MICROS Materials Control

Central Management & Replication

micros
Materials Control

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Introduction

The replication process in Materials Control is essential to use Central Management.
Please see also the manual "59 Central Management Workflow".

Before using the replication it must be ensured that a database connection can be established. All necessary servers (HQ and slaves) must be able to communicate via ORACLE and TCP/IP.
All data will be transferred via a direct connection between the databases. No file transfer is necessary. This results in more security and data integrity.

Preparation:

The following section will describe the necessary steps to activate & use the replication functionality.

License:

The module Replication must be activated in the license.

Head Quarter Database:

To run a database as a Head Quarter Database some entries in the database must be checked. We recommend to use only prepared databases for Master and Slave. Those can be downloaded from ftp.micros.com.

Please check the following settings in the Head Quarter database:

```
controltab.fil_id = 0
steuertb.fil_id = 0
steuertb.stb_identnr < 1000000 for all records
steuertb.stb_extnr < 1000000 for all records
```

To activate the Replication functionality you need to enable the module via SQLTALK:

```
update modul set mgr_nr=1, mod_zugl=1 where mod_id=580;
```

Slave Database:

For the slave the prepared file from the FTP server must be used.
NOTE: In case of updating an installation with client version older than 8.02 / DB 8.75 using the replication module the table FILIALE must be adjusted manually.
FIL_DBUSER, FIL_DATABASE and FIL_PASSWORD must be filled for the central DB as well as for all subsidiaries wherever available.
For new installations the system will write this information automatically.

Master Data:

In the central environment all master data must/should be created in the HQ database. This should include e.g.:
- all cost centers in all subsidiaries
- all groups used in all subsidiaries (similar group structure recommended)
- all suppliers used in all subsidiaries
- etc. …

Master Data created in the local subsidiary databases cannot be evaluated in the head quarter database.

In order to avoid local created master data a new (hidden) security parameter was inserted and filled automatically.
The parameter is filled through the update routine based on our best knowledge and can be adjusted if necessary.

Go to System > Configurations > FBV8.INI > Custom >
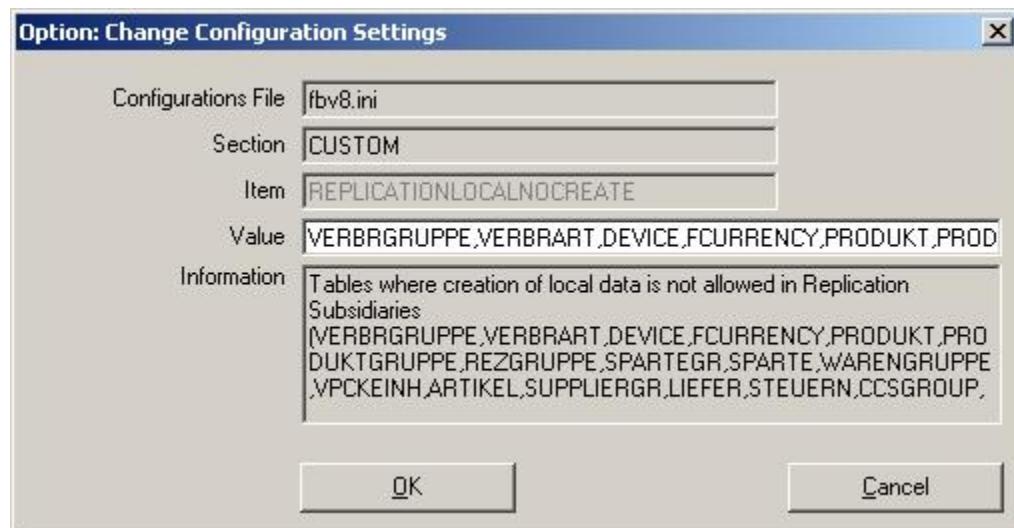
Here all tables are listed for which the application will **not** allow the creation of new entries for subsidiary databases. The table names are separated by comma (,).

The adjustment must be done in all subsidiary databases after the update to DB version 10.30 or higher.
The Materials Control EAME team does **not** recommend to change this parameter!

Please note that this is a hidden parameter (by design) that can be adjusted by authorized administrators only!

Replication Tasks:

The following section will explain the different items to replicate.
Some items must be replicated others can be replicated.
Each task will be explained.

The replication can take place in two directions:
- From Master (HQ) to Slave (Subsidiary)
  o Master Data, Configurations

- From Slave (Subsidiary) to Master (HQ)
  o Result Data

Direction HQ to Slave:

This section will list and explain all data which must / should / can be replicated from the HQ database to the subsidiaries.

"MUST" Data:

In the case of running Central Management some data **must** be controlled by the Head Office. Please find below the list of items, which must be created and maintained centrally:

Cost Centers / Stores:
The entire store structure must be controlled by the Head Quarter Database. If a new store is required it can only be created in the HQ and will be replicated to the Slave. **Creation of stores in the Slave Data Base will return errors in the Replication!**

Over Groups:
The entire group structure must be controlled by the Head Quarter Database. If a new over group is required it can only be created in the HQ and will be replicated to the Slave. **Creation of over groups in the Slave Data Base will return errors in the Replication!**

Major Groups:
The entire group structure must be controlled by the Head Quarter Database. If a new major group is required it can only be created in the HQ and will be replicated to the Slave. **Creation of major groups in the Slave Data Base will return errors in the Replication!**

Item Groups:
The entire group structure must be controlled by the Head Quarter Database. If a new item group is required it can only be created in the HQ and will be replicated to the Slave. **Creation of item groups in the Slave Data Base will return errors in the Replication!**

Taxes:
All tax schemas (including rates) must be controlled centrally in order to secure the correct calculation. **Creation of tax schemas in the Slave Data Base will return errors in the Replication!**

Currencies:
All used currencies must be setup in the Head Office to analyze the purchasing values. **Creation of currencies in the Slave Data Base will return errors in the Replication!** (Exchange rates for these currencies will be explained below.)

"SHOULD" Data:

The following section will list all tasks that are strongly recommended to be managed centrally only. This data can be created locally, but…

- will return error messages in the replication process (can be ignored then)
- can never be evaluated in the head office

Suppliers:
All centrally controlled suppliers can be evaluated centrally. If a new supplier is required it should only be created in the HQ and will be replicated to the Slave. In the definition of the slave you can activate suppliers for this subsidiary. Only those will be replicated to the slave database. **Locally created suppliers cannot be evaluated / analyzed in the Head Quarter!**

Articles:
All centrally controlled articles can be evaluated centrally. All central articles will be replicated to all subsidiaries. In order to use central price quotes the articles must be controlled centrally. **Locally created articles cannot be evaluated / analyzed in the Head Quarter!**

Units:
Some units must be created centrally if you want to use central price quotes, because units are essential to create a price quote. **Locally created units cannot be evaluated / analyzed in the Head Quarter and cannot be used for central price quotes!**

Price Quotes:
All centrally controlled price quotes can be evaluated centrally. Price quotes will be replicated with the suppliers to the slave database. So you will only be able to use central price quotes if the correspondent supplier is activated / replicated to the subsidiary. Of course the price quote can be replicated only if the correspondent suppliers, articles and units are controlled centrally. **Locally created price quotes cannot be evaluated / analyzed in the Head Quarter!**

Future Price Quotes:
If used also FPQs should be replicated. Of course the price quote can be replicated only if the correspondent suppliers, articles and units are controlled centrally. **Locally created price quotes cannot be evaluated / analyzed in the Head Quarter!**

Usage Groups:
Usage groups should be managed centrally, as, similar to the item groups, there will be mirrored groups in the financial back office systems. **If usage groups are replicated, usage over groups must be replicated as well!**

Usage Over Groups:
These are the main assignment groups for booking usages, waste, etc.

"ONCE" Data:

Some items will be replicated only at the first replication after the creation.

Exchange rates:
The currencies must be handled centrally. There an exchange rate will be defined. This exchange rate will be replicated once and not compared during following replication, as those could be different in the subsidiaries. **The exchange rates must be defined locally!**

"CAN" Data:

Master Data:
This section will list all items that can be replicated if necessary.

Notes/Remarks:
"Notes & Remarks" are free definable text blocks and can be replicated.

Cost Center Groups:
If cost center groups are used, these should be handled centrally and replicated.

Supplier Groups:
If supplier groups are used, these should be handled centrally and replicated.

Users & Rights:
The following is related to users and rights. These can be replicated if necessary.
NOTE: This functionality **must not** be activated in existing replications environments without replication of these.

Users:
This is the definition of the application users.
If you replicate users, the departments, departments rights, CC rights and user rights MUST be replicated too!

Departments:
These are the departments to which the users are assigned.
If you replicate departments, the department rights MUST be replicated as well!

Department Rights:
These are the application rights per department.

User Rights:
These are the application rights per user.

CC Rights:
This is the cost center filter definition per user.

POS & Production:
The following section should be replicated only if you run also a centralized POS environment.

Recipe Groups:
These groups are defined to organize a structure in your recipe list. **If you replicate recipes, the recipe groups MUST be replicated too!**

Product Groups:
These groups are defined in the centralized POS system. **If you replicate products, the product groups MUST be replicated as well!**

Recipes:

The recipes can be handled centrally. Those can be replicated to the subsidiaries and there assigned to the products. If recipes are replicated, the following items must be replicated too: Recipe Groups, Recipe Components, Recipe-Article Links, and Recipe-Foreign Links.

Recipe Components:
If you replicate recipes you should also replicate the components. Otherwise only the recipe headers will be created in the subsidiaries.

Recipe-Article Link:
If you want to use recipe transfer and recipe ingredients transfer this item must be replicated.

Recipe-Foreign Link:
If you use sub recipes in your recipes this item must be replicated.

Products:
If you are using a centralized POS system it makes sense to replicate the products. Then you don't have to assign the recipes to the products (sales items).

Clusters:
If you run a centralized POS system it is necessary to replicate clusters.

Devices:
If you run a centralized POS system it is necessary to replicate clusters.

Replication with POS Interfaces

If you run a centralized POS system please follow the below described steps.

1. Create devices in Headquarter **without** Interfaces.
2. Replicate clusters and devices to subsidiaries.
3. Define interfaces on Head Quarter devices.
4. Read data and import products.
5. Replicate recipes, products to subsidiaries.
6. Define interfaces on subsidiary devices.

Direction Slave to Master:

Result:
The information for the result calculation will be replicated from the subsidiaries to the master.

Invoices:
Invoices prepared for the back office will be replicated to the master.

Booked Invoices:
Invoices booked to back office will be replicated to the master.

Booked Invoice lines:
Invoice lines booked to back office will be replicated to the master.

Compare.def:

A file called COMPARE.DEF controls the entire replication process.
Since DB version 8.75 the install set does not longer include a COMPARE.DEF. As this is always customized we will just deliver a COMPARE.ORG, which contains all options for replication. In case of a new installation with replication, create a copy of that file and rename it to COMPARE.DEF. Adjust the file to your needs and load it in the application.

Explanation:

This chapter will explain the sections and parameters in the comparison file.

Header Section:

[FM COMPARE]
TABLE001=VAT
TABLE002=Over Group
TABLE003=Major Group
TABLE004=Item Group
TABLE005=Units
TABLE006=Articles
TABLE007=Currency
TABLE008=Supplier Group
TABLE009=Suppliers
…

This section contains all tables that can be compared. All tables not listed here are not available for the replication. Manually added tables will **not** be considered.

The sequence of the tables must be continuous.

Table Detail Section:

[CURRENCY]
   - referring to the header section

TABLE=Currency,fcurrency,fcurrency,T,,Z,NJJN
    - Description shown in screen, table name in source DB, table name in target DB,
    internal parameters

WHERESRC=
   - internal definitions

WHEREDEST=
   - internal definitions

DIRECTION=MASTERTOSLAVE
    - Direction for replication

KEY1=I,cur_id,cur_id
    - unique key for identification

COMP1=CUR_NAME,CUR_NAME

COMP2=CUR_NAMEID,CUR_NAMEID
COMP3=CUR_SHORTCUT,CUR_SHORTCUT
COMP4=aktiv,aktiv,,,A
- Fields to compare at every replication ("COMP") in a sequential row. Field name in source table, field in target table

MOVE1=CUR_NUMBER,CUR_NUMBER
MOVE2=CUR_SEQUENCE,CUR_SEQUENCE
- Fields to be replicated at the 1st replication only ("MOVE") in a sequential row. Field name in source table, field in target table

DBTEMPSRC=
- internal definitions

INCREMENTAL=
- internal definitions

LASTREPLIKDEST=2004,5,14,16,32,1
- Last replication date

LASTREPLIKSRC=2004,5,14,16,32,1
- Last replication date

READSRC=
- internal definitions

TEST=
- internal definitions

Using the replication

Setting up replication definitions

1st Replication Setup:

Go to System > Replication:
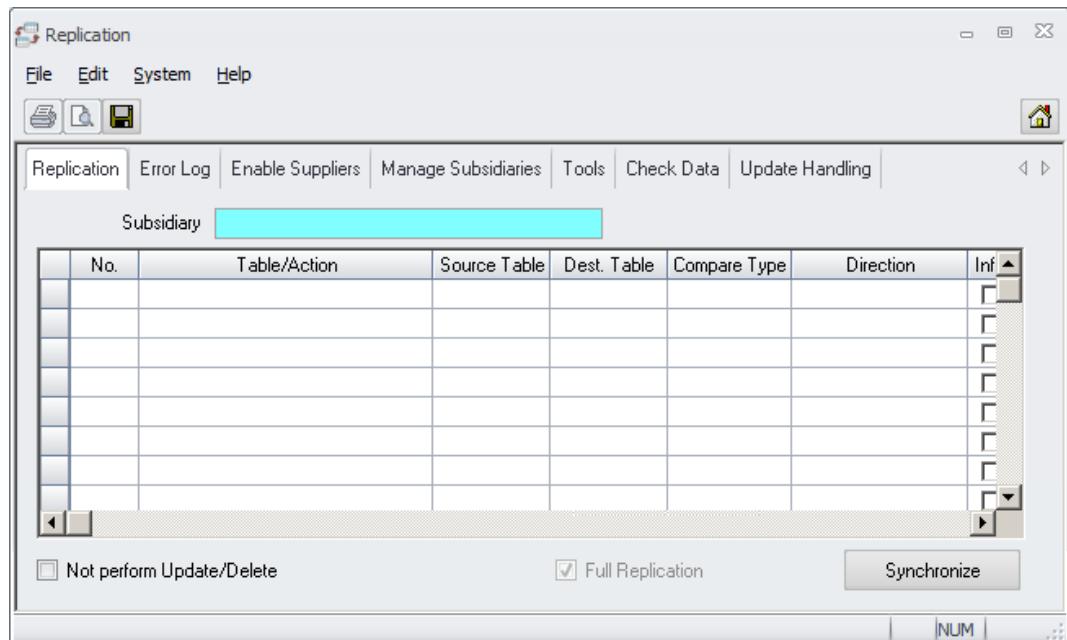
When opening this module the first time the system will show you the blank screen as no definitions are done yet.

Loading Definitions:

Switch to the tab "Tools":

Here you find 2 options:
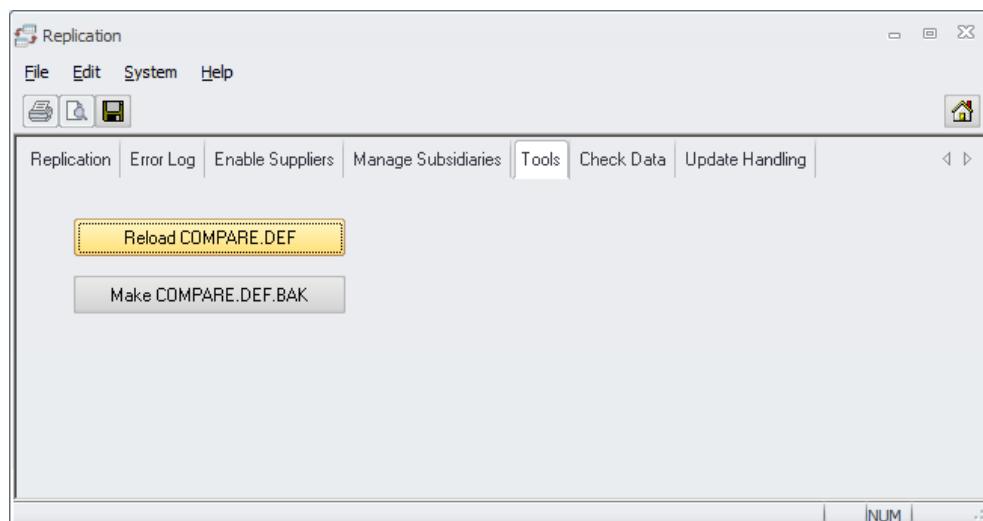
Reload COMPARE.DEF
- Use this option to load the definition from the file COMPARE.DEF (located in the Materials Control client installation directory). This option will also overwrite already loaded information.

Make COMPARE.DEF.BAK
- Use this option to make a backup of already loaded definitions before loading new definitions from the file. This is strongly recommended every time you reload a COMPARE.DEF.

Click on the button "Reload COMPARE.DEF".

Switch back to the 1st tab "Replication when finished:
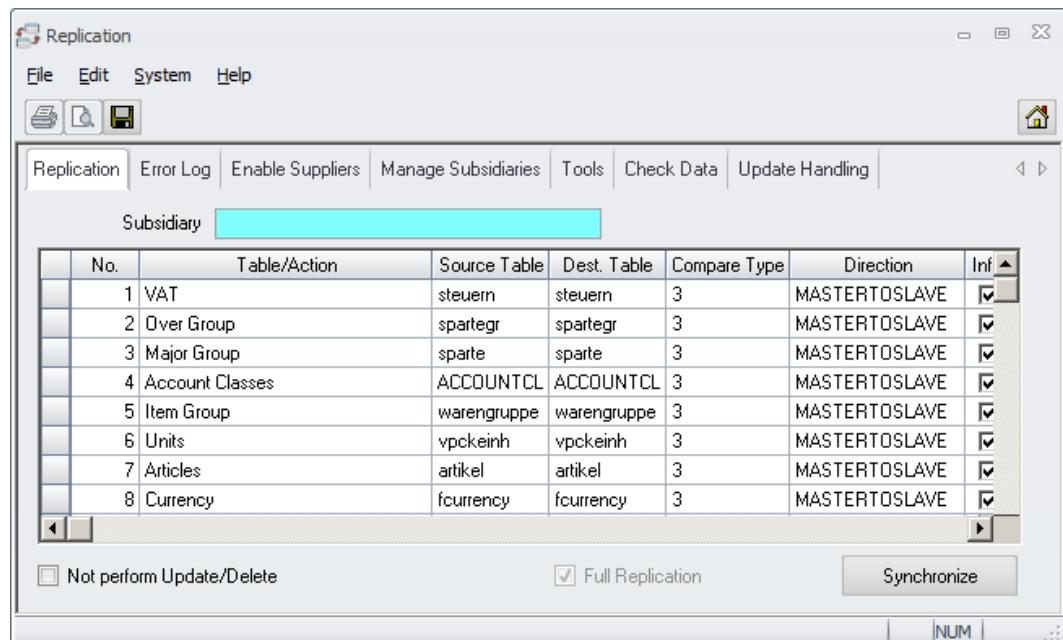
The system now shows all loaded comparison definitions with their options.

![micros]

## Setup of Subsidiaries:

Switch to the tab "Manage Subsidiaries":
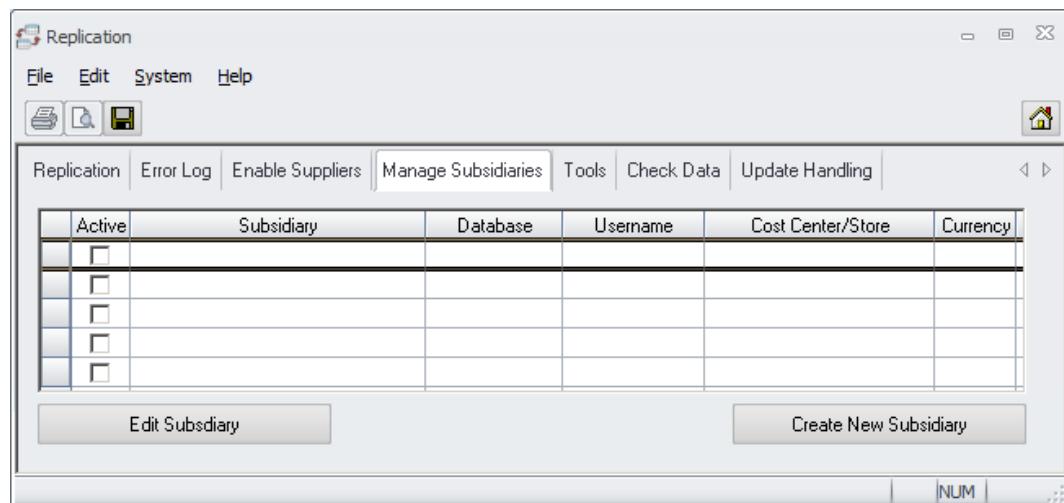
This screen will show you the connection details for all connected subsidiaries.

Click on the button "Create New Subsidiary" to connect the slave databases:
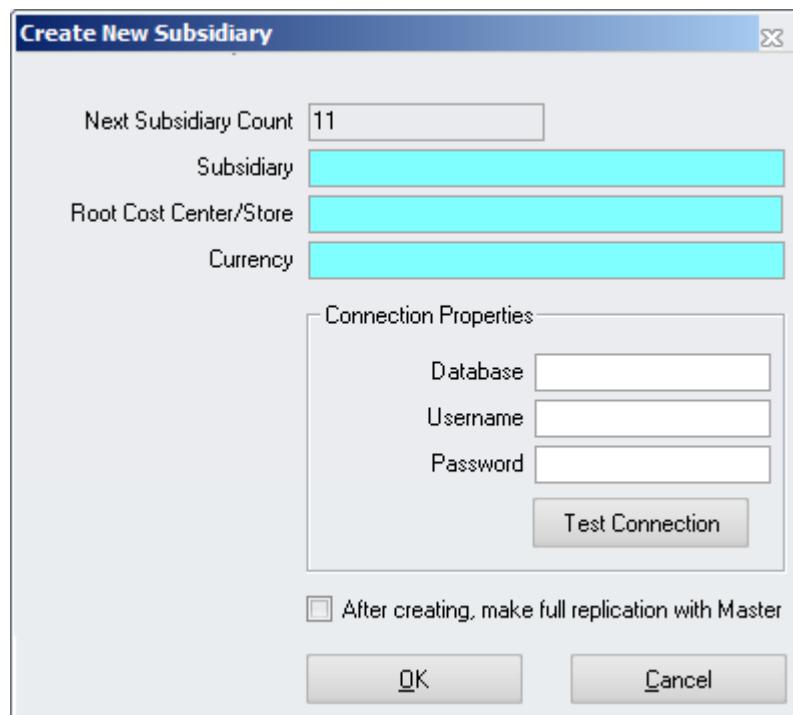
Next Subsidiary Count:
- This field displays the internal counter and is not editable.

Subsidiary:
- Here you can enter the name of the subsidiary.

Root Cost Center / Store:

- Select the root cost center for the subsidiary from the database.

Currency:
- Please select the currency if the currency of the subsidiary is different from the HQ's currency

Database:
- Please enter the Oracle table space name.

Username:
- Please enter the Oracle DB user name.

Password:
- Please enter the password for the Oracle DB user.

Test Connection:
- Click this button to test the connectivity. A message will appear if the connection cannot be established. Please check the connection parameters and try again.

After creating, make full replication with Master
- If this box is ticked the system will perform a full replication (Master to Slave) for this subsidiary after clicking "OK"

Click "OK" to confirm the creation.

Note: This step does actually not create a subsidiary database. It just writes the connection parameters to the HQ database!

Please redo these steps for all subsidiaries.
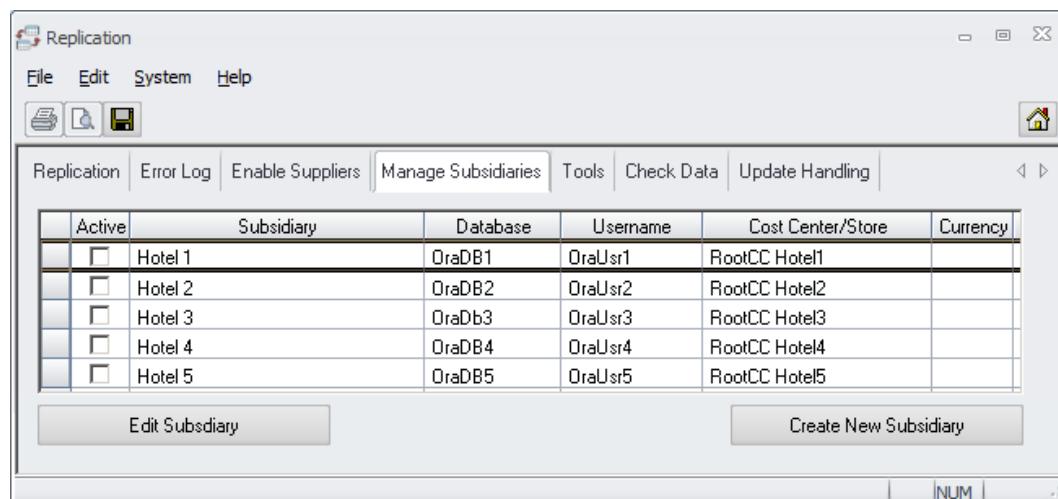
Once the subsidiaries are created the button "Edit Subsidiary" can be used to edit / change the connection parameters if necessary.

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Create New Subsidiary

Next Subsidiary Count	3
Subsidiary	Hotel 3
Root Cost Center/Store	RootCC Hotel 3
Currency	

Connection Properties

Database	OraDb3
Username	OraUsr3
Password	*******

Test Connection

OK   Cancel
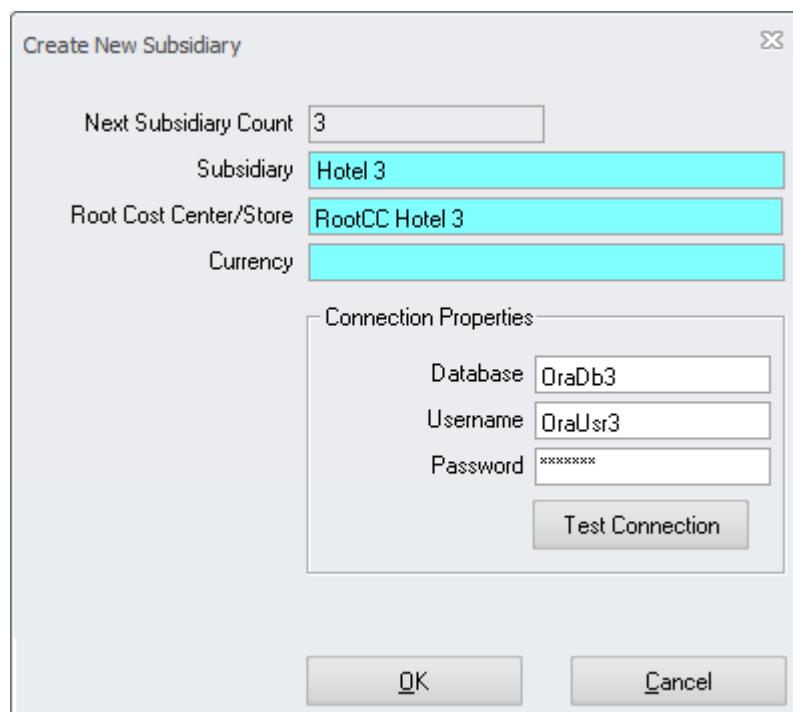
Activation of Suppliers:

Once all subsidiaries are created the suppliers must be assigned to them. Switch to the 1st tab and select a subsidiary.

Switch now to the 3rd tab and mark all suppliers that should be replicated (including their price quotes!) to this subsidiary:
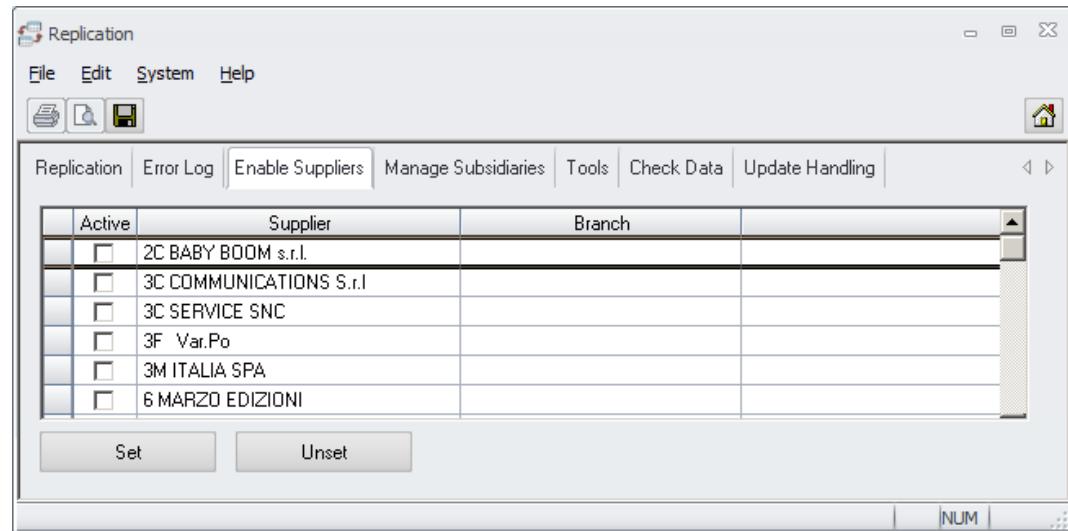

You can also mark several lines and click on "Set" / "Unset" to mark / unmark them.

Click on the Save icon to save the settings.

Database Versions:

Before starting the replication please make sure that you have same database version on master and slave(s). Otherwise the system will show an error message like below:

Manual Replication:

The replication can be started manually or scheduled.

In order to start manually please switch back to the 1st tab:
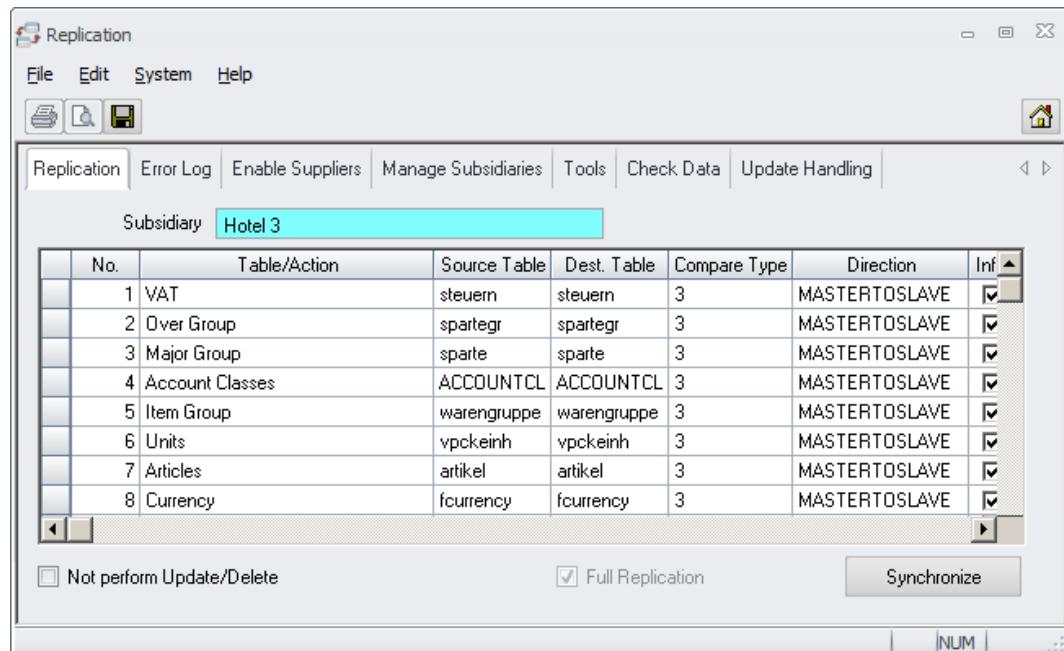
Mark the lines you want to replicate and click on the button "Synchronize"

During the replication process you can see what is replicated:
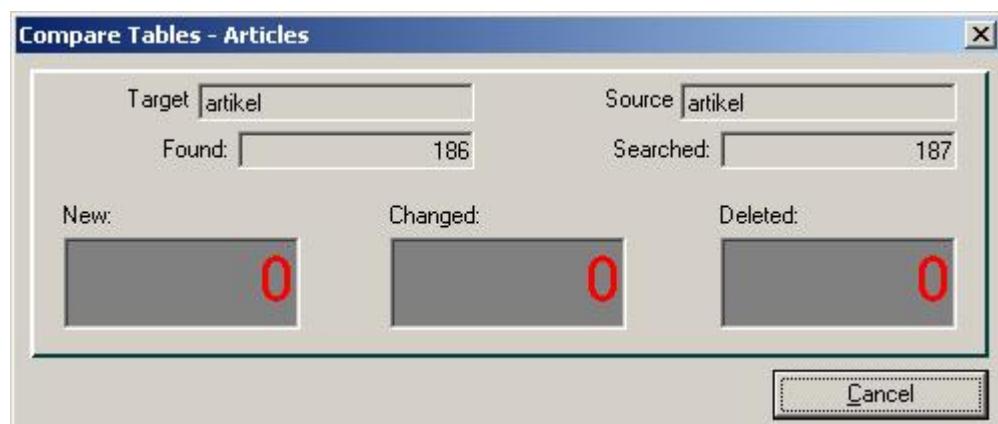
Target   - destination table (if MASTERTOSLAVE, this is slave table)
Source   - source table (if MASTERTOSLAVE, this is master table)
Found   - number of records found on Target
Searched   - number of records existing on Source
New   - number or records to be inserted in Target
Changed   - number or records to be updated in Target
Deleted   - number or records to be deleted in Target
When the replication is finished the system will show the log file screen:
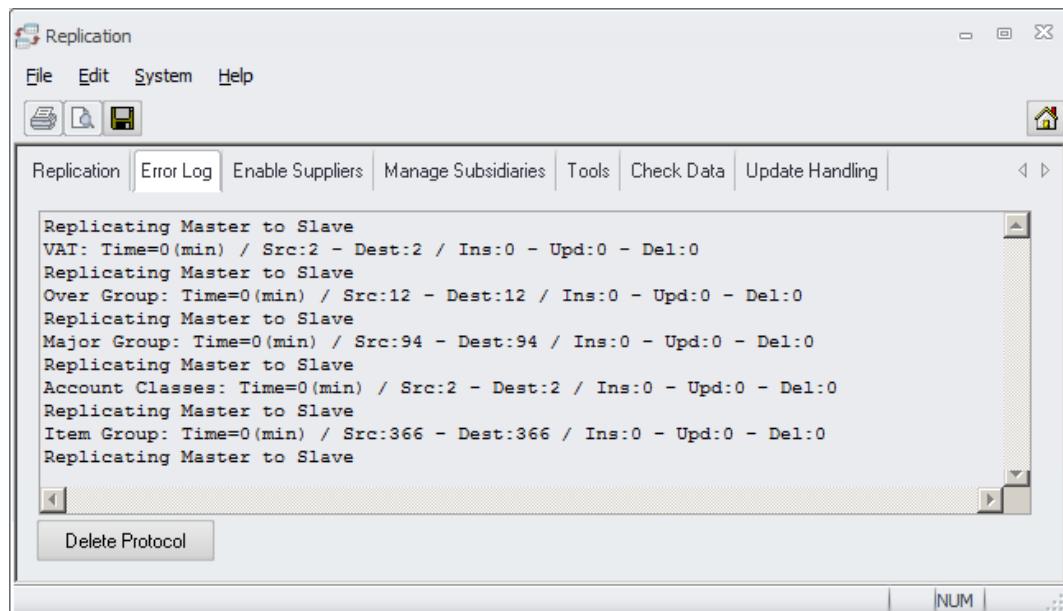
The data displayed here is retrieved from the log file stored in the defined log directory of the local Materials Control client.

REPLIKAT.LOG:

```
2003-01-10-20.00.54.070000-Admin    --------------------------------------------------------
2003-01-10-20.00.54.150000-Admin    -Replicating Master to Slave
2003-01-10-20.00.57.680000-Admin    -VAT: Time=0(min) / Src:8 - Dest:8 / Ins:0 - Upd:0 - Del:0
2003-01-10-20.00.57.760000-Admin    -Replicating Master to Slave
2003-01-10-20.01.00.530000-Admin    -Over Group: Time=0(min) / Src:7 - Dest:7 / Ins:0 - Upd:0 - Del:0
2003-01-10-20.01.00.630000-Admin    -Replicating Master to Slave
2003-01-10-20.01.03.730000-Admin    -Major Group: Time=0(min) / Src:28 - Dest:28 / Ins:0 - Upd:0 - Del:0
2003-01-10-20.01.03.820000-Admin    -Replicating Master to Slave
2003-01-10-20.01.07.060000-Admin    -Item Group: Time=0(min) / Src:42 - Dest:42 / Ins:0 - Upd:0 - Del:0
2003-01-10-20.01.07.130000-Admin    -Replicating Master to Slave
2003-01-10-20.01.10.920000-Admin    -Units: Time=0(min) / Src:159 - Dest:159 / Ins:0 - Upd:0 - Del:0
2003-01-10-20.01.10.990000-Admin    -Replicating Master to Slave
2003-01-10-20.01.20.100000-Admin    -Articles: Time=0(min) / Src:711 - Dest:711 / Ins:0 - Upd:0 - Del:0
2003-01-10-20.01.20.180000-Admin    -Replicating Master to Slave
2003-01-10-20.01.22.950000-Admin    -Currency: Time=0(min) / Src:9 - Dest:9 / Ins:0 - Upd:0 - Del:0
2003-01-10-20.01.23.030000-Admin    -Replicating Master to Slave
2003-01-10-20.01.26.670000-Admin    -Suppliers: Time=0(min) / Src:10 - Dest:10 / Ins:0 - Upd:0 - Del:0
2003-01-10-20.01.26.740000-Admin    -Replicating Master to Slave
2003-01-10-20.01.29.900000-Admin    -Cost Center/Store: Time=0(min) / Src:3 - Dest:3/Ins:0 - Upd:0 – Del:0
2003-01-10-20.01.29.980000-Admin    -Replicating Slave to Master
2003-01-10-20.01.32.930000-Admin    -Result: Time=0(min) / Src:0 - Dest:0 / Ins:0 - Upd:0 - Del:0
2003-01-10-20.01.33.010000-Admin    -Replicating Slave to Master
2003-01-10-20.01.36.230000-Admin    -Invoice: Time=0(min) / Src:0 - Dest:0 / Ins:0 - Upd:0 - Del:0
2003-01-10-20.01.36.310000-Admin    -Replicating Slave to Master
2003-01-10-20.01.40.880000-Admin    -Booked Invoice: Time=0(min) / Src:0 - Dest:0 / Ins:0 - Upd:0 - Del:0
2003-01-10-20.08.07.860000-Admin    --------------------------------------------------------
```

Scheduled Replication:

Once all subsidiaries have received one complete replication (Master to Slave) we recommend to include the replication into the scheduler as a daily procedure executed during the night.

Go to System > Replication > switch to the tab "Manage Subsidiaries":
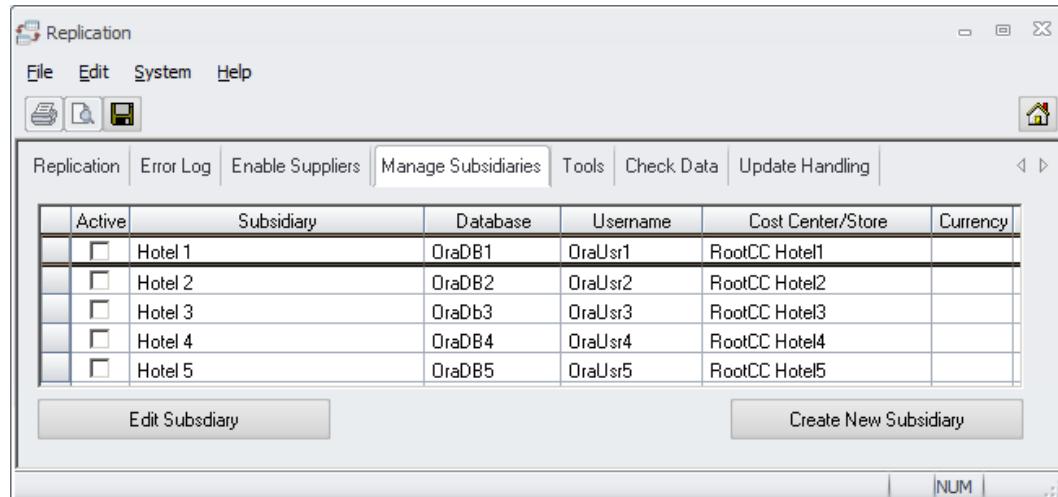
Mark all records in the checkbox "Active" to be included into the automated replication.

Click on the Save icon in the top menu.

Go to System > Scheduler:

Click on the button "New Job" and select here the task "Replication" from the list
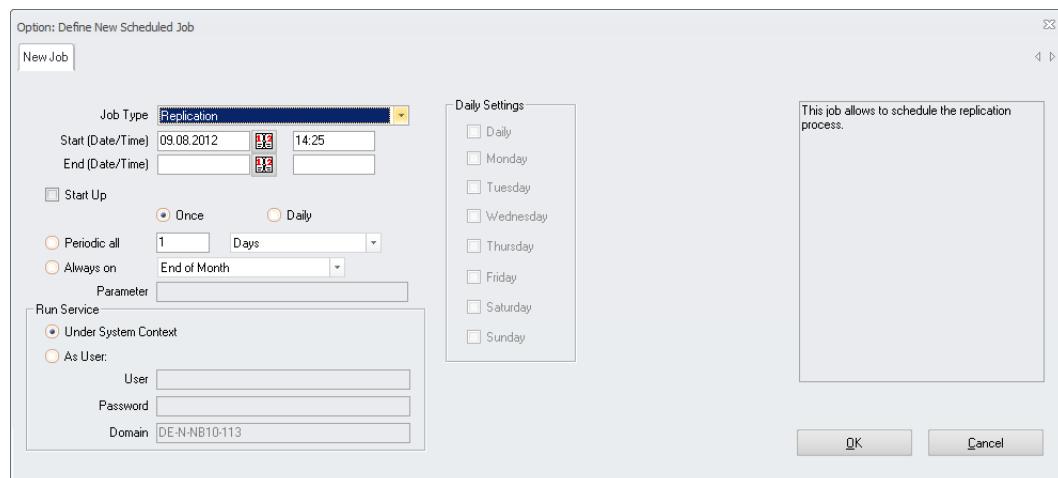
Define all necessary parameters (Start Time, Periodic Settings, etc.) and click "OK" to return to the main scheduler screen.

Save the new job using the icon in the top menu bar.

Please ensure that the scheduler service is started.

Analysis in Central Database

The following reports / applications in the central database will show information from the subsidiaries:

Purchasing:

- Receiving -> all delivery notes booked to BO in the subsidiaries can be viewed here
- Invoice Control -> only if invoice was closed and booked to BO in the subsidiaries, but here you can view every single delivery note

Purchase Analysis:

- Purchase Statistics per Article
- Purchase Statistics per Supplier
- ABC Purchase Analysis
- Price Variance Statistics
- Summarized Receipt Journal
- Purchase Register (new Analysis Release Mid Feb 2004)

Result Section:

- Daily Food,
- Cost Center Comparison,
- Major Group Lists,
- F&B Result

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