SAP POS Data Management and SAP Forecasting & Replenishment Connectivity and Interface Background

Applies to: Industry Retail. For more information, visit the Business Process Expert homepage.

Summary

This document focuses on the connection between SAP POS Data Management (SAP POS DM) and SAP Forecasting and Replenishment (SAP F&R). This combination of products is used in projects in Trade where SAP F&R is implemented because SAP F&R uses a high volume data coming from execution sites, such as stores.

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Introduction

This document focuses on the connection between SAP POS Data Management (SAP POS DM) and SAP Forecasting and Replenishment (SAP F&R). This combination of products is usually used in projects in the Trade area where SAP Forecasting and Replenishment is used because of the fact that we will always have to deal with high volume data coming from the execution sites, such as stores.

In this scenario SAP POS DM is utilized as the main entrance gate or data distribution hub into the SAP system environment, sending validated, enriched and aggregated data to a various number of target systems like SAP for Retail, SAP BI and SAP F&R. This includes the possibility to send cancellation messages and reprocess data.

From an SAP F&R perspective SAP POS DM will provide actual consumption information, current stock in store will be provided by SAP for Retail and historical information will be extracted from SAP BI data cubes.

The following chapters will give an overview and will allow interested parties to gain a better understanding for the interaction between SAP F&R and SAP POS DM. It will give implementing teams a starting point for discussions and will answer most of the initial questions that arose in past projects and should enable solution architects from SAP F&R and SAP POS DM to understand the requirements and capabilities of the combination of both products.

Note: This document is not intended to provide a full How-To Guide for SAP POS DM or SAP F&R and does not replace specific solution training.

Overview SAP POS DM

SAP POS Data Management is a stand-alone ERP independent solution that offers a comprehensive point-of-sales data management tool set for data capturing, sales auditing and reporting, from the cash register to the connected retail applications.

SAP POS DM is delivered (and installed) with the BI Content Releases and uses SAP BI as its operational platform. It consists of two parts: POS Inbound Processing Engine (PIPE) for data collection, validation and distribution and POS Analytics for sales and ticket reporting.

One of the solutions connected to POS DM and receiving data from PIPE is SAP Forecasting and Replenishment (SAP F&R) based on SAP SCM.

This first part of the document focuses on the POS DM data streams and configuration options for using SAP F&R, but will not explain all other configuration options and data streams available. It also gives some information about data extraction from BI to SAP F&R for historical data.

SAP POS DM Data Flows and architecture

The data flows related to the SAP F&R data stream are the streams reflecting daily consumption:
- Sales information, including applied discounts, promotion numbers, …

- Goods Movements, including goods receipts, goods issues, stock adjustments.

The associated information is loaded to POS DM and distributed from the transaction log storage table (TLOG table) to SAP F&R on the required level of aggregation.
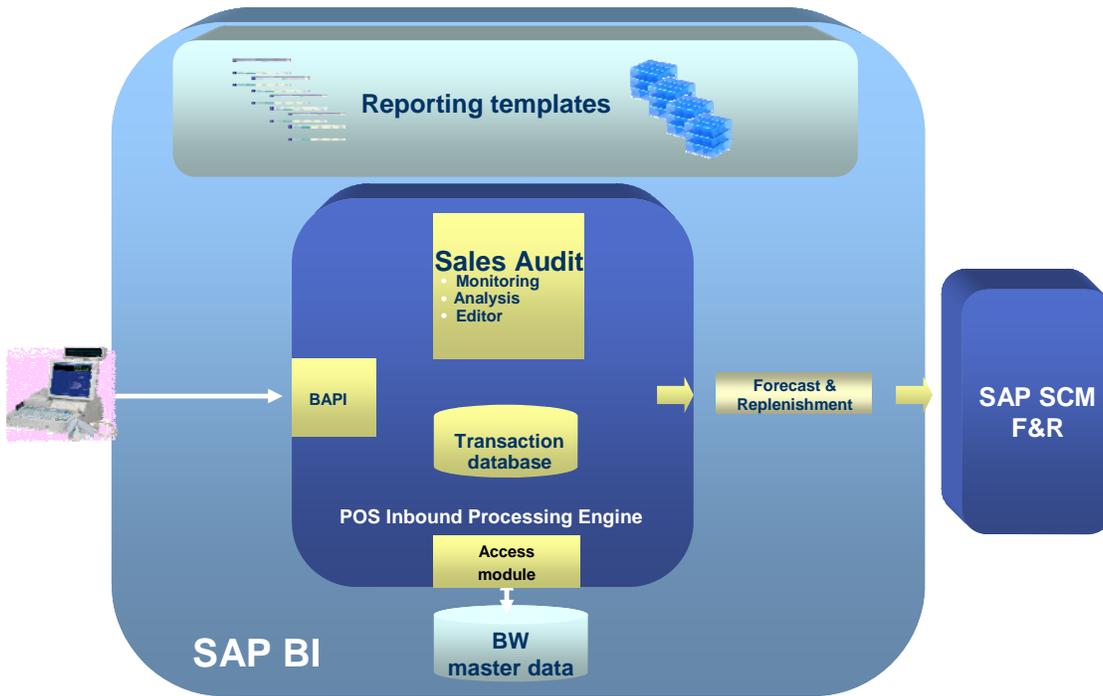
Transaction types in POS DM

The information received and distributed by SAP POS DM is dependent on the level of granularity provided by the POS. In an ideal world, the POS provides a level of detail where each single business case at the POS can be identified at the POS:

For sales:

- Sales, Promotion Sales, Employee Sales, …

- Refunds

- Cancellations

And dependent information, for example:

- Discount details

For goods movements:

- Goods receipts

- Goods issues

- Store to store stock transfers (in/out)

- Various types of stock adjustments (positive and negative).

Identifying all the different types of data coming into SAP POS DM then allows to selectively convert the information according to SAP F&R needs and distribute it (e.g. not to treat refunds as a consumption type of transaction).

In reality restrictions apply based on the ability of the POS system to provide the correct level of information. This could for example mean that it could not be easily recognized if a sale is a promotion sale or a regular sale for some POS solutions.

Interfaces and data transferred to SAP F&R

The interface used for SAP F&R is the time series interface:

/FRE/BIF_TSD_INBOUND2

This interface receives the data translated to SAP F&R qualifier or type code (identifying which type of data SAP F&R receives), product (article, based on article number), location (site) and quantity in base unit of measure. As POS DM usually receives barcodes (or EANs) from stores, this translation is done by the aggregation (or compression) method of SAP POS DM (chapter 3.2).

Because of the nature of SAP POS DM only delta updates can be handled in the interface to SAP F&R. The reason is primarily that SAP POS DM only sends data which has been successfully validated and holds back transactions with identified issues. These will be processed at a later moment in time.

As a secondary impact, the data available in SAP POS DM can be cancelled (voided) for data reloading reasons. This process sends through inverted values which end up as a zero sum (initial posting +5, inverted posting -5).

Result: With SAP POS DM absolute values cannot be sent as the following example shows! That's the reason why only delta postings can be sent from SAP POS DM to SAP F&R.

Example

Article Sales:

Transaction 1		Transactions 2		Transaction 3	
Article	Quantity	Article	Quantity	Article	Quantity
A	5	A	-2	C	-5
B	5	B	5	D	-1
C	5			E	10
D	2				

Delta postings, expected result: Result after aggregation (relative values, partial postings possible):

Aggregated Result:	
Article	Quantity
A	3
B	10
D	1
E	10

Absolute postings: Transaction 3 is posted at a later moment in time because of problems with article E

Posting 1 (without TA#3)		Posting 2 (only TA#3)	
Article	Article	Quantity	Quantity
A	3	C	-5
B	10	D	-1
C	5	E	10
D	2		

Result: incorrect consumption values for articles C & D!

Posting 1 (without TA#3)	
Article	Article
A	3
B	10
C	**-5**
D	**-1**
E	10

Interface SAP POS DM to /FRE/BIF_TSD_INBOUND2

a. Interface Details

The following fields are available in the interface for time series to SAP F&R.

MATNR	/POSDW/FRE_MATNR	CHAR	40	Material Number
LOCNR	/POSDW/FRE_LOCNO	CHAR	20	Location Number
LOCTYPE	/POSDW/FRE_LOCTYPE	CHAR	4	Location Type (SAP F&R)
QUALIFIER	/POSDW/FRE_QUALIFIER	CHAR	4	Qualifier for Supplying SAP F&R
QUANTITY	/POSDW/FRE_QUANTITY	QUAN	19,6	Quan. of Issues & Receipts for SAP F&R
UNIT	/POSDW/BASEUNITOFMEASURE	UNIT	3	Base Unit of Measure
UNIT_ISO	/POSDW/FRE_UNIT_ISO	CHAR	3	ISO Code for UoM for Supplying SAP F&R
ABSFLAG	/POSDW/FRE_VALTYPE	CHAR	1	Absolute/Delta Value for SAP F&R Engine
PRICE	/POSDW/FRE_PRICE	DEC	13,2	Value for Supplying the SAP F&R Interface
CURRENCY	/POSDW/FRE_CURRENCY	CUKY	5	Curr. Key for Suppl. SAP F&R Interface
CURR_ISO	ISOCD	CHAR	3	ISO currency code
STARTDATE	TZNTSTMPS	DEC	15	UTC Time Stamp in Short Form
ENDDATE	TZNTSTMPS	DEC	15	UTC Time Stamp in Short Form
ACCOMPLISH	/POSDW/LASTPACKAGE	CHAR	1	Indicator for Last Pack Processing
REF_ID	/POSDW/FRE_BIF_REFID	CHAR	35	Reference Identifier
TZONE	TZNZONE	CHAR	6	Time Zone

b. Actual mapping (as per SAP POS DM aggregation method and task for SAP F&R)

Fix values:

> **loctype** = '1040' (identifies that this is store data)

> **absflag** = ' ' (posting of absolute Values)

The mapping of the SAP POS DM Type Codes to the SAP F&R type codes for consumption is done in the aggregation method preparing the data fort he actual posting:

> qualifier = Retail Line Item – Retailtypecode.

Instead of using the customer number of the site (RT_CUSTPL,field Retailstoreid, CHAR10) SAP F&R is using the location id information (CHAR20). How to deal with this issue is described in chapter 7.2

> **locnr** = Transaction Header - Retailstoreid.

The determination of the product (article, derived from EANUPC) is done in the aggregation method for SAP F&R:

> **matnr** = Retail Line Item - Materialnumber.

The time zone as well as the actual timestamp fort he posting period is determined in the system as well:

tzone = determined time zone
startdate = determined time stamp for start of time series.
enddate = determined time stamp for end of time series.

During the aggregation the sales quantity in sales unit of measure is used, not base unit of measure:

quantity = Retail Line Item - Retailquantity.
unit = Retail Line Item - Salesuom.

The following fields are not populated by SAP POS DM:

ref_id   not used

unit_iso   not needed as SAP UoM is used

price   not used

currency   not used (as price is not used)

curr_iso   not used (as above)

SAP POS DM Configuration

The configuration part of SAP POS DM already starts with the incoming data, when data is identified against a transaction or line item type code (qualifier). These type codes then trigger if a received line item (sales or goods movements) is relevant for SAP F&R.

The concepts of SAP POS DM regarding Task groups and the assignment of tasks to task groups apply as for any other processing step.

SAP POS DM Customizing: /POSDW/IMG

(When using the transaction code you will always have to prefix it with /n!)

Master data in 0MAT_PLANT/DSO01

All processing for SAP F&R is based on data filtering in the 0MAT_PLANT info object or the associated DSO (data storage object). This object would have to provide the information about store, article, and replenishment type for the selection of the SAP F&R relevant articles.

To use the DSO, master data checking needs to be performed based on check profiles.

Customizing: /POSDW/IMG → POS Inbound Processing → General Settings

(To use the DSO you will have to maintain table view /RTF/V_CUST accordingly.)

Compression method

The compression method provided by SAP POS DM translates incoming store barcodes and associated quantities in sales unit of measure to article number (material) and base unit of measure.

Additionally SAP POS DM transaction types are translated to SAP F&R type codes (chapter 3.4) and the data is aggregated into the defined time granularity.

Standard entry in customizing:

0003	Aggregation by SAP F&R Type/Material/Day	Month of Time Stamp
0003	Aggregation for Material/SAP F&R Type Code	

Customizing: /POSDW/IMG → POS Inbound Processing → Tasks → One-Step Processing → Aggregation methods

The period the data is aggregated against can be set here and can be:
- Posting Date

- Posting Date/Transaction Currency

- Week of Posting Date

- Month of Posting Date

- Hour of Time Stamp

- 10-Minute Division of Time Stamp

- Day of Time Stamp

- Week of Time Stamp

- Month of Time Stamp

Customizing: /POSDW/IMG → POS Inbound Processing → Tasks → Aggregation Period

Activate SAP F&R Replenishment Types

Each existing replenishment type needs to be maintained in the SAP POS DM customizing for SAP F&R. In this table, the active flag needs to be set for each replenishment type relevant for SAP F&R.

Active types are then used to check if the replenishment type maintained against the article/site combination is relevant for SAP F&R or not.

Customizing: /POSDW/IMG → POS Inbound Processing → Integration with other SAP Components → SAP Forecasting and Replenishment → Activate F&R Replenishment Types

Assign F&R Type Codes to SAP POS DM Type Codes

F&R type codes describe which type of information is distributed to the F&R system, e.g. consumption data like sales or refunds, goods scraping or others. There is a standard set of those F&R type codes. These are the ones relevant for SAP POS DM:

1000	Goods Receipt
2000	Goods Issue
3000	Sales/Consumption

For each different SAP POS DM type code relevant for SAP F&R, the translation to one of the F&R type codes needs to be maintained.

Customizing: /POSDW/IMG → POS Inbound Processing → Integration with other SAP Components → SAP Forecasting and Replenishment → Assign F&R Type Codes for Sales Item Types

Example shows usage of F&R Type Code "3000".

Customizing: /POSDW/IMG → POS Inbound Processing → Integration with other SAP Components → SAP Forecasting and Replenishment → Assign F&R Type Codes to Goods Movement Types

F&R Task Customizing

The task (or processing step) for F&R distribution will be maintained to provide the necessary conditions for the processing and will be executed using a batch process using a F&R specific variant of report /POSDW/PIPEDISPATCHER.

The standard delivered task is:

0001   0020   Supply SAP Forecasting and Replenishment

Customizing: /POSDW/IMG → POS Inbound Processing → One-Step-Processing → Tasks
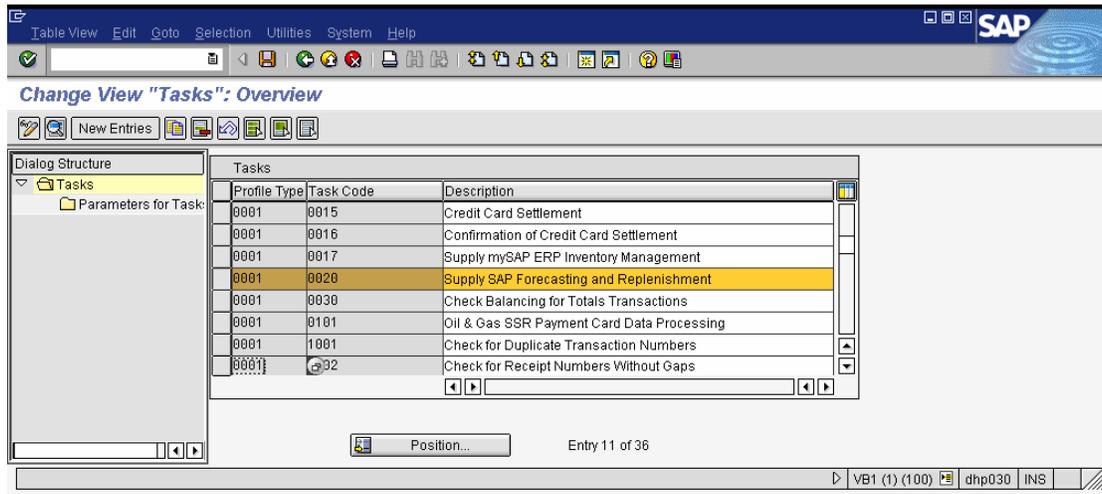
The SAP delivered standard configuration provides the following settings. Custom built implementations can be maintained if necessary (e.g. adopted aggregation method).

Type of Task	Collective processing
Filter for BAdI Tasks	0020
Code for Aggregation Method	0003 Aggregation by F&R Type/Material/Day
Voided Itms in Processing	Filter Out Voided Items
Voided Trans. in Proc.	Filter Out Voided Transactions
External call	Ticked

Customizing: /POSDW/IMG → POS Inbound Processing → One-Step-Processing → Tasks
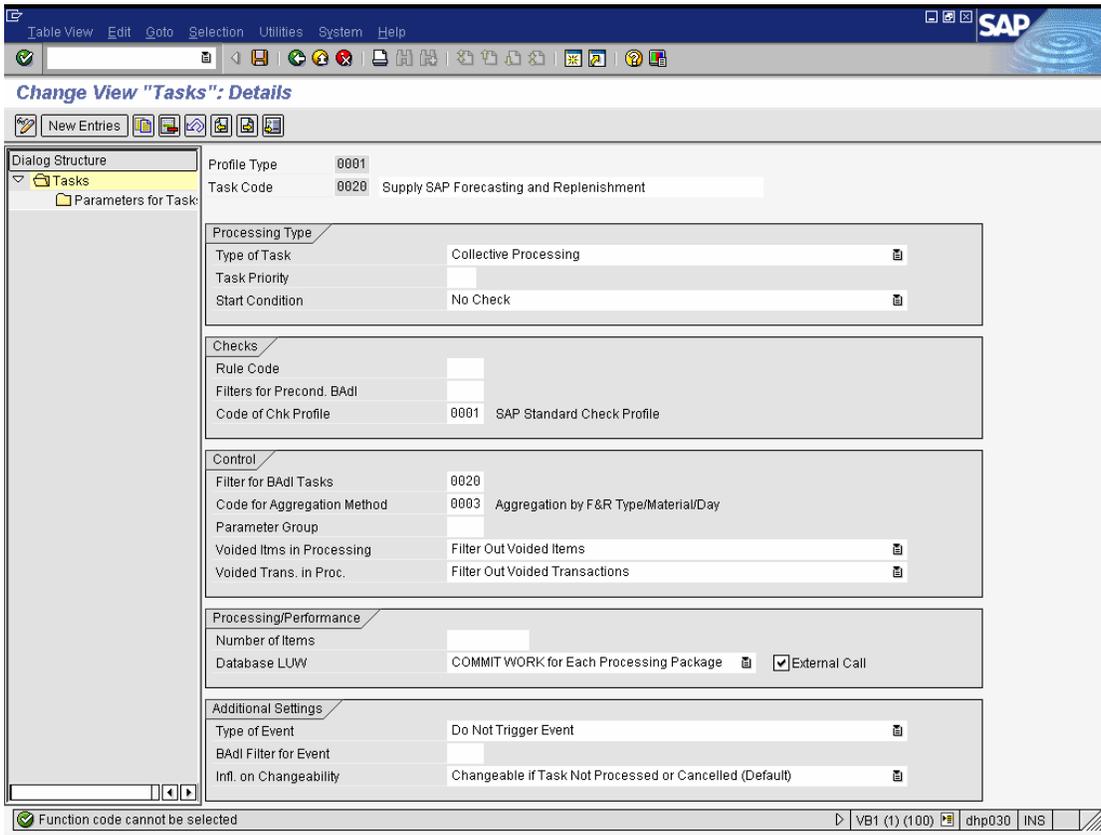
The RFC destination of the SAP F&R system needs to be maintained!

Customizing: /POSDW/IMG → POS Inbound Processing → Tasks → Additional Details for Task
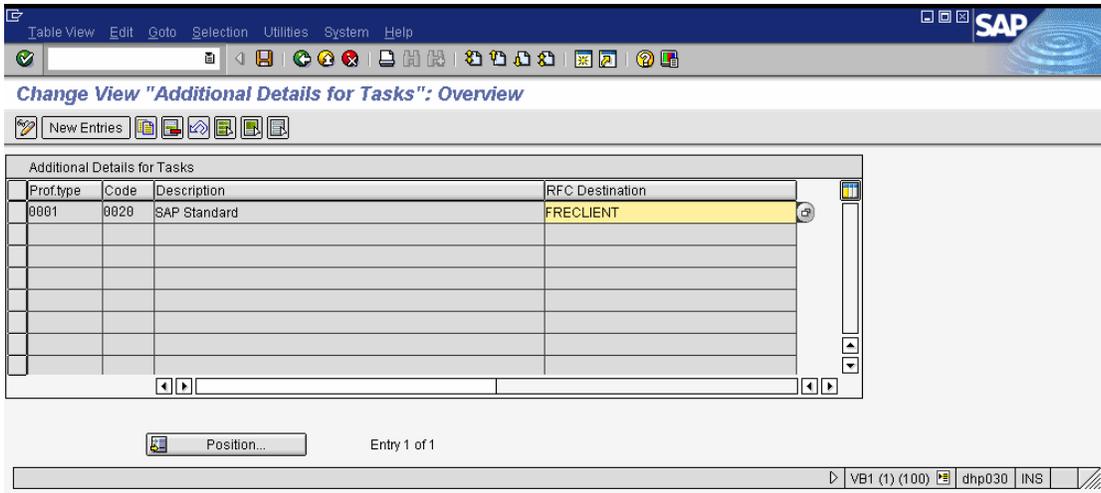
Historical data (data migration)

SAP F&R requires historical information for its forecasting models. This information is usually imported directly to copies of the following SAP POS DM cubes. Copies are used to separate historical from current data.

- Store/Article/Week/Quantity in Base Unit of Measure: 2 years of history

    Data cube: 0RPA_C02

- Store/Article/Day/Quantity in Base Unit of Measure: 2 months of history

    Data cube: 0RPA_C01

The information is usually loaded to these cubes directly using BI loading mechanisms. Depending on volumes a load through PIPE should only be considered carefully depending on the following reasons.

Reasons for not using PIPE:

a. Article master data needs to be available for the full two year period

b. Posting 2 years of data needs to be carefully managed from a performance and data volume perspective, e.g. available system resources, disk space, proper archiving model, available (human) resources for error resolution

c. Operational impact (basis team, …)

d. Massive performance impact on already productive environment, system access needs restrictions during loads

e. Additional (through away) interface for aggregated data through SAP POS DM

f. It's almost certain that parts of the PIPE configuration need to be changed for this data load

Reasons for using PIPE:

g. Translation from Barcode to article and base unit of measure is available out of the box

h. Master data integrity is checked in PIPE

i. Easy to adopt interface (based on the transactional interfaces) could be used to connect to SAP POS DM

j. Existing data streams can be used within SAP POS DM

k. Transactional history could be built if full master data set is available

No matter which way is used, the following rules apply:

l. Data migration and data cleansing have to be performed BEFORE starting the upload

m. System impact needs to be checked carefully

n. Time dependent master data cannot be handled in standard for SAP POS DM and the underlying Retail Foundation Classes

SAP F&R

SAP POS DM system sends the POS data to F&R. This information may include sales data as well as goods movements of almost every type (e.g. goods issues or corrections).This depends on the used POS solution and on the approach how stock information is handled between the leading inventory management system, like for example ERP for Retail, and F&R.[1]

Sales Data handling

Sales Data in SAP F&R

The forecast calculation in SAP F&R uses historical demand or consumption data as a basis for determining operational forecast consumption figures on product/location level. Only "real" consumption that is relevant for replenishment is taken into account. For example, consumption that results from spoiled or damaged goods should not be considered.

The provided data is first processed in a data cleansing step. Values which are unusually high and are not explained by a demand influencing factor (DIF) – so-called outliers – can be smoothed. An analysis of zero stocks takes place to determine whether they were caused by out of stock situations. In both cases the identified values are replaced by mean values. The corrected time series is the basis for the later forecast calculation.

Sales Data in Store Replenishment

In case of store replenishment the forecast is based on historical store sales.[2]

In order to create accurate forecasts, historical sales data of a sufficiently long period of time are required. It's recommended to provide sales history for 110 weeks in the past where possible, in order to ensure two occurrences of the DIF events (e.g. Christmas, Easter):

* For the most recent past (e.g. for the past 2 weeks) the sales history ideally should be provided on a daily product-location level, which is the lowest level of granularity for SAP F&R.

* For the remaining 108 weeks, a weekly granularity is accepted as sufficient.

The historical sales data on a weekly granularity is transferred to SAP F&R from SAP BI. Daily store sales are transferred from SAP POS DM.

The initial transfer of historical sales data from BI is done once prior to the Go Live and after the initial transfer of master data to SAP F&R. From then on daily sales data should immediately be transferred daily from SAP POS DM to avoid gaps between the BI init load and the SAP POS DM transfer.

Sales Data in DC Replenishment

There are several options to build the basis for a DC forecast:

* Strategy DC Goods Issues

> The DC Goods Issues can be used when not all sales can be captured (e.g. Franchise Stores, Customer Sales Orders)

> Disadvantage: DC Goods Issues can be affected by out of stocks in the DC. This may not reflect the real store demand in spite of smoothing.

* Strategy Aggregated Historical Store Orders

> The historical store orders of all the stores that are supplied by the respective DC are considered. A time shift has to be applied to address the gap between the consumer demand in the store and the store demand in the DC due to replenishment lead times

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[1] For further information see chapter Usage of Stock Data in F&R – Stock Transfer Scenarios.

[2] For information about archiving of data that exceed the defined time horizon see chapter 0 Reorganization of Sales Data.

* Strategy Aggregated POS sales

> For this, a service for object based aggregation of time series is used. The aggregated POS sales data time series is built from the POS sales data time series (day sales only). For each location product the daily sales of the product of all corresponding stores are accumulated and stored. Because this time series is used for DC forecasting it must be available in both daily and weekly granularity.

> Aggregating store sales data should take place after inbound processing of the store sales, but before the FRP outbound process for the DC.

Sales Data in Reference Handling

There are several occasions where a product location does not have an own sales history, such as:

 - New product launch

 - Existing product newly listed in an existing store

 - New store opening

Reference handling means that sales data time series of a relevant location product is used as the forecast basis. It is also possible to assign more than one location product as reference (reference module). The respective sales data time series are then merged into one time series that is used as forecast basis.

Again the aggregation should take place after inbound processing of the store sales, but before the FRP outbound process.

Sales Data for Choosing Forecast Algorithms

The forecasting method is chosen in accordance to the classification mean value, which is calculated from the sales data of each location product. Depending on the classification mean value, the location products are classified into different selling classes like slow sellers or fast sellers. SAP F&R then uses the forecasting method assigned to the selling class in the Forecasting Profile in Customizing.

Sales Data for Calculating Day Weights

The forecast is calculated on a weekly basis. For the replenishment calculation, the weekly forecast is broken down on daily basis. Therefore, the consumption distribution of the single consumption days is calculated from the daily sales of the last weeks. Depending on these day weights, the daily forecast values are calculated.

Displaying Sales Data in the System

The sales data can be displayed in the time series screen of the Replenishment Workbench (transaction code /FRE/RWB), in the time series screen of the Cause Determination (transaction code /FRE/CADE) or via the report /FRE/TSE (transaction code /FRE/TES01, key figure parameter CONS_DATA) which reads directly from the data base.

Stock Data

Stock Data in SAP F&R

The current stock in store (including goods issues, goods receipts, transfers in/out and other stock adjustments) is the basis for the calculation of the net replenishment quantity in SAP F&R.

Stock Transfer Scenarios

There exist two possible scenarios to transfer stock information to SAP F&R which include the transfer of movements from SAP POS DM.

Which scenario is used depends on the actual customer situation. SAP F&R supports each scenario. It is up to the external systems (POS system and leading inventory management system) to manage the transfer. In SAP F&R it is not necessary to perform any specific settings or customizing besides the settings for SAP POS DM connection3 in order to configure any of these scenarios. It only depends on the transfer sequence and on the data which is transferred via the interfaces. The transfer is always triggered by the external system.

Daily transfer of current stock information from the leading inventory management system to SAP F&R

This scenario is used if the stock movements of the stores are captured not only in the stores themselves but also in the centralized leading inventory management system (e.g. one-step-transfer from a distribution center to a store that is created by the execution system).The leading inventory management system is usually ERP.4

The stock transfer is triggered in the non critical time window from the leading inventory management system and includes absolute stock values. The existing stock of LIME is overwritten by these absolute values.

In the critical time window special movements of the stores (e.g. sales, thefts and returns) are received within SAP F&R via the time series interface. According to this information SAP F&R updates the stock in LIME via the inventory interface. At this step delta the inventory interface is supplied with delta stock quantities.

Transfer of current stock in bigger time intervals (e.g. one time per week)

This scenario is possible if all stock movements are uploaded from the POS system via the time series interface into SAP F&R. In this case the stock is up to date after the POS upload. The daily stock transfer from the leading inventory management system is not necessary because the POS data includes all necessary information.

This means that the POS system transfers delta quantities; the leading inventory management system transfers absolute quantities.

The inventory information has to consist of the following fields:
- Location identifier
- Product identifier
- Stock value type (absolute or delta)
- Stock quantity
- Unit of Measurement
- Timestamp
- External document number: identifies the external document that triggers the posting (e.g. POS ticket number)
- Process type: identifier of the calling application that uses LIME (e.g. F&R)
- Direction: direction of the movement (in, out, transfer)
- Reason: reason for the goods movement
- Location target identifier: needs to be supplied in the case of stock transfer

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[3] For a detailed description of the F&R customizing settings necessary for the POS DM connectivity see chapter Customizing.

[4] In ERP customizing it has to be defined which stock types are relevant for F&R. The setting can be checked in the table FRE_TS_REL_ST. In general both the unrestricted use stock (LABST) and the stock transfer stock (UMLME) are transferred to F&R and are read from table MARD. The transfer from ERP to F&R is done with the report FRE_SEND_TSD.

Displaying Stock Data in the System

Stock data can be displayed in the Cause Determination (transaction code /FRE/CADE) and via the report /FRE/FU_TOOLS_READ_STOCK.

Inbound Processing and Data Storage

Sales and/or stock data are transferred via a push process from SAP POS DM to SAP F&R. This is done by using the F&R processing task described in the SAP POS DM Section of this document.

Interface

The data is received via the time series interface /FRE/BIF_TSD_INBOUND2. This interface receives the data translated to F&R qualifier or type code (identifying which type of data F&R receives), product, location and quantity in base unit of measure.

Inbound Interface Table

First the data is buffered in the time series inbound interface table /FRE/BIF_TSD along with other time series data, differentiated by qualifier, before they are processed into the respective time series tables.

In contrast, historical consumption data transferred from BI are booked directly into the SCM data base tables and not initially into an inbound interface table.

The required minimum information is:
- Location identifier
- Product identifier
- Value type (absolute or delta)
- Quantity
- Qualifier (stock, goods issues, sales, goods receipts, returns, corrections, DIF)
- Timestamp

Inbound Processing and Data Storage

The report /FRE/BIF_INB01 (transaction code /FRE/BIF) is used for the inbound processing of the time series data in /FRE/BIF_TSD. It is usually scheduled via a batch job.

Stock data is then stored in the Logistics Inventory Management Engine (LIME) in F&R. Sales data is stored in FRE time series tables.

The processing batch job should ideally be scheduled shortly before the critical time window of the FRP run, since FRP needs the actual sales and stock data of the current day. By that time the sales and stock data should have been transferred completely to SAP F&R.

Very flexible starting times with an optional check of the consumption update can be defined in customizing. If the consumption update setting is activated, the system awaits the updated consumption data within the defined time window before starting the FRP run; however, if the consumption data was not updated, the FRP run will start at the latest defined starting point.

The FRP run is usually started by the dispatcher. The event handler, which is part of the dispatcher, checks whether the consumption update was performed[5], and informs the dispatcher to start the FRP run. The determination of whether the consumption update has been performed is done on level location. In case that for at least one (location) product a stock or consumption update has been done, F&R assumes that the storage of the goods movements and sales data has been completed. The stock date (day's closing stock) and time stamp for consumption update is set to the current day for all location products.[6]

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[5] Information stored in table /FRE/DB_FRP_EVT.

[6] The time stamp of the last update can be found in the table /FRE/FRPMID_SCHE.

Customizing

Qualifiers

The movement type qualifiers that F&R expects to receive need to be defined in SAP F&R customizing. The default settings relevant for SAP POS DM data are the following:

```
1000    Goods Receipt
2000    Goods Issue
3000    POS Information (Sales/Consumption)
3500    POS Correction
6000    Historic Sales
```

These settings can be found in F&R IMG → Forecasting and Replenishment → Interfaces → Define Movement Type Qualifiers

Granularity

You have to define for which past horizon the sales data should be stored in weekly and for which horizon in daily granularity. This is done in F&R IMG → Forecasting and Replenishment → Time Series → Maintain Time Series Profiles.

The primary granularity is used to store the time series as detailed as necessary for a short time horizon, i.e. on a daily basis. The secondary granularity is used to store the time series for a longer time horizon and may be on a higher level of granularity, i.e. on a weekly basis.

The number of past periods for the granularities defines the horizon for the availability of time series values.

Stock Relevance of Movement Types

In case stock is only transferred in bigger time intervals from the leading inventory management system and a partial inventory management therefore has to be done in SAP F&R it has to be defined in customizing which movement types are relevant for posting to the inventory management (LIME) system. The relevance is defined by the LIME relevance indicator, which can be set in F&R IMG → Forecasting and Replenishment → Interfaces → Maintain Time Series Interface. In this setting you also define the movement direction, i.e. the inventory booking direction. Inventory information that is booked into the inventory management system may be of type input (such as goods receipts), output (such as goods issues), transfer, or inventory.

Relevance of Movement Type as Trigger for FRP

Any movement type can be defined as trigger for the FRP run. For example, when the transfer of POS sales data or stock data should function as starting event for the dispatcher within the predefined time window the indicator for start of FRP run has to be activated for the respective movement type in F&R IMG → Forecasting and Replenishment → Interfaces → Maintain Time Series Interface.

Reorganization of Sales Data

A program exists in SAP F&R for deleting consumption data that is no longer required, i.e. time series data that lies outside the defined past horizon for the respective granularity (report /FRE/FU_TS_DELETE).

Project best practice/Lessons learned

RFC Destinations

Customizing in SAP POS DM is always transported. Therefore the RFC Destination settings pointing to the SAP F&R system connected to SAP POS DM is transported as well.

Usually there is a separate RFC Destination for each target system:

F&R Development: FRDCLNT100

F&R Quality Assurance: FRQCLNT100

F&R Production: FRPCLNT100

When transporting the entry from the development system for SAP POS DM to the QA system for SAP POS DM, the entry would point to the wrong target system. Therefore the experience shows that the following handling is improving configuration consistency:

F&R Client Connection: FRECLIENT

This means FRECLIENT would point to the FRD/FRQ/FRP-system in the RFC configuration (SM59).

RetailstoreID vs LocationID vs Plant

The master data information in SAP POS DM using RetailstoreID or 0RT_CUSTPL (CHAR10) and Plant (CHAR4) and the interface for SAP F&R using Location (CHAR20) do not fit. The result is that a work around needs to be implemented in the SAP POS DM interface to SAP F&R.

Interface for time series

MATNR /POSDW/FRE_MATNR CHAR 40 0 Material Number

LOCNR /POSDW/FRE_LOCNO CHAR 20 0 Location Number

Interface in SAP POS DM:

MATERIALNUMBER /POSDW/MATERIALNUMBER

  CHAR 18 0 Material Number

RETAILSTOREID /POSDW/RETAILSTOREID CHAR 10 0 Store

The translation in SAP POS DM is in standard:

```
<fs_timeline>-locnr    = i_transaction-retailstoreid.
```

This means for numeric values that leading zeros (10 digits) will be provided.

Requirement in projects so far was to use 0PLANT (4 CHAR) instead.

Solution:

Translate RetailstoreID to Plant in the data manipulation BADI /POSDW/FRE_OUTPUT which holds the source transaction table and the target timelines table.

Example Coding:

```
METHOD /posdw/if_ex_fre_output~call.

  DATA: ls_transaction  TYPE /posdw/transaction_int,
        ls_plant        TYPE /rtf/_s_plant,
        ls_settings     TYPE /posdw/ref_settings.

  FIELD-SYMBOLS: <fs_timelines> TYPE /posdw/fre_values_no_sty.

  READ TABLE it_transactions INDEX 1 INTO ls_transaction.

  IF sy-subrc = 0.
```

```
CALL FUNCTION '/POSDW/SETTINGS'
  IMPORTING
    o_settings = ls_settings.

CALL METHOD /rtf/cl_plant=>plant_single_read_by_customer
  EXPORTING
    i_custpl    = ls_transaction-retailstoreid
    i_infoobject = ls_settings->md_bwio_plant
  IMPORTING
    es_plant    = ls_plant.

* We can be sure that the site exists because of master data checking!
    LOOP AT it_timelines ASSIGNING <fs_timelines>.
      <fs_timelines>-locnr = ls_plant-plant.
    ENDLOOP.

  ENDIF.
ENDMETHOD.
```