

Getting Started With Oracle Analytics Cloud Data Sync

This guide introduces Oracle Analytics Cloud Data Sync Version 2.5 (Data Sync) and provides installation instructions. Data Sync loads and transforms data that you want to analyze into an Oracle database (On-premises, Oracle Database Cloud Service, ADW, Exadata Express), Oracle Essbase, or Oracle Analytics Cloud data sets.

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Before You Start

To install Data Sync, you must meet the requirements and prerequisites, download the application from Oracle Technology Network, then install and configure the software.

Prerequisites

Before installing, you must have Java V1.8.x (not V1.9.x) of Java Development Kit (JDK) and apply critical updates.

 **Note:**

Data Sync doesn't work with Java Runtime Environment (JRE); you must have JDK.

Supported Target Database Types

Data Sync only loads to Oracle relational databases. You can also load to Oracle EssBase, Oracle Analytics Cloud datasets, and flat file targets.

Security

Oracle recommends that you only install Data Sync in protected environments because Data Sync stores connection information and passwords for your databases.

Installing and Setting Up Oracle Analytics Cloud Data Sync

To install Data Sync, you download the software pack from Oracle Technology Network, install the software, then configure Data Sync.

Download and Install Data Sync

1. On the Data Sync Downloads site (<http://www.oracle.com/technetwork/middleware/oac/downloads/index.html>), accept the OTN license agreement, and click the **OAC Data Sync 2.5** link to download the OACDataSync_V2_5.zip file.
2. Copy the OACDataSync_V2_5.zip file to an installation directory with no spaces in the directory name (for example, c:\DataSync2_5), and extract the contents.

Setting up the Java Home Environment Variable

Depending on your operating system, edit the config.bat or config.sh file, and modify the line that sets the JAVA_HOME. Replace "@JAVA_HOME" with the directory where the JDK is installed. If your JDK directory name contains spaces, then put double-quotes around it.

For example, on Windows:

```
set JAVA_HOME=D:\Java\jdk1.8
```

For example, on UNIX:

```
JAVA_HOME=/usr/java
```

Running Data Sync for the First Time

The first time you start the Data Sync client, the Configuration Setup wizard prompts you to configure the software.

1. Start Data Sync by navigating to the Data Sync installation root directory, then:
 - On Windows, click the datasync.bat file.

- On UNIX, click the `datasync.sh` file.
2. At the Welcome dialog, click **Next**.
 3. At the Environment Configuration dialog, click **Configure a new environment**, then click **Next**.

To upgrade an existing Data Sync environment, see [Upgrading an Existing Data Sync Installation](#).

4. At the repository configuration dialog, specify:
 - **Logical Name**. Specify a name for the repository to distinguish the repository in multi-repository environments. For example, you might name the instance Development Environment or Production Environment.
 - **Password**. Provide a password for accessing Data Sync. Optionally, use the **Remember password** option to specify whether Data Sync stores the password so that you don't have to specify it each time you start Data Sync.

 **Note:**

The **Remember password** option on the Enter Password dialog only stores the password if the system property named **Allow Clients To Remember User Password** is set to true. If this property is set to false, then Data Sync overrides the **Remember password** option selected.

Starting Data Sync

To start Data Sync and its server, run `datasync.bat` (Windows) or `datasync.sh` (Linux/UNIX) from the directory where you installed Data Sync. The Data Sync icon displays in your system icon tray to show that the server is running.



- Select **Start UI** to open the Data Sync client. When you close the Data Sync client, the Data Sync server remains running.
- Select **Exit** to stop the Data Sync server and close the Data Sync client if it is open.

Alternatively, use these files:

- `datasyncClient.bat/sh` opens the Data Sync tool (when the server is running).
- `stopserver.bat/sh` stops the Data Sync server.

Reconfiguring Data Sync With Its Default Settings

To reset Data Sync with default settings and re-run the setup process, run `datasync.bat` (Windows) or `datasync.sh` (Linux/UNIX) in a command window with the `-clean` option.

Uninstalling Data Sync

To uninstall Data Sync, delete the install directory.

Upgrading an Existing Oracle Analytics Cloud Data Sync Installation

You can upgrade an existing Data Sync installation to Version 2.5 if your existing environment is loading to Oracle Database Cloud Service for Oracle Analytics Cloud. The upgrade steps are different depending on the Java Development Kit (JDK) version used in the existing Data Sync installation. If you don't know which JDK version you have, look in the file named `release` in the root Java installation folder, and review the value of the `JAVA_VERSION` setting.

If your existing Data Sync environment is using JDK V1.8, follow these steps to upgrade:

1. Start Data Sync by navigating to the Data Sync installation root directory, then:
 - On Windows, click the `datasync.bat` file.
 - On UNIX, click the `datasync.sh` file.
2. At the Welcome dialog, click **Next**.
3. At the Environment Configuration dialog, click **Copy an exiting environment**, then click **Next**.
4. Use the **Existing Environment Configuration** dialog to navigate to and select the root directory of the existing Data Sync with JDK V1.8 installation.
5. At the confirmation dialog, click **Yes**.
6. At the **Repository Name** dialog, specify a name for the new Data Sync repository, then click **Next**.
7. At the **Configuration Complete** dialog, click **Finish**.

If your existing Data Sync environment is using JDK V1.7, follow these steps to upgrade:

1. Create a new Data Sync environment with JDK V1.8.

If you don't have the Data Sync V2.3.x software pack, then download it from the Data Sync Downloads site (<http://www.oracle.com/technetwork/middleware/bicloud/downloads/index.html>), accept the OTN license agreement, and click the **BICS Data Sync <Version>** link to download the `BICSDataSyncVn.n.zip` file.
2. In the new Data Sync with JDK V1.7 environment, export the metadata and projects:
 - a. From the **Tools** menu, select **Export**.
 - b. At the **Export** dialog, select all options under **Categories**, and select all projects in the **Applications List**.
 - c. Click **OK** to start the export the selected metadata.

3. In the Data Sync with JDK V1.8 environment, import the metadata and projects that you exported in Step 2:
 - a. From the **Tools** menu, select **Import**.
 - b. Click Change Folder for Import/Export, and use the Import from directory dialog to navigate to and select the \export directory in the Data Sync with JDK V1.7 environment.
 - c. Select all options under **Categories**, and select all projects in the **Applications List**.
 - d. Click **OK** to start the import the selected metadata.
4. Start Data Sync V2.5, and at the Welcome dialog, click **Next**.
5. At the Environment Configuration dialog, click **Copy an exiting environment**, then click **Next**.
6. Use the **Existing Environment Configuration** dialog to navigate to and select the root directory of the Data Sync with JDK V1.8 environment.
7. At the confirmation dialog, click **Yes**.
8. At the **Repository Name** dialog, specify a name for the new Data Sync repository, then click **Next**.
9. At the **Configuration Complete** dialog, click **Finish**.

Quick Guide to Loading Data Using Oracle Analytics Cloud Data Sync

1. From the **Projects** menu, click **New**, and create a new project.
2. In the **Connections** view, specify connection details for your data target, and your data source (if it's a database).
3. In the **Project** view, specify loading options for your project.
4. In the **Jobs** view, create a new Job, then click **Run Job**.

Connecting to Your Data Source

In Data Sync, navigate to the Connections tab and specify connection details for your target database and the data sources that you want to extract from.

Source Database Support

Data Sync supports the following source database types:

- Oracle
- Microsoft SQL Server
- DB2
- Teradata

- MySQL
- Oracle TimesTen
- Generic JDBC with prepackaged drivers for Greenplum, MongoDB, Salesforce, Redshift, Hive and PostgreSQL
- Other sources that support JDBC
- Oracle Transactional Business Intelligence:
 - Oracle Financials Cloud
 - Oracle HCM Cloud
 - Oracle Procurement Cloud
 - Oracle Project Management Cloud
 - Oracle Sales Cloud
 - Oracle Supply Chain Management Cloud
- Oracle Service Cloud (RightNow)
- Oracle Taleo Enterprise Reporting

JDBC Drivers

Data Sync is a Java application that uses Java Database Connectivity (JDBC). Data Sync is installed with Oracle JDBC Version 12.1.0.2.0. If you're using a different database or version, then you must replace the installed Oracle JDBC version with the JDBC version that's specific to your database. To replace the installed JDBC version, you copy the JDBC drivers from your Oracle database environment to the `lib` directory on the machine where you installed Data Sync.

Vendor	JDBC Driver File name
MySQL	Mysql-connector-java*.jar
Microsoft SQL Server	sqljdbc.jar
DB2	db2java.zip
TimesTen	ttjdbc6.jar, orai18n.jar, timestenjmsxla.jar, jms.jar, javax.jms.jar
Teradata	terajdbc4.jar, log4j.jar, teradata.jar, tdgssjava.jar, tdgssconfig.jar

Connecting Data Sync to Your Data Source

On the Connections tab, create a connection for each of your data sources. If you load data only from files, skip this task and access the Project-File Data dialog to specify the files and loading details. On the Connections tab, click **New** and specify the connection details of your data source.

- In the **User** and **Password** fields, specify the user name and password for a user with sufficient reporting privileges for the data source.
- In the **URL** field, specify the URL for your data source. For example, for Amazon Redshift you might enter: `jdbc:redshift://bics-source.abcdefg.us.redshift.amazonaws.com:1234/prod`.

- In the **Connection Type** field, select the appropriate data source type. For example, for Amazon Redshift, you select Generic JDBC.

For additional information about specifying connections for JDBC, Oracle Service Cloud, or NetSuite, click Help.

Connecting to an Oracle Database on cloud (DBCS, ADWC, Exadata Express)

In Data Sync, you specify connection details for your Oracle target database. For example, Oracle Database Cloud Service, Autonomous Data Warehouse Cloud, or Exadata Express.

On the **Connections** tab, create a new connection, and specify the following details:

- In the **Connection Type** field, select **Oracle (Thin)**.
- In the **User** and **Password** fields, specify the user name and password of the database user.
- In the **URL** field, specify your database's URL. This can be found in the tnsnames.ora.

For example, open c:\12c_client\product\12.2.0\client_1\network\admin\tnsnames.ora. For the Service Name URL entry for the lowest level (that is, ending in 'low'), copy the string from "(DESCRIPTION" to the end of connect string, and append it to jdbc:oracle:thin:@. For example:

```
jdbc:oracle:thin:@(description= (address=(protocol=tcps)(port=1522)
(host=adwc.oraclecloud.com))
(connect_data=(service_name=partners_low.adwc.oraclecloud.com))(security=(s
sl_server_cert_dn="CN=adwc.uscom-east-1.oraclecloud.com,OU=Oracle BMCS
US,O=Oracle Corporation,L=Redwood City,ST=California,C=US")))
```

- In the **JDBC Driver** field, specify 'oracle.jdbc.driver.OracleDriver'.
- In the **Schema/Table Owner** field, specify the SCHEMA owner (typically the same as the database user, but in upper case).

Alternatively, click the edit icon on the **Schema/Table Owner** field to select from available schemas.

- If your connection requires cwallet.sso, click the **Advanced Properties** tab, and set the value of **Additional JDBC driver Properties** to oracle.net.wallet_location=file:<FULL_PATH_TO_CWALLET.SSO_FILE>. For example, C:\users\oracle\client_creds\cwallet.sso.

Connecting to an Essbase Target Database

On the **Connections** tab, create a new connection, and specify the connection details of your EssBase target database.

- In the **Connection Type** field, select **Essbase**.

- In the **User** and **Password** fields, specify the user name and password of a user with the Application Role named **BI Dataload Author**.
- In the **URL** field, specify your Essbase URL. For example, <https://essbase-xxxx.oraclecloud.com>.

Connecting to Database As A Service Using SSH Tunneling

By default, Data Sync V2.5 communicates with Oracle Database Cloud Service using port 1521. Alternatively, you can configure Data Sync to communicate with Database As A Service using the Secure Shell (SSH) port 22 (this configuration is known as 'SSH Tunneling').

1. Close Data Sync and the Data Sync server.

To stop the Data Sync server, click the Data Sync icon on the Windows tool bar and click **Exit**.



2. Update your JDK/JRE with Java Cryptography Extension (JCE), which supports Unlimited Strength.

The default JDK doesn't install the unlimited strength version of JCE (Java Cryptography Extension). You must install a version of JCE that's compatible with the Java version you're using for Data Sync. For example, you might download JCE V8 from <http://www.oracle.com/technetwork/java/javase/downloads/jce8-download-2133166.html>.

3. Unzip the contents of the downloaded JCE ZIP file and replace the local_policy.jar and US_export_policy.jar in \$JAVA_HOME/jre/lib/security with the downloaded files.
4. Start Data Sync.
5. From the **Views** menu, click **SSH Tunnels (Beta)**.
6. Create a new entry to configure the port forwarding from the local machine to the remote host.

Option	What to specify
Name	A short descriptive name to identify this configuration in Data Sync.
Remote Host	The IP address of the Database As A Service node.
Remote SSH Port	The SSH Port on the remote host, which is typically 22.
User Name	The user name for the remote server, which is typically <code>opc</code> .

Option	What to specify
Private Key	The SSH private key file that matches the public key associated with the deployment. When you create a Database As A Service instance, you create a public key and a private key. The Public Key was used on instance creation. The private key is used to connect to the instance at the Operating System (OS) level. Download this file and point the location of that key file.
Passphrase	The password that you specified when you created the database deployment.
Port Forward	The database port on the remote host, which is typically 1521.
Local Port	An unassigned port on the local machine that can be used for the tunnel. If you don't know the port number to enter, click Find Available Port , and select a port.

7. Save the details and test the connection.

When you test a connection and it's successful, Data Sync creates the SSH tunnel, and this SSH tunnel remains active as long as Data Sync is running.

8. Configure the default TARGET connection or create a new database connection to your Database As A Service instance by choosing Oracle (Thin) type connection.

For the **Host**, use `localhost`, and for the **Port**, use the local port that you defined in Step 6.

9. Create a project and load your data as normal.

If for any reason the SSH tunnel closes (or is deactivated), then reported failures in the job will relate to IO Exceptions. From the **Views** menu, click **SSH Tunnels (Beta)**, and correct any issues.

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