Informatica® Cloud Data Integration
July 2024

Db2 for i Connector

Informatica Cloud Data Integration Db2 for i Connector
July 2024

© Copyright Informatica LLC 2023, 2024

This software and documentation are provided only under a separate license agreement containing restrictions on use and disclosure. No part of this document may be reproduced or transmitted in any form, by any means (electronic, photocopying, recording or otherwise) without prior consent of Informatica LLC.

U.S. GOVERNMENT RIGHTS Programs, software, databases, and related documentation and technical data delivered to U.S. Government customers are "commercial computer software" or "commercial technical data" pursuant to the applicable Federal Acquisition Regulation and agency-specific supplemental regulations. As such, the use, duplication, disclosure, modification, and adaptation is subject to the restrictions and license terms set forth in the applicable Government contract, and, to the extent applicable by the terms of the Government contract, the additional rights set forth in FAR 52.227-19, Commercial Computer Software License.

Informatica, the Informatica logo, Informatica Cloud, and PowerCenter are trademarks or registered trademarks of Informatica LLC in the United States and many jurisdictions throughout the world. A current list of Informatica trademarks is available on the web at https://www.informatica.com/trademarks.html. Other company and product names may be trade names or trademarks of their respective owners.

Portions of this software and/or documentation are subject to copyright held by third parties. Required third party notices are included with the product.

See patents at https://www.informatica.com/legal/patents.html.

DISCLAIMER: Informatica LLC provides this documentation "as is" without warranty of any kind, either express or implied, including, but not limited to, the implied warranties of noninfringement, merchantability, or use for a particular purpose. Informatica LLC does not warrant that this software or documentation is error free. The information provided in this software or documentation may include technical inaccuracies or typographical errors. The information in this software and documentation is subject to change at any time without notice.

NOTICES

This Informatica product (the "Software") includes certain drivers (the "DataDirect Drivers") from DataDirect Technologies, an operating company of Progress Software Corporation ("DataDirect") which are subject to the following terms and conditions:

1. THE DATADIRECT DRIVERS ARE PROVIDED "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NON-INFRINGEMENT.
2. IN NO EVENT WILL DATADIRECT OR ITS THIRD PARTY SUPPLIERS BE LIABLE TO THE END-USER CUSTOMER FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, CONSEQUENTIAL OR OTHER DAMAGES ARISING OUT OF THE USE OF THE ODBC DRIVERS, WHETHER OR NOT INFORMED OF THE POSSIBILITIES OF DAMAGES IN ADVANCE. THESE LIMITATIONS APPLY TO ALL CAUSES OF ACTION, INCLUDING, WITHOUT LIMITATION, BREACH OF CONTRACT, BREACH OF WARRANTY, NEGLIGENCE, STRICT LIABILITY, MISREPRESENTATION AND OTHER TORTS.

The information in this documentation is subject to change without notice. If you find any problems in this documentation, report them to us at infa_documentation@informatica.com.

Informatica products are warranted according to the terms and conditions of the agreements under which they are provided. INFORMATICA PROVIDES THE INFORMATION IN THIS DOCUMENT "AS IS" WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING WITHOUT ANY WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND ANY WARRANTY OR CONDITION OF NON-INFRINGEMENT.

Publication Date: 2024-07-12

Table of Contents

Preface 4

Chapter 1: Introduction to Db2 for i Connector 5

Db2 for i Connector usage scenario 5

Integration with the PowerExchange environment 6

Db2 for i Connector asset types 7

Software requirements 7

Supported targets 8

Db2 for i Connector rules and guidelines 8

Prerequisite tasks for using Db2 for i Connector 9

Task flow for using Db2 for i Connector 10

Chapter 2: Db2 for i connections 11

Db2 for i connection properties 11

Chapter 3: Mappings and mapping tasks with Db2 for i Connector 14

Mapping configuration 14

- Db2 for i source properties in mappings 15
- Targets in mappings with Db2 for i sources 17
- Db2 for i targets in a mapping 18
- Create a target table at runtime 19
- Lookup transformations 20

Mapping task configuration 20

- Properties for parameterized sources and connections 21

Running a mapping task 21

Monitoring a mapping task 21

Chapter 4: Db2 for i administration 23

Upgrading to a new version of PowerExchange 23

Chapter 5: Data type reference 24

Db2 for i supported data types 24

Index 26

Preface

Learn how to use *Db2 for i Connector* to retrieve DB2 for i data from a PowerExchange environment and write the data to a supported target, including another Db2 for i system. The 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.

CHAPTER 1

Introduction to Db2 for i Connector

You can use Db2 for i Connector to connect to a PowerExchange for Db2 for i environment to retrieve data from Db2 source tables on an IBM i system.

For relational sources and targets such as DB2 for i tables, 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 or target. PowerExchange uses these transformations to access the source or target tables. On a read, the data is returned to the PowerExchange Bulk Reader, which sends the records to Data Integration. Data Integration can then send the records to a supported target, such as the PowerExchange Bulk Writer.

Db2 for i Connector retrieves records from PowerExchange and sends the records to Data Integration. Data Integration can then transmit the data to a supported target.

To move bulk data from or to Db2 for i, you must run a mapping or a mapping task.

Db2 for i Connector must be able to connect to an active PowerExchange environment. You do not need to copy the PowerExchange dbmover configuration file to the Db2 for i Connector system. For more information about configuring PowerExchange for Db2 for i, see the *PowerExchange Bulk Data Movement Guide* .

Db2 for i Connector works with the Informatica Cloud Secure Agent. When you install and start the Secure Agent, it downloads the Db2 for i Connector components and the PowerExchange Client packages. When you define a runtime environment, you configure a Secure Agent group.

Note: Db2 for i Connector does not work with the Hosted Agent.

Db2 for i Connector usage scenario

You can use Db2 for i Connector to connect to an on-premises PowerExchange for Db2 for i system from a Linux and Windows system where the Secure Agent is installed.

You can use the browser-based Informatica Intelligent Cloud Services interfaces to define Db2 for i 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 i Connector components, in conjunction with Data Integration, read and process the data that Db2 for i Connector read from the Db2 for i database.

Db2 for i Connector components retrieve metadata for Db2 source tables. The source metadata is stored in the Informatica Intelligent Cloud Services cloud. You can use the browser-based Data Integration and Administrator interfaces to define Db2 for i connections, mappings, and mapping tasks. When you run the

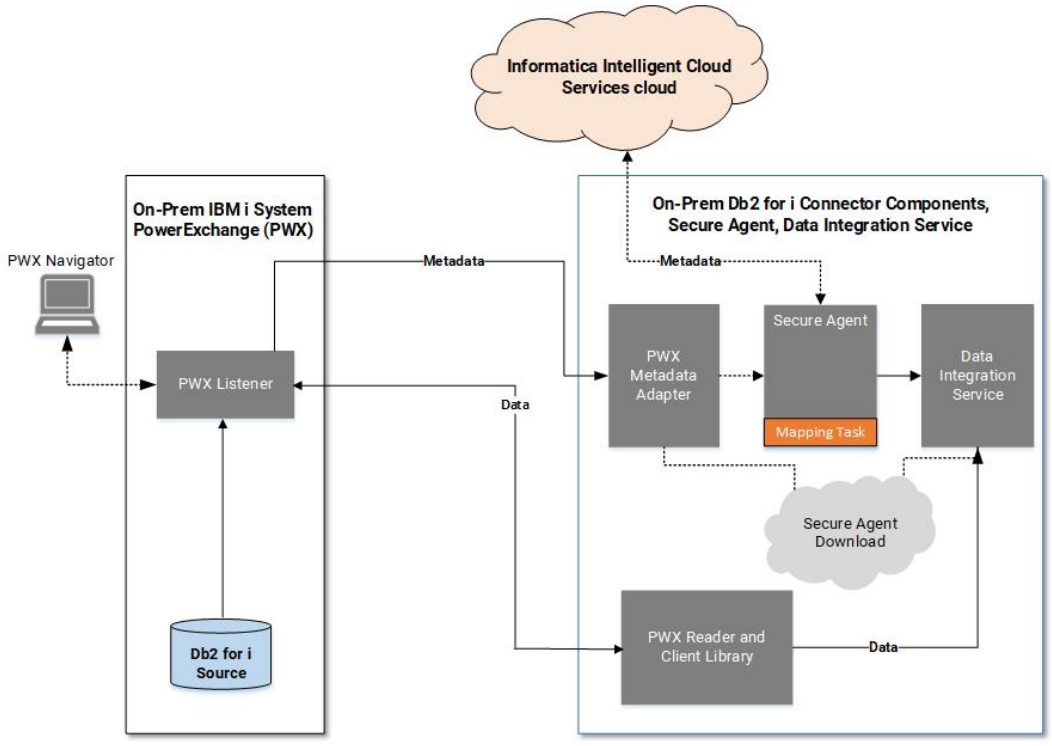
mappings or mapping tasks, Db2 for i Connector components in conjunction with Data Integration retrieve and process the records that PowerExchange replicated from the production database and transmit these records to one or more targets, including another Db2 for i system. Multiple users can then access the latest data on the target systems.

Integration with the PowerExchange environment

You must have a functional on-premises PowerExchange environment that can replicate data from Db2 source tables on an IBM i system and transmit the data to a supported target.

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

The following image shows the general architecture of the Db2 for i Connector components in relation to Cloud Data Integration, the remote Db2 for i source system:



This configuration spans the following on-premises systems:

- The IBM i system where the Db2 for i database and PowerExchange Listener run.
- The system where the Db2 for i Connector components and Secure Agent run.

Based on this configuration, the following processing occurs:

1. PowerExchange reads from and writes to Db2 tables where the PowerExchange Listener for IBM i resides.

2. When you design a mapping in Data Integration, you associate the Source transformation with a Db2 for i 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 IBM i and and read from and write to Db2 tables.

   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 or mapping task, 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 and Writer on the Secure Agent machine communicates with the PowerExchange Listener on the IBM i machine to move bulk data from the source tables.
6. Data Integration transmits the records to the mapped target.

Db2 for i Connector asset types

The following table lists the Data Integration asset types that the Db2 for i Connector uses:

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

Software requirements

Verify that your PowerExchange system and Db2 for i Connector system meet the following software requirements for integration with Informatica Cloud Data Integration:

- You must have a remote PowerExchange installation on the Db2 for i 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 i 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 i 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 i 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 i Connector rules and guidelines

Review the Db2 for i Connector rules and guidelines before you begin creating connections, mappings, and mapping tasks.

- You can use Db2 for i connections for sources and targets.
- Db2 for i Connector connects to the PowerExchange Listener on the IBM i source system by using the **Listener Location** property that you specify in the Db2 for i connection definition. On the Connector system, you do not need to create a local copy of the dbmover.cfg 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 23.

- PowerExchange does not move data for Db2 for i columns that have the following data types:

  - BLOB, CLOB, or DBCLOB
  - DATALINK
  - DECFLOAT
  - DISTINCT
  - ROWID

  Columns that have these data types will not be included in the data that Db2 for i Connector retrieves from PowerExchange.
- The PowerExchange Listener on the IBM i system can compress or encrypt the data that it sends to the PWX Bulk Reader component of Db2 for i Connector, depending on how you set the **Compression** and **Encryption** properties for the source connection.

Prerequisite tasks for using Db2 for i Connector

Before you begin configuring Db2 for i 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 IBM i systems use a PowerExchange version that the Db2 for i 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 i Connector components and PowerExchange Client 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 i 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 i Connector

To use Db2 for i 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 i Connector" on page 9.

1. In Administrator, create a source connection with the type of **Db2 for i**. 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 i Connector. For more information, see "Db2 for i connection properties" on page 11.

   Db2 for i Connector uses this connection to retrieve source metadata and 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.
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 21.
6. Monitor the job status for the mapping task instance. For more information, see "Monitoring a mapping task" on page 21.

   If a job has the status of Failed or Warning, check the session log for related error or informational messages. Then try to correct the issues that caused the failure and restart the mapping task.

CHAPTER 2

Db2 for i connections

You must create a Db2 for i connection to connect to a PowerExchange Listener to read from or write to Db2 tables.

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

You can create a Db2 for i 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 i**.
- 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 i**. Alternatively, if you previously defined a Db2 for i 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 i connection, it becomes available for use within the organization and can be used in multiple mappings.

Db2 for i connection properties

When you configure a Db2 for i connection, you must set the connection properties.

The following table describes Db2 for i connection properties:

Property	Description
Connection Name	A name for the Db2 for i 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 i connection. Maximum length is 4000 characters.
Type	Type of connection. For Db2 for i, the type must be **Db2 for i**.

Property	Description
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 i 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:
	`DB2ILSNR:14675`

Database Name	The Db2 for i 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	The schema name of the Db2 for i 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.
Isolation Level	The Db2 for i isolation level to use for the source database. Options are: - ALL - CS - CHG - None - RR Default is CS
Database File Overrides:	A value to override the database file default. This value overrides the value in the DB_FILE statement in the PowerExchange DBMOVER configuration file.
Library List:	The name of the Db2 for i Library List to use for the connection.
Environment SQL	SQL commands that run in the database environment.
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.

Property	Description
Custom Properties	Custom properties that you can specify to override PowerExchange default settings. You can enter multiple properties by using a semicolon (;) as the separator. 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 PowerCenter (PWXPC) Db2 for i connections in PowerCenter.
Write Properties	Write Mode. Options are: - **Confirm Write On**. Sends data to the PowerExchange Listener and waits for a success or no success response before sending more data. This mode sends data synchronously to the PowerExchange Listener rather than buffering the data. - **Confirm Write Off**. Sends data asynchronously to the PowerExchange Listener by buffering the data. This mode does not wait for a success or no success response. - **Asynchronous with Fault Tolerance**. Combines the speed of **Confirm Write Off** with the error detection of **Confirm Write On**. This mode buffers the data and sends it asynchronously to the PowerExchange Listener. When an SQL error occurs, PowerExchange creates a reject file on the target machine, which contains the data records that the writer could not write to the target. View the file contents to identify and correct the errors without reloading the entire table. You can also specify how to handle specific SQL return codes. Default is **Confirm Write On**.
Reject File	Overrides the default prefix of PWXR for the reject file. PowerExchange creates the reject file on the target machine when the Write Mode is Asynchronous with Fault Tolerance. **Note:** Enter PWXDISABLE to prevent creation of the reject files.

CHAPTER 3

Mappings and mapping tasks with Db2 for i Connector

In Data Integration, create a mapping that includes the Db2 for i source and a supported target type. Then 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 for i data, run the mapping task in a selected 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 replicated Db2 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 Data Integration or Monitor.

Mapping configuration

You must configure a mapping that contains a Source transformation for a Db2 for i 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**.

A mapping must contain at least one Source transformation mapped to one Target transformation. Alternatively, a mapping can contain multiple Db2 for i 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 same 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 Source transformation in a mapping, specify a name for the transformation, a Db2 for i connection that can connect to the PowerExchange Listener, the source type, and the Db2 for i source table. You can also set some additional source properties. The PWX Bulk Metadata Adapter retrieves metadata for the source table from the Db2 database catalog.

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 manually map them.

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 i source properties in mappings

When you create a mapping, you configure a Source transformation for a Db2 for i 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.

Note: If a mapping includes source tables or columns that have special characters in their names, the associated mapping task fails because it cannot import the source metadata. Special characters include s #, $, @, %, *, !, and ~. Therefore, ensure that none of the source tables and mapped columns have names with any special character. Rename the tables and columns if necessary.

The **Properties:** ***Source*** 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 i 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 i source properties under **Details**:

Property	Description
Connection	*Required*. Select a source connection of the type **Db2 for i**, 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 i 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 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 i source and target objects.
Parameter	If you selected **Parameter** as the source type, you can identify a parameter to use for the source object. Select a parameter from the list. Alternatively, create a parameter by clicking **New Parameter** for the source object. Then define the parameter in the **New Input Parameter** dialog box.
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 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	Specify the **Filter** and **Sort** options for the connection.

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

Property	Description
Pre SQL	Pre-SQL command to run before reading data from the source.
Post SQL	Post-SQL command to run after reading data from the source.
Sql Override	Configure SQL overrides and define constraints.
Select Distinct	Select this option to extract only distinct rows.
Output is deterministic	When you configure this property, the Secure Agent does not stage source data for recovery if transformations in the pipeline always produce repeatable data.
Output is repeatable	When the output is deterministic and the output is repeatable, the Secure Agent does not stage the source data for recovery.
Tracing Level	Amount of detail that appears in the log for this transformation. You can choose terse, normal, verbose initialization, or verbose data. Default is normal.

- **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 for Db2 for i connections.

Targets in mappings with Db2 for i 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 Db2 for i Connector, see "Supported targets" on page 8.

- **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. Target properties vary based on the supported target that you select.
- **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.

Db2 for i targets in a mapping

To write data to a Db2 for i database, configure a Db2 for i object as the Target transformation in a mapping.

Specify the name and description of the Db2 for i 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 for i 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. If you want 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 for i target object available. You can choose from the following source types: - Single - Parameter
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 Secure Agent uses the parameters from the file that you specify in the advanced session properties.
Target Object	Name of the Db2 for i target object based on target type selected. Specify the target object that you want to create at run time. You can also select an existing object from the list.
Operation	Select the target operation. You can perform the following operations on a Db2 for i target: - Insert - Update - Upsert - Delete - Data Driven
Truncate target table option	When you enable the **Truncate target table option**, the Secure Agent truncates the table before running the task. Default is not selected.
Pre SQL	Pre-SQL command to run against the target database before writing data to the target.
Post SQL	Post-SQL command to run against the target database after writing data to the target.
Update Override	An update SQL statement that updates the data in a Db2 for i target table. The update SQL statement you specify overrides the default update statements that the Secure Agent generates to update the target based on key columns. You can define an update override statement to update target tables based on both key or non-key columns. In the override statement, you must enclose all reserved words in quotation marks.
Forward Rejected Rows	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 rejected rows and writes them to the session log file. The Secure Agent does not write the rejected rows to the reject file.

.

Create a target table at runtime

You can use an existing target or create a target in a mapping. If you choose to create the target, the agent creates the target when you run the task.

Note: Before you create a target table at runtime, select the appropriate database type in the Db2 for i connection.

To specify the target properties, perform the following tasks:

1. Select the Target transformation in the mapping.
2. On the **Incoming Fields** tab, configure field rules to specify the fields to include in the target.
3. To specify the target, click the **Target** tab.
4. Select the target connection.
5. For the target type, choose **Single Object** or **Parameter**.
6. Specify the target object or parameter.
7. To specify a target object, perform the following tasks:
    a. Click **Select** and choose a target object. You can select an existing target object or create a new target object at runtime and specify the object name.
    b. To create a target object at runtime, select **Create New at Runtime**.
    c. Enter the name of the target table that you want to create name in the **Object Name** field.
    d. In the **Path** field, specify the target table name and schema in the following format: `<Schema-Name>/<TableType>`, where the mandatory value for TableType is *TABLE*.

       For example, *private/TABLE*

       In the example, the table is created in the schema named "private" in the database server. If you do not specify a value for the path, the Secure Agent considers the schema name you specified in the connection. If you did not specify a schema name in the connection, the Secure Agent creates the table in the default schema.
    e. Click **OK**.
8. Specify the advanced properties for the target, if required.

Rules and guidelines

When you configure a mapping with the **Create New at Runtime** option, consider the following rules:

- Do not edit the metadata in the target object. If you edit the metadata, the changes are not reflected at runtime.
- When a target table exists, the Secure Agent uses the same target table.
- When you configure an override of the schema name and table while creating a target at runtime, the Secure Agent creates an empty table in the default database.

Platform to Db2 for i data type mapping

The following table identifies the Db2 for i target data type based on the input platform data type:

Platform Data Type	Db2 for i Target Data Type
bigint	BIGINT
binary	VARBINARY [1]
date/time	TIMESTAMP
decimal	DECIMAL
double	DOUBLE
integer	INTEGER
string	VARCHAR [1]

[1] When the length of a VARBINARY or a VARCHAR exceeds the maximum length, the connector creates a target data type of BLOB instead of VARBINARY and a target type of CLOB instead of VARCHAR. PowerExchange does not support the writing of LOBs, so the mapping fails. Modify the target mapping to remove the mappings to LOB columns and run the mapping again.

Lookup transformations

You can configure a cached Lookup transformation when you use a Db2 for i connection in a mapping to return data from a Db2 for i source based on a specified lookup condition. However, Db2 for i 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 i source. When you run the mapping task, the Db2 for i data records are transmitted to the target. You cannot run mappings for Db2 for i.

Note: SQL ELT optimization and Visio templates are not supported for Db2 for i 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 **Filter Overrides** or **SQL Query Override** advanced property. For more information about these properties, see "Db2 for i source properties in mappings" on page 15.

Note: If the mapping uses a specific source connection and a parameter for the source object, you can specify these 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 defined a parameter for the source object in the mapping, you must select a specific source object for the mapping task. After you select a source object, the **Preview All Columns** button appears under **Data Preview**. However, you cannot preview data for a source object.

When you finish entering information on the **Sources** page, click **Validate** to validate your entries and then click **Next** to proceed to the **Runtime** page.

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. If necessary, you can stop the mapping task from the Monitor.

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 i administration

As the organization administrator of a Db2 for i Connector implementation, you might need to perform some administrative tasks to keep processing of data records running smoothly.

For example, you might need to perform some administrative tasks when you upgrade PowerExchange. For more information, see "Upgrading to a new version of PowerExchange" on page 23.

Upgrading to a new version of PowerExchange

The connector can replicate 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 i :

Db2 for i native data types

Db2 for i 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 i supported data types

The following table lists the Db2 for i data types that Data Integration supports for bulk data movement:

DB2 Datatype	Supported for Bulk Data Movement?
BIGINT	Yes
BINARY	Yes
BLOB	Yes (sources only)
CHAR	Yes
CLOB	Yes (sources only)
DATALINK	No
DATE	Yes
DBCLOB	Yes (sources only)
DECFLOAT	No
DECIMAL	Yes

DB2 Datatype	Supported for Bulk Data Movement?
DISTINCT (user-defined)	No
DOUBLE	Yes
FLOAT	Yes
GRAPHIC	Yes
INTEGER	Yes
LONG VARCHAR	Yes
LONG VARGHAPHIC	Yes
NUMERIC	Yes
REAL	Yes
ROWID	No
SMALLINT	Yes
TIME	Yes
TIMESTAMP	Yes
VARBINARY	Yes
VARCHAR	Yes
VARGRAPHIC	Yes

INDEX

C

connections
  Db2 for i 11
  Db2 for i connection properties 11
Create target
  rules and guidelines 19, 20

D

data type reference
  overview 24
Db2 for i
  mapping task configuration 20
  source properties in mappings 15
  task and asset types 7
  administration 23
  connection properties 11
  connections overview 11
  Connector architecture 6
  Connector software requirements 7
  Connector usage scenario 5
  data types 24
  introduction to Connector 5
  mapping configuration 14
  mapping task properties for parameterized sources 21
  prerequisite tasks for using the Connector 9
Db2 for i *(continued)*
  rules and guidelines for Connector use 8
  supported target types 8
  target properties in Db2 source mappings 17
  task flow for using the Connector 10
Db2 for i targets
  mapping 18

L

Lookup transformation 20

M

mapping tasks
  Db2 for i 20
  monitoring mapping tasks 22
  running mapping tasks 21
mappings
  Db2 for i 14

T

target table 19