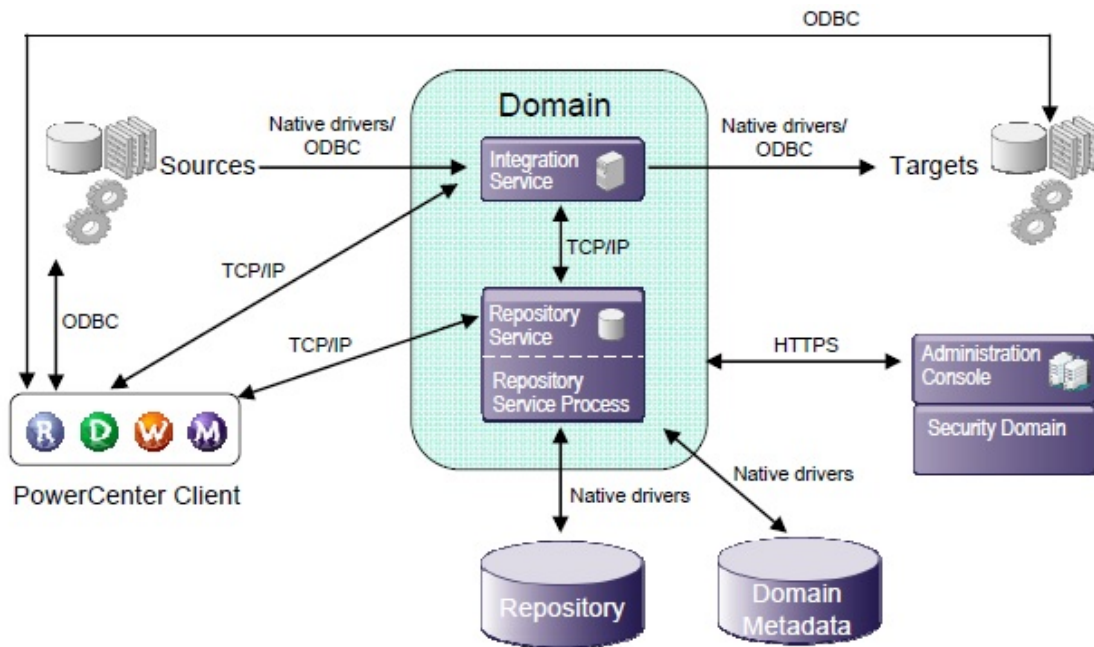


Creating a connection from Informatica PowerCenter 9.6 to Oracle Autonomous Data Warehouse

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This document provides an overview of the install and configuration steps to setup Informatica PowerCenter 9.6 to connect to ADWC as a target end point.

The Informatica PowerCenter architecture includes two repositories, and a source and target end point. Please review the architectural below.

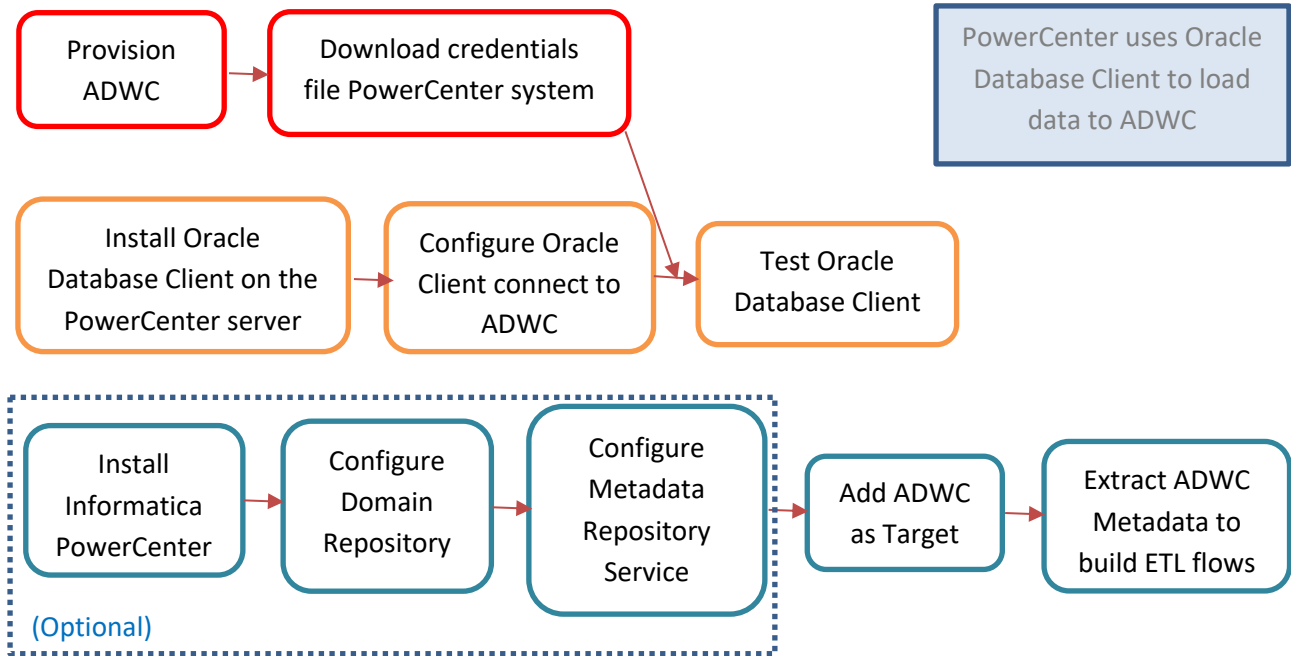


PowerCenter uses different types of database drivers for connectivity to its repositories, and end points. Ensure that you have the correct version of the drivers before attempting an install.

Product	Version
Informatica PowerCenter	9.6
Oracle Client	12.1.0.2 or higher

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Configuration Steps



Configuration Steps:

Step	Description	Repository Location	
		On premises Oracle Database no ASO	Oracle Database Cloud Service (DBCS, DBaaS)
0	Provision ADWC, install Oracle Client	--	--
1	Install PowerCenter software, Domain and Metadata Repository (Oracle)	Follow Informatica Install Guide	Appendix A
2	Configure Target Connection to ADW	--	--
3	Import Target Metadata	--	--

Step 0: Provision ADWC, install and configure Oracle Client

1. Provision Autonomous Data Warehouse Cloud (ADWC) and download the corresponding credentials.zip file to the system that will have the Informatica PowerCenter installation. For the Oracle documentation to provision ADWC click [here](#). Also check [Downloading Client Credentials \(Wallets\)](#).
2. All connections to Autonomous Data Warehouse Cloud use certificate-based authentication and Secure Sockets Layer (SSL). Copy the client credentials file that you downloaded in step

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1 to the system where you will be installing Informatica PowerCenter and uncompress it into a secure folder.

3. Download the Oracle Database Client to the system where Informatica PowerCenter will be installed. We first validate that the Oracle Database Client can communicate with ADWC, and since it is installed on the same system as Informatica PowerCenter, it ensures that PowerCenter is also configured correctly.
4. Edit the `sqlnet.ora` file, replacing “`*/network/admin`” with the name of the folder containing the client credentials.

For example:

```
WALLET_LOCATION = (SOURCE = (METHOD = file) (METHOD_DATA =  
(DIRECTORY="/home/adwc_credentials")))  
SSL_SERVER_DN_MATCH=yes
```

5. Create the `TNS_ADMIN` environment variable and set it to the location of the secure folder containing the credentials file you saved in Step 3. The `tnsnames.ora` file provided with the credentials zip file contains three database service names identifiable as `high`, `medium` and `low`. The predefined service names provide different levels of performance and concurrency for Autonomous Data Warehouse Cloud. Use one of these service names in your `ConnectionString`.
6. Test the Oracle Client with Oracle SQL*Plus

```
sqlplus password/"Password"@ConnectionString  
or  
sqlplus /nolog  
sql> set define off  
sql> connect username/password@connectString
```

If the connection is successful you are ready to move to the next step.

Step 1. Install Informatica PowerCenter Software and Domain and Metadata Repository Service

If you have an existing Informatica PowerCenter install and associated repositories then you can jump to [Step 2](#) which describes the steps to configure ADWC as a target.

Follow the Informatica PowerCenter install documentation to install the software and the Domain and Metadata Repository. If the repository is stored in an Oracle database on-premises that does not have the Advanced Security Option (ASO) configured, then follow the installation steps in the [Informatica install guide](#). However, if the repository is going to be in the Oracle

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Cloud Database Cloud Service (DBCS) or on an on premises Oracle Database with ASO configured, then we need additional configuration as detailed in [Appendix A](#).

Step 2: Add ADWC as target connection to Load Data

Below are the steps to setup ADWC as a target. As a prerequisite make sure that you have installed the Oracle Database Client 12.1.0.2 or higher on the PowerCenter environment.

Ensure PowerCenter server environment is started with ORACLE_HOME environment variable set. Next in the PowerCenter Workflow manager, in the menu use Connection -> Relational and add new connection. You can add ADWC as your target. Enter the username, password and connect string (step [1.6](#)) for ADWC.

Step 3: Import Target (ADWC) Metadata

DataDirect ODBC drivers distributed with Informatica PowerCenter 9.6 cannot connect to ADWC. So, you cannot import ADWC's metadata into the repository. We are working with Informatica to bundle the [latest](#) DataDirect ODBC drivers to resolve this issue.

In the meanwhile, please use the following steps to configure the import of the target (ADWC) metadata into the repository.

1. **Import Metadata into target from source.** Create a target definition from a relational source by dragging the source definition into the Target Designer workspace. The Designer creates a relational target definition that matches the source definition.
2. You can edit the definition to change information such as the description, columns, data types, and target type. Save as target definition.

This is likely a sufficient workaround for most of the cases. Check out this [blog](#) for more details.

This completes the install and configuration of Informatica PowerCenter software, repositories and source and targets.

Appendix A

How to install Informatica PowerCenter and configure it to use Oracle Database Cloud Service (DBCS) as its repository

Overview:

When installing PowerCenter to work with the ADWC, the Domain Repository could be stored on the Oracle Database Cloud Service (DBCS).

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SQL*Net encryption is enabled by default on DBCS instances. The DataDirect drivers bundled with PowerCenter lack the necessary JCE files to support SQL*Net encryption. The installation doesn't have an option to install "software only" and is hard wired to configure the Domain repository which fails to install into DBCS.

To successfully carry out an install and configuration of PowerCenter it is required to initially disable SQL*Net encryption on Oracle DBCS.

Then install the repository, update the DataDirect configuration files to support SQL*Net encryption, and then re-enable SQL*Net encryption.

Oracle is working with Informatica and Data Direct JDBC to simplify the installation steps. In the meanwhile, here is the sequence of installation steps needed.

The high-level steps to install Informatica PowerCenter are as follows:

1. Disable SQL*Net encryption on the Oracle Database where Domain Configuration Repository is to be installed.
2. Install PowerCenter and the Domain Repository as per the installation guide.
3. Enable the SQL*Net encryption on Oracle DB server.
4. Configure DataDirect drivers to connect over SQL*Net encryption.

1. Disable SQL*Net encryption on Oracle Database Cloud Service (DBCS)

All Oracle databases in the cloud have SQL*Net encrypted enabled by default. To disable it, you need to simply comment out certain parameter in sqlnet.ora and restart the listener.

Note: If the Database has an ASM cluster, you need to modify the sqlnet.ora from ORACLE_HOME and restart the listener from GRID_HOME.

```
cp
$ORACLE_HOME/network/admin/sqlnet.ora $ORACLE_HOME/network/admin
/sqlnet.ora.orig
```

Then edit sqlnet.ora file.

Replace SQLNET.ENCRYPTION_SERVER=required with SQLNET.ENCRYPTION_SERVER=**rejected**.

Example sqlnet.ora

```
ENCRYPTION_WALLET_LOCATION= (SOURCE= (METHOD=FILE) (METHOD_DATA= (DI
RECTORY=/opt/oracle/dcs/commonstore/wallets/tde/$ORACLE_UNQNAME)
))
#SQLNET.ENCRYPTION_SERVER=REQUIRED
SQLNET.ENCRYPTION_SERVER=rejected
```

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```
#SQLNET.CRYPTO_CHECKSUM_SERVER=REQUIRED
#SQLNET.ENCRYPTION_TYPES_SERVER=(AES256,AES192,AES128)
#SQLNET.CRYPTO_CHECKSUM_TYPES_SERVER=(SHA1)
#SQLNET.ENCRYPTION_CLIENT=REQUIRED
#SQLNET.CRYPTO_CHECKSUM_CLIENT=REQUIRED
#SQLNET.ENCRYPTION_TYPES_CLIENT=(AES256,AES192,AES128)
#SQLNET.CRYPTO_CHECKSUM_TYPES_CLIENT=(SHA1)
```

Restart the listener.

```
lsnrctl reload <listener_name>
```

2. Install PowerCenter and the Domain Repository as per the Installation guide.
3. Enable the SQL*Net encryption on Oracle DBCS.

Restore the original `sqlnet.ora` file and ensure that `SQLNET.ENCRYPTION_SERVER = required` is set and restart the listener again.

```
mv $ORACLE_HOME/network/admin/sqlnet.ora.orig $ORACLE_HOME/netwo
rk/admin/sqlnet.ora
lsnrctl reload <listener_name>
```

4. Configure the DataDirect JDBC drive to connect over SQL*Net encryption.
5. Shutdown Informatica Server.
6. Download the Java Cryptography Extension (JCE) Policy Files that are compatible with the PowerCenter version.

Download the Java Cryptography Extension (JCE) Policy Files. The DataDirect JDBC driver for Oracle requires Java Cryptography Extension (JCE) Policy files to support a 256-bit strength encryption. <http://www.oracle.com/technetwork/java/javase/downloads/jce-7-download-432124.html>

Open the JCE policy zip file that you downloaded and replace the `local_policy.jar` and `US_export_policy.jar` files to the folder in directory `<InformaticaInstallationDir>\java\jre\lib\security`

Then update the Driver configuration to accept encrypted data.

Go to `<InformaticaInstallationDir>/isp/bin` directory and run the following `updategatewaynode` command:

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Example

```
./infasetup.sh updategatewaynode -cs  
"jdbc:informatica:oracle://db_hostname:1521;ServiceName=informatica.oracle.network.com;EncryptionLevel=required;EncryptionTypes=(AES256,AES192,AES128);DataIntegrityLevel=required;DataIntegrityTypes=SHA1" -dt oracle -du infmetadata -dp mypassword
```

At this point, you should have a successfully driver configuration to communicate over SQL*Net encryption. Restart the Informatica server.
