

Syniti

Data Replication

Setup Guide for AWS

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Syniti Data Replication

Document History

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Syniti Data Replication

Table of Contents

Architecture.....	3
Supported Platforms.....	4
Requirements.....	4
Setup Steps.....	4
BYOL Instance Setup.....	6
Creating and Running Replications	6
Create a Source Connection	6
Enable Transactional Replication	8
Create a Target Connection	8
Add Information to the Target Connection	10
Define the Replication.....	11
Run the Replication	13
Managing Replications Remotely	14

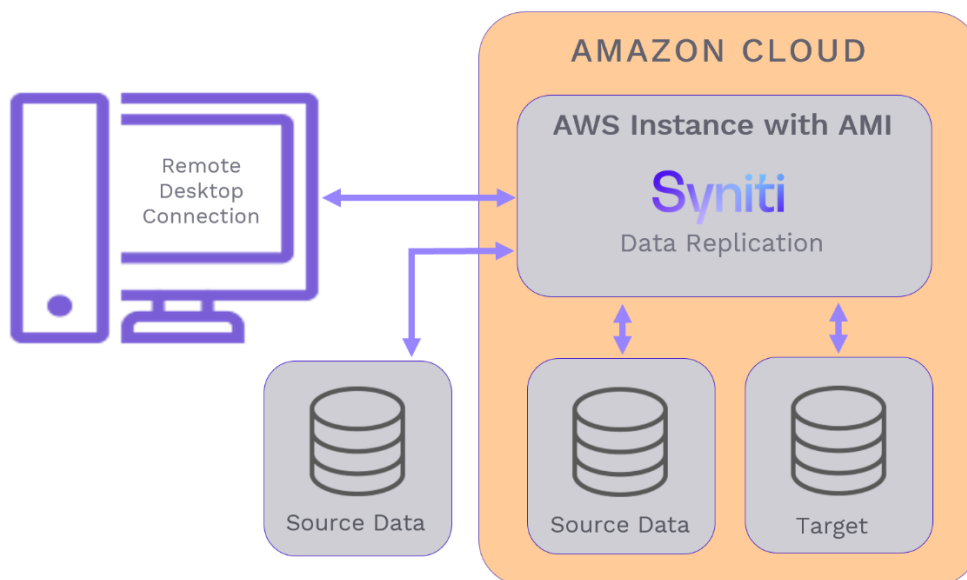
Syniti Data Replication

This guide describes how to set up and use Syniti Data Replication from the AWS Marketplace. Use Syniti Data Replication to move data from any source database to AWS targets. There are three options for using Syniti Data Replication for AWS:

Product Name	Description
SDR v9.7.3.3 AWS AMI 1-1	Syniti Data Replication v9.7.3.3 for AWS for 1 SOURCE, 1 TARGET (1 PAIR) A 10-day free trial to try replicating data from one source database to one target platform.
SDR v9.7.3.3 AWS AMI 2-2	Syniti Data Replication v9.7.3.3 for AWS for 2 SOURCES, 2 TARGETS (2 PAIRS) A 10-day free trial to try replicating data with access from up to two source databases to one or two target platforms.
SDR v9.7.3.3 AWS AMI BYOL	Syniti Data Replication v9.7.3.3 for AWS for 'Bring Your Own License' Provide your own Syniti Data Replication license. See BYOL Instance Setup for license installation details.

Architecture

Access the Syniti Data Replication AMI (Amazon Machine Image) via a Remote Desktop Connection to set up, manage and run replications. Source data can be accessed from any supported on-premise or cloud database, and supported targets include all Amazon data platforms. The Syniti Data Replication AMI is Microsoft Windows-based and includes everything you need to set up and run test replications, including easy access to SQL Server Express and PostgreSQL for testing purposes.



Syniti Data Replication

Supported Platforms

Sources		Targets
Amazon Aurora MySQL*	MariaDB*	Amazon Aurora MySQL*
Amazon Aurora PostgreSQL	Microsoft Azure SQL	Amazon Aurora PostgreSQL
Amazon RDS for MariaDB	Microsoft SQL Server	Amazon DocumentDB
Amazon RDS for MySQL*	Microsoft SQL Server CE	Amazon QuickSight
Amazon RDS for Oracle*	MySQL*	Amazon Redshift
Amazon RDS for PostgreSQL	Oracle*	Amazon RDS for MariaDB*
Amazon RDS for SQL Server	PostgreSQL	Amazon RDS for MySQL*
Amazon Redshift	Progress OpenEdge*	Amazon RDS for Oracle*
Google Cloud SQL MySQL*	SAP HANA*	Amazon RDS for PostgreSQL
Google Cloud SQL PostgreSQL	SAP Sybase ASE*	Amazon RDS for SQL Server
Gupta SQLBase*	SAP Sybase IQ*	Amazon S3
IBM Db2 LUW	SAP Sybase SQL Anywhere*	
IBM Db2 for i	Teradata*	
IBM Db2 for z/OS	Tibero*	
IBM Informix*	Vertica*	
IBM PureData*	Vector (Actian)*	
Ingres*		

*These databases require separate installation of a .NET provider on the AWS instance.

Requirements

- Connectivity drivers for source and target. Some drivers are included in the AMI. See the file INSTALLED SOFTWARE.txt on the instance desktop for a complete list. If a source provider is not included, download and install it using [the guide in the Help Center](#).
- The ability to create a Remote Desktop Connection to access the AMI.
- An AWS account with access to an EC2 console.

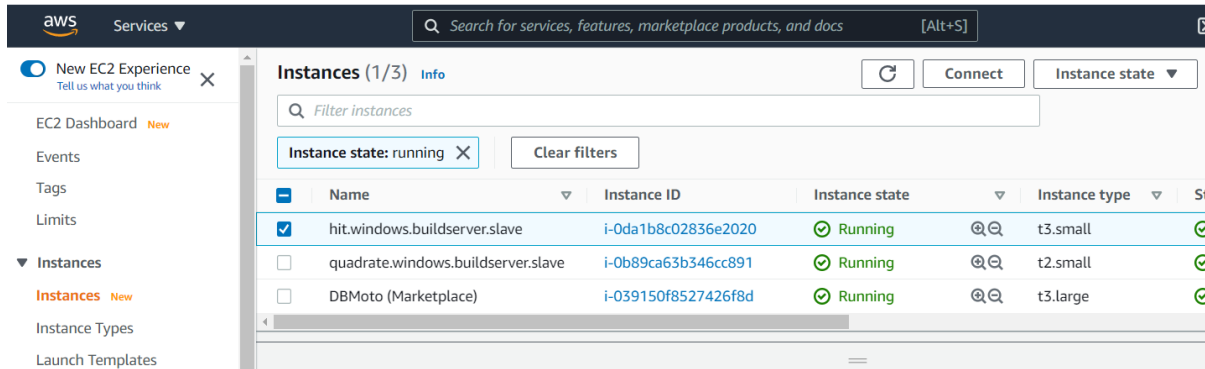
Setup Steps

To launch a Syniti Data Replication AMI in AWS:

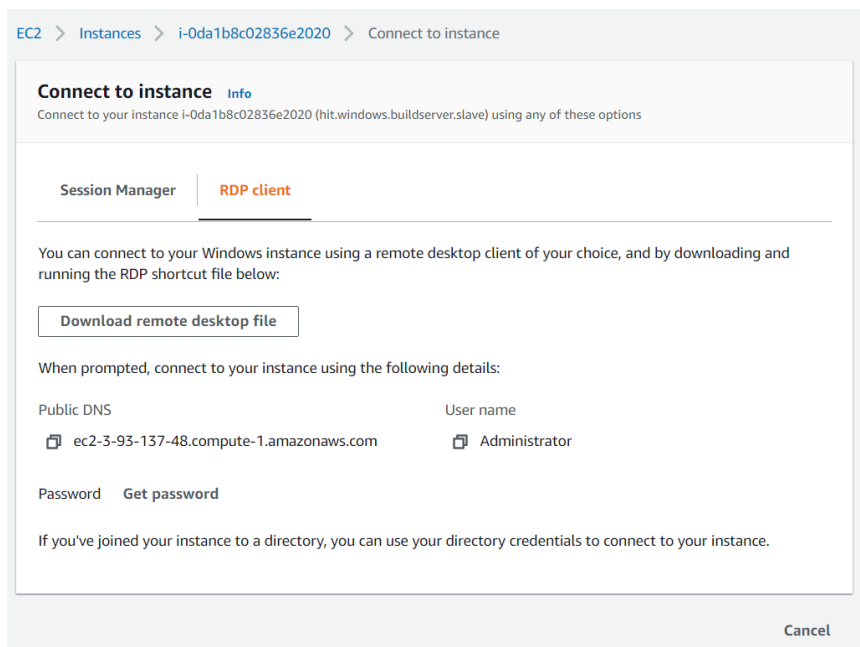
1. Ensure that an EC2 key pair is available to you for secure access to the AMI. Use the EC2 Dashboard to set up the key pair and install the private key file on your local system.
2. Sign in to AWS, if you have not already done so.
3. Go to the AWS Marketplace.
4. Search for Syniti Data Replication for AWS.
5. Select the region for the AMI to run in.
6. Click **Continue**.
7. Check the Region and Key Pair settings.
8. After reviewing the cost estimate for running the AMI, click **Next**.

Syniti Data Replication

- Accept terms and launch the AMI.
- Once setup is complete, go to the EC2 console.
- Select the instance, and click **Connect** at the top of the EC2 view on the dashboard to save a remote desktop connection file that can then be used as link to open the connection.



- In the **Connect to instance** dialog, on the **RDP Client** tab, click to download the remote desktop file.



- Use this dialog to retrieve the password and record any other connection information you need.
- Define a Security Group for the connection. Configure an InBound rule to connect from any machine to the EC2 instance using the following settings:

Type: RDP Protocol: TCP Port: 3389 Source: 0.0.0.0/0

WARNING: This rule opens access to a client connection from **ANY** source server. To restrict access, replace 0.0.0.0/0 with the IP address of each server allowed to connect.

Syniti Data Replication

NOTE: You can define an AWS security group either while configuring the EC2 instance or after the instance is created.

BYOL Instance Setup

For current Syniti Data Replication customers, there is an option to transfer your license to the AWS environment. To allow you to explore the AWS solution, you can initially request a temporary license via the [Help Center](#). To add the temporary license to the BYOL version:

1. Upload the license to your AWS instance.
2. In the Management Center Metadata Explorer, select the **local** server, and choose **Manage Licenses** from the right mouse button menu.
3. Click **Import License** to add the uploaded license to the Management Center.

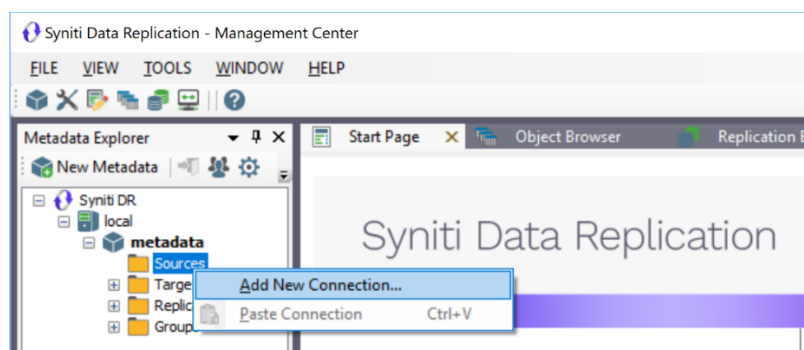
Creating and Running Replications

1. Set up a Remote Desktop Connection to access Syniti Data Replication on the AWS instance. Use the information in step 11 of the [Setup Steps](#) section to help you. You will need the public IP address of the EC2 instance and the instance administrator login ID and password.
2. Follow the steps described below to set up and run a replication.
 - [Create a source connection](#)
 - [Enable a transactional replication](#)
 - [Create a target connection](#)
 - [Define the replication from source to target](#)
 - [Run the replication](#)

Create a Source Connection

First, make sure that the .NET Data Provider to connect to your source database is available in the AWS instance. A file on the desktop of the AWS instance called INSTALLED SOFTWARE.txt contains a list of all installed providers. If the data provider for your database is not listed, you will need to locate and install the provider on the AWS instance.

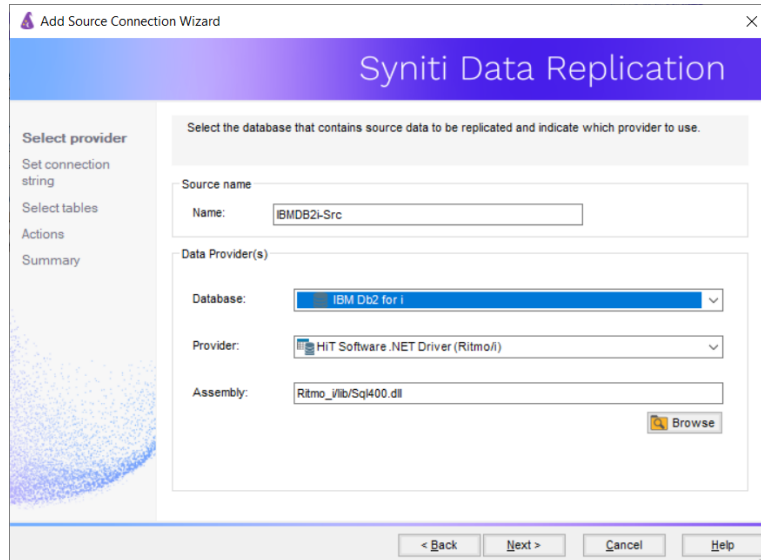
1. In the Metadata Explorer, expand the metadata node to view the **Sources** and **Targets** nodes.
2. Select the **Sources** node.
3. From the right mouse button menu, choose **Add New Connection**.



Syniti Data Replication

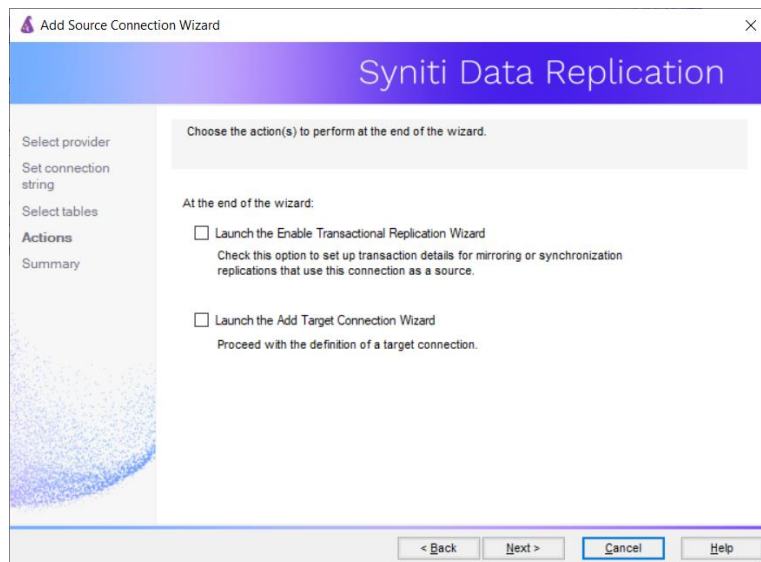
4. In the [Add Source Connection Wizard](#), follow steps to add a connection string and test the connection to the database.

If you have installed a data provider yourself, check the Supported Provider List in the [Help Center](#) before entering a value in the **Assembly** field.



5. In the **Select Tables** screen, choose the tables that you plan to replicate.

6. In the **Actions** screen, check the option **Launch the Enable Transactional Setup Wizard**.



7. Complete the wizard.

Syniti Data Replication

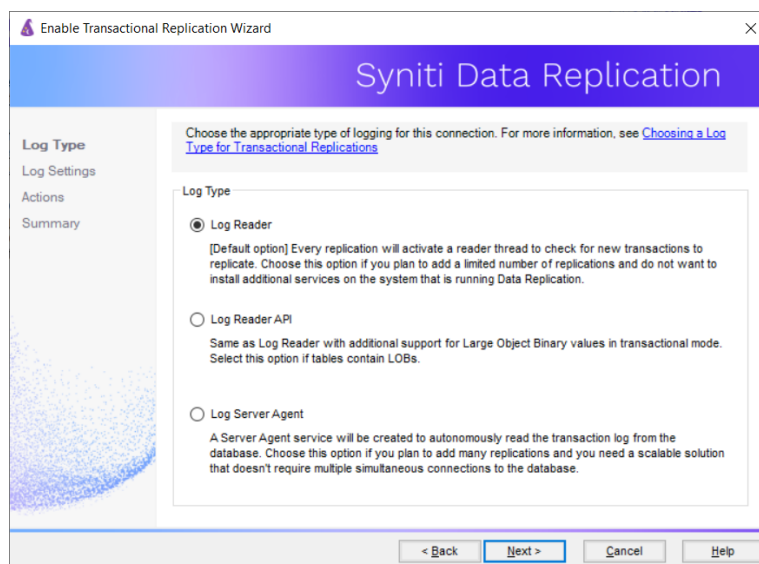
Enable Transactional Replication

This section assumes you are planning to replicate data to an Amazon target using mirroring (rather than Refresh) from a relational database. Mirroring replicates only the changed data since the last replication and is therefore much more efficient. 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 [Syniti DR help](#) for more information on the best option.



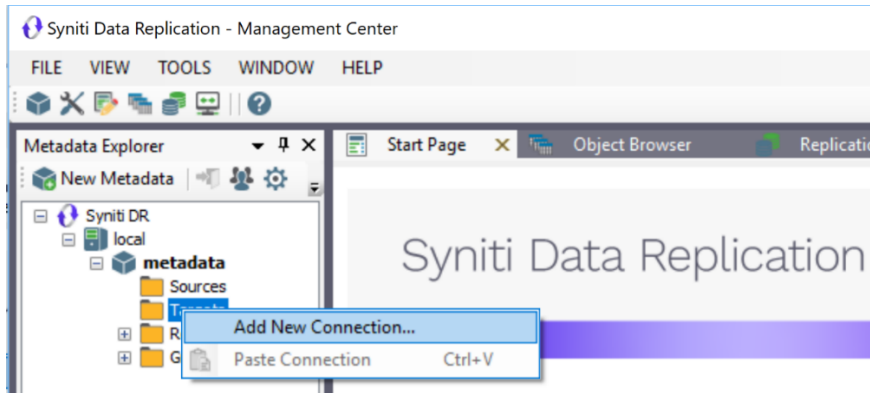
2. Click **Next** to enter the log settings. The fields and appropriate values depend on the database and log type. You can obtain a setup guide for a specific relational database by making a request in the [Help Center](#).
3. Click **Next** to verify your settings against the source connection to the 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.

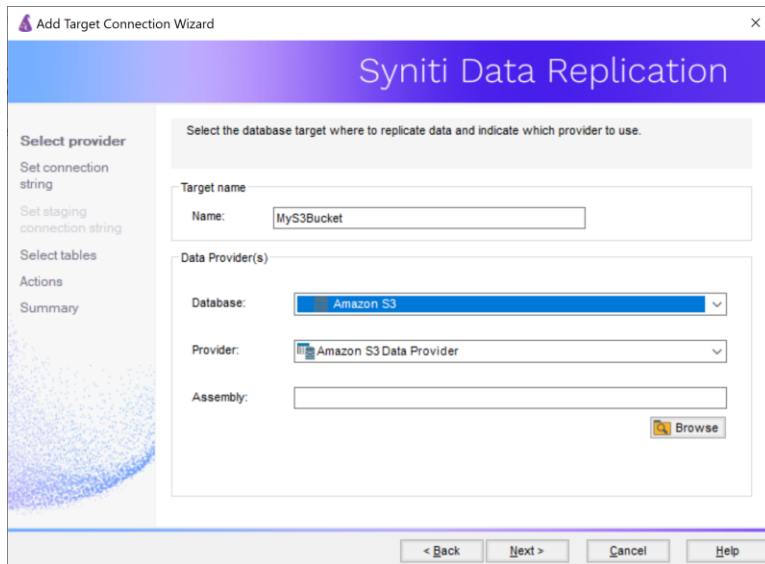
Create a Target Connection

This section assumes you have checked the **Enable Transactional Replication wizard** option to launch the Add Target Connection wizard. If not, to open the wizard from the Management Center, choose **Targets** in the Metadata Explorer, then right-click to choose **Add New Connection...**

Syniti Data Replication

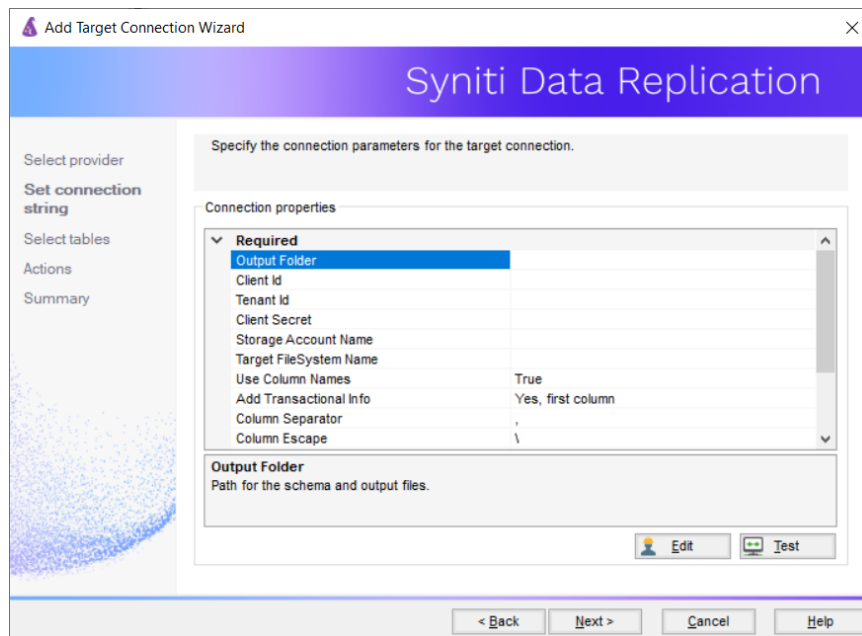


1. In the Target Connection Wizard **Provider** field, select the target platform of your choice.



2. Click **Next** to display the Set **connection string** screen.
For information on how to complete the connection details for your target, check the [Syniti DR Setup Guides](#) in the [Help Center](#).

Syniti Data Replication



3. Click **Next** to display the Select Tables screen.
At this point, there may be no output structure available to display. You can add the information after completing the Target Connection wizard.
4. Click **Next** to display the **Summary** page.
5. Click **Finish** to complete the wizard.

Add Information to the Target Connection

The target connection is displayed in the Metadata Explorer, but you still need to add the 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 may be inactive if there is no editable SQL script to create a SQL table.
9. Click **Next** to display the **Summary** screen.

Syniti Data Replication

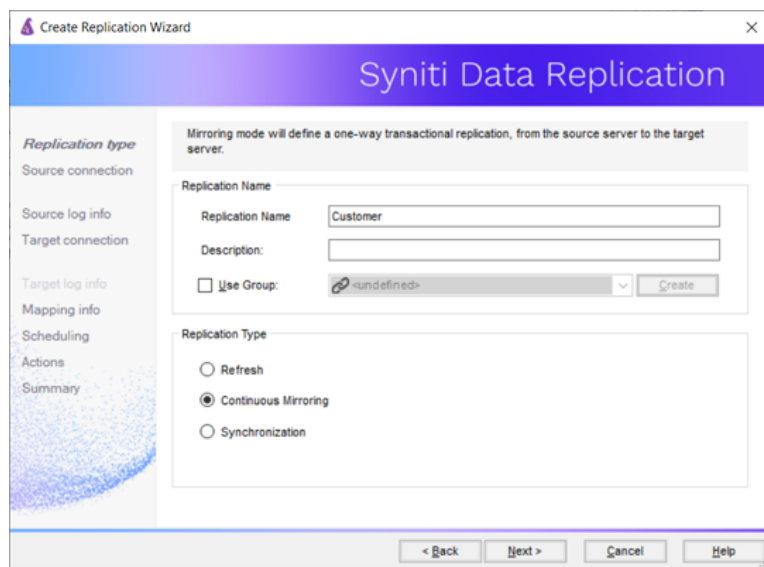
10. Click **Finish** to create the table representation in the Metadata Explorer.
11. Click **Yes** to add the table name to the target connection entry in the Metadata Explorer
12. Repeat steps 2 through 11 for each source table that you want to replicate to a file.

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

Define the Replication

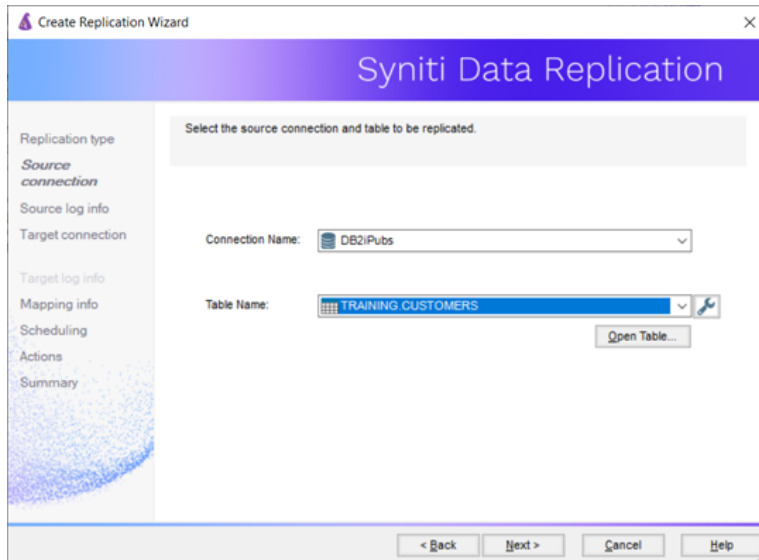
This section assumes you have checked the Create Replication wizard option to launch the Create Replication wizard. If not, to open the wizard from the Management Center, choose the table you want to replicate in the Metadata Explorer, then right-click to choose **Replication > Create New Replication...**

1. In the **Define Replication Type** screen, type a name to identify the replication.
2. Optionally provide a description of the replication.
3. In the Replication Mode area, choose **Continuous Mirroring**.

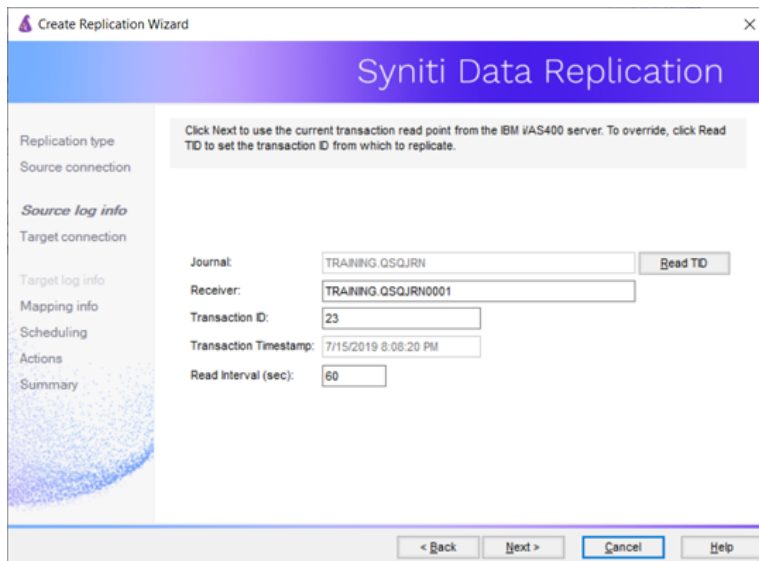


4. Click **Next** to go to the **Select Source Connection** screen.

Syniti Data Replication



5. Choose the source name from the drop-down list that includes all the source connections you have created in Syniti DR.
6. Choose the table that you want to replicate from the drop-down list.
7. If you want more information about the table before proceeding, click **Open Table...**
8. 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 IBM Db2 for i (iSeries or AS/400). Check the help for the [Replication Wizard](#) for details on the other databases.

The Journal field is automatically filled in by retrieving the information from Db2 for i. The Receiver field will be automatically filled in after setting the Transaction ID. You do not need to modify these

Syniti Data Replication

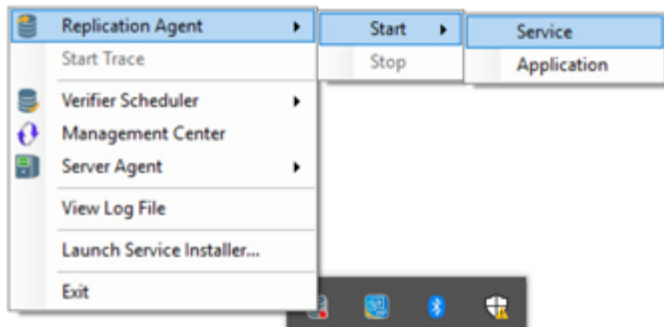
fields. However, if the library that you have specified as a source is not journaled, you will need to ask your system administrator to journal the library.

9. In the Transaction ID field, click **Read** to open the Read Point dialog.
10. Choose either the current transaction or a transaction ID based on a time and date.
11. Click **OK** to add the value to the **Source Log Info** screen.
12. Set the value of the **Read Interval** field to the frequency with which you want Syniti DR to check the transaction log for new events to mirror.
13. Click **Next** to go to the **Select Target Connection** screen.
14. Choose the target connection from the drop-down list that includes all the target connections you have created in Syniti DR.
15. 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.
16. Click **Next** to go to the **Set Mapping Info** screen.
Source columns and target data with the same name are automatically mapped.
17. 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.
18. 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.
19. Go to the Mirroring Schedule tab.
20. 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.
21. Make sure the **Enable Replication** option is checked. This is required for the replication to run.
22. Click **Next** to go to the **Summary** screen.
23. Click **Finish** to complete the wizard.

Run the Replication

Start the Replication Agent service using the Service Monitor program  in the Windows Notification Area.

Syniti Data Replication



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.

Managing Replications Remotely

Syniti Data Replication on AWS provides two ways to access and manage replications from a system outside the AMI:

- Via a [locally installed Management Center](#)

Run Syniti Data Replication Management Center locally and connect to the Syniti DR Server Agent on AWS. This requires creating a Security Group and adding a Custom TCP rule with your IP and port 58361 as an inbound rule only.

This approach restricts some Management Center capabilities. The following limitations apply:

- Logs are only accessible when set as database logs
 - Traces are not available
 - Product license cannot be changed
 - User settings cannot be changed
 - Opening the content of a table or connecting to a database may not work. The connection .NET data providers must be installed locally and the remote settings for the connection also need to work on the local machine.
- Via a [local application](#) built using the Syniti Data Replication API
- Run an SDR API-based client application locally and connect to the Syniti DR Server Agent on AWS. This requires creating a Security Group and adding a Custom TCP rule with your IP and port 58361 as an inbound rule only.

For details on setting up either of these options, contact the technical support team via the [Help Center](#).