



Integration Guide DemandData Foundation (DDF) to SAP ERP Outbound Integration

Target Audience

- Technology Consultants
- System Administrators
- Project Leads
- Security Consultants

PUBLIC

Document version: 1.01 – 2014-04-01

Document History



CAUTION

Before you start the implementation, make sure you have the latest version of this document.

You can find the latest version at the following location: <http://service.sap.com/~sapidb/011000358700001091002013E/DDF-ERP.pdf>

The following table provides an overview of the most important document changes.

Version	Date	Description
1.01	2014-04-01	Added reference to required business function. Added reference to SAP Note for troubleshooting. Minor terminology corrections.
1.00	2013-11-06	Initial Version

Table of Contents

Chapter 1	Overview of Interfaces to Demand Data Foundation	<u>5</u>
Chapter 2	Configuring Data Replication of Promotions, Site Hierarchies, and Site Groups	<u>7</u>
Chapter 3	Replicating Promotions, Site Hierarchies, and Site Groups	<u>11</u>

**This page is left blank for documents
that are printed on both sides.**

1 Overview of Interfaces to Demand Data Foundation

You can use the following interfaces to replicate data from SAP ERP in Demand Data Foundation (DDF) or Demand Management Foundation (DMF).

Interface Description	Outbound Implementation
Article Hierarchy	PAHY
Consumption	PCON
Inventory	PINV
Moving Average Price	PMAP
Material	PMAT
Material Group Hierarchy	PMCH
Material/Plant	PMPL
ERP Promotion Transferred as Offer	POFF
Plant Hierarchy	PPHY
Plant Hierarchy/Group from Classification System (Site Groups of Type 030 and Site Hierarchies of Type 035)	PPHY_CLASS
Plant	PPLT
Source of Supply	PSOS
Sales Price	PSPR
Vendor	PVEN



NOTE

The PPRM interface, previously available to applications that consumed DMF, has been replaced by POFF.

The interfaces listed are supported as of DDF 1.0 and DMF 1.2 as of SAP Enhancement Package 6 for SAP ERP SP07 or higher, and as of SAP Enhancement Package 5 for SAP ERP SP10 or higher.

**This page is left blank for documents
that are printed on both sides.**

2 Configuring Data Replication of Promotions, Site Hierarchies, and Site Groups

You can use this function to make the settings to replicate promotions, as well as the site hierarchies and site groups described by PPHY_CLASS from SAP ERP in Demand Data Foundation (DDF).

Prerequisites

- Your application uses DDF.
- Your application is integrated with SAP ERP.
- You have activated the ISR_APPL_OUTBOUND_DMF business function.
- You have activated the ISR_RETAIL_OUTBOUND_DMF business function.
- You have noted the different terms for the following objects:

SAP ERP	SAP Retail	Demand Data Foundation
Material	Article	Product
Plant	Site	Location
Promotion	Promotion	Offer

Integration

You can replicate all supported business objects using the Data Replication Framework (DRF), an infrastructure used to distribute data from an SAP ERP system to target systems. For more information about data replication and using the DRF, see SAP Library for Master Data Governance (MDG) on SAP Help Portal at <http://help.sap.com>. For more information about the supported business objects, see *Overview of Interfaces to Demand Data Foundation* [page 5].

Activities

SAP supplies most of the objects and assignments needed as standard. You can view the objects and assignments that SAP supplies as standard in Customizing. For more information, see Customizing for SAP Retail under ► *Logistics - General* → *Merchandise Lifecycle Optimization* → *Outbound* → *Data Replication Framework* ◀.

Before replicating promotions, site hierarchies, and site groups from SAP ERP in DDF, make the settings in Customizing as described in the following sections.

Define Replication Models

You can find this activity in Customizing for *SAP Retail* under ► *Logistics - General* → *Merchandise Lifecycle Optimization* → *Outbound* → *Data Replication Framework* → *Define Custom Settings for Data Replication* → *Define Replication Models* ◀.

You use the preconfigured replication model named SAP Promotion Management to transfer your data to DDF. The replication model comes with a list of assigned outbound implementations. It only supports communication by Remote Function Call (RFC).

For example, you assign target systems for replication models per outbound implementation, define technical parameters for parallel processing, or specify the number of business objects per bulk message (package containing multiple individual asynchronous messages processed together in one Logical Unit of Work (LUW)).

For site hierarchies and site groups (PPHY_CLASS):

- You must assign a target system.
- Since the volume of transferred data is expected to be low, parallelization in DRF is not enabled (TASK_SIZE_PROCMMSG not enabled).
- You can define a package size for bulk messages. The default setting for this parameter is 10.000.

For promotions (POFF):

- You must assign a target system.
- You can specify how many promotions you want processed in one parallel task (TASK_SIZE_PROCMMSG).
- You can define a package size for bulk messages (PACK_SIZE_BULK).

For more information about how to use the SAP Promotion Management replication model, see *Replication of Promotions, Site Hierarchies, and Site Groups* [page 11].

For more information about the supported outbound interfaces, see *Overview of Interfaces to Demand Data Foundation* [page 5].

Define Target Systems

You define the receiving systems of your replication model. Enter one or more systems in which you want to replicate the data.



CAUTION

When you transfer your Customizing settings to the production system, you must subsequently check and adjust the assignment of the replication model to the receiving systems.

Assign Languages

You specify which languages the system is to take into account for language-dependent texts for your replication model.

Edit DRF Control Parameters

You can find this activity in Customizing for *SAP Retail* under ► *Logistics - General* → *Merchandise Lifecycle Optimization* → *Outbound* → *Maintain Control Parameters* ◀ .

You use this activity to select which business objects you want to transfer. Note that the *Retail Event* group box found in earlier releases has been replaced by the *Promotion* group box.

- To send site hierarchies and site groups, select *Send Plant Hier. and Groups from Classification System* .
- If you want to replicate promotion data, specify how many days into the past you want the system to search for completed SAP ERP for Retail promotions that are to be transferred to your target system.



CAUTION

Verify that you have made the necessary settings to ensure that you only transfer the business objects that you need in your target system. Do not select Inventory objects unless you have verified that your application already uses them.

Define Tactic Assignments for Promotions

You can find this activity in Customizing for *SAP Retail* under ► *Logistics - General* → *Merchandise Lifecycle Optimization* → *Outbound* → *Handling of Promotions* ◀ .

If you want to transfer tactic information assigned to offers, you must maintain the permitted tactic and tactic type combinations. In addition, you specify how the system is to derive the tactics to be assigned to an offer from the promotion header information.

Optionally, you can use `DMF_BADI_OFFER RFC` to implement your own logic to assign tactics to offers before transferring them to DDF.

More Information

- For more information about Customizing for replicating SAP ERP promotions in DDF, see SAP Note [1830164](#) .
- For more information about Customizing for replicating SAP ERP locations and hierarchies in DDF, see SAP Note [1825740](#) .
- For more information about troubleshooting replication errors, see SAP Note [1928098](#) .

**This page is left blank for documents
that are printed on both sides.**

3 Replicating Promotions, Site Hierarchies, and Site Groups

You can use this function to replicate promotions, site groups, and site hierarchy data from the SAP ERP system to Demand Data Foundation (DDF), using the Data Replication Framework (DRF). In DDF, site groups and site hierarchies (termed location hierarchies in DDF) can be used, for example, to create local location groups. Promotions are mapped to DDF offers; the offers are then replicated in DDF, where they can be used in demand modeling.

Prerequisites

- You have activated the `ISR_APPL_OUTBOUND_DMF` business function.
- You have activated the `ISR_RETAIL_OUTBOUND_DMF` business function.
- You have configured data replication for promotions, site hierarchies, and site groups. For more information, see *Configuring Data Replication of Promotions, Site Hierarchies, and Site Groups* [page 7]. For more information about DRF settings, see SAP Library for Master Data Governance (MDG) on SAP Help Portal at <http://help.sap.com>.
- You have defined DRF filter criteria for promotions. For more information, see section *Filter Maintenance*. For more information about DRF filter settings, see SAP Library for Master Data Governance (MDG).
- You have defined the necessary authorizations. For more information, see the documentation on the authorization objects `DRF_ADM` and `DRF_RECEIV`.

Integration

DDF will not automatically request data that you change in SAP ERP; instead, you supply DDF with regular transfers.

Outbound Interface: Site Groups and Site Hierarchies (PPHY_CLASS)

An interface has been integrated into the existing DDF connectivity that allows you to transfer site groups of the class type 030 and site hierarchies of the class type 035 that have been defined in the SAP ERP classification system to DDF. The class type 030 is mapped to the location hierarchy type 07. The class type 035 is mapped to the location hierarchy type 02. You can adjust this data in the `DMF_BADI_LOCHY RFC` Business Add-In (BAI). You can access this BAI in Customizing for *SAP Retail* under ► *Logistics - General* → *Merchandise Lifecycle Optimization* → *Outbound* → *Business Add-Ins* ◀.

**NOTE**

All existing SAP ERP classes for site hierarchies and site groups are transferred, regardless of their site assignments. Site assignments are only transferred if the site is relevant for the target system and has already been transferred to that system. As a result, the target system may contain site groups or site hierarchies with no sites assigned to them.

Classes that do not have a parent class assigned are transferred as separate hierarchy instances and technically represent the root node of the hierarchy instance.

Class names are transferred as external node IDs.

DDF hierarchies do not allow multiple assignment of the same location or node within one hierarchy instance. SAP ERP outbound checks for such multiple assignments, creates a log message, and provides a BAdI to remove them (applies for class type 030 only).

Outbound Interface: Promotions Transferred as Offers (POFF)

An interface has been integrated into the existing DDF connectivity that allows you to transfer promotion information from your SAP ERP system to DDF. Historical promotion information is collected in SAP ERP according to specified relevance criteria (which are hard-coded). The information is then mapped to the structure of the DDF offer. The Offer business object is then transferred via Remote Function Call (RFC) to your target system.

The following business objects must be replicated before replicating promotions:

- Articles
- Sites

The following SAP ERP promotions are relevant for DDF:

- Only promotions that have a sales period ending in the past (historical promotions).
- Only promotions that have been created in SAP ERP. Promotions created in another application and then transferred to SAP ERP cannot be replicated in DDF.
- Only promotions that are active are transferred. Active promotions meet one of the following criteria:
 - WALE records have been created with one of the following follow-on processing steps:
 - ◆ Listing
 - ◆ Source of supply determination
 - ◆ Promotion announcement
 - ◆ Allocation generation
 - ◆ Price activation on site or site group level
 - Activation status of sales price conditions must be *B*; *prices activated, conditions created* for the respective price activation type:
 - ◆ Price activation on the site or site group level: WALE-VKGEN
 - ◆ Price activation on the price list or distribution chain level: WAKP-VKKPS
- Blocked promotions and promotion items are not transferred.

- Promotion information is only transferred for articles and sites that have already been replicated to the target system.
- Customer-specific filter logic that has been applied to promotions via the DMF_BADI_OFFER_FILTER_CUST BAdI. You can access this BAdI in Customizing for *SAP Retail* under ► *Logistics - General* → *Merchandise Lifecycle Optimization* → *Outbound* → *Business Add-Ins* → *BAdI: Customer Filter Extension for Promotion Data* ◀.

Promotion Mapping

SAP ERP promotion information is mapped to DDF offers in the following way:

To Offer Header Structure

Promotion numbers, types, and sales periods are mapped to the offer header structure. Date ranges are taken from promotion header level; differing sales periods at lower levels in the promotion are ignored. Instances of differing sales periods are logged for later viewing.

To Offer Term Structure

- Promotional sales price and price reference quantity plus currency
Available information is only mapped if the sales price has been activated, that is, the sales price activation status is *B; prices activated, conditions created*. Promotions that do not have an activated sales price are marked to use the current regular sales price as the activated sales price. Variants of generic articles that do not have their own sales prices are mapped with the generic article sales price, if the generic article has a price.
- Promotion sales unit of measure
Only promotion items that have the base unit of measure for each of their offered articles can be mapped.

To Offer Product Location Structure

Article and site combinations assigned to promotions that have the status *active* (no longer in planning) during the promotion's sales period are mapped to DDF Offer Product Location Structures (which are in turn assigned to Offer Term Structures). The affected articles and sites are identified via the following:

- Promotion WALE records, if price activation occurred on the site group level or no price has been activated.
- Price lists assigned to the promotion for the merchandise category in which the article belongs to, if price activation occurred at the price list level.
- Sites assigned to the distribution chain assigned to the promotion, if price activation occurred on the distribution chain level. Only the main distribution chain of a site from table T001W is considered.
- The related price plan, if the promotion has been created using the Price Planning Workbench (PPW).

**NOTE**

Only DDF-relevant article and site combinations are considered. Only those promotions that contain at least one article and site combination relevant for DDF are transferred. One offer term is created for all article and site combinations that share the same promotion price. In addition, one regular price offer term is created for all article and site combinations that do not have an active promotion sales price assigned to them.

To Offer Tactics Structure

Tactics and tactic type combinations are derived from promotion information, if mapping is maintained in Customizing.

You can adjust this data in the DMF_OFFER RFC BAdI. You can access this BAdI in Customizing for SAP Retail under ► *Logistics - General* → *Merchandise Lifecycle Optimization* → *Outbound* → *Business Add-Ins* → *BAdI: Offer Interface* ◀.

For more information about the interfaces supported for data replication, see *Overview of Interfaces to Demand Data Foundation* [page 5].

Activities**Filter Maintenance**

You can filter the Promotion business object according to promotion type to restrict which promotions are transferred. There are no filter criteria for site groups and site hierarchies.

You can access this option under SAP Easy Access SAP Retail (transaction W10T) under ► *Logistics* → *Retailing* → *Distributed Retailing* → *Merchandise Lifecycle Optimization* → *Outbound* → *Filter Maintenance (DRFF)* ◀.

Data Replication

You can access this option under SAP Easy Access SAP Retail (transaction W10T) under ► *Logistics* → *Retailing* → *Distributed Retailing* → *Merchandise Lifecycle Optimization* → *Outbound* → *Execute Data Replication (DRFOUT)* ◀.

You use replication by replication model to replicate business objects within a replication model to the target systems that you selected in Customizing. The application selects the business objects according to their defined filter criteria. This option allows you to choose between three replication modes: *Initialization*, *Changes*, and *Manual*.

To replicate data to DDF, you must use the preconfigured data replication model named SAP Promotion Management, to which all relevant business objects have already been assigned.

Refer to the following table to check the availability of certain features for the promotion and the site groups and site hierarchies interfaces:

Replication Feature	Promotion	Site Groups and Site Hierarchies
Initialization	X (Promotion Type as Filter)	X (Complete Data Transfer)

Replication Feature	Promotion	Site Groups and Site Hierarchies
Changes	X (new promotions in the past, promotions with newly relevant articles/sites, deletion of promotions no longer relevant)	X (complete data transfer, deletion of objects no longer relevant)
Limit Changes Using Time Interval		
Manual Transfer Mode	X (promotion number as filter)	
Parallel Processing	X	
Restart Replication From DRF Outbound Log		

Analyze Log for Outbound Implementations

When carrying out the data replication, the system automatically generates data replication logs, which you can then evaluate.

You can access this option under *SAP Easy Access SAP Retail* (transaction W10T) under ► *Logistics* → *Retailing* → *Distributed Retailing* → *Merchandise Lifecycle Optimization* → *Outbound* → *Analyze Log for Outbound Implementations (DRFLOG)* ◀.

For more information about evaluating and displaying data replication logs, see SAP Library for Master Data Governance (MDG) on SAP Help Portal at <http://help.sap.com>.

Constraints

Site Hierarchies and Site Groups

- Existing SAP ERP nodes are sometimes replicated in DDF as part of a new hierarchy. This can happen, for example, if a node is assigned to more than one hierarchy, or if a node has been moved from one hierarchy to another. Such nodes are treated as new objects in DDF.
- In SAP ERP, you can assign one and the same site or group node to site groups of the type 030 more than once. DDF does not support multiple assignments of the same location or location node within one location hierarchy. You can use DMF_BADI_LOCHY_MULT_ASS to reduce these multiple assignments to single assignments.

Promotions

- Bonus buy and promotion discount information is not replicated.
- Offer tactic information can only be assigned at promotion header level.
- All promotion items are replicated with the sales period entered at promotion header level, even if their original sales period differs. You can view the effected items using transaction DRFLOG.
- Promotion items cannot be transferred if they contain articles with units of measure other than base units of measure. You can view the effected items and their messages using transaction DRFLOG.
- Promotion items on price list or distribution chain level with activated prices are replicated as individual article and site combinations based on the current definition of the price list or distribution chain at the time the data is replicated. This can result in the inclusion or exclusion

of some sites, depending on whether they were or were not relevant at the time of promotion execution.

- DDF does not support mixed simple and multi-buy offers. To compensate for this, promotion items that have a reference quantity of greater than one (>1) can be normalized to equal one ($=1$) via BAdI `DMF_OFFER_RFC`. The sales price must be divided by the reference quantity for this normalization.
- Replicating promotions using the *Changes* mode only transfers changes made to Promotion business objects that have already been replicated if those objects include articles or sites that have been added to DDF after the promotion was last replicated. Deletions for promotions that have been blocked at header level or that have been deleted from SAP ERP after their initial transfer to DDF are transferred.

**CAUTION**

DDF modeling and forecasting restrictions may affect the usability of transferred objects.

More Information

- For more information about replicating SAP ERP promotions in DDF and DMF, see SAP Note [1830164](#).
- For more information about replicating SAP ERP site hierarchies and site groups in DDF and DMF, see SAP Note [1825740](#).
- For more information about troubleshooting replication errors, see SAP Note [1928098](#).

Typographic Conventions

Example	Description
<Example>	Angle brackets indicate that you replace these words or characters with appropriate entries to make entries in the system, for example, “Enter your <User Name> ”.
▶ Example → Example ◀	Arrows separating the parts of a navigation path, for example, menu options
Example	Emphasized words or expressions
Example	Words or characters that you enter in the system exactly as they appear in the documentation
http://www.sap.com	Textual cross-references to an internet address
/example	Quicklinks added to the internet address of a homepage to enable quick access to specific content on the Web
123456	Hyperlink to an SAP Note, for example, SAP Note 123456
<i>Example</i>	<ul style="list-style-type: none"> ■ Words or characters quoted from the screen. These include field labels, screen titles, pushbutton labels, menu names, and menu options. ■ Cross-references to other documentation or published works
Example	<ul style="list-style-type: none"> ■ Output on the screen following a user action, for example, messages ■ Source code or syntax quoted directly from a program ■ File and directory names and their paths, names of variables and parameters, and names of installation, upgrade, and database tools
EXAMPLE	Technical names of system objects. These include report names, program names, transaction codes, database table names, and key concepts of a programming language when they are surrounded by body text, for example, SELECT and INCLUDE
EXAMPLE	Keys on the keyboard

Some software products marketed by SAP AG and its distributors contain proprietary software components of other software vendors. National product specifications may vary.

These materials are provided by SAP AG and its affiliated companies ("SAP Group") for informational purposes only, without representation or warranty of any kind, and SAP Group shall not be liable for errors or omissions with respect to the materials. The only warranties for SAP Group products and services are those that are set forth in the express warranty statements accompanying such products and services, if any. Nothing herein should be construed as constituting an additional warranty. SAP and other SAP products and services mentioned herein as well as their respective logos are trademarks or registered trademarks of SAP AG in Germany and other countries.

Please see <http://www.sap.com/corporate-en/legal/copyright/index.epx#trademark> for additional trademark information and notices.

Disclaimer

Please see <http://www.sap.com/corporate-en/legal/copyright/index.epx> for disclaimer information and notices.

Documentation in the SAP Service Marketplace

You can find this document at the following address: /

SAP AG

Dietmar-Hopp-Allee 16

69190 Walldorf

Germany

T +49/18 05/34 34 34

F +49/18 05/34 34 20

www.sap.com