT_DOMAIN_PASSWORD. If you set a password with both methods, the password set with the -pd option takes precedence.
-SecurityDomain -sdn	security_domain	Required if the domain uses LDAP authentication. Optional if the domain uses native authentication or Kerberos authentication. Name of the security domain to which the domain user belongs. You can set a security domain with the -sdn option or the environment variable INFA_DEFAULT_SECURITY_DOMAIN. If you set a security domain name with both methods, the -sdn option takes precedence. The security domain name is case sensitive. If the domain uses native or LDAP authentication, the default is Native. If the domain uses Kerberos authentication, the default is the LDAP security domain created during installation. The name of the security domain is the same as the user realm specified during installation.
-Gateway -hp	gateway_host1:port gateway_host2:port ...	Required if the gateway connectivity information in the domains.infra file is out of date. The host names and port numbers for the gateway nodes in the domain.

Option	Argument	Description
-ResilienceTimeout -re	timeout_period_in_seconds	Optional. Amount of time in seconds that infacmd attempts to establish or reestablish a connection to the domain. If you omit this option, infacmd uses the timeout value specified in the INFA_CLIENT_RESILIENCE_TIMEOUT environment variable. If no value is specified in the environment variable, the default of 180 seconds is used.
-ServiceName -sn	service_name	Required. Name of service you want to remove. To enter a name that contains a space or other non-alphanumeric character, enclose the name in quotation marks.

RemoveService Example

The following sample command deletes a Test Data Warehouse Service with the name *tdw1*:

```
infacmd isp removeService -dn Domain -un Administrator -pd Administrator -sn tdw1
```

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