Syniti Replicate

SAP BDC Application-Level Loading for Syniti Replicate

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Table of Contents

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Introduction

This feature loads data into SAP Application based on the BDC Scripting language used by SAP to script transactions. A new type of data source has been introduced to expand the functionality to allow using Replicate-based data sources.

To load the data using BDC Application-level loading:

1. Create the BDC Recording in SAP.
2. Map one or many databases tables or views to the structure of the BDC recording structure (template) for a specified T-Code.
3. Optionally, apply filters to the data.
4. Execute the load, sending data to the BDC.

Configuration Steps

Use Syniti Replicate Management Center to:

1. Create source connections to RDBMS tables.
2. Create AWS DocumentDB targets.
3. Map RDBMS sources to DocumentDB targets.
4. Enable the replication.

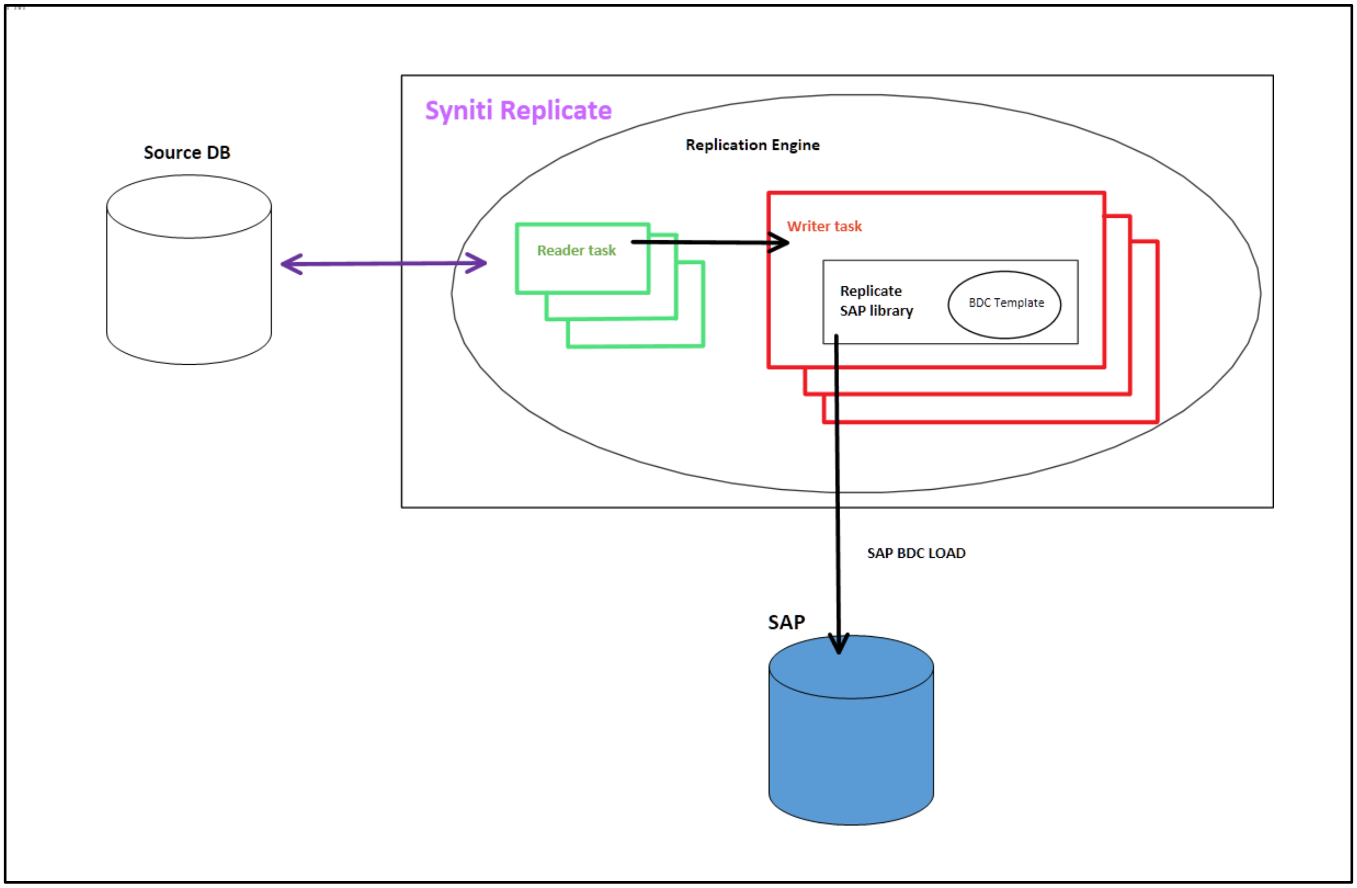
Connection Type

For AWS DocumentDB, use .NET Driver MongoDB Driver Version 2.19.0. The latest stable version can be downloaded via:

https://www.nuget.org/packages/MongoDB.Driver/2.19.0

See Download and Install .NET Provider for more detail on installing the provider.

SAP BDC Data Load Diagram

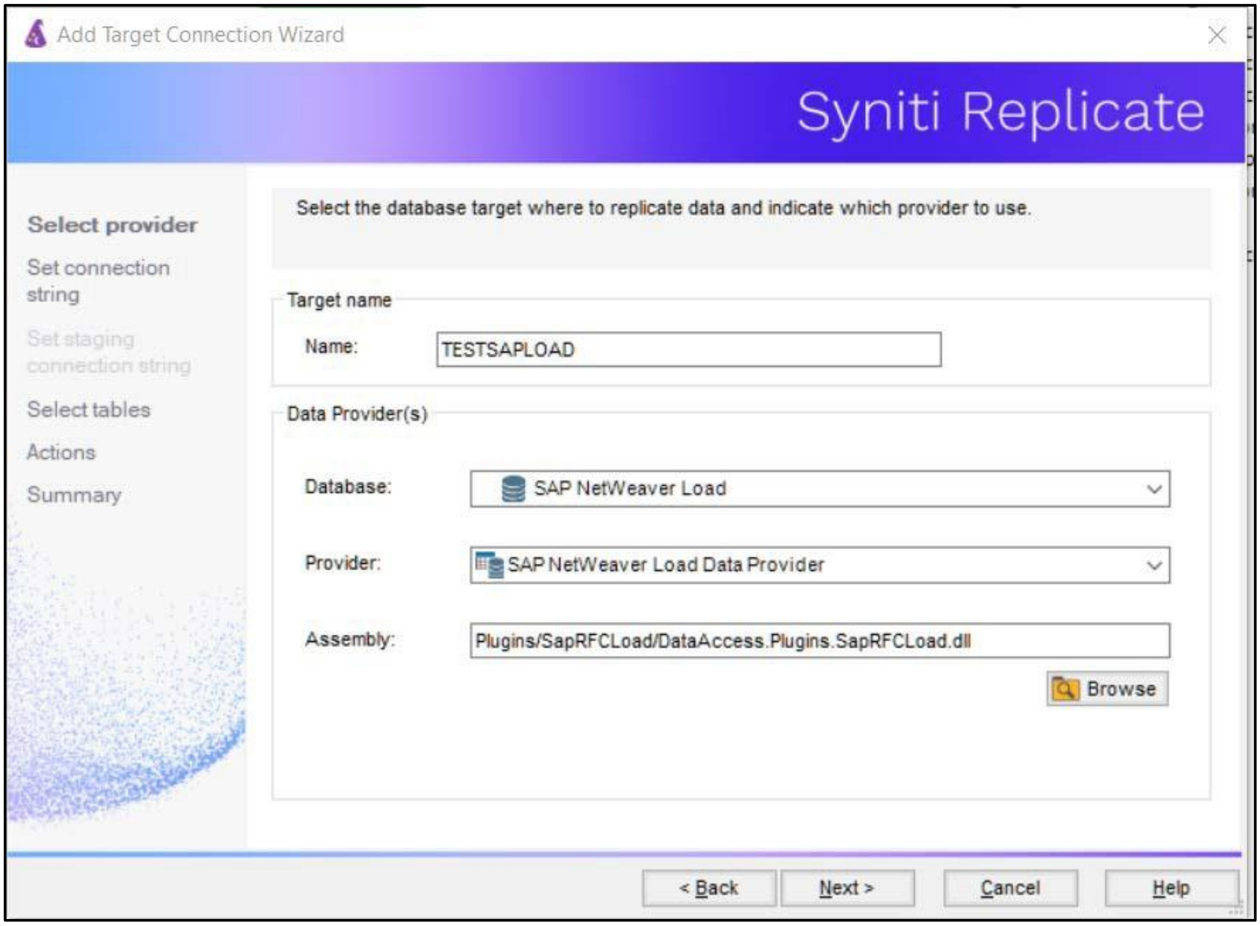


SAP BDC Load Process Overview

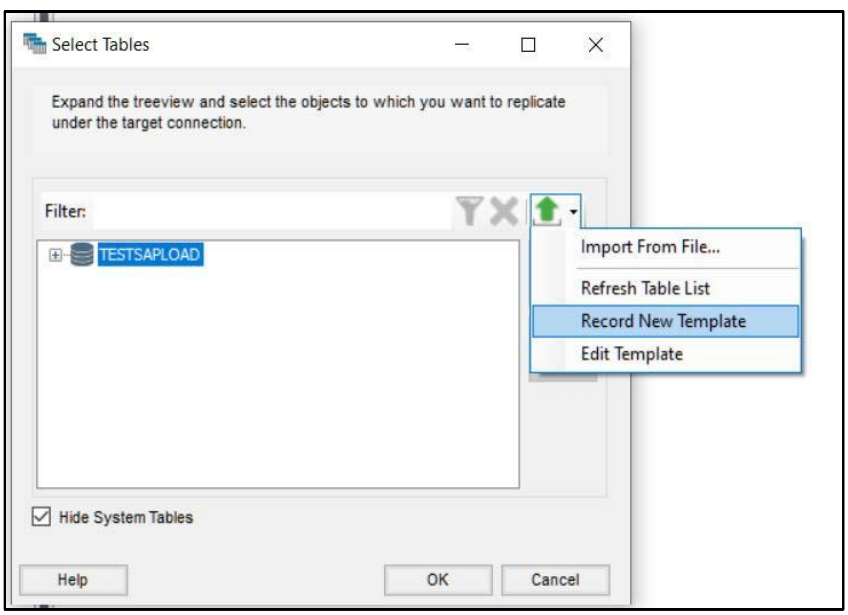
At a high level, the process is:

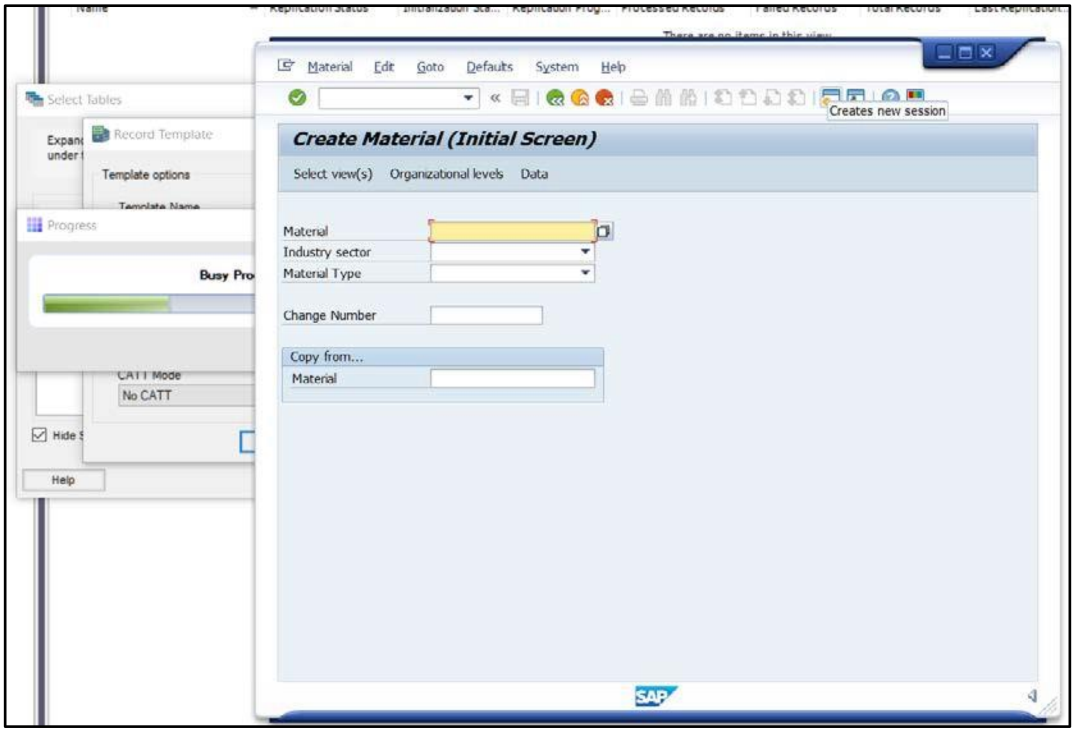
1. [Create an SAP Netweaver Load Connection for the Target.]

NOTE: Steps for setting up Syniti Replicate are provided in [Setup Summary].



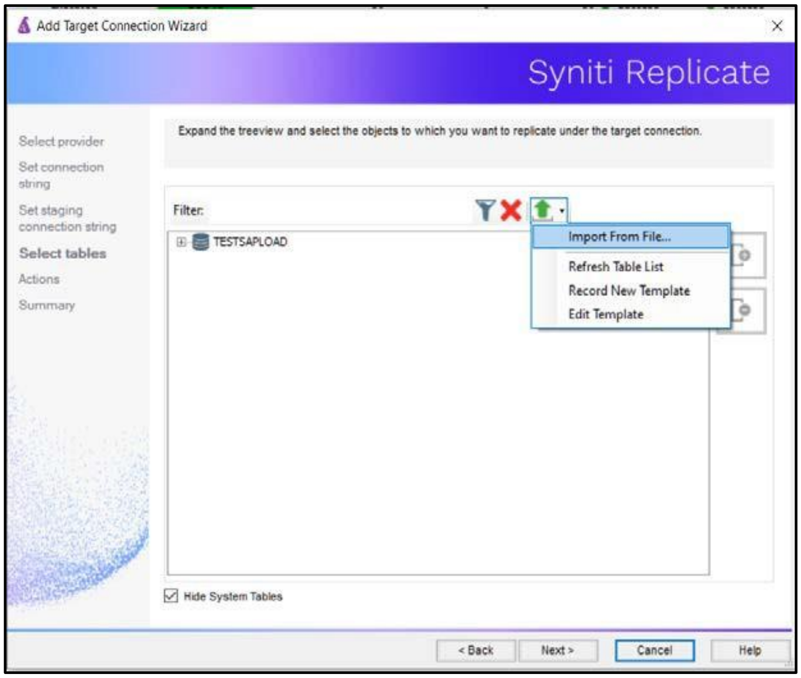
2. [Record an SAP Template](#).

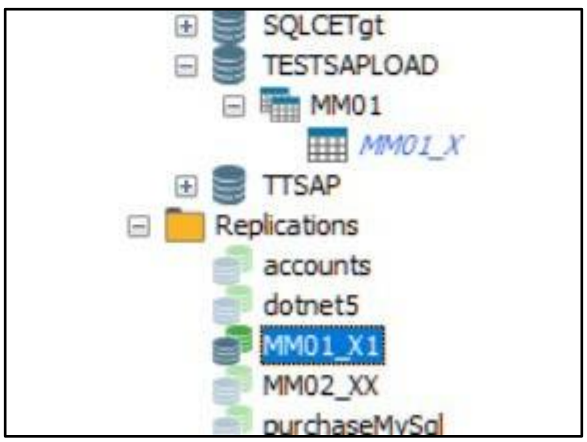


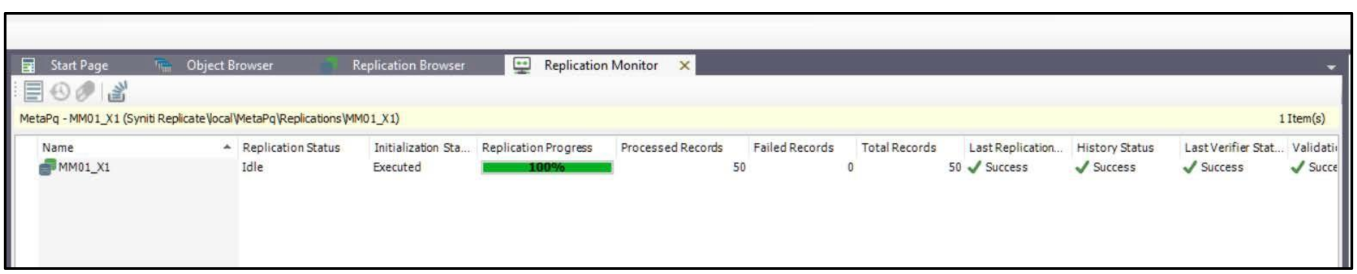


3. [Import the BDC Template to Create a Replication](#).
4. [Edit the Template.](#)
5. Start the replicator and monitor the results.

NOTE: You can also [Use Looped Templates](#).


Add Target Connection Wizard
Syniti Replicate
Select provider
Set connection string
Set staging connection string
Select tables
Actions
Summary
Expand the treeview and select the objects to which you want to replicate under the target connection.
Filter:
TESTSAPLOAD
Import From File...
Refresh Table List
Record New Template
Edit Template
Hide System Tables
< Back
Next >
Cancel
Help


SQLCETgt
TESTSAPLOAD
MM01
MM01_X
TTSAP
Replications
accounts
dotnet5
MM01_X1
MM02_XX
purchaseMySql

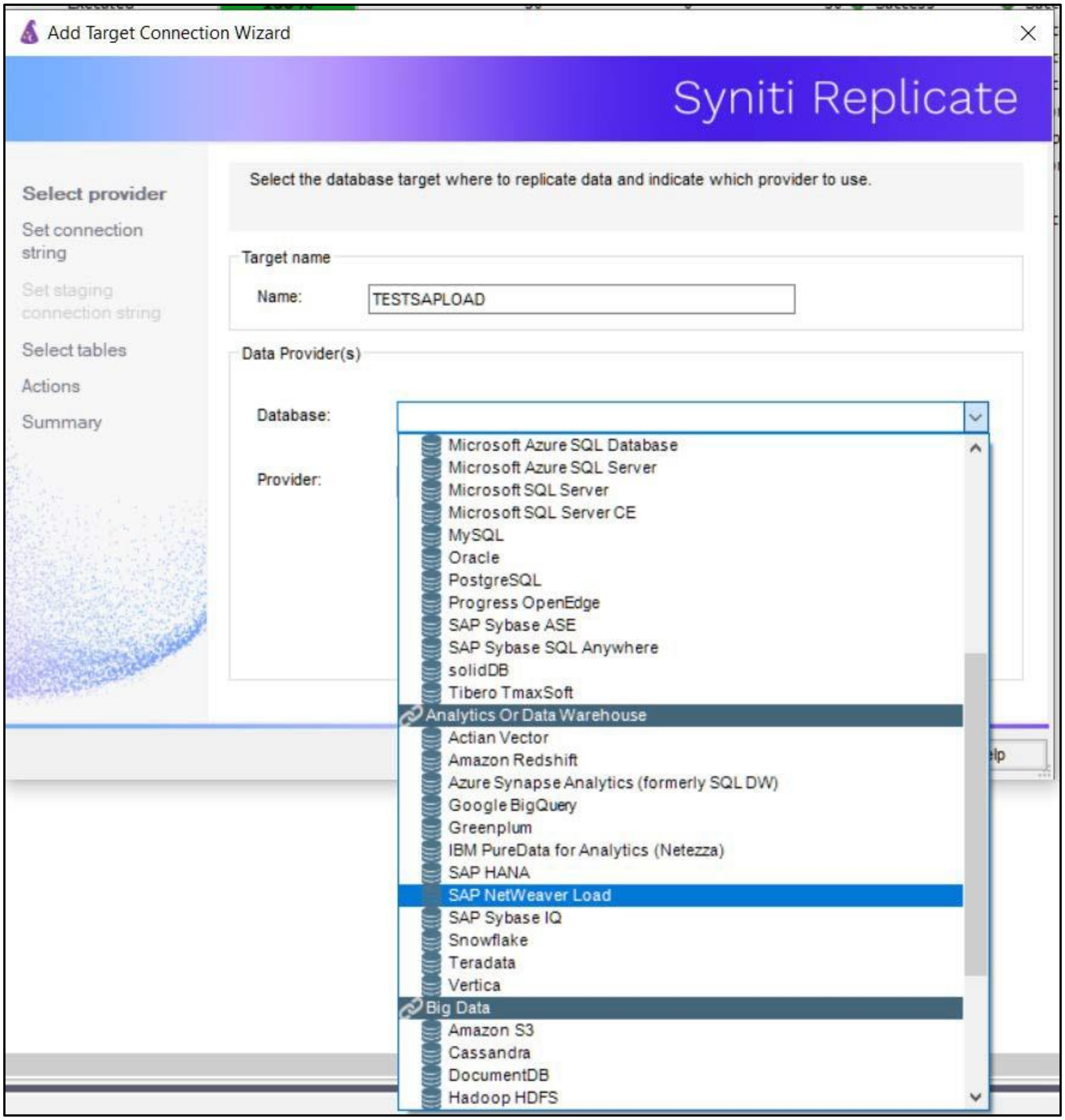

Start Page
Object Browser
Replication Browser
Replication Monitor
MetaPq - MM01_X1 (Syniti Replicate\local\MetaPq\Replications\MM01_X1)
1 Item(s)
Name
Replication Status
Initialization Sta...
Replication Progress
Processed Records
Failed Records
Total Records
Last Replication...
History Status
Last Verifier Stat...
MM01_X1
Idle
Executed
100%
50
0
50
Success
Success
Success

Create an SAP Netweaver Load Connection for the Target

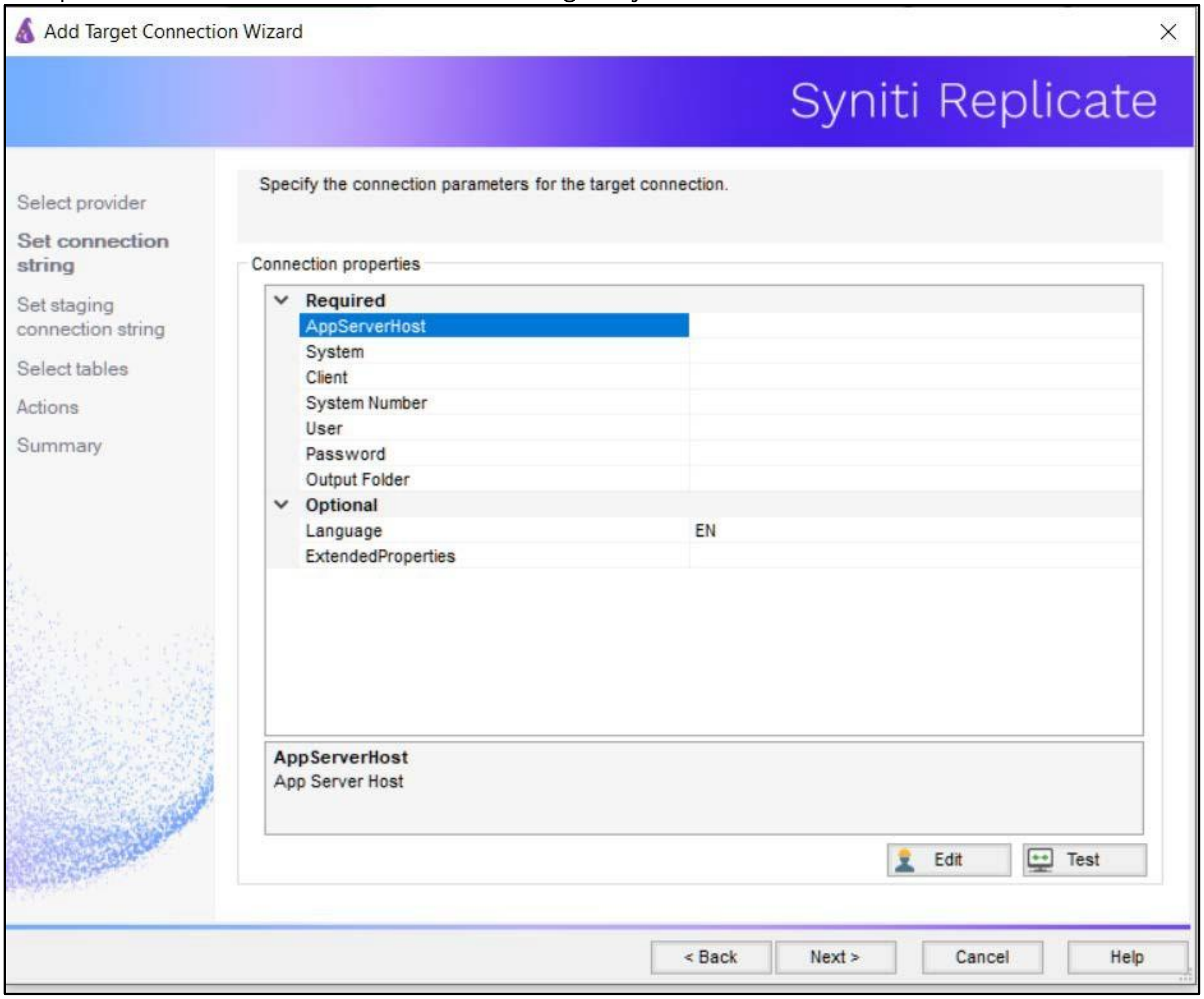
NOTE: This section applies to the target only.

To create the load connection:

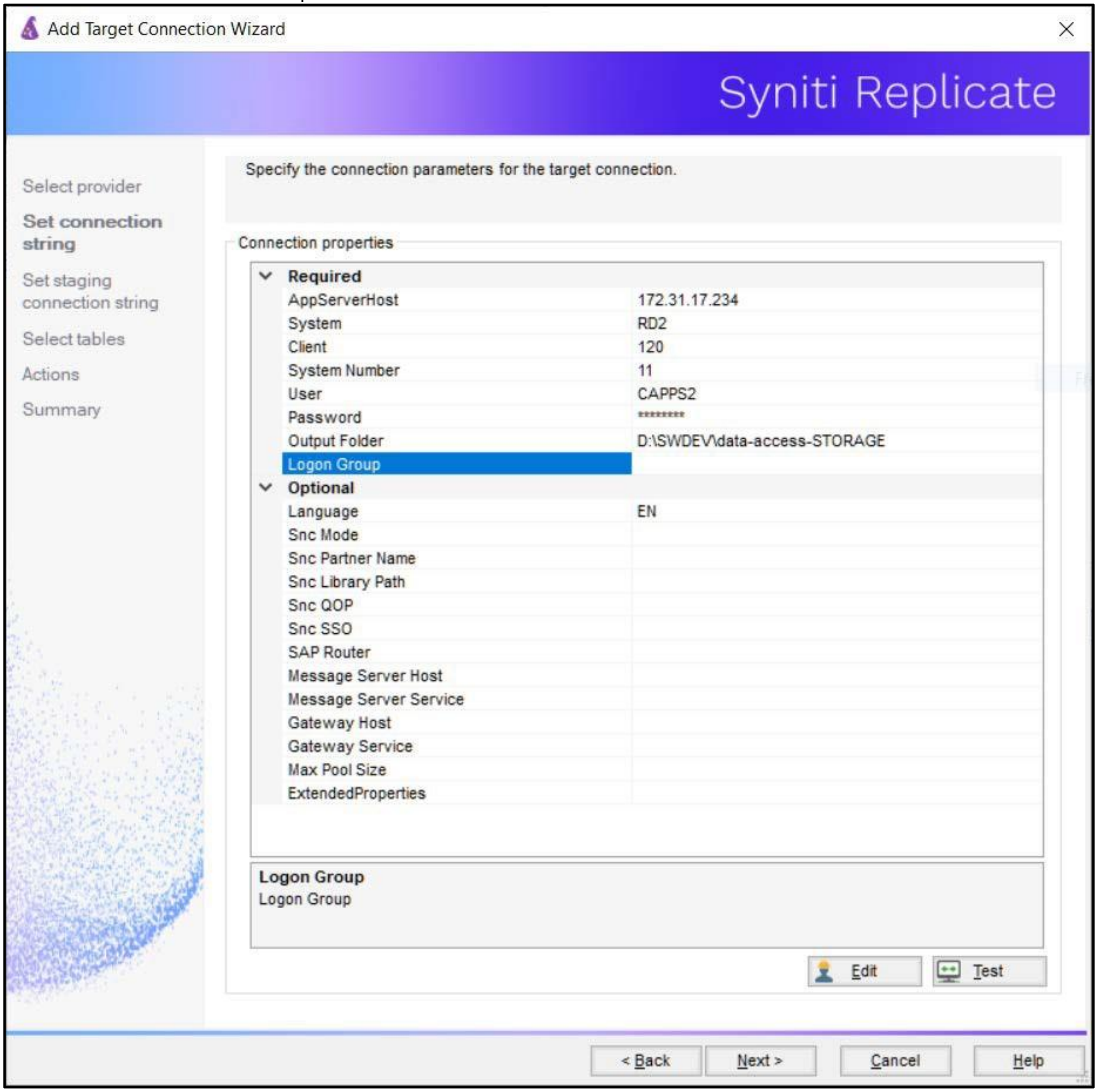
1. In the metadata tree, right-click the target and select **Add New Connection**.
2. Select **SAP Netweaver Load** from the **Database** list box.


Add Target Connection Wizard
Syniti Replicate
Select provider
Set connection string
Set staging connection string
Select tables
Actions
Summary
Select the database target where to replicate data and indicate which provider to use.
Target name
Name:
TESTSAPLOAD
Data Provider(s)
Database:
Provider:
Microsoft Azure SQL Database
Microsoft Azure SQL Server
Microsoft SQL Server
Microsoft SQL Server CE
MySQL
Oracle
PostgreSQL
Progress OpenEdge
SAP Sybase ASE
SAP Sybase SQL Anywhere
solidDB
Tibero TmaxSoft
Analytics Or Data Warehouse
Actian Vector
Amazon Redshift
Azure Synapse Analytics (formerly SQL DW)
Google BigQuery
Greenplum
IBM PureData for Analytics (Netezza)
SAP HANA
SAP NetWeaver Load
SAP Sybase IQ
Snowflake
Teradata
Vertica
Big Data
Amazon S3
Cassandra
DocumentDB
Hadoop HDFS

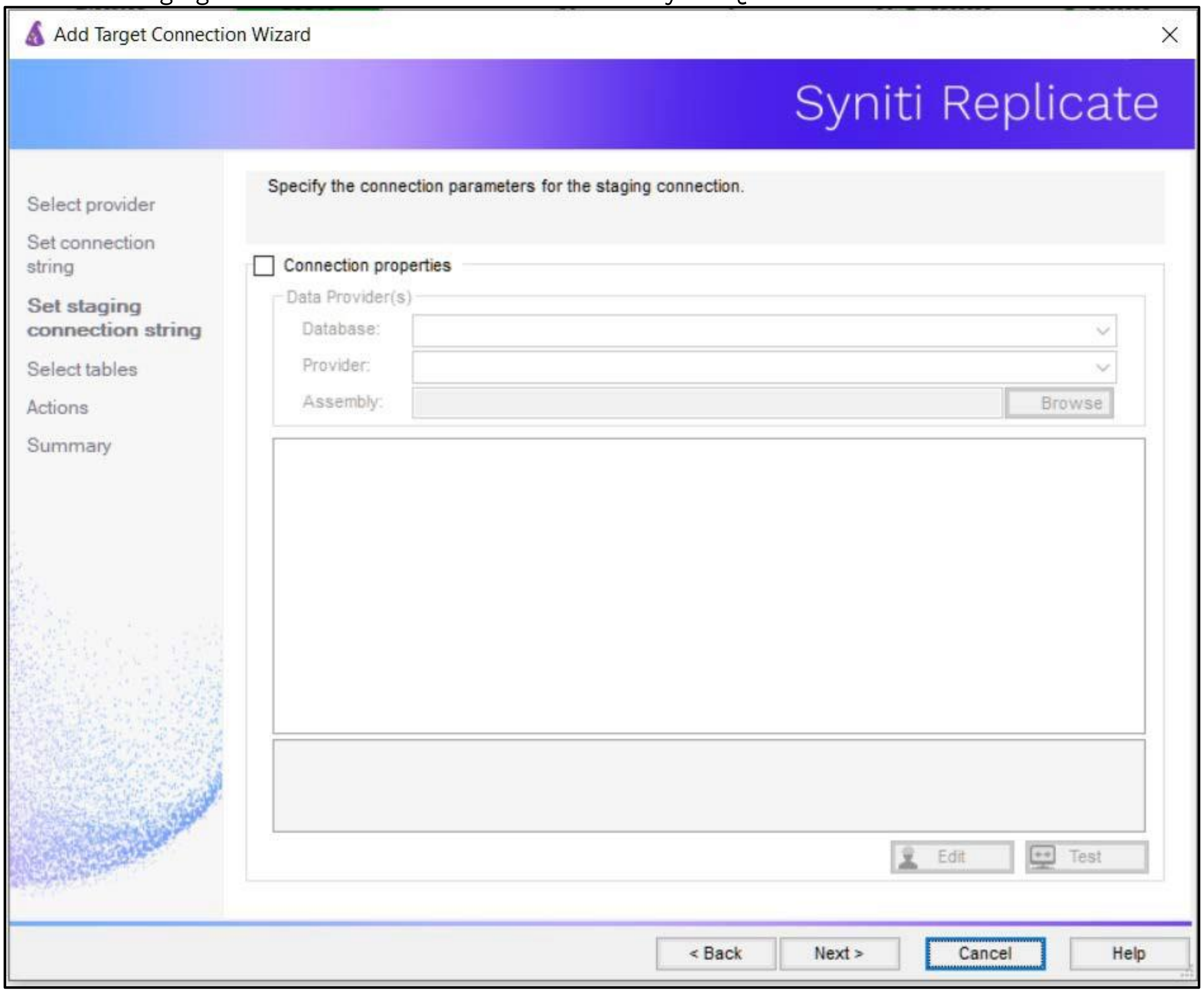
3. Click **Next.**
4. Complete the fields for the connection string for your SAP connection. Click **Next**.



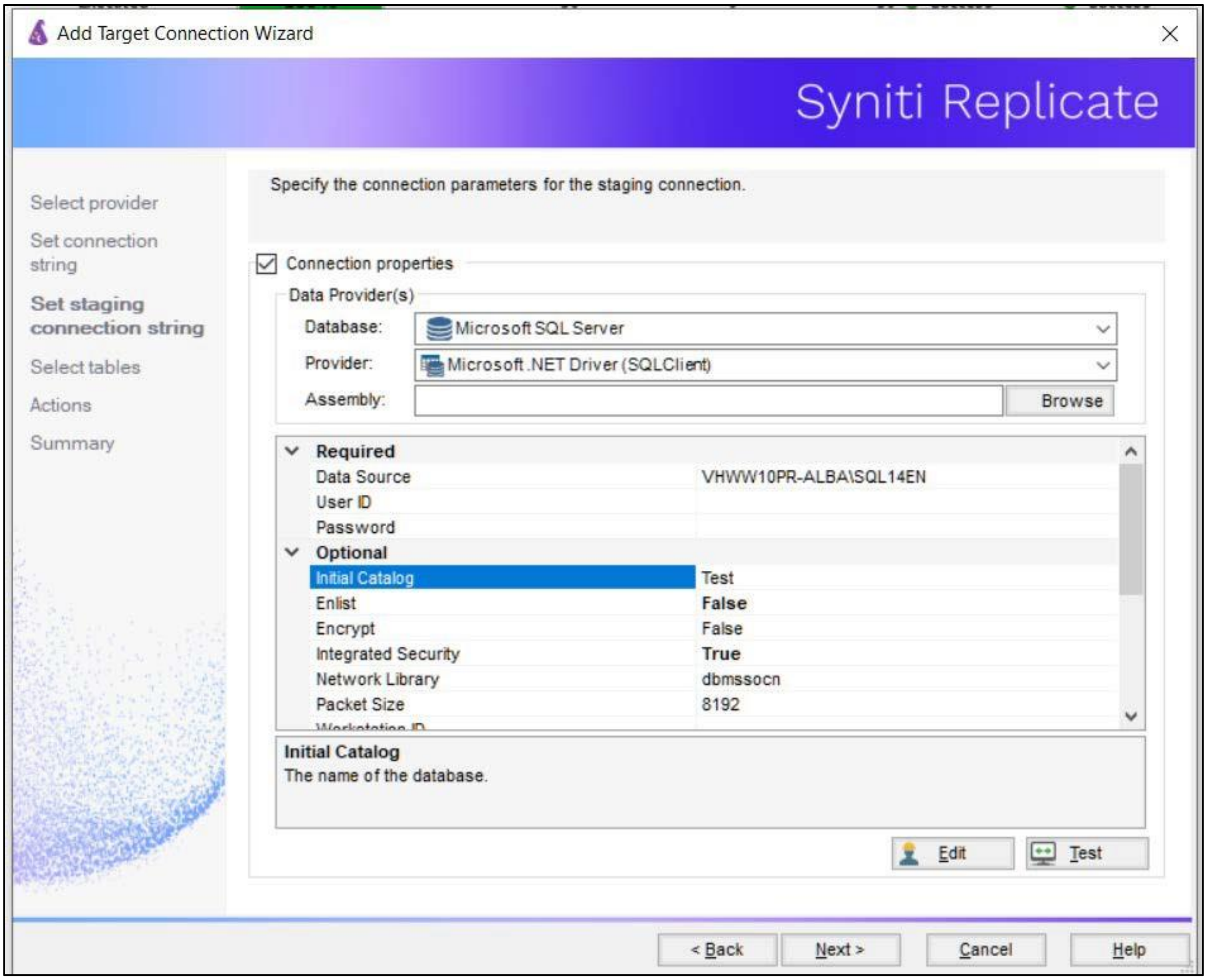
5. Complete the connection properties as indicated below. The Output folder is a local folder you use to store files and templates. Click **Next**.



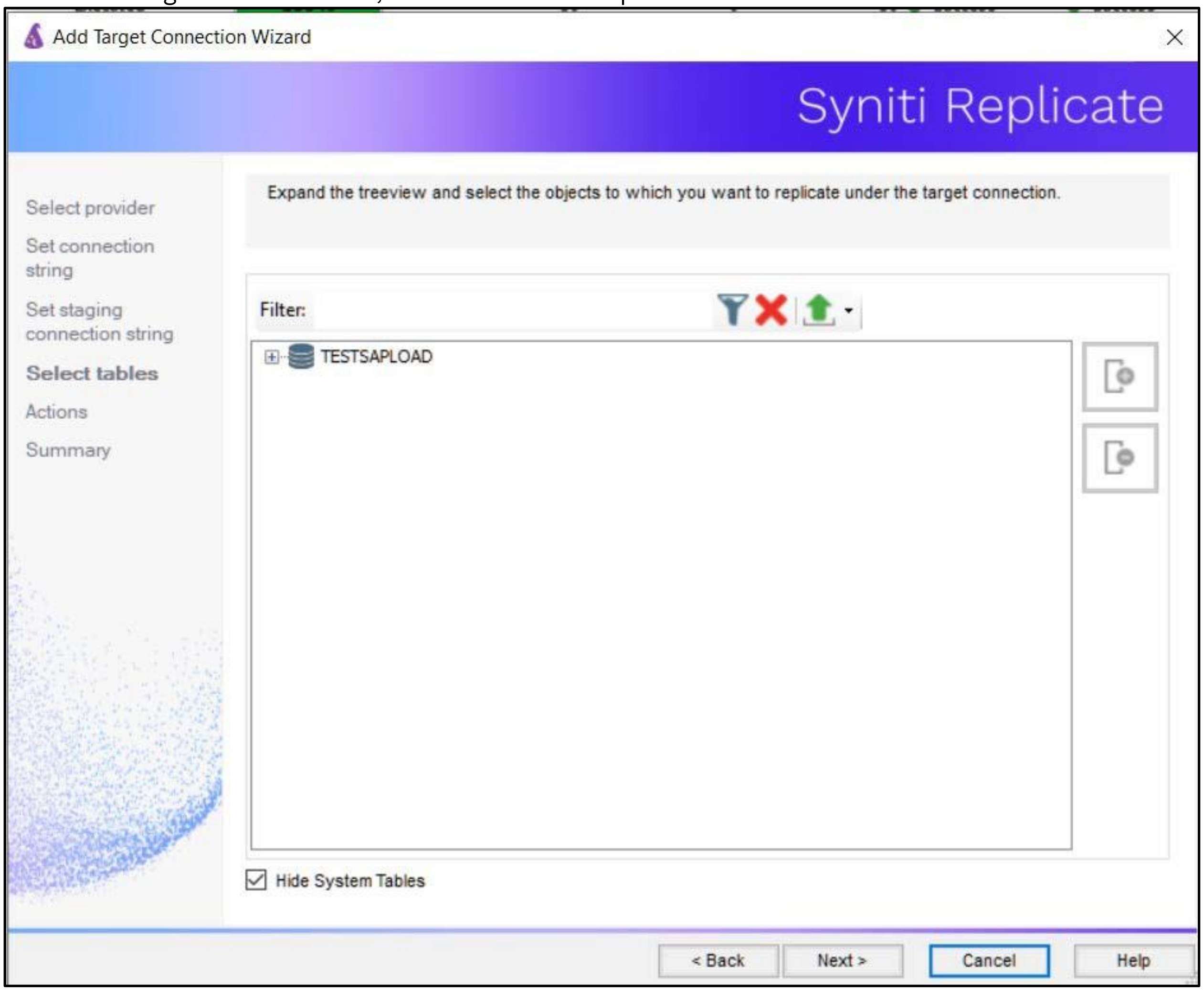
6. Create a Staging database connection. This is usually a SQL Server connection.



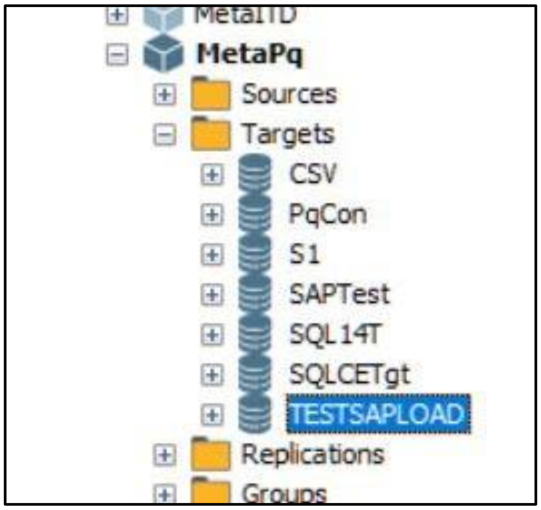
An example of a staging connection (a SQL Server database displays here.



7. After entering the connection, click **Next** to complete the wizard.



The new target displays.


MetaITD
MetaPq
Sources
Targets
CSV
PqCon
S1
SAPTest
SQL14T
SQLCETgt
TESTSAPLOAD
Replications
Groups

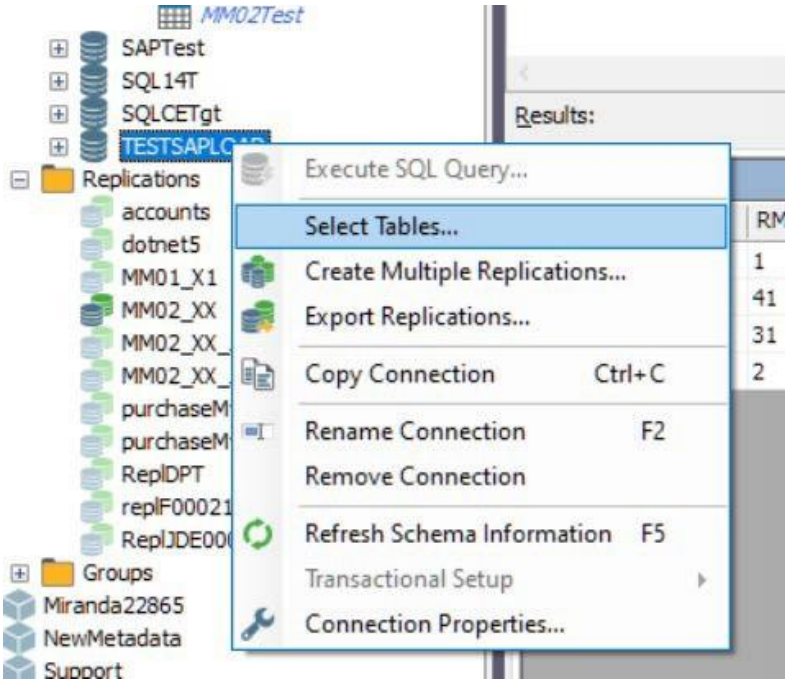
Record an SAP Template

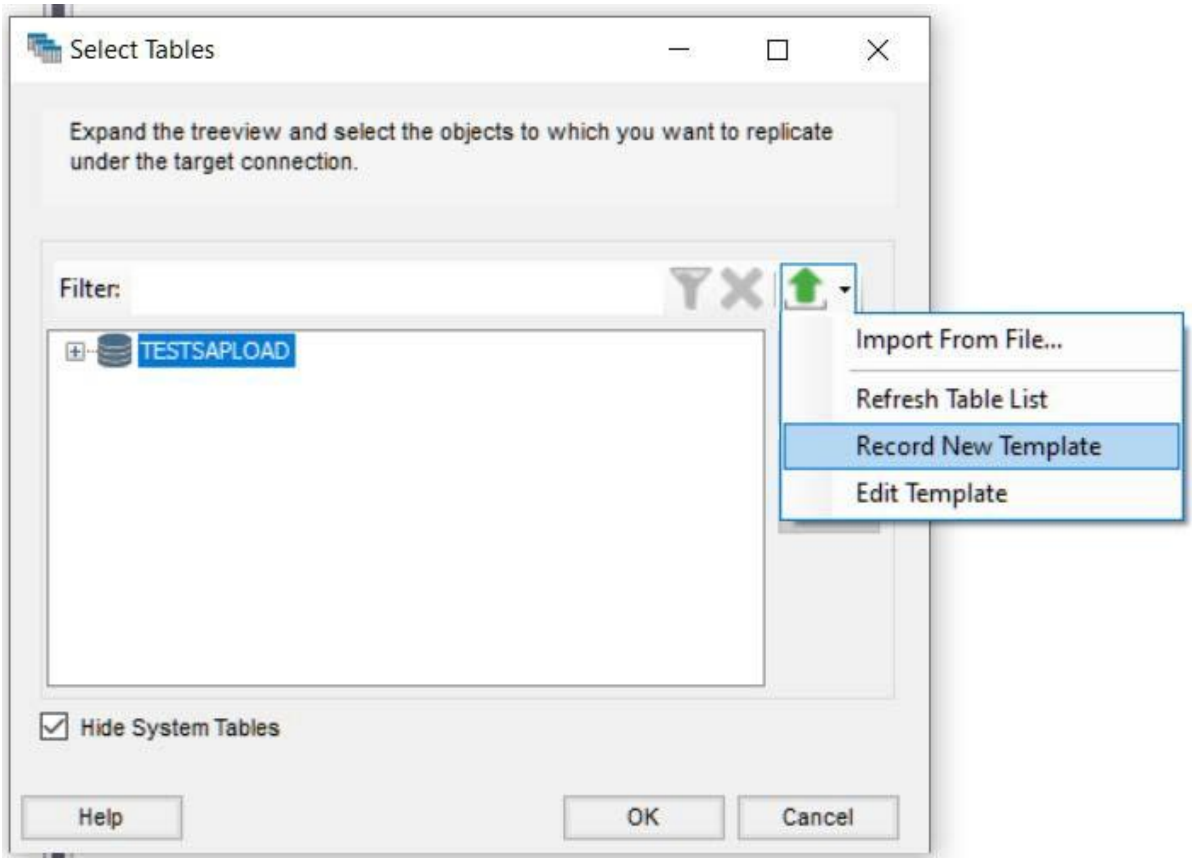
NOTE: You must install SAP GUI/Netweaver on the same system that is running the Management Center.

You must have knowledge of the SAP transactions to be used. This steps in this example cover a sample MM01 transaction to create a new material

To record the template:

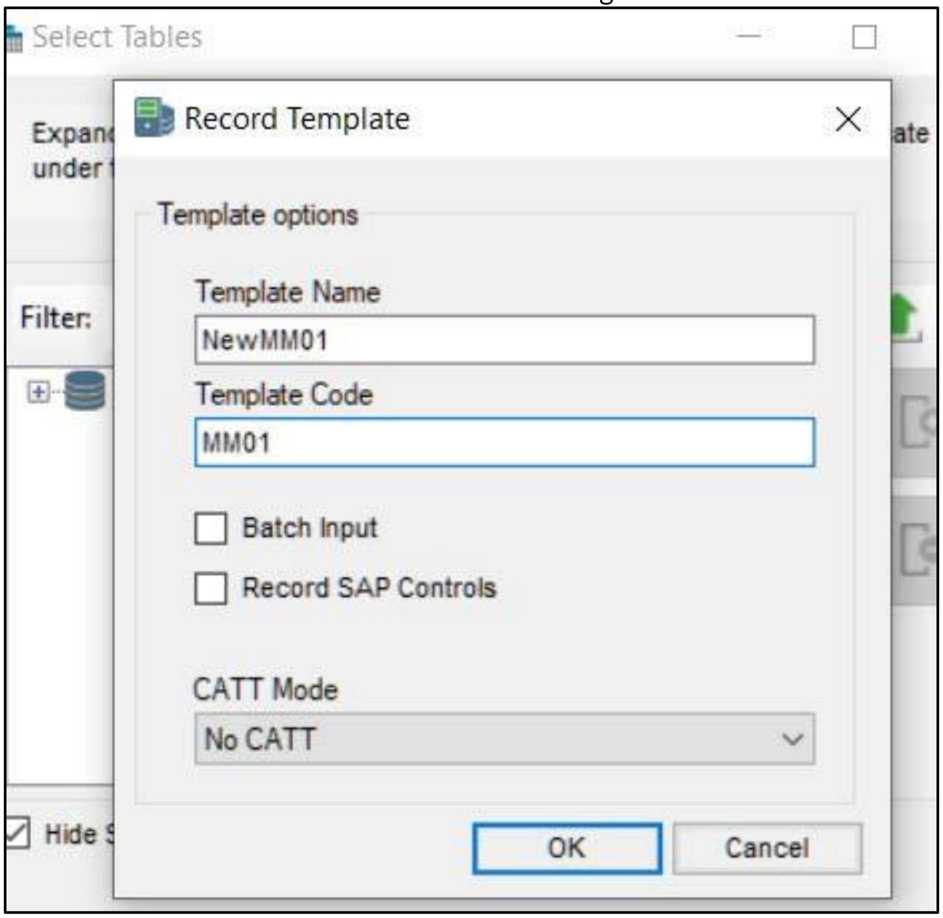
1. From the Management Center, right click an SAP Load target connection and select **Select Table.**



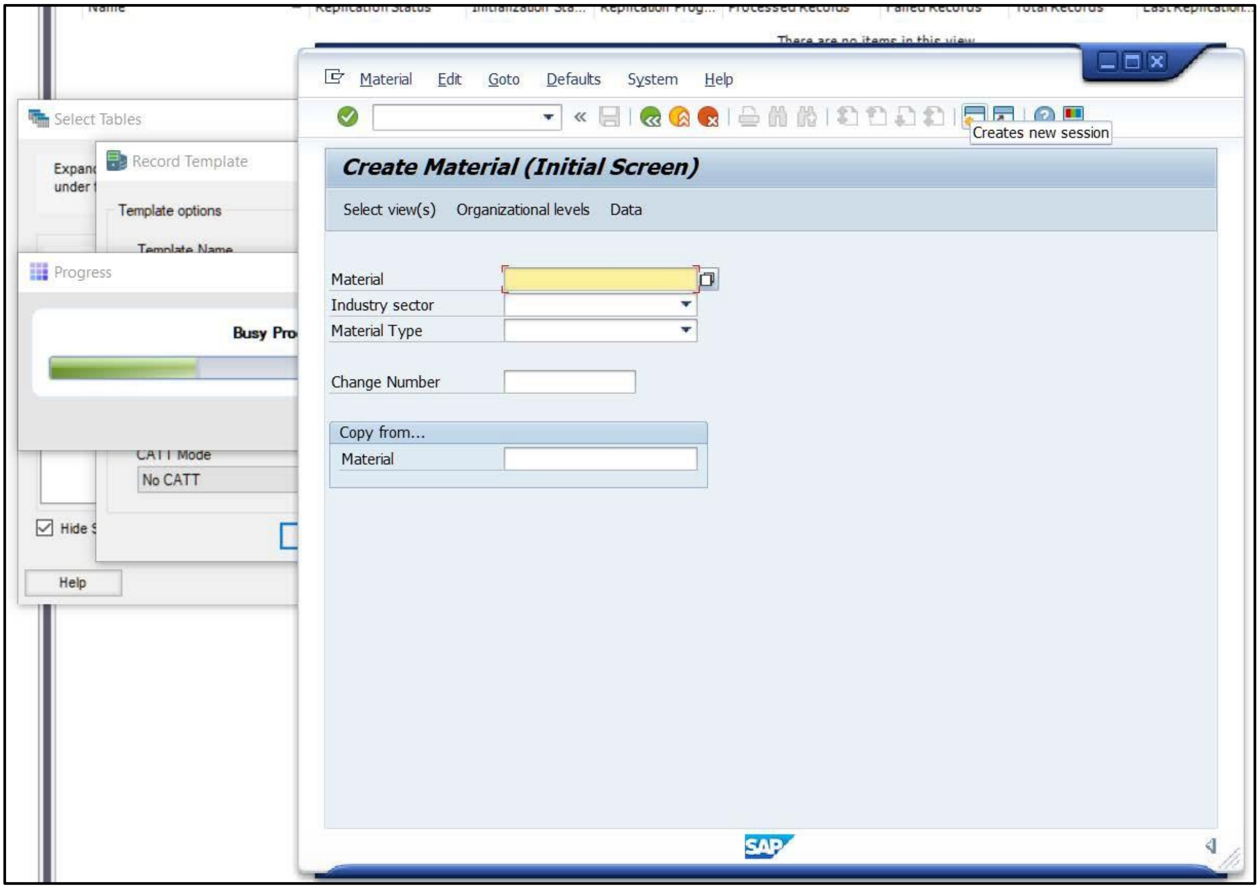


2. Click the green arrow icon and select **Record New Template**.
3. Enter a name for the template file you are going to generate in the **Template Name** field.
4. Enter the SAP T-Code to use in the **Template Code** field.
   NOTE: Leave the other options unchanged.

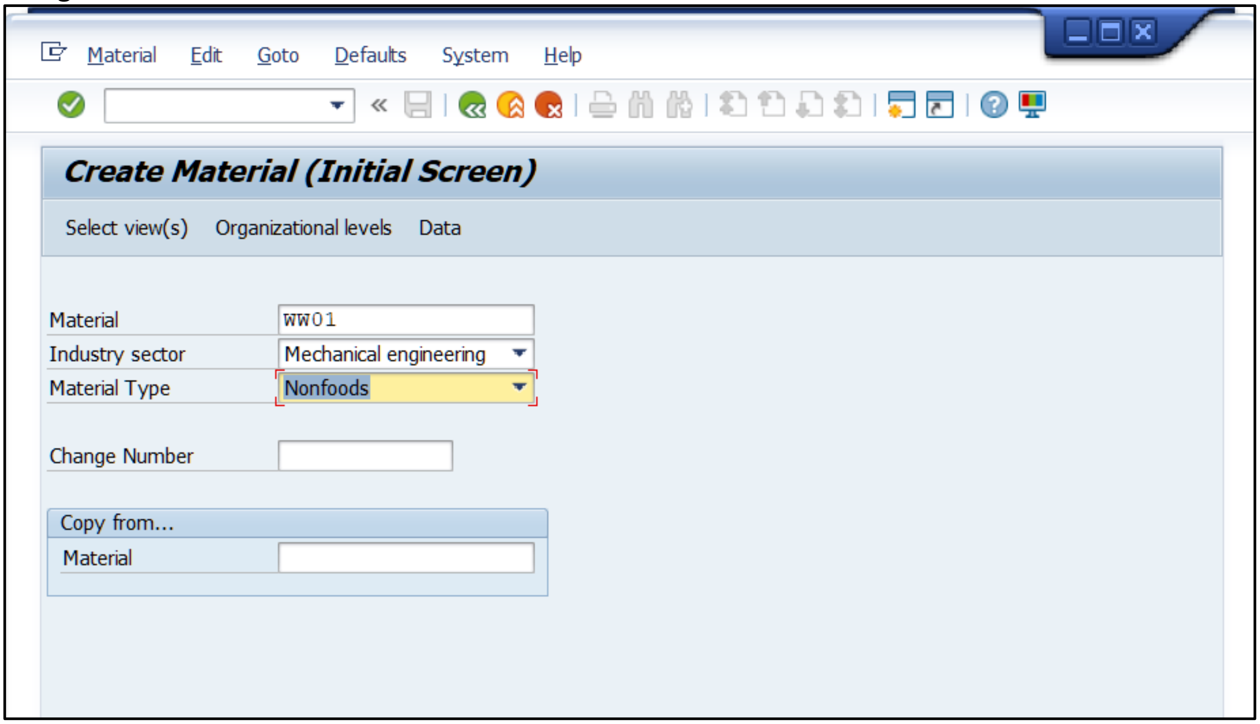
5. Click **Ok** to finish and start the recording.

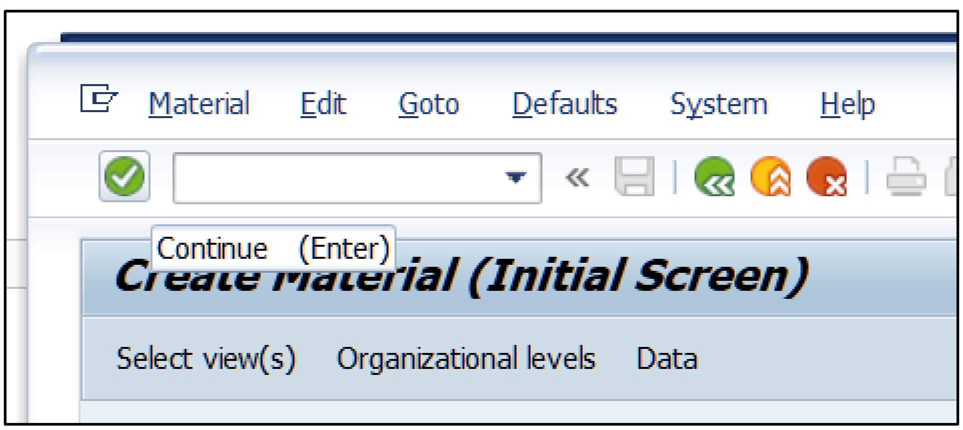


This connects to the system specified using the connection parameters defined in your metadata. The SAP GUI opens.

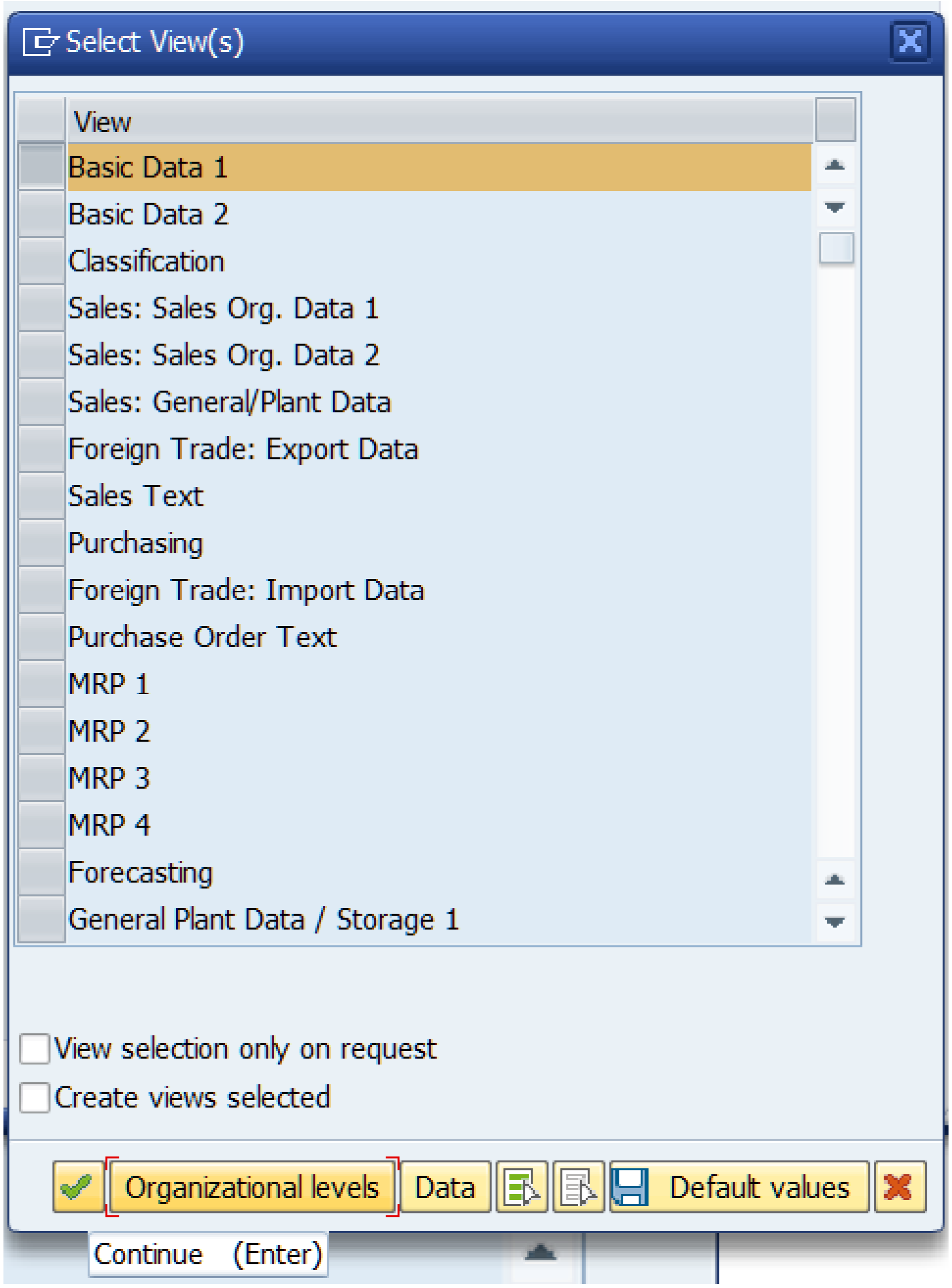


6. Enter the new material parameters in the Create Material (Initial Screen) page, then click the green check Enter icon.

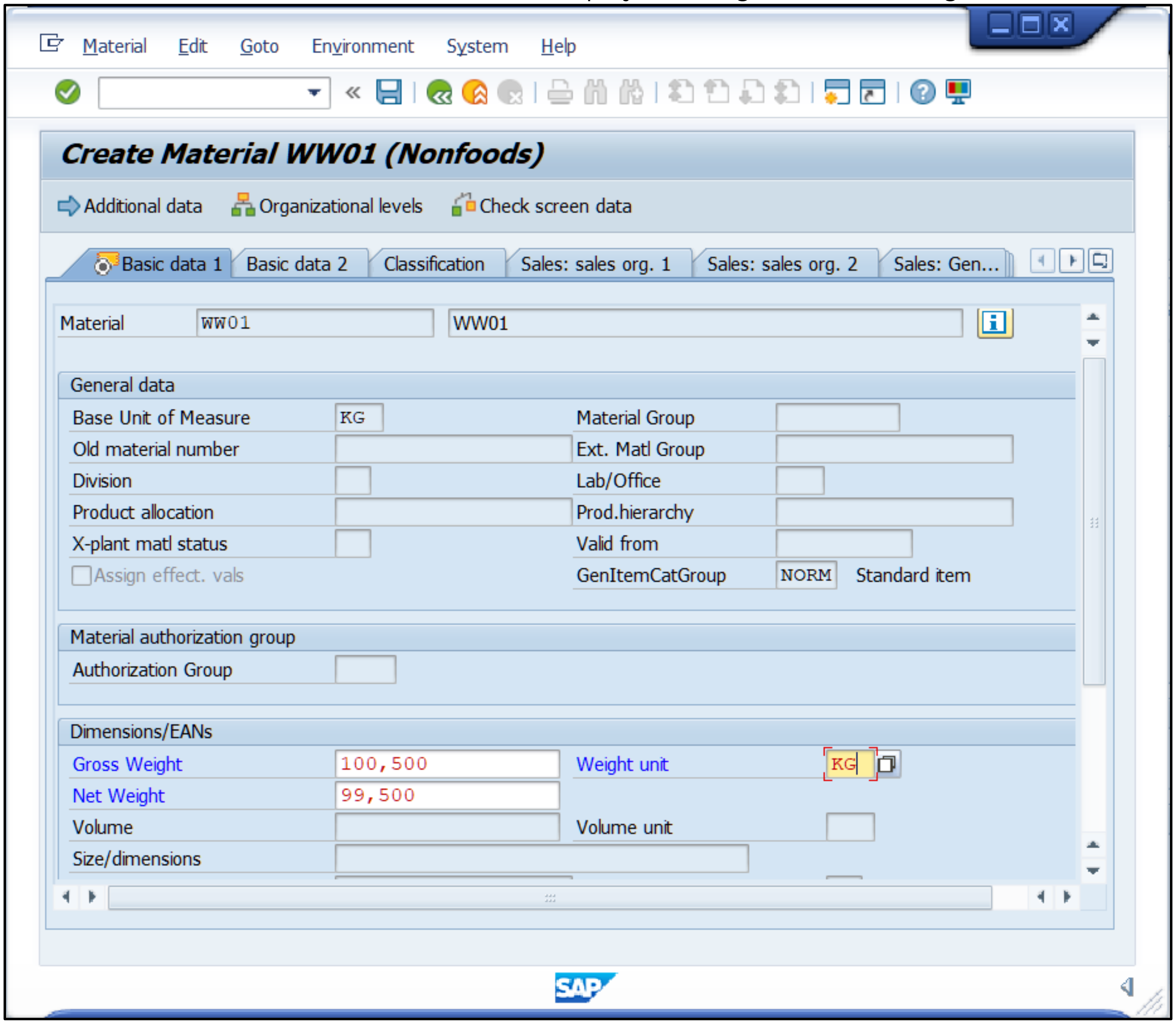




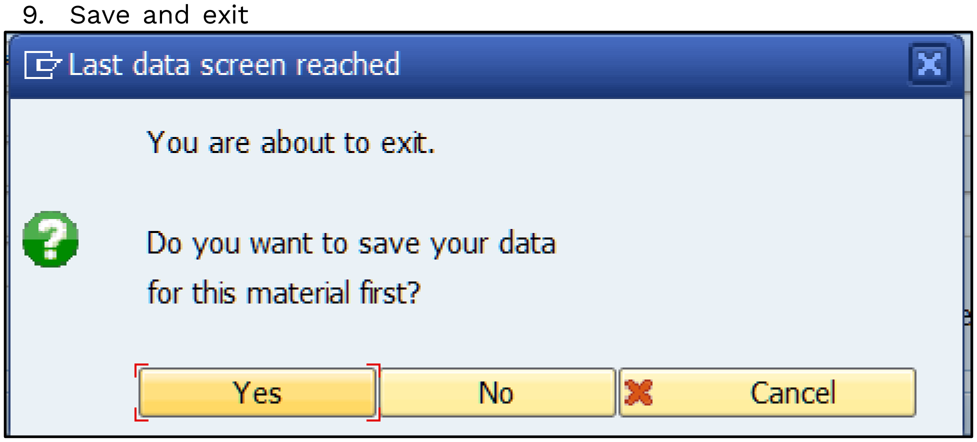
7. Select **Basic Data I** and click the Enter icon to continue,



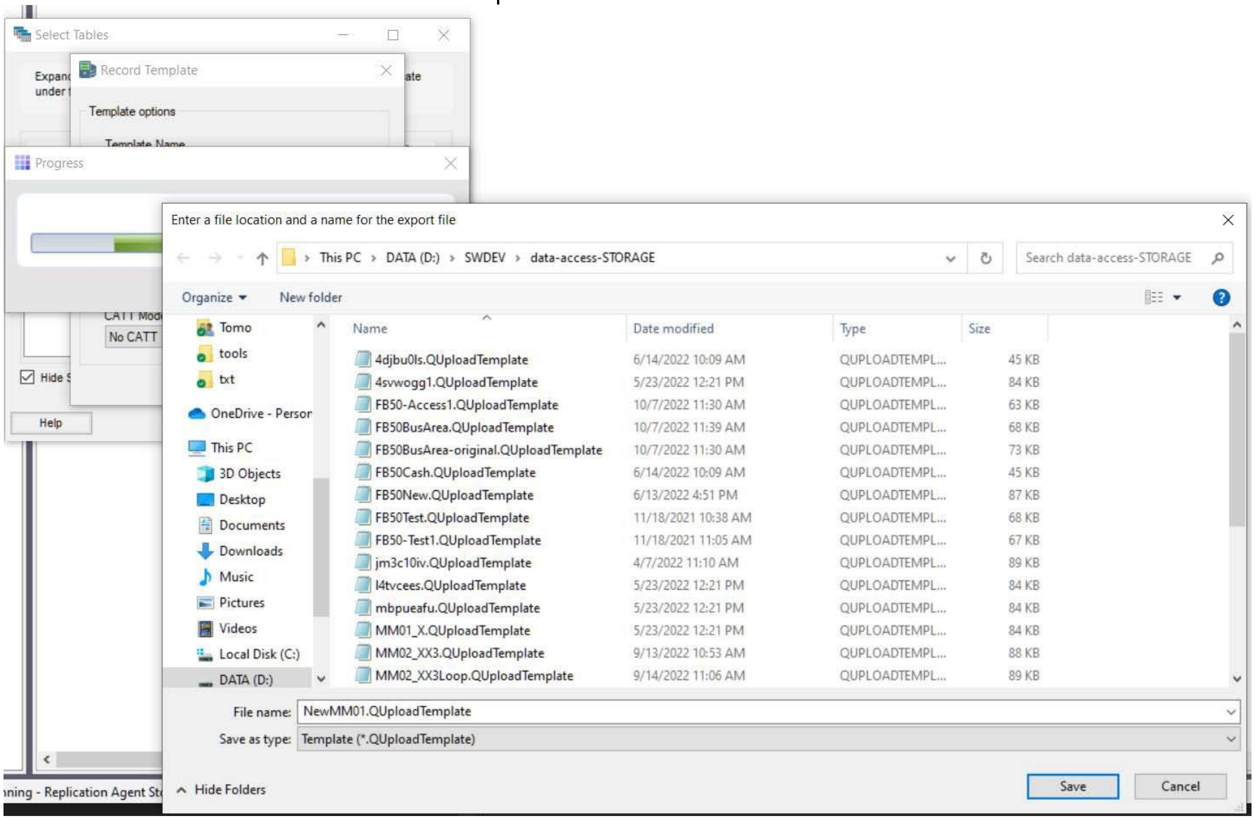
8. Add material information. The SAP GUI displays messages about missing or bad data.



9. Save and exit



10. Select a folder to save the template file and click **Save**.

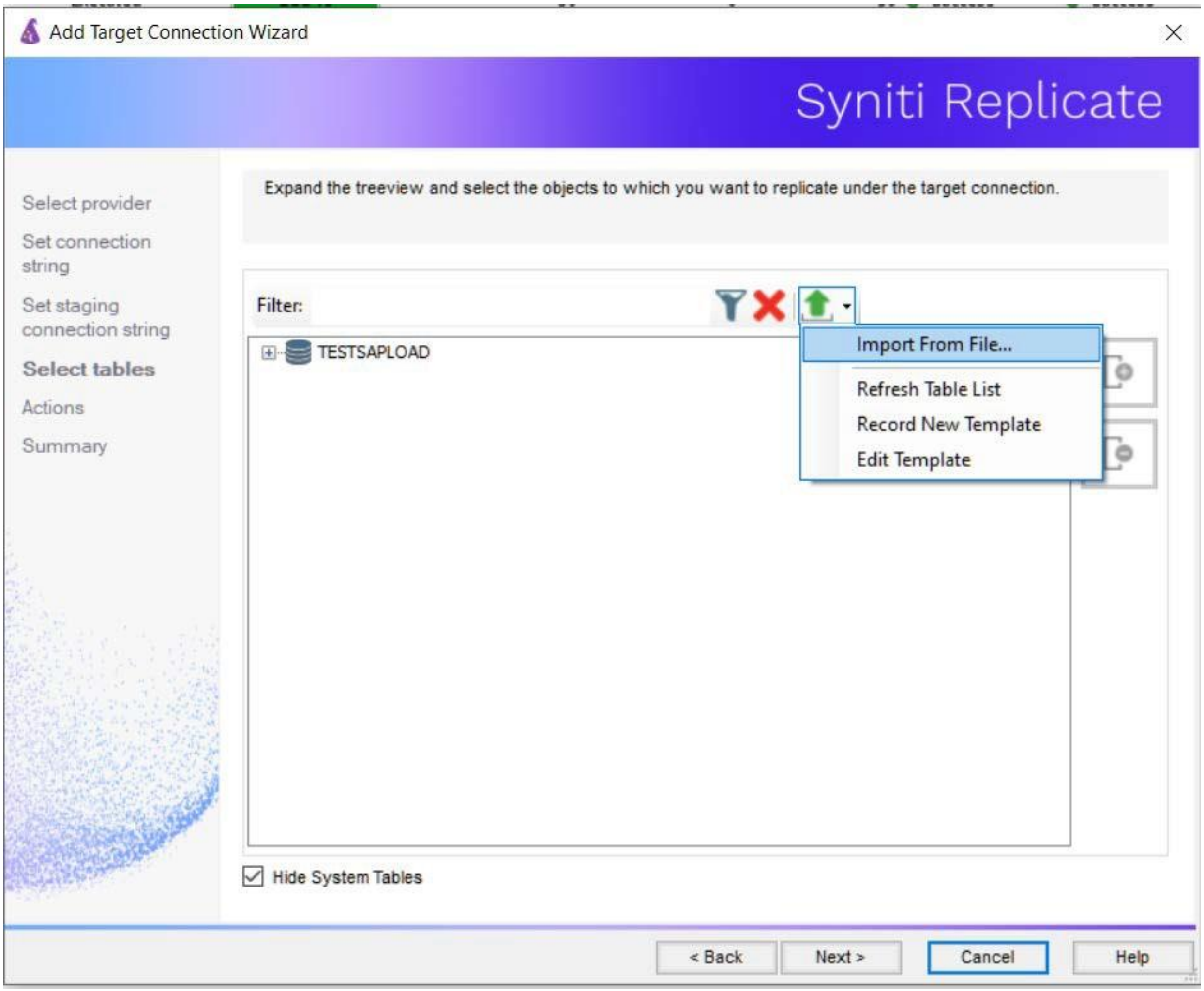


Import the BDC Template to Create a Replication

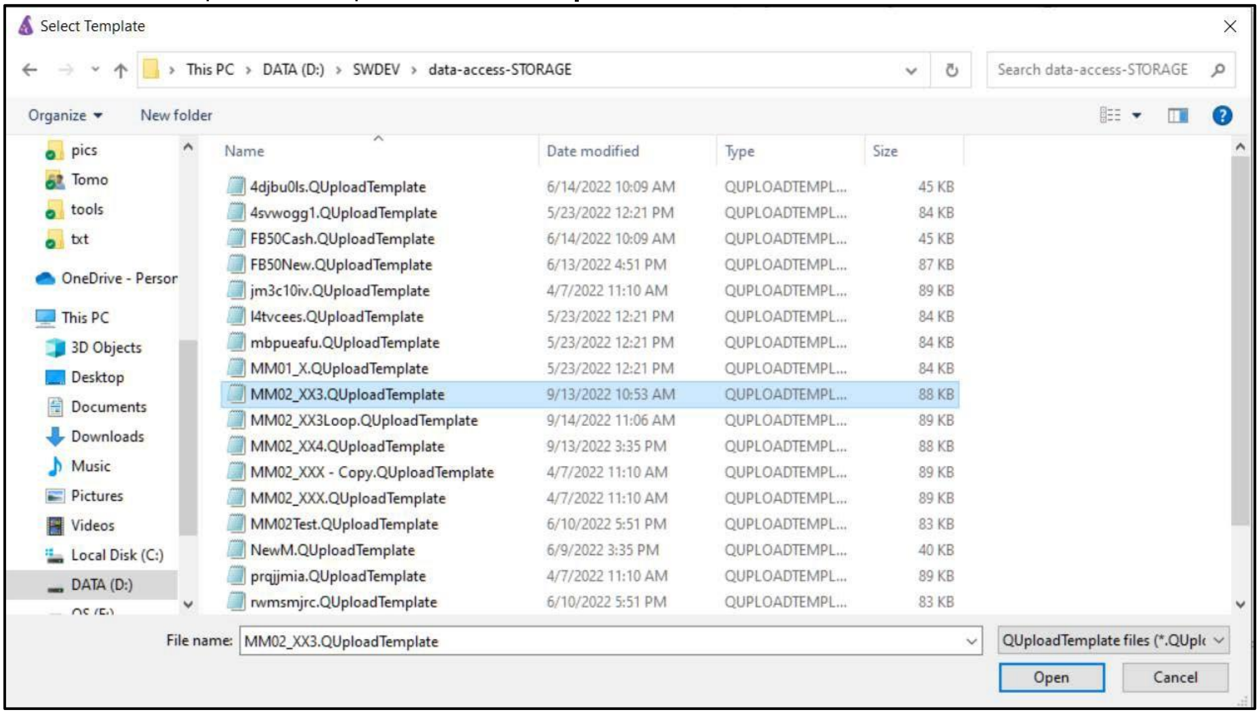
Perform this task when configuring a replication to specify the SAP target to be used.

To import a template:

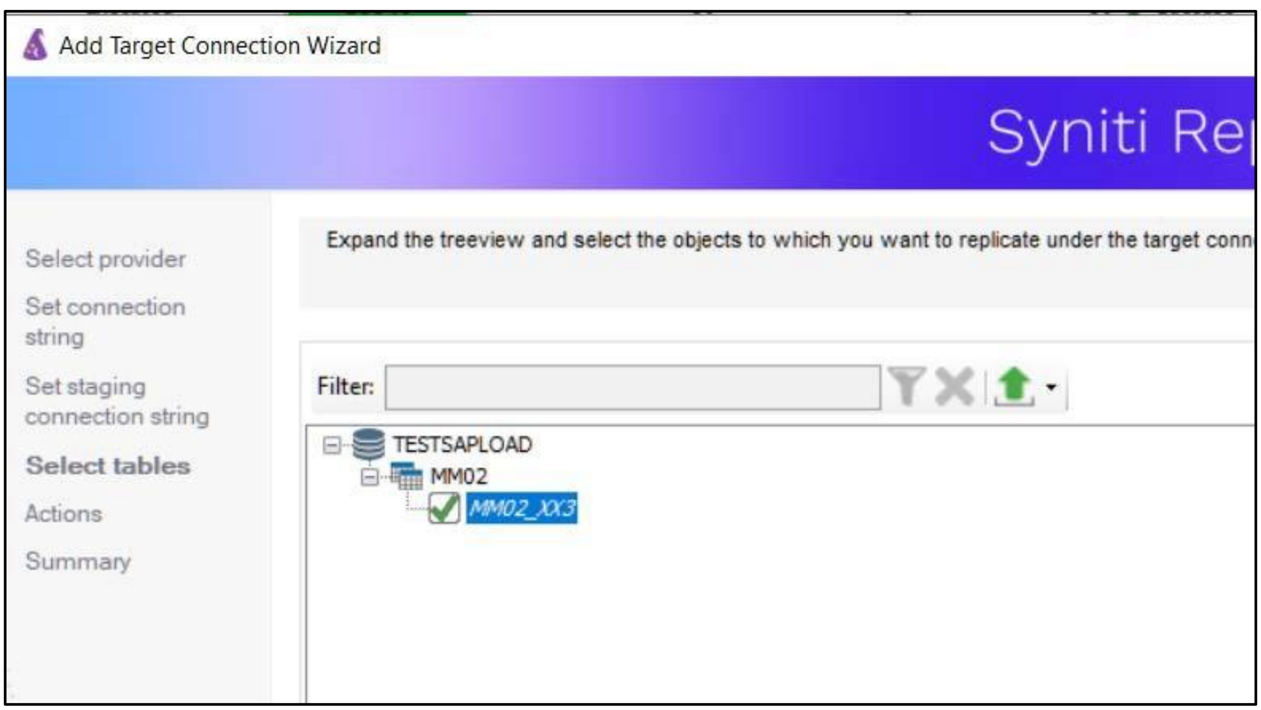
1. Click the green check mark icon and select **Import From File**.

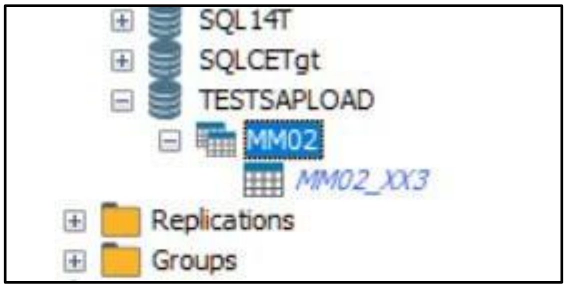


2. Select the template to import and click **Open**.



A new table (in reality, a virtual table) is added to the hierarchy. The SAP transaction T-code is the schema, the template name is the table name.



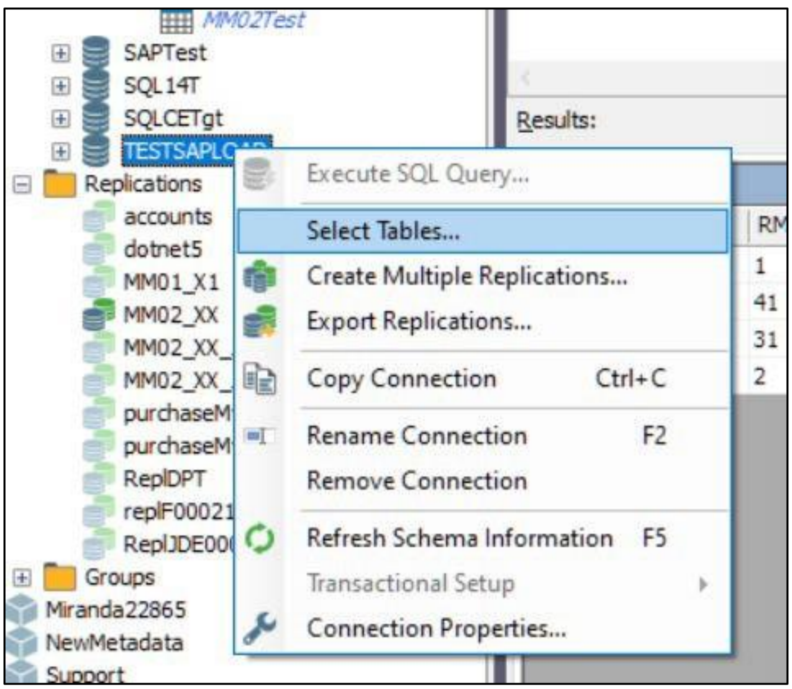


You can now use that target table to create replications. Once the export complete message appears, the page closes and you can record a new template

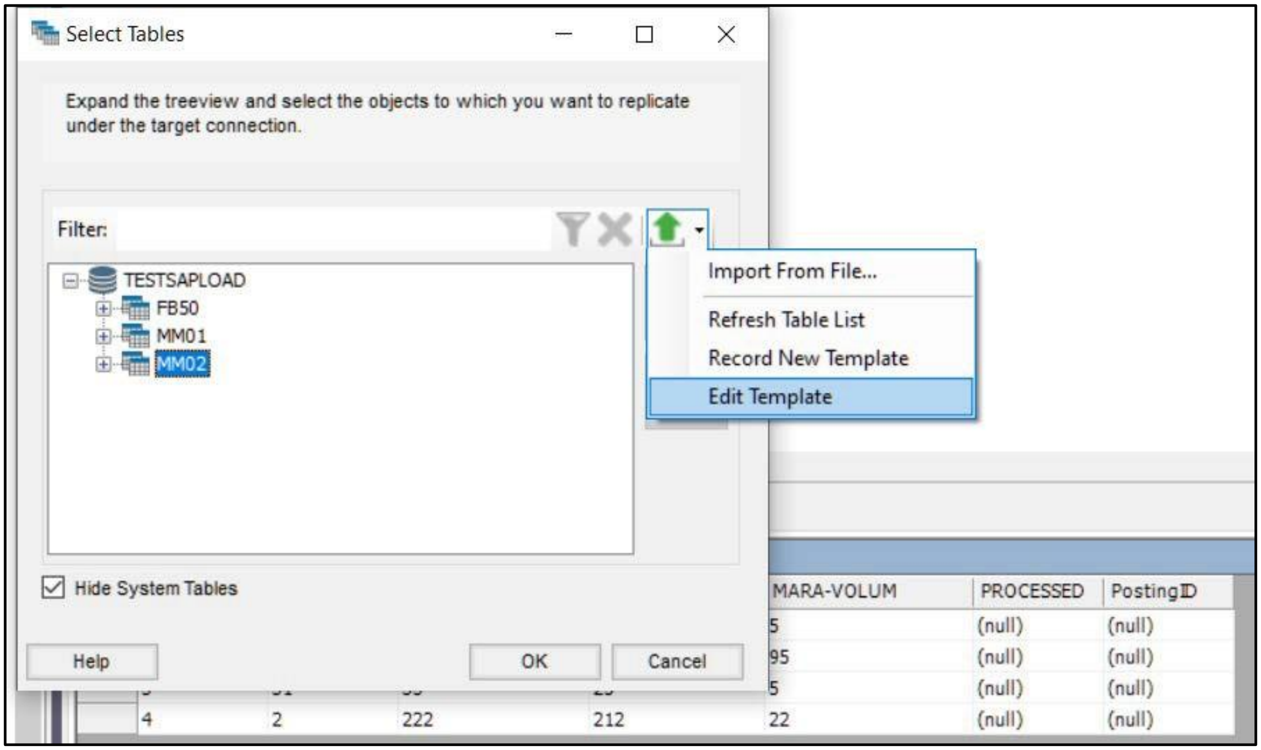
Edit the Template

To edit the template:

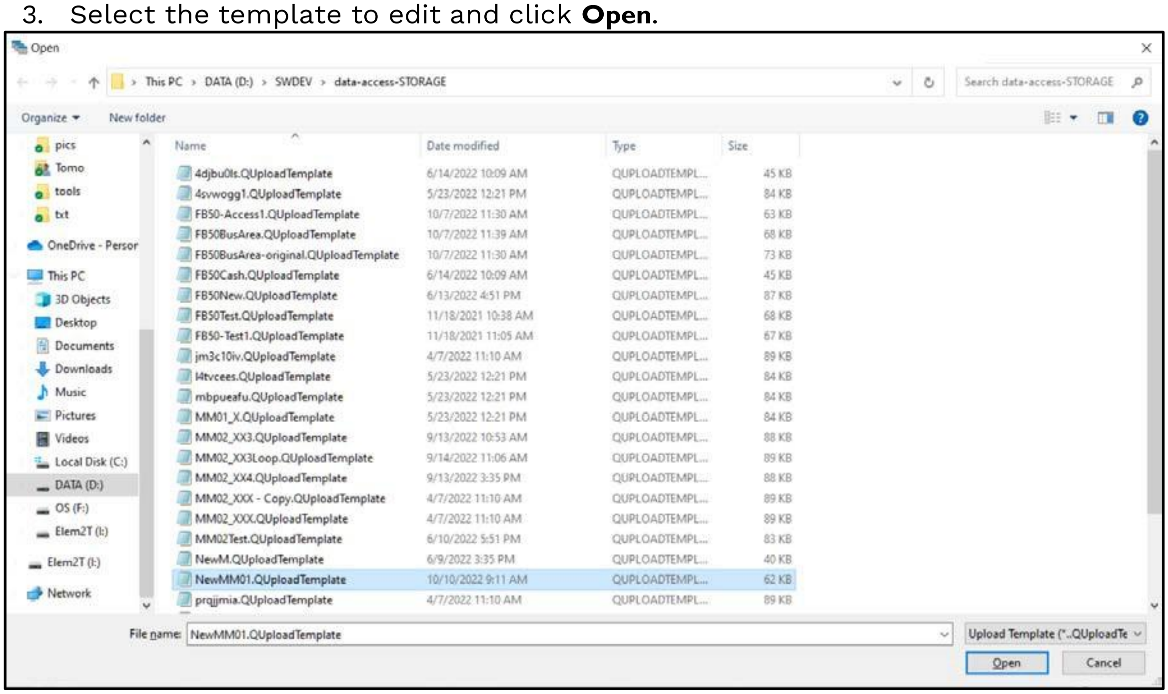
1. From the Management Center, right click an SAP Load target connection and select **Select Tables**.



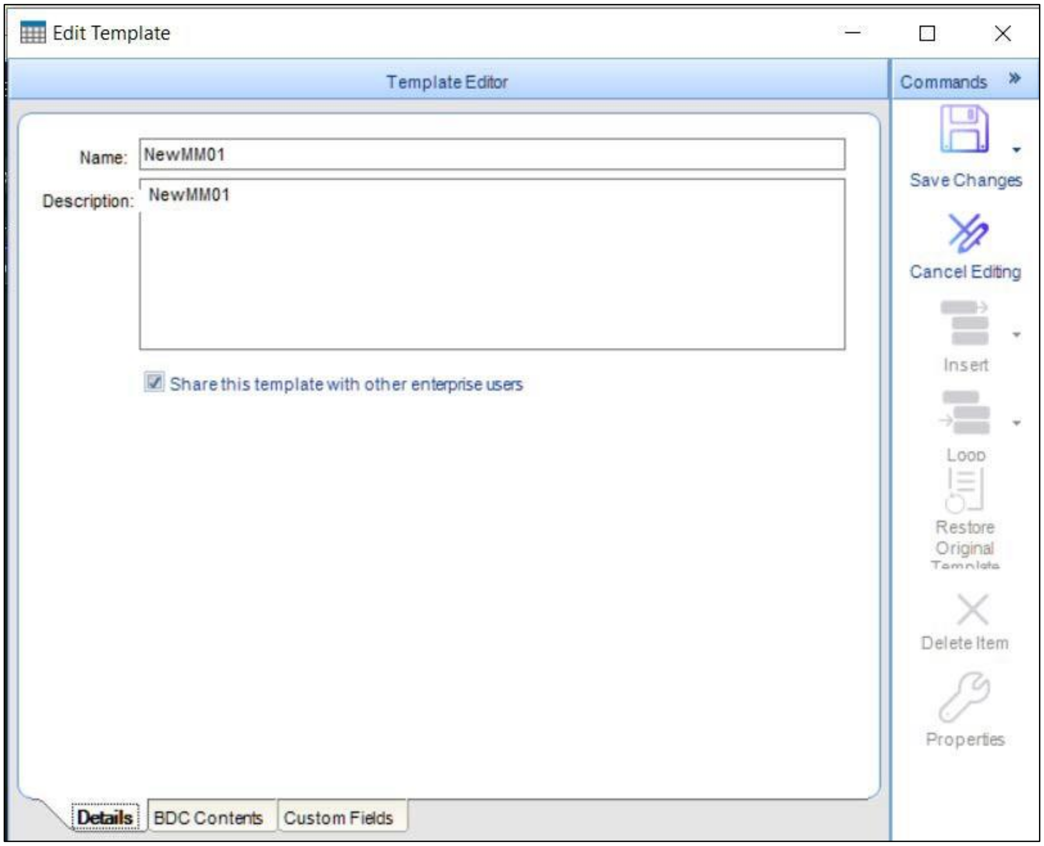
2. Click the green check icon and select **Edit Template**.

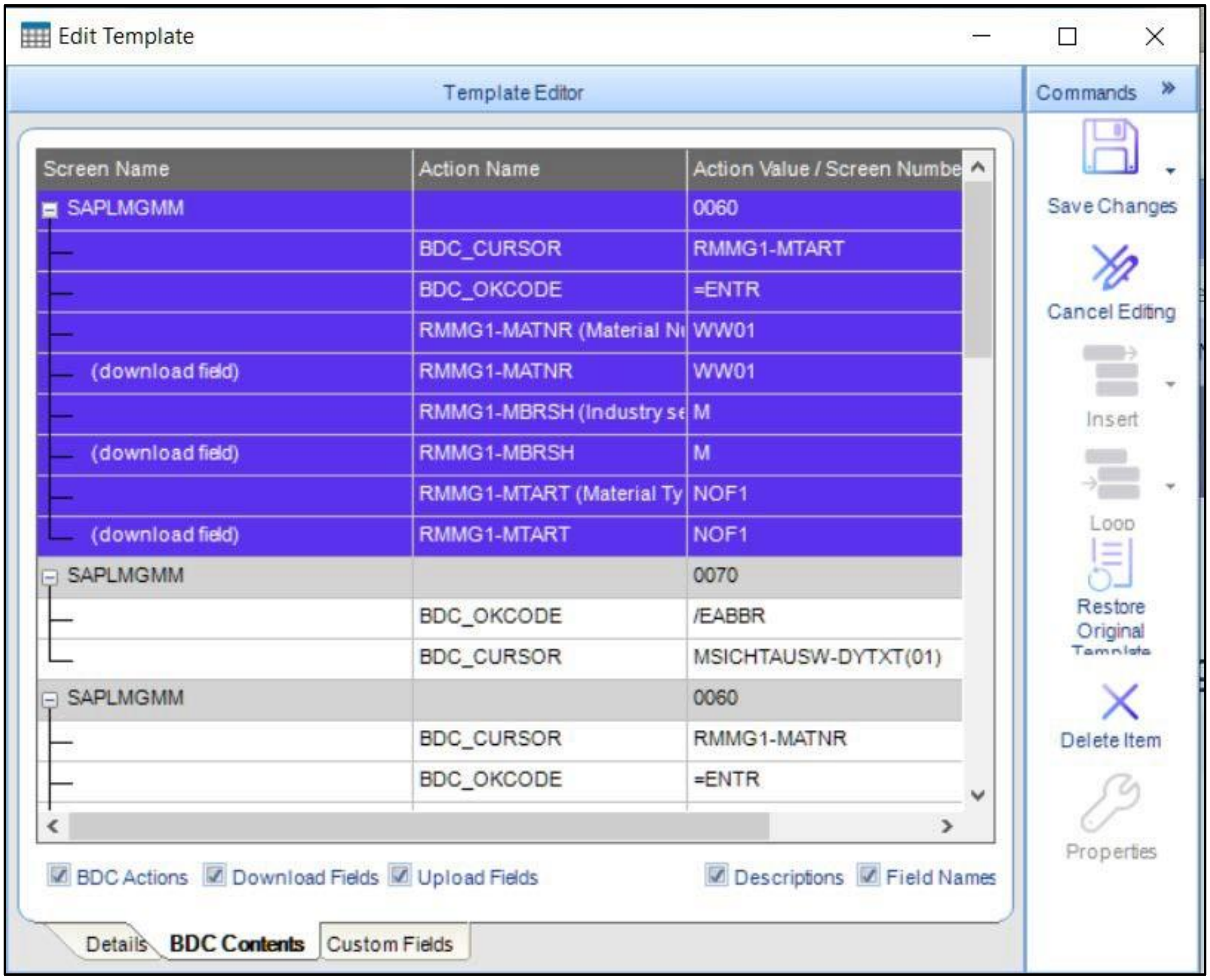


3. Select the template to edit and click **Open**.



The Editor displays. The details of the template display on the **BDC Contents** tab (the second tab at the bottom of the page).





4. Edit the items, add or remove fields and loops.
5. Click **Save Changes**.

Use Looped Templates

This section provides an example using SAP's FB50 transaction.

To user looped templates:

1. If not yet defined, set up a new connection following the steps in Create an SAP Netweaver Load Connection for the Target.
2. If not available, create a new template following the steps in Record an SAP Template.
3. Import a template that has loops defined (for example FB50) following the steps in Import the BDC Template to Create a Replication.
4. Define a source table with appropriate fields and values for FB50 transaction. FB50 is about financial documents named General Ledgers (G/L). Here is an example In SQL Server. The fields are based on a template previously recorded and imported:

```
SET ANSI_NULLS ON
GO

SET QUOTED_IDENTIFIER ON
GO

CREATE TABLE [dbo].[FB50_XX](
	[ID] [int] IDENTITY(1,1) NOT NULL,
	[ACGL_HEAD-BLDAT] [nchar](10) NULL,
	[ACGL_HEAD-XBLNR] [nchar](20) NULL,
	[ACGL_ITEM-HKONT(01)] [nchar](10) NULL,
	[ACGL_ITEM-SHKZG(01)] [nchar](10) NULL,
	[ACGL_ITEM-WRBTR(01)] [nchar](10) NULL,
	[ACGL_ITEM-GSBER(01)] [nchar](10) NULL,
	[ACGL_ITEM-MARKSP(01)] [nchar](10) NULL,
	[PROCESSED] [nchar](2000) NULL,
	[PostingID] [nchar](100) NULL,
 CONSTRAINT [PK_FB50X] PRIMARY KEY CLUSTERED
(
	[ID] ASC
)WITH (PAD_INDEX = OFF, STATISTICS_NORECOMPUTE = OFF, IGNORE_DUP_KEY = OFF, ALLOW_ROW_LOCKS =
ON, ALLOW_PAGE_LOCKS = ON) ON [PRIMARY]
) ON [PRIMARY]

GO
```

Below there's sample content for the table.

Every row to be loaded is considered an item for a single financial document. To complete the transaction, the sum of the values must be 0.

The data is divided in 2 parts: the header, which is the document reference (and will be used just once) and the items, which are the single financial movements.
The rule is: the sum of the `ACGL_ITEM-WRBTR(01)` values where `ACGL_ITEM-SHKZG(01) = H` must be the same of the `ACGL_ITEM-WRBTR(01)` values where `ACGL_ITEM-SHKZG(01) = S`.
In this example we have 1+2+3+5 =10 and this is correct.

	ID	ACGL_HEAD-BLD...	ACGL_HEAD-XBL...	ACGL_ITEM-HKONT(...	ACGL_ITEM-SHKZG(01)	ACGL_ITEM-WRBTR(01)	ACGL_ITEM-GSBER(...	ACGL_ITEM-MARKSP(...	PROCESSED	PostingID
1	1	11/29/2022	BusArea	213020	H	1	0001	X	NULL	NULL
2	2	11/29/2022	BusArea	213020	H	2	0001	X	NULL	NULL
3	3	11/29/2022	BusArea	213020	H	3	0001	X	NULL	NULL
4	4	11/29/2022	BusArea	213020	H	4	0001	X	NULL	NULL
5	5	11/29/2022	BusArea	213020	S	10	0001	X	NULL	NULL

5. You can add documents in the same table, ensuring the account is in balance.

   The ITEM columns are part of the loop. For the BDC template task to run the HEAD values must repeat multiple times.

   Make sure the `ACGL_HEAD-BLDAT` value is current date before running the test, otherwise the transaction will fail (FB50 cannot accept G/L records dated in the future or in the past). This is a sample instruction to accomplish this before running the load test:

   ```
   update [dbo].[FB50_XX] set [ACGL_HEAD-BLDAT]= CONVERT(varchar,GETDATE(),101)
   ```

Next steps are:

6. Create and populate the source table.
7. Import the template to create a new target table.
8. Define a replication.

NOTE: To check the result, use SAP transaction FB03 and check the latest documents added.