Informatica®

Informatica® Cloud Data Integration

DB2 Loader Connector

Informatica Cloud Data Integration DB2 Loader Connector
July 2024

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Preface

Use DB2 Loader Connector to learn how to write to DB2 database by using Data Integration. Learn to create a DB2 Loader connection, develop, and run mappings and mapping tasks in Data Integration.

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CHAPTER 1

Introduction to DB2 Loader Connector

You can use DB2 Loader Connector to connect to DB2 from Data Integration. Use the DB2 Loader connection to securely write data to a DB2 database.

You can use DB2 Loader objects as targets in mappings and mapping tasks. When you use these objects in mappings, you must configure properties specific to DB2.

You can use DB2 Loader Connector to insert records to DB2 databases.

DB2 Loader Connector assets

Create assets in Data Integration to integrate data using DB2 Loader Connector.

When you use DB2 Loader Connector, you can include the following Data Integration assets:

- Mapping
- Mapping task

For more information about configuring assets and transformations, see *Mappings*, *Transformations*, and *Tasks* in the Data Integration documentation.

CHAPTER 2

Connections for DB2 Loader

Create a DB2 Loader connection to securely write data to DB2. You can use a DB2 Loader connection to specify targets in mappings and mapping tasks.

Prerequisites

Before you create a DB2 Loader connection to write to DB2, be sure to complete the prerequisites.

Install the DB2 Loader JDBC driver and DB2 client

To write data to DB2 databases, you need to install the DB2 Loader JDBC driver and DB2 client on the Secure Agent machine.

- Install the DB2 Loader JDBC driver on the Secure Agent machine.
  To install the driver, perform the following steps:
  1. To get the DB2 Loader JDBC driver, contact Informatica Global Customer Support.
  2. Create the `informatica.db2loader` folder manually in the following directory based on whether the Secure Agent machine is a Windows or a Linux machine:

Secure Agent machine	Directory
Linux	`<Secure Agent installation directory>/ext/connectors/thirdparty/informatica.db2loader`
Windows	`<Secure Agent installation directory>\ext\connectors\thirdparty\informatica.db2loader`

  3. Copy the DB2 Loader JDBC driver to the `informatica.db2loader` folder.

- Install the DB2 LUW client on the Secure Agent machine.
  To install the DB2 LUW client, perform the following steps:
  1. Download and install the DB2 LUW client and instance from the IBM website.

2. Set the following environmental variables based on whether the Secure Agent machine is a Windows or a Linux machine:

Secure Agent machine	Environmental variable
Linux	- setenv DB2INSTANCE <DB2 instance directory> - setenv DB2CLP DB20FADE - setenv PATH <DB2 client directory>/bin - setenv LD_LIBRARY_PATH <DB2 client directory>/lib64
Windows	setenv DB2CLP DB20FADE

After you install the DB2 Loader JDBC driver and set the environmental variables, you need to restart the Secure Agent.

Connect to DB2 Loader

Let's configure the DB2 Loader connection properties to connect to a DB2 database.

Before you begin

Before you get started, you'll need to install the DB2 Loader JDBC driver and DB2 client on the Secure Agent machine to establish a DB2 Loader connection.

Check out "Prerequisites" on page 7 to learn more about the configuration prerequisites.

Connection details

The following table describes the basic connection properties:

Property	Description
Connection Name	Name of the connection. Each connection name must be unique within the organization. Connection names can contain alphanumeric characters, spaces, and the following special characters: _ . + -, Maximum length is 255 characters.
Description	Description of the connection. Maximum length is 4000 characters.
Type	db2loader
Runtime Environment	The name of the runtime environment where you want to run tasks. Select a Secure Agent.
Host Name	The name of the machine that hosts the DB2 database server.
Database	The name of the DB2 database.

Property	Description
Port	The port number that connects to the DB2 database server. Default is 50000.
Schema	The schema name in the DB2 database server to fetch the metadata. This property doesn't apply when you configure a DB2 Loader connection.
User Name	The user name to connect to the DB2 account.
Password	The password to connect to the DB2 account.
Connection String	The alias name to connect to the DB2 database.

Advanced settings

The following table describes the advanced connection properties:

Property	Description
Encryption Method	Encrypts data exchanged between the Secure Agent and the database server. Select one of the following encryption methods from the list: - No Encryption. Establishes a connection without using SSL. Data is not encrypted. - SSL. Establishes a connection using SSL. Data is encrypted using SSL. Default is No Encryption.
Validate Server Certificate	Determines whether the Secure Agent validates the certificate that is sent by the database server. This property appears only if you select the encryption method as **SSL**. Select one of the following options from the list: - False. The Secure Agent does not validate the certificate. - True. The Secure Agent validates the certificate. Default is False.
Truststore	The path and file name of the truststore file that contains the SSL certificate to connect to DB2. This property appears only if you select the encryption method as **SSL** and validate server certificate as **True**. Specify both the directory and file name in the following format: `/root/<folder name>/<truststore file name>.p12`
Truststore Password	The password to access the truststore file that contains the SSL certificate. This property appears only if you select the encryption method as **SSL** and validate server certificate as **True**.
Host name in Certificate	The name of the machine that hosts the secure database. This property appears only if you select the encryption method as **SSL** and validate server certificate as **True**. The Secure Agent validates the host name specified in this property with the host name in the SSL certificate.

Property	Description
Authentication Method	The authentication method that the driver uses to establish a connection. Select one of the following authentication methods from the list: - Clear Text. Sends the user ID and password in clear text to the DB2 server for authentication. - Encrypted Password. Sends the user ID in clear text and encrypted password to the DB2 server for authentication. Default is Clear Text.
Is Staged	Method to load data. Select **Is Staged** to load data to a flat file staging area before loading to the database. Default is disabled.
Recoverable	Sets the DB2 tablespace in backup pending state. Before you enable the **Recoverable** option and run a mapping, you need to fully back up the database to perform any other operation on the tablespace. Default is enabled.
DB2 Server Location	The DB2 database server location. Select one of the following locations from the list: - Remote. The DB2 database server resides on another machine. - Local. The DB2 database server resides on the Secure Agent machine. Default is Remote.
External Loader Executable	The DB2 external loader executable file name. The Secure Agent uses the DB2 external loader executable file of the IBM data server client 9.5 version and later. Default is db2load.
Operation Mode	The operation for DB2 external loader to perform. Select one of the following operation modes to determine how the DB2 external loader writes data to the target table based on the mode that you selected in the DB2 external loader: - Insert. Loads data to the table. - Replace. Deletes existing data from the table, and then adds data to the table. - Restart. Restarts a previously interrupted load operation. - Terminate. Terminates a previously interrupted load operation and rolls back the operation to the starting point, even if consistency points are passed. Default is Insert.
Additional Metadata Connection Properties	Additional metadata connection properties that you want to pass to the driver. If you specify more than one property, separate each key-value pair with a semicolon. For example, <parameter name1>=<value1> ; <parameter name2>=<value2>

CHAPTER 3

Mappings and mapping tasks with DB2 Loader Connector

Use the Data Integration Mapping Designer to create a mapping. When you create a mapping, configure a target to represent a DB2 Loader object.

Describe the flow of data from the source to the target along with the required transformations before the agent writes data to the DB2 target. When you create a mapping task, select the configured mapping that you want to use. Use the Mapping Task wizard to create a mapping task. Validate and run the mapping to write to a target. The mapping task processes data based on the data flow logic you define in the mapping.

Before you begin

Before you configure and run a mapping, complete the required prerequisites.

Verify authorities and database privileges

To run a mapping that writes data to a DB2 Loader target table, you need to have the required authorities and database privileges on the DB2 database.

Before you write to the DB2 database, verify that you have one of the following authorities and database privileges:

- SYSADM authority
- DBADM authority
- LOAD authority on the database and one of the following privileges when the load utility is invoked in insert, terminate, or restart mode:
  - Insert privilege on the table
  - Insert and delete privileges on the table

DB2 Loader targets in mappings

To write data to a DB2 database, configure a DB2 Loader object as the target in a mapping.

Specify the name and description of the DB2 target. Configure the target and advanced properties for the target object.

The following table describes the target properties that you can configure for a DB2 Loader target:

Property	Description
Connection	Name of the target connection. You can select an existing connection, create a new connection, or define parameter values for the target connection property. To overwrite the target connection properties at runtime, select the **Allow parameter to be overridden at run time** option.
Target Type	Type of the DB2 Loader target object. Select one the following target types: - Single - Parameter
Object	Name of the DB2 Loader target object. Specify the target object that you want to create. You can also select an existing object from the list.
Parameter	A parameter file where you define values that you want to update without having to edit the task. Select an existing parameter for the target object or click **New Parameter** to define a new parameter for the target object. The **Parameter** property appears only if you select parameter as the target type. If you want to overwrite the target object at runtime, select the **Allow parameter to be overridden at run time** option. When the task runs, the agent uses the parameters from the file that you specify in the advanced session properties.
Operation	Type of the target operation. You can perform only the insert operation on a DB2 Loader target.

The following table describes the advanced target properties that you can configure for a DB2 Loader target:

Property	Description
Append if exists	Appends the output data to the target files and reject files. Default is disabled.
Create Target Directory	Creates a directory to store the output files. Default is disabled. Do not change the default value.
Header Options	The header row in the DB2 Loader target table. Select one of the following header options from the list: - No Header. Does not create a header row in the target table. - Output Field Names. Creates a header row in the target table with the output field names. - Use header command output. Not applicable. Default is No Header.

Property	Description
Output File Directory	The directory that stores the output files. Specify the directory where you want to store the output files. Ensure that the specified directory is accessible from the Secure Agent machine. Default is $PMTargetFileDir. **Note:** Do not use double spaces in the directory name of the output file.
Output File Name	Creates the output file in the output file directory with the name you specify. Specify the output file name. To write to multiple target tables, enter a unique output file name for each target. Default is output1.out.
Reject File Directory	The directory that stores the rejected files. Specify the directory where you want to store the rejected files. Default is $PMBadFileDir.
Reject File Name	Creates the rejected file in the reject file directory with the name you specify. Specify the reject file name. Default is Output1.bad.
File Delimiter	The delimiter to use to separate columns of data in a delimited flat file. Default is comma (,). Do not change the default value.
Table Name Prefix	Prefix that the Secure Agent adds to the target table name. Enter a schema name to add as a prefix to the table name that you load to the target. When you add a prefix in this field, the target table name appears in the control file in the following format: <table name prefix>.table name
Target Table Name	The target table name that you want to override in a mapping.
Code Page	The code page that the Secure Agent uses to write data to a delimited flat file. Select one of the following code pages from the list: - MS Windows Latin 1 (ANSI), superset of Latin 1 - Unicode Transformation Format, multibyte Default is MS Windows Latin 1 (ANSI), superset of Latin 1.
Optional Quotes	Quote characters that define the boundaries of data in a delimited flat file. Select one of the following quotes from the list: - None - Single - Double Default is None.
Forward Rejected Rows	Determines whether the transformation passes rejected rows to the next transformation or drops rejected rows. By default, the mapping task forwards rejected rows to the next transformation. If you select the Forward Rejected Rows option, the Secure Agent flags the rows for reject and writes them to the reject file. If you do not select the Forward Rejected Rows option, the Secure Agent drops the rejected rows and writes them to the session log file. The Secure Agent does not write the rejected rows to the reject file.

Rules and guidelines for DB2 Loader objects

Consider the following rules and guidelines for DB2 Loader objects used as targets in mappings and mapping tasks:

General guidelines

- When you write to a DB2 Loader target table and some rows are rejected due to constraint violation errors, the session log shows incorrect number of rows that are written to the target.
- To load data from a delimited flat file, ensure that the precision of each target table column matches the corresponding source column precision to write all data.

Data types

When you load blank spaces to a DB2 Loader target, the blank spaces are loaded as null values in the Char data type field.

Partitioning

You can't load data to a DB2 target in a mapping enabled for the source partitioning.

Data preview

You can't preview data of a DB2 Loader target object.

CHAPTER 4

Data type reference

Data Integration uses the following data types in mappings and mapping tasks with DB2:

DB2 native data types

DB2 data types appear in the **Target Fields** tab of the Target transformation when you choose to edit metadata for the fields.

Transformation data types

Set of data types that appear in the transformations. They are internal data types based on ANSI SQL-92 generic data types, which the Secure Agent uses to move data across platforms. Transformation data types appear in all transformations in a mapping.

When Data Integration writes to a target, it converts the transformation data types to the comparable native data types.

DB2 Loader and transformation data types

Use only the supported DB2 data types in a mapping to write to DB2.

The following table lists the DB2 data types that Data Integration supports and the corresponding transformation data types:

DB2 data type	Range and Description	Transformation data type	Range and Description
Bigint	-9,223,372,036,854,775,808 to 9,223,372,036,854,775,807	Bigint	-9,223,372,036,854,775,808 to 9,223,372,036,854,775,807 Precision 19, scale 0
Char	1 to 254 characters	String	1 to 104,857,600 characters
Date	0001 to 9999 A.D. Precision 19; scale 0 (precision to the day)	Date/Time	Jan 1, 0001 A.D. to Dec 31, 9999 A.D. (precision to the nanosecond)
Decimal	Precision 1 to 31, scale 0 to 31	Decimal	Precision 1 to 28, scale 0 to 28
Double	Precision 15	Double	Precision 15
Float	Precision 1 to 15	Double	Precision 15

DB2 data type	Range and Description	Transformation data type	Range and Description
Integer	-2,147,483,648 to 2,147,483,647	Integer	-2,147,483,648 to 2,147,483,647 Precision 10, scale 0
Numeric	Precision 1 to 31, scale 0 to 31	Decimal	Precision 1 to 28, scale 0 to 28
Real	Precision 7, scale 0	Real	Precision 7, scale 0
Smallint	-32,768 to 32,767	Small Integer	Precision 5, scale 0
Time	24-hour time period Precision 19, scale 0 (precision to the second)	Date/Time	Jan 1, 0001 A.D. to Dec 31, 9999 A.D. (precision to the nanosecond)
Timestamp	26 bytes Precision 26, scale 6 (precision to the microsecond)	Date/Time	Jan 1, 0001 A.D. to Dec 31, 9999 A.D. (precision to the nanosecond)
Varchar	Up to 4,000 characters	String	1 to 104,857,600 characters

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