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SCS_sw3_Sync

revision 01.03

Revision History

Version	Date	Author	Reason for changes
01.01	2017-04-24	YV	Initial document
01.02	2018-10-31	YV	Event synchronisation
01.03	2021-4-18	ML	Install / start

CONTENTS

1   Introduction

SW3_synch.exe is an application used to configure synchronization of field data between Softwin3 databases and Other Systems databases. Microsoft Net framework and Microsoft Synchronization framework are required to be installed on the Server\PC machine where the databases will sit and where the SW3_Synch.exe application will be used.

2   Requirements

- Softwin3 and Other System must use Microsoft SQL Server databases.
- SCS_Server must be installed on the Server\PC where Sw3_Sync.exe will be executed.
- All changes to Softwin3 databases must be finalised.

3   Setup process

The Admin\User who will run Sw3_Sync.exe must know:

- Which SQL Server instance is used by Softwin3.
- The password for SQL Server administrator user 'sa'.
- Which tables and which fields must be included to the synchronization process.

Sw3_Sync.exe will create Sw3Sync database with the "master" (Softwin3) data and will prepare Softwin3 databases for the exchange process.

SCS_Server.exe must be run with /sw3sync

Important: please check that Softwin3 user has read/write access to Sw3Sync database.

4   Sw3Sync database

For each Softwin3 database table that has been included into the configuration to exchange process with Other System. Sw3_Sync.exe will create "tracking" tables with the latest changes made from Softwin3 and Other System. Softwin3 and Other System must update only the original table, for example CARD_DATA. Each original table has an additional column called Softwin3UpdateDt. This column is used only by Softwin3 and not by Other System.

There is two system tables **Softwin3SyncColumns** and **Softwin3SyncSettings**

4.1   The structure of "Tracking" table

The name of "tracking" table is OriginalTableName_Tracking. For example, if the original table name is CARD_DATA, the "tracking" table name will be CARD_DATA_tracking. The "tracking" table has the following structure:

Column	Type	Comment	Who is using
ID	Bigint	The original table primary key	The sync system
ColumnName	Varchar(128)	The original table column name	The sync system.
Operation	Varchar(1)	The last operation: I – insert U – update D - delete	The sync system
OldValue	Varbinary(max)	The old value of the original column	The sync system
NewValue	Varbinary(max)	The new value of the original table	The sync system
Softwin3UpdateDt	datetime	The datetime when Softwin3 system has changed the value	The sync system
Softwin3SyncDt	datetime	The datetime when Softwin3 has started synchronisation and finished successfully	**Softwin3**
OtherSystemUpdateDt	datetime	The datetime when OtherSystem has changed the value	The sync system
OtherSystemSynchDt	datetime	The datetime when OtherSystem has started synchronisation and finished successfully	**OtherSystem**

Each "tracking" table has the unique index by ID and ColumnName.

4.2   The structure of Softwin3SyncSettings table

This table helps you to see which Softwin3 table has been included to the exchange process. The OtherSystem can modify this table by adding an additional columns but not changing the existing. Please do not delete records from this table.

Column	Type	Comment	The purpose
TableID	Varchar(128)	The Softwin3 table ID	Read-only
TableName	Varchar(128)	The original table name	Read-only
Softwin3StartSyncDt	Datetime	The datetime when Softwin3 has been started the exchange process	**Used by Softwin3**
Softwin3LastSyncDt	Datetime	The datetime when Softwin3 has updated the Softwin3 database successfully.	**Used by Softwin3** and normally equal to Softwin3StartSyncDt
OtherSystemStartSyncDt	Datetime	The datetime when OtherSystem has updated the OtherSystem database successfully.	**Used by OtherSystem**
OtherSystemLastSyncDt	Datetime	The datetime when OtherSystem has updated the OtherSystem database successfully.	**Used by OtherSystem** and normally equal to OtherSystemStartSyncDt
IsBusy	Bit	Using by Softwin3 when updating Softwin3 database	**Used by Softwin3**

This table has the primary index by TableID and unique index by TableName.

4.3   The structure of Softwin3SyncColumns table

This table helps to see the table column settings. The OtherSystem can modify this table by adding an additional columns but not changing the existing. Please do not delete records from this table.

Column	Type	Comment	The purpose
TableID	Varchar(128)	The Softwin3 table ID	Read-only. Link to Softwin3SyncSettings table
ColumnID	Varchar(128)	The Softwin3 column ID	Read-only
TableName	Varchar(128)	The original table name	Read-only. Link to Softwin3SyncSettings table
ColumnName	Varchar(128)	Othe original column name	Read-only
IsSetup	Bit	This is the indication to Softwin3 system that after the exchange process the setup must be send to devices	Read-only. Currently the exchange process supports only cards (CARD_DATA).
ColumnType	Varchar(128)	Softwin3 supports the next types only: - Datetime - Long - Varchar - Varbinary	Read-only. Can be using when updating the original databases (Softwin3 and OtherSystem).

This table has the primary index by TableID, ColumnID and unique index by TableName, ColumnName.

5 SW3Sync run true

Initially, install the following, in order by right click, select install (in the shipped Sw3_sync folder):
Synchronization-v2.1-x86-ENU.msi
DatabaseProviders-v3.1-x86-ENU.msi
ProviderServices-v2.1-x86-ENU.msi

Welcome screen

5.1 Connection Screen

On this screen, you need to enter the following details:

SQL Server Name:	This will be the SQL Server instance name located in the SQL Management Studio.
Username:	The username is fixed to **sa** and can't be changed.
Password:	The default password if set correctly is **$0ftc0nPass**. If not make sure to set the password for sa account in the SQL Management Studio.

5.2 Softwin3 Table selection screen

This screen allows you to select the tables containing the fields that you need to synchronize.

5.3 Field data selection for each table.

This screen will allow you to select the field data that you need to synchronize. Each table you selected will show you a list of all the field data that you can select.

5.4   Confirmation screen

On this screen, you can see all the Softwin3 tables that you selected and all the fields for each table.
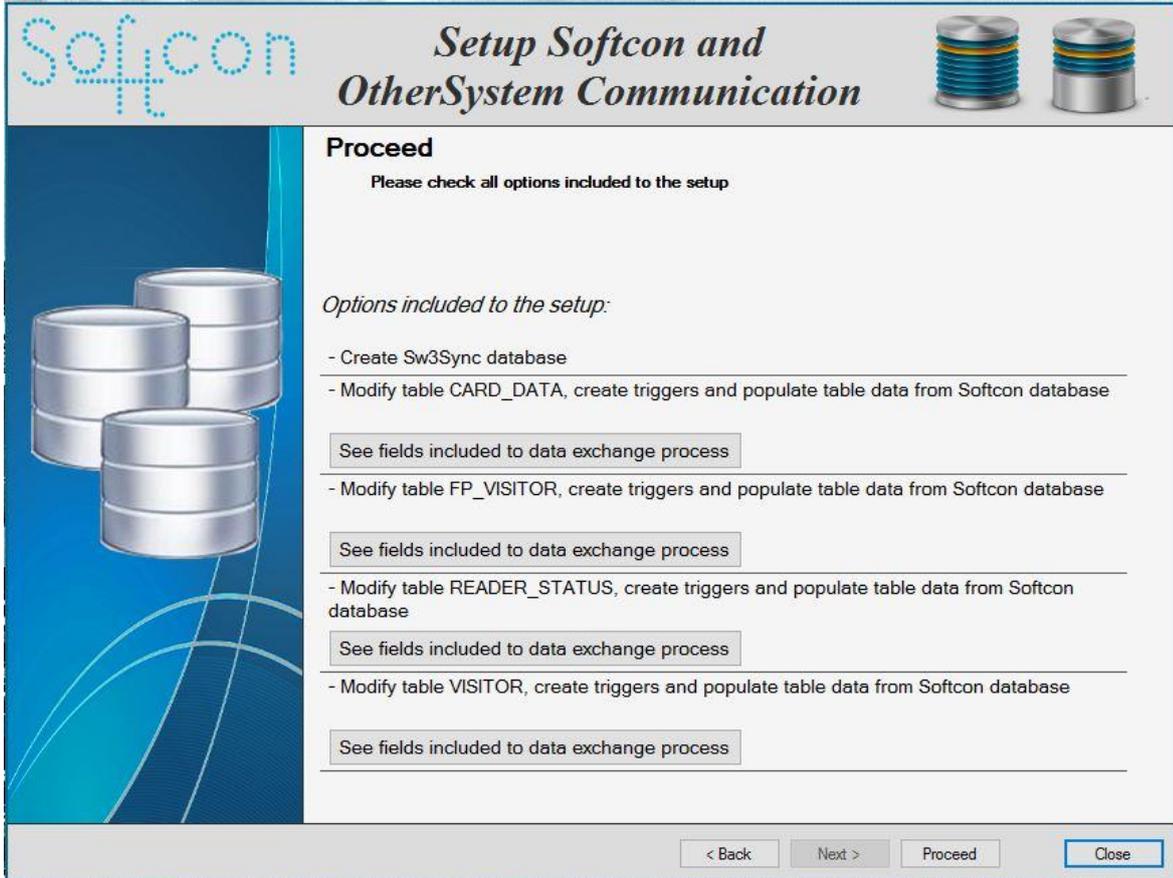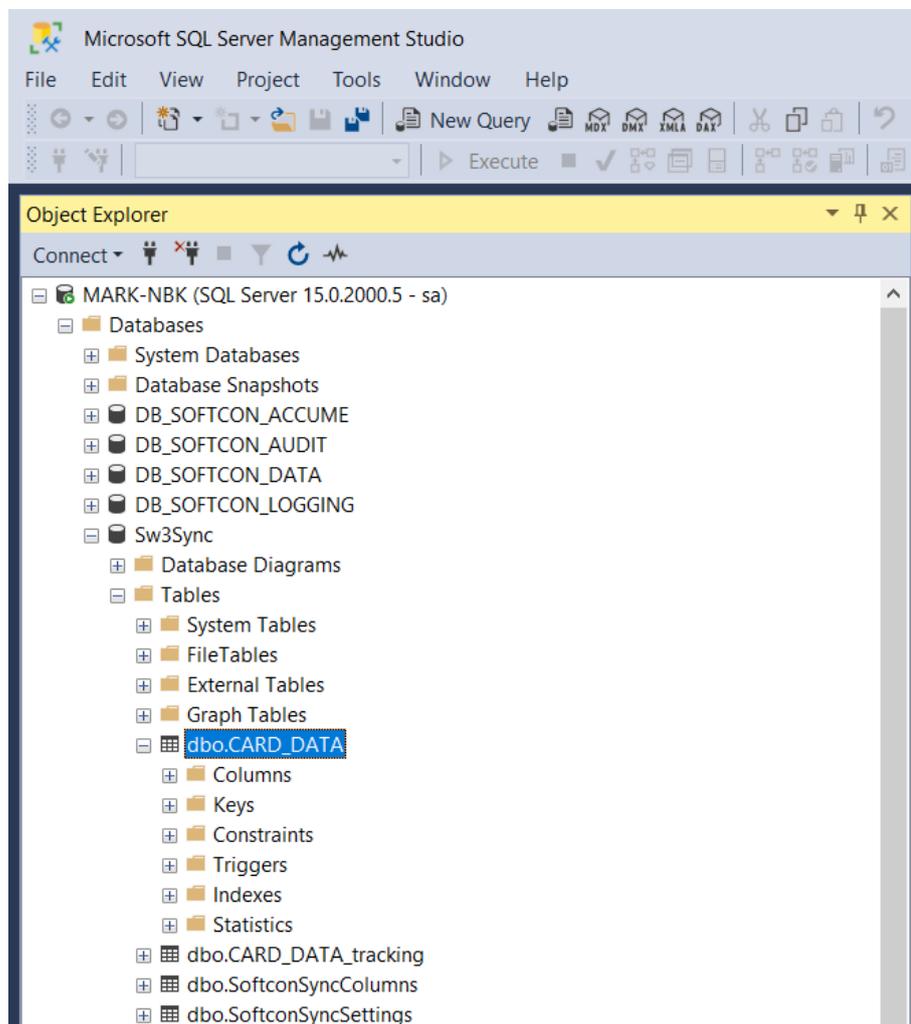

5.5   Update Process screen

On this screen you will see the process running.

5.6 Shared Table

Using SQL Server Management Studio, the shared table can be seen.

As example – CARD_DATA is shared. If edit any changes to data is replicated to SW3 card_database (updated every 15 seconds). Alternately, changes by SW3 to card data, are replicated in this table.

6 Event synchronisation

There is a possibility to exchange events between Softcon and Other System.

6.1 Requirements

- SQL Server must be installed
- SQL Server database SW3SyncEvents must be created with customised **Events** table for Other System
- Softcon system user must have read/write access to SW3SyncEvents database
- The detail operational document must be created to describe **Events** table.

6.2 Softcon settings

The customized SW3SyncEvents.config.xml in C:\Softwin3\exe folder must be created for specific Other System.

SW3SyncEvents.config.xml content:

<SystemName>SystemName</SystemName>

<EventTrigger>EventTrigger</EventTrigger>

SystemName	The Other System name which must be known to Softcon system
EventTrigger	The Sql Server trigger which determinates what should be written to **Events** table. Usually, Softcon stuff is responsible for this trigger