Informatica® Cloud Data Integration
July 2024

Db2 for z/OS Image Copy Connector

Informatica Cloud Data Integration Db2 for z/OS Image Copy Connector
July 2024

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Preface

Learn how to use the *Db2 for z/OS Image Copy Connector* to retrieve data from a PowerExchange environment and write the data to a supported target. The Db2 for z/OS Image Copy connector works with Cloud Data Integration mappings, mapping tasks, and taskflows. Learn how to configure connections, mappings, and mapping tasks and to run and monitor mapping tasks.

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CHAPTER 1

Introduction to Db2 for z/OS Image Copy Connector

You can use Db2 for z/OS Image Copy Connector to connect to a PowerExchange environment to move bulk data from a Db2 for z/OS Image Copy data set. To source data from a Db2 for z/OS Image Copy data set, you do not need to create a data map. The connector can import the metadata that PowerExchange reads from the DB2 catalog to create a source. PowerExchange uses these transformations to access the source tables. The data is returned to the PowerExchange Bulk Reader, which sends the data to Data Integration. Data Integration can then send the data to a supported target.

Db2 for z/OS Image Copy Connector must be able to connect to an active PowerExchange environment that includes the PowerExchange Listener. You do not need to copy the PowerExchange dbmover configuration file to the Db2 for z/OS Image Copy Connector system. For more information about configuring PowerExchange for Db2 for z/OS Image Copy Connector, see the *PowerExchange Bulk Data Movement Guide*.

Db2 for z/OS Image Copy Connector works with the Informatica Cloud Secure Agent. When you install and start the Secure Agent, it downloads the Db2 for z/OS Image Copy Connector components and the PowerExchangeClient packages. When you define a runtime environment, you configure a Secure Agent group.

To move bulk data from a Db2 for z/OS Image Copy data set, you must run a mapping or a mapping task.

After you materialize a target, you can use PowerExchange Change Data Capture (CDC), if this option is available at your site, to update the target on a continuous basis. By moving only the change data, you can refresh data on the target faster.

Note: Db2 for z/OS Image Copy Connector does not work with the Hosted Agent.

Db2 for z/OS Image Copy Connector usage scenario

You can use the browser-based Informatica Intelligent Cloud Services interfaces to define Db2 for z/OS Image Copy connections, mappings, and mapping tasks.

With Informatica Intelligent Cloud Services interfaces, you gain access to easy-to-use, browser-based interfaces for defining mappings and mapping tasks and running and monitoring mapping tasks. When you run the mapping and mapping tasks, Db2 for z/OS Image Copy Connector components, in conjunction with Data Integration, read data from Db2 for z/OS Image Copy data sets.

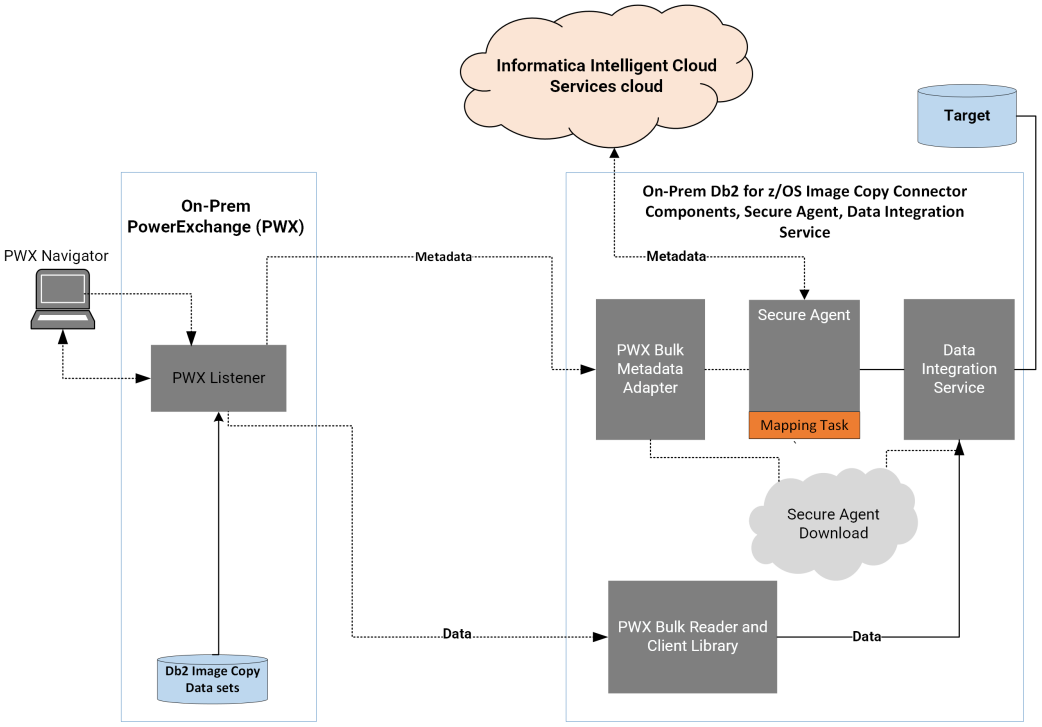
Also, you must run a PowerExchange Listener on the MVS system where the Db2 source is located. Verify that this PowerExchange Listener can communicate with the system or systems where the Informatica Cloud Secure Agent runs.

Integration with the PowerExchange CDC environment

You must have a functional on-premises PowerExchange environment that can connect to a Db2 for z/OS database and that can retrieve records from the image copy data sets on a z/OS system.

You must have a license that allows your organization to use the Db2 for z/OS Image Copy Connector and PowerExchangeClient packages. On each system from which you plan to use Db2 for z/OS Image Copy Connector, install the Secure Agent. After you start the Secure Agent the first time, the Db2 for z/OS Image Copy Connector and PowerExchangeClient package are installed locally. You then can use Cloud Data Integration, Administrator, and Monitor interfaces to configure Db2 for z/OS Image Copy connections, mappings, and mapping tasks and to run and monitor mapping tasks.

The following image shows the general architecture of the Db2 for z/OS Image Copy Connector components in relation to Cloud Data Integration and the remote Db2 for z/OS Image Copy source system:



This configuration spans the following on-premises systems:

- The z/OS system where the Db2 tables and PowerExchange Listener run.
- The system where the Db2 for z/OS Image Copy Connector components and Secure Agent run.

Based on this configuration, the following processing occurs:

1. PowerExchange reads from Db2 image copy data sets where the PowerExchange Listener for z/OS resides.
2. When you design a mapping in Data Integration, you associate the source transformation with a Db2 for z/OS Image Copy connection. You can define the connection in either Data Integration or Administrator. The PWX Bulk Metadata Adapter then uses the connection to connect to the PowerExchange Listener on z/OS and read from Db2 image copy data sets.

In the mapping, you must also define a Target transformation and connection and map the source fields to target fields.

3. The Secure Agent in conjunction with Data Integration sends the Db2 metadata to the Informatica Intelligent Cloud Services repository in the cloud.
4. When you run the mapping task that is associated with the mapping, all of the metadata, connection properties, mapping information, advanced source properties, runtime properties, and advanced session properties are pushed down to the on-premises Secure Agent in the form of a session .xml file.
5. The PWX Bulk Reader on the Secure Agent machine communicates with the PowerExchange Listener on the z/OS machine to retrieve the records from the PowerExchange Listener.
6. Data Integration transmits the data to the mapped target.

Db2 for z/OS Image Copy Connector asset types

The following table lists the Data Integration asset types that the Db2 for z/OS Image Copy Connector uses:

Asset Type	Required or Optional?
Mapping	Required
Mapping task	Optional
Taskflow	Optional

Software requirements

Verify that your PowerExchange system and Db2 for z/OS Image Copy Connector system meet the following software requirements for integration with Informatica Cloud Data Integration:

- You must have a remote PowerExchange installation on the Db2 source system. For all PowerExchange installations, the following PowerExchange versions are supported:
  - PowerExchange 10.5.*x*
  - PowerExchange 10.4.1
  - PowerExchange 10.4.0 HotFix 1
  - PowerExchange 10.4.0
- Db2 for z/OS Image Copy Connector components run on the same Linux and Windows operating systems that are supported for the Informatica Secure Agent. For more information, see the Product Availability Matrix (PAM) for Informatica Intelligent Cloud Services (IICS) <*current_version*>, which is available on Informatica Network at https://network.informatica.com/community/informatica-network/product-availability-matrices. You must have a login to access this location.

- The supported versions of Db2 for z/OS Image Copy source databases and operating systems are the same as those that PowerExchange supports. For more information, see the **PWX Classic** tab in the Product Availability Matrix (PAM) for Informatica <current_pwx_version>, which is available on Informatica Network at https://network.informatica.com/community/informatica-network/product-availability-matrices.

Supported targets

Db2 for z/OS Image Copy Connector is certified with the following target types:

- Amazon Redshift
- Aurora PostgreSQL
- Db2 for z/OS
- Db2 for i
- Google BigQuery
- Microsoft SQL Server and Amazon Relational Database Service (RDS) for SQL Server
- MySQL
- Oracle and Amazon RDS for Oracle
- PostgreSQL
- Snowflake

Important: Other Cloud Data Integration targets are expected to work but have not been fully tested and certified with this source type. Informatica recommends that you use other targets in your test environment first.

Db2 for z/OS Image Copy Connector rules and guidelines

Review the Db2 for z/OS Image Copy Connector rules and guidelines before you begin configuring connections, mappings, and mapping tasks.

- You can use Db2 for z/OS Image Copy connections for sources only.
- Db2 for z/OS Image Copy Connector connects to the PowerExchange Listener by using the **Listener Location** property that you specify in the Db2 for z/OS Image Copy connection definition. On the Connector system, you do not need to create a local copy of the DBMOVER configuration file that contains a NODE statement pointing to the PowerExchange Listener.
- If you upgrade your system to a later PowerExchange version, you must stop the Secure Agent that connects to the older PowerExchange Listener before you try to connect to the upgraded PowerExchange Listener. After you edit the connection properties to specify the upgraded PowerExchange Listener, restart the Secure Agent before you try to establish the connection again. For more information, see "Upgrading to a new version of PowerExchange" on page 26.

- The PowerExchange Listener on the z/OS system can compress or encrypt the data that it sends to the PWX Bulk Reader component of Db2 for z/OS Image Copy Connector depending on how you set the **Compression** and **Encryption** properties for the connection.

Prerequisite tasks for using Db2 for z/OS Image Copy Connector

Before you begin configuring Db2 for z/OS Image Copy connections, mappings, and mapping tasks, you must complete several prerequisite tasks in PowerExchange and in Informatica Intelligent Cloud Services Administrator. Make sure you have a user role that allows you to perform these tasks.

- Verify that the PowerExchange installations on the z/OS source system use a PowerExchange version that the Db2 for z/OS Image Copy Connector supports.
- If your site uses TLS or SSL security, verify that valid certificates are available for the source and target servers and that the PWX_CONFIG environment variable points to the dbmover configuration file that includes the SSL configuration for the PowerExchange Listener. For more information about configuring TLS or SSL security, see the *PowerExchange Reference Manual*.
- If you localize PowerExchange messages in Japanese, before you start the Secure Agent, create a copy of the PowerExchange dbmover_ja.cfg file. Then set the PWX_CONFIG environment variable to point to the copy. For more information about the dbmover_ja.cfg configuration file, see the *PowerExchange Reference Manual*.
- Download the Secure Agent. The Secure Agent can then download the Db2 for z/OS Image Copy Connector components and PowerExchangeClient packages based on your licensing. The download also creates a Secure Agent group that contains a Secure Agent as the runtime environment. You can add another Secure Agent to the group. You must have at least one runtime environment in each organization so that users in the organization can run tasks.

  Note: Db2 for z/OS Image Copy Connector does not support the Hosted Agent.
- In Administrator, configure user roles if the predefined roles are not sufficient. Then assign one or more roles to each user or user group. The roles must provide the privileges that the users require to perform all of their tasks. Usually, the organization administrator configures user roles.
- If you do not want users to run scheduled mapping tasks during a certain period, define a blackout period for all schedules on the **Schedules** page in Administrator.

Task flow for using Db2 for z/OS Image Copy Connector

To use Db2 for z/OS Image Copy Connector, create a source connection, mapping, and mapping task. Also create a target connection if one is not already defined.

Before you begin, in the Administrator, you must complete the prerequisite tasks. See "Prerequisite tasks for using Db2 for z/OS Image Copy Connector" on page 11.

1. In Administrator, create a source connection with the type of **Db2 for zOS Image Copy**. Test the connection.

   Alternatively, you can create a source connection in Data Integration when you configure a mapping. When you create a connection, you must set some connection properties that are specific to Db2 for z/OS Image Copy Connector. For more information, see "Db2 for z/OS Image Copy connection properties" on page 14.

   Db2 for z/OS Image Copy Connector uses this connection to retrieve source metadata and read data records from PowerExchange.
2. Create a target connection with a supported target type, if one is not already defined.
3. In Data Integration, configure a mapping. Validate the mapping and then save it.
4. Create a mapping task that is associated with the mapping.

   You can set optional runtime properties and advanced session properties.
5. Run the mapping task manually, or create a schedule to run it on a recurring basis. For more information, see "Running a mapping task" on page 24.
6. Monitor the job status for the mapping task instance. For more information, see "Monitoring a mapping task" on page 24.

   If a job has the status of Failed or Warning, check the session log for related error or informational messages.

CHAPTER 2

Db2 for z/OS Image Copy connections

You must create a Db2 for z/OS Image Copy connection to connect to a PowerExchange Listener to read from one or more Db2 source tables.

The PWX Bulk Reader that is on the system where the Secure Agent runs requires the connection information to retrieve Db2 data from PowerExchange.

You can create a Db2 for z/OS Image Copy connection in Administrator or Data Integration, provided that your assigned user role allows this action. Use one of the following methods:

- In Administrator, click **Connections** on the navigation bar. On the **Connections** page, click **New Connection** and then enter connection details and properties for a connection that has the type of **Db2 for zOS Image Copy**.
- In Data Integration, when you create a mapping, click **Source** on the mapping canvas and then click **Source** in the **Properties: Source** panel. To create a connection, click **New Connection** and define a connection that has the type of **Db2 for zOS Image Copy**. Alternatively, if you previously defined a Db2 for z/OS Image Copy connection, select it from the **Connection** list.

When you configure a connection, you must specify a runtime environment for the connection. The runtime environment must contain a Secure Agent with the status "Up and Running."

After you create a Db2 for z/OS Image Copy connection, it becomes available for use within the organization and can be used in multiple mappings.

Db2 for z/OS Image Copy connection properties

When you configure a Db2 for z/OS Image Copy connection, you must set the connection properties.

The following table describes Db2 for z/OS Image Copy connection properties:

Property	Description
Connection Name	A name for the Db2 for z/OS Image Copy connection. This name must be unique within the organization. Connection names can contain alphanumeric characters, spaces, and the following special characters: _ . + - Spaces at the beginning or end of the name are trimmed and are not saved as part of the name. Maximum length is 100 characters. Connection names are not case sensitive.
Description	Description of the Db2 for z/OS Image Copy connection. Maximum length is 4000 characters.
Type	Type of connection. For Db2 for z/OS Image Copy, the type must be **Db2 for z/OS Image Copy**.
Runtime Environment	Name of the runtime environment that contains the Secure Agent that you want to use to run mapping tasks.

Listener Location	Host name or IP address of the system where the PowerExchange Listener that processes requests for Db2 for z/OS Image Copy runs. Also include the Listener port number. Enter the value in the following format, where *host_name* can be a host name or IP address:
	`host_name:port_number`
	For example:
	`LSNR1:1467?`

DB2 Subsystem ID	The Db2 subsystem or database name.
User Name	A user name that can be used to access the PowerExchange Listener when PowerExchange Listener security is enabled. For more information, see the SECURITY statement in the *PowerExchange Reference Manual*.
Password	Password that is associated with the user name that is specified in the **User Name** property.
Schema Name	Schema used for the source or target.
Code Page	The code page that the Secure Agent for the Data Integration Service uses to extract data from the source database.
Offload Processing	Controls whether to use offload processing. Offload processes transfers bulk data processing from the source system to the target system. Options are: - **Auto**. Cloud Data Integration determines whether to use offload processing. - **Filter After**. Offloads the bulk data processing to the target, including the filtering of data. - **Filter Before**. Offloads processing to the target but continues to filter data on the source system. - **No**. Disables offload processing. Default is No.

Property	Description
Offload Threads	The number of threads that Cloud Data Integration uses to process bulk data. For optimal performance, this value should not exceed the number of installed or available processors on the Integration Service machine. Valid values are 1 through 64. Default is 0, which disables multithreading. If you use reader or writer pipeline partitioning, accept the default value of 0. You cannot use both multiple offload threads and partitioning. Not all connection types support offload threads. If the **Offload Threads** connection attribute for one of these connections is set to a nonzero value, processing continues without threads.
Array Size	Valid values are from 1 through 5000. Default is 25.
Replace Low Values with Spaces	Controls whether to replace embedded nulls in character data with spaces. Select this property to replace embedded nulls. By default, this property is selected.
Connection Retry Period	Number of seconds that the PowerExchange Bulk Reader tries to reconnect to the PowerExchange Listener after the initial connection attempt fails. If a connection cannot be established within the retry period, the mapping task fails. The default is 0, which disables connection retries.
Custom Properties	Custom properties or connection property overrides. Custom properties are properties that you can specify to override PowerExchange default settings. You can enter multiple properties by using a semicolon (;) as the separator. For example: `<property>=<value>;<property>=<value>` Normally, you set custom properties only at the direction of Informatica Global Customer Support. **Note:** These properties are equivalent to the **PWX Override** options for the PowerExchange Client for PWX NRDB Batch connections in PowerCenter. You can also specify connection property overrides in this field or through a parameter file. To specify connection property overrides through a parameter file, you set a parameter in the form of `$<ParameterName>`, where you prefix a user-defined parameter name with a dollar sign character ($). Then configure a mapping task for the mapping to use a parameter file that contains the user-defined parameter definition by specifying the parameter file name in the **Parameter File Name** field on the **Runtime Options** tab. **Note:** - If you enter the same parameter for both the mapping and connection, the connection custom property takes precedence. - If you have a parameter file, the parameter name you specify in this field must match an entry defined in the parameter file. For more information, see the “Connection overrides reference” chapter.

CHAPTER 3

Mappings and mapping tasks with Db2 for z/OS Image Copy Connector

In Data Integration, create a mapping that includes a Db2 source and a target of a supported type. Then you can optionally create a mapping task that is associated with the mapping to process data based on the mapping.

The mapping and mapping task information is stored in the Informatica Intelligent Cloud Services cloud.

To process the Db2 image copy data, run the mapping task in your runtime environment. The mapping task runs on premises, on the same machine where the Secure Agent and PowerExchange client components run. The mapping task uses the mapping and mapping task information pushed down from the Informatica Intelligent Cloud Services cloud. During a mapping task run, the PWX Bulk Reader retrieves the Db2 image copy data and Data Integration transmits the data to the target based on the mapping.

After a mapping task ends, you can determine its job status and view the session log from either the Data Integration or Monitor interface.

Mapping configuration

You must configure a mapping that contains a Source transformation for a Db2 for z/OS Image Copy source and map it to a Target transformation.

To begin creating a mapping in Data Integration, click **New** > **Mappings** > **Mapping** and then click **Create**. In the **New Mapping** dialog box, click **Mapping** > **Continue**.

When you define a Source transformation in a mapping, specify a name for the transformation, a Db2 for z/OS Image Copy connection, the source type, and the table for the Db2 source object. You can also set some additional source properties. The PWX Bulk Metadata Adapter retrieves metadata for the source table from the Db2 database catalog.

A mapping must contain at least one Source transformation mapped to one Target transformation. Alternatively, a mapping can contain multiple Db2 for z/OS Image Copy sources and multiple targets. For example, you can define multiple one-to-one mappings, map one source to multiple targets, or map multiple sources to one target. To map multiple sources to the one target, you can create multiple one-to-one mappings that map each source separately to the same target. In this case, each source must have a different primary key value.

When you define a Target transformation, specify a name for the transformation, a connection to the target and the target type. In the user's environment, the target can reside on premises or in a cloud. If you do not want to send all of the incoming fields to the target, you can define one or more exclusion field rules. As part of configuring the target, you must also map the incoming fields to the target fields. You can map fields automatically based on the field names or map them manually.

Instead of selecting specific connections and objects in the Source and Target transformations, you can define a parameter for the connection, the source or target object, or both. You then must enter a specific connection or object in the associated mapping tasks. If you want to use a parameter for the source or target connection, you must perform one of the following actions before the mapping can be successfully validated:

- Set the **Source Type** or **Target Type** field to **Parameter** and then enter a parameter for the source or target object in the **Parameter** field. On the **Field Mapping** tab of the Target transformation, you must set the map option to **Automatic** for the mapping to be validated.
- If you want to use a specific source or target object with a connection parameter, first select a specific connection, set the **Source Type** or **Target Type** field to **Single Object**, select a source or target object in the **Object** field, validate the mapping, and then enter the connection parameter.

  Tip: If you want to validate the source-to-target field mappings, map the fields in the Target transformation before validating the mapping. After the mapping is confirmed as valid, enter connection parameters.

You can also completely or partially parameterize field mappings, and then define specific mappings in the mapping tasks.

Db2 for z/OS Image Copy source properties in mappings

When you create a mapping, you configure a Source transformation for a Db2 for z/OS Image Copy source and set some source properties for the Source transformation.

Click the Source transformation box on the mapping canvas. Then configure the source properties in the **Source Properties** panel below the mapping canvas.

If you have multiple Source transformations in a mapping, configure source properties for each source. If you use a specific connection instead of a connection parameter, enter the same connection for all sources.

The **Source Properties** panel contains the following tabs on which you can enter information:

- **General** tab. Specify a user-defined name and optional description for the Db2 for z/OS Image Copy source.
- **Source** tab. Configure the source properties under **Details** and under **Advanced**. The advanced properties are available only if you enter a specific connection for the source. If you enter a parameter for the source connection, the advanced properties are not displayed. However, you can define these properties in the associated mapping task after you select a specific source connection for the task.

The following table describes the Db2 for z/OS Image Copy source properties under **Details**:

Property	Description
Connection	*Required*. Select a source connection of the type **Db2 for zOS**, or click **New Connection** to create one. Alternatively, you can define a connection parameter in the mapping and enter a specific connection in each mapping task that is associated with the mapping. If you want to use a connection parameter with a specific source object, you must first select a specific connection so that you can access the source to select the source object in the **Object** field. After you select the source object, define the connection parameter. If you want to use parameters for both the connection and source object, you do not need to first select a specific connection. You can just define the parameters in either order. To define a connection parameter, click **New Parameter** next to the **Connection** property and enter the following information: - Enter a parameter name that begins with a letter and is up to 200 characters in length, including @, #, _, and alphanumeric characters. - In the **Type** property, verify that **connection** is selected. - Leave the **Connection Type** property blank. After you click **OK**, the parameter appears in the **Connection** property.
Source Type	*Required*. Select one of the following options: - **Single Object** lets you select a Db2 for z/OS Image Copy source object in the **Object** property. - **Parameter** selects an existing parameter for the source object, or allows you to define a new parameter for the mapping. The parameter defines a specific source object in each mapping task associated with the mapping. - **Query** lets you enter a custom SQL query for the source object.
Object	If you selected **Single Object** as the source type, you can select a Db2 for z/OS Image Copy source object. Click **Select**. Then in the **Select Source Object** dialog box, under **Packages**, click a listed value. This value is the schema name. The right pane lists the tables in the selected schema. The table metadata is stored in the Informatica Intelligent Cloud Services repository in the cloud. **Note:** The **Preview Data** feature is not supported for Db2 for z/OS Image Copy source and target objects.
Parameter	Parameter to use for the source object. This field only appears when you select **Parameter** as the source type. To parameterize a source object, click **New Parameter**. Enter the parameter name and then select the type data object. From the **New Input Parameter** dialog box, you can add a description, default value, and other information for the parameter.
Query	If you selected **Query** as the source type, you can enter a custom SQL query for the source. Select **Define Query** and enter the SQL query in the **Edit Custom Query** dialog box. Use SQL that is valid for the Db2 for z/OS Image Copy database. You can create custom queries to override the default SQL, to perform a complicated join of tables, to reduce the number of fields that enter the data flow, or to create columns for metadata. You can validate an SQL query when you add or enter it. **Note:** The **Preview Data** button in the **Edit Custom Query** dialog box is not supported. If you select **Preview Data**, Data Integration issues an error.
Query Options	You can configure the source transformation to filter or sort data before the data enters the data flow. Use the source query options to filter or sort source data. For more information, see *Transformations*.

The following table describes the optional source properties under **Advanced**:

Property	Description
Schema Name Override	Overrides the source schema name.
Table Name Override	Overrides the source table name.
DB2 Subsystem ID Override	Overrides the DB2 instance name in the PowerExchange data map.
Image Copy Dataset	Provides the image copy data set name. If not specified and the table is in a non-partitioned table space, the most current image copy data set with TYPE=FULL and SHRLEVEL=REFERENECE is used. If the table is in a partitioned table space, you must specify the **Image Copy Dataset** attribute.
Disable Consistency Checking	If cleared for a DB2 image copy source, PowerExchange reads the catalog to verify that the DSN of the specified image copy data set is defined with SHRLEVEL=REFERENCE and TYPE=FULL and is an image copy of the specified table. If the DSN is not defined with these properties, the session fails. If selected, PowerExchange reads the Image Copy Dataset regardless of the values of SHRLEVEL and TYPE and without verifying that the object ID in the image copy matches the object ID in the DB2 catalog.

Property	Description

Filter Overrides	One or more conditions that filter the source records that the PWX Bulk Reader retrieves from the PowerExchange Listener. Based on the filter conditions, a WHERE clause is appended to the default SQL SELECT query that the PWX Bulk Reader uses to read the records.
	Db2 Data Map Connector supports two forms of filter condition syntax. For single record source definitions such as single record nonrelational data maps, specify a single filter condition statement. You can specify a single filter condition or join numerous filter conditions by using the conditional operands that PowerExchange supports for NRDB SQL statements. For example:
	`column1 is NULL and column2='A'`
	For multi-record nonrelational source definitions, you can also use the following syntax:
	`group_name1=filter_condition;group_name2=filter_condition;...`
	Use the group_name form to specify filter conditions for one or more record types in a multi-record source definition. To apply a filter condition to all records in a multi-record source definition, use a single filter condition without group_name. You cannot combine single filter conditions with group_name conditions.
	You must use the nonrelational SQL syntax that PowerExchange supports for comparison and LIKE operators. For more information, see the "PowerExchange Nonrelational SQL" chapter in the *PowerExchange Reference Manual*. If the filter includes a date or timestamp column, ensure that the range of years in the column data is within the range of years for PowerExchange data filtering, as controlled by the DATERANGE statement in the DBMOVER configuration file. The default range is 1800 to 2200.
	For example, to select records in which the TYPE column has a value of A or D, specify the following condition:
	`TYPE='A' or TYPE='D'`
	Maximum length of the entire SELECT statement that PowerExchange builds, including the WHERE clause with the filter conditions, is 8192 bytes.
	Note: If you specify the **Filter Overrides** attribute and also specify an **SQL Query Override** attribute value that contains a filtering WHERE clause, the resulting SELECT statement contains a WHERE clause that uses the AND operator to associate the Filter Overrides filter conditions with the SQL Query Override conditions. For example:
	`SELECT * from schema.table WHERE Filter_Overrides_conditions AND SQL_Query_Override_conditions`

SQL Override	The SQL statement to override the default query generated from the specified source type to read data from the source. You can partially parameterize SQL override with values specified in a parameter file. Ensure that the list of selected columns, data types, and the order of the columns that appear in the query matches the columns, data types, and order in which they appear in the source object. **Note:** SQL override is not applicable when you enable partitioning. If you specify an SQL override and configure partitioning, the mapping fails.
Tracing Level	Sets the amount of details that appear in the log file. You can choose terse, normal, verbose initialization, or verbose data.

- **Fields** tab. Select the fields that you want to use in the data flow. You can edit field metadata such as precision and scale if necessary.

Note: Ignore the **Partitions** tab. Key-range partitioning is not supported.

Targets in mappings with Db2 for z/OS Image Copy sources

To configure a target in a mapping, click the Target transformation box on the mapping canvas. Then configure the target properties in the **Target Properties** panel below the mapping canvas.

Note: To determine which target types are supported by the Db2 for z/OS Image Copy Connector, see "Supported targets" on page 10.

In the **Target Properties** panel, enter information on the following tabs:

- **General** tab. Specify a user-defined name and optional description for the target.
- **Incoming Fields** tab. Optionally review the included fields and define field exclusion rules and renaming criteria.
- **Target** tab. Configure the target properties under **Details** and under **Advanced**. The advanced properties are available only if you enter a specific connection for the target.

  The following table describes the target properties under **Details**:

Property	Description
Connection	Select an existing Db2 target connection, or create a target connection that has a type of **Db2**. Alternatively, you can use a connection parameter in the mapping and then enter a specific connection in each mapping task that is associated with the mapping. If you want to use a connection parameter with a specific target object, you must first select a specific connection so that you can access the target to select the target object in the **Object** field. After you select the target object, define the connection parameter. If you want to use parameters for both the connection and target object, you do not need to first select a specific connection. You can just define the parameters in either order. To define a connection parameter, click **New Parameter** and enter the following information: - Enter a parameter name that begins with a letter and is up to 200 characters in length, including @, #, _, and alphanumeric characters. - In the **Type** property, verify that **connection** is selected. - Leave the **Connection Type** property blank.
Data Driven Condition	Enables you to define expressions that flag rows for an insert, update, delete, or reject operation. Appears only when the operation type is **Data Driven** but is not required for this operation type.
Target Type	Select **Single Object** if you want to specify a target table. Alternatively, select **Parameter** and then specify an input parameter for the target object in the **Parameter** property. When you use a parameter, you specify the target table for the parameterized object on the **Targets** page of each mapping task associated with the mapping.
Object	Click **Select**. In the **Target Object** dialog box, select **Existing** and then select an existing target table. Alternatively, select **Create New at Runtime** and enter the name of a target table to generate at runtime.
Parameter	Select or create a parameter for the target object. Appears only when the target type is **Parameter**.

Property	Description
Operation	Select **Data Driven** to properly handle insert, update, and delete rows from the source. By default, inserts, updates, and deletes are applied as inserts, updates, and deletes, respectively.
Update Columns	Click **Add** to select the columns that you want to use as a logical primary key for performing update, upsert, and delete operations on the target. Appears only when the operation type is **Data Driven**. This field is not required if the target table already has a primary key.

The following table describes the advanced target properties that appear under **Advanced**:

Advanced Property	Description
Truncate target table	Select this option if you want to clear the target table each time the mapping task runs. However, if you select this option and set the **Operation** property to **Data Driven**, update operations on the target will fail.
Pre SQL	SQL statements that run on the target before the extracted data is written to a target. Maximum length is 5000 characters.
Post SQL	SQL statements that run on the target after the extracted data is written to a target. Maximum length is 5000 characters.
Update Override	An override Db2 update statement to update the data in a Db2 target table. The override update statement you specify overrides the default update statements that the Secure Agent uses to update targets based on key columns. You define an override update statement to update target tables based on non-key columns. In the override statement, you must enclose all reserved words in quotation marks.
Forward Rejected Rows	Select this option to have the Target transformation pass rejected rows to a reject file that is generated in the following directory: `\agent_install_directory\apps\Data_Integration_Server\data\error` Clear this option to ignore the rejected rows. **Note:** This field is not displayed if a parameter is specified for the target connection.

- **Target Fields** tab. Optionally add fields, delete fields, or edit field metadata such as native data type, precision, and scale.
- **Field Mapping** tab. Map the incoming fields to the target fields. You can manually map an incoming field to a target field or automatically map fields based on the field names. If you entered a connection parameter, you must select **Automatic** as the field map option to be able to validate the mapping. Alternatively, you can completely or partially parameterize field mappings, and then define the specific field mappings in the mapping task. For more information, see Transformations > Target Transformation > Target Transformation Field Mappings in the Data Integration Help.

Lookup Transformation

You can configure a cached Lookup transformation when you use a Db2 for z/OS Image Copy connection in a mapping to return data from a Db2 for z/OS Image Copy source based on a specified lookup condition. However, the Db2 for z/OS Image Copy Connector does not support uncached lookup.

For more information, see Cloud Data Integration *Transformations*.

Mapping task configuration

Configure a mapping task for a mapping with a Db2 for z/OS Image Copy source. When you run the mapping task, the Db2 data is transmitted to the target. You cannot run mappings for Db2 for z/OS Image Copy.

Note: SQL ELT optimization and Visio templates are not supported for Db2 for z/OS Image Copy mapping tasks.

To begin configuring a mapping task, perform one of the following actions:

- In Data Integration, click **New** > **Mapping Task** and then click **Create**.
- While the mapping is open, select **New Mapping Task** from the **Actions** menu.

Then enter information on some or all of the following pages in the mapping task wizard:

- **Definition**. Enter a name for the mapping task, a project or folder location for the mapping task, and the runtime environment that contains the Secure Agent or Secure Agent Group under which the mapping task will run. If you began creating the mapping task without first opening the mapping, you must also select the mapping with which to associate the mapping task. The description is optional.
- **Sources**. This page appears only if you defined a parameter for the connection. If you defined a connection parameter, select or create the specific connection that you want the mapping task to use.
- **Targets**. This page appears only if you defined a parameter for the target connection or object in the mapping. For more information about configuring targets in mapping tasks, click the help icon on this page.
- **Runtime Options**. Optionally define a schedule for running the mapping task.

Properties for parameterized sources and connections

The **Sources** page appears in the mapping task wizard if you defined a parameter for the connection or source object in the associated mapping.

If you defined a parameter for the source connection in the mapping, you must select or create a specific connection for the mapping task. Ensure that the connection type is consistent with the source object type. After a connection is selected, you can click **Advanced Options** to configure the optional advanced properties. For more information about these advanced properties, see "Db2 for z/OS Image Copy source properties in mappings" on page 17.

Note: If the mapping uses a specific source connection, you can specify these advanced properties in the mapping and also specify them in the mapping task. In this case, the properties in the mapping task override those in the mapping.

If you are parameterizing a source object, select the objects that correspond to the groups you selected in the mapping from the mapping task **Sources** tab. The number of objects you select must match the number of groups that were added in the multi group data object parameter. To select the source objects, click **Select**.

Note: To parameterize a source object, you must define a parameter of the type **data object** for the mapping.

When you finish entering information on the **Sources** page, click **Validate** to validate your entries.

Note: If the mapping specifies a connection parameter and you edit the mapping to change the source object, check the specific connection in the mapping task to determine if you need to reset it and then **Validate** the mapping task again.

Running a mapping task

A mapping task runs on premises under control of the Secure Agent.

To run the mapping task, use any of the following methods:

- After you finish configuring the mapping task, click **Run**.
- Manually start the mapping task from the **Explore** page.
- Create a schedule that runs the mapping task based on a date, time, and repeat frequency, such as hourly, daily, weekly, or monthly.
- Include the mapping task in a taskflow and then run the taskflow.

Monitoring a mapping task

After you run a mapping task, you can check the job status for the task to determine if the job succeeded, completed with warnings, or failed. If the job failed or ended with a warning, you can view the session log for the job to identify the error or warning conditions.

Each time a user or schedule starts a mapping task, Informatica Intelligent Cloud Services creates a job to run the task.

1. To view a list of mapping task jobs, use one of the following methods:
   - In Data Integration, select **My Jobs**. The **My Jobs** page lists all jobs that you, the user who is currently logged in, started. It does not include jobs that were started by a schedule.
   - In Monitor, select **All Jobs** or **Running Jobs**. The **All Jobs** page lists all of the running and completed jobs that members of your organization started or that were started by a schedule. The **Running Jobs** page lists only the jobs that are currently running or that have completed within the last 5 minutes.
2. On the **My Jobs**, **All Jobs**, or **Running Jobs** page, review the information about the jobs you're interested in. The following information is displayed by default and shown for each job instance:
   - Start date and time
   - End date and time
   - Number of rows processed
   - Current state, which can be one of the following values: Queued, Starting, Running, Success, Stopped, Suspended, Warning, or Failed.

   Tip: You can change the columns that are displayed by right-clicking the column-heading area and selecting or deselecting column names in the list.

   For more information about a job, click the job name to open a page that contains job details and a download link for the session log. You can also download the session log by moving the cursor to the right end of the row for a job and clicking the **Download Log** icon.
3. If the job state is Failed or Warning, gather more information about the error or warning condition in the following ways:
   - For a Failed job, hover the cursor over the Failed icon in the **State** column. A brief description of the error condition appears, which you can copy.
   - Download the session log and look for error or warning messages that begin with the message ID prefix of "PWXPC" or "PWX."

If possible, correct the error or warning condition and then restart the job. To restart the job from the **Jobs** or **My Jobs** page, move the cursor to the right end of the row for the job and click the **Restart** icon.

CHAPTER 4

Db2 for z/OS Image Copy administration

As the organization administrator of a Db2 for z/OS Image Copy Connector implementation, you might need to perform some administrative tasks to keep processing of data running smoothly.

To learn about some common administrative issues and tasks, read the following topics:

- "Upgrading to a new version of PowerExchange" on page 26

Upgrading to a new version of PowerExchange

The connector can retrieve data from only a single version of PowerExchange. If you upgrade your on-premise environment to a later supported PowerExchange version, use this task to move your Informatica Intelligent Cloud Services Data Integration connections to the new PowerExchange environment.

1. Upgrade the PowerExchange installation. For more information, see the *PowerExchange Installation and Upgrade Guide*.
2. In Monitor, open the **Running Jobs** page.
3. Make sure that any running mapping tasks that connect to the previous PowerExchange version run to completion, or stop the task if necessary.
4. Stop the Secure Agent that is specified in the connection configuration for any connection to the previous PowerExchange version.
5. In Data Integration, edit the connections to point to the new PowerExchange version.
6. If necessary, edit the mapping task configurations to specify the appropriate connection to the new version of the PowerExchange environment.
7. Start the mapping tasks again, when appropriate.

CHAPTER 5

Data type reference

Data Integration uses the following data types in mappings and tasks with Db2 for z/OS Image Copy:

Db2 for z/OS Image Copy native data types

Db2 for z/OS Image Copy data types appear in the source and target transformations 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 reads source data, it converts the native data types to the comparable transformation data types before transforming the data. When Data Integration writes to a target, it converts the transformation data types to the comparable native data types.

Db2 for z/OS Image Copy and transformation data types

The following table lists the Db2 for z/OS Image Copy datatypes that Data Integration supports:

DB2 Datatype	Supported for Bulk Data Movement?
BIGINT	Yes
BINARY	Yes
BLOB	Yes
CHAR	Yes
CLOB	Yes
DATE	Yes
DBCLOB	Yes
DECFLOAT	No
DECIMAL	Yes

DB2 Datatype	Supported for Bulk Data Movement?
DISTINCT (user-defined)	No
DOUBLE	Yes
FLOAT	Yes
GRAPHIC	Yes
LONG VARCHAR	Yes
LONG VARGHAPHIC	Yes
INTEGER	Yes
REAL	Yes
ROWID	No
SMALLINT	Yes
TIME	Yes
TIMESTAMP	Yes, including extended-precision TIMESTAMP columns, which support fractional seconds up to 12 digits
TIMESTAMP WITH TIME ZONE	No
VARBINARY	Yes
VARCHAR	Yes
VARGRAPHIC	Yes
XML	No

CHAPTER 6

Connection overrides reference

When you create a mapping that uses this connector type, you can specify a connection property that allows you to specify connection property overrides through a parameter file in the connection properties panel **Custom Properties** field.

Connection overrides

The following table lists the connection overrides that you can specify for nonrelational sources such as Adabas, Datacom, IDMS, IMS, sequential file, and VSAM connections:

Connection Override	Default	Valid Values
Array Size	25	1 to 100000
Connection Retry Period	0	0 to 1000000
Offload Processing	No	A - Auto F - Filter After N - No Y - Yes
Offload Threads	0	0 to 64
Password	no default	A valid password for the specified user
Replace Low-values With Spaces	no default	Y|N
User Name	no default	A user name
Confirm Network Write	Confirm Write On	Y|N

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