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webMethods Process Performance Manager

CONTENT PACKAGE FOR SAP MM

Version 9.10

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Contents

1 Text conventions

Menu items, file names, etc. are indicated in texts as follows:

- Menu items, key combinations, dialogs, file names, entries, etc. are displayed in **bold**.
- User-defined entries are shown in **<bold and in angle brackets>**.
- Single-line example texts (e.g., a long directory path that covers several lines) are separated by ↵ at the end of the line.
- File extracts are shown in this font format:

    `This paragraph contains a file extract.`

2 General

This manual describes the contents of PPM Content Package for SAP MM, a PPM customizing for extracting data from an SAP MM system with PPM Process Extractor SAP-2-PPM and for evaluating the data for use in webMethods Process Performance Manager (PPM).

Please note that this manual is not intended to replace user or customizing training. It is a source of reference containing information that supplements the information provided in the manuals and online help.

Content Packages are only approved for use under Windows.

3   Overview

This chapter provides an overview of the extraction of data from application systems for use in webMethods Process Performance Manager. The Content Package contains configuration files for PPM Process Extractor SAP-2-PPM to extract the necessary sales process data from SAP systems. The files are saved as XML files in PPM system event format. The SAP-2-PPM process extractor is described in detail in the **PPM Process Extractors** manual.

Using the fragment and mapping definitions from the Content Package, the extracted data can be imported into webMethods Process Performance Manager with no changes via the PPM XML import interface and then processed. The XML import interface is described in detail in the **PPM Data import** manual.

3.1   Data extraction

The following representation illustrates the basic functioning of data extraction from R/3 source systems, the optional data transformation, and the output in PPM-compatible XML files.
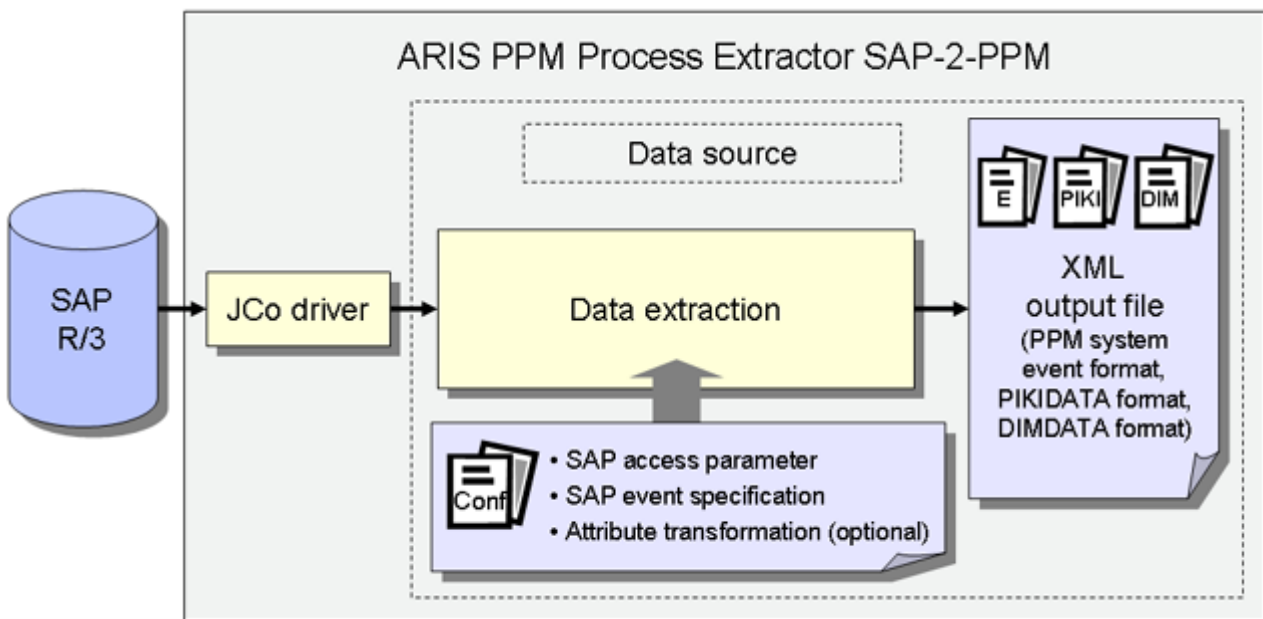
SAP ACCESS PARAMETERS

The system configuration specifies the source system to be extracted and the access data for the source system, e.g., the system account, the access mode, and the extraction period.

You need to ensure that the specified source system user has appropriate access authorization to extract the relevant data fields.

SAP EVENT SPECIFICATION

The table configuration determines the data to be extracted from the source system.

ATTRIBUTE TRANSFORMATION (OPTIONAL)

If required, source system attributes can be modified before being imported into the PPM system and attribute types can be added and calculated. An appropriate transformation configuration needs to be created for the attribute transformation.

SYSTEM DRIVERS

The system drivers extract data from the source systems considering the settings specified in the system configuration (SAP access parameters).

XML OUTPUT

The XML Generator converts the extracted data into the data structure of a PPM-compliant XML format.

3.2 Data import (Example: XML import in PPM system event format)

In addition to the XML output files in PPM system event format, the XML Generator can also output files in process instance-independent measure or dimension data format for import into a PPM system. The process of importing XML output files in PPM system event format is described here as an example.

During the import, a fragment definition is assigned to each source system event in the generated XML output files and then instantiated in the PPM database. The source system attributes specified in the mapping are copied to the objects in this fragment instance. The fragment instances are then saved in the PPM database.
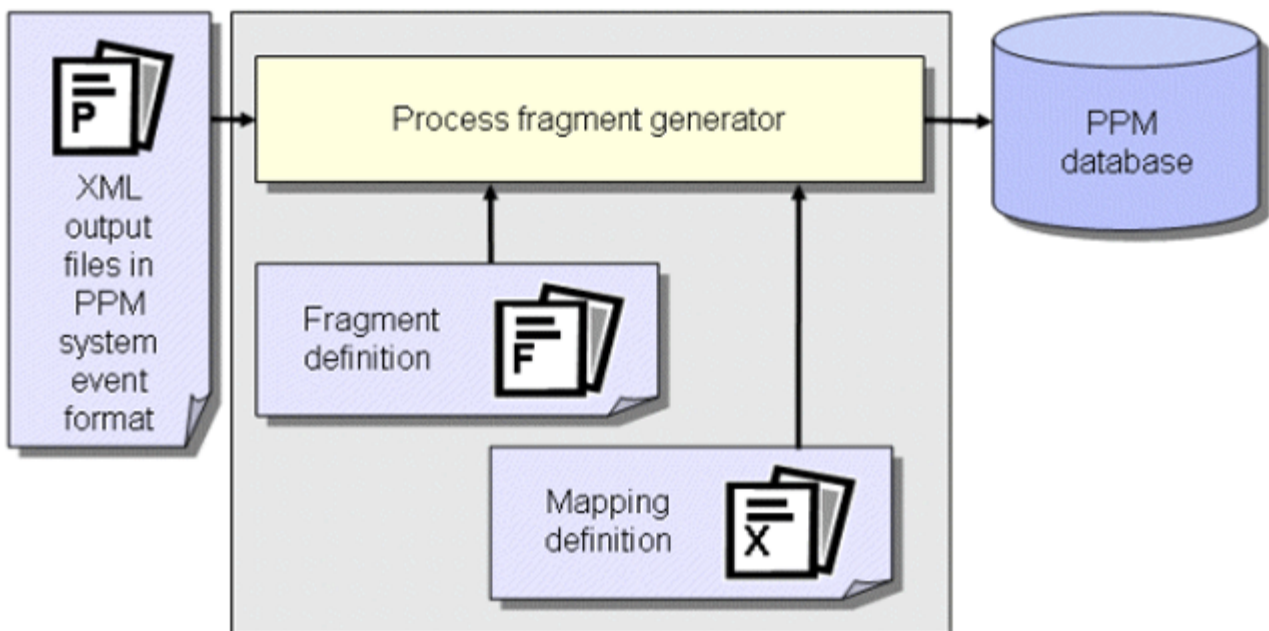
Tip

For further information about the configuration of the XML import please refer to the **PPM Data Import** manual.

In a further work step, the fragment instances imported into the database are compiled into process instances using the **runppmimport** PPM command and assigned to process types. After measure calculation, the process instances are available for detailed analyses.

Tip

The configuration of all files relevant for **runppmimport** is described in detail in the **PPM Customizing** manual.

4 Installation

This chapter provides an overview of the installation of PPM Content Package for SAP MM.

4.1 Install PPM Content Package for SAP MM

You can install PPM Content Package for SAP MM using the PPM installation program.

Prerequisite

Before you install PPM Content Package for SAP MM, you must install webMethods Process Performance Manager and PPM Process Extractor SAP-2-PPM.

For detailed installation information please refer to the PPM Installation Guide.

4.2 Install PPM clients

To use PPM Content Package for SAP MM, you must first use the PPM client setup in the client overview of PPM Customizing Toolkit to create a client. To do so, the client template **ppm4mm_en** is available in client setup.

For information on how to use PPM Customizing Toolkit to create a client with one of the templates from PPM Content Package for SAP MM, how to extract data, and how to import it into the PPM system, please refer to the description of PPM Customizing Toolkit (CTK User Guide)

4.3 Create table indices

The following **non-unique** indices should be created in the database in the SAP system because they considerably speed up the extraction process or, depending on the amount of data, they facilitate extraction within an acceptable time frame. The names of the data sources benefitting from the corresponding index are specified in parentheses.

You may need to create further indices depending on how you want to modify or extend the configurations contained in the Content Package.

BKPF TABLE

Index on **MANDT**, **CPUDT** (ACCOUNTING, LOG_INVOICE_ACCOUNTING_HIER)

Index on **MANDT**, **AEDAT** (ACCOUNTING, LOG_INVOICE_ACCOUNTING_HIER)

Index on **MANDT**, **UPDDT** (ACCOUNTING, LOG_INVOICE_ACCOUNTING_HIER)

Index on **MANDT**, **AWTYP** (ACCOUNTING, LOG_INVOICE_ACCOUNTING_HIER)

BSAK TABLE

Index for **MANDT**, **CPUDT** (CLEARING)

Index on **MANDT**, **BUKRS**, **BELNR** (CLEARING)

CDHDR TABLE

Index on **MANDT**, **UDATE** (CHG_RBKP_BLOCKED)

EBAN TABLE

Index on **MANDT**, **ERDAT** (PO_REQUISITION)

EKEK TABLE

Index on **MANDT**, **ERDAT** (DELIVERY_SCHEDULE_CALL)

EKPO TABLE

Index on **MANDT**, **AEDAT** (PURCHASE_ORDER)

LTAK TABLE

Index for **MANDT**, **BDATU** (WM_TRANSFER_ORDER)

LTBK TABLE

Index on **MANDT**, **BDATU** (TRANSFER_REQUIREMENT)

LIPS TABLE

Index on **MANDT**, **ERDAT** (DELIVERY)

Index on **MANDT**, **AEDAT** (DELIVERY)

MKPF TABLE

Index on **MANDT**, **CPUDT** (MATERIAL_DOCUMENT)

RBKP TABLE

Index on **MANDT**, **CPUDT** (LOGISTIC_INVOICE, LOGISTIC_INVOICE_HEADER)

4.4　Data extraction and import

The batch files supplied and described below are only intended as examples that you can use to create your own batch files for automatic data extraction and import.

4.4.1　Data extraction

The procedure for extracting data from an SAP/MM system is as follows.

1. In the file **ppm4mm_en_SAPSystem.xml**, set the access data for the R/3 system from which you want to extract data. For more information about these settings, refer to the technical reference document **PPM Process Extractors** in the chapter on **R/3 System Configuration**.

2. Use CTK to set start and end date of the extraction period whose data you want to extract in the parameter **PPM_CONF_MYSAP_PARAMS**.

3. Start a DOS command prompt, switch to the directory **<installation directory>\ppmmashzone\server\bin\work\data_ppm\custom\ppm4mm_en\bat**, and execute the file **sapexport_all.bat**.

Under **<installation directory>\ppmmashzone\server\bin\work\data_ppm\custom\ppm4mm_en\data** you will then find the ZIP files with the extracted data in PPM system event format.

4.4.2   Data import

The procedure for initializing the PPM client, importing the ZIP files, and performing the PPM import is as follows:

1. Open a DOS command prompt, switch to the directory **<installation directory>\ppmmashzone\server\bin\work\data_ppm\custom\ppm4mm_en\bat**, and execute the file **initdb.bat**. The batch file initializes the database for the client.

2. Start the **xmlimport_all.bat** file in the same directory. The batch file performs the XML import for the client.

3. Then start the **ppmimport.bat** file in the same directory to perform the PPM import for the client.

Under **<installation directory>\ppmmashzone\server\bin\work\data_ppm\custom\ppm4mm_en\data\ archive** you will then find the imported ZIP files with the extracted data in PPM system event format.

5   Individual adjustments

There is no option of an automatic upgrade with a transfer of individual adjustments to a subsequent version of the Content Package.

Therefore, mark or remember the changes you make in the configuration to be able to specify them in a newer version of the Content Package.

6 Appendix

6.1 Processes contained

EXTERNAL PURCHASE ORDER PROCESSING (PO)

- Standard purchase order
- Standard purchase order with consignment
- Standard purchase order with subcontracting
- Framework order
- Other orders

CREDIT MEMO PROCESSING WITHOUT PREDECESSOR

- Logistic credit memo without predecessor

HIERARCHIES

- Accounting process

INVOICE VERIFICATION (HEADER)

- Invoice verification

INTERNAL PURCHASE ORDER PROCESSING

- Stock transport request

CONTACT PROCESSING

- Outline agreements without successor

DELIVERY SCHEDULE

- Delivery schedule
- Other delivery schedules
- Stock transfer delivery schedule

OPEN REQUIREMENTS REQUISITIONS

- Open purchase requisitions
- Invoice verification without predecessor
- Logistic invoice without predecessor
- Returns processing
- Return (return delivery)

6.2 Measures and dimensions contained

PROCESS MEASURES

Number of purchase requisitions	Corresponds to the number of purchase requisitions that occur in the process
PO amount in base unit	Sum of purchase order amounts (in the base unit) from the **Create purchase order item** functions minus the purchase order amounts from the **Cancel purchase order item** function. The sum is created when the measure is aggregated. When using the measure, please refer to the chapter on the "PO amount in base unit" measure (Page 18).
Process cycle time	Corresponds to the time span between the start time of the first function and the end time of the last function of a process instance
Process cycle time (factory calendar)	Corresponds to the period between the start time of the first function and the end time of the last function of a process instance considering the factory calendar
Number of processors	Corresponds to the average number of different processors in the process instances.
Processing frequency	Corresponds to the number of times the function is processed in the process instance
Number of processes	Corresponds to the number of process instances.
Process frequency	Calculates the average number of process instances of a type in the number of process instances per time unit under analysis.

Process costs based on performance standard	Calculates the process costs for process instances based on the assigned performance standard and the assigned process cost rates per unit of time.
Requirement value	Corresponds to the requirement quantity in the purchase requisition (SAP table field: EBAN-MENGE) multiplied by the average material price
Requirement quantity	Corresponds to the requirement quantity in the purchase requisition (SAP table field: EBAN-MENGE)
Order quantity	Corresponds to the order quantity in the purchase requisition (SAP table field: EKPO-MENGE)
Delivery time (plan)	Corresponds to the average value of the planned delivery time in days stored in SAP for all purchase order items (SAP table field: EKPO-PLIFZ).
Delivery quantity	Corresponds to the total of all uncanceled delivery quantities or goods receipt quantities for all purchase order items
Delivery value	Corresponds to the value of all uncanceled goods receipts for all purchase order items. Material price per unit of measure multiplied by the delivery quantity
Number of purchase order items assigned to an account	Corresponds to the number of purchase order items with an assignment flag that occur in the process
Order processing time	Calculates the time span between the purchase requisition creation date (SAP table field: EBAN-BADAT) and the document date (issue date of original document) of the latest goods receipt (SAP table fields: MKPF- BLDAT).

Cycle time requirement-purchase order	Corresponds to the average time span between the "Create purchase requisition" and "Create purchase order" functions. Relevant time stamps: Purchase requisition creation date (SAP table field: EBAN-BADAT) and order date (SAP table field: EKKO-BEDAT).
Delivery time (actual)	Average time span between posting date / purchase order date (SAP table field: EKKO-BEDAT) for the order and the last goods receipt date.
Delivery quantity flexibility	Ratio order quantity divided by the delivery quantity
Average material price	Calculates the net price across all purchase order items in the process in the document currency
Over/underdelivery (absolute)	Calculates the average deviation between the planned order quantity and the actual delivery quantity in the process. The difference between the purchase order quantity and the total of all goods receipt quantities belonging to the order item is calculated (minus goods receipt cancelations).
Overdelivery/underdelivery (tolerance)	Calculates the average deviation between the planned order quantity and the actual delivery quantity in the process. The difference between the purchase order quantity and the total of all goods receipt quantities belonging to the order item is calculated (minus goods receipt cancelations) taking into account the permissible under- and overdelivery tolerance.
Ship-to party delivery performance (in percent)	Calculates adherence to the desired delivery date (SAP table field: LIKP-LFDAT) based on the document date (issue date of original document) of the latest goods receipt (SAP table fields: MKPF- BLDAT) in percent.

Ship-to party delivery performance	Calculates the difference in days between the document date (issue date of original document) of the latest goods receipt (SAP table fields: MKPF-BLDAT) and the desired delivery date (SAP table field: LIKP- LFDAT).

FUNCTION MEASURES

Function frequency	Corresponds to the number of functions depending on the period being analyzed The measure is calculated internally. When calculating the measure, the values are added together and divided by the number of days given by the selected scaling of a time dimension.
Number of processors	Corresponds to the average number of processors who have executed a function within the set of process instances being analyzed.
PO amount in base unit	PO amount in base unit (only at the **Create purchase order item** function), or the negated PO amount in base unit (only at the **Cancel purchase order item** function).
	The sum is created when the measure is aggregated.
	When using the measure, please refer to the chapter on the "PO amount in base unit" measure (Page 18).
Cycle time	Corresponds to the time span between the start time and the end time of the function being analyzed
Cycle time (factory calendar)	Corresponds to the time span between the start time and the end time of the function being analyzed considering the factory calendar

Processing frequency	Corresponds to the average number of times a particular function is processed in the set of process instances being analyzed
Process cost rate based on performance standard	Calculates the costs of a function based on the assigned performance standard and process cost rates per unit of time
Processing frequency in process	Specifies how often a particular function occurs in a process instance
Delivery time (plan) purchase order	Corresponds to the planned delivery time for a purchase order item in days stored in SAP (SAP table field: EKPO-PLIFZ).
Order value purchase order	Corresponds to the net value (SAP table field: EKPO-NETWR) of the purchase order item.
Delivery time deviation (plan-actual)	Calculates the deviation of the planned delivery time to the actual delivery time. Time difference between the delivery time (actual) and the delivery time (planned) of the purchase order.
Cycle time requirement-purchase order document	Corresponds to the time span between the "Create purchase requisition" and "Create purchase order item" functions, calculated for each order item. Relevant time stamps: Purchase requisition creation date (SAP table field: EBAN-BADAT) and order date (SAP table field: EKKO-BEDAT).
Processing time	Corresponds to the time span between the start time and the end time of the function being analyzed within a process instance
Processing time (factory calendar)	Corresponds to the time span between the start time and the end time of the function being analyzed within a process instance, based on the factory calendar.

Wait time	Corresponds to the average time span between the end of processing of the preceding function and the start of processing of the function being analyzed
Wait time (factory calendar)	Corresponds to the average time span between the end of processing of the preceding function and the start of processing of the function being analyzed. The calculation is based on the factory calendar.
Number of functions	Corresponds to the sum of the occurrences of a function in the process instances being analyzed
Delivery time (actual) purchase order	Corresponds to the planned delivery time for a purchase order item in days stored in SAP (SAP table field: EKPO-PLIFZ).
Delivery quantity purchase order	Corresponds to the quantity of all non-canceled goods receipts for a purchase order item in the process
Delivery value purchase order	Corresponds to the value of all non-canceled goods receipts for an purchase order item in the process
Material price purchase order	Corresponds to the net value of the purchase order item divided by the order quantity of the purchase order item (SAP table fields: EKPO-NETWR, EKPO-MENGE).
Over/underdelivery purchase order (absolute)	Calculates the deviation between the planned purchase order quantity and the actual delivery quantity. The difference between the purchase order quantity and the total of all goods receipt quantities belonging to the order item is calculated (minus goods receipt cancelations).

Over/underdelivery purchase order (tolerance)	Calculates the deviation between the planned purchase order quantity and the actual delivery quantity. The difference between the purchase order quantity and the total of all goods receipt quantities belonging to the order item is calculated (minus goods receipt cancelations) taking into account the permissible under- and overdelivery tolerance.
Number of goods receipts canceled	Corresponds to the number of canceled deliveries/goods receipts for a purchase order item
Number of goods receipts	Corresponds to the number of deliveries/goods receipts for a purchase order item

PROCESS DIMENSIONS

- Process type
- Time
- Base unit (purchase order)
- Flag: Delete merge keys
- Deadline reliability (plan)
- Purchasing group
- MRP controller
- Plant
- Purchasing organization
- Material
- Search for document number
- Search for material number
- Material group
- Search for supplier
- Company code
- Account assignment type
- Critical component indicator

FUNCTION DIMENSIONS

- Function

- Function time
- Base unit (purchase order)
- Purchase order document number
- Goods receipt document number
- Purchasing document type
- Deadline reliability (plan)
- Supplier
- Delivery completed indicator set
- Storage location
- Unit of measure
- Unlimited overdelivery allowed
- Document currency
- Reason for rejection
- ABC indicator

6.3 "PO amount in base unit" measure

The function or process measure **PO amount in base unit** does not have a unit. You find the unit of the value in the function dimension or process dimension **Base unit (purchase order)**.

When using this in evaluations, please note that various base units exist, such as "kilogram" or "liter". This means that if you evaluate processes and functions regarding the **PO amount in base unit** measure, and the processes contain purchase orders for materials **A**, **B**, and **C**, the measure value **PO amount in base unit** of material A may have the unit **Pieces**, the measure value of material **B** may have the unit **Kilograms**, and the measure value of material **C** may have the unit **Liters**.

Therefore, an evaluation based on the **PO amount in base unit** should always be performed in combination with the **Base unit (purchase order)** dimension. In most cases it might also be useful to add the **Material** dimension.

The function measure **PO amount in base unit** for the function **Create purchase order item** (create_purchase_order_item) is calculated as follows:

- Is the table field **EKPO-LMEIN** empty or does it have the same value as the field **EKPO-MEINS**?

    Yes: The value from the table field **EKPO-MENGE** is used for the measure.

    No: The value of the table field **EKPO-MENGE** is multiplied by the value of the field **EKPO-UMREZ** and divided by the value of the field **EKPO-UMREN**.

If you select the first option, the PO amount already has the base unit. If you select the second option, the PO amount has a different unit and the PO amount must be multiplied with the conversion factor. The conversion factor is saved with numerator (EKPO-UMREZ) and denominator (EKPO-UMREN) for the purchase order document item.

The measure is calculated exactly as described above for the **Cancel purchase order item** function (cancel_purchase_order_item) and then negated.

To calculate the **PO amount in base unit** process measure, the sum of the **PO amount in base unit** measures of all functions is created. The default value is **0.0**.

Following are two examples. The first shows the summed up process measure **PO amount in base unit** with the dimensions **Material** and **Base unit (Purchase order)**. The second contains the same dimensions as the first plus the **End time [By month]** dimension.

Example 1

Table		
PO amount in base unit	**↑≞ Base unit (Purchase order)**	
Material	**Piece (ST)**	**US pound (LB)**
'Sophia l.' pizza, 3-pack (R100004)	249,924.000	
Basketball 'Professional' (R100011)	139,452.984	
Body lotion 'Alabaster' (R100014)	581,381.000	
Bottle 1.5 (R100022)	120.000	
Crate 12 bottles (R100023)	10.000	
Fauna margarine (R100001)	1,431,300.000	
Fitdrink 2000 (Can) (R100032)	3,605,928.000	
Hammer, 20 oz framing (R100010)	111,073.000	
Hexagon head screw ISO4017 M6x20-8.8-A1C (QS6X20)	15,000.000	
Hexagon head screw ISO4017 M8x20-8.8-A1C (QS8X20)	4,170.000	
Ladies' blouse, linen, 36, red (R100018001)	415.000	
Ladies' blouse, linen, 36 green (R100018002)	475.000	
Ladies' blouse, linen, 38, yellow (R100018004)	380.000	
Ladies' blouse, linen, 38 green (R100018003)	380.000	
Ladies' blouse, linen, 40, blue (R100018006)	510.000	
Ladies' blouse, linen, 40 yellow (R100018005)	390.000	
Lemonade 1.5 l bottle (R100003)	120.000	
Meyer's cream of mushroom soup (R100026)	1,310,609.000	
Meyer's goulash soup (R100027)	986,831.000	
Meyer's soup display (R100028)	2.000	
MEYER'S tomato soup (R100006)	306,568.000	
Net of oranges, 4 lb (R100007)	395,210.000	
Pepper (R100008)		269,120.000
RAVIOLI 'LA MAMMA' (R100005)	77,734.000	
Salami parma (R100002)		620,540.000
Screwdriver (cross-head) (R100009)	665,676.000	
Shampoo 'Splash' (R100013)	471,233.000	
Shirt 'Smart' (fl, 14,5, 0034, dark blue (R100019003)	415.000	
Shirt 'Smart' (flan, 15, 0034, dark blue (R100019004)	430.000	
Shirt 'Smart' (flannel,14,5, 0033, white (R100019002)	440.000	
Shirt 'Smart' (flannel), 14, 0033, white (R100019001)	355.000	
Skateboard 'Hells Bells' (R100012)	15,705.000	
Tuner X300 (R100016)	12,316.000	
Yoghurt all natural (R100000)	2,922,620.000	

Example 2

PO amount in base unit		Base unit (Purchase order)
Material	End time [By month]	Piece (ST)
	Jun 99	15,024.000
	Jul 99	126,600.000
	Aug 99	133,944.000
	Sep 99	127,800.000
	Oct 99	121,752.000
	Nov 99	113,184.000
	Dec 99	127,800.000
	Jan 00	115,656.000
	Feb 00	120,528.000
	Mar 00	121,752.000
	Apr 00	120,528.000
	May 00	122,952.000
	Jun 00	122,952.000
	Jul 00	129,024.000
	Aug 00	121,752.000
Fitdrink 2000 (Can) (R100032)	Sep 00	127,800.000
	Jan 01	115,656.000
	Feb 01	263,376.000
	Mar 01	121,752.000
	Apr 01	120,528.000
	May 01	122,952.000
	Jun 01	122,952.000
	Jul 01	129,024.000
	Aug 01	121,752.000
	Sep 01	42,456.000
	Oct 01	121,752.000
	Nov 01	113,184.000
	Dec 01	143,712.000
	Jan 02	77,256.000
	Feb 02	120,528.000

6.4　Documentation

In CTK, you can generate detailed documentation for the configurations of your PPM client, which you have created on the basis of PPM Content Package for SAP/MM. The **Create client documentation** program extracts the most important XML configuration files for PPM and creates documentation in the form of HTML pages. The application is available in the **Programs** component of the **Client** module. The files of your documentation are saved under **<installation directory>\ppmmashzone\server\bin\work\data_ppm\custom\<client>\docu**.

You can document the configuration of the following elements of your client:

- Process type
- Measures
- User-defined measures
- Dimensions
- Functions
- Attributes
- Calculated attributes (incl. calculation rule)
- Process instance-independent measures
- Relations