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Syniti Solutions

SAP RFC Data Extraction using Syniti Replicate

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Overview

Syniti Replicate version 10.0 and above supports the extraction of data from SAP ECC and S/4 HANA Systems through the application layer using Remote Function Calls (RFC). In order to use this capability, customers must have the necessary license applied to their Syniti Replicate installation. Supported data extraction objects are as follows: -

SAP ECC Systems

- Tables
- Cluster Tables
- Pooled Tables
- Long Texts
- Global & Local Queries

SAP S/4 HANA Systems

- Tables
- Views
- Long Texts
- Global & Local Queries

Customers that need to extract data from SAP ECC and S/4 HANA Systems using Syniti Replicate should raise a Syniti Support request for a SAP RFC Extraction for Syniti Replicate.

NOTE: You must be signed in to the Syniti Support site to submit a request.

Syniti support will provide a download link to the file 'SAP RFC Extraction for Syniti Replicate.zip'. This file includes the following artifacts:



1. SAP RFC Data Extraction Using Syniti Replicate User Guide (this document) i. Document Syniti - SAP RFC Data Extraction Using SDR.docx

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2. SAP ERP Driver Registration

- i. Windows Registry file Syniti_Register_cData_Driver_for_SAP_ERP.reg
- 3. Custom SAP Read Table Function
 - i. Overview document Syniti Data Replication Read Table.docx
 - ii. Transport RD2K9A011P for SAP ECC6 SAP Basis 700 731
 - iii. Transport DCSK900470 for SAP ECC6 SAP Basis 740 and higher
 - a. Containing Function /BOA/SDR_READ_TABLE
 - iv. Transport S4DK900435 for SAP S/4 HANA 1709 (S4CORE 102) and higher a. Containing Function /BS4/SDR_READ_TABLE
- 4. SAP Long Text Extract Query
 - i. Overview document Syniti SAP Query Read Text.docx
 - ii. Install Transport DCSK900570 for SAP ECC6 SAP Basis 700 and higher & S/4 HANA 1709 (S4CORE 102) and higher

a. Containing SAP Query BOAQ_READ_TEXT in User Group /BOA/QUERY

Prerequisites

Extracting data from SAP ECC and S/4 HANA Systems using Syniti Replicate requires software to be installed on the application server running Syniti Replicate and the SAP Application from which data is being extracted.

Syniti Replicate Windows Application Server

To use the Syniti Replicate SAP NetWeaver Extract database type, the SAP NetWeaver RFC SDK must be installed on the application server running Syniti Replicate. The following libraries from the RFC SDK must be available at run time:

- sapnwrfc.dll
- icudt30.dll
- icuin30.dll
- icuuc30.dll
- libicudecnumber.dll
- libsapucum.dll

NOTE: Details explaining how to download the SAP NetWeaver RFC SDK can be found at the following location:

https://support.sap.com/en/product/connectors/nwrfcsdk.html

NOTE: The Syniti Replicate Application Server **MUST** have .Net Framework 3.5 and Windows Visual Studio 2013 C++ installed.

NOTE: After installing the SAP NetWeaver RFC SDK, the installation location must be added to the PATH System Environment Variables.

NOTE: It is important that the above installations are all aligned to the correct 64 bit processing capability as SDR is a 64bit application and will rely on the .Net Framework, Windows Visual Studio 2013 C++ and SAP NetWeaver RFC SDK being aligned to 64bit. If not, then errors will occur when testing the connectivity either directly via 64 bit ODBC connections or via SDR.

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Commented [JG1]: @Andrew Lund I don't believe this is the correct name space for S/4



Example





Setup Steps to Extract Data from SAP Systems

- 1. Download zip file SAP RFC Extraction for Syniti Replicate.zip onto Syniti Replicate application server.
- 2. <u>Install cData Driver for SAP ERP</u>.
- 3. Register cData Driver for SAP ERP.
- 4. Install Custom Read Table Function on SAP Application.
- 5. Install SAP Query for Extracting Long Texts on SAP Application.

Download zip file SAP RFC Extraction for Syniti Replicate to Application Server

Download and unzip file SAP RFC Extract for Syniti Replicate.zip onto the Windows Server where Syniti Replicate is installed. Before unzipping the file, check the properties of the zip file to ensure it's not blocked. If it is, check the Unblock flag and click apply.

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	SAP RFC Extraction for Syniti Replicate.zip		
Type of file:	Compressed (zipped) Folder (.z	ip)	
Opens with:	🦮 Windows Explorer	Change	
Location:	C:\		
Size:	10.4 MB (10,912,275 bytes)		
Size on disk:	10.4 MB (10,915,840 bytes)		
Created:	Tuesday, June 21, 2022, 12:17:25 PM		
Modified:	Tuesday, June 21, 2022, 12:14:14 PM		
Accessed:	Tuesday, June 21, 2022, 12:17:25 PM		
Attributes:	Read-only Hidden	Advanced	
Security:	This file came from another con and might be blocked to help p this computer.	nputer Unblock	

The folder structure of the unzipped file should look as follows:

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Install CData Driver for SAP ERP

To install the CData Driver for SAP ERP:

1. Copy folder CData and 2 CData DLLs highlighted below from extracted folder 'SAP RFC Extraction for Syniti Replicate'.

~	Drivers	
- 1	> 🚞 cData	
	CData.ODBC.SAPERP.DLL	
	CData.ODBCm.SAPERP.DLL	
-	Syniti_Register_cData_Driver_for	_SAP_ERP.reg

2. Paste the folder into the location where Syniti Replicate was installed. By default, Syniti Replicate is installed in the following location: -

C:/Program Files/Syniti/Syniti Replicate

	> This	s PC > Local Disk (C:) > Program Files > Syn	iti 🔹 Syniti Replicate 🗧
		Name	Date modified
iS		📙 cData	5/16/2023 10:44 AM
R		CData.ODBC.SAPERP.DLL	5/10/2023 1:42 AM
		CData.ODBCm.SAPERP.DLL	5/10/2023 1:42 AM

Register CData Driver for SAP ERP

To register the CData Driver for SAP ERP:

1. A Windows Registry file Syniti_Register_cData_Driver_for_SAP_ERP.reg file is available in the zip file.

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2. The Syniti_Register_cData_Driver_for_SAP_ERP.reg file expects that the driver files have be copied to the default Syniti Replicate installation location. If Syniti Replicate has been installed in a different location, then the highlighted file paths below will need to be modified.

	Syniti_Register_cData_Driver_for_SAP_ERP.reg
Windows Registry Editor Version 5.00	
<pre>[HKEY_LOCAL_MACHINE\SOFTWARE\ODBC\ODBC "Driver"="C:\\Program Files\\Syniti\\S "Setup"="C:\\Program Files\\Syniti\\S "OEM="TRUE" "DisplayProperties"="ALL" "Help"="C:\\Program Files\\Syniti\\Syn "Help"</pre>	CINST.INI\Syniti-CData Driver for SAP ERP] Synit Replicate\\CData.00BC.SAPERP.dll" Miti Replicate\\CData.00BC.SAPERP.dll" Miti Replicate\\CData\\CData
[HKEY_LOCAL_MACHINE\SOFTWARE\ODBC\ODBC " <u>Syniti-CData</u> Driver for SAP ERP"="Ins	INST.INI\ODBC Drivers] stalled"

To register the CData Driver for SAP ERP:

- 3. Double-click the Syniti_Register_cData_Driver_for_SAP_ERP.reg file
- 4. When prompted, confirm that you want to update the registry.

Adding information can unintentionally change or delete values and cause components to stop working correctly. If you do not trust the source of this information in Uschient RemoteDeckton/Joniti Reviser cala Torixer for SQP FRP rea do not add it to th
registry.
Are you sure you want to continue?
Yes No.

Install Custom Read Table Function on SAP Application

To efficiently extract table / view data from SAP ECC and S/4HANA Systems using Syniti Replicate, custom read table function SDR_READ_TABLE must be installed on the SAP system.

Transport RD2K9A011P contains the version of the function for SAP ECC6 SAP Basis 700 - 731.

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Transport DCSK900470 contains the version of the function for SAP ECC6 SAP Basis 740 and higher. Transport S4DK900435 contains the version of the function for SAP S/4HANA 1709 (S4CORE 102) or higher.

Install the required version of the function using the standard SAP Transport import process.

Document Syniti - Data Replication Read Table.docx provides an overview of the contents of the specified SAP Transports.

Install SAP Query for Extracting Long Texts on SAP Application

To extract long text data from SAP ECC and S/4HANA Systems using Syniti Replicate, install SAP Query BOAQ_READ_TEXT in User Group /BS4/QUERY on the SAP system.

Transport DCSK900570 contains the SAP Query that is compatible with SAP ECC & S/4HANA.

Document Syniti - SAP Query Read Text.docx provides an overview of the contents of the specified SAP Transports.

Extracting Data using SAP NetWeaver Extract Database Type

This section of the document provides detailed steps to:

- <u>Set Up a Connection to an SAP Application</u>
 Extract Data from a Single Table
- <u>Extract Data from a Single Table</u>
 <u>Extract Data from Multiple Tables</u>
- 4. Extract Long Texts
- 4. Extract Long Texts

Set Up a Connection to an SAP Application

To set up the connection:

1. Right-click the Sources folder as shown below and choose Add New Connection.



NOTE: The Add Source Connection Wizard opens.

2. Click Next.

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- Enter a Name for the Source Connection.
 Select SAP NetWeaver Extract from the Database list box.
- Select CData SAP RFC ODBC Driver 6.4 bit from the Provider list box.
- 5. 6. Click Next.

B Add Source connect		
		Syniti Data Replication
Select provider	Select the da	tabase that contains source data to be replicated and indicate which provider to use.
let connection tring	Source name	
Select tables	Name:	S4I_Demo_Source
lummary	Data Provider	8)
	Database:	SAP Net/Weaver Extract
	Provider:	CDATA SAP RFC ODBC Driver 64 bit
المعققات		
and the second second		

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7. Click the connection properties and configure the connection.

The CData ODBC Driver for SAP ERP DSN configurator opens.

DSN Configuration				
Data Source Name:	Test	Connection	Reset	Connec
Connection Properties				
📖 Show Required 💷 Show All	21 ===			
Authentication				
Connection Type	NetWeaver			
Host	10.21.12.205			
System Number	10			
User	dsp_rfc			
Password		••		
Client	400			
AbusCeroncase				
Message Server	h.			
Sustem Id	4			
DECTIDI				
Connection lype				

The table below defines the available CData ODBC SAP ERP driver connection properties along with recommended values to be used for particular properties.

YELLOW = Syniti recommended changes to default values GREEN = SAP connection information that may or may not need to be populated based upon requirements

Group	Property	Recommended Value
Authentication	ConnectionType	NetWeaver
Authentication	Host	{Enter SAP Host or Message Server}
Authentication	SystemNumber	{Enter SAP System Number}

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Group	Property	Recommended Value
Authentication	User	{Enter SAP RFC Username}
Authentication	Password	{Enter SAP RFC User Password}
Authentication	Client	{Enter SAP Client}
Authentication	X509Certificate	
Authentication	MessageServer	{Enter SAP Host or Message Server}
Authentication	Group	{Enter Group if using Message Server}
Authentication	SystemId	{Enter SAP System ID}
Authentication	RFCURL	
Authentication	MessageServerService	
Caching	AutoCache	FALSE
Caching	CacheProvider	
Caching	CacheConnection	
Caching	CacheLocation	%APPDATA%\CData\SAPERP Data Provider
Caching	CacheTolerance	600
Caching	Offline	FALSE
Caching	CacheMetadata	FALSE
Firewall	FirewallType	NONE
Firewall	FirewallServer	
Firewall	FirewallPort	0
Firewall	FirewallUser	
Firewall	FirewallPassword	
Logging	Logfile	
Logging	Verbosity	1
Logging	LogModules	
Logging	MaxLogFileSize	100MB
Logging	MaxLogFileCount	-1
Misc	Charset	
Misc	Destination	
Misc	EndianType	Auto

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Group	Property	Recommended Value
Misc	GatewayHost	{Populate if SAP Gateway is used}
Misc	GatewayService	{Populate if SAP Gateway is used}
Misc	GenerateSchemaFiles	Never
Misc	InitialValueMode	InitialValue
Misc	Language	EN
Misc	Location	
Misc	MaxRows	-1
Misc	Other	{Populate with TrimStrings property to change the way leading and trailing spaces are handled – see appendix for further details}
Misc	Pagesize	25000
Misc	PseudoColumns	*=*
Misc	QueryMode	Global
Misc	ReadTableFunction	/BOA/SDR_READ_TABLE (SAP ECC Systems) /BS4/SDR_READ_TABLE (SAP S/4 HANA Systems)
Misc	RTK	
Misc	StoredProcedureFilter	BAPI*
Misc	SupportEnhancedSQL	TRUE
Misc	TableMode	(NOT TABNAME LIKE '%/%' AND (TABCLASS = 'TRANSP' OR TABCLASS = 'POOL' OR TABCLASS = 'CLUSTER') AND CONTFLAG <> 'L')
Misc	Timeout	60
Misc	UseLabels	FALSE
Misc	UseUnicodeRFC	TRUE
Misc	UseSimpleNames	FALSE
Misc	DefaultDomain	
Misc	EnableForeignKeyDetection	FALSE
Misc	IncludeDualTable	FALSE
Misc	LimitKeySize	255
Misc	MapBigintToVarchar	FALSE
Misc	MapToInt	FALSE

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Group	Property	Recommended Value
Misc	MapToLongVarchar	-1
Misc	MapToWVarchar	TRUE
Misc	MaximumColumnSize	16000
Misc	UpperCaseIdentifiers	FALSE
Proxy	ProxyAutoDetect	TRUE
Proxy	ProxyServer	
Proxy	ProxyPort	80
Proxy	ProxyAuthScheme	BASIC
Proxy	ProxyUser	
Proxy	ProxyPassword	
Proxy	ProxySSLType	Auto
Proxy	ProxyExceptions	
Schema	BrowsableSchemas	
Schema	Tables	
Schema	Views	
Security	SNCMode	{Set to True if SNC Used} {See Appendix 3}
Security	SNCName	{Populate if SNC is used}
Security	SNCQop	{Populate if SNC is used}
Security	SNCPartnerName	{Populate if SNC is used}
Security	SNCLibPath	{Populate if SNC is used}
SSL	SSLServerCert	

See <u>Appendix 1</u> for further details regarding connection properties.

See Appendix 3 for further details regarding SNC connectivity setup.

NOTE: Typically, Syniti Replicate runs a Select 1 Count(*) from {Table} before running a replication. This allows the replication to track the % completion. When extracting from the SAP application layer, this is an expensive operation as this query can't be pushed down to the database. Therefore, this functionality should be disabled. To disable the functionality:

8. Right-click the SAP Source Connection and select Connection Properties.

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9. Set the Skip Record Count property to True.

,	General	
	Connection Name	S4I Demo Source
	Connection	CDATA SAP RFC ODBC Driver 64 bit
	Default Fetch Size	1000000
	Relative Time Difference	00:00:04
	Created By	anonymous
	Created At	6/9/2022 9:19:02 AM
	Modified By	anonymous
	Modified At	6/10/2022 11:41:15 AM
•	Dynamic Properties	
	Max Number of Concurrent Connections	50
	Command Timeout	60
	Disconnected Mode	False
	Skip Record Count 🔺	True
1	Default Commit Mode	AutoCommit

Extracting Data from a Single Table

To extract data from a single table, follow these steps:

- 1. Import Table Metadata into Syniti Replicate
- 2. <u>Create Table in Target Data Source</u>
- 3. Create Replication for Single Table
- Step 1: Import Table Metadata into Syniti Replicate
 - 1. Right-click the Source Connection that represents the SAP System where data is being extracted and choose **Select Tables**.

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2. In the Select Tables dialog box, expand the Source navigation tree (S4I_Demo_Source) and then click the schema called **SAPERP**.

Tip: Avoid expanding the navigation tree below the SAPERP schema. If you expand it, the system attempts to load all the tables defined by the 'TableMode' connection property and could take a few minutes to complete.

Select Tables		-		×
Expand the treeview and select t source connection.	he objects you want	to replicat	e under th	•
Filten		Y	x ±	•
S45_Demo_Source			0	þ
			B	0
Hide System Tables				

3. Select the specific table that needs to be extracted by entering the name in the **Filter** field and then clicking the **Apply Filter** icon.

Tip: Append % to the first characters of a table to retrieve a list of tables that begin with specific characters.

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4. Select the table(s) that need to be imported into the Source Connection table metadata store and click **OK**.



NOTE: This action may take 10 – 15 seconds to complete.

Step 2: Create Table in Target Data Source

1. Drag the source table to the target to open the Create Target Wizard.

Source connection	Select the target conner	ction and define the target table name.
Target connection		
Define columns SQL script Actions	Connection Name: Database Name:	SAPECC_TARGET_TEST1 v
Summary	Owner Name: Table Name:	
Constanting of		
		< Back Next > Cancel Help

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2. Click Next twice to reach the Target Connection Details form, and populate the Database Name, Owner Name and Table Name and click Next.

💰 Create Target Table Wi	zard		×
		Syniti Data Replication	
Source connection	Select the target conne	ction and define the target table name.	
Target connection Define columns SQL script Actions Summary	Connection Name: Database Name: Owner Name: Table Name:	SAPECC_TARGET_TEST1 SAPECC_TARGET_TEST1 र्देक MARA	
		< Back Next > Cancel Hel	p

3. In the Table Structure form, scroll to the bottom to assign the **datetime2** Type to the **ReplicateDateTime** field and click **Next**:

			<u>5</u> }	/nit	i Da	ata F	Re	plica	atio	h
surce connection	The table structure has context menu on the gr	i been autor id if you wa	nati nt t	cally gener o change t	ated in the he table si	e source tab tructure.	ile. Usi	e the buttons	or the	
rget connection	Table Structure									
	E+ E+ E* 🔍 🤗	4			Cre	ate Table Ru	ile E	Automatic	~	
anne columns	Field name	Type		Size	Precisi	Scale	Null	Defaul	Identity	,
L script	FIBER CODE2	nvarchar	×	8	0	0	2			
ions	FIBER_PART2	nvarchar	V	3	0	0	7			
mmary	FIBER_CODE3	nvarchar	~	8	0	0	7			
	FIBER_PART3	nvarchar	~	3	0	0	7			
	FIBER_CODE4	nvarchar	~	8	0	0	7			
	FIBER_PART4	nvarchar	~	3	0	0	7			
	FIBER_CODE5	nvarchar	~	8	0	0	2			
	FIBER_PARTS	nvarchar	~	3	0	0	2			
	FASHGRD	nvarchar	~	- 4	0	0	~			
States States	ReplicateDate	datetime	×	0	0	0	~			
2020										`
CONTRACTOR STOR	<								>	

4. Click Next twice and then click Finish.

Step 3: Create Replication for Single Table

1. Right-click the Replication folder to select the **Create New Replication** option.

Targets Deplication	QE_dbMoto_Te
MAKT 👩 Create Ne	w Replication
MARA_MARC_001	QE_dbMoto_Te
MARA_S4I	QE_dbMoto_Te
MARC	P QE_dbMoto_Te

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- 2. Select a replication name or leave it blank. If the name is blank, the System assigns the name of the table as the replication name or adds a counter to it if that name already exists.
- 3. Leave the **Replication Type** as **Refresh.**

-		
		Syniti Data Replication
Replication type	Refresh mode will defin server.	e a one-time unidirectional replication, from the source server to the target
Source connection	Replication Name	
	Replication Name	<leave blank="" names="" source="" table="" to="" use=""></leave>
Target connection	Description:	
	Use Group:	Ø ⊲undefined> ∨ Create
Mapping info		
Scheduling	Replication Type	
Actions	Refresh	
Summary	O Continuous Mirro	ring
	O Synchronization	

4. Select the source connection and the table to be replicated and click **Next**.

		Syniti Data Replication
Replication type	Select the source conn	nection and table to be replicated.
Source connection		
Target connection	Connection Name:	SAP_S4_SOURCE_TEST2 V
Mapping info	Table Name:	SAPERP MARA 🗸 🌽
Scheduling		Open Table
Actions		
Summary		
and the second s		
No.		
		< Back Next > Cancel Hel

5. Select the target connection and the table to be replicated and click **Next**.

1.

		Syniti Data Repli	cation
Replication type Source connection	Select the target conne	ction and table to be replicated.	
Source log into Target connection Target log into Mapping into Scheduling Actions Summary	Connection Name: Database Name: Owner Name: Table Name:	549.54 TANGET TEST 549.54 TANGET TEST 66 0041	✓ ✓ ✓ Marine

6. Click **Next** in the Mapping form to map all the fields from the source into the target.

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		S	/niti [Data Re	plicatic	n
Replication type Source connection	The mapping has target fields. Dray	been automatically g g source fields to targ	enerated using t jet fields or use	he default mapping ruk the toolbar to edit map	e to match source an pings.	4
	- 1	0 - 🔣 -				
	[SAP_S4_SOURCE	TEST2] SAP		[SAP_S	4_TARGET_TEST1] S	AP_S
larget connection	Field name	Ordinal ^		Field n	ame Ordina	1 B ^
	MANDT	01			NDT 01	m
	MATNR	02		🗩 🔍 КИ	NNR 02	m
Manning info	ERSDA	03	_		ND1 03	m.
Scheduling	COEATED AT	^* > `	/	<	11E1 0.4	~
ctions	Field name	Target Table	Ordinal	Type	Size	51
Summary	MANDT	ISAP S4 TARG	1	nvarchar	3	1 A -
and the second	KUNNR	ISAP S4 TARG	2	nvarchar	10	
Contraction of the second	<					>

7. Click **Next** to launch the replication immediately.

	Syniti Data Replication
Replication type Source connection	Set scheduing information for the replication.
Source log info Target connection Target log info	Enable Residuation Evenus Initial Refresh Start Time: 621/2022 V [708.37.44 [5] Refresh 25-deck IIII: Illignman Schedule Vertific Schedule
Mapping info Scheduling Actions	Run One Time Only Run Recurrently:
Summary	Add Remove Edit

8. Click Next again and Finish.

Extracting Data from Multiple Tables

To extract data from multiple tables:

- Bulk Import Table Metadata into Syniti Replicate
 Create Replications for Multiple Tables

Step 1: Bulk Import Table Metadata into Syniti Replicate

1. Right-click the Source Connection that represents the SAP System where data is being extracted and choose Select Tables.

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2. On the Select Tables dialog box, click the Load Tables List icon and then select Import from File.



3. On the Select Table List File dialog box. choose the file that contains the list of comma separate tables to extract.



NOTE: The file being used to import the tables must be in a CSV format as shown in the screenshot below:

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🔚 new 1	i tet 🖾 🔚 CDATA.tet 🔝 🔚 DBMoto_0002.log 🖾 🔚 Demo_Tables.csv 🖾
1	"", "SAPERP", "EQKT", []
2	"", "SAPERP", "EQUI", []
3	"", "SAPERP", "KNA1", []
4	"", "SAPERP", "KNB1", []
5	"", "SAPERP", "KNB5", []
6	"", "SAPERP", "KNBK", []
7	"", "SAPERP", "LFA1", []
8	"", "SAPERP", "LFB1", []
9	

- 4. Once the file import has been completed, expand the list of tables beneath the SAPERP schema and check that these correspond to the tables in the upload file.
- 5. Click the **OK** button.



The table metadata will then be imported into Syniti Replicate.



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Step 2: Create Replications for Multiple Tables



1. Click Next.

Create Multiple Replic	ations Wizard				
		Syniti Da	ata Re	plicati	ion
	Create Multiple Rep	lications Wizard	1		
	This wizard will assist you in set libraryidatabase/schema. Select	ting up multiple replication the source and target cor	s between a sour nections to defin	ce and a target the replications.	
		< Back	Next>	Cancel	Help

2. Click Next.

		Syniti D	iata Replica	tion
Replication type	Define a name to be us use the source table na	ed as prefix when creating replic me as replication name.	ations or leave the field blank if you	want to
Source connection	Replication Name			
	Replication Name	<leave blank="" source="" td="" to="" to<="" use=""><td>able names></td><td></td></leave>	able names>	
Target connection	Description:			
	Use Group:	@ sundefined>	V 0	reate
Set replications				
Scheduling	Replication Type			
Summary	Refresh D			
	Continuous Mirro	rina		
	0			
all states of a	O synchronization			
and a second second				
No. Contractor				

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- Select Schema Name SAPERP. 3.
- 4. Check Load Table from Local Metadata flag.

IMPORTANT! Checking the Load Table from Local Metadata flag ensures that only the tables for the tables imported from the file in the previous step are available for selection. If you do not check this box, Syniti Replicate browses all the tables in the SAP system.

5. Click Next.

	Syniti Data Replication	
Replication type	Select the source connection and library/databaselschema to be replicated.	
Source connection		
Target connection	Connection Name: S4I Demo. Source	
	Schema Name: SAPERP	
Set replications		
Scheduling		
Summary		
and the second		
and and a second second	Coad Tables From Local Metadata	
and a state		

- Select Connection Name of Target Connection.
 Select Database Name in the Target Connection.
 Select Owner Name of Target Database.
- 9. Click Next.

		Oyma Data Ne	producion
Replication type Source connection	Select the target conne	ction and library/database/schema to be replicated.	
larget connection	Connection Name:	SDR_Demo_Target	~
	Database Name:	SDR_Demo_Target	~
let replications	Owner Name:	dbo	×
Scheduling			
Summary			
J. J.			
a Restaur			

10. By default, all the tables in the Source are selected. Choose the items for which a new replication should be created. 11. Click Next.

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				Syn	iti Dat	а	Rep	licati	on
Replication type	Sele	ct the tables to pu	t into	replication.					
ource connection	Repl	cation List							
		Source Table		Source Type	Target Table		Mapping		-
		EQKT		VIEW	EQKT	V	-		0
rarget connection		EQUI		VIEW	EQUI	~			
		KNA1		VIEW	KNA1	~			l lo
		KNB1		VZEW	KNB1	~	-		
let replications		KN85		VIEW X	OKN85	~	-		
cheduling		KNBK		VIEW O	KNBK	~	-		
		LFA1		VIEW	LFA1	~			
ummary		LFB1		VIEW	LFB1	~			
		MARA		VIEW	MARA	v	-		
		MARC MARC		VIEW	MARC	~	-		
		MARD		VIEW	MARD	v			
1					Create Table	Rule	Automat	ic v	
2012					Mapping Ruk	.	MapByN	ame 🗸	

- Check the Enable Replication Flag.
 Check the Execute Initial Refresh Flag.

NOTE: These settings cause the replications to be created and then immediately run.

14. Click Next.

	Syniti Data Replication	
Replication type Source connection	Set acheduling information for the replication.	
Source log min Target connection Target log inte Set replications Scheduling Summary	fostale Replication fostale Replication fostale Schedule fostale Verlage fostale Verlage fostale Verlage fostale Verlage fostale Verlage fostale Verlage fostale fostale fostale	
	Add Benyw Est	

15. Click Start.

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•		Syniti Data	Replication
Replication type	Click the 'Starf' button replication rules.	to begin creating replications. Only run the Re	plication Agent after defining all
Source connection	Multiple Replications S	immary	
	Source Connection:	S4I Demo Source	~
Taunal connection	Source Schema:	SAPERP	
rargetconnection	Source Table:	EQKT	
	Target Connection:	SDR_Demo_Target	
	Target Database:	SDR_Demo_Target	
Set replications	Target Owner:	dbo	
Scheduling	Target Table:	EQKT	
Summary	Source Connection	S4I Damo Source	
	Source Schema	SAPERP	
	Source Table:	EQUI	
	Target Connection:	SDR Demo Target	
	Target Database:	SDR_Demo_Target	
San Stranger	Target Owner:	dbo	
San State	Target Table:	EQUI	~

16. If one of the tables selected does not exist in the target database, Syniti Replicate is able to create it automatically. When prompted, it's recommended to select **Yes All.**

			J		- Parces	
	Wait for the auto the wizard.	matic process to de	fine the multiple repl	ications, then se	lect the 'Close' buttor	to end
	Process status					
nget school nget log into direphonites dieduling	Table 'EQKT' does Do you want to cre Don't Show Again	not exist on the tar sate the table? Ves	get database and	it must be crea	ted to proceed.	^
	1					
	1.11					

The target tables is then created in the target database and the replications are created in Syniti Replicate.

17. Click Close.

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Create Multiple Replication Water Create Multiple Replication Water Create Multiple Replication Water Create Multiple Replication Water Create Multiple Replication Creat

To view the replications, navigate to the Replication folder and observe the execution of the replications.



Extracting Long Texts

To extract long texts:

- 1. Import Table Metadata into Syniti Replicate
- 2. <u>Create Long Text Table in Target Data Source</u>
- 3. <u>Create Long Text Replication</u>

Step 1: Import Table Metadata into Syniti Replicate

1. Right-click the Source Connection that represents the SAP System where data is being extracted and choose **Select Tables**.

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2. On the Select Tables dialog box, expand the Source navigation tree (S4I_Demo_Source) and then click the schema called **SAPERP**.

Tip: Avoid expanding the navigation tree below the SAPERP schema as doing this causes the system to attempt to load all the tables defined by the 'TableMode' connection property and could take a few minutes to complete.

- 1	_ >
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	ts you want to repicate un

3. Select the specific table to be extracted by entering the name in the **Filter** input field and then click the **Apply Filter** icon.

Tip: Append % to the first characters of a table to retrieve a list of tables that begin with specific characters.

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Step 2: Create Long Text Table in Target Data Source

To create a new Long Text table in the target database:

1. Drag and drop the **BOAQ_READ_TABLE** source table onto the target data source.

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2.On the 'Create Target Table Wizard', click Next.



- Confirm that the source connection name and source table name are correct.
 Click Next.

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		Syniti Data Replication
Source	Select the source table	to be copied.
arget connection		
Define columns	Connection Name:	S4I_Demo_Source
lctions		
Summary	Table Name:	SAPERP BOAQ_READ_TEXT V
		Open Table
and a state		
No.		

- 3. Confirm that the target connection name, database name and owner name are correct.
- 4. By default, the target table name will be BOAQ_READ_TEXT. It's recommended that this table name is changed to something that represents the specific long texts being extracted.

NOTE: It's likely that several different long text extracts will be needed for different data objects.

5. Click Next.

	Colored Barrier and Second	
iource connection	Select the target conne	ction and define the target table name.
Target connection Define columns SQL script Actions Summary	Connection Name: Database Name: Owner Name:	SDR_Deno_Terget v SDR_Deno_Terget v Geo_v
	Table Name:	Material_Texts
-		

The details of the table to be created display.

6. Click Next.

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A Create Trade Nation Create Trade Nation

The create table SQL statement displays.

7. Click Next.

	Syniti Re	plicate
Source connection		
arget connection	Table Creation Script	
Define columns SQL script Actions Bummary	Create table MATERIALLOND_TEXT reserve table MGRAP.Volume*.doc*.MATERIAL_CONT_TEXT (* 800_EBAD_TEXT=MGRAP.workshc10000) NULL , * 800_EBAD_TEXT=MGRAP.workshc10000 NUL ,	^
and the second second		~

The long text table is created in the target database specified.

Step 3: Create Long Text Replication

To create the replication:

1. Right-click the Replication folder and select **Create New Replication**.

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2. Click Next.



- 3. Enter the Replication Name
- 4. Click Next.

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		Syniti Da	ta Replication
Replication type Source connection	Refresh mode will defin server.	e a one-time unidirectional replication	, from the source server to the target
Source log rule Target connection	Replication Name Replication Name	Material_Texts	
Terget log into	Use Group:	O undefined>	 ⊂ Create
Scheduling Actions Summary	Replication Type Refresh Continuous Mirro Synchronization	ring	

- 5. Select the Source **Connection Name**
- 6. Select Table Name BOAQ_READ_TEXT
- 7. Click Next.

			inci D	atanc	plicat	
Replication type	Select the source con	nection and table	to be replicated.			
Source connecti						
lource log into						
arget connection	Connection Name:	S4LDem	to_Source			~
Mapping info	Table Name:	THI SAPERP	BOAQ_READ_T	EXT		~ 10
Scheduling					Open Table	
lctions						
Summary						
States of the						
and the second second						

- 8. Select the Target Connection Name into which the long text data is to be replicated
- 9. Select **Database Name** into which the long text data is to be replicated
- 10. Select Schema **Owner Name** into which the long text data is to be replicated
- 11. Select **Table Name** into which the long text data is to be replicated
- 12. Click Next.

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13. Review the mapping information and click Next.

		S	yniti [Data R	eplica	atio	n
Replication type	The mapping has target fields. Dra	been automatically g g source fields to tar	enerated using ti get fields or use t	he default mappin the toolbar to edit	g rule to match so mappings.	ource and	
ource connection							
	- 1	🖸 - 🔣 -					
	[S4I_Demo_Source	SAPERP.BO		[SD	R_Demo_Target]	SDR_Dem	o_Ta.
arget connection	Field name	Ordinal ^		Fi	eld name	Ordinal	T) ^
	BOA_READ	01 -			_BOA_READ	01	m.
	_BOA_READ	02 -		E	_BOA_READ	02	n\
Mapping info	BOA_READ	03 -		E	_BOA_READ	03	n\
abad for	_BOA_READ	04 -			_BOA_READ	04	n١
cheduling	BOA_READ	05 -			_BOA_READ	05	n\
ctions	BOA READ	06 4 -			BOA READ	06	n\ *
ummary	<	>		<			>
	Field name	Target Table	Ordinal	Туре	Size		: ^
	BOA_READ	[SDR_Demo_Tar	1	nvarchar	2000		
	_BOA_READ	[SDR_Demo_Tar	2	nvarchar	2000		
and the second s	_BOA_READ	[SDR_Demo_Tar	3	nvarchar	2000		
Contraction of the second	4						>

Before running an initial extract, a replication where clause to restrict it to a subset of long text records should be added. Therefore, on the next step:

- Deselect Enable Replication.
 Deselect Execute Initial Refresh.
- 16. Click Next.

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17. Click Next.

	Syniti Data Replication	
Replication type Source connection	Choose the action(s) to perform at the end of the wizard.	ĺ
	At the end of the wizard.	
Target connection	Launch the Create Replication Wizard Proceed with the creation of another replication.	
Mapping info		
Scheduling		
Actions		
Summary		
all and a la		
and a second second		
Section and the		

18. Click Finish.

		Syniti Data Repl	ication
Replication type	Click 'Finish' to create the replicat	ion.	
Source connection	Designation Property		
	Repication Suffitially	Material Texts	0
Target connection	Source Connection: Source Schema	S4LDemo_Source SAPERP	
	Source Table: Target Connection:	BOAQ_READ_TEXT SDR. Demo. Taroet	
Mapping info	Target Database:	SDR_Demo_Target	
Scheduling	Target Owner:	dbo	
Actions	Target Table: Replication Type:	Material_Texts Refresh	
Summary	Replication Status:	Disabled	
الملور	Click Finish to perform the follow	ing actions:	
and the second second		Create Replication	v

The replication is created, however, its icon is dimmed because it's not enabled.

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19. To add a where clause to the replication, right-click the replication and select Replication Properties.



On the 'Refresh' properties menu item, an extract where clause can be added to the attribute 'Refresh Filter Source'.

Long Text Data Filtering

Option 1: Using a 'where clause' to run a query with a specific Variant

To use this option, a Variant must be created for SAP Query 'BOAQ_READ_TEXT' in User Group /BOA/QUERY

Example Where Clause using a Variant

Variant = 'MY_VARIANT'

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Option 2: Using a 'where clause' to pass in query selection parameters

SAP Query 'BOAQ_READ_TEXT' supports querying on the following selection parameters:

- Text Object: Field Name _BOA_READ_TEXT-OBJECT ٠

- Text Name: Field Name _BOA_READ_TEXT-NAME Text ID: Field Name _BOA_READ_TEXT-ID Language: Field Name _BOA_READ_TEXT-LANGUAGE •

Example Where Clause using Input Parameters

"_BOA_READ_TEXT-OBJECT" = 'MATERIAL' AND "_BOA_READ_TEXT-ID" = 'BEST'

NOTE: Double quotes need to be wrapped around the field names that are used in the where clause.

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- Run the long text replication by right-clicking the long text replication and selecting Enable Replication.
 Right-click the long text replication and select Run Initial Refresh.

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22. When prompted, click **Yes** to confirm that a full refresh should be performed.



The long extract starts to process.



Once the extract is complete, view the extracted long text data by right-clicking the Long Text table under the Target Data Source and choosing **Open Table**.

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The data extracted should correspond to parameters passed in the where clause or the variant used in the where clause.

Results:

		_BOA_READ_TEXT-OBJ 2	_BOA_READ_TEXT-NAME	_BOA_READ_TEXT-ID	_BOA_READ_TEXT-LAN	_BOA_READ_TEXT-FORMA	_BOA_READ_TEXT-LINE	_BOA_READ_TEXT-COUN	ZMANDT	Variant
	۲.	MATERIAL	TKW_1002	BEST	E	*	Semi-Metallic Brake Pads del	1	400	(null)
		MATERIAL	TKW_1002	BEST	E	1	pack. See Contract for com	2	400	(null)
		MATERIAL	TKW_1002	BEST	E	1		3	400	(null)
		MATERIAL	MH80008	BEST	E	*	Long PO description for the	1	400	(null)
		MATERIAL	MH80008	BEST	E	1	all nursing units and many d	2	400	(null)
		MATERIAL	MH81008	BEST	E	*	Long PO Description for Forc	1	400	(null)
		MATERIAL	MH81008	BEST	E	1	contain more detailed inform	2	400	(null)
		MATERIAL	MH51623	BEST	E	*	Zimmer, 4022-00-45, Zimme	1	400	(null)
		MATERIAL	MH51623	BEST	E	1	Fenestrated Stem $45 \text{mm} \times 1$	2	400	(null)
		MATERIAL	00000000000000183	GRUN	E	*	This is a test	1	400	(null)
1		MATERIAL	00000000000014563	GRUN	E		Test	1	400	(null)

Appendix 1 – Important Connection Property Details

TableMode

The value entered here represents the filter criteria that is applied to SAP data dictionary table DD02L to extract the scope of tables available for extraction.

This statement can be altered to add some additional tables e.g., cluster / pooled or views e.g., (NOT TABNAME LIKE '%/%' AND TABCLASS = 'TRANSP' AND (CONTFLAG = 'A' OR CONTFLAG = 'C' OR CONTFLAG = 'G' OR CONTFLAG = 'E' OR CONTFLAG = 'S' OR CONTFLAG = 'W')) OR TABNAME = 'PAPPINSVH'

Using criteria that select more tables than recommended may cause performance issues when performing operations that browse the SAP metadata.

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PageSize

This property defines the number of records that will be extracted per RFC call. The recommended default value is 25000, however, this can be adjusted. Using a higher value may reduce extraction times, however, if the value is too large, then extracting tables with lots of columns may fail due to lack of temporary memory on the SAP application side.

QueryMode

The SAP Query to extract long text BOAQ_READ_TEXT is a global query, hence by default it's recommended to use value Global. However, if Local queries are created, then this value can be set to ALL.

NOTE: If there are queries with names that overlap with standard SAP tables or queries with the same name but in different User Groups then this may be problematic and hence should be avoided if possible.

TrimStrings

This property provides control of how leading and trailing spaces are handled on extracted data. The options are: -

- TrimAll Trim the leading and trailing spaces of the string value.
- TrimLeft Trim the leading spaces of the string value.
- TrimRight Trim the trailing spaces of the string value.
- None Do not trim any spaces of the string value

The TrimStrings connection property is populated within the driver property 'Other' e.g. Other=TrimStrings=TrimRight. If no value is provided for this property, the default behavior is TrimAll - Trim the leading and trailing spaces of the string value.

InitialValue

This property controls how Blank versus NULL values are handled. By default, it's recommended that value InitialValue is used. This writes a <Blank> value to a table field with no data. This value can be changed to NULL if the value written should be NULL.

NOTE: If there are columns that are primary keys that have <Blank> values then using value NULL will cause the extract to fail.

Views

This property allows a subset of the tables returned by the TableMode criteria to be restricted in the metadata extract.

Appendix 2 – Troubleshooting

If there are data extraction errors that can't be resolved through the usual Syniti Replicate logs, it's possible to activate detailed logging in the CData Driver for SAP ERP. This can be done by setting the following connection properties:

- Logfile -> Enter the location and filename of the log file e.g. C:\SDR\Debuglog.txt
- Verbosity -> Enter value 3

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Logging	
Logfile	C:\SDR\Debuglog.txt
/erbosity	3

Known Issue 1: Maximum ODBC Connection String Exceeded

When creating a connection using the properties in SDR, there is a limit to maximum connection string length. This limit is 1032 characters. Therefore, deviating from the recommended property values may cause the character limit to be exceeded and hence cause problems.

To get around this issue it's possible to create a DSN record and then reference this DSN directly in the SDR connection.

Known Issue 2: Performance Problems when CData Ingests SAP Metadata

On some deployments we have found an issue where the Replicate Service memory consumption rises a very large amount (4 to 5GB +) at certain intervals when running SAP NetWeaver based replications using the CData connection type. The issue is caused by CData caching the SAP table and field metadata every hour based on the default settings of the driver. Once the caching is complete the performance and memory usage returns to the pre-caching levels. A side effect of the caching can be that replications look to be in a pending state until the caching is complete.

To resolve this issue, you can change the caching refresh period from 60 mins to 24 hours by adding the following parameter string to the **other** parameter under the advanced settings.

SchemaCacheDuration=86400

It is then recommended to schedule an SAP replication to run once every 24 hours so that the caching is performed once a day and won't be retriggered during the snapshot or replication window.

Appendix 3 – SNC Configuration

This section details the steps to configure a Secure Network Communications (SNC) connection between a Replicate Server installed on Windows and an SAP ECC or S/4HANA server. This is an advanced topic, and an experienced SAP Basis resource will be required.

The SAP side of the configuration is typically the responsibility of the SAP Basis team. The steps for configuring different versions of SAP may differ so the steps below are intended for guidance only.

NOTE: The SAP server must have SNC enabled.

Download and Extract the Files

To download and extract the files:

- 1. Retrieve the SAP Cryptographic Library files. The latest version can be downloaded from the SAP Marketplace. Download:
 - SAPCAR.EXE—Utility to uncompress .SAR files

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- SAPCRYPTOLIBP_<version number>.SAR Compressed file with the SAP crypto library, for example SAPCRYPTOLIBP_8536-20011729.SAR.
- 2. On the Replicate server, create a folder for the Cryptographic Library, for example C:\SAP_SNC.
- 3. Copy the files downloaded in step 1 to this folder.
- 4. Extract the files from the . SAR file by executing the SAPCAR application. Open a command prompt with Administrator privileges.
- 5. Move to the C:\SAP_SNC folder and run the following command:

sapcar -xvf SAPCRYPTOLIBP_8536-20011729.sar

NOTE: Eight files are extracted, including the sapcrypto.dll and sapgenpse.exe.

Add System Environment Variables

You must be an Administrator on the Replicate server to perform this action.

To add the environment variables:

1. Add a System environment variable named SECUDIR with a value of the folder path where the SAP Cryptographic Library files have been extracted. The screenshot below shows an example where the files were extracted to C:\SAP_SNC.

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Syniti

PROCESSOR_IDENTIFIER PROCESSOR_LEVEL	Intel64 Family 6 Model 79 Stepping 1, GenuineIntel
PROCESSOR_LEVEL	
	6
ROCESSOR_REVISION	4f01
PSModulePath	%ProgramFiles%\WindowsPowerShell\Modules;C:\Windows\s
SECUDIR	C:\SAP_SNC
TEMP	C:\Windows\TEMP
TMP	C:\Windows\TEMP
	<u> </u>
	New Edit Delete

- 2. Add another System environment variable named SNC_LIB with a value of the SAP Cryptographic Library full path, for example C:\SAP_SNC\sapcrypto.dll.
- 3. If the Replicate services or applications were active during the creation of the environment variables, restart them to read the newly created variables.

Generate the Personal Security Environment and Certificate

A prerequisite to configuring an SAP NetWeaver connection, the Replicate application server must have a Personal Security Environment (PSE) with a certificate accepted by the SAP server. To generate the PSE and the certificate:

1. At the command prompt, run the following command to generate the PSE on the SST server:

sapgenpse gen_pse -v -p C:\SAP_SNC\RFC.pse

NOTE: Replace C:\SAP SNC\ in the above command with your file path if it is different.

- 2. The process prompts you for a PIN code. A password is not required. Either:
 - Do not enter a PIN and press the Enter key.

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- Enter a PIN, and note it as it will be needed again.
- The process prompts 'get_pse: Distinguished name of PSE owner'. Enter CN=ServerName

where *ServerName* is a name to identify the SST server in SAP, for example CN=RepProd. NOTE: As a result of this command, an RFC.pse is created in the SECUDIR folder.

4. At the command prompt, run the following command to generate the SST server certificate: sapgenpse export_own_cert -v -p C:\SAP_SNC\RFC.pse -o C:\SAP_SNC\RFC.crt NOTE: Replace C:\SAP_SNC\ in the above command with your file path if it is different. NOTE: As a result of this command, the RFC.crt certificate file is created.

Import the Certificate to the Server and Client PSEs

To continue setting up the SNC connection, import the certificate into the Server and the Client Personal Security Environments (PSEs).

To import the certificate into the Server PSE:

- 1. Navigate to the SAP System that Replicate should connect to via SNC.
- 2. Open the **STRUST** transaction.
- 3. Expand the **SNC SAPCryptolib** folder in the left panel and click the node below it. NOTE: You may be asked for a password to proceed.

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2 M	
System PSE	
SNC SAPCRYPTOID	Owner Valid from Valid to
SSL corver Standard	CN=USPM 18.12.2023 01.01.2038
SSL client SSL Client (Anonyr	CN=USPM2 17.12.2023 01.01.2038
× SSL client BCM	CN=POCDAPP026 15.04.2021 01.01.2038
🛅 SSL client SSL Client (Standa	CN=DSPAppSite 28.04.2021 01.01.2038
X SSL dient PAYPAL	CN-DOCDARROS 06.07.2022_01.01.2028
WS Security Standard	Verification DSE A Paceward
WS Security Other System E	Password Password
WS Security WS Security Ke	Castification
Similard	Centrate
SSE Collaboration Integration	Subject
SSF E-Learning	Subject (Alt.)
SSE FI MAP	Issuer
SSF Logon Ticket	Serial Number (Hex.)
🛅 SSF SAP Trade Repository Re	Serial Number (Dec.)
	Valid From to
	Algorithm
	Key Strength
	Singht a Anothen
	Checksum (SHA1)
	Kara Kara Kara Kara Kara Kara Kara Kara

- 4. Click the Import Certificate button which is left of the Add to Certificate List button; a pop up opens.
- 5. Select your certificate file RFC.crt and click the Continue button. The certificate data displays.
- 6. Click the Add to Certificate List button. The certificate displays in the Certificate List.

NOTE: If the Add to Certificate List button is disabled, click the Display <-> Change button in the upper left corner to review the settings

7. Click the Save button (Ctrl + S).

Next, import the Server Certificate to the Client PSE:

- 1. Still in the **STRUST** transaction on the **SNC SAPCrytpolib** folder, double-click the Own Certificate Subject in the upper part of the screen, as shown in the screenshot below.
 - The Own Certificate data displays.

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2 🎢		
System PSE	SNC SAPCryptolib	
SNC SAPCryptolib	Own Certificate	
 pocdsap005_S4I_10 	Oubject	
SSL server Standard	Subject	Civerney, Or Nerdea do
SSL client SSL Client (Anonyr		(ser-signed)
SSL client BUM		Issuer Certificates
SSL client SSL client (Standa		
WS Security Standard		
WS Security Other System E		•
WS Security WS Security Ke		
X SMIME Standard		Trust own root certificate
🖓 File		-
SSF Collaboration Integration	Certificate List	
SSF E-Learning		
SSF FI_MAP		
G SSF Logon Ticket	Owner	Valid from Valid to
SSP SAP Trade Repusitory RE	CN=USPM	18.12.2023 01.01.2038
	CN=USPM2	17.12.2023 01.01.2038
	CN=POCDAPP026	15.04.2021 01.01.2038
	CN=DSPAppSite	28.04.2021 01.01.2038
		16.07 477 10.01 415
	Verification PSE	Password
	Certificate	
	Subject	CN=HE4, O=Kerberos
	Subject (Alt.)	
	Issuer	CN=HE4, O=Kerberos
	Serial Number (Hex.)	0A:20:16:02:07:08:29:01
	Serial Number (Dec.)	729607337597741313
	Valid From	07.02.2016 08:29:01 to 01.01.2038 00:00:01
	Algorithm	RSA
	Key Strength	2048
	Signature Algorithm	RSA+SHA1
	Check Sum (MD5)	82:29:5D:37:87:04:DF:8E:08:C3:C7:A7:3F:E3:AB:4D
	Checksum (SHA1)	62:C5:A3:04:60:6A:65:50:89:04:40:19:A1:EE:A1:FA:D5:E2:85:A0

- 2. Click the Export Certificate button.
- 3. Assign a name to the exported certificate that identifies the SAP System where the certificate came from.
- 4. Select the Base64 option and click Continue (F8).

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Trust Manager: Display			
9 M			
System PSE Second Sec	NC SAPCryptabb Own Certificate Subject Cit+HE4, Or Self-Symmetry Issuer Certificate Issuer Certificate NC/RQ1.ort	-Kerberos) cates	Vald from 18.12.202 17.12.202 15.04.202 28.04.202 28.04.202 28.04.202

5. Open a command prompt, move to the SECUDIR folder, and execute the following commands:

sapgenpse maintain_pk -v -a <full path and name of certificate> -p <full path and name of environment>

For example:

sapgenpse maintain_pk -v -a C:\SAP_SNC\RQ1.crt -p C:\SAP_SNC\RFC.pse

A message similar to this one displays:

Adding new certificate from file "[YourCertificate]"

The certificate downloaded from SAP has been incorporated into your PSE environment.

Create the Credentials File

Using the commands in this section, you can create the $cred_v2$ file that contains the secure credentials used in the SNC connections between Replicate and SAP. The $cred_v2$ file must be created in the SECUDIR directory (to continue the example from above C:\SAP_SNC). The operating system users that run the Replicate Service and Application must have entries in the file.

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To generate the file and grant access to the users, the following command must be run from a command prompt with Administrator privileges:

sapgenpse seclogin -p RFC.pse -O <User>

The command must be run for each user that needs to have access. For example, if the Replicate services are run by the LocalAccount or NetworkServices, the following commands should be executed:

sapgenpse seclogin -p C:\SAP_SNC\RFC.pse -O Administrator sapgenpse seclogin -p C:\SAP_SNC\RFC.pse -O System

sapgenpse seclogin -p C:\SAP_SNC\RFC.pse -O NetworkService

If Windows user Bob is running the Replicate Management Center he must also be added

sapgenpse seclogin -p C:\SAP SNC\RFC.pse -O Bob

The tool will ensure a valid Windows user and the correct Domain and Username is added. Upon completion, this message displays:

D:\snc_lib>sapgenpse seclogin -p RFC.pse -O Bob

running seclogin with USER="Bob"

creating credentials for user "WIN-S4DMXYZ\Bob" (yourself)...

Adjusting credentials and PSE ACLs to include " WIN-S4DMXYZ\Bob"...

d:\snc_lib\cred_v2 ... ok. d:\snc_lib\RFC.pse ... ok.

Added SSO-credentials for PSE "d:\snc_lib\RFC.pse"

SNC Configuration in SAP

Using transaction **snc0** add an entry for the Replicate server. **System ID** is the Replicate server's hostname and **SNC Name** is the *Distinguished name of PSE owner* from the step *Generate the Personal Security Environment* above.

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Type of ACL entry:					
١C	: Access Control Lis	t (ACL) for Systems			
	System ID	SNC name	RF	CP	
	4EH	p:CN=SCC, OU=HCP Scenarios, O=Trust Community, C=DE	\checkmark		
	Cloud connector	p:CN=CC	\checkmark		
	DSPAppSite	p:CN=DSPAppSite		✓	
	POCDAPP023.pocla	p:CN=POCDAPP023		\checkmark	
	POCDAPP026.pocla	p:CN=POCDAPP026		\checkmark	
	POCXAPP111.poclab.	p:CN=POCXAPP111	\checkmark	✓	
	SAP Cloud Connector	p:CN=cldvmxli00197.wdf.sap.corp, O=SAP, C=DE			
	WIN-S4DM9O98A40	p:CN=USPM	\checkmark		

Configuring a NetWeaver Connection to use SNC

Follow the instructions <u>here</u> to create a NetWeaver connection.

A basic connection uses the following connection properties.

4	Authentication				
	Connection Type	NetWeaver			
	Connection Scheme	ApplicationServer			
	Host	10.21.12.205			
	System Number	10			
	User	dsp_rfc			
	Password	•••••			
	Client	400			

Under the Advanced -> Security section of the connection, SNC can be configured. In the basic example below **SNC Partner name** is obtained from the SAP system and prefixed with p :. If **SNC Name** is empty, **User** and **Password** are used.

Note that using **SNC Name** is an advanced option requiring additional SAP configuration. SNC Name is configured for SAP logons in the SAP system.

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1	Security	
	SNC Mode	True
	SNC Name	
	SNC Qop	9
	SNC Partner Name	p:CN=HE4, O=Kerberos
	SNC Lib Path	D:\snc_lib\sapcrypto.dll

Trust Manager: Display								
19 M								
System PSE Solution System PSE Solution Solution	SNC SAPCryptolib Own Certificate Subject	CN=HE4, O=Kerberos (Self-Signed) Issuer Certificates						

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