

Pricing in SAP CRM E-Commerce Product Catalog



Applies to:

- SAP CRM Release: SAP CRM 2007, SAP CRM 7.0
- Support Package: SP004

Summary

SAP CRM e-Commerce offers a tool called Product Catalog that enables the Customers to browse through the Products and their details in webshop viz. Product ID, Product Description, Unit of Measurement and Prices are displayed in the Product Detail View of the Product Catalog.

This document describes the sequence of activities required to enable Pricing in SAP CRM e-Commerce Product Catalog using IPC, with standard and customer-specific fields.

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Overview

SAP CRM e-Commerce offers a tool called Product Catalog that enables the Customers to browse through the Products and other related details in webshop.

Overview		Image	Product		Price
Quantity			Product Number	Name	
<input type="checkbox"/>	1 EA		10030747	PACK Q-RIT CORN FULL	650.00 USD
<input type="checkbox"/>	1 EA		10027866	CRCO H-8970Y/CELL TRD 11281084M2HNS	100.00 USD
<input type="checkbox"/>	1 EA		10028430	SYCO 827-L4 ROY D 722 PB 20 LB NK US	41.00 USD
<input type="checkbox"/>	1 EA		10028496	SYCO 821-06 TRD D 241 PB 20 LB NK US	62.00 USD
<input type="checkbox"/>	1 EA		10028900	SYCO 827-L4 TRD D 241 PB 20 LB NK US	30.00 USD
<input type="checkbox"/>	1 EA		10028417	SYCO 828-06 ROY H 722 TB 20 LB NK US	2.00 USD

As shown in the screenshot above, the product details such as Product ID, Product Description, Unit of Measurement and Prices are displayed in the Product Detail View of the Product Catalog.

There are following options for Price display in e-Commerce Product Catalog:

- List Prices
- IPC Prices

List Price: List prices are retrieved as per the Price Lists assigned to the Product Catalog Variant in Product Catalog Administration. Price Lists enables creation of lists of prices valid for a list of products and group of Business Partners. The Price Lists assigned to the Product Catalog are replicated to TREX along with the other catalog details. Thus, the prices are calculated when catalog is replicated and read from TREX during runtime.

IPC Price: IPC calculates Prices for the products in the catalog based on the Pricing Procedure assigned to the Product Catalog Variant in Product Catalog Administration. IPC determines the relevant condition records for each Product based on the Master Data (Catalog Variant, Product, Business Partner and Sales Organization) available in CRM.

Thus, the document here deals in detail with various scenarios of Pricing in Product Catalog, in e-Commerce Application, using IPC. To summarize, the settings covered in this document can be broadly categorized into following areas:

- XCM and Shop Administration Settings to enable pricing using IPC in e-Commerce Product Catalog.
- XCM Settings to enable Pricing Analysis in e-Commerce Product Catalog.

- Determination of Pricing Procedure in a Product Catalog.
- Enhancements to adopt Customer-Specific Fields in Product Catalog Pricing.

Scope

This document describes the sequence of activities required to enable Pricing in SAP CRM e-Commerce Product Catalog using IPC.

The steps required to enable Pricing in Product Catalog in e-Commerce Application, are as follows:

- Define Pricing Procedure Determination for Product Catalog.
- Switch on Pricing with IPC in B2B e-Commerce Product Catalog.
- Switch on Pricing Analysis in e-Commerce Product Catalog.
- Analyze the Condition Tables/Fields to be used for Product Catalog Pricing.
- Identify additional Header and Item specific Fields to be defined for Product Catalog Pricing.
- Define Name-Value pairs for customer-specific fields.
- Pass additional Item Level Attributes to IPC.

Usage

The details and settings provided in this document will be useful in the following SAP CRM e-Commerce scenarios:

- To enable pricing using IPC in e-Commerce Product Catalog.
- Pricing in e-Commerce Product Catalog using customer-specific fields.
- To enable Pricing Analysis in e-Commerce Product Catalog.

Thus, these settings are applicable to B2B (business-to-business), B2C (business-to-customer) and BOB (business-on-behalf) Applications in SAP CRM e-Commerce.

Architecture

The following figure demonstrates the program flow for Product Catalog Pricing using IPC in e-Commerce Application.

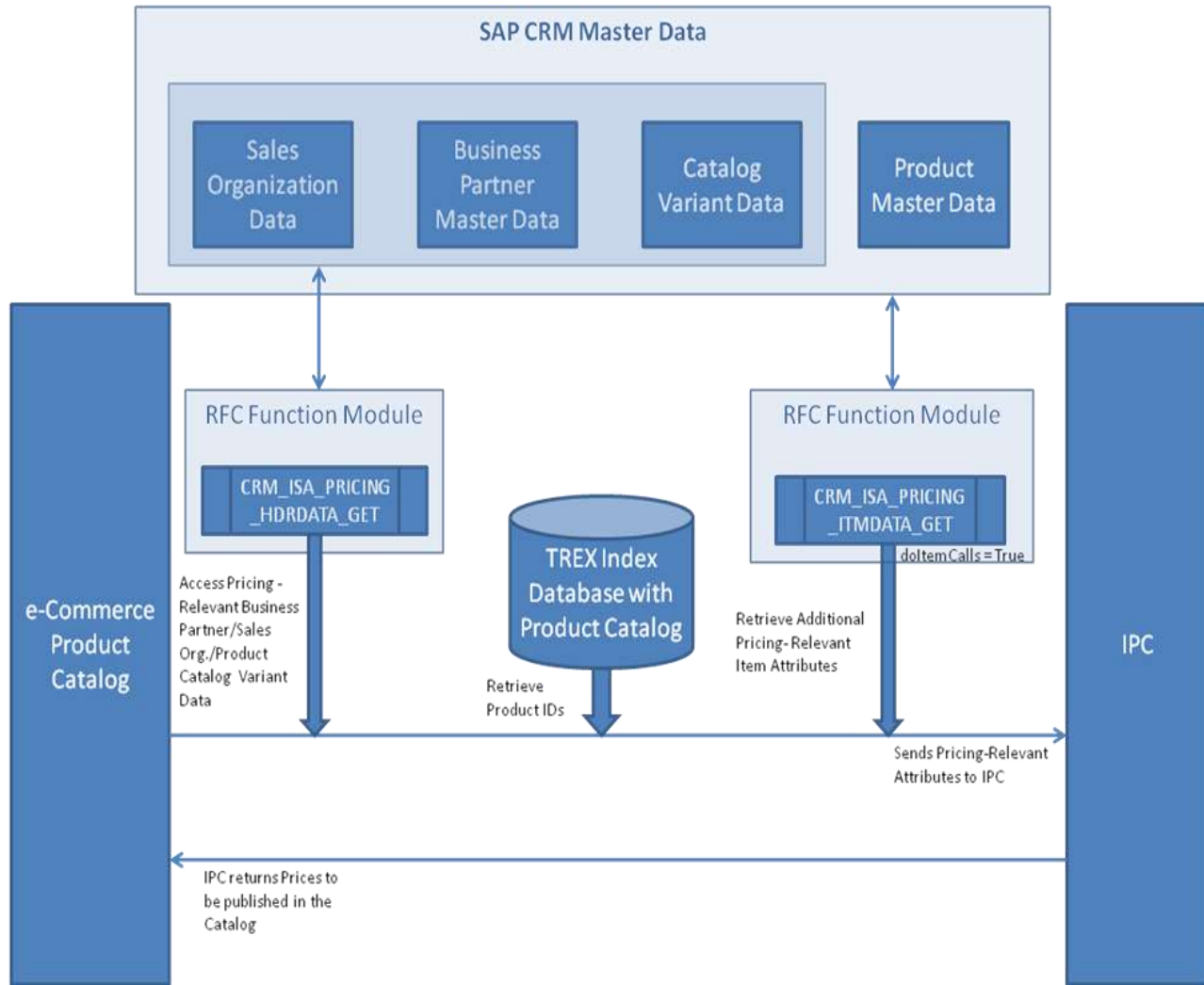


Figure 1: Pricing in e-Commerce Web Catalog

The process flow for Pricing in Web Catalog depicted above can be described as follows:

- When the customer logs in to the webshop and chooses a catalog variant, an RFC call is made to the function module CRM_ISA_PRICING_HDRDATA_GET to retrieve the pricing-relevant header attributes. These attributes are specific to the Business Partner Master, Sales Organization or Product Catalog Variant Data.
- The function module CRM_ISA_PRICING_HDRDATA_GET takes the following main input parameters:
 - Business Partner ID of the Customer logged into the webshop.
 - Product Catalog and Variant ID selected by the customer.
 - Shop Id of the webshop being used.
- Having retrieved the header data, when the customer searches for the product/s in the web catalog, the relevant Product IDs are retrieved from the TREX. Product ID itself is a pricing-relevant item attribute.

- To retrieve further pricing-relevant item attributes, an RFC call is made to the function module CRM_ISA_PRICING_ITMDATA_GET. It mainly takes Catalog ID, Catalog Variant ID, Product ID/s and Shop ID as input parameters to retrieve data from Product Master Data.
- If required, the FM CRM_ISA_PRICING_ITMDATA_GET internally calls the FM CRM_ISA_PRICING_HDRDATA_GET to retrieve additional attributes such as Business Partner related details, Catalog Variant data etc.
- Once all the pricing-relevant attributes have been retrieved, these attributes are sent to IPC for pricing of the products in the web catalog. These prices are then published in the Product Catalog.

Further Sections of the document capture the settings required to enable Pricing with IPC in e-Commerce Product Catalog. These settings also cover the ABAP and JAVA enhancements required to enable pricing in web catalog with customer-specific fields.

Activities

Pricing Procedure Determination in Product Catalog

These settings are required for determination of a Pricing Procedure in a product catalog, using which the IPC carries out pricing for the enclosed products.

Prerequisite:

1. Pricing Procedure should have been defined in SAP CRM using the following customizing path: IMG → Customer Relationship Management → Basic Functions → Pricing → Pricing in the Business Transaction → Create Pricing Procedure.
2. Product Catalog and its variants should have been defined and ready to be replicated to TREX.

For example, Pricing Procedure: ZCRM02 (screenshot below) and Product Catalog: ZCATALOG

Change View "Control data": Overview

Application: CRM
Pricing Proc.: ZCRM02
Source System: Source: CI
Source System: Source: CI

Level	Cntr	U	CTyp	Pricing procedure line	Fr	To	M	M	St	SubTo	Calc.Fo	Base F
11	0	PR	0PR0	Price			<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	No set		
100	0			Gross			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Carry 2		
103	0	PR	0K05	Customer/Material			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	No set		
300	0			Discount Amount	101	299	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	No set		
800	0			Net Value for Item			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Carry 2		

The customizing settings given below are required for determination of a Pricing Procedure by a Product Catalog in e-Commerce webshops.

1. Go to Product Catalog Administration using Transaction Code COMM_PCAT_ADM.
2. Choose the Product Catalog ZCATALOG and click on Change.
3. Assign the created Pricing procedure (ZCRM02) to the required variants.

Product Catalog ZCATALOG Edit

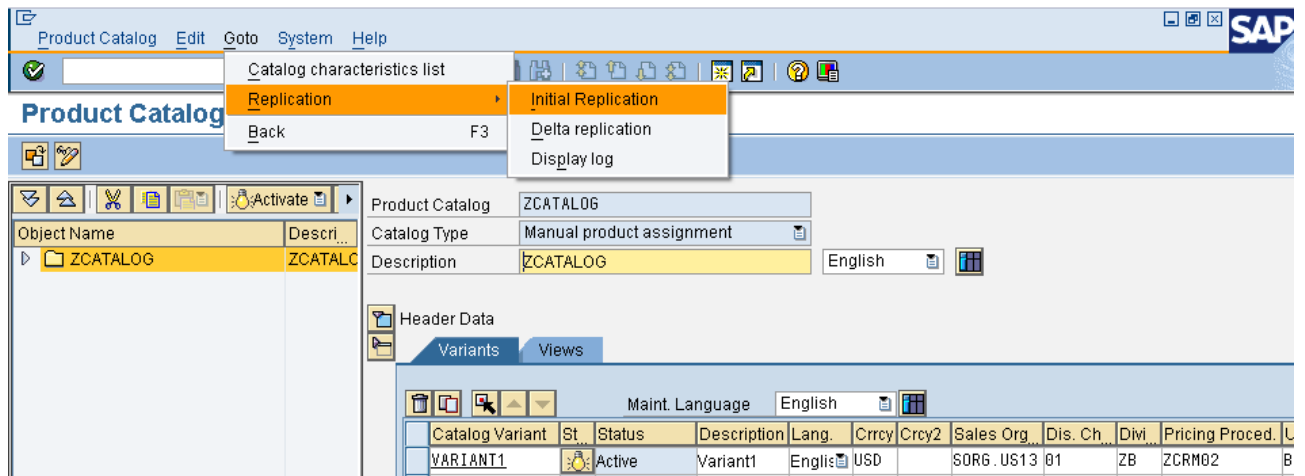
Product Catalog: ZCATALOG
Catalog Type: Manual product assignment
Description: ZCATALOG English

Header Data
Variants Views

Catalog Variant	St	Status	Description	Lang	Crcy	Crcy2	Sales Org	Dis. Ch	Div	Pricing Proc.
VARIANT1		Active	Variant1	Englis	USD		S0R6_US13	01	ZB	ZCRM02

4. Save the changes made.

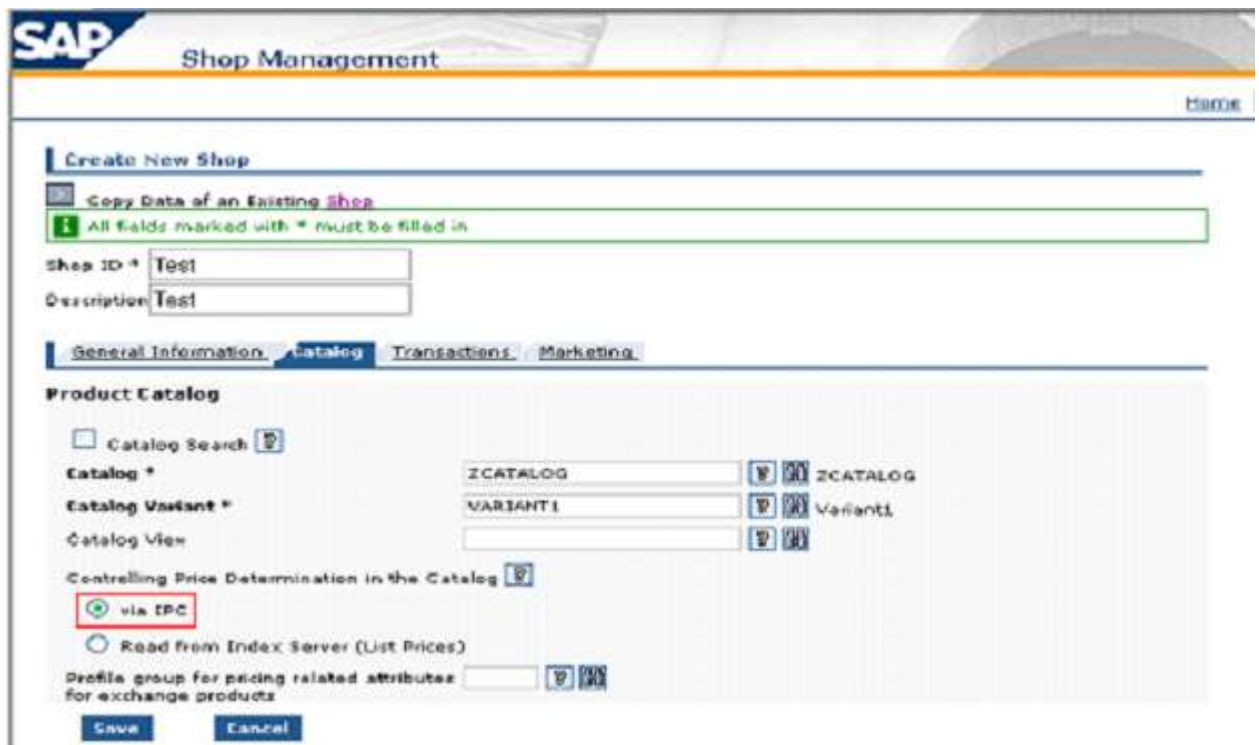
- Carry out the Initial Replication of the Product Catalog to TREX.



Shop Admin Settings for IPC Pricing In Catalog

The following Shop Administration Setting for an e-Commerce webshop is required to enable Pricing with IPC in Product Catalog attached to the Webshop.

- Go to the Shop Administration for the respective Webshop (B2B/B2C/BOB).
- Go to the Catalog tab of the shop settings.
- Choose option 'via IPC' for the parameter Controlling Price Determination in the Catalog.



XCM Settings for Pricing in Product Catalog

IPC is available as a separate Component in Extended Configuration Management (XCM) settings for Internet Sales, which can be configured as per the Application requirements.

Component Configuration for IPC

SAP has provided two standard configurations for Component IPC:

- **ipcdefault**: SAP default configuration for using IPC.

The screenshot displays the SAP XCM Administration interface for 'Internet Sales'. A red box highlights the 'Component configuration: 'ipcdefault'' entry in the left-hand navigation tree. The main content area shows the configuration details for this component, including a description, component name, base configuration, and a table of configuration details.

Please note: Configuration in the SAP area is protected and cannot be changed. Please create your configuration in the CUSTOMER area by deriving from this configuration.

Component documentation

Component configuration: 'ipcdefault'

Description: Configures connection parameters to the IPC Server

Component: ipc Select Test: [?]

Base Configuration: [?] run test Save component configuration before testing!

Component Configuration details

Name	Value	Description
type:	ISA	IPC server type. Usually not changed
scenario.basket:	isab2b	The IPC has its own set of XCM configuration files. This parameter specifies the configuration for these configuration files, if called from the shopping basket.
scenario.cat:	isacatalog	The IPC has its own set of XCM configuration files. This parameter specifies the configuration for these configuration files, if called from the catalog.

- **noipc**: SAP default configuration for turning off IPC.

The screenshot displays the SAP XCM Administration interface for 'Internet Sales'. A red box highlights the 'Component configuration: 'noipc'' entry in the left-hand navigation tree. The main content area shows the configuration details for this component, including a description, component name, base configuration, and a table of configuration details.

Please note: Configuration in the SAP area is protected and cannot be changed. Please create your configuration in the CUSTOMER area by deriving from this configuration.

Component documentation

Component configuration: 'noipc'

Description: Configures connection parameters to the IPC Server

Component: ipc Select Test: [?]

Base Configuration: [?] run test Save component configuration before testing!

Component Configuration details

Name	Value	Description
------	-------	-------------

Note: Customer configuration can also be created for component IPC by copying and modifying the SAP configuration as per the project requirements.

Assign IPC Component to Application Configuration

Having configured the IPC component, same should be selected in the Application Configuration Settings for IPC as shown below:

SAP Extended Configuration Management (XCM) Administration

Application configuration for: Internet Sales

configuration documentation

Application configuration: 'b2bcrmstandard'

Description: Default B2B configuration with CRM as backend system.

Create customer application configuration based on this SAP application configuration

Name (case sensitive): create

Application configuration details

Advanced Settings: Display ?

Param. name	Value	Component	Description
jco: data	<input type="text"/>	jco	Configures connection parameters to the SAP system.
ipc: data	ipcdefault	ipc	Configures connection parameters to the IPC Server

Switch on IPC Pricing in Product Catalog

In the configuration settings of Component 'WebCatalog', specify the value of parameter '**preventIPC Pricing**' as '**false**'.

Component: webcatalog Select Test: ?

Base Configuration: ? run test Save component configuration

Component Configuration details

Name	Value	Description
imageserver:	<input type="text"/>	This URL describes the server directory, to which system are published. In the application this URL w the content of each image attribute to build the full l tag. The value of this parameter must correspond t CRM system, for the 'publishing' part of the catalog
itemPage Size:	5	OBSOLETE Not supported anymore. This paramete Catalog.ListView.MaxItems.
preventIPC Pricing:	false	Defines whether IPC pricing in the catalog should b

Pricing Analysis in Web Catalog

In the configuration settings of Component 'UI', specify the value of parameter '**enable.priceAnalysis**' as '**true**'.

Component Configuration details

Name	Value	Description
language:	en	Default Language for communication
styledirection.core:	he, ar	ISO languages which
enable.priceAnalysis:	true	Show or hide pricing
configOnlineEvaluate:	true	Turn on IPC configure
enablerelogincookie.core:	false	If enabled, a tempora login parameter for a

Example of Pricing Analysis in Web Catalog

The screenshot illustrates the pricing analysis process in the SAP B2B Shop. The main window shows a product listing with a price of 70.00 USD. A detailed pricing condition panel is overlaid, showing the following conditions:

Condition Type	Description	Condition Rate	Price Unit	Condition Value
OPR0	Price	100.00 USD	1 EA	100.00 USD
	Gross	100.00 USD	1 EA	100.00 USD
OK05	Customer/Material	-30.00 USD	1 EA	-30.00 USD
	Discount Amount	-30.00 USD	1 EA	-30.00 USD
	Net Value for Item	70.00 USD	1 EA	70.00 USD

The detailed pricing condition panel also shows a tree view of condition determination steps, including:

- ZCRM02: Condition determination 1
 - OPR0 Price Condition record has been found
 - Product GUID/Product Group 1/Sold-to party
 - Sales Org./Distribution Channel/Sold-to party
 - Condition record has been found
 - Sales Organization ID O 50000514
 - Distribution Channel 01
 - Sold-to party 4A18316197EB4D8FE
 - Product GUID 49ED6DD547A57278
 - Gross
 - OK05 Customer/Material Condition record has been found
 - Discount Amount
 - Net Value for Item

Standard Pricing in Product Catalog

Once the settings given in previous sections are done and condition records for pricing have been maintained, product catalog pricing will be activated.

Pricing is carried out based on a specific Pricing Procedure which contains a list of condition types, that in turn have attached access sequences. These access sequences decide the condition table/s that will be used for retrieving condition records.

These condition tables might contain standard or customer-specific fields. But, not all of these fields are available for Catalog Pricing as standard. Thus, it is important to ensure that the fields being used in the condition tables are available for product catalog pricing. There might be standard fields such as Product Price Groups or Business Partner Address Details etc. which are available within the SAP CRM system but not specifically for catalog pricing. The same applies to the customer-specific pricing fields defined for pricing in Transactions, but still not available for catalog pricing.

This section deals with identifying the pricing-relevant fields which are delivered as standard by SAP CRM for catalog pricing. The settings for passing additional fields (customer-specific/standard) to IPC have been covered in the next section.

The standard pricing-relevant fields for Product Catalog, as delivered by SAP, are captured in the following two structures:

- CRMT_ISALES_HDRDATA_PRC_UXI

Dictionary: Display Structure

Structure: CRMT_ISALES_HDRDATA_PRC_UXI Active
Short Description: UserExit Pricing (Context Variables)

Attributes Components Entry help/check Currency/quantity fields

Predefined Type 1 / 33

Component	RTy	Component type	Data Type	Length	Decim	Short Description
_INCLUDE	<input type="checkbox"/>	CRMT_ISALES_HDRDATA		0	0	Output Structure for Price-Relevant Header Infos: Fields
PROCEDURENAME	<input type="checkbox"/>	PRCT_PRIC_PROC	CHAR	6	0	Pricing Procedure
DOCUMENTCURRENCY	<input type="checkbox"/>	COMT_PCAT_ITM_CUFCUKY		5	0	Currency Key for Item
LOCALCURRENCYUNIT	<input type="checkbox"/>	COMT_PCAT_ITM_CUFCUKY		5	0	Currency Key for Item
LANGUAGE	<input type="checkbox"/>	LAISO	CHAR	2	0	Language according to ISO 639
COUNTRY	<input type="checkbox"/>	LAND1	CHAR	3	0	Country Key
CUST_GROUP	<input type="checkbox"/>	CRMT_CUST_GROUP	CHAR	2	0	Customer Group
PRICE_GROUP	<input type="checkbox"/>	CRMT_PRICE_GRP	CHAR	2	0	Customer Price Group
PRICE_LIST	<input type="checkbox"/>	CRMT_PRICE_LIST	CHAR	2	0	Price List Type
INCOTERMS1	<input type="checkbox"/>	CRMT_INCOTERMS1	CHAR	3	0	Incoterms (Part 1)
INCOTERMS2	<input type="checkbox"/>	CRMT_INCOTERMS2	CHAR	28	0	Incoterms (Part 2)
RMESS	<input type="checkbox"/>		CHAR	75	0	Return Code and Message
EXCHANGE_TYPE	<input type="checkbox"/>	CRMT_EXCHG_TYPE	CHAR	4	0	Exchange Rate Type
PAYMENT_TERMS	<input type="checkbox"/>	CRMT_PMNTTRMS	CHAR	4	0	Terms of Payment
SHIPPING_COND	<input type="checkbox"/>	CRMT_SHIP_COND	CHAR	2	0	Shipping Conditions

- CRMT_ISALES_ITMDATA_PRC_UXI

Dictionary: Display Structure

Structure: CRMT_ISALES_ITMDATA_PRC_UXI Active
 Short Description: UserExit Pricing (Context Variables) at Item Level

Attributes Components Entry help/check Currency/quantity fields

Predefined Type 1 / 9

Component	RTy	Component type	Data Type	Length	Decim	Short Description
SOLD_TO	<input type="checkbox"/>	BU PARTNER	CHAR	10	0	Business Partner ID
SHOP	<input type="checkbox"/>	CRMT SHOP_ID	CHAR	10	0	Web Shop Identifier
CATALOG_ID	<input type="checkbox"/>	COMT PCAT_ID	CHAR	30	0	Product Catalog Number
VARIANT_ID	<input type="checkbox"/>	COMT PCAT_VRT_ID	CHAR	30	0	Catalog Variant Number
SALES_ORG	<input type="checkbox"/>	CRMT SALES_ORG	CHAR	14	0	Sales Organization ID
DIST_CHAN	<input type="checkbox"/>	CRMT DISTRIBUTION	CHAR	2	0	Distribution Channel
DIVISION	<input type="checkbox"/>	CRMT DIVISION	CHAR	2	0	Division
PRODUCT	<input type="checkbox"/>	CRMT_ISALES_ITMDA		0	0	Input Structure Price Relevant Item Info
PARTNER	<input type="checkbox"/>	CRMT_ISALES_ITMDA		0	0	Input Structure for Price-Relevant Item-Pa

Example of Standard Fields Relevant for Catalog Pricing

Header Level Attributes: Customer Group (CUST_GROUP), Incoterms (INCOTERMS1 and INCOTERMS2), Customer ID (ECC Field KUNNR) etc.

Item Level Attributes: Product ID (PRODUCT), Sold to Party ID (Sold to), Sales Organization ID (SALES_ORG), Distribution Channel (DIST_CHAN), Sales Division (DIVISION) etc.

Product Catalog Pricing Using Customer-Specific Fields

- The function module CRM_ISA_PRICING_HDRDATA_GET determines the header and control data in the Web Catalog for calling the pricing engine. This function module calls the method NEW_VALUES_READ of the BAdI CRM_ISA_HDR_PRICING to transfer additional pricing-relevant header attributes to Web Catalog.
- The function module CRM_ISA_PRICING_ITMDATA_GET calls the method NEW_ITEM_VALUES_READ of the BAdI CRM_ISA_HDR_PRICING to transfer additional pricing-relevant item attributes to Web Catalog.
- The function module CRM_ISA_PRICING_ITMDATA_GET stores all the pricing-relevant item attributes into a structure *et_itemattributes* []. This structure is eventually passed to IPC to be used for pricing.

Business Add-Ins: Display Definition CRM_ISA_HDR_PRICING

The screenshot displays the SAP Business Add-Ins (BAdI) configuration for CRM_ISA_HDR_PRICING. It includes a toolbar with icons for editing, saving, and documentation. The main area shows the definition name 'CRM_ISA_HDR_PRICING' and its short text 'Changes to header data, relevant for customer-specific price'. Below this, the 'Interface' tab is selected, showing the interface name 'IF_EX_ISA_HDR_PRICING'. A table lists the methods implemented for this interface:

Method	Description
NEW_VALUES_READ	Determination of Customer-Specific Price-Relevant
NEW_ITEM_VALUES_READ	Determination of Cust-Spec Price-Relevant Data at I

Thus, following activities have to be carried out for passing customer-specific pricing attributes to IPC for pricing in Product Catalog:

1. Implement the BAdI CRM_ISA_HDR_PRICING to include the customer-specific and standard fields relevant for Pricing in Product Catalog.
2. Implement the following methods for Header and Item Fields respectively:
 - a. NEW_VALUES_READ: Determination of Customer-Specific Price-Relevant Header Data. For example, Sold-to-Party relevant data from Business Partner Master.
 - b. NEW_ITEM_VALUES_READ: Determination of Customer-Specific Price-Relevant Item Data. For example, product-specific data from Product Master.
3. Append the relevant structures CRMT_ISALES_HDRDATA_PRC_UXI and CRMT_ISALES_ITMDATA_PRC_UXI used by the above mentioned methods respectively with 'Name and Value' pairs for the customer-specific/standard fields to be used for Product Catalog Pricing.

Refer to [previous section](#) for further details on the pricing structures.

Passing Additional Item Attributes to IPC

As mentioned in the previous section, the function module CRM_ISA_PRICING_ITMDATA_GET is used to retrieve the additional item attributes for pricing in product catalog. However, this function module is not called in the standard catalog pricing delivered by SAP.

Thus, to activate the remote call to function module CRM_ISA_PRICING_ITMDATA_GET, the parameter 'doltemCalls' has to be set to 'TRUE' in CONFIG.XML file generated for the relevant internet sales web application.

Glossary

- *Product Catalog*: As the name suggests, a Catalog that enlists the Product offerings along with details such as Description and Prices.
- *Pricing Analysis*: Detailed analysis of Pricing Elements that eventually sum up to result in a final Price for a Product.
- *XCM*: Extended Configuration Management for SAP CRM Web Channel. This tool is used for configuration of SAP CRM Web Applications and their components.
- *IPC*: Internet Pricing and Configuration Engine integrated with SAP CRM. IPC enables Product Configuration and Pricing in the Web shop and offline using CRM Master Data.
- *Pricing Procedure*: A sequential list of Pricing Elements to be processed based on specific conditions to give a Net Price for a Product.
- *TREX*: It is an SAP Web Channel Integrated Engine used for Indexing and Searching capabilities.
- *Price List*: List of Prices defined for a list of products with a fixed validity period.
- *B2B*: Business-to-Business Application in SAP CRM Web channel.
- *B2C*: Business-to-Customer Application in SAP CRM Web channel.
- *BOB*: Business-on-Behalf Application in SAP CRM Web channel.

Related Content

In addition to the generic settings given in this document, there is a wide range of information available that deals with plausible scenarios and issues in Web Catalog Pricing in SAP CRM e-Commerce at the following SAP Links:

- [Service Market Place](#)→[SAP Note 1004533](#): SAP Consulting Note specifically on Pricing in Web Catalog. It guides on IPC pricing with additional attributes in e-Commerce Web Catalog.
- [SAP Community Network Forums](#): Forum Category “CRM Web Channel E-Commerce, E-Marketing & E-Service” consists of various threads on issues related to Pricing in Web Catalog.
- [SAP Help Portal](#)→[SAP CRM](#)→[Product Catalog](#): Generic Information on Product Catalog in SAP CRM.
- [SAP Help Portal](#)→[SAP CRM](#)→[Pricing](#): Generic Information on Base Customization for SAP CRM Pricing.
- [SAP Help Portal](#)→[CRM Web Channel](#): Information on SAP CRM Web Channel.

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