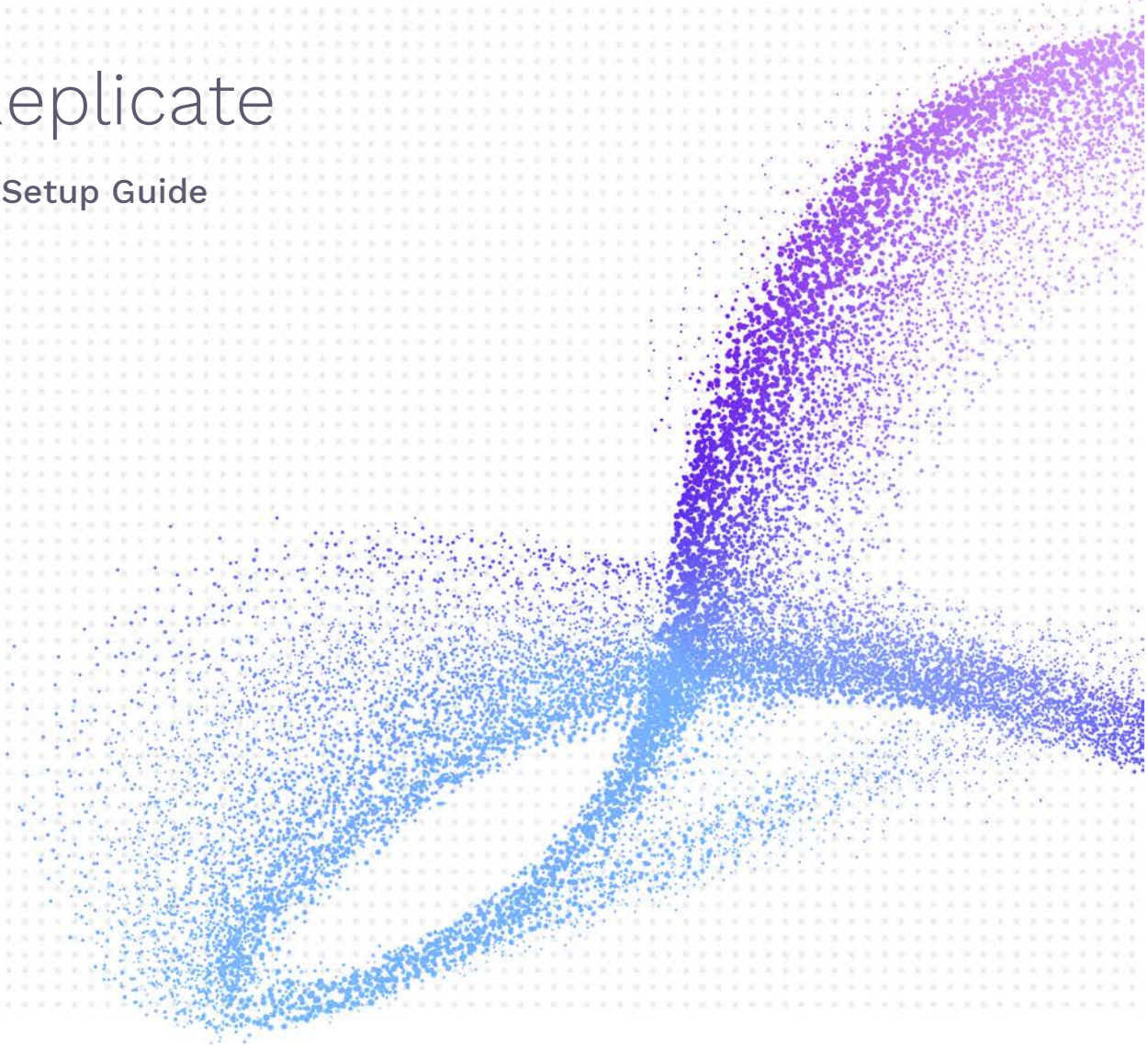
Syniti

Syniti Replicate

JSON Provider Setup Guide

Version 10.3



Syniti

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Syniti Replicate

This guide describes how to set up your Syniti Replicate environment to replicate data to and from JSON format files.

When replicating **from a relational database to a JSON file**, Syniti Replicate allows you to replicate data in two different ways, or modes:

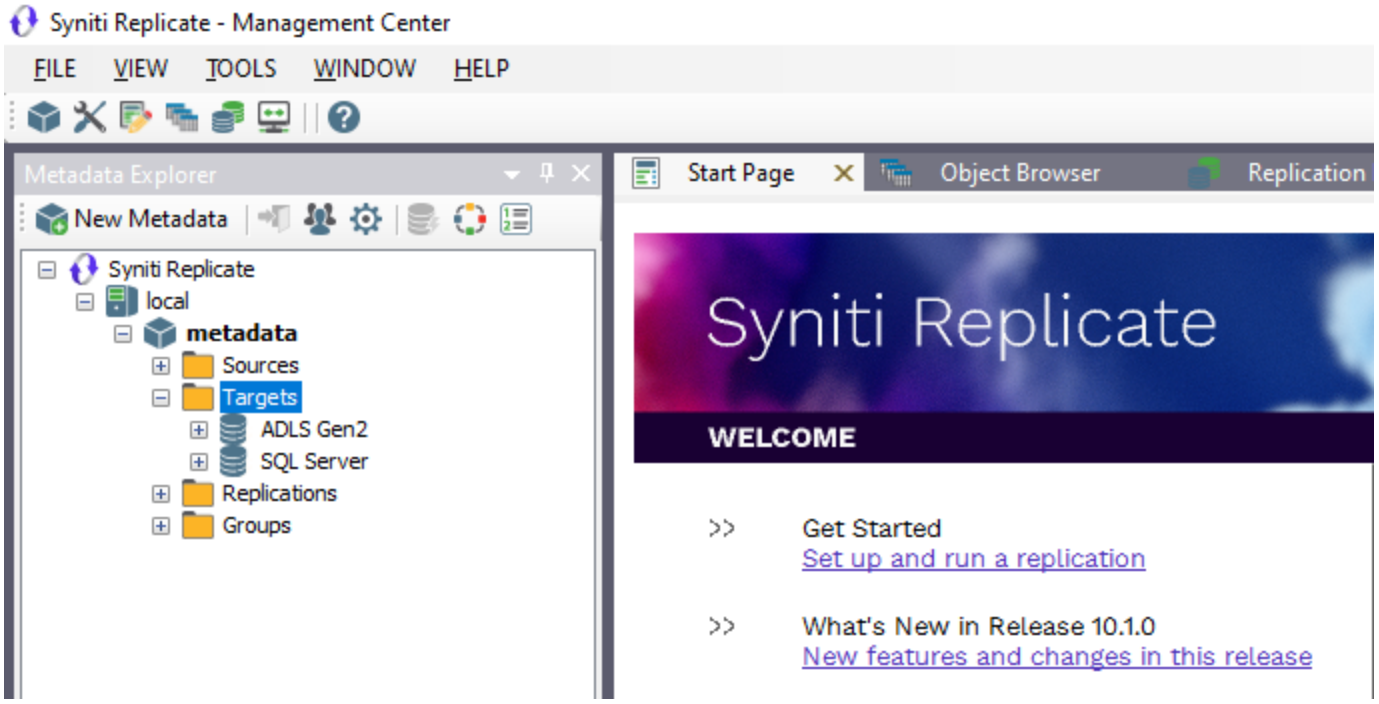
- **Refresh**
  A one-time complete replication from source table to a JSON file, according to replication settings and scripts. You can control the timing of the replication, identify the columns to be replicated and add scripts to transform data during replication.
- **One-way mirroring**
  A continuous update of a replicated table to a JSON file based on changes to the source database that have been recorded in the database server log. You can define the replication settings to check the transaction log on the source database at regular intervals. Any changes found in the log would be applied to the target file.

Replicating Data from a Relational Database to a JSON File

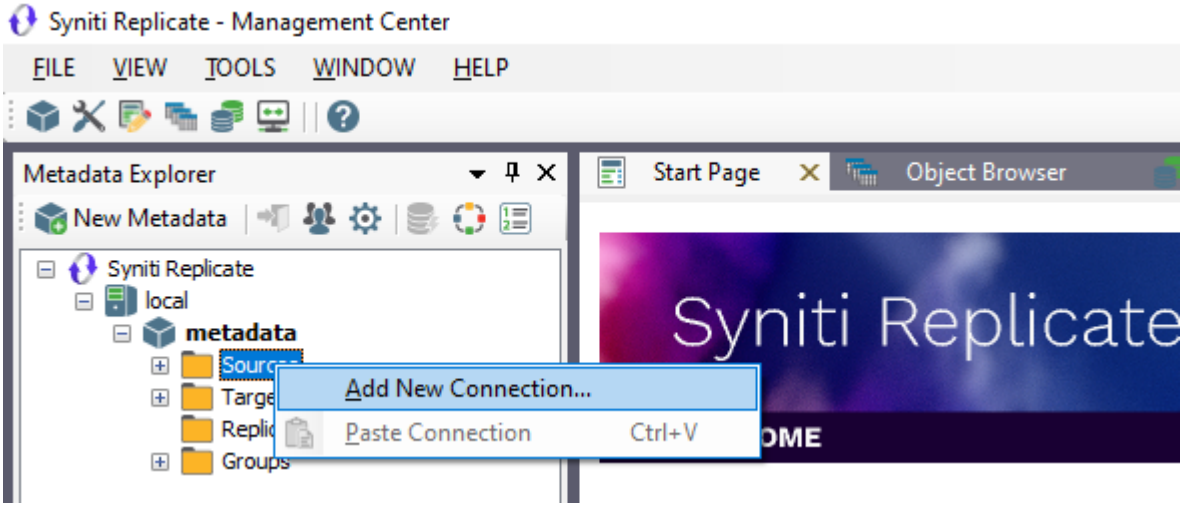
1. Set Up a Source Connection to a Relational Database

1. Make sure you have database connections via a .NET data provider to your source database. For each database you are planning to use in your replication project:
   - Install and configure one of the supported data access products. See the list of supported .NET data providers in the knowledge base for a current list of supported providers.
   - From the data access product, test the connection to the database.
   - Create a connection string for the data access product/database you are using. Check the documentation for the data access product for information on how to do this.
   - Check that the user ID you are planning to use has sufficient permissions to complete all operations in Syniti Replicate. Contact Syniti Technical Support for specific requirements for your database.
2. Start Syniti Replicate Management Center.
   Syniti Replicate provides a default database (Microsoft SQL Server CE) for your metadata, all the information that Syniti Replicate needs to store about your replication setup.

3.

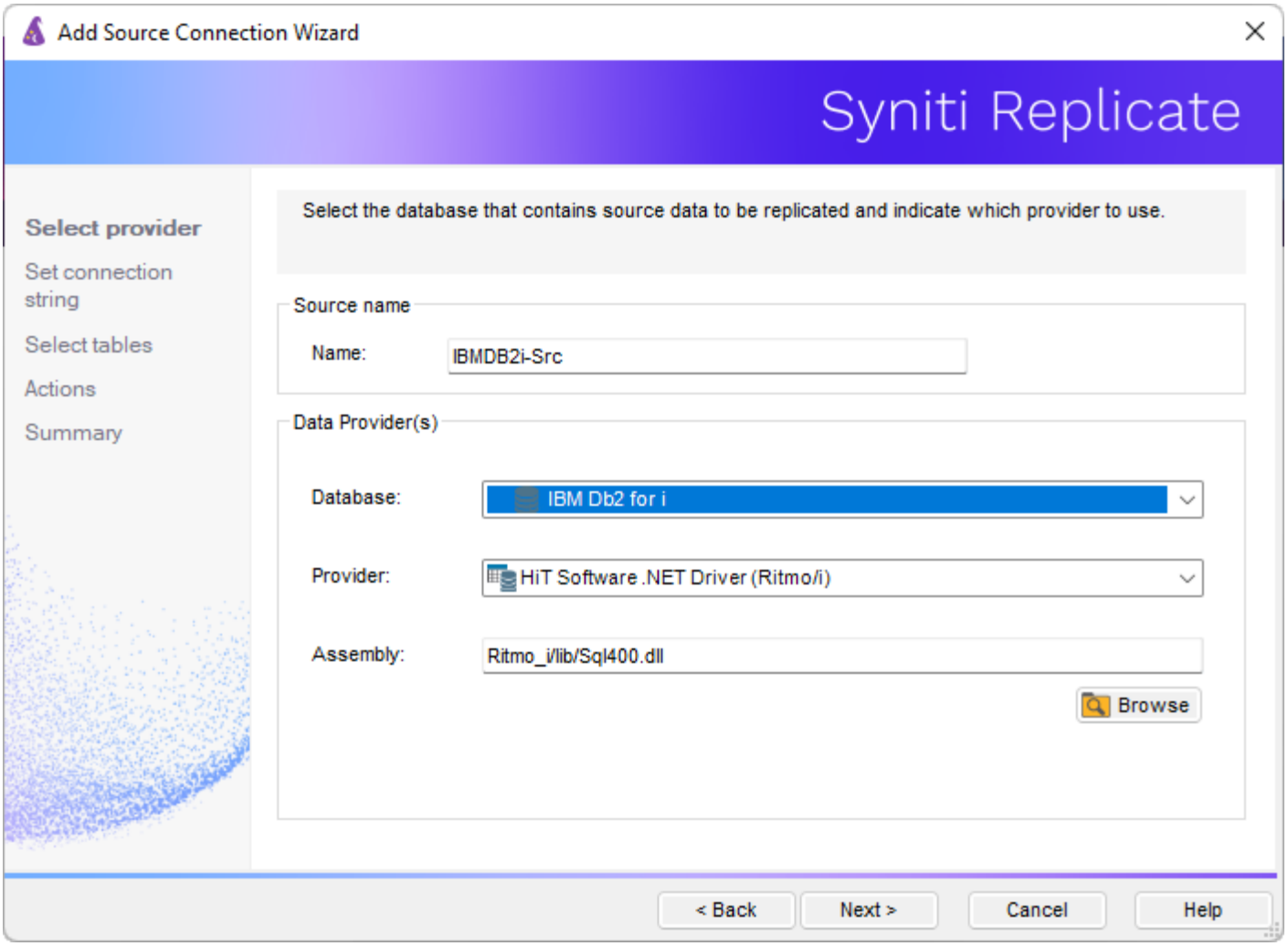


4. In the Metadata Explorer, expand the metadata node to view the **Sources** and **Targets** nodes.
5. Select the **Sources** node.
6. From the right mouse button menu, choose **Add New Connection**.



7. In the Source Connection Wizard, follow steps to add a connection string and test the connection to the database.

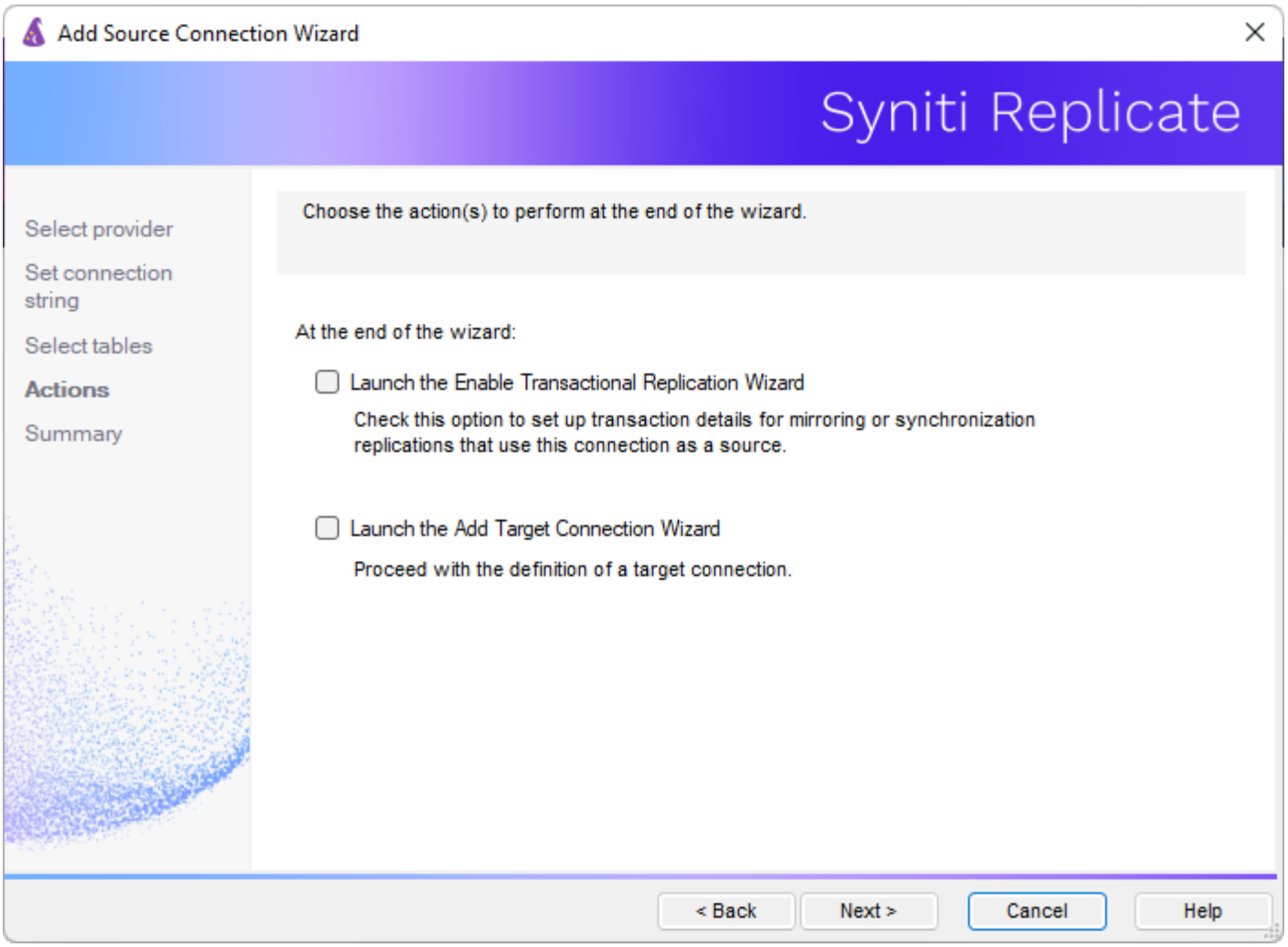
   Check the knowledge base article on data providers before entering a value in the **Assembly** field.



8. In the **Set Connection String** screen, fill out the following fields:

   Connection Properties
   Edit at least the **Required** connection properties by clicking in the property value field and typing a new value.
   Note: If using an Oracle 11 client, in the Data Source field, be sure to add the **Oracle Service Name** after the IP address.

9. Choose the tables that you plan to replicate.
10. In the Actions screen, check the option Launch the Enable Transactional Setup Wizard.



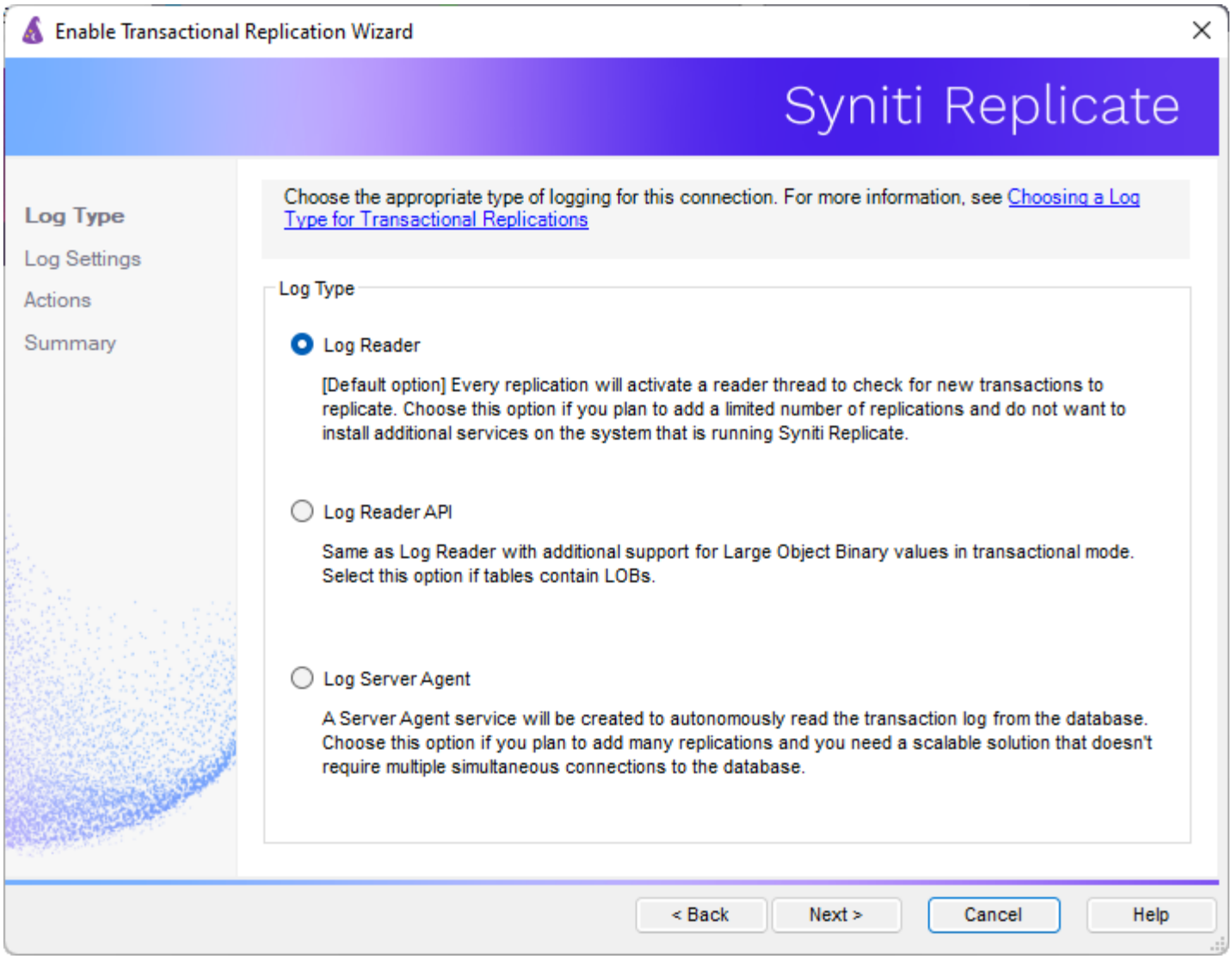
11. Complete the wizard.

Enable Transactional Replication

This section assumes you are planning to replicate data to a flat file using mirroring (rather than Refresh) from a relational database. For Refresh replications, you do not need to complete the Enable Transactional Replication wizard. If you have checked the Source Connection wizard option to launch the Enable Transactional Replication wizard, follow the steps below. To open the wizard from the Management Center, choose the connection in the Metadata Explorer, then right-click to choose Transactional Setup > Enable...

In the **Enable Transactional Replication wizard**:

1. Select the type of transactional replication to use. The options depend on the source database and can include log reader, log server agent, triggers, plus log reader API (for IBM Db2 for i only). Check the help for more information on the best option.



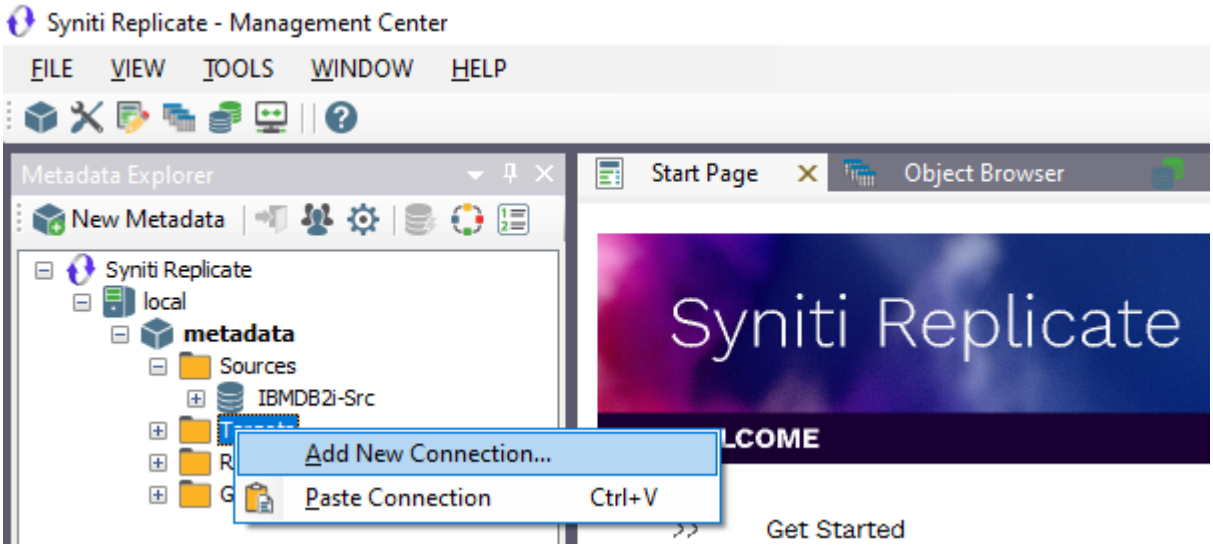
2. Click **Next** to enter the log settings. The fields and appropriate values depend on the database and log type. You can obtain a setup guide for a specific relational database by making a request in the Help Center.
3. Click **Next** to verify your settings against the source connection to the database. If any information is missing, you will not be able to proceed.
4. In the Actions screen, check the option to launch the **Add Target Connection wizard**.
5. Click **Next** to review your changes.
6. Click **Finish** to complete the wizard.

The source connection is now set up for transactional replications.

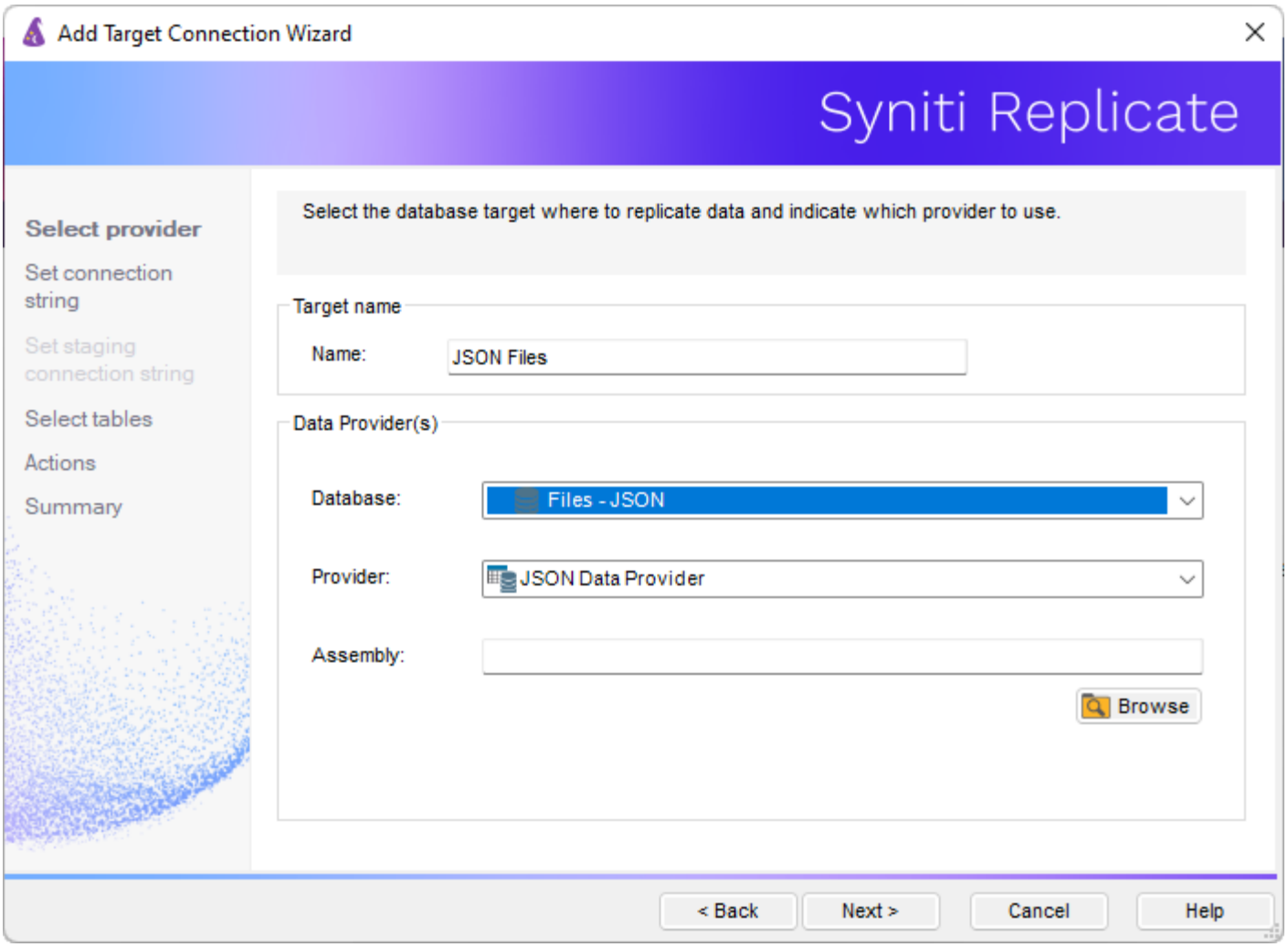
2. Set up a Target Connection for JSON Output

1. Select the **Targets** node.

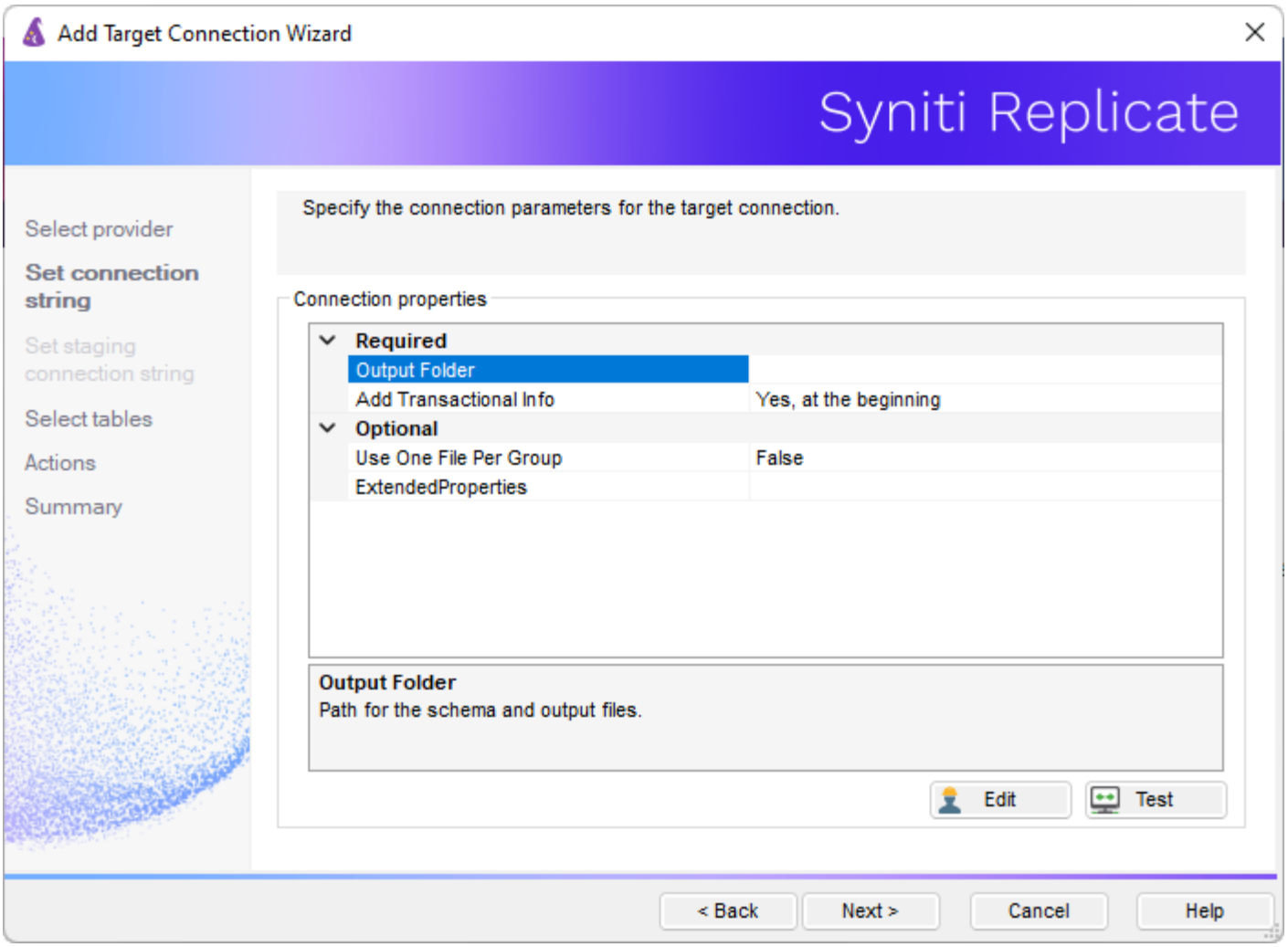
2. From the right mouse button menu, choose **Add New Connection**.



3. In the Target Connection Wizard **Provider** field, select the **Files - JSON** option.



4. In the **Set Connection String** page, set a directory path for the output from replications between the source relational database and the JSON file target.



5. Set an Output Folder available to the system where Syniti Replicate is running. The JSON files will be written to this folder.
6. Make sure that the **Add Transactional Info** field is set to **Yes, at the beginning**.
7. Leave the default settings for the remaining required connection string properties.
8. Click **Next** to display the **Select tables** page.

   At this point, there is no output structure available to display. You can add the information after completing the Target Connection wizard.
9. Click **Next** to display the **Summary** page.
10. Click **Finish** to complete the wizard.

3. Add Table Information to the Target Connection

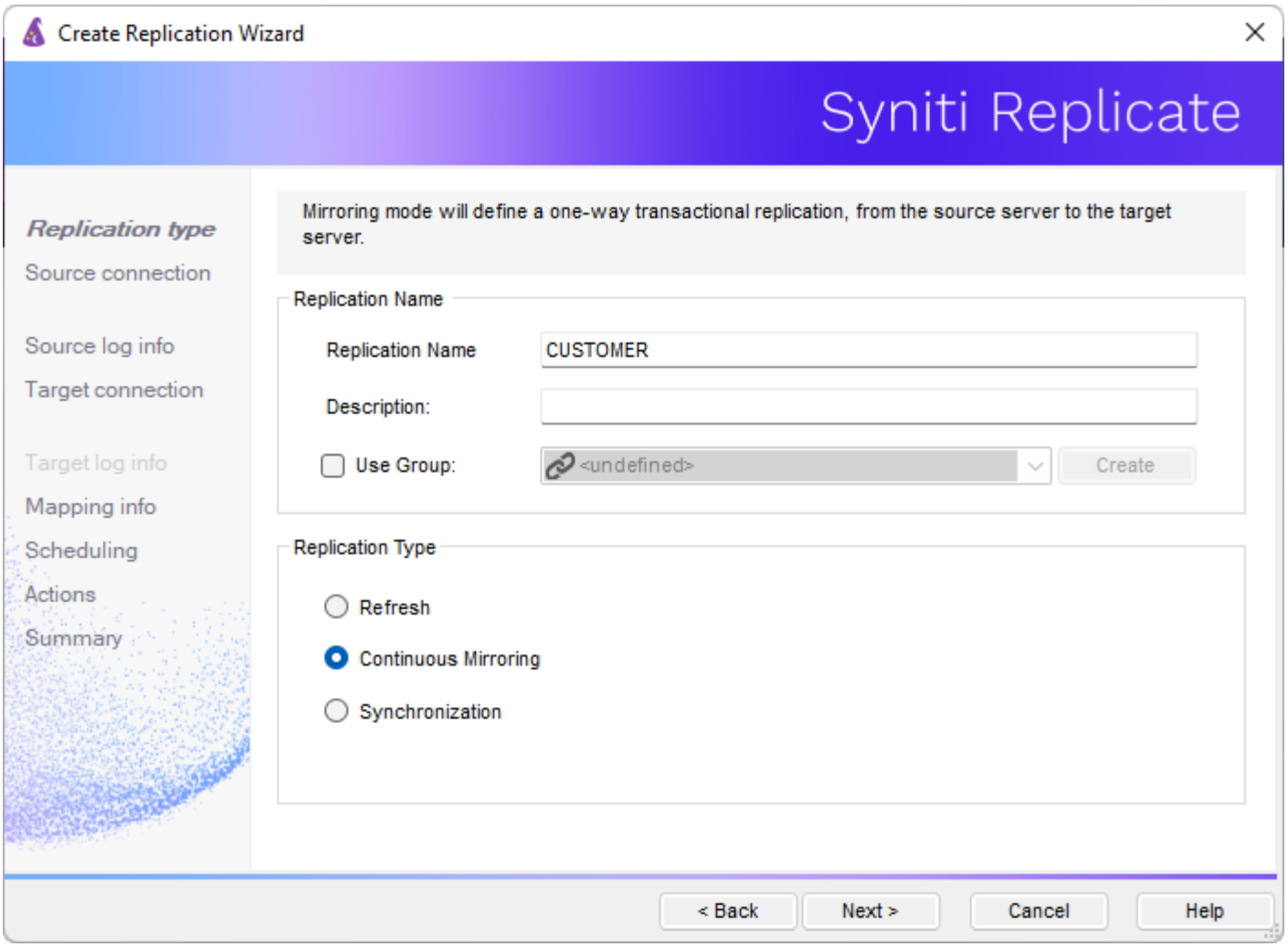
The target connection is displayed in the Metadata Explorer, but you still need to add the JSON file representation for source table data so that when you create replications below, you can specify a source table and target “file.”

1. In the Metadata Explorer, expand the source connection you created above.
2. Select and drag a source table to the target file connection.
3. The Create Target Table wizard is displayed.
   Although you are not actually creating tables, you can use this wizard to create a representation of the file data.
4. In the **Source Connection** screen, you should see the source table you selected above.
5. Click **Next** to display the **Target Connection** screen.
6. Verify that the screen displays the correct target connection name, and table name.
7. Click **Next** to review the table structure.
   At this point, you can modify data types, null values and so on, if you want to modify the data eventually sent to a file.
8. Click **Next** to display the **SQL Script** screen.
   The contents of this screen are inactive because there is no editable SQL script to create a table. Instead, Syniti Replicate outputs the table information to a file.
9. Click **Next** to display the **Summary** screen.
10. Click **Finish** to create the table representation in the Metadata Explorer.
11. Click **Yes** to add the table name to the target connection entry in the Metadata Explorer
12. Repeat steps 2 through 11 for each source table that you want to replicate to a file.

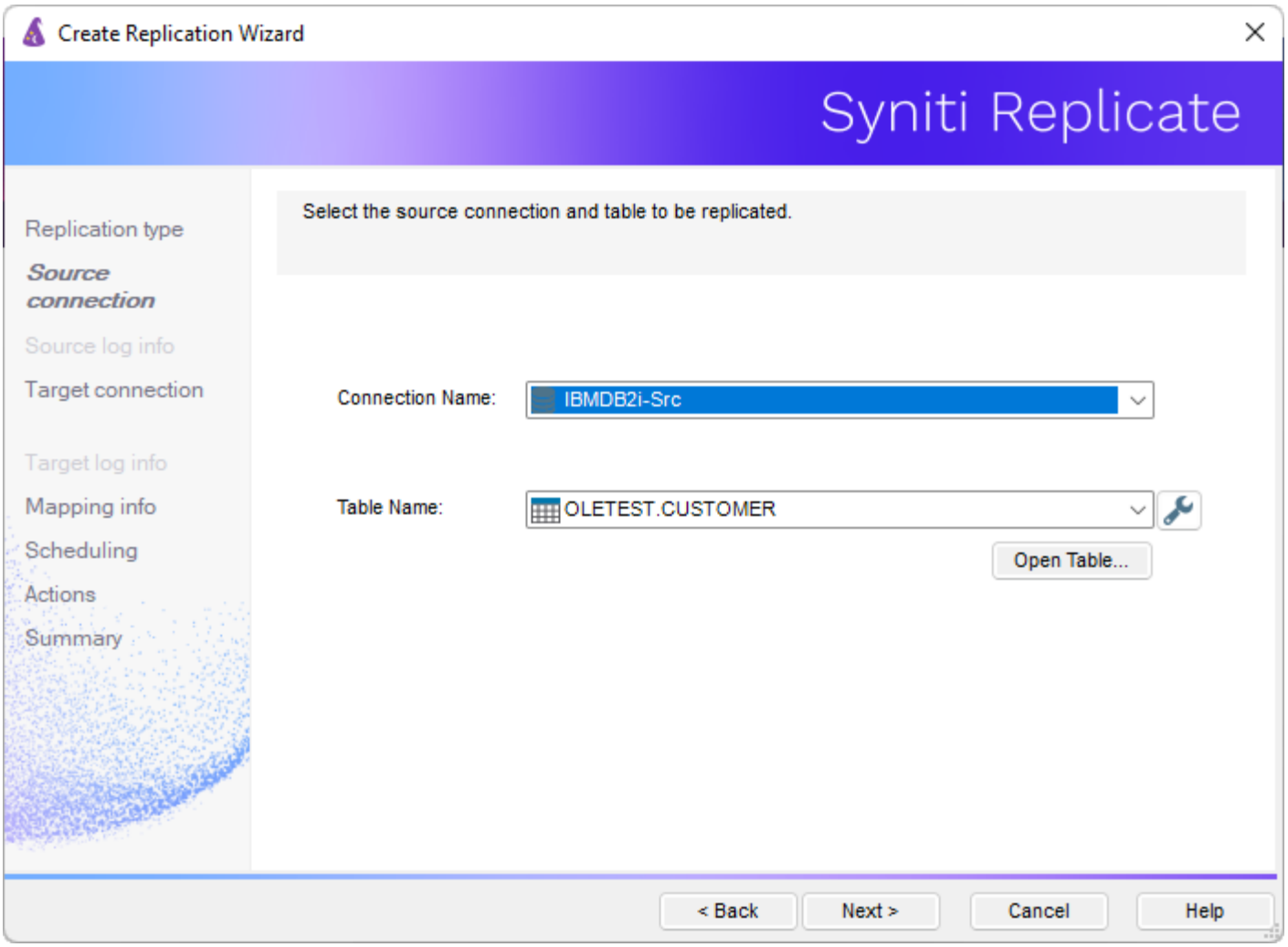
At the end of this process, you should have a list of table representations under the target connection in the Metadata Explorer.

4. Define Replications

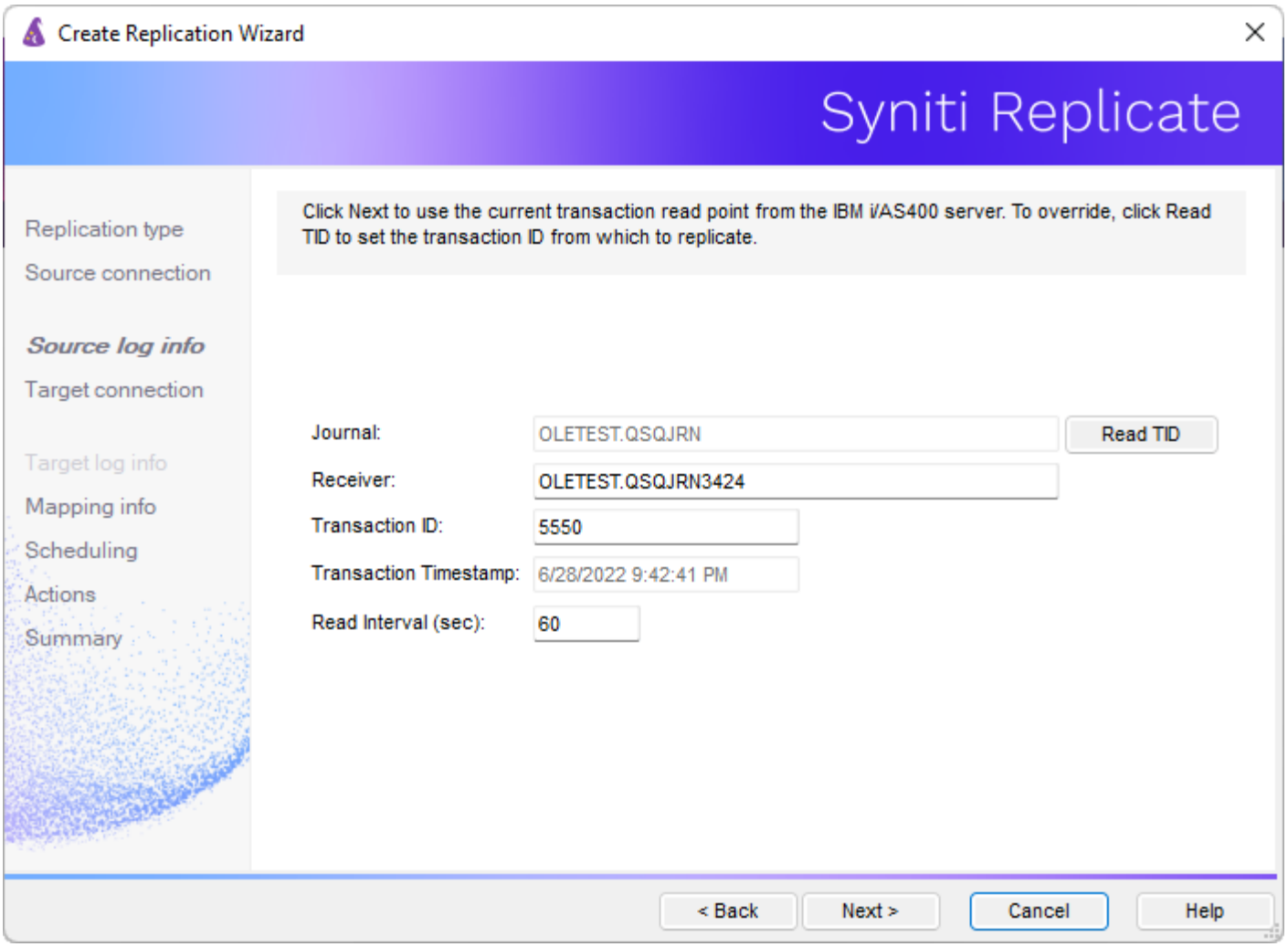
1. Expand the Metadata Explorer tree to display the table that contains the data you want to replicate.
2. Select the table.
3. From the right mouse button menu, choose **Replication** then **Create New Replicaton...**.
4. In the **Define Replication Type** screen, type a name to identify the replication.
5. Optionally provide a description of the replication.
6. In the **Replication Mode** area, choose **Mirroring** to capture changed data only.



7. Click **Next** to go to the **Select Source Connection** screen.

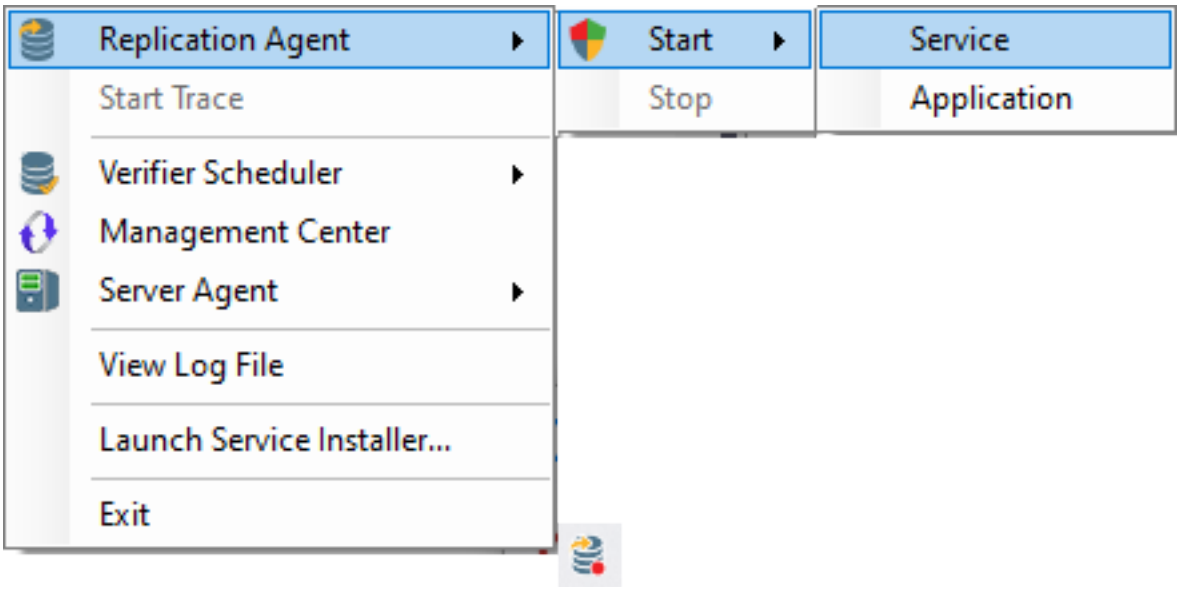


8. Choose the source connection name from the drop-down list that includes all the source connections you have created in Syniti Replicate.
9. Choose the table that you want to replicate from the drop-down list.
10. If you want more information about the table before proceeding, click **Open Table...**.
11. Click **Next** to go to the **Source Log Info** screen.



The first two fields on this screen depend on the source database you are using. In this explanation, we assume you are using Microsoft SQL Server. Check the help for the Replication Wizard for details on the other databases.

12. In the **Transaction ID** field, click **Read** to open the Read Point dialog.



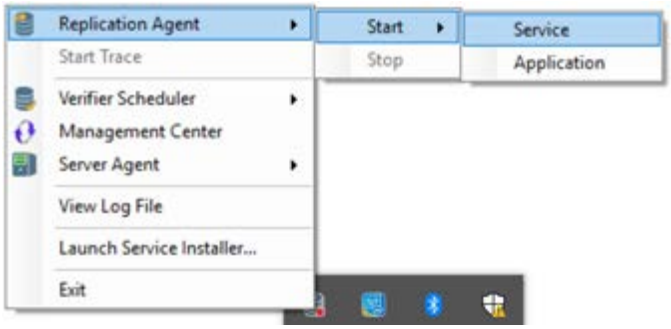
13. Choose either the current transaction or a transaction ID based on a time and date.
14. Click **OK** to add the value to the **Source Log Info** screen.
15. Set the value of the **Read Interval** field to the frequency with which you want Syniti Replicate to check the transaction log for new events to mirror.
16. Click **Next** to go to the **Select Target Connection** screen.
17. Choose the target connection for text output from the drop-down list that includes all the target connections you have created in Syniti Replicate.
18. Choose the data set you want to replicate from the drop-down list.
    If the drop-down list is empty, exit the wizard and add or create a target data set.
19. Click **Next** to go to the **Set Mapping Info** screen.
    Source columns and target data with the same name are automatically mapped.
20. Click **Next** to go to the **Scheduling** screen.
21. Make sure the **Enable Replication** option is checked. This is required for the replication to run.
22. Set a start time for the replication. The **Start Time** field indicates the time at which the Replication Agent will begin considering the replication for execution.

    Check the option to **Execute Initial Refresh**.
    A full replication will be performed from the source table to the data file, prior to starting the mirroring process where only incremental changes will be replicated.
23. Go to the Mirroring Schedule tab.
24. Select how you want to run the replication:
    - Run Continuously: the transaction log will be checked for changes to the table using the frequency that you specified on the Set Log Info tab. Any changes will be replicated to the target table.
    - Schedule Interruptions: the replication process will run as above, except for interruptions specified when you click the Schedule button in the Scheduler dialog.

25. Click **Next** to go to the **Summary** screen.
26. Click **Finish** to complete the wizard.

5. Run the Replication

If you installed The Replication Agent as a service during setup, you just need to start the service using the Service Monitor program in the Windows Notification Area.



The replication that you have scheduled should start at the specified time. Use the Replication Monitor tab in the Management Center to track the progress of the replication.

If you would like to install the Replication Agent as a service:

- From the Windows Desktop **Start** menu, choose **Syniti Replicate**, then **Service Installer**.
- Manage the service from Service Monitor program (located in the Syniti Replicate install folder or on the Windows **Start** > **Programs** > **Startup** menu).
- Use the Replication Monitor tab in the Management Center to track the progress of the replication.

To run the Replication Agent interactively:

- In the Windows Notification Area, select the Service Monitor icon.
- From the right mouse button menu, choose **Replication Agent**, then **Start** then **Application**.
  The replication that you have scheduled should start at the specified time.
- Use the Replication Monitor tab in the Management Center to track the progress of the replication.

JSON File Structure

The file has a .mir extension when used for mirroring and a .ref extension when used for snapshot, or refresh replications.