

Produmex Scan Customization Guide

1. Customization Technology

The customization process for the Produmex mobile applications consists of the following steps:

- Enable the Customization Assist mode and run the client application. Check the customization information of the screen.
- Create the custom field and/or the SAP user query.
- Restart the client application and check the results of the customization.

Many screens of Produmex mobile applications are customizable with SAP Business One's queries. The used query have to be named specifically based on the screen it is used on. The query names, and parameters can be found with the help of the 'Customization Assist'. The query result column names indicate which fields to set.

Supported customization types:

- Preset field data
- Validation: The system checks if the entered values are correct during a 'validate' or a 'button' event.
- Add new fields/Hide existing fields

Helpful Tips and Resources

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Produmex Scan Articles: [Customization \(more subsections are available\)](#)

Functional changes introduced in new software releases can impact the behavior of customizations. Customizations are not part of the standard software, and are therefore not tested against new software releases. If you have any customizations, please make sure that appropriate testing protocols are applied to validate the customizations against the new software release.

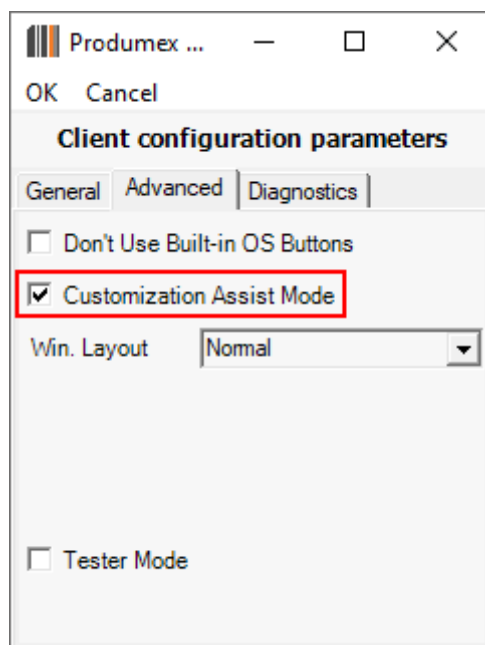
1.1. Enable the Customization Assist

To see information regarding the customization possibilities enable the Customization Assist mode.

Note: The Customization Assist mode is only needed to see customization possibilities. It is not

required to be enabled during normal operations.

1. Start the Produmex Scan Configuration application.
2. Enable the Customization Assist Mode setting on the Advanced tab, then press OK to save the setting.



3. Run Produmex Scan and go to the screen that needs to be customized.
4. Tap the **C** button on the top of the screen.

The Customization screen opens up and it lists the possible parameters for customization with their current value and the customizable events.



1.2. Create custom fields

Open the Customization Fields table in SAP Business One via Tools > User-Defined Windows > Customization Fields (BXCUSTFD).

[illegible]

1.2.1. Field Name

The field name will be used to identify the field on the Customization window and in user queries. It is possible to create a new field or to add an existing Produmex Scan field. If the name of an existing field is added, the other properties can be changed.

Example:

In the example we add a custom delivery date field to the Goods Receipt PO screen and we hide the UoM field.

Field Name	Field Type	Label	Module	Screen	Visible	Ready Only
DELDATE	String	Del.Date	BXMobileWH9	GoodsReceiptPOLinesScreen	Yes	Yes
TextUoM	String		BXMobileWH9	GoodsReceiptPOLinesScreen	No	

To add data to the fields defined in the Customization Fields user table, use user queries.



It is also possible to add fields that already exist in SAP Business One as a user defined field. In this case no user query is required to copy the values added on the scanner to the database, but additional user queries are needed to populate the fields on the device with the database values.

1.2.1.1. Add SBO Header Field

Note: This function does not exist on line level.

In order to add an SBO header field, add the DI API field name and the BO_ prefix as the field name on the Customization Fields user table.

Hereinafter you can also change the other properties. When providing the value for Screen, make sure that you indicate the screen from where the final posting process will begin.

Example:

Add the Description field from the SBO Bin Location Master Data form to the Bin Attributes Produmex Scan screen.

Field Name	Field Type	Label	Module	Screen	Read Only
BO_Description	String	Description	BXMobileWH9	BinAttributesScreen	No

Exception: Field Ref2 must be referenced as BO_Reference2 in the Field Name column.

1.2.1.2. Add SBO User Defined Field for document header

Note: This function does not exist on line level.

In order to add an SBO user defined field, add the field title with the BO_U_ prefix as the field name on the Customization Fields user table.

Hereinafter you can also change the other properties. When providing the value for Screen, make sure that you indicate the screen from where the final posting process will begin.

Example:

Add the 'Customer' user defined field from the SBO Bin Location Master Data form to the Bin Attributes Produmex Scan screen.

✖

Field Name	Field Type	Label	Module	Screen	Read Only
BO_U_PMXCUS	String	Customer	BXMobileWH9	BinAttributesScreen	No



1.2.1.3. Add Batch/Serial Number Details

Batch and Serial Number Details has to be added with the following format: #FieldName.

Title on Batch Details	DB field name	Field Name (CustomizationFields user table)
Expiration Date	ExpDate	#ExpirationDate
Manufacturing Date	MnfDate	#ManufacturingDate
Batch Attribute 1	MnfSerial	#Attribute1
Batch Attribute 2	LotNumber	#Attribute2
Details	Notes	#Details

Title on Serial Number Details	DB field name	Field Name (CustomizationFields user table)
Expiration Date	ExpDate	#SerialExpirationDate
Manufacturing Date	MnfDate	#SerialManufacturingDate
Mfr Serial No.	MnfSerial	#SerialAttribute1
Lot Number	LotNumber	#SerialAttribute2
Details	Notes	#SerialDetails

The default Serial number input field should be the last input field during the data entering process. It is because the Serial number will be added to the list in its validation event.

NOTE: Batch and serial number details are not supported on material return documents and A/R Credit Memos.

1.2.2. Field Type

Type of the field. Supported field types:

- *Button(13)*: Creates a new button. It will have a 'click' and 'click after' event.
- *String(0)*: Creates a new input field for alphanumeric values. It will have a 'validate' and 'validate after' event.
- *Quantity(5)*: Creates a new input field. The user can add a number with decimals as the value. It will have a 'validate' and 'validate after' event.
- *Percent(6)*: Creates a new input field. The user can add a percentage as the value. It will have a 'validate' and 'validate after' event.
- *Integer(8)*: Creates a new input field. The user can add a whole number as the value. It will have a 'validate' and 'validate after' event.

1.2.3. Label

The displayed text. It is also possible to change the label of an existing field.

1.2.4. Module

The name of the mobile solution. Add **BXMobileWH9**.

1.2.5. On External Form

Defines whether the new field is added to an external screen or not. If you select Yes in the column, a new button (E) is displayed to open the external screen.



1.2.6. Position Data

The position of an object can be changed in this field. Possible values:

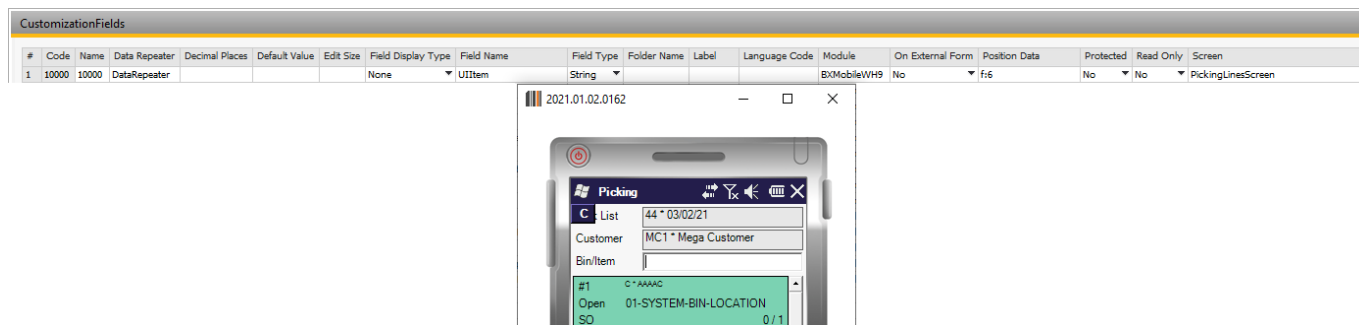
- x: - horizontal position (% of screen width from left)
- y: - vertical position (% of screen height from top)
- w: - width (% of screen width)
- h: - height (% of screen height)
- f: - font size (pixel) only on 'Button' and for [DataRepeater](#)
- lines: - the number of extra lines to be added to the screen, only for DataRepeater

(see section [7. Manipulating DataRepeater / 7.3. Adding extra lines to screens](#))

Please note that only integer values are allowed. Separate the different parameters with the ';' character.

E.g.: x:1;y:50;w:50;h:80;lines:3

Font size example:



1.2.7. Protected

If it is set to yes, the field is displayed on the next screen as well and the entered value is in read-only mode on this second screen.

Note:

- If a field is customized on a given screen, it cannot be added to the same screen again as a protected field.
- It is recommended to convert the value of the protected field on the second screen in your query because if the field does not contain any value, it can cause any error.

1.2.8. Read Only

Defines whether the field will be read only or not.

1.2.9. Screen

The screen name. The screen name can be found in the first line on the Customization window.

1.2.10. Visible

Defines whether the field is displayed on the screen or not.

1.3. Create an SAP user query

Open the Query Manager in SAP Business One via: Tools > Queries > Query Manager

Create the user query.

The name of the query defines when it will be executed, therefore save it as the name of the event when you would like to run the user query.

EXAMPLE: The user query that runs when the 'GR PO' screen is loaded in Produmex Scan is 'BXMobileWH9_GoodsReceiptPOScreen_Load'

1.3.1. Supported message types

The following message types can be used in user queries for Produmex Scan:

- **I: Information**
A pop up information message will be prompted, that needs user confirmation (OK). The event will execute.
- **E: Error**
A pop up error message will be prompted, that needs user confirmation (OK). The event will not execute.
- **YM: Yes/No with message box**
A pop up confirmation message will be prompted, that can be answered with yes or no. The event will execute depending on user choice.

1.4. Restart the application

To apply the customization restart the mobile application.

You must restart the application every time a new user query is created but it is not necessary to restart the application when modifying an existing query.

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2. Customization Examples

2.1. Goods Receipt PO

Helpful Tips and Resources

Click the link below to visit our Article site, where you will find examples and useful information. We are continuously adding new articles featuring the most common customizations.

Produmex Scan Articles: Customization

2.1.1. Set (user) fields in GR PO

The customization makes possible to set additional fields (SAP or user fields) in the Goods Receipt PO document from.

Go to GR PO Lines screen, and open Customization window. Here you can see the name of this screen: *GoodsReceiptPOLinesScreen*



To add new fields, open the [CustomizationFields](#) User-Defined window in SAP Business One. Use the recommended parameters as below:

Screen	Module	Label	Field Name	Read Only
GoodsReceiptPOLinesScreen	BXMobileWH9	Del.Date	DELDATE	YES

Now you are able to load data into this new field. To do it, you have to use the *BXMobileWH9_GoodsReceiptPOLinesScreen_Load* user query.

GR PO

Ch.Ord.10 * Mega Supplier LLC

Item Filter

UoMpallet

QuantityAddUpd

Del.Date

#1A1000 * Normal Paper A1 000OpenWH: 010 / 1 pallet

#2A1000 * Normal Paper A1 000OpenWH: 010 / 1 pallet

Done

Customization

Screen: GoodsReceiptPOLinesScreen

\$(ButtonExtraData) = E

\$(ButtonCustomizationDebug) = C

\$(ButtonUpdate) = Upd

\$(ButtonAdd) = Add

\$(TextQuantity) =

\$(TextUoM) = pallet

\$(TextPurchaseOrder) = 10 * Mega Supplier LLC

\$(TextItem) =

\$(DELDATE) =

\$(DataRepeater.UIRowStatus) = Open##Open

\$(DataRepeater.SelectedUIRowStatus) = Open

\$(DataRepeater.UIWarehouse) = WH: 01##WH: 01

\$(DataRepeater.SelectedUIWarehouse) = WH: 01

\$(DataRepeater.UIItemCode) = A1000 * Normal Paper A1 000##A1000 * Normal Paper A1 000

\$(DataRepeater.SelectedUIItemCode) = A1000 * Normal Paper A1 000

\$(DataRepeater.UILineNumber) = #1##2

\$(DataRepeater.SelectedUILineNumber) = #1

\$(DataRepeater.UIQuantityDetails) = 0 / 1 pallet##0 / 1 pallet

Close

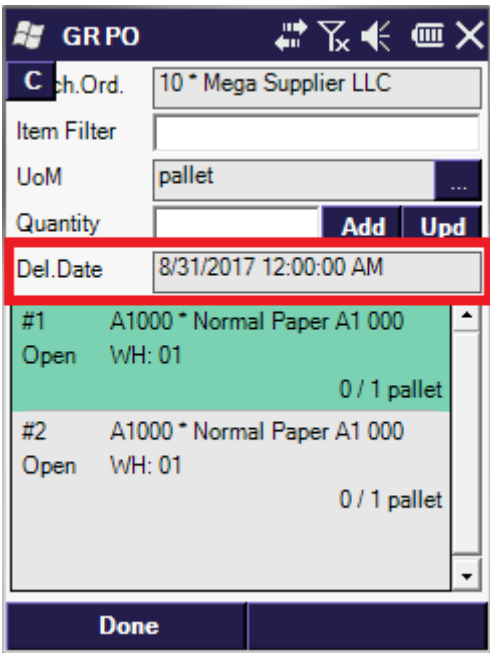
If you want to select the delivery date of the purchase order, you will need the purchase order number. You can check the field name on customization screen.
In the example: `$(TextPurchaseOrder) = 10 * Mega Supplier LLC`

You have to use `$(TextPurchaseOrder)` field and you have to split the string in the query. If you want to read the data from the field, then you have to use `$` character.

```
SELECT DocDueDate as [DELDATE] FROM OPOR
```



```
WHERE DocNum = SUBSTRING( $[TextPurchaseOrder], 0, CHARINDEX( '*', $[TextPurchaseOrder], 1) - 1)
```



2.1.2. Set Freight

It is possible to set the Freight costs/lines in the created Goods Receipt PO with user query. Please see [2.1 Set Freight in Delivery document](#) for the example query.

UserQuery: bx_mobile_wh9_document_additionalexpenses (Category: BXMobileWH9)	
Parameters [%1] - employeeID [%2] - TerminalID [%3] - Head Code from Mobile Transaction table (@BXPLMSMOBTHD.Code) [%4] - grouped Head Codes (string, list), separated with # characters, only applicable for grouped Purchase Order/APReserve invoice → Goods Receipt PO	Results Zero, one or more rows for the Freight charges to be created. The result columns can have the names: * BO_LineTotal = the LineTotal field, amount of money (mandatory) * BO_ExpenseCode = Expense Code (integer) (mandatory)

2.1.3. Batch number generation

On some screens (e.g. Goods Receipt PO, Receipt from Production) the system can automatically generate batch numbers when entering the received quantities and bin locations. The batch number generation logic can be defined in a user query.

UserQuery: bx_mobile_wh9_get_new_batchnumber (Category: BXMobileWH9)	
Parameters [%1]: employee ID (int) [%2]: terminal ID (nvarchar) [%3]: base document type (int) [%4]: base document entry (int) [%5]: base document line (int) [%6]: item code (nvarchar)	Results The user query should return the batch number in a column called BXBATNUM (type of the field should be NVARCHAR)

Note: The standard *click* and *click_after* events cannot use the parameters of the `bx_mobile_wh9_get_new_batchnumber` query.

Example:

The following query generates a batch number combining the supplier code and the current date:

```
SELECT T0.[CardCode] + '-' + CONVERT(varchar, GETDATE(), 112) AS 'BxBATNUM'
FROM OPOR T0 WHERE T0.[DocEntry] = [%4]
```

2.1.4. Serial number generation

In the Goods Receipt PO process, the system can automatically generate serial numbers when entering the received stocks. The serial number generation logic needs to be defined in a user query.

UserQuery: <code>bx_mobile_wh9_get_new_serialnumber</code> (Category: <code>BXMobileWH9</code>)	
Parameters [%1]: employee ID (int) [%2]: terminal ID (nvarchar) [%3]: base document type (int) [%4]: base document entry (int) [%5]: base document line (int) [%6]: item code (nvarchar)	Results The user query should return the serial numbers (multiple rows possible) in a column called <code>BXSERNUM</code>

2.1.5. Expiration date at GRPO/Inventory

The following fields can be used at BatchScreen or SerialScreen:

```
BATCH_EXPIRATION_DATE = "#ExpirationDate";
BATCH_MANUFACTURING_DATE = "#ManufacturingDate";
BATCH_ATTRIBUTE1 = "#Attribute1";
BATCH_ATTRIBUTE2 = "#Attribute2";
BATCH_DETAILS = "#Details";
```

```
SERIAL_EXPIRATION_DATE = "#SerialExpirationDate";
SERIAL_MANUFACTURING_DATE = "#SerialManufacturingDate";
SERIAL_ATTRIBUTE1 = "#SerialAttribute1";
SERIAL_ATTRIBUTE2 = "#SerialAttribute2";
SERIAL_DETAILS = "#SerialDetails";
```

These fields can be added on the [CustomizationFields](#) table.

Example for batches:

Field Name	Label	Screen
#ExpirationDate	BBD	ReceiptFromProductionQuantitiesBatchScreen
#ManufacturingDate	ManufacturingDate	ReceiptFromProductionQuantitiesBatchScreen
#ExpirationDate	BBD	GoodsReceiptPOQuantitiesBatchScreen

2.1.6. Generate GRPO from Draft

Note: This customization is **compatible from SAP Business One version 2405 or later versions**. It will not function on earlier versions!

With this customization GRPOs can be created from draft. When starting the Goods Receipt Purchase Order function on the scanner and there is a draft GRPO registered in SBO for the given warehouse, the draft document is listed among the Purchase Orders.

The 'Post' button is immediately active for draft documents when selected and the 'Receive' button is hidden/not available. When the 'Post' button is pressed while a GRPO draft is selected, the GRPO is created from the GRPO draft with the exact same stock parameters as the GRPO draft.



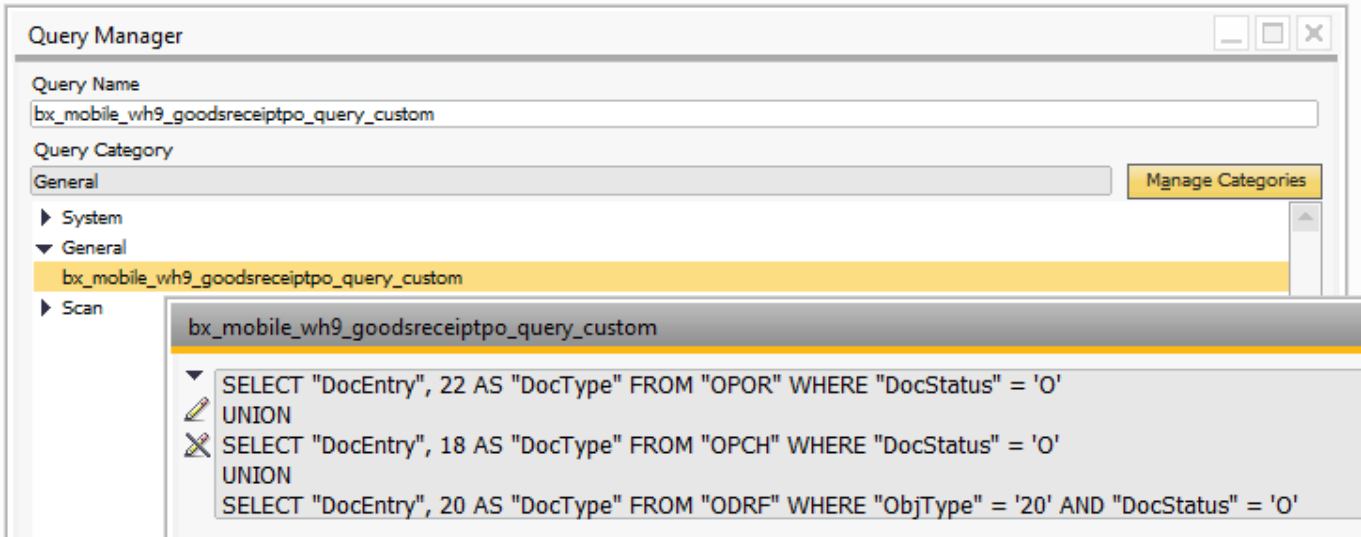
Note: DR = draft GRPO (new), PO = Purchase Order, RI = A/P Reserve Invoice

UserQuery: bx_mobile_wh9_goodsreceiptpo_query_custom

```
SELECT
    Distinct "DocEntry", "DocType", ItemCode
FROM (
    SELECT "OPOR"."DocEntry", 22 as "DocType", "CardCode", "DocNum",
    "DocDueDate", "POR1"."ItemCode" FROM "POR1" LEFT JOIN "OPOR" ON
    "POR1"."DocEntry" = "OPOR"."DocEntry" WHERE "DocStatus" = '0'
    UNION
    SELECT "OPCH"."DocEntry", 18 as "DocType", "CardCode", "DocNum",
    "DocDueDate", "PCH1"."ItemCode" FROM "PCH1" LEFT JOIN "OPCH" ON
    "PCH1"."DocEntry" = "OPCH"."DocEntry" WHERE "DocStatus" = '0'
    UNION
    SELECT "ODRF"."DocEntry", 20 as "DocType", "CardCode", "DocNum",
    "DocDueDate", "DRF1"."ItemCode" FROM "DRF1" LEFT JOIN "ODRF" ON
    "DRF1"."DocEntry" = "ODRF"."DocEntry" WHERE "ODRF"."ObjType" = '20' AND
    "DocStatus" = '0' AND "ODRF"."WddStatus" in ('Y','')
    ) as DOCUMENT
WHERE
    (CASE WHEN isnull($[ItemCode], '') = '' THEN 1 ELSE CASE WHEN
    "DOCUMENT"."ItemCode" = $[ItemCode] THEN 1 ELSE 0 END END) = 1
    AND (CASE WHEN isnull($[DocNum], '') = '' THEN 1 ELSE CASE WHEN
    "DOCUMENT"."DocNum" = $[DocNum] THEN 1 ELSE 0 END END) = 1
    AND (CASE WHEN isnull($[CardCode], '') = '' THEN 1 ELSE CASE WHEN
    "DOCUMENT"."CardCode" = $[CardCode] THEN 1 ELSE 0 END END) = 1
    AND (CASE WHEN isnull($[DueDate], '') = '' THEN 1 ELSE CASE WHEN
    "DOCUMENT"."DocDueDate" = $[DueDate] THEN 1 ELSE 0 END END) = 1
```

Implementation:

Add the query in the Query Manager in SBO



2.2. Sales Orders

2.2.1. Set Freight in Delivery document

By default the Freight in the created Delivery document is 0. It is possible to customize Produmex Scan so freight lines are added with a custom freight calculation algorithm. This algorithm receives a parameter which allows to query the items, quantities, base documents which will be used to create the new Delivery Document.

UserQuery: bx_mobile_wh9_document_additionalexpenses (Category: BXMobileWH9)	
Parameters [%1] - employeeID [%3] - Head Code from Mobile Transaction table (@BXPLMSMOBTHD.Code) [%4] - grouped Head Codes (string, list), separated with # characters, only applicable for grouped Purchase Order/APReserve invoice → Goods Receipt PO	Results Zero, one or more rows for the Freight charges to be created. The result columns can have the names: BO_LineTotal = the LineTotal field, amount of money (mandatory) BO_ExpenseCode = Expense Code (integer) (mandatory)

Example:
A combined query to copy expenses from Sales Orders and Purchase Orders.
Query name: bx_mobile_wh9_document_additionalexpenses

```
declare @salesOrderDocEntry int
SELECT @salesOrderDocEntry = U_BXPBsDcE
FROM [@BXPLMSMOBTLN]
WHERE U_BXP HdCd = [%3] AND U_BXPBsDcT = 17 AND U_BXPDocTy = 15
-- 15-delivery, 17-sales order
IF @salesOrderDocEntry > 0
BEGIN
SELECT
    ExpnsCode as B0_ExpenseCode,
    LineTotal as B0_LineTotal,
```

```

    17 as B0_BaseDocType,
    @salesOrderDocEntry as B0_BaseDocEntry,
    LineNum as B0_BaseDocLine
FROM RDR3
WHERE DocEntry = @salesOrderDocEntry AND Status <> 'C'
END
declare @purchaseOrderDocEntry int
SELECT @purchaseOrderDocEntry = U_BXPBsDcE
FROM [@BXPLMSM0BTLN]
WHERE U_BXPHdCd = [%3] AND U_BXPBsDcT = 22 AND U_BXPDocTy = 20
-- 22-Purchase order, 20-Goods Receipt P0
IF @purchaseOrderDocEntry > 0
BEGIN
SELECT
    ExpnsCode as B0_ExpenseCode,
    LineTotal as B0_LineTotal,
    22 as B0_BaseDocType,
    @purchaseOrderDocEntry as B0_BaseDocEntry,
    LineNum as B0_BaseDocLine
FROM POR3
WHERE DocEntry = @purchaseOrderDocEntry AND Status <> 'C'
END

```

HANA version

```

CREATE PROCEDURE PMXSCAN_ADDITIONALEXPENSES (
    IN
    pHeadCode NVARCHAR(5000)
)
LANGUAGE SQLSCRIPT
AS
BEGIN
    declare purchaseOrderDocEntry int;
    declare salesOrderDocEntry int;
    SELECT SUM("U_BXPBsDcE") into salesOrderDocEntry FROM
    (
        SELECT 0 "U_BXPBsDcE" FROM DUMMY
        UNION
        SELECT "U_BXPBsDcE"
        FROM "@BXPLMSM0BTLN"
        WHERE "U_BXPHdCd" = pHeadCode AND "U_BXPBsDcT" = 17 AND "U_BXPDocTy"
= 15
    );

    -- 15-delivery, 17-sales order
    IF salesOrderDocEntry > 0 THEN
        SELECT
            "ExpnsCode" as "B0_ExpenseCode",
            "LineTotal" as "B0_LineTotal",
            17 as "B0_BaseDocType",
            salesOrderDocEntry as "B0_BaseDocEntry",

```

```
        "LineNum" as "B0_BaseDocLine"
    FROM "RDR3"
    WHERE "DocEntry" = salesOrderDocEntry AND "Status" <> 'C';
END IF;

SELECT SUM("U_BXPBsDcE") into purchaseOrderDocEntry FROM
(
    SELECT 0 "U_BXPBsDcE" FROM DUMMY
    UNION
    SELECT "U_BXPBsDcE"
    FROM "@BXPLMSMOBTLN"
    WHERE "U_BXPHdCd" = pHeadCode AND "U_BXPBsDcT" = 22 AND "U_BXPDocTy"
= 20
);
-- 22-Purchase order, 20-Goods Receipt PO
IF purchaseOrderDocEntry > 0 THEN
    SELECT
        "ExpnsCode" as "B0_ExpenseCode",
        "LineTotal" as "B0_LineTotal",
        22 as "B0_BaseDocType",
        purchaseOrderDocEntry as "B0_BaseDocEntry",
        "LineNum" as "B0_BaseDocLine"
    FROM "POR3"
    WHERE "DocEntry" = purchaseOrderDocEntry AND "Status" <> 'C';
END IF;

END;

SAP Query name:
bx_mobile_wh9_document_additionalexpenses

content:
call "PMXSCAN_ADDITIONALEXPENSES"( [%3] );
```

This example user query looks at the Mobile Transaction (lines) table, filters for Base Document Type = Sales Order, finds the base Sales Order Document DocEntry. It then retrieves the freight expense records related to the Sales Order (from table RDR3), and extracts Expense Code and Line Total, so it essentially copies all the freight charges from the Sales Order without any calculation.

2.2.2. Packing ID

It is possible to record packaging ID during picking. The package ID screen can be added to the picking lines screen.

Example:

Field Name	Label	Screen
#PackageId	Package ID	PickingLinesPickNormalScreen
#PackageId	Package ID	PickingLinesPickBatchScreen
#PackageId	Package ID	PickingLinesPickSerialScreen

The screenshot shows the 'Picking' screen with the following fields and values:

- Pick List: 57 * 06/04/18
- Customer: PCO12345 * Paper Company
- Item: A1000
- Open Qty: 5 pcs
- Rec. Bin: 01-RECEIVING-BIN-LOCATION
- Bin Loc.: 01-RECEIVING-BIN-LOCATION
- UoM: pcs
- Quantity: 5 pcs
- Package ID: 10001

Buttons at the bottom: Find Stocks, Post, Back.

The Package ID is automatically filled with the last Package ID value that was added for the pick list. Both numbers and letters are supported in this field.

The package ID is stored on the MobilePickingData (BXPLMSMOBPICK) user table.

The screenshot shows the 'MobilePickingData' table with the following columns: #, Code, Name, Batch Number, Bin Code, Is Failed, Is Synchronized, Package Id, Item Code, Picked Quantity, Pick List Abs Entry, and Pick List Line Number.

#	Code	Name	Batch Number	Bin Code	Is Failed	Is Synchronized	Package Id	Item Code	Picked Quantity	Pick List Abs Entry	Pick List Line Number
1	01797507	01797507		01-RECEIVING-BIN-LOCATION	No	Yes	10001	A1000	5	57	
2	01797508	01797508	BN72510	01-SYSTEM-BIN-LOCATION	No	Yes	10002	B1000	5	57	1
3	01797509	01797509		01-SYSTEM-BIN-LOCATION	No	Yes	10003	S1000	1	57	2
4	01797510	01797510		01-SYSTEM-BIN-LOCATION	No	Yes	10003	S1000	1	57	2
5	01797511	01797511		01-SYSTEM-BIN-LOCATION	No	Yes	10003	S1000	1	57	2
6	01797512	01797512		01-SYSTEM-BIN-LOCATION	No	Yes	10003	S1000	1	57	2
7	01797513	01797513		01-SYSTEM-BIN-LOCATION	No	Yes	10003	S1000	1	57	2
8					No	No					
9											
10											
11											
12											
13											
14											
15											
16											
17											
18											
19											
20											

Buttons at the bottom: OK, Cancel.

2.3. Pick Lists

2.3.1. Set Freight in Delivery

Please see: [2.1 Set Freight in Delivery document](#)

2.3.2. Set (user) fields in Delivery

It is possible to set the values of the Delivery Document which are created from the Produmex Scan Pick List screen.

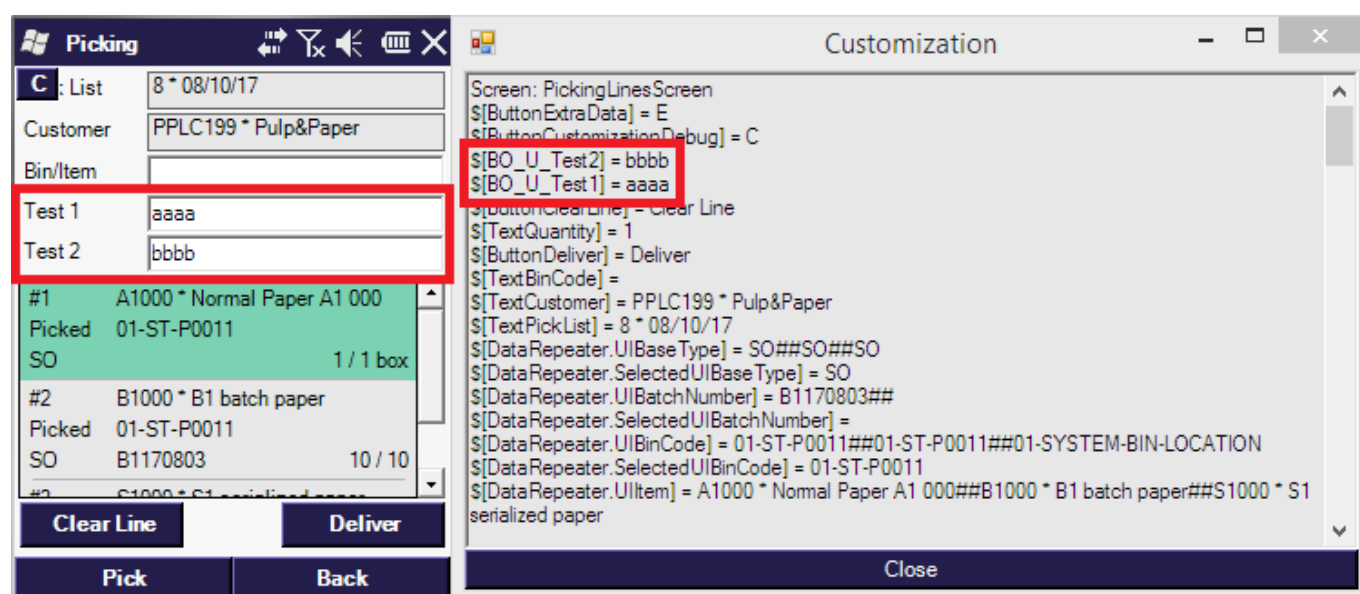
To set a field, you have to add a customization field to the Pick List Lines screen. The customization field name must be:

- **BO_U_XXField1** to set Delivery Document U_XXField1 custom field
- **BO_FieldName** to set Delivery Document SAP internal field by API name. In this case, the field name must match the DI API name. Example: BO_JournalMemo

In the [Customization Fields](#) user table, it is important that the Field Name is BO_U_*and it must match the UDF name (with a U_Prefix), eg. BO_U_Test1 → Test1 userdefined field. The Label can be anything.

Example:

Screen	Module	Label	Field Name
PickingLinesScreen	BXMobileWH9	Test 1	BO_U_Test1
PickingLinesScreen	BXMobileWH9	Test 2	BO_U_Test2



When pressing the Delivery button on the Pick List lines screen, these field values will be used in the newly created Delivery Document.

2.3.3. Pick List screen - customize list

With the default settings, only open pick lists that have not been started by anyone are displayed, but the original program logic can be overridden by customization.

UserQuery: bx_mobile_wh9_picklists_query_custom (Category: BXMobileWH9)**Parameters**

\$[AbsEntry]
 \$[CardCode]
 \$[EmployeeNo] - logged in employeeID
 \$[ItemCode]
 \$[PickDate]
 \$[WarehouseCode]

Results

A table with multiple rows with a single column (integer) with PickList AbsEntry values.
(OPKL.AbsEntry)

Example:

With the example user query the list of picklists is filtered down to picklist assigned to the employee. We used the 'Picker' field on the Pick list to assign the employee to the pick list.

Please note: The Picker field must be in the 'FirstName LastName' or 'FirstName MiddleName LastName' format for the example user query to work.

The example user query name: *bx_mobile_wh9_picklists_query_custom*

```

IF $[AbsEntry] IS NOT NULL
BEGIN
    SELECT AbsEntry
    FROM OPKL WHERE AbsEntry = $[AbsEntry] AND Status <> 'C'
END
ELSE
BEGIN
    SELECT AbsEntry
    FROM OPKL
    WHERE Name = (SELECT firstName + ' ' + ISNULL(middleName + ' ', '') +
lastName
    FROM OHEM
    WHERE empID = $[EmployeeNo]) AND Status <> 'C'
    ORDER BY AbsEntry
END
  
```

This simple example only filters for employee or PickListNo, but doesn't respect other filters like Customer, Item, DueDate, Warehouse. It also allows the employee to enter a PickListNo and allows him to select that pick list even if he's not assigned for it.

2.3.4. Auto fill batch with recommended batch

To automatically populate the Batch field with the recommended batch, add the following query:

Query name: *BXMobileWH9_PickingLinesPickBatchScreen_Activate*

```
SELECT ${TextRecBatch} AS [TextBatch]
```

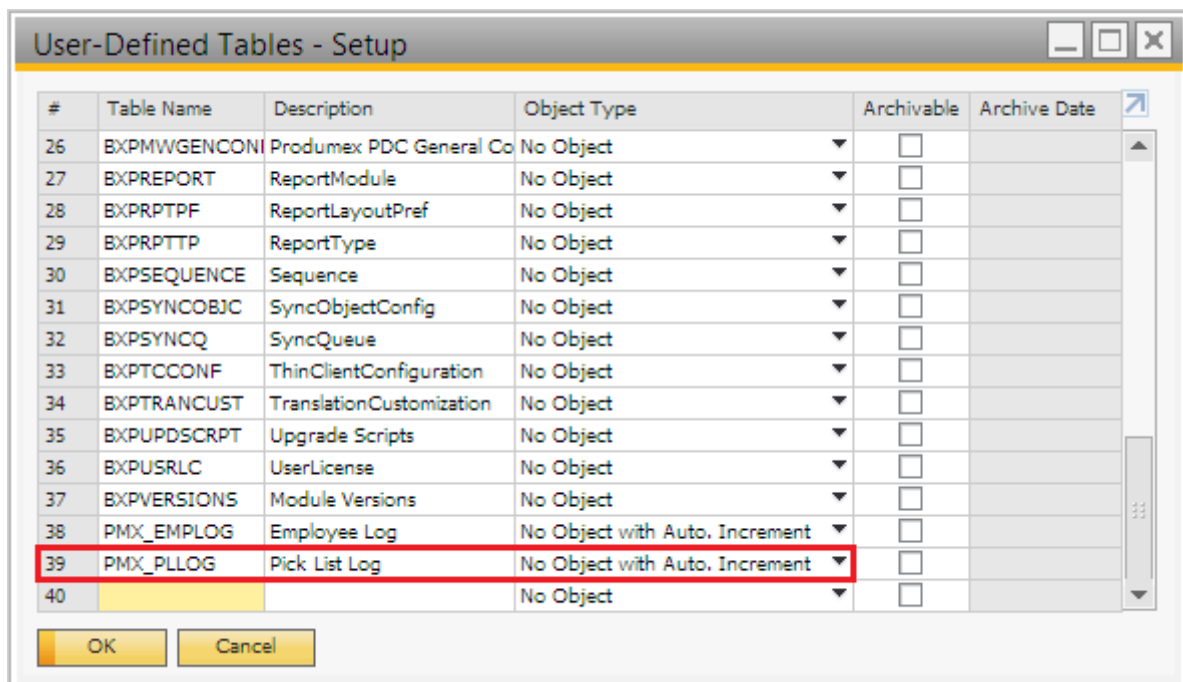
2.3.5. Capture pick list selection events into a separate table

It is possible to capture the date and time when an employee selects a pick list into a separate table.

Create the user table

First create the user table for the pick list selection events. Example: PMX_PLLOG user table

Set the object type to 'No object with Auto.Increment'.



Add the user defined fields to the table. In the example we will add the following fields:

Title	Description	Type
Date	Date	Date/Time
Time	Time	Numeric
EmpID	Employee ID	Alphanumeric
EmpName	Employee Name	Alphanumeric
PLN	Pick List	Numeric

Create the user query

The user query name is: *BXMobileWH9_PickingScreen_OK_clicked*

SQL

```
INSERT INTO "@PMX_PLLOG" ("Name", "U_Date", "U_Time", "U_EmpID",  
"U_EmpName", "U_PLN")  
values ('Pick List Entry', cast(getdate() as date),  
cast(substring(CONVERT(VARCHAR,GETDATE(),108),1,2) * 100 +  
substring(CONVERT(VARCHAR,GETDATE(),108),4,2) as int),  
$[Employee.EmployeeID], $[Employee.FirstName]+ ' ' + $[Employee.LastName],  
SUBSTRING($[DataRepeater.SelectedUIPickListNo], CHARINDEX('#',  
$[DataRepeater.SelectedUIPickListNo]) + 1,  
LEN($[DataRepeater.SelectedUIPickListNo]) - CHARINDEX('#',  
$[DataRepeater.SelectedUIPickListNo]))))
```

HANA

```
INSERT INTO "@PMX_PLLOG" ("Name", "U_Date", "U_Time", "U_EmpID",  
"U_EmpName", "U_PLN")  
values ('Pick List Entry', cast(getdate() as date),  
cast(substring(CONVERT(VARCHAR,GETDATE(),108),1,2) * 100 +  
substring(CONVERT(VARCHAR,GETDATE(),108),4,2) as int),  
$[Employee.EmployeeID], $[Employee.FirstName]+ ' ' + $[Employee.LastName],  
SUBSTRING($[DataRepeater.SelectedUIPickListNo],  
LOCATE($[DataRepeater.SelectedUIPickListNo], '#') + 1) FROM DUMMY')
```

When the 'Pick' button is pressed, this query inserts the current date to the Date column, the current time to the Time column, the employee ID to the Employee ID column, the first and last name of the employee to the Employee Name column and the pick list number to the Pick List column.



2.4. Query Stocks

2.4.1. Override list

It is possible to override the list of items on the Query Stocks screen.

This is the same screen that can be opened from Pick List and from other modules in Produmex Scan when pressing the Find Stocks button, so the custom logic is also relevant for those cases.

UserQuery: bx_mobile_wh9_querystocks_query_custom (Category: BXMobileWH9)	
Parameters \$[Warehouse] \$[BinLocation] \$[ItemCode] \$[BatchNumber] (\$[..] - other user fields from screen)	Results A table with multiple rows with specific column names: - Warehouse - BinLocation - ItemCode - ItemName - ManagedBy (Batch: 10000044, Serial: 10000045, None: -1) - OnHandQuantity (in inventory UoM)

Example:

This custom query returns items sorted by quantity (descending).

Please note: This query doesn't filter by batch input parameter, only Warehouse, ItemCode and BinLocation.

Query name: *bx_mobile_wh9_querystocks_query_custom*

```
-- return maximum 20(+20) matches by filters, ordered by quantity descending
-- first select is for bin-activated warehouses
SELECT TOP 20 OIBQ.WhsCode as Warehouse, OIBIN.BinCode as BinLocation,
OIBQ.ItemCode, OITM.ItemName,
CASE
    WHEN OITM.ManSerNum = 'Y' THEN 10000045
    WHEN OITM.ManBtchNum = 'Y' THEN 10000044
    ELSE -1 END as ManagedBy, OIBQ.OnHandQty as OnHandQuantity FROM OIBQ
JOIN OIBIN ON (OIBIN.AbsEntry = OIBQ.BinAbs)
JOIN OITM ON (OITM.ItemCode = OIBQ.ItemCode)
WHERE (OIBQ.ItemCode = $[ItemCode] OR $[ItemCode] = '')
    AND (OIBQ.WhsCode = $[Warehouse] OR $[Warehouse] = '')
    AND (OIBIN.BinCode = $[BinLocation] OR $[BinLocation] = '')
    AND OnHandQty > 0
UNION
-- this second select is for non-bin warehouses
SELECT TOP 20 OITW.WhsCode as Warehouse, '' as BinLocation, OITW.ItemCode,
OITM.ItemName,
CASE
    WHEN OITM.ManSerNum = 'Y' THEN 10000045
    WHEN OITM.ManBtchNum = 'Y' THEN 10000044
    ELSE -1 END as ManagedBy, OITW.OnHand as OnHandQuantity FROM OITW
JOIN OITM ON (OITM.ItemCode = OITW.ItemCode)
JOIN OWHS ON (OWHS.WhsCode = OITW.WhsCode)
WHERE OWHS.BinActivat = 'N'
    AND (OITW.ItemCode = $[ItemCode] OR $[ItemCode] = '')
    AND (OITW.WhsCode = $[Warehouse] OR $[Warehouse] = '')
-- order by quantity descending
ORDER BY OnHandQuantity DESC
```

2.5. General for multiple processes

2.5.1. Creating documents as drafts

It is possible to control whether the documents should be created as drafts or as real documents when posted from Produmex Scan for the following documents:

Document	Doc. type
Delivery	15
Sales Order (by <i>BN Create SO</i> function)	17
Goods Receipt PO	20
Goods Issue	60

The controlling logic must be defined with a user query.

UserQuery: bx_mobile_wh9_document_creation_type (Category: BXMobilWH9)	
Parameters [%1]: employee ID (int) [%3]: mobile transaction head code (nvarchar)	Results The user query should return the result in a column called BXDOCTYP. The result must be an integer, and the following values are supported: - 0: real document - 1: draft

For example, with the following logic, all goods receipt PO documents (doc. type = 20) will be created as drafts, while the other documents are created as real documents:

MS SQL

```
SELECT CASE T0.[U_BXPDocTy]
WHEN 20 THEN 1
ELSE 0 END as 'BXDOCTYP'
FROM [dbo].[@BXPLMSMOBTHD] T0 WHERE T0.[Code] = [%3]
```

HANA

```
SELECT
case
T0."U_BXPDocTy" when 20 then 1
else 0
end as "BXDOCTYP"
FROM "@BXPLMSMOBTHD" T0 WHERE T0."Code" = [%3]
```

2.5.2. Special field for series numbering

A user field for series numbering can be added to screens where a Post event starts.

Field name: BO_Series

Example: Add a user field for numbering series to the GR PO screen

Add the following record to the [Customization Fields](#) user table:

Screen	Module	Label	Field Name	Read Only
GoodsReceiptPOPostSelectionScreen	BXMobileWH9	Series numbering	BO_Series	No

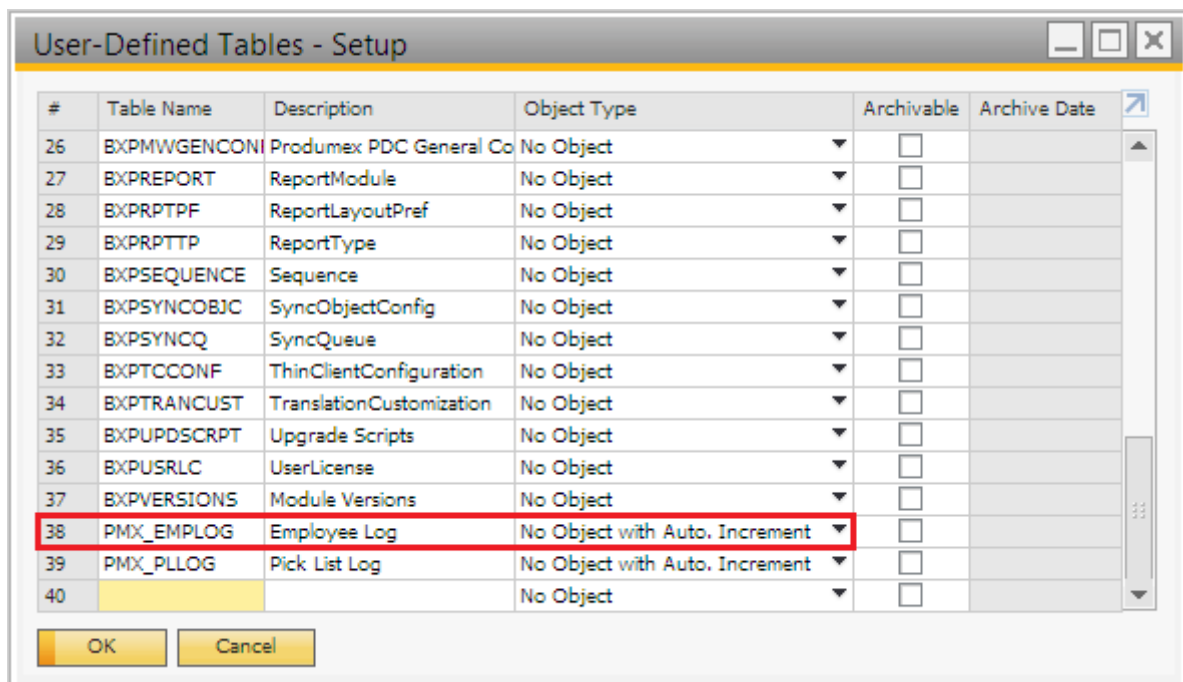
2.5.3.Capture login events into a separate table

It is possible to capture the date and time of the employee login and logout events in a separate user table.

Create the user table

First create the user table for the log in and log out events. Example: PMX_EMPLOG user table

Set the object type to 'No object with Auto.Increment'.



Add the user defined fields to the table. In the example we will add the following fields:

Title	Description	Type
Date	Date	Date/Time
Time	Time	Numeric
EmpID	Employee ID	Alphanumeric
EmpName	Employee Name	Alphanumeric

Create the user query

The user query name for the log in is: *BXMobileWH9_LoginScreen_OK_clicked*

SQL

```
INSERT INTO "@PMX_EMPL0G" ("Name", "U_Date", "U_Time", "U_EmpID",
"U_EmpName")
values ('Login', cast(getdate() as date),
cast(substring(CONVERT(VARCHAR,GETDATE(),108),1,2) * 100 +
substring(CONVERT(VARCHAR,GETDATE(),108),4,2) as int), $[TextUser],
$[TextUserName])
```

HANA

```
INSERT INTO "@PMX_EMPL0G" ("Name", "U_Date", "U_Time", "U_EmpID",
"U_EmpName")
values ('Login', cast(current_timestamp as date), TO_INT( TO_VARCHAR(
CURRENT_TIMESTAMP, 'HH24MI' ) ), $[TextUser], $[TextUserName])
```

This query inserts the current date to the Date column, the current time to the Time column, the employee ID to the Employee ID column, the first and last name of the employee to the Employee Name column and the event name in the Name column.

[illegible]

2.6. Special customization

You can use this special customization to manipulate the loaded data.

2.6.1. Special customization queries

2.6.1.1. Query Stocks

User query: bx_mobile_wh9_querystocks_query_custom	
Parameters \$[ItemCode], \$[Warehouse]	Query fields Warehouse, BinLocation, ItemCode, ItemName, ManagedBy, OnHandQuantity

This example will order the result by batch number.

```
SELECT TOP 20 OIBQ.WhsCode as Warehouse, OIBQ.BinCode as BinLocation,
OIBQ.ItemCode, OITM.ItemName,
CASE
    WHEN OITM.ManSerNum = 'Y' THEN 10000045
    WHEN OITM.ManBtchNum = 'Y' THEN 10000044
    ELSE -1 END as ManagedBy, OIBQ.OnHandQty as OnHandQuantity
FROM OIBQ
    JOIN OIBQ ON (OIBQ.AbsEntry = OIBQ.BinAbs)
    JOIN OITM ON (OITM.ItemCode = OIBQ.ItemCode)
    JOIN OBBQ ON (OBBQ.BinAbs = OIBQ.BinAbs)
    JOIN OBTN ON (OBBQ.SnBMDAbs = OBTN.AbsEntry)
WHERE
    (OIBQ.ItemCode = $[ItemCode] OR $[ItemCode] = '')
    AND (OIBQ.WhsCode = $[Warehouse] OR $[Warehouse] = '')
    AND (OBBQ.ItemCode = $[ItemCode] OR $[ItemCode] = '')
    AND (OBBQ.WhsCode = $[Warehouse] OR $[Warehouse] = '')
    AND OIBQ.OnHandQty > 0
    AND OBBQ.OnHandQty > 0
ORDER BY OBTN.DistNumber
```

2.6.1.2. Picklist

User query: bx_mobile_wh9_picklists_query_custom	
Parameters \$[AbsEntry], \$[CardCode], \$[EmployeeNo], \$[ItemCode], \$[PickDate], \$[WarehouseCode], \$[BinLocationCode]	Query fields AbsEntry

On the pick list screen, you can use custom fields in the custom query.

Example:

Add a new custom field 'CFEmpID' for employee input on the [CustomizationFields table](#).

Field Name	Label	Screen
CFEmpID	EmpID	PickingScreen

After the field is added it can be used in a custom query. Query name:

bx_mobile_wh9_picklist_query_custom

```
IF ($[CFEmpID]=' ')
BEGIN
    SELECT AbsEntry FROM OPKL WHERE Status <> 'C'
    ORDER BY AbsEntry desc
END
ELSE
BEGIN
    SELECT AbsEntry FROM OPKL WHERE Status <> 'C' AND U_BXPEmpID=$[CFEmpID]
    ORDER BY AbsEntry desc
END
```

2.6.1.3. Sales order lines

User query: *bx_mobile_wh9_salesorderlines_query_custom*

Parameters	Query fields
\$[DocEntry]	LineNum, BinCode

2.6.1.4. Sales issue

User query: *bx_mobile_wh9_salesissue_query_custom*

Parameters	Query fields
\$[DocNum], \$[CardCode], \$[DueDate], \$[ItemCode], \$[EmployeeNo]	DocEntry, DocType (17:Sales Order; 13:A/R Reserve invoice)

2.6.1.5. Goods Receipt PO

User query: *bx_mobile_wh9_goodsreceiptpo_query_custom*

Parameters	Query fields
\$[DocNum], \$[CardCode], \$[DueDate], \$[ItemCode], \$[EmployeeNo]	DocEntry, DocType (18:A/P Reservere invoice; 22: Purchase Order)

2.6.1.6. Stock Transfer Request

User query: *bx_mobile_wh9_stocktransferrequest_query_custom*

Parameters	Query fields
\$[DocNum] \$[WarehouseFrom] \$[WarehouseTo]	DocEntry

2.6.1.7. Stock Transfer Request Lines

User query: bx_mobile_wh9_stocktransferrequestlines_query_custom	
Parameters	Query fields
[\$DocEntry]	LineNum IsAvailable

2.6.1.8. Customize The order of the pick list lines

This query is designed to work with both **Speed Picking** and **Sequential Picking** processes. In both cases, the system will place the picked items at the end of the list without reloading the entire item list. This behavior is intentional and should remain the standard for these picking logics to maintain consistency and efficiency.

Important Note: The “PickEntry” field and the “Order” alias are mandatory and must be used!

User query: bx_mobile_wh9_picklistlines_query_custom	
Parameters	Query fields
[\$AbsEntry]	PickEntry AS “Order”

```
IF [$AbsEntry] IS NOT NULL
BEGIN
    SELECT PickEntry AS "Order"
    FROM PKL1 WHERE AbsEntry = [$AbsEntry]
    ORDER BY RelQty DESC, PickEntry DESC
END
```

2.6.2. Button customization

Example:

Automatically click on the ‘Reload’ button after scanning on the GR PO screen.

Query name: *BXMobileWH9_GoodsReceiptPOScreen_TextDocumentNumber_validate_after*

```
IF [$TextDocumentNumber] <> ''
BEGIN
SELECT 'ButtonReload' as 'Click$'
END
```

The name of the button can be found in customization assist. A custom button also can be pressed. The two buttons at the bottom of the screen are called 'OK' and 'Option'

2.6.3. Custom message

You can send a message to employee is a custom event.

```
SELECT 'Information' as "Message$", 'I' as "MessageType$"
```

HANA version:

```
SELECT 'Information' as "Message$", 'I' as "MessageType$" FROM DUMMY
```

See the supported message types here: [Supported message types](#)

2.7. Other Examples

2.7.1. Populate Bin Location field with default item location in GR PO

You have to add the same query content for all item types

Query names:

BXMobileWH9_GoodsReceiptPOQuantitiesNormalScreen_Load

BXMobileWH9_GoodsReceiptPOQuantitiesBatchScreen_Load

BXMobileWH9_GoodsReceiptPOQuantitiesSerialScreen_Load

```
select
    "OBIN"."BinCode" as "TextBinLocation"
from
    "OITW"
    LEFT JOIN "OBIN" on "OITW"."DftBinAbs" = "OBIN"."AbsEntry"
where
    "OITW"."ItemCode" = ${SelectedPurchaseOrderLine.ItemCode}
    and "OITW"."WhsCode" = ${SelectedPurchaseOrderLine.WarehouseCode}
```

2.7.2. Delete the document number in screen load event in GR PO Screen

You have to add an SAP query with the name of the screen load event Query names:

BXMobileWH9_GoodsReceiptPOScreen_Load

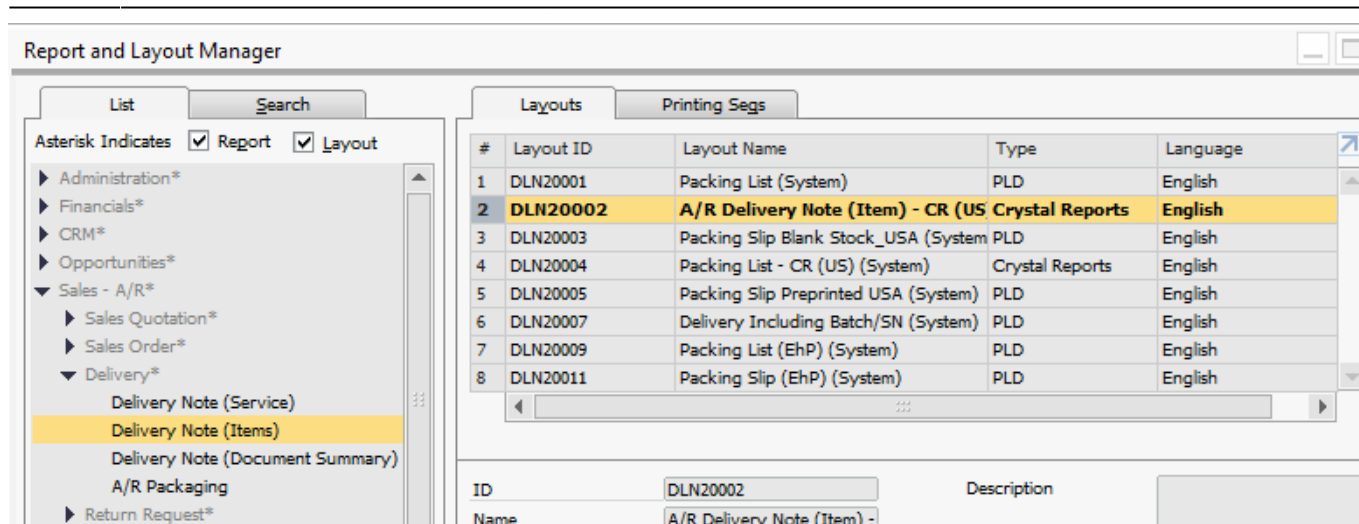
```
select '' as "TextDocumentNumber"
```

2.7.3. Auto print Delivery in Sales Issue process

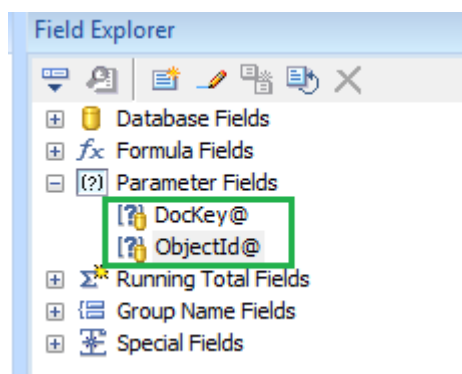
It is possible to use the ButtonPost_click_after event to trigger the printing. The SAP document is already created in this event. The number of the new Delivery is not available in the customization, so we can only print the last Delivery document that was created by the logged in employee.

You can see the configuration steps below.

- Locate the Delivery note from the "Report and Layout Manager"



- Open it in Crystal Reports Designer.
- Set the database configuration for the report file and save a copy from the report.
- Check the paramters of the report file, we need them in the custom query.



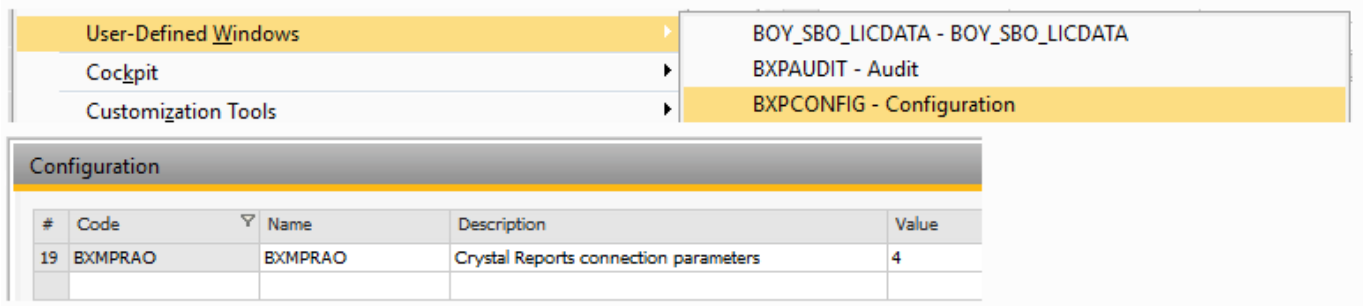
- import the report file into SBO by function "Report and Layout Manager"
- Create the custom query

- Use the SBO Report ID in column: "PrintLayout\$"
- Set all properties in a new column by addind "Print_" prefix
- Set the printer name in column: "PrintPrinter\$"
- Send a message about the printing in columns "Message\$" and "MessageType\$"

```
SELECT TOP 1
    'RCRI0013' as "PrintLayout$",
    "DocEntry" as "Print_DocKey@",
    15 as "Print_ObjectId@",
    'Bullzip PDF Printer' as "PrintPrinter$",
    'Delivey is Printed' "Message$", 'I' "MessageType$"
FROM
    "ODLN"
WHERE
    "U_BXPEmpID" = $[Employee.EmployeeID]
ORDER BY "DocEntry" DESC
```

- The name of the query must be: BXMobilWH9_SalesIssueScreen_ButtonPost_click_after
- Produmex Scan application must be restarted after adding the new customization
- Since the report file contains sub reports you may enable it in the setting below. You can find more information about this setting on the url below

Advanced printing configurations



In the Picking process you can use the query name below:

BXMobilWH9_PickingLinesScreen_ButtonDeliver_click_after

The PickingLineScreen will be closed after creating the Delivery and the event won't be able to use objects from the PickingLineScreen anymore. It is necessary to check the setting below in order to prevent closing the screen.

“Don't close screen after picking delivery”

2017/07/27 13:45 · csuhaa

3. Customization Example: Micro-Vertical Solution for Serial Numbered Appliance Trading Organizations

This document describes how the Free Goods Receipt PO process in Produmex Scan was customized to fit a typical client and form a part of the micro-vertical solution for serial numbered appliance trader and similar companies. The customizations for each screen are described in detail.

3.1. Free Goods Receipt PO



In Produmex Scan, the Free Goods Receipt PO consist of 3 screens: a main screen used to start creating and preparing a new Goods Receipt document, a screen showing item lines and quantities and a detail screen on which the receiving bin location and serial numbers can be specified.

In standard Produmex Scan, these screens are optimized for receiving items sequentially, that is, start receiving ITEM1, enter to location, quantities or serial numbers, then start receiving ITEM2, enter location, quantities or serial numbers. This is a good solution in many cases when there are a couple of different items being received and they are grouped.

However, in this micro vertical solution the typical customer wants to receive many different items, a kind of assortment, which are not grouped by item code, maybe only by similar items. These items are also mostly serial numbered, which means the standard Produmex Scan way of receiving requires a lot of extra actions on the mobile user interface. The goal here was to allow the warehouse worker to use the bar code scanner button 99% of the time when doing the receiving. In practice this means: he will take the next piece of item (boxed), scan the item code bar code, then scan the serial number bar code, and then move on to the next piece of item (boxed).

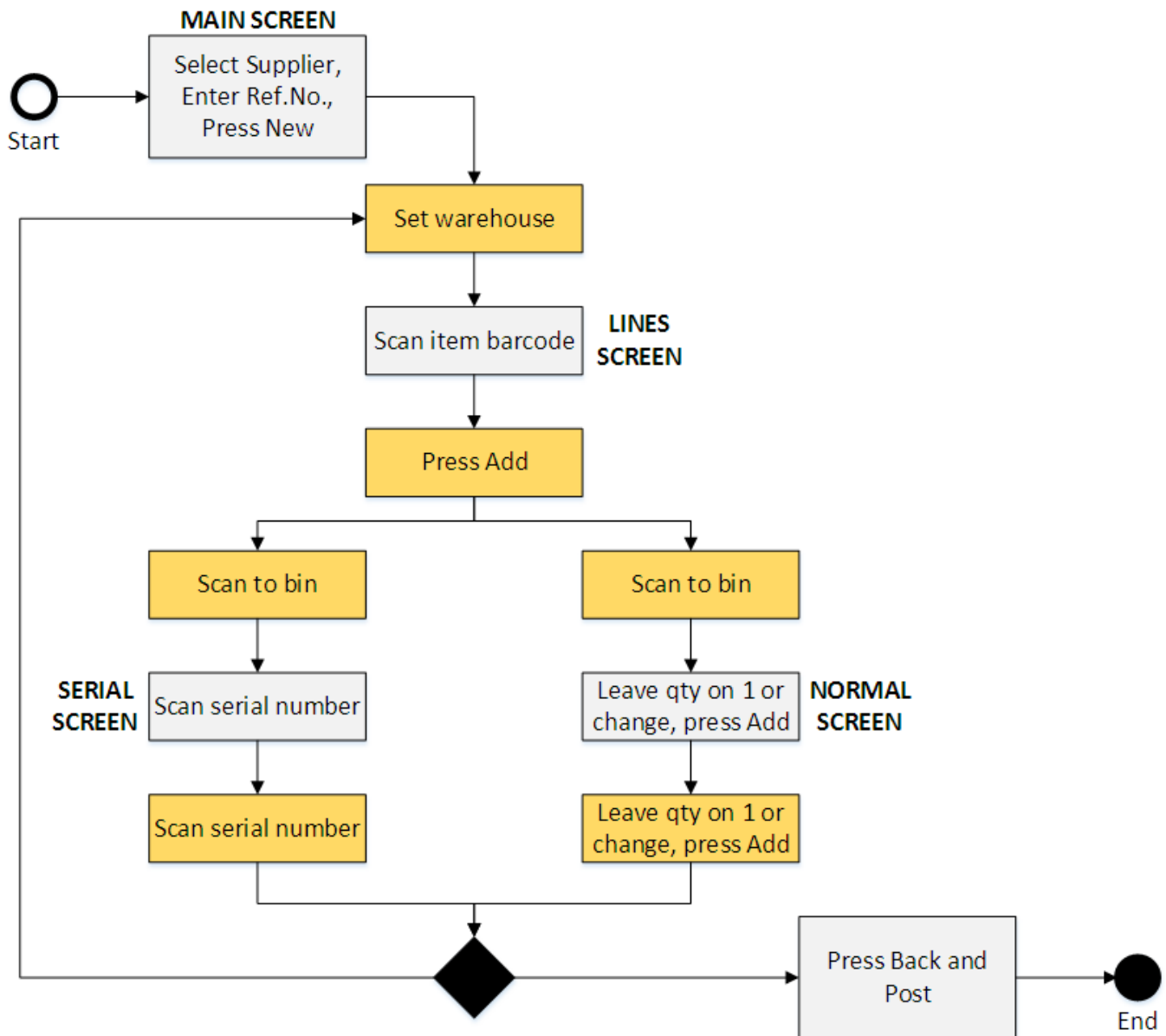
During receipt, the items are moved to a temporary bin location, which is an empty pallet labelled with a bin code. When a pallet is full the warehouse worker can change the bin location to the next temporary bin location, the next pallet's location. In a later step, these pallets are moved to shelves with a forklift and the Produmex Scan Mass Transfer function, which moves all the stocks on one bin to another.

3.1.1. Comparison of the Original and New Receiving

Below you can see the original process for receiving.

The extra steps that this micro-vertical solution eliminates have been colored.

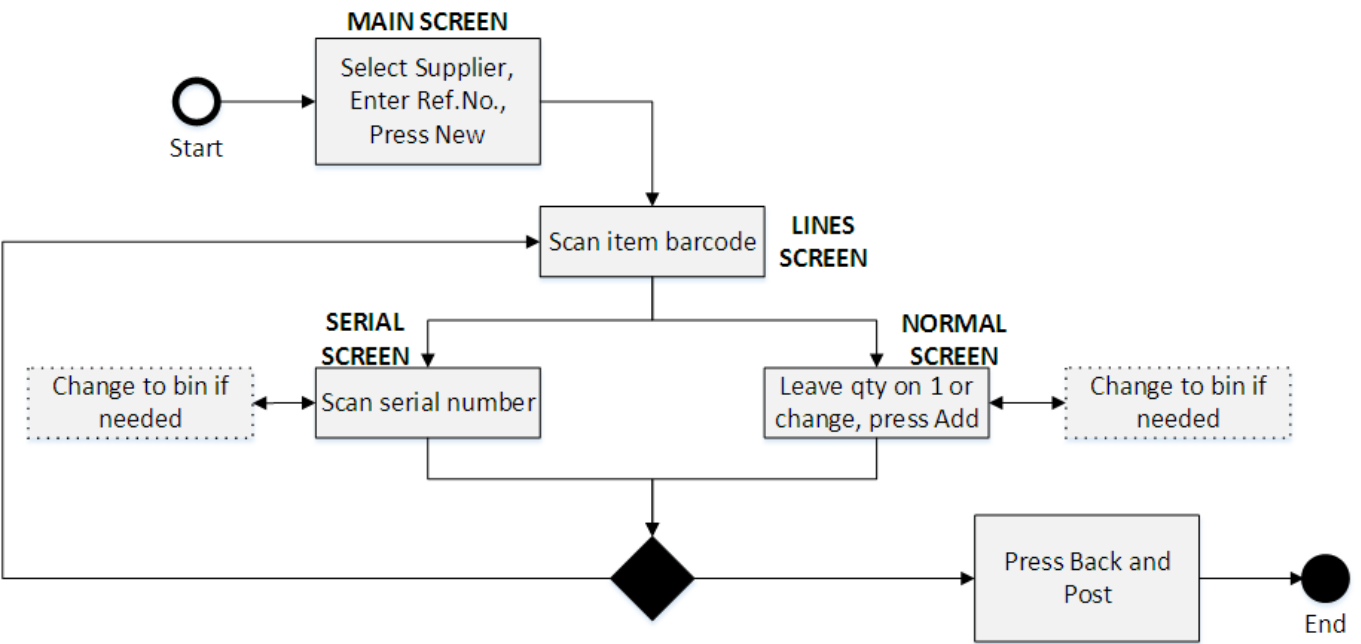
If we look at just the main action (from Set warehouse to just before Finish), receiving 10 serial items takes $10 \times 5 = 50$ actions this way. It needs 3 bar code scans (item, to bin, serial number) and 2 button presses (Add, Done) per item piece.



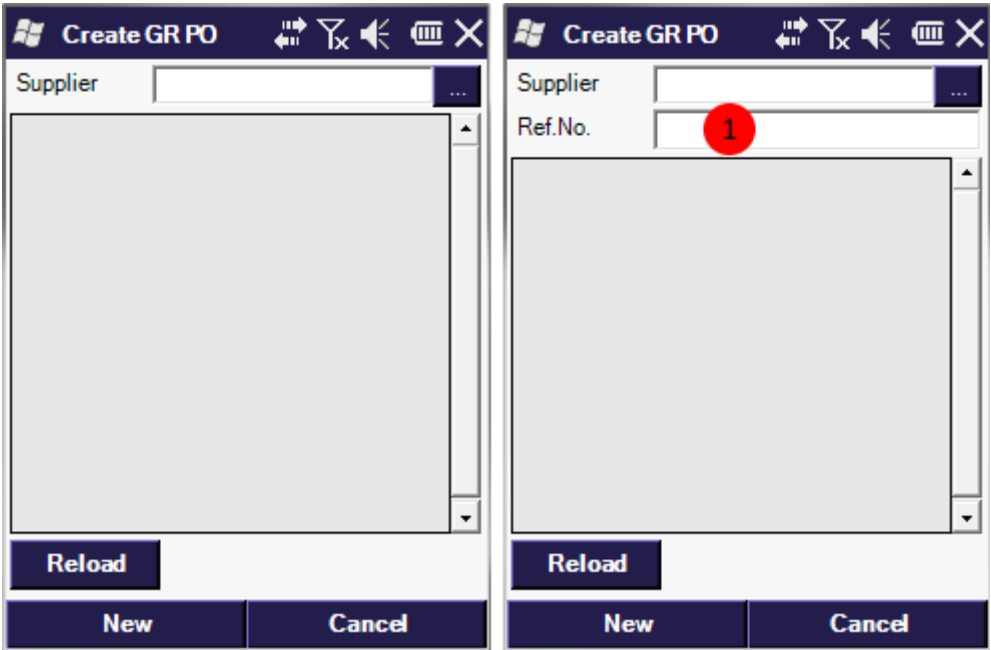
The following picture shows you the new process with these steps eliminated.

The core steps of receiving 10 items means $10 \times 2 = 20$ steps, plus changing the destination palette (to bin) occasionally. Even better, these actions are all bar code scans (item code, serial number), only 2 per item.

This shows how we optimized the process. Please also note, that there are other types of companies who might receive only a few different serial numbered items at once, for them, the original Produmex Scan process of scanning one item code then scanning a lot of serial numbers is much more effective.



3.1.2. Main Screen



Changes:

- 1. Added Ref. No. field which will be copied to the new Delivery document. The user queries and custom fields for the above custom logic:

Field Name	Label	Screen
BO_NumAtCard	Ref.No.	CreateGoodsReceiptPOScreen

3.1.3. Item Lines Screen

The image shows two side-by-side screenshots of the 'Create GR PO' window. The left screenshot shows the initial state with a red line through the UoM field (5) and a red circle around the 'Add' button (4). The right screenshot shows the updated state with a red circle around the 'Add' button (4) and a red circle around the 'Back' button (1).

Changes:

1. List items are changed to show Item Code + Item Name without prefix and to show bar code (EAN) in the second line instead of warehouse.
2. The warehouse is filled by the last selected warehouse for the employee by default and the value is saved if it has changed.
3. After the item has been scanned, it is checked if that item has any open Purchase Orders from the same supplier. If the item was valid and there are no problems, after scanning item code or bar code the screen automatically opens the next (bin locations) screen. No need to press the Add button explicitly.
4. The Add button checks if there is still open quantity for the given item from the same supplier. It gives a warning if there are no more open quantities.
5. UoM field is hidden because it's not used.

The image shows two side-by-side screenshots of the 'Produmex Scan' window. The left screenshot shows a red 'X' icon and the message 'There is no Purchase Order for A1000'. The right screenshot shows a yellow warning triangle icon and the message 'There is no more PO for this item. Continue?' with 'Yes' and 'No' buttons.

The user queries and custom fields for the above custom logic:

1.

User query: *BXMobileWH9_CreateGoodsReceiptPOLinesScreen_DataRepeater_InternalDataLoad*

```
-- Fill UIItem with item code and name
-- and UIWarehouse with OITM.CodeBars in list
SELECT SUBSTRING (S.splitdata,7,50) AS [DataRepeater.UIItem], C.CodeBars AS
[DataRepeater.UIWarehouse]
FROM dbo.SplitStringForDataRepeater($[DataRepeater.UIItem]) S, OITM C
```

```
WHERE C.ItemCode=SUBSTRING(S.splitdata,7,PATINDEX('%*%',S.splitdata)-8)
```

2.

Create a new user table 'SCANEMPWH' with the following fields:

- To Bin Location (ToWH)
- Employee ID (empID)

User query: *BXMobileWH9_CreateGoodsReceiptPOLinesScreen_TextWarehouse_validate_after*

```
-- Save Warehouse value to remember it for next time
IF (SELECT ISNULL([@SCANEMPWH].U_ToWH, ''))
FROM [@SCANEMPWH] WHERE U_empID = $[Employee.EmployeeID]) <>
$[TextWarehouse]
UPDATE [@SCANEMPWH] SET [U_ToWH]=$[TextWarehouse] WHERE U_empID =
$[Employee.EmployeeID]
```

3.

User query: *BXMobileWH9_CreateGoodsReceiptPOLinesScreen_TextItem_validate*

```
-- Check Item and see if it has open quantity in Purchase orders from this
supplier
-- if not, show error message
DECLARE @itemcode nvarchar (MAX)
SET @itemcode = $[TextItem]

IF NOT EXISTS SELECT (T0.ItemCode FROM OITM T0 WHERE T0.ItemCode=@itemcode)
SELECT @itemcode=T1.ItemCode FROM OBCD T1 WHERE T1.BCdCode=@itemcode

IF @itemcode<>' ' AND (SELECT ISNULL (SUM(T1.[OpenQTX]),0) FROM OPOR T0
INNER JOIN POR1 T1 ON T0.[DocEntry] = T1.[DocEntry]
WHERE T1.[ItemCode] = @itemcode AND T0.[CardCode] =
LEFT($[TextSupplier],PATINDEX('%*%', $[TextSupplier])-1))=0
SELECT 'There is no Purchase Order for '+@itemcode AS 'Message$', 'E' AS
'MessageType$'
ELSE SELECT ' ' AS dummy
```

User query: *BXMobileWH9_CreateGoodsReceiptPOLinesScreen_TextItem_validate_after*

```
-- If item is filled then set quantity to empty and press Add automatically
IF $[TextItem]<>' ' SELECT ' ' AS TextQuantity, 'ButtonAdd' AS Click$
```

4.

User query: *BXMobileWH9_CreateGoodsReceiptPOLinesScreen_ButtonAdd_click*

```
-- When add button is pressed check if there is open quantity
-- for that item in Purchase Orders
DECLARE @itemcode nvarchar(MAX)
SET @itemcode = $[TextItem]
```

```

IF NOT EXISTS (SELECT T0.ItemCode FROM OITM T0 WHERE T0.ItemCode=@itemcode)
SELECT @itemcode=T1.ItemCode FROM OBVD T1 WHERE T1.BCdCode=@itemcode

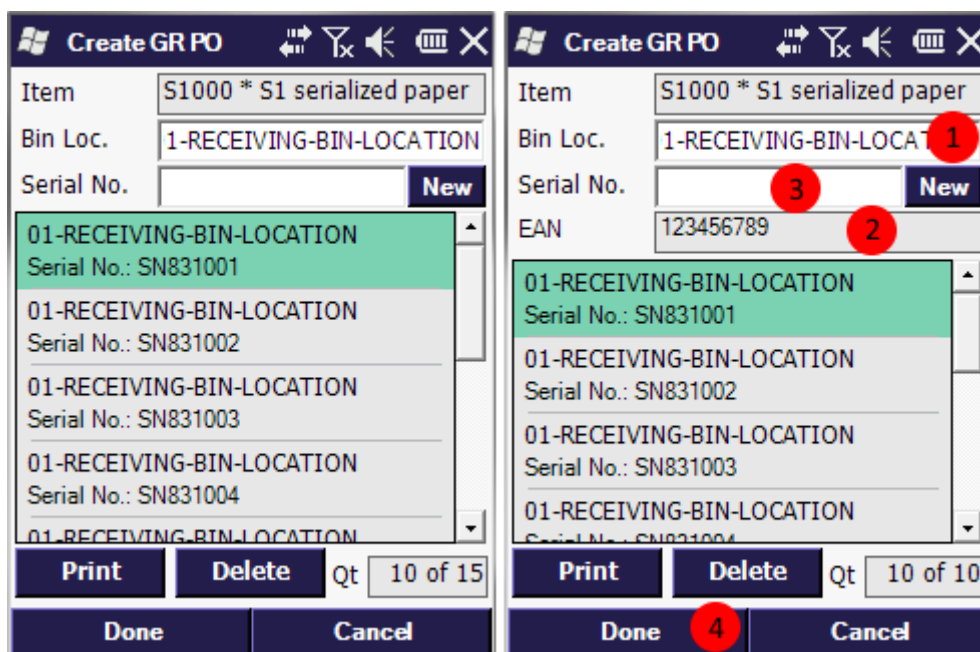
IF (SELECT SUM(CAST(LEFT(S.splitdata2,PATINDEX('% %',Splitdata2)-1) AS
DECIMAL (1,5)))
FROM
dbo.SplitStringForDataRepeater2($[DataRepeater.UIItem],$[DataRepeater.UIQuan
tity]) S
WHERE
@itemcode=SUBSTRING(S.splitdata,1,PATINDEX('%*%',S.splitdatda)-1))>=(SELECT
ISNULL (SUM(T1.[OpenQty]),0) FROM OPOR
T0.[CardCode]=LEFT($[TextSupplier],PATINDEX('%*%', $[TextSupplier])-1))
SELECT 'There is no more PO for this item. Continue?' AS 'Message$', 'YM' AS
'MessageType$'

```

5.
To hide the UoM item on the screen, add a record to the [Customization Fields\(BXPCUSTFD\)](#) user table:

FieldName	Visible	Screen
TextUoM	NO	CreateGoodsReceiptPOLinesScreen

3.1.4. Serial Numbers Screen



Changes:

1. Save the last bin for next time and load it with last value
2. New field: EAN (Item's bar code) added and loaded with data
- 3., 4. After serial number has been scanned, automatically press the Done button to go to previous screen

The user queries and custom fields needed for these are:

- 1.

Create a new user table 'SCANEMPBL' with the following fields:

- To Bin Location (ToBL)
- Employee ID (empID)

User query:

BXMobileWH9_CreateGoodsReceiptPOQuantitiesSerialScreen_TextBinLocation_validate_after

```
-- Save Bin Location from screen to employee so it can be loaded next time
IF (SELECT ISNULL([@SCANEMPBL].U_ToBL, ''))
FROM [@SCANEMPBL] WHERE U_empID = $[Employee.EmployeeID]) <>
$[TextBinLocation]
UPDATE [@SCANEMPBL] SET [U_ToBL]=$[TextBinLocation] WHERE U_empID =
$[Employee.EmployeeID]
```

1., 2.

User query: *BXMobileWH9_CreateGoodsReceiptPOQuantitiesSerialScreen_Load*

```
-- On screen load fill bin location from saved value
-- and fill EAN field from OITM.CodeBars
SELECT
(SELECT [@SCANEMPBL].U_ToBL FROM [@SCANEMPBL] WHERE U_empID =
$[Employee.EmployeeID]) AS 'TextBinLocation',
(SELECT CodeBars FROM OITM
WHERE ItemCode=SUBSTRING($[TextItem],1,PATINDEX('%*%', $[TextItem])-2) ) AS
'EanCode'
```

2.
To show the new EAN field on the screen, add a record to the [Customization Fields\(BXPCUSTFD\)](#) user table:

FieldName	Label	ReadOnly	Screen
EanCode	EAN	YES	CreateGoodsReceiptPOQuantitiesSerialScreen

3., 4.

User query: *BXMobileWH9_CreateGoodsReceiptPOQuantitiesSerialScreen_TextSerial_validate_after*

```
-- After the serial number has been scanned,
-- press OK button to go back to previous screen
IF $[TextSerial]<>' ' SELECT 'OK' AS Click$
```

3.1.5. Regular Items Screen

The image shows two side-by-side screenshots of a 'Create GR PO' application window. The left screenshot shows the initial state: Item 'A1000 * Normal Paper A1', Bin Loc. '1-RECEIVING-BIN-LOCATION', UoM 'pcs' (highlighted with a red circle and arrow labeled '6'), and Quantity '25'. The right screenshot shows the state after changes: EAN '12345' (labeled '1'), Bin Loc. '1-RECEIVING-BIN-LOCATION' (labeled '2'), Quantity '1' (labeled '3'), and the 'Done' button (labeled '5'). The 'Add' and 'Upd' buttons are also visible. The bottom status bar shows '25 of 25 pcs' on the left and '25 of 10 pcs' on the right.

Changes:

1. New field: EAN (Item's bar code) added and loaded with data
2. Save the last bin for next time and load it with last value
3. Set quantity to 1 by default and focus on quantity
- 4., 5. When the Add button is pressed automatically press Done to go back to previous screen
6. UoM field is hidden because it's not used

The user queries and custom fields needed for these are:

1., 2., 3.

Create a new user table 'SCANEMPBL' with the following fields:

- To Bin Location (ToBL)
- Employee ID (empID)

User query: *BXMobileWH9_CreateGoodsReceiptPOQuantitiesNormalScreen_Load*

```
-- When screen is loaded fill bin location with last value
-- fill EAN with bar code from OITM, set quantit to 1 and
-- focus on Quantity field
SELECT
(SELECT CodeBars FROM OITM WHERE
ItemCode=SUBSTRING($[TextItem],1,PATINDEX('%*%', $[TextItem])-2) ) AS
'EanCode',
(SELECT [@SCANEMPBL].U_ToBL FROM [@SCANEMPBL] WHERE U_empID =
$[Employee.EmployeeID]) AS 'TextBinLocation',
'1' AS 'TextQuantity',
'TextQuantity' AS Click$
```

2.

User query:

BXMobileWH9_CreateGoodsReceiptPOQuantitiesNormalScreen_TextBinLocation_validate_after

```
-- Save bin location for next time
```

```
IF (SELECT ISNULL([@SCANEMPBL].U_ToBL, ''))
FROM [@SCANEMPBL] WHERE U_empID = $('[Employee.EmployeeID]') <>
 $('[TextBinLocation]')
UPDATE [@SCANEMPBL] SET [U_ToBL]=$[TextBinLocation] WHERE U_empID =
 $('[Employee.EmployeeID]')
```

4., 5.

User query: *BXMobileWH9_CreateGoodsReceiptPOQuantitiesNormalScreen_ButtonAdd_click_after*

```
-- When Add button is pressed, automatically press OK to close screen
SELECT 'OK' AS Click$
```

2., 6.

To show the new EAN field on the screen and hide UoM, add record to the [Customization Fields\(BXPCUSTFD\)](#) user table:

FieldName	Label	ReadOnly	Visible	Screen
EanCode	EAN	YES	YES	CreateGoodsReceiptPOQuantitiesNormalScreen
TextUoM			NO	CreateGoodsReceiptPOQuantitiesNormalScreen

3.2. Helper SQL procedures

3.2.1. Produmex Scan List splitting 1

```
CREATE FUNCTION [dbo].[SplitStringForDataRepeater] ( @string NVARCHAR
(MAX))
RETURNS @output TABLE (splitdata NVARCHAR (MAX))
BEGIN
    DECLARE @START INT, @END INT
    SELECT @START = 1, @END = CHARINDEX ('##', @string)
    WHILE @START < LEN (@string) + 1 BEGIN
        IF @END = 0
            SET @END = LEN (@string) + 2
        INSERT INTO @output (splitdata)
        VALUES (SUBSTRING(@string, @START, @END - @START))
        SET @START = @END + 2
        SET @END = CHARINDEX('##', @string, @START)
    END
    RETURN
END
```

3.2.2. Produmex Scan List splitting 2

```
CREATE FUNCTION [dbo].[SplitStringForDataRepeater2] ( @string NVARCHAR
(MAX), @string2 NVARCHAR (MAX))
RETURNS @output TABLE (splitdata NVARCHAR (MAX), splitdata2 NVARCHAR (MAX))
```

```

BEGIN
    DECLARE @START INT, @END INT @start2 INT, @end2 INT
    SELECT @START = 1, @END = CHARINDEX ('##', @string) , @start2 = 1, @end2
= CHARINDEX ('##', @string2)
    WHILE @START < LEN (@string) + 1 BEGIN
        IF @END = 0
            BEGIN
                SET @END = LEN (@string) + 2
                SET @end2 = LEN (@string) + 2
                END
            INSERT INTO @output (splitdata, splitdata2)
            VALUES (SUBSTRING(@string, @START, @END - @START)
, SUBSTRING(@string2, @start2, @end2 - @start2))
            SET @START = @END + 2
            SET @END = CHARINDEX ('##', @string, @START)
            SET @start2 = @end2 + 2
            SET @END = CHARINDEX ('##', @string2, @start2)
        END
    RETURN
END

```

2017/08/31 13:43 · csuhaa

4. Customizing serial number management in Produmex Scan

This document provides examples for serial number management customization in Produmex Scan. For more information about the general customization method please see: [Customization Technology in Produmex Scan](#)

4.1. User-Defined Fields

4.1.1. Goods Receipt

4.1.1.1. Goods Receipt PO Lines Screen

Add the following record to the [Customization Fields](#) user table:

FieldName	Visible	Screen
TextUoM	NO	GoodsReceiptPOLinesScreen

Item code field must be scanned before Add button click

Query name: BXMobilWH9_GoodsReceiptPOLinesScreen_ButtonAdd_click

```

IF $[TextItem] = ''
SELECT 'You must scan an item first!' AS 'Message$', 'E' AS 'MessageType$',
'TextItem' AS Click$

```

Item code field must be scanned before Update button click

Query name: BXMobilWH9_GoodsReceiptPOLinesScreen_ButtonUpdate_click

```
IF $[TextItem] = ''  
SELECT 'Please scan an item!' AS 'Message$', 'E' AS 'MessageType$',  
'TextItem' AS Click$
```

Focus on Item field (when returning to this screen)

Query name: BXMobilWH9_GoodsReceiptPOLinesScreen_Activate

```
SELECT 'TextItem' AS Click$
```

Change contents of the list, show bar code instead of WH text

Query name: BXMobilWH9_GoodsReceiptPOLinesScreen_DataRepeater_InternalDataLoad

```
SELECT  
SUBSTRING(S.splitdata,1,50) AS [DataRepeater.UIItemCode],  
C.CodeBars AS [DataRepeater.UIWarehouse]  
FROM dbo.SplitStringForDataRepeater($[DataRepeater.UIItemCode]) S, OITM C  
WHERE C.ItemCode=SUBSTRING(S.splitdata,1,PATINDEX('%*%',S.splitdata)-2)
```

After Item field has been entered write ' ' to quantity and press Add button

Query name: BXMobilWH9_GoodsReceiptPOLinesScreen_TextItem_validate_after

```
IF $[TextItem]<>' ' SELECT ' ' AS TextQuantity, 'ButtonAdd' AS Click$
```

4.1.1.2. Goods Receipt PO Quantities Serial Screen

Add the following record to the [Customization Fields](#) user table:

FieldName	Label	ReadOnly	Screen
EanCode	EAN	YES	GoodsReceiptPOQuantitiesSerialScreen

Create a new user table 'SCANEMPBL' with the following fields:

- Employee ID (empID)
- To Bin Location (ToBL)

Load bin location for employee, fill EanCode with bar code

Query name: BXMobilWH9_GoodsReceiptPOQuantitiesSerialScreen_Load

```
SELECT  
(SELECT [@SCANEMPBL].U_ToBL FROM [@SCANEMPBL] WHERE U_empID =  
$[Employee.EmployeeID]) AS 'TextBinLocation',  
(SELECT CodeBars FROM OITM WHERE  
ItemCode=SUBSTRING($[TextItem],1,PATINDEX('%*%', $[TextItem])-2) ) AS  
'EanCode'
```


Save the Bin Location value for next time

Query name: BXMobilWH9_GoodsReceiptPOQuantitiesSerialScreen_TextBinLocation_validate_after

```
IF (SELECT ISNULL(OHEM.U_ToBL, '' ) FROM OHEM
WHERE empID = $[Employee.EmployeeID]) <> $[TextBinLocation]
UPDATE OHEM SET [U_ToBL]=$[TextBinLocation] WHERE empID =
$[Employee.EmployeeID]
```

After serial number was specified press OK to go back

Query name: BXMobilWH9_GoodsReceiptPOQuantitiesSerialScreen_TextSerial_validate_after

```
IF $[TextSerial]<>' ' SELECT 'OK' AS Click$
```

4.1.1.3. Goods Receipt PO Quantities Normal ScreenAdd the following record to the [Customization Fields](#) user table:

FieldName	Label	ReadOnly	Screen
EanCode	EAN	YES	GoodsReceiptPOQuantitiesNormalScreen
FieldName	Visible	Screen	
TextUoM	NO	GoodsReceiptPOQuantitiesNormalScreen	

Create a new user table 'SCANEMPBL' with the following fields:

- Employee ID (empID)
- To Bin Location (ToBL)

Save the Bin Location value for next time

Query name: BXMobilWH9_GoodsReceiptPOQuantitiesNormalScreen_TextBinLocation_validate_after

```
IF (SELECT ISNULL([@SCANEMPBL].U_ToBL, '' )
FROM [@SCANEMPBL] WHERE U_empID = $[Employee.EmployeeID]) <>
$[TextBinLocation]
UPDATE [@SCANEMPBL] SET [U_ToBL]=$[TextBinLocation] WHERE U_empID =
$[Employee.EmployeeID]
```

Load last location for employee, EAN bar code, set quantity to 1 and focus on quantity

Query name: BXMobilWH9_GoodsReceiptPOQuantitiesNormalScreen_Load

```
SELECT
(SELECT CodeBars FROM OITM
WHERE ItemCode=SUBSTRING($[TextItem],1,PATINDEX('%*%', $[TextItem])-2) ) AS
'EanCode',
(SELECT [@SCANEMPBL].U_ToBL FROM [@SCANEMPBL] WHERE U_empID =
$[Employee.EmployeeID]) AS 'TextBinLocation', '1' AS 'TextQuantity'
,'TextQuantity' AS Click$
```

After the Add button press OK to go back

Query name: BXMobilWH9_GoodsReceiptPOQuantitiesNormalScreen_ButtonAdd_click_after

```
SELECT 'OK' AS Click$
```

4.1.2. Free Goods Receipt

4.1.2.1. CreateGoodsReceiptPOLinesScreen

Add the following record to the [Customization Fields](#) user table:

FieldName	Visible	Screen
TextUoM	NO	GoodsReceiptReceiptLinesScreen

Create a new user table 'SCANEMPWH' with the following fields:

- Employee ID (empID)
- To Warehouse (ToWh)

Load saved warehouse for employee, focus on item

Query name: BXMobileWH9_CreateGoodsReceiptPOLinesScreen_Load

```
SELECT  
(SELECT [@SCANEMPWH].U_ToWh FROM [@SCANEMPWH] WHERE U_empID =  
$[Employee.EmployeeID]) AS 'TextWarehouse',  
'TextItem' AS Click$
```

Focus on item (after returning to this screen)

Query name: BXMobileWH9_CreateGoodsReceiptPOLinesScreen_Activate

```
SELECT 'TextItem' AS Click$
```

Modify list contents

Query name: BXMobileWH9_CreateGoodsReceiptPOLinesScreen_DataRepeater_InternalDataLoad

```
-- Modify list contents:  
-- [DataRepeater.UIItem] Item code + name  
-- [DataRepeater.UIWarehouse] Bar code (EAN)  
SELECT SUBSTRING(S.splitdata,7,50) AS [DataRepeater.UIItem], C.CodeBars AS  
[DataRepeater.UIWarehouse]  
FROM dbo.SplitStringForDataRepeater($[DataRepeater.UIItem]) S, OITM C  
WHERE C.ItemCode=SUBSTRING(S.splitdata,7,PATINDEX('%*%',S.splitdata)-8)
```

Save warehouse for employee

Query name: BXMobileWH9_CreateGoodsReceiptPOLinesScreen_TextWarehouse_validate_after

```
IF (SELECT ISNULL([@SCANEMPWH].U_ToWh, '' )  
FROM [@SCANEMPWH]  
WHERE U_empID = $[Employee.EmployeeID]) <> $[TextWarehouse]  
UPDATE [@SCANEMPWH]
```

```
SET [U_ToWh]=$[TextWarehouse]
WHERE U_empID = $[Employee.EmployeeID]
```

Check if item has been ordered/open quantity from this supplier

Query name: BXMobilWH9_CreateGoodsReceiptPOLinesScreen_TextItem_validate

```
DECLARE @itemcode nvarchar(MAX)
SET @itemcode = $[TextItem]
IF NOT EXISTS (SELECT T0.ItemCode FROM OITM T0 WHERE T0.ItemCode=@itemcode)
SELECT @itemcode=T1.ItemCode FROM OBCD T1 WHERE T1.BcdCode=@itemcode
IF @itemcode<>' ' AND (SELECT ISNULL(SUM(T1.[OpenQty]),0) FROM OPOR T0
INNER JOIN POR1 T1 ON T0.[DocEntry] = T1.[DocEntry] WHERE T1.[ItemCode]
=@itemcode AND T0.[CardCode] =
LEFT($[TextSupplier],PATINDEX('%*%', $[TextSupplier])-1))=0
SELECT 'There is no Purchase Order: ' + @itemcode AS 'Message$', 'E' AS
'MessageType$'
ELSE SELECT '' AS dummy
```

Check if item has been ordered/open quantity from this supplier

Query name: BXMobilWH9_CreateGoodsReceiptPOLinesScreen_TextItem_validate

```
DECLARE @itemcode nvarchar(MAX)
SET @itemcode = $[TextItem]
IF NOT EXISTS (SELECT T0.ItemCode FROM OITM T0 WHERE T0.ItemCode=@itemcode)
SELECT @itemcode=T1.ItemCode FROM OBCD T1 WHERE T1.BcdCode=@itemcode
IF @itemcode<>' ' AND (SELECT ISNULL(SUM(T1.[OpenQty]),0) FROM OPOR T0
INNER JOIN POR1 T1 ON T0.[DocEntry] = T1.[DocEntry] WHERE T1.[ItemCode]
=@itemcode AND T0.[CardCode]
=LEFT($[TextSupplier],PATINDEX('%*%', $[TextSupplier])-1))=0
SELECT 'There is no Purchase Order: ' + @itemcode AS 'Message$', 'E' AS
'MessageType$'
ELSE SELECT '' AS dummy
```

After item code has been entered write ' ' to quantity and press Add

Query name: BXMobilWH9_CreateGoodsReceiptPOLinesScreen_TextItem_validate_after

```
IF $[TextItem]<>' ' SELECT '' AS TextQuantity, 'ButtonAdd' AS Click$
```

4.1.2.2. CreateGoodsReceiptPOQuantitiesSerialScreen

Add the following record to the [Customization Fields](#) user table:

FieldName	Label	ReadOnly	Screen
EanCode	EAN	YES	CreateGoodsReceiptPOQuantitiesSerialScreen

Create a new user table 'SCANEMPBL' with the following fields: • Employee ID (empID) • To Warehouse (ToBL)

Load bin location from employee, fill EAN bar code

Query name: BXMobileWH9_CreateGoodsReceiptPOQuantitiesSerialScreen_Load

```
SELECT
(SELECT [@SCANEMPBL].U_ToBL FROM [@SCANEMPBL]
WHERE U_empID = $('[Employee.EmployeeID]') AS 'TextBinLocation',
(SELECT CodeBars FROM OITM
WHERE ItemCode=SUBSTRING($[TextItem],1,PATINDEX('%*%', $[TextItem])-2) ) AS
'EanCode'
```

Save bin location to employee

Query name:

BXMobileWH9_CreateGoodsReceiptPOQuantitiesSerialScreen_TextBinLocation_validate_after

```
IF (SELECT ISNULL([@SCANEMPBL].U_ToBL, '') FROM [@SCANEMPBL]
WHERE U_empID = $('[Employee.EmployeeID]') <> $('[TextBinLocation]')
UPDATE [@SCANEMPBL] SET [U_ToBL]=$[TextBinLocation]
WHERE U_empID = $('[Employee.EmployeeID]')
```

After serial entry press OK to go back

Query name: BXMobileWH9_CreateGoodsReceiptPOQuantitiesSerialScreen_TextSerial_validate_after

```
IF $('[TextSerial]')<>' ' SELECT 'OK' AS Click$
```

4.1.2.3. CreateGoodsReceiptPOQuantitiesNormalScreen

Add the following record to the [Customization Fields](#) user table:

FieldName	Label	ReadOnly	Screen
EanCode	EAN	YES	GoodsReceiptPOQuantitiesNormalScreen
FieldName	Visible	Screen	
TextUoM	NO	GoodsReceiptPOQuantitiesNormalScreen	

Create a new user table 'SCANEMPBL' with the following fields:

- Employee ID (empID)
- To Warehouse (ToBL)

Load last location for employee, EAN bar code, set quantity to 1 and focus on quantity

Query name: BXMobileWH9_CreateGoodsReceiptPOQuantitiesNormalScreen_Load

```
SELECT
(SELECT CodeBars FROM OITM
WHERE ItemCode=SUBSTRING($[TextItem],1,PATINDEX('%*%', $[TextItem])-2) ) AS
'EanCode',
(SELECT [@SCANEMPBL].U_ToBL FROM [@SCANEMPBL]
WHERE U_empID = $('[Employee.EmployeeID]') AS 'TextBinLocation', '1' AS
'TextQuantity' , 'TextQuantity' AS Click$
```

Save bin location to employee

Query name:

BXMobileWH9_CreateGoodsReceiptPOQuantitiesNormalScreen_TextBinLocation_validate_after

```
IF (SELECT ISNULL([@SCANEMPBL].U_ToBL, '' ) FROM [@SCANEMPBL]
WHERE U_empID = $[Employee.EmployeeID]) <> $[TextBinLocation]
UPDATE [@SCANEMPBL] SET [U_ToBL]=$[TextBinLocation]
WHERE U_empID = $[Employee.EmployeeID]
```

After add button press OK to go back

Query name: BXMobileWH9_CreateGoodsReceiptPOQuantitiesNormalScreen_ButtonAdd_click_after

```
SELECT 'OK' AS Click$
```

4.1.3. Transfer Stocks**4.1.3.1. TransferStocksScreen**Add the following record to the [Customization Fields](#) user table:

FieldName	Visible	Screen
TextBatch	NO	CreateGoodsReceiptPOQuantitiesSerialScreen

Modify the list contents: show EAN bar code instead of item code

Query name: BXMobileWH9_TransferStocksScreen_DataRepeater_InternalDataLoad

```
SELECT
SUBSTRING(S.splitdata,1,15)+'EAN:' + ISNULL(C.CodeBars, '')
AS [DataRepeater.UIItemCode]
FROM dbo.SplitStringForDataRepeater($[DataRepeater.UIItemCode]) S, OITM C
WHERE C.ItemCode=SUBSTRING(S.splitdata,1,PATINDEX('%*%',S.splitdata)-2)
```

Focus on item field after returning to this screen

Query name: BXMobileWH9_TransferStocksScreen_Activate

```
SELECT 'TextItem' AS Click$
```

4.1.3.2. TransferStocksQuantitiesSerialScreenAdd the following record to the [Customization Fields](#) user table:

FieldName	Label	ReadOnly	Screen
EanCode	EAN	YES	TransferStocksQuantitiesSerialScreen

Create a new user table 'SCANEMPBL' with the following fields:

- Employee ID (empID)

- To Bin Location (ToBL)

Fill to location from saved, load bar code into EAN code

Query name: BXMobileWH9_TransferStocksQuantitiesSerialScreen_Load

```
SELECT
(SELECT [@SCANEMPBL].U_ToBL
FROM [@SCANEMPBL]
WHERE U_empID = $('[Employee.EmployeeID]') AS 'TextToLocation',
(SELECT CodeBars FROM OITM
WHERE ItemCode=SUBSTRING($[TextItem],1,PATINDEX('%*%', $[TextItem])-2) ) AS
'EanCode'
```

Save to location for employee

Query name: BXMobileWH9_TransferStocksQuantitiesSerialScreen_TextToLocation_validate_after

```
IF
(SELECT ISNULL([@SCANEMPBL].U_ToBL, ''))
FROM [@SCANEMPBL]
WHERE U_empID = $('[Employee.EmployeeID]') <> $('[TextToLocation]
UPDATE [@SCANEMPBL]
SET [U_ToBL]=$[TextToLocation] WHERE U_empID = $('[Employee.EmployeeID]'
```

After serial number entered, press OK to go back

Query name: BXMobileWH9_TransferStocksQuantitiesSerialScreen_TextSerialNumber_validate_after

```
IF $('[TextSerialNumber]<>' SELECT 'OK' AS Click$
```

4.1.3.3. TransferStocksQuantitiesNormalScreen

Add the following record to the [Customization Fields](#) user table:

FieldName	Label	ReadOnly	Screen
EanCode	EAN	YES	TransferStocksQuantitiesNormalScreen
FieldName	Visible	Screen	
TextUoM	NO	TransferStocksQuantitiesNormalScreen	

Create a new user table 'SCANEMPBL' with the following fields:

- Employee ID (empID)
- To Warehouse (ToBL)

Load EAN bar code and to location, set quantity to 1 and focus on quantity

Query name: BXMobileWH9_TransferStocksQuantitiesNormalScreen_Load

```
SELECT
(SELECT CodeBars
FROM OITM
```

```
WHERE ItemCode=SUBSTRING($[TextItem],1,PATINDEX('%*%', $[TextItem])-2) ) AS
'EanCode',
(SELECT [@SCANEMPBL].U_ToBL
FROM [@SCANEMPBL]
WHERE U_empID = $[Employee.EmployeeID]) AS 'TextToLocation','1' AS
'TextQuantity','TextQuantity' AS Click$
```

Save to location for employee

Query name: BXMobilWH9_TransferStocksQuantitiesNormalScreen_TextToLocation_validate_after

```
IF (SELECT ISNULL([@SCANEMPBL].U_ToBL, ''))
FROM [@SCANEMPBL]
WHERE U_empID = $[Employee.EmployeeID]) <> $[TextToLocation]
UPDATE [@SCANEMPBL]
SET [U_ToBL]=$[TextToLocation]
WHERE U_empID = $[Employee.EmployeeID]
```

Press OK to go back after Add button

Query name: BXMobilWH9_TransferStocksQuantitiesNormalScreen_ButtonAdd_click_after

```
SELECT 'OK' AS Click$
```

4.1.4. Mass Transfer

4.1.4.1. TransferStocksMassScreen

Create a new user table 'SCANEMPBL' with the following fields:

- Employee ID (empID)
- To Bin Location (ToBL)
- From Bin Location (FromBL)

Load saved bin location from and to

Query name: BXMobilWH9_TransferStocksMassScreen_Load

```
SELECT
(SELECT [@SCANEMPBL].U_FromBL FROM [@SCANEMPBL]
WHERE U_empID = $[Employee.EmployeeID]) AS 'TextWHBinLocationFrom',
(SELECT [@SCANEMPBL].U_ToBL
FROM [@SCANEMPBL]
WHERE U_empID = $[Employee.EmployeeID]) AS 'TextWHBinLocationTo'
```

Save from bin location

Query name: BXMobilWH9_TransferStocksMassScreen_TextWHBinLocationFrom_validate_after

```
IF $[TextWHBinLocationFrom] <> ''
AND (SELECT ISNULL([@SCANEMPBL].U_FromBL, ''))
FROM [@SCANEMPBL]
WHERE U_empID = $[Employee.EmployeeID]) <> $[TextWHBinLocationFrom]
```

```
UPDATE [@SCANEMPBL]
SET [U_FromBL]=$[TextWHBinLocationFrom]
WHERE U_empID = $[Employee.EmployeeID]
```

Save to bin location

Query name: BXMobileWH9_TransferStocksMassScreen_TextWHBinLocationFrom_validate_after

```
IF $[TextWHBinLocationTo] <> ''
AND (SELECT ISNULL([@SCANEMPBL].U_ToBL, ''))
FROM [@SCANEMPBL]
WHERE U_empID =$[Employee.EmployeeID]) <> $[TextWHBinLocationTo]
UPDATE [@SCANEMPBL]
SET [U_ToBL]=$[TextWHBinLocationTo]
WHERE U_empID = $[Employee.EmployeeID]
```

Modify list contents

• [DataRepeater.UIItemCode] Item code + name • [DataRepeater.UIOnHandQuantity] Bar code (EAN) + quantity
Query name: BXMobileWH9_TransferStocksMassScreen_DataRepeater_InternalDataLoad

```
-- Modify list contents
-- [DataRepeater.UIItemCode] Item code + name
-- [DataRepeater.UIOnHandQuantity] Bar code (EAN) + quantity
SELECT C.CodeBars + ' ' +SUBSTRING(S.splitdata2,1,50) AS
[DataRepeater.UIOnHandQuantity]
FROM dbo.SplitStringForDataRepeater2($[DataRepeater.UIItemCode], $
[DataRepeater.UIOnHandQuantity]) S, OITM C
WHERE C.ItemCode=SUBSTRING(S.splitdata,1,PATINDEX('%*%',S.splitdata)-1)
```

4.1.5. Transfer Stock Request

4.1.5.1. TransferStockRequestLineScreen

Add the following record to the [Customization Fields](#) user table:

FieldName	Visible	Screen
TextBatch	NO	TransferStockRequestLineScreen

Modify list contents, add EAN bar code

Query name: BXMobileWH9_TransferStockRequestLineScreen_DataRepeater_InternalDataLoad

```
SELECT SUBSTRING(S.splitdata,7,15)+' EAN:' + ISNULL(C.CodeBars, '') AS
[DataRepeater.UIItem]
FROM dbo.SplitStringForDataRepeater($[DataRepeater.UIItem]) S, OITM C
WHERE C.ItemCode=SUBSTRING(S.splitdata,7,PATINDEX('%*%',S.splitdata)-8)
```

After Item Code has been entered, set quantity to ' ' and press Add

Query name: BXMobileWH9_TransferStockRequestLineScreen_TextItem_validate_after


```
IF $[TextItem]<>' ' SELECT ' ' AS TextQuantity, 'ButtonAdd' AS Click$
```

Item code scanning is mandatory (before pressing Add button)

Query name: BXMobilWH9_TransferStockRequestLineScreen_ButtonAdd_click

```
IF $[TextItem] = ' '
SELECT 'You must scan an item!' AS 'Message$', 'E' AS 'MessageType$',
'TextItem'
AS Click$
```

Item code scanning is mandatory (before pressing Update button)

Query name: BXMobilWH9_TransferStockRequestLineScreen_ButtonUpdate_click

```
IF $[TextItem] = ' '
SELECT 'You must scan an item!' AS 'Message$', 'E' AS 'MessageType$',
'TextItem'
AS Click$
```

Focus on Item field (when returning to this screen)

Query name: BXMobilWH9_TransferStockRequestLineScreen_Activate

```
SELECT 'TextItem' AS Click$
```

4.1.5.2. TransferStockRequestsQuantitiesSerialScreen

Add the following record to the [Customization Fields](#) user table:

FieldName	Label	ReadOnly	Screen
EanCode	EAN	YES	TransferStockRequestsQuantitiesSerialScreen

Create a new user table 'SCANEMPBL' with the following fields:

- Employee ID (empID)
- To Bin Location (ToBL)

Set to location from saved, set EAN code from barcode

Query name: BXMobilWH9_TransferStockRequestsQuantitiesSerialScreen_Load

```
SELECT
(SELECT [@SCANEMPBL].U_ToBL FROM [@SCANEMPBL]
WHERE U_empID = $[Employee.EmployeeID]) AS 'TextToLocation',
(SELECT CodeBars FROM OITM
WHERE ItemCode=SUBSTRING($[TextItem],1,PATINDEX('%*%', $[TextItem])-2) ) AS
'EanCode'
```

Save to location if changed

Query name:

BXMobilWH9_TransferStockRequestsQuantitiesSerialScreen_TextToLocation_validate_after

```
IF (SELECT ISNULL([@SCANEMPBL].U_ToBL, '' )
FROM [@SCANEMPBL]
WHERE U_empID = $('[Employee.EmployeeID]') <> $('[TextToLocation]')
UPDATE [@SCANEMPBL]
SET [U_ToBL]=$[TextToLocation] WHERE U_empID = $('[Employee.EmployeeID]')
```

After serial number has been entered press OK to go back

Query name:

BXMobileWH9_TransferStockRequestsQuantitiesSerialScreen_TextSerialNumber_validate_after

```
IF $('[TextSerialNumber]') <> '' SELECT 'OK' AS Click$
```

4.1.5.3. TransferStockRequestsQuantitiesNormalScreen

Add Customization Fields user table records:

FieldName	Label	ReadOnly	Screen
EanCode	EAN	YES	TransferStockRequestsQuantitiesNormalScreen
FieldName	Visible	Screen	
TextUoM	NO	TransferStockRequestsQuantitiesNormalScreen	

Create a new user table 'SCANEMPBL' with the following fields:

- Employee ID (empID)
- To Bin Location (ToBL)
- From Bin Location (FromBL)

Fill EanCode, To location, set 1 to quantity and focus on quantity

Query name: BXMobileWH9_TransferStockRequestsQuantitiesNormalScreen_Load

```
SELECT
(SELECT CodeBars FROM OITM
WHERE ItemCode=SUBSTRING($[TextItem],1,PATINDEX('%*%', $[TextItem])-2) ) AS
'EanCode',
(SELECT [@SCANEMPBL].U_ToBL
FROM [@SCANEMPBL]
WHERE U_empID = $('[Employee.EmployeeID]') ) AS 'TextToLocation', '1' AS
'TextQuantity' , 'TextQuantity' AS Click$
```

Save to bin location for next time

Query name:

BXMobileWH9_TransferStockRequestsQuantitiesNormalScreen_TextToLocation_validate_after

```
IF (SELECT ISNULL[@SCANEMPBL] (.U_ToBL, '' )
FROM [@SCANEMPBL]
WHERE U_empID = $('[Employee.EmployeeID]') <> $('[TextToLocation]')
UPDATE [@SCANEMPBL]
```

```
SET [U_ToBL]=$[TextToLocation]
WHERE U_empID = $[Employee.EmployeeID]
```

After Add press OK to go back

Query name: BXMobilWH9_TransferStockRequestsQuantitiesNormalScreen_ButtonAdd_click_after

```
SELECT 'OK' AS Click$
```

4.1.6. Picking Screen

4.1.6.1. Picking Screen

Add the following record to the [Customization Fields](#) user table:

FieldName	Label	ReadOnly	Screen
BO_U_Tour ID	TourID	YES	PickingLinesScreen

Show TourID in the list in the place of date field

Query name: BXMobilWH9_PickingScreen_DataRepeater_InternalDataLoad

```
SELECT SUBSTRING(S.splitdata2,1,50)+ ' Tour: ' + C.U_TourID AS
[DataRepeater.UIPickDate]
FROM dbo.SplitStringForDataRepeater2($[DataRepeater.UIPickListNo],
$[DataRepeater.UIPickDate]) S, OPKL C
WHERE C.AbsEntry= CAST(SUBSTRING(S.splitdata, 11,5) AS INT)
```

4.1.6.2. Picking Lines Screen

Add the following record to the [Customization Fields](#) user table. The Tour ID field will be shown on the screen and the Bin Code field will be editable.

FieldName	Label	ReadOnly	Screen
BO_U_TourID	TourID	YES	PickingLinesScreen
TextBinCode	Item	NO	PickingLinesScreen

Fill TourID field on top of the screen

Query name: BXMobilWH9_PickingLinesScreen_Load

```
SELECT
(SELECT OPKL.U_TourID FROM OPKL WHERE OPKL.AbsEntry =
CAST(LEFT($[TextPickList],PATINDEX('%*%', $[TextPickList])-1) AS INT)) AS
[BO_U_TourID]
```

Mandatory to scan/enter item in bin code field

Query name: BXMobilWH9_PickingLinesScreen_OK_clicked

```
IF $[TextBinCode] = ''
```

```
SELECT 'Scan an item!' AS 'Message$', 'E' AS 'MessageType$', 'TextBinCode' AS Click$
```

Show EAN bar code in list

Query name: BXMobilWH9_PickingLinesScreen_DataRepeater_InternalDataLoad

```
SELECT ' EAN: ' + C.CodeBars AS [DataRepeater.UIBinCode]
FROM dbo.SplitStringForDataRepeater2($[DataRepeater.UItem],
$[DataRepeater.UIBaseType]) S, OITM C
WHERE C.ItemCode=SUBSTRING(S.splitdata,1,PATINDEX('%*%',S.splitdata)-1)
```

Focus on bin code field

Query name: BXMobilWH9_PickingLinesScreen_Activate

```
SELECT 'TextBinCode' AS Click$
```

4.1.6.3. PickingLinesPickSerialScreen

Add new EanCode field to screen, set bin field to read only. Add the following records to the [Customization Fields](#) user table:

FieldName	Label	ReadOnly	Screen
EanCode	EAN	YES	PickingLinesPickSerialScreenw
FieldName	Label	Screen	
TextBinLocation	YES	PickingLinesPickSerialScreen	

Show the bin location and the EAN code of the item on the screen

Query name: BXMobilWH9_PickingLinesPickSerialScreen_Load

```
SELECT $[TextRecBin] AS 'TextBinLocation',
(SELECT CodeBars FROM OITM
WHERE ItemCode=SUBSTRING($[TextItem],1,PATINDEX('%*%', $[TextItem])-2) ) AS
'EanCode'
```

Press the Post button after the serial number is scanned if the open quantity is zero

Query name: BXMobilWH9_PickingLinesPickSerialScreen_TextSerialNumber_validate_after

```
IF $[TextSerialNumber]<>' '
IF CAST(LEFT($[TextOpenQty],PATINDEX('% %',$[TextOpenQty]+' ')-1) AS INT)=0
SELECT 'OK' AS 'Click$'
ELSE SELECT 'OK##Option' AS 'Click$'
```

4.1.6.4. PickingLinesPickNormalScreen

Hide UoM field from screen. Add the following record to the [Customization Fields](#) user table:

FieldName	Label	ReadOnly	Screen
EanCode	EAN	YES	PickingLinesPickNormalScreen
FieldName	Visible	Screen	
TextUoM	NO	PickingLinesPickNormalScreen	
FieldName	ReadOnly	Screen	
TextBinLocation	YES	PickingLinesPickNormalScreen	

Show the bin location and the EAN code of the item on the screen

Query name: BXMobilWH9_PickingLinesPickNormalScreen_Load

```
SELECT $[TextRecBin] AS 'TextBinLocation',
(SELECT CodeBars FROM OITM
WHERE ItemCode=$[SelectedPickListLine.ItemCode]) AS 'EanCode',1 AS
'TextQuantity', 'TextQuantity' AS Click$
```

After quantity has been entered, press OK to book and then back button

Query name: BXMobilWH9_PickingLinesPickNormalScreen_TextQuantity_validate_after

```
IF CAST(LEFT($[TextOpenQty],PATINDEX('% %',$[TextOpenQty]+' ')-1) AS INT)-
CAST($[TextQuantity] AS INT)<=0
SELECT 'OK' AS 'Click$'
ELSE SELECT 'OK##Option' AS 'Click$'
```

4.1.7. Goods Receipt

4.1.7.1. GoodsReceiptLinesScreen

Hide UoM field from screen. Add the following record to the [Customization Fields](#) user table:

FieldName	Visible	Screen
TextUoM	NO	PickingLinesScreen

Sets price, currency and account no fields

Query name: bx_mobile_wh9_goodsreceipt_pricing

```
SELECT
ISNULL(T1.Price,0) AS 'BXITPRC',
ISNULL(T1.Currency,'FT') AS 'BXITCURR',
'5911' AS 'BXITACCN'
FROM OITM T0
JOIN ITM1 T1 ON T0.ItemCode=T1.ItemCode AND T1.Pricelist='1'
WHERE T0.[ItemCode] =[%3]
```

Create a new user table 'SCANEMPWH' with the following fields:

- Employee ID (empID)
- To Warehouse (ToWh)

Load warehouse from employee's saved value, focus on item

Query Name: BXMobileWH9_GoodsReceiptLinesScreen_Load

```
SELECT
(SELECT [@SCANEMPWH].U_ToWh FROM [@SCANEMPWH]
WHERE U_empID =[$Employee.EmployeeID]) AS 'TextWarehouse', 'TextItem' AS
Click$
```

Save warehouse code for next time

Query Name: Save warehouse code for next time

```
IF (SELECT ISNULL([@SCANEMPWH].U_ToWh, '') FROM [@SCANEMPWH]
WHERE U_empID = [$Employee.EmployeeID]) <> $[TextWarehouse]
UPDATE [@SCANEMPWH] SET [U_ToWh]=[$TextWarehouse] WHERE U_empID =
[$Employee.EmployeeID]
```

After item code has been entered, automatically set quantity to ' ' and press add

Query Name: BXMobileWH9_GoodsReceiptLinesScreen_TextItem_validate_after

```
IF $[TextItem]<>' ' SELECT ' ' AS TextQuantity, 'ButtonAdd' AS Click$
```

Change the contents of the list: [DataRepeater.UIItem] Item code + name, [DataRepeater.UIWarehouse] Bar code (EAN)

Query Name: BXMobileWH9_GoodsReceiptLinesScreen_DataRepeater_InternalDataLoad

```
SELECT
SUBSTRING(S.splitdata,7,50) AS [DataRepeater.UIItem],
C.CodeBars AS [DataRepeater.UIWarehouse]
FROM dbo.SplitStringForDataRepeater($[DataRepeater.UIItem]) S, OITM C
WHERE C.ItemCode=SUBSTRING(S.splitdata,7,PATINDEX('%*%',S.splitdata)-8)
```

Focus on item code (on return to this screen)

Query Name: BXMobileWH9_GoodsReceiptLinesScreen_Activate

```
SELECT 'TextItem' AS Click$
```

4.1.8. Query Stocks

4.1.8.1. QueryStocksScreen

Hide batch field from screen. Add the following record to the [Customization Fields](#) user table:

FieldName	Visible	Screen
TextBatch	NO	QueryStocksScreen

Create a new user table 'SCANEMPWH' with the following fields:

- Employee ID (empID)
- To Warehouse (ToWh)

Load default warehouse for employee, focus on Item field

Query Name: BXMobileWH9_QueryStocksScreen_Load

```
SELECT
(SELECT [@SCANEMPWH].U_ToWh FROM [@SCANEMPWH] WHERE U_empID =
$[Employee.EmployeeID]) AS 'TextWHBinLocation', 'TextItem' AS Click$
```

Modify list contents (show bar code)

Query Name: BXMobileWH9_QueryStocksScreen_DataRepeater_InternalDataLoad

```
SELECT SUBSTRING(S.splitdata,1,50) +' VK: ' + C.CodeBars AS
[DataRepeater.UIItemCode]
FROM dbo.SplitStringForDataRepeater($[DataRepeater.UIItemCode]) S, OITM C
WHERE C.ItemCode=SUBSTRING(S.splitdata,1,PATINDEX('%*%',S.splitdata)-1)
```

4.2. Appendix

4.2.1. Helper SQL procedures

```
-- This function is a helper for Produmex Scan list splitting
CREATE FUNCTION [dbo].[SplitStringForDataRepeater]
( @string NVARCHAR(MAX) )
RETURNS @output TABLE(splitdata NVARCHAR(MAX) )
BEGIN
DECLARE @START INT, @END INT
SELECT @START = 1, @END = CHARINDEX('##', @string)
WHILE @START < LEN(@string) + 1 BEGIN
IF @END = 0
SET @END = LEN(@string) + 2
INSERT INTO @output (splitdata)
VALUES(SUBSTRING(@string, @START, @END - @START))
SET @START = @END + 2
SET @END = CHARINDEX('##', @string, @START)
END
RETURN
END
```

```
-- This function is a helper for Produmex Scan list splitting
CREATE FUNCTION [dbo].[SplitStringForDataRepeater2]
( @string NVARCHAR(MAX), @string2 NVARCHAR(MAX) )
RETURNS @output TABLE(splitdata NVARCHAR(MAX) , splitdata2 NVARCHAR(MAX))
BEGIN
DECLARE @START INT, @END INT , @start2 INT, @end2 INT
SELECT @START = 1, @END = CHARINDEX('##', @string) , @start2 = 1, @end2 =
CHARINDEX('##', @string2)
WHILE @START < LEN(@string) + 1 BEGIN
```

```
IF @END = 0
BEGIN
SET @END = LEN(@string) + 2
SET @end2 = LEN(@string2) + 2
END
INSERT INTO @output (splitdata, splitdata2)
VALUES(SUBSTRING(@string, @START, @END - @START),SUBSTRING(@string2,
@start2, @end2 - @start2))
SET @START = @END + 2
SET @END = CHARINDEX('##', @string, @START)
SET @start2 = @end2 + 2
SET @end2 = CHARINDEX('##', @string2, @start2)
END
RETURN
END
```

2017/08/31 10:36 · csuhaa

5. Strategies in Produmex Scan

This documentation describes the steps of configuring and customizing the incoming and replenishment strategies in Produmex Scan.

5.1. Incoming Strategy

The incoming strategy is a user query that is run periodically by the Produmex Scan server component. The output of the query creates Stock Transfer Draft documents if stock move is required.

Limitations:

The Stock Transfer Draft document is not created in the following cases:

- The item is managed by serial numbers, the management method is On Release Only and the serial number is not provided.
- The item is managed by batch numbers or serial numbers and on the Item Master Data window the Issue Primarily By setting is set to Bin Locations.

5.1.1. Configuration

Settings

Configure the following setting on the [Produmex Scan Strategies](#) tab.

Incoming strategies UQ name (default: bxmobilwh9_strategy_incoming)

Incoming strategies frequency (default: 300 seconds = 5 minutes)

Query input, output

By default, the user query must be named 'bxmobilewh9_strategy_incoming', but this can be changed in the configuration.

Input: the user query takes no input

Output: the user query must return a table with the recommended movement results.

The result table columns are:

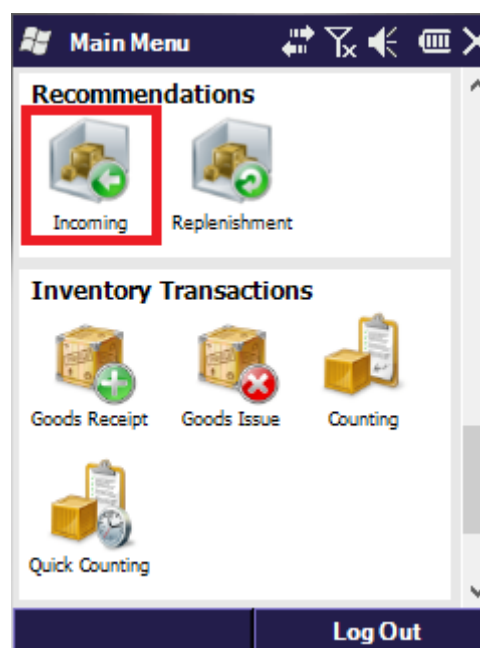
- ItemCode
- BatchNumber (only applicable for batch items, otherwise leave empty)
- SerialNumber (only applicable for serial items, otherwise leave empty)
- Quantity (in inventory UoM)
- SourceLocation (where to move from)
- DestinationLocation (where to move to)
- GroupID
- Remarks

The GroupID result column can be used to group created output documents: for each different groupID, a different *Stock Transfer - Draft* document will be created.

5.1.2. Logging, monitoring

Mobile interface

Incoming strategy recommendation results transfers can be accessed from the Produmex Scan main menu, with the 'Incoming Recommendations' icon.

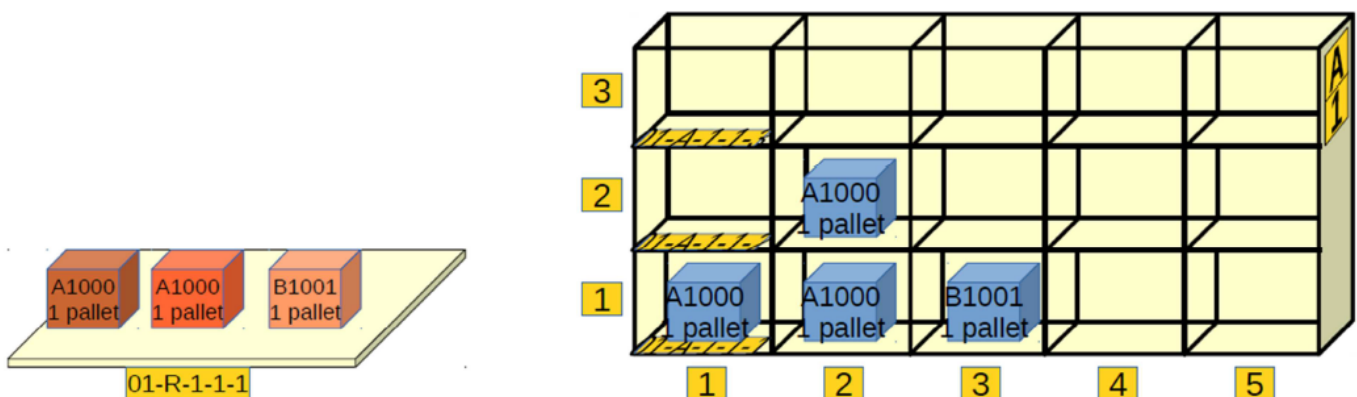


On the incoming recommendations screen, you will see all the *Stock Transfer - Draft* documents, where the Transaction Type user-defined field is 'Incoming'. It is possible to filter by 'From Warehouse'

or 'To Warehouse'.

After selecting the appropriate document, press the Transfer button to start working on it.

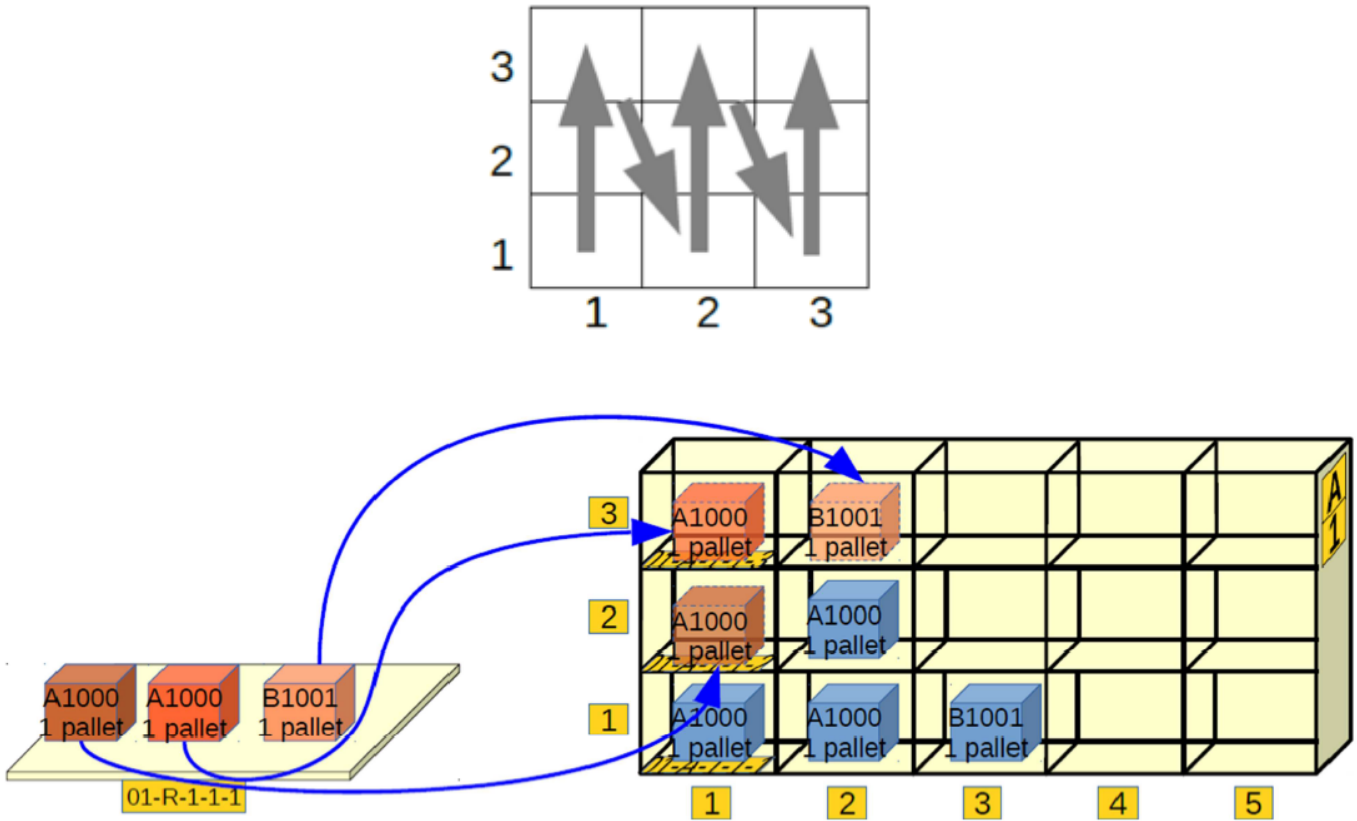
Example incoming strategy



In this example, we have an incoming location (01-R-1-1-1) where incoming trucks unload the goods. Our incoming strategy will check if there is any stock on this location, and automatically recommend moving it to empty locations in the warehouse shelves (locations 01-A-1-*-*).

The algorithm which is implemented in an SQL user query:

1. Check if incoming locations (01-R-1-1-1) have stock
2. Look at the stock, see if it has a recommendation already
3. If not, then find a locations to move to - the next empty location in 01-A-1-*-* . Order of looking for empty locations is by shelf column then level (see figure below).
4. Return results to create recommendations for moving the incoming the item



In this example scenario on the picture above, the algorithm will return the following recommendations:

Item	Batch	From bin	To bin	Quantity
A1000		01-R-1-1-1	01-A-1-1-2	1 (pallet)*
A1000		01-R-1-1-1	01-A-1-1-3	1 (pallet)*
B1001	B12345	01-R-1-1-1	01-A-1-2-3	

**Quantity is always in inventory units, pallet units are only for illustration purposes here.*

5.2. Replenishment Strategy

5.2.1. Configuration

Settings

Configure the following setting on the [Produmex Scan Strategies](#) tab.

Replenishment strategies UQ name (default: `bxmoblewh9_strategy_replenishment`)
Replenishment strategies frequency (default: 300 seconds = 5 minutes)

Query input, output

By default, the user query must be named 'bxmoblewh9_strategy_replenishment', but this can be changed in the configuration.

Input: the user query takes no input

Output: the user query must return a table with the recommended movement results.

The result table columns are:

- ItemCode
- BatchNumber (only applicable for batch items, otherwise leave empty)
- SerialNumber (only applicable for serial items, otherwise leave empty)
- Quantity (in inventory UoM)
- SourceLocation (where to move from)
- DestinationLocation (where to move to)
- GroupID
- Remarks

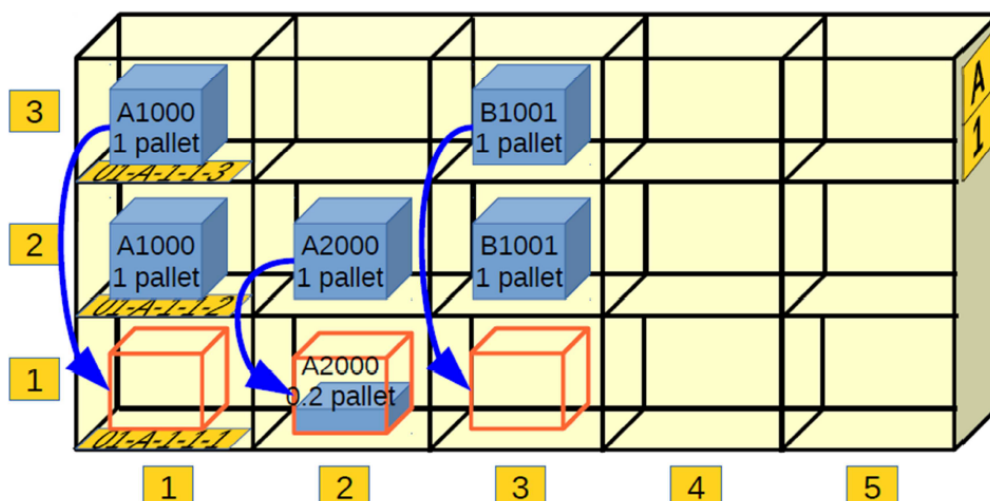
The GroupID result column can be used to group created output documents: for each different groupID, a different Stock Transfer Draft document will be created.

5.2.2. Logging, monitoring

Mobile interface

See the section 'Incoming Strategy - Mobile interface'. The work flow is the same, but you have to select the 'Replenishment recommendations' icon on the main screen.

Example replenishment strategy



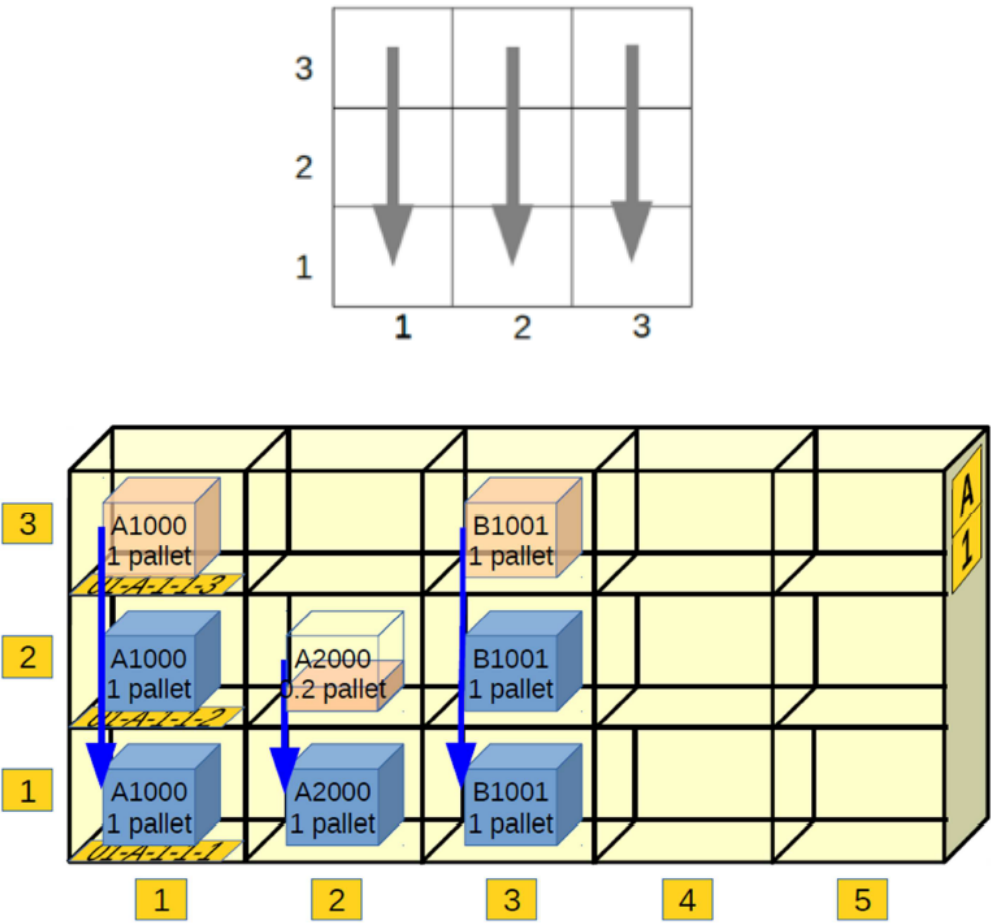
Replenishment strategy can be used to refill easily-reached locations in a warehouse system. In this example warehouse, the locations on the first level (01-A-1-*-1) are reachable by every warehouse worker, but higher levels (01-A-1-*-2, 3) are only reachable by fork lifts.

The refill algorithm, which is implemented in SQL query:

1. Check first level locations (01-A-1-*-1), see if it's empty or it's below minimum level (25% of

pallet).

2. Look for refill sources in the same column, but higher levels. If found, recommend moving items from upper levels to lower levels



In this example scenario on the picture above, the algorithm will return the following recommendations:

Item	Batch	From bin	To bin	Quantity
A1000		01-A-1-1-3	01-A-1-1-2	1 (pallet)*
A2000		01-A-1-2-3	01-A-1-1-3	0.8 (pallet)*
B1001	B12345	01-A-1-3-3	01-A-1-2-3	1 (pallet)*

**Quantity is always in inventory units, pallet units are only for illustration purposes here.*

5.3. Appendix

5.3.1. Helper view

MS SQL version

```
CREATE VIEW XXX_INVTRANSFER_DRAFT_LINESBIN
AS
SELECT DRF1.DocEntry, DRF1.ItemCode, DRF1.LineNum, fromBin.BinCode AS
```

```
FromBin,  
fromBinLine.Quantity AS FromQuantity,  
toBin.BinCode AS ToBin,  
toBinLine.Quantity AS ToQuantity  
FROM ODRF, DRF1  
LEFT OUTER JOIN DRF19 fromBinLine ON (fromBinLine.ObjType = 67  
AND fromBinLine.DocEntry = DRF1.DocEntry  
AND fromBinLine.LineNum = DRF1.LineNum  
AND fromBinLine.BinActTyp = 2)  
LEFT OUTER JOIN DRF19 toBinLine ON (toBinLine.ObjType = 67  
AND toBinLine.DocEntry = DRF1.DocEntry  
AND toBinLine.LineNum = DRF1.LineNum  
AND toBinLine.BinActTyp = 1)  
LEFT OUTER JOIN OBIN fromBin ON (fromBin.AbsEntry = fromBinLine.BinAbs)  
LEFT OUTER JOIN OBIN toBin ON (toBin.AbsEntry = toBinLine.BinAbs)  
WHERE ODRF.ObjType = 67  
AND DRF1.ObjType = 67  
AND toBinLine.ObjType = 67  
AND ODRF.DocEntry = DRF1.DocEntry
```

HANA version

```
CREATE VIEW "PMXSCAN19_2"."XXX_INVTRANSFER_DRAFT_LINESBIN" ( "DocEntry",  
    "ItemCode",  
    "LineNum",  
    "fromBin",  
    "FromQuantity",  
    "ToBin",  
    "ToQuantity" ) AS SELECT  
    "DRF1"."DocEntry",  
    "DRF1"."ItemCode",  
    "DRF1"."LineNum",  
    "fromBin"."BinCode" AS "fromBin",  
    "fromBinLine"."Quantity" AS "FromQuantity",  
    "toBin"."BinCode" AS "ToBin",  
    "toBinLine"."Quantity" AS "ToQuantity"  
FROM "ODRF",  
    "DRF1"  
LEFT OUTER JOIN "DRF19" AS "fromBinLine" ON ("fromBinLine"."ObjType" = 67  
    AND "fromBinLine"."DocEntry" = "DRF1"."DocEntry"  
    AND "fromBinLine"."LineNum" = "DRF1"."LineNum"  
    AND "fromBinLine"."BinActTyp" = 2)  
LEFT OUTER JOIN "DRF19" AS "toBinLine" ON ("toBinLine"."ObjType" = 67  
    AND "toBinLine"."DocEntry" = "DRF1"."DocEntry"  
    AND "toBinLine"."LineNum" = "DRF1"."LineNum"  
    AND "toBinLine"."BinActTyp" = 1)  
LEFT OUTER JOIN "OBIN" "fromBin" ON ("fromBin"."AbsEntry" =  
    "fromBinLine"."BinAbs")  
LEFT OUTER JOIN "OBIN" "toBin" ON ("toBin"."AbsEntry" =
```

```

"toBinLine"."BinAbs")
WHERE "ODRF"."ObjType" = 67
AND "DRF1"."ObjType" = 67
AND "toBinLine"."ObjType" = 67
AND "ODRF"."DocEntry" = "DRF1"."DocEntry" WITH READ ONLY

```

5.3.2. Example Incoming Strategy

Algorithm:

1. Look for stock on RecBinLocation (eg. 01-Q), only non-serial, non-batch items
2. Subtract/ignore stock quantity already recommended for moving
3. Recommend moving remaining quantity to locations defined by OutLocationFilter eg. 01-F-%, look for empty locations. Only put one PurchaseUoM (eg. pallet) quantity on one out location, split moving to multiple out locations if needed.

5.3.2.1. Example Incoming Strategy SQL

```

DECLARE @RecBinLocation nvarchar(MAX)
DECLARE @OutLocationFilter nvarchar(MAX)
DECLARE @ItemCode nvarchar(MAX)
DECLARE @Quantity DECIMAL
DECLARE @SourceLocation nvarchar(MAX)
DECLARE @DestinationLocation nvarchar(MAX)
DECLARE @PurchaseUomQuantity nvarchar(MAX)
DECLARE @QuantityPartial DECIMAL
DECLARE @ExcludeBinList nvarchar(MAX)
DECLARE @QuantityAlready DECIMAL

/*
@RecBinLocation: receiving bin location
@OutLocationFilter: target bin location filter
*/
SET @RecBinLocation = '01-S'
SET @OutLocationFilter = '01-%'
SET @ExcludeBinList = ''

-- temp table for moving
DECLARE @RESULT TABLE (
    ItemCode nvarchar(MAX),
    BatchNumber nvarchar(MAX),
    SerialNumber nvarchar(MAX),
    Quantity DECIMAL,
    SourceLocation nvarchar(MAX),
    DestinationLocation nvarchar(MAX),
    GroupID nvarchar(MAX),
    Remarks nvarchar(MAX)
)

```

```
-- select stock on the receiving bin location
DECLARE curs CURSOR FOR
SELECT OIBQ.ItemCode, OIBQ.OnHandQty, OIBIN.BinCode
FROM OIBQ, OIBIN, OITM
WHERE OIBIN.BinCode = @RecBinLocation
      AND OIBQ.BinAbs = OIBIN.AbsEntry
      AND OITM.ItemCode = OIBQ.ItemCode
      AND OIBQ.OnHandQty > 0
      AND OITM.ManBtchNum = 'N'
      AND OITM.ManSerNum = 'N'

-- cursor for checkin items one by one
OPEN curs
FETCH NEXT FROM curs INTO @ItemCode, @Quantity, @SourceLocation
WHILE @@FETCH_STATUS = 0
BEGIN
    SET @PurchaseUomQuantity = NULL
    SELECT @PurchaseUomQuantity = BaseQty
    FROM UGP1, OITM
    WHERE UGP1.UgpEntry = OITM.UgpEntry AND UGP1.UomEntry =
OITM.PUomEntry AND OITM.ItemCode = @ItemCode

    -- check the quantity that has already been added on a previous stock
transfer draft document
    SET @QuantityAlready = NULL
    SELECT @QuantityAlready = SUM(FromQuantity)
    FROM XXX_INVTRANSFER_DRAFT_LINESBIN
    WHERE ItemCode = @ItemCode AND FromBin = @SourceLocation

    IF @QuantityAlready IS NOT NULL BEGIN SET @Quantity = @Quantity -
@QuantityAlready END

    WHILE @Quantity > 0 BEGIN
        SET @QuantityPartial = @Quantity
        IF @PurchaseUomQuantity IS NOT NULL AND @QuantityPartial >
@PurchaseUomQuantity BEGIN
            SET @QuantityPartial = @PurchaseUomQuantity
        END

        -- make some logic to get the target bin location
        SET @DestinationLocation = NULL
        SELECT TOP 1 @DestinationLocation = BinCode
        FROM OIBIN LEFT OUTER JOIN OIBQ ON (OIBIN.AbsEntry =
OIBQ.AbsEntry)
        WHERE OIBIN.BinCode LIKE @OutLocationFilter
              AND charindex(OIBIN.BinCode, @ExcludeBinList) <= 0
              AND OIBIN.BinCode NOT IN
              (SELECT ToBin FROM XXX_INVTRANSFER_DRAFT_LINESBIN
```



```

                                WHERE ToBin LIKE @OutLocationFilter)
                                GROUP BY BinCode HAVING SUM(OnHandQty) =
OR SUM(OnHandQty) IS NULL
                                ORDER BY BinCode

                                -- if no more places, DestinationLocation will be empty
                                INSERT INTO @RESULT (ItemCode, Quantity, SourceLocation,
DestinationLocation)
                                VALUES (@ItemCode, @QuantityPartial, @SourceLocation,
@DestinationLocation)

SET @Quantity = @Quantity - @QuantityPartial
SET @ExcludeBinList = @ExcludeBinList + ' ' + @DestinationLocation
END
FETCH NEXT FROM curs INTO @ItemCode, @Quantity, @SourceLocation
END
CLOSE curs
DEALLOCATE curs
SELECT * FROM @RESULT

```

5.3.2.2. Example Incoming Strategy HANA

```

CREATE PROCEDURE PMXSCAN_PMXSCAN_INCOMINGSTRATEGY (
)
LANGUAGE SQLSCRIPT
AS
BEGIN
    DECLARE RecBinLocation NVARCHAR(200);
    DECLARE OutLocationFilter NVARCHAR(200);
    DECLARE ItemCode NVARCHAR(200);
    DECLARE Quantity DECIMAL(21,6);
    DECLARE SourceLocation NVARCHAR(200);
    DECLARE DestinationLocation NVARCHAR(200);
    DECLARE PurchaseUomQuantity NVARCHAR(200);
    DECLARE QuantityPartial DECIMAL(21,6);
    DECLARE ExcludeBinList NVARCHAR(2000);
    DECLARE BatchNum NVARCHAR(200);
    DECLARE QuantityAlready NVARCHAR(200);
    DECLARE TableExists INT;
    DECLARE CURSOR curs FOR
        SELECT "OIBQ"."ItemCode", "OIBQ"."OnHandQty", "OBIN"."BinCode" FROM
"OBIN", "OIBQ", "OITM"
        WHERE "OBIN"."BinCode" = RecBinLocation AND "OIBQ"."BinAbs" =
"OBIN"."AbsEntry" AND
            "OITM"."ItemCode" = "OIBQ"."ItemCode" AND "OIBQ"."OnHandQty" > 0
            AND "OITM"."ManBtchNum" = 'N' AND "OITM"."ManSerNum" = 'N';
    /*
    SELECT COUNT(*) INTO TableExists FROM "PUBLIC"."M_TEMPORARY_TABLES"
WHERE "TABLE_NAME" = '#RESULT';
    IF TableExists > 0 THEN

```

```
DROP TABLE #result;
END IF;
*/
CREATE LOCAL TEMPORARY TABLE #result
(
    "ItemCode" NVARCHAR(200),
    "BatchNumber" NVARCHAR(200),
    "SerialNumber" NVARCHAR(200),
    "Quantity" DECIMAL(21,6),
    "SourceLocation" NVARCHAR(200),
    "DestinationLocation" NVARCHAR(200),
    "GroupID" NVARCHAR(200),
    "Remarks" NVARCHAR(200)
);
RecBinLocation := '01-S';
OutLocationFilter := '01-F%';
ExcludeBinList := '01-SYSTEM-BIN-LOCATION';

FOR c_ as curs DO
    ItemCode := c_."ItemCode";
    Quantity := c_."OnHandQty";
    SourceLocation := c_."BinCode";
    PurchaseUomQuantity := NULL;
    SELECT SUM("BaseQty") into PurchaseUomQuantity FROM "UGP1", "OITM"
        WHERE "UGP1"."UgpEntry" = "OITM"."UgpEntry" AND
"UGP1"."UomEntry" = "OITM"."PUoMEntry" AND "OITM"."ItemCode" = ItemCode;
    QuantityAlready := NULL;
    SELECT SUM("FromQuantity") into QuantityAlready FROM
"XXX_INVTRANSFER_DRAFT_LINESBIN"
        WHERE "ItemCode" = ItemCode AND "FromBin" = SourceLocation;
    IF QuantityAlready IS NOT NULL THEN
        Quantity := Quantity - QuantityAlready;
    END IF;
    WHILE Quantity > 0 DO
        QuantityPartial := Quantity;
        IF PurchaseUomQuantity IS NOT NULL AND QuantityPartial >
PurchaseUomQuantity THEN
            QuantityPartial := PurchaseUomQuantity;
        END IF;
        DestinationLocation := NULL;
        SELECT TOP 1 "BinCode" into DestinationLocation
            FROM "OBIN" LEFT OUTER JOIN "OIBQ" ON ("OBIN"."AbsEntry" =
"OIBQ"."BinAbs")
            WHERE "OBIN"."BinCode" LIKE OutLocationFilter
            AND LOCATE(ExcludeBinList, "OBIN"."BinCode") <= 0
            AND "OBIN"."BinCode" NOT IN (SELECT "ToBin" FROM
"XXX_INVTRANSFER_DRAFT_LINESBIN"
                WHERE "ToBin" LIKE OutLocationFilter)
            GROUP BY "BinCode" HAVING SUM("OnHandQty") = 0 OR
```

```

SUM("OnHandQty") IS NULL
        ORDER BY "BinCode";

        INSERT INTO #result VALUES (ItemCode, BatchNum, '',
QuantityPartial, SourceLocation, DestinationLocation, '', '');
        Quantity := Quantity - QuantityPartial;
        ExcludeBinList := ExcludeBinList || ' ' || DestinationLocation;
    END WHILE;
END FOR;
SELECT * FROM #result;
DROP TABLE #result;
END;

call "BXINCOMINGSTRATEGY"()

```

5.3.3. Example Replenishment Strategy

Algorithm:

1. See what stocks are on floor (*-1) locations and on upper (*-2, *-3, ec) locations for the same itemcode. (Only normal items are considered, and which have purchase uom groups defined)
Only look in bin locations 01-F-* (ScanArea0)
2. If floor quantity $\leq$ 50% of pallet quantity, look for upper locations. Also consider Inventory Transfer Draft documents already recorded. Recommend moving quantities from upper locations until floor quantity reaches 100% of pallet quantity if possible.

5.3.2.1. Example Replenishment Strategy MS SQL

```

DECLARE @ScanArea nvarchar(MAX)
DECLARE @FloorLocation4 nvarchar(MAX)
SET @ScanArea = '01-F-%'
SET @FloorLocation4 = '1'

DECLARE @FloorBin nvarchar(MAX)
DECLARE @ItemCode nvarchar(MAX)
DECLARE @FloorQuantity DECIMAL
DECLARE @UpperBin nvarchar(MAX)
DECLARE @UpperQuantity DECIMAL
DECLARE @PalletQty DECIMAL
DECLARE @QuantityPartial DECIMAL
DECLARE @LastBin nvarchar(MAX)
DECLARE @LastBinFloorQuantity DECIMAL
DECLARE @QuantityNeeded DECIMAL
DECLARE @QuantityAlready DECIMAL
DECLARE @RESULT TABLE (
ItemCode nvarchar(MAX),
BatchNumber nvarchar(MAX),
SerialNumber nvarchar(MAX),

```

```
Quantity DECIMAL,  
SourceLocation nvarchar(MAX),  
DestinationLocation nvarchar(MAX),  
GroupID nvarchar(MAX),  
Remarks nvarchar(MAX)  
)  
DECLARE curs CURSOR FOR  
SELECT  
binupper.FloorBinCode2 AS FloorBin,  
binupper.ItemCode AS ItemCode,  
binfloor.OnHandQty AS FloorQuantity,  
binupper.BinCode AS UpperBin,  
binupper.OnHandQty AS UpperQuantity,  
palletQuantities.BaseQty AS PalletQty  
FROM  
(  
SELECT OBIN.WhsCode + '-' + OBIN.SL1Code + '-' + OBIN.SL2Code + '-' +  
OBIN.SL3Code  
AS BinPrefix,  
OBIN.WhsCode + '-' + OBIN.SL1Code + '-' + OBIN.SL2Code + '-' + OBIN.SL3Code  
+ '-' +  
@FloorLocation4 AS FloorBinCode2,  
OBIN.BinCode, OIBQ.ItemCode, OIBQ.OnHandQty FROM OIBQ, OBIN WHERE  
OBIN.BinCode LIKE  
@ScanArea AND OBIN.SL4Code <> @FloorLocation4 AND OBIN.AbsEntry =  
OIBQ.BinAbs  
) binupper  
LEFT OUTER JOIN  
(  
SELECT OBIN.WhsCode + '-' + OBIN.SL1Code + '-' + OBIN.SL2Code + '-' +  
OBIN.SL3Code  
AS BinPrefix, OBIN.BinCode, OIBQ.ItemCode, OIBQ.OnHandQty  
FROM OIBQ, OBIN  
WHERE OBIN.BinCode LIKE @ScanArea  
AND OBIN.SL4Code = @FloorLocation4  
AND OBIN.AbsEntry = OIBQ.BinAbs  
) binfloor ON (binfloor.ItemCode = binupper.ItemCode AND binfloor.BinPrefix =  
binupper.binprefix)  
JOIN (  
SELECT ItemCode, BaseQty FROM UGP1, OITM WHERE UGP1.UgpEntry = OITM.UgpEntry  
AND  
UGP1.UomEntry = OITM.PUomEntry  
) palletQuantities ON (binupper.ItemCode = palletQuantities.ItemCode)  
WHERE binfloor.OnHandQty IS NULL OR binfloor.OnHandQty <=  
palletQuantities.BaseQty  
/2 AND binupper.OnHandQty > 0  
ORDER BY UpperBin  
SET @LastBin = ''
```

```
SET @LastBinFloorQuantity = 0
OPEN curs
FETCH NEXT FROM curs INTO @FloorBin, @ItemCode, @FloorQuantity, @UpperBin,
@UpperQuantity, @PalletQty
WHILE @@FETCH_STATUS = 0
BEGIN
IF @FloorQuantity IS NULL BEGIN SET @FloorQuantity = 0 END
IF @LastBin <> @FloorBin BEGIN
SET @LastBin = @FloorBin
SET @QuantityAlready = NULL
SELECT @QuantityAlready = SUM(ToQuantity) FROM
XXX_INVTRANSFER_DRAFT_LINESBIN WHERE ItemCode = @ItemCode AND ToBin =
@FloorBin
IF @QuantityAlready IS NULL BEGIN SET @QuantityAlready = 0 END
SET @LastBinFloorQuantity = @FloorQuantity + @QuantityAlready
END
IF @LastBinFloorQuantity <= @PalletQty / 2 BEGIN
SET @QuantityNeeded = @PalletQty - @LastBinFloorQuantity
SET @QuantityPartial = @QuantityNeeded
IF @QuantityPartial > @UpperQuantity BEGIN SET @QuantityPartial =
@UpperQuantity END
SET @LastBinFloorQuantity = @LastBinFloorQuantity + @QuantityPartial
INSERT INTO @RESULT (ItemCode, Quantity, SourceLocation,
DestinationLocation)
VALUES (@ItemCode, @QuantityPartial, @UpperBin, @FloorBin)
END
FETCH NEXT FROM curs INTO @FloorBin, @ItemCode, @FloorQuantity, @UpperBin,
@UpperQuantity, @PalletQty
END
CLOSE curs
DEALLOCATE curs
SELECT * FROM @RESULT
```

If you are NOT getting the expected *Replenishment Strategy* results, then it is recommend to check on the *Master Data Configuration*, the *Bin Restrictions* settings and make sure the *Batch* is released.

1. Check on your Item Master Data settings:

Item Master Data

Item No.	Manual	BATCHITEM	☒ Inventory Item
Description	BATCHITEM		☒ Sales Item
Foreign Name			☒ Purchasing Item
Item Type	Items		
Item Group	Items		
UoM Group	Manual		
Price List	Base Price		
Bar Code	99310095000358		
Unit Price	Primary Curr		

General

Purchasing Data

Sales Data

Inventory Data

Planning Data

Production Data

Properties

Remarks

Attachments

☒ Tax Liab

☐ Do Not Apply Discount Groups

Manufacturer

OEC

Additional Identifier

Shipping Type

Fedex EM

Serial and Batch Numbers

Manage Item by

Batches

Management Method

On Every Transaction

Issue Primarily By

Serial and Batch Numbers

2. Review possible Bin Restrictions:

Bin Location Master Data

Warehouse	Aisle	Shelf
05	A1	S2
Bin Location Code	05-A1-S2-L1	

Bin Location Properties

Inactive

☐

Receiving Bin Location

☒

Exclude from Auto. Alloc. on Issue

☐

Description

Item Weight

No. of Items

6

Alternative Sort Code

Minimum Qty

Maximum Weight

Item Qty

441

No. of Batches/Serials

12

Bar Code

Maximum Qty

Item Restrictions

None

UoM Restrictions

None

Batch Restrictions

None

Transaction Restrictions

None

Last Updated On

Reason

3. Make sure the status of the batch is released:

Batch Details

Item Number → BATCHITEM

Item Description BATCHITEM

Status Released

First Bin Location → 05-A1-S1-L1

Batch B0506_1

Batch Attribute 1

Batch Attribute 2

Admission Date 05/06/2024

Manufacturing Date

Expiration Date

Details

System Number 4

Batch Quantities

#	Code	Existing Qty	Allocated Qty	Available Qty	Location
1		5		5	

5.3.2.2. Example Replenishment Strategy HANA

The scan area and the floor location can be set in the calling of the procedure:

CALL "PMXSCAN_REPLENISHMENT" ('01-F-%', '1');

```
CREATE PROCEDURE PMXSCAN_REPLENISHMENT (
    IN
    ScanArea NVARCHAR(5000),
    FloorLocation4 NVARCHAR(5000)
)
LANGUAGE SQLSCRIPT
AS
BEGIN
    DECLARE FloorBin nvarchar(5000);
    DECLARE ItemCode nvarchar(5000);
    DECLARE FloorQuantity DECIMAL;
    DECLARE UpperBin nvarchar(5000);
    DECLARE UpperQuantity DECIMAL;
    DECLARE PalletQty DECIMAL;
    DECLARE QuantityPartial DECIMAL;
    DECLARE LastBin nvarchar(5000);
    DECLARE LastBinFloorQuantity DECIMAL;
    DECLARE QuantityNeeded DECIMAL;
    DECLARE QuantityAlready DECIMAL;
    DECLARE CURSOR curs FOR
```

```
SELECT
    "binupper"."FloorBinCode2" AS "FloorBin",
    "binupper"."ItemCode" AS "ItemCode",
    "binfloor"."OnHandQty" AS "FloorQuantity",
    "binupper"."BinCode" AS "UpperBin",
    "binupper"."OnHandQty" AS "UpperQuantity",
    "palletQuantities"."BaseQty" AS "PalletQty"
FROM
    (
        SELECT
            "OBIN"."WhsCode" || '-' || "OBIN"."SL1Code" || '-' ||
"OBIN"."SL2Code" || '-' || "OBIN"."SL3Code" AS "BinPrefix",
            "OBIN"."WhsCode" || '-' || "OBIN"."SL1Code" || '-' ||
"OBIN"."SL2Code" || '-' || "OBIN"."SL3Code" || '-' || FloorLocation4 AS
"FloorBinCode2",
            "OBIN"."BinCode", "OIBQ"."ItemCode", "OIBQ"."OnHandQty"
        FROM "OIBQ", "OBIN"
        WHERE "OBIN"."BinCode" LIKE ScanArea AND "OBIN"."SL4Code" <>
FloorLocation4 AND "OBIN"."AbsEntry" = "OIBQ"."BinAbs"
    ) "binupper"
LEFT OUTER JOIN
    (
        SELECT
            "OBIN"."WhsCode" || '-' || "OBIN"."SL1Code" || '-' ||
"OBIN"."SL2Code" || '-' || "OBIN"."SL3Code" AS "BinPrefix",
            "OBIN"."BinCode", "OIBQ"."ItemCode", "OIBQ"."OnHandQty"
        FROM "OIBQ", "OBIN"
        WHERE "OBIN"."BinCode" LIKE ScanArea
            AND "OBIN"."SL4Code" = FloorLocation4
            AND "OBIN"."AbsEntry" = "OIBQ"."BinAbs"
    ) "binfloor"
ON ("binfloor"."ItemCode" = "binupper"."ItemCode" AND
"binfloor"."BinPrefix" = "binupper"."BinPrefix")
JOIN (
    SELECT "ItemCode", "BaseQty" FROM "UGP1", "OITM" WHERE
"UGP1"."UgpEntry" = "OITM"."UgpEntry"
    /*AND "UGP1"."UomEntry" = "OITM"."PUomEntry"*/
) "palletQuantities"
ON ("binupper"."ItemCode" = "palletQuantities"."ItemCode")
WHERE
    "binfloor"."OnHandQty" IS NULL OR "binfloor"."OnHandQty" <=
"palletQuantities"."BaseQty" AND "binupper"."OnHandQty" > 0
ORDER BY "UpperBin";

LastBin := '';
LastBinFloorQuantity := 0;

CREATE LOCAL TEMPORARY TABLE #result
(
```



```
"ItemCode" NVARCHAR(200),
"BatchNumber" NVARCHAR(200),
"SerialNumber" NVARCHAR(200),
"Quantity" DECIMAL(21,6),
"SourceLocation" NVARCHAR(200),
"DestinationLocation" NVARCHAR(200),
"GroupID" NVARCHAR(200),
"Remarks" NVARCHAR(200)
);

FOR c_ AS curs DO
    FloorBin :=c_."FloorBin";
    ItemCode :=c_."ItemCode";
    FloorQuantity :=c_."FloorQuantity";
    UpperBin :=c_."UpperBin";
    UpperQuantity :=c_."UpperQuantity";
    PalletQty :=c_."PalletQty";

    IF FloorQuantity IS NULL THEN
        FloorQuantity := 0;
    END IF;
    IF LastBin <> FloorBin THEN
        LastBin := FloorBin;
        QuantityAlready := NULL;

        SELECT SUM("ToQuantity") INTO QuantityAlready FROM
            "XXX_INVTRANSFER_DRAFT_LINESBIN" WHERE "ItemCode" = ItemCode AND
            "ToBin" = FloorBin;

        IF QuantityAlready IS NULL THEN
            QuantityAlready := 0;
        END IF;
        LastBinFloorQuantity := FloorQuantity + QuantityAlready;
    END IF;
    IF LastBinFloorQuantity <= PalletQty / 2 THEN
        QuantityNeeded := PalletQty - LastBinFloorQuantity;
        QuantityPartial := QuantityNeeded;
        IF QuantityPartial > UpperQuantity THEN
            QuantityPartial := UpperQuantity;
        END IF;
        LastBinFloorQuantity := LastBinFloorQuantity + QuantityPartial;

        INSERT INTO #result ("ItemCode", "Quantity", "SourceLocation",
            "DestinationLocation")
            VALUES (ItemCode, QuantityPartial, UpperBin, FloorBin);
    END IF;

END FOR;

SELECT * FROM #result;
```

```
DROP TABLE #result;
```

```
END;
```

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6. Manipulating DataRepeater (List)

There are list boxes on the screens in which items, SAP documents, serial or batch numbers appear. In the Produmex Scan these list objects are called: DateRepeater.

In one row you can usually find multiple data. For example Itemcode, Location, Document Line Number.

The pieces of information for one type of data are stored concatenated in a single string, separated by: "##".

There are two parameters that we have for one type of data:

- You can find the concatenated value in the parameter that starts with: DataRepeater.UI
- You can find the value from the selected row in the parameter that starts with: DataRepeater.SelectedUI

Example:

```
[$DataRepeater.UIWarehouse] = WH: 01##WH: 02##WH: 03  
[$DataRepeater.SelectedUIWarehouse] = WH: 01
```

If you would like to manipulate the appearing content then you should convert the concatenated string into an SQL table with our example splitter functions shown below. This table can be used in a query in order to load the data you need.

As a final step define the column in your query. The column name should be the same as the name of the parameter that you want to replace, for example:

```
SELECT  
    'NewInfo' as "DataRepeater.UIRemarks"  
FROM  
    . . . . .
```

You will need a splitter function, to separate data. If it does not exist, then you can create them with these queries:

SQL

```
CREATE FUNCTION [dbo].[SplitStringForDataRepeater]  
(  
    @string NVARCHAR(MAX)  
)
```

```

RETURNS @output TABLE(splitdata NVARCHAR(MAX)
)
BEGIN
    DECLARE @start INT, @end INT
    SELECT @start = 1, @end = CHARINDEX('##', @string)
    WHILE @start < LEN(@string) + 1 BEGIN
        IF @end = 0
            SET @end = LEN(@string) + 2
        INSERT INTO @output (splitdata)
        VALUES(SUBSTRING(@string, @start, @end - @start))
        SET @start = @end + 2
        SET @end = CHARINDEX('##', @string, @start)
    END
    RETURN
END

```

```

CREATE FUNCTION [dbo].[SplitStringForDataRepeater2]
( @string NVARCHAR(MAX), @string2 NVARCHAR(MAX) )
RETURNS @output TABLE(splitdata NVARCHAR(MAX) , splitdata2 NVARCHAR(MAX))
BEGIN
    DECLARE @start INT, @end INT , @start2 INT, @end2 INT
    SELECT @start = 1, @end = CHARINDEX('##', @string) , @start2 = 1, @end2
=CHARINDEX('##', @string2)
    WHILE @start < LEN(@string) + 1 BEGIN
        IF @end = 0
            BEGIN
                SET @end = LEN(@string) + 2
                SET @end2 = LEN(@string2) + 2
            END
        INSERT INTO @output (splitdata, splitdata2)
        VALUES(SUBSTRING(@string, @start, @end - @start),SUBSTRING(@string2,
@start2, @end2 - @start2))
        SET @start = @end + 2
        SET @end = CHARINDEX('##', @string, @start)
        SET @start2 = @end2 + 2
        SET @end2 = CHARINDEX('##', @string2, @start2)
    END
    RETURN END

```

HANA

```

CREATE FUNCTION SPLITSTRINGFORDATAREPEATER2 (strstring nvarchar(5000),
strstring2 nvarchar(5000) )
RETURNS TABLE (splitdata nvarchar(5000) , splitdata2 nvarchar(5000) )
LANGUAGE SQLSCRIPT AS
BEGIN
    DECLARE strstart INT;
    DECLARE strend INT;
    DECLARE strstart2 INT;
    DECLARE strend2 INT;
    declare _items nvarchar(5000) ARRAY;

```

```
declare _index integer;
_index := 1;
strstart := 1;
strend := LOCATE(strstring, '##');
strstart2 := 1;
strend2 := LOCATE(strstring2, '##');

WHILE strstart < LENGTH(strstring) + 1 DO
    IF strend = 0 THEN
        BEGIN
            strend := LENGTH(strstring) + 2;
            strend2 := LENGTH(strstring2) + 2;
        END;
    END IF;
    _items[:_index] := SUBSTRING(strstring, strstart, strend - strstart)
|| '|||' || SUBSTRING(strstring2, strstart2, strend2 - strstart2);
    _index := _index + 1;
    strstart := strend + 2;
    strend := LOCATE(strstring, '##', strstart);
    strstart2 := strend2 + 2;
    strend2 := LOCATE(strstring2, '##', strstart2);
end while;

rst = UNNEST(:_items) AS ("items");
RETURN
    SELECT SUBSTRING("items", 1, LOCATE("items", '|||') - 1) as
"SPLITDATA", SUBSTRING("items", LOCATE("items", '|||') + 3, (LENGTH("items")
- LOCATE("items", '|||') ) ) as "SPLITDATA2" FROM :rst;
END;
```

6.1. Add a string

This customization will add a string to the Warehouse field on Sales Order Issue Lines screen.

Query name: *BXMobileWH9_SalesIssueLinesScreen_DataRepeater_InternalDataLoad*

SQL

```
SELECT
    S.splitdata + ' Additional Info' AS [DataRepeater.UIWarehouse] from
    dbo.SplitStringForDataRepeater($[DataRepeater.UIWarehouse]) S
```

HANA

```
SELECT
    "S"."SPLITDATA" || ' Additional Info ' || AS "DataRepeater.UIWarehouse"
FROM
    SPLITSTRINGFORDATAREPEATER2(
```

```
$(DataRepeater.UIWarehouse), '' ) AS "S"
```

6.2. Add information from RDR1

This customization will add information from RDR1 table by VisOrder.

Note: On some screens the sequence of VisOrder may start with 1 instead of 0 (in contrast with the SAP database table). In this case you can either reduce the splitter value with 1 or increase the VisOrder SAP field with 1 in the query.

We can load DocNumber from \$(TextSalesOrder] field, and we can get the exact number with SUBSTRING. SplitStringForDataRepeater2 function splits UIWarehouse UILineNumber from the datarepeater, and then we can use them to connect to SAP table, and we can use the splitted values in the query.

Query name: *BXMobileWH9_SalesIssueLinesScreen_DataRepeater_InternalDataLoad*

SQL

```
SELECT
    S.splitdata + ' - ' + ItemCode AS [DataRepeater.UIWarehouse] FROM
    dbo.SplitStringForDataRepeater2(
        $(DataRepeater.UIWarehouse) ,
        $(DataRepeater.UILineNumber) ) S
LEFT JOIN
    (SELECT
        '#' + cast(VisOrder + 1 as varchar(10)) as ln,
        ItemCode
    FROM
        RDR1 left join ORDR on RDR1.DocEntry = ORDR.DocEntry
    WHERE
        ORDR.DocNum = SUBSTRING($(TextSalesOrder] ,0,CHARINDEX('*',
        $(TextSalesOrder] )) ) as RDR1Line
    ON S.splitdata2 = RDR1Line.ln
```

HANA

```
SELECT
    "S"."SPLITDATA" || ' - ' || "ItemCode" AS "DataRepeater.UIWarehouse"
FROM
    SPLITSTRINGFORDATAREPEATER2(
        $(DataRepeater.UIWarehouse) ,
        $(DataRepeater.UILineNumber) ) AS "S"
LEFT JOIN
    (SELECT
        '#' || cast("VisOrder" + 1 as varchar(10)) as "ln",
        "ItemCode"
    FROM
        "RDR1" left join "ORDR" on "RDR1"."DocEntry" = "ORDR"."DocEntry"
    WHERE
        "ORDR"."DocNum" = CAST( SUBSTRING($(TextSalesOrder] ,0,
```

```
LOCATE($[TextSalesOrder], '*' ) - 2) AS int)) as "RDR1Line"  
ON "S"."SPLITDATA2" = "RDR1Line"."ln"
```

6.3. Adding extra lines to screens

This customization will add extra lines to the necessary screen beside the default lines.

Example

In this example we will add 3 extra lines to the *Goods Receipts PO* screen by running the necessary SAP user query. The extra lines are:

1. Posting Date
2. Document Date
3. Ship to

1. We list the 3 extra lines in the [Customization Fields](#) window and fill in the necessary columns. In the *Position Data* column we also indicate that we wish to add 3 extra lines.



2. We run the necessary query.

Query name: *BXMobileWH9_GoodsReceiptPOScreen_DataRepeater_InternalDataLoad*

SQL

```
SELECT  
    REPLACE( S.splitdata , 'PO #', '' ),  
    'Posting Date ' + FORMAT( OPOR.DocDate, 'dd/MM/yyyy', 'en-US' ) as  
[DataRepeater.UICust01],  
    'Document Date ' + FORMAT( OPOR.TaxDate, 'dd/MM/yyyy', 'en-US' ) as  
[DataRepeater.UICust02],  
    'Ship to ' + OPOR.Address2 as [DataRepeater.UICust03]  
  
from  
    dbo.SplitStringForDataRepeater( $[DataRepeater.UIDocNum] ) as S  
    LEFT JOIN OPOR on REPLACE( S.splitdata , 'PO #', '' ) = OPOR.DocNum
```

HANA

```
SELECT  
    REPLACE( "S"."SPLITDATA" , 'PO #', '' ),  
    'Posting Date ' || to_char( "OPOR"."DocDate", 'DD/MM/YYYY' ) as  
"DataRepeater.UICust01",  
    'Document Date ' || to_char( "OPOR"."TaxDate", 'DD/MM/YYYY' ) as  
"DataRepeater.UICust02",
```

```
'Ship to ' || "OPOR"."Address2" as "DataRepeater.UICust03"
```

```
from
    SPLITSTRINGFORDATAREPEATER2( ${DataRepeater.UIDocNum}, ' ' ) as "S"
    LEFT JOIN "OPOR" on REPLACE( "S"."SPLITDATA" , 'PO #', ' ') =
    "OPOR"."DocNum";
```

SAP user query:



3. After executing the query, the 3 extra lines will appear on the *Goods Receipt PO* screen as follows:



2017/07/26 14:04 · csuhaa

7. Custom printing

7.1. Custom Layout Printing

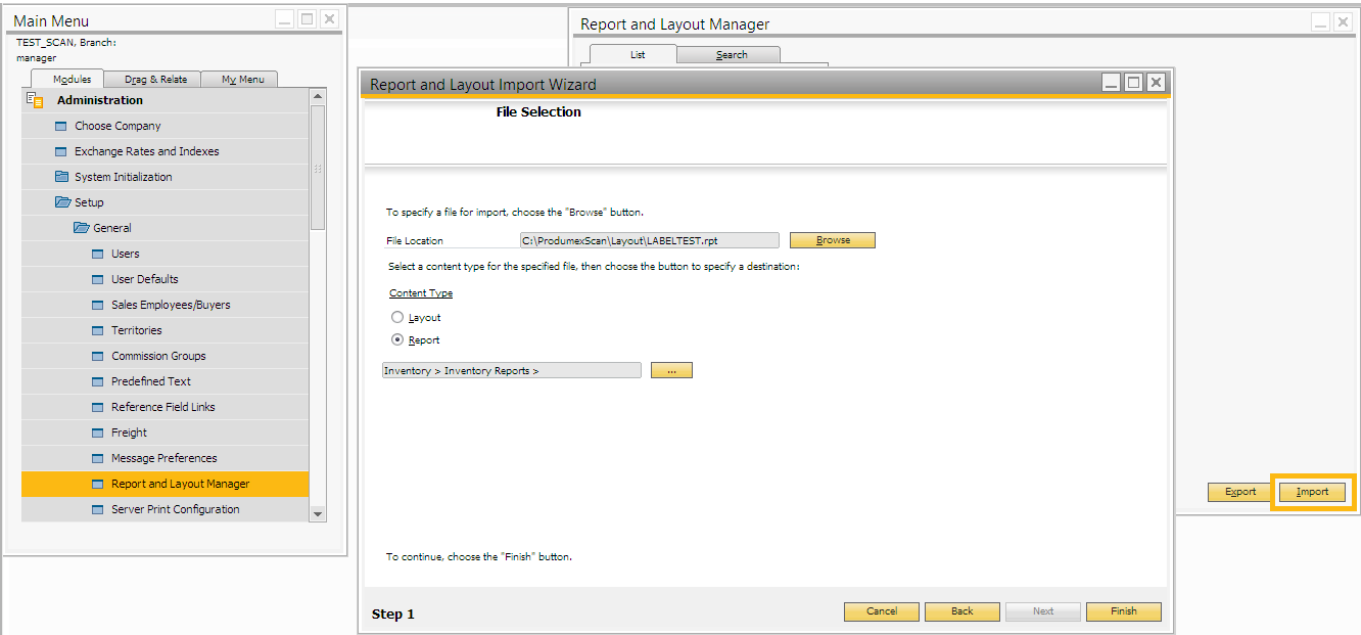
Report printing can be customized in Produmex Scan by using the customization technology described in: [Customization Technology for Produmex Scan](#). A report can be printed with user queries in the following cases:

- The report is defined in SAP Business One, or
- The report is located in a folder Produmex Service Broker can access.

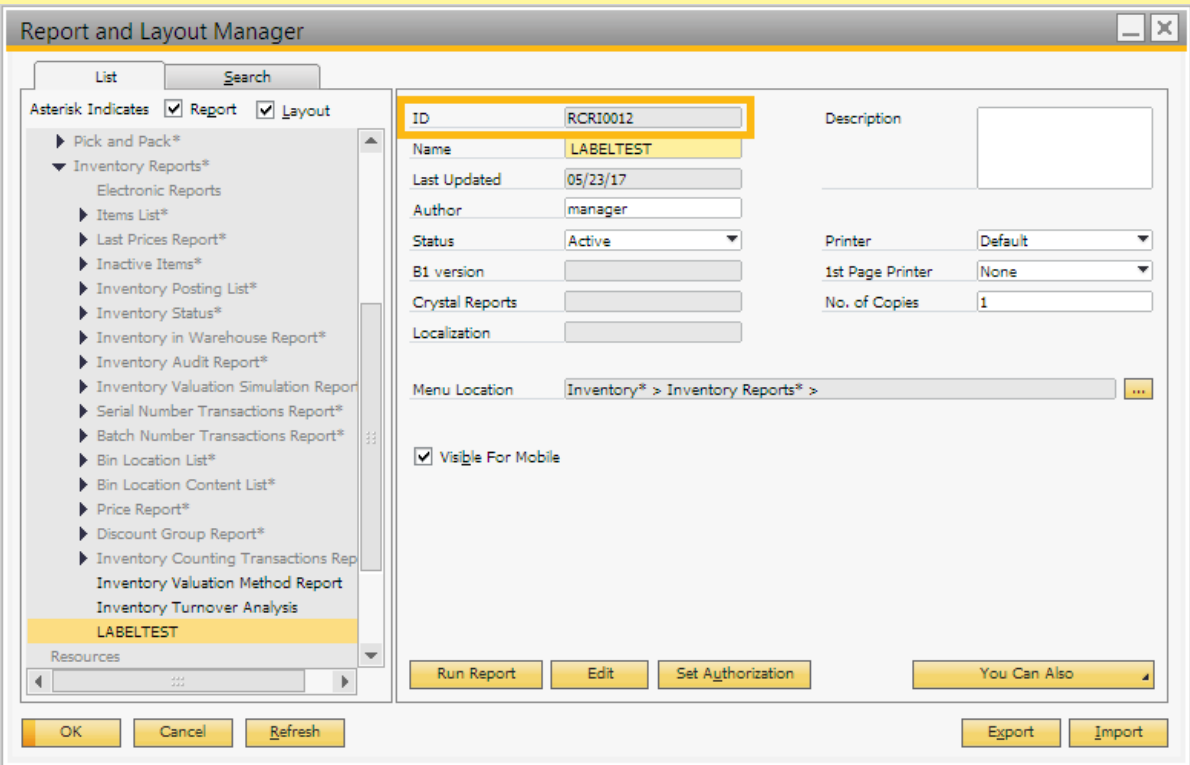
7.1.1. Import the report

Use the [HanaReportSettingTool](#) to configure the correct connection of the report file in HANA environment. You can read more about the tool in the [UserGuide](#)

Import the report in SAP Business One with the *Report and Layout Import Wizard*. Select '*Inventory > Inventory Reports*' as the location.



To see the details of the report, open the Report and Layout Manager and select the report from the Inventory Reports. The report ID will identify the report in the user queries.

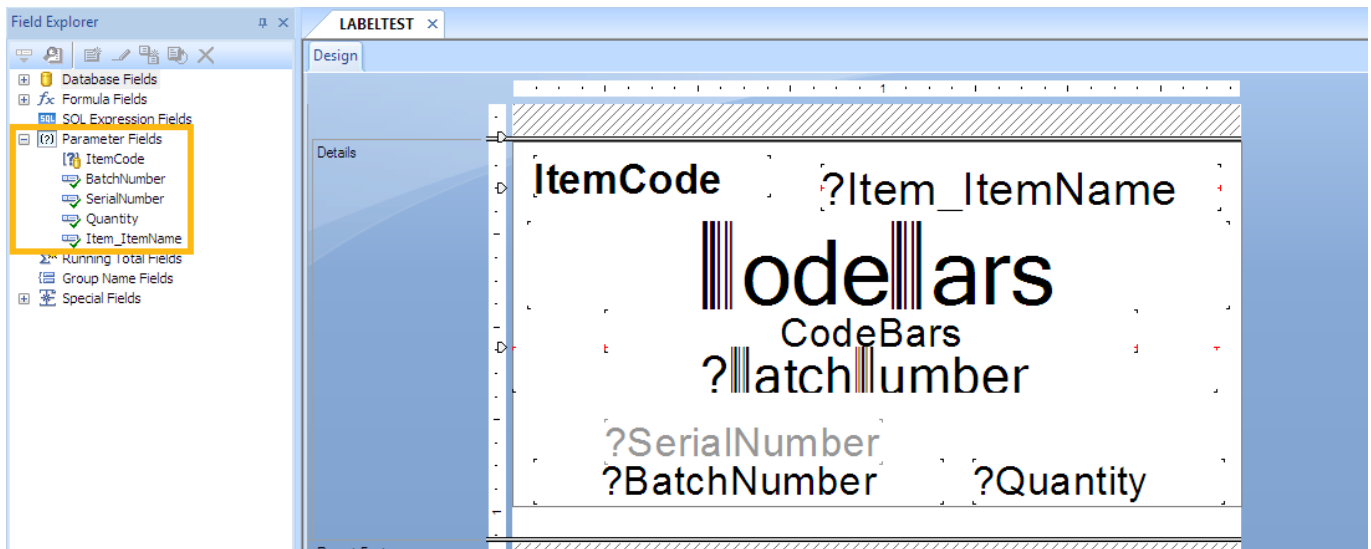


7.1.2. Examples

Example 1: Add customization on the Done button event for the Create GR PO screen

Create the user Query in the Query Manager. The name of the user query must be the name of the Produmex Scan event.

Include the report ID and the report parameters in the user query.



Query name: *BXMobileWH9_CreateGoodsReceiptPOQuantitiesNormalScreen_OK_clicked*

Example query:

SQL

```
SELECT
    'RCRI0012' "PrintLayout$",
    SUBSTRING ($[TextItem], 1 , CHARINDEX ('*', $[TextItem]) - 2 )
    "Print_ItemCode",
    SUBSTRING ($[TextItem], CHARINDEX ('*', $[TextItem]) + 2, LEN
    ($[TextItem]) - CHARINDEX ('*', $[TextItem])) "Print_Item_ItemName",
    ' "Print_SerialNumber",
    ' "Print_BatchNumber",
    $[DataRepeater.SelectedUIOnHandQuantity] "Print_Quantity",
    'PDFCreator' "PrintPrinter$",
    'Document PRINTING' "Message$", 'I' "MessageType$"
```

HANA

```
SELECT
    'RCRI0012' "PrintLayout$",
    SUBSTRING ($[TextItem] , 1 , LOCATE ($[TextItem], '*') - 2 )
    "Print_ItemCode",
    SUBSTRING ($[TextItem], LOCATE ($[TextItem], '*') + 2, LENGTH
    ($[TextItem]) - LOCATE ($[TextItem], '*') ) "Print_Item_ItemName",
    ' "Print_SerialNumber",
    ' "Print_BatchNumber",
    $[DataRepeater.SelectedUIOnHandQuantity] "Print_Quantity",
    'PDFCreator' "PrintPrinter$",
    'Document PRINTING' "Message$", 'I' "MessageType$"
FROM DUMMY
```

The user query does the following:

Sets the parameters of the selected report to the values entered on the screen and sends it to the defined printer. Then displays the 'Document printing' message.

Report parameters in the example:

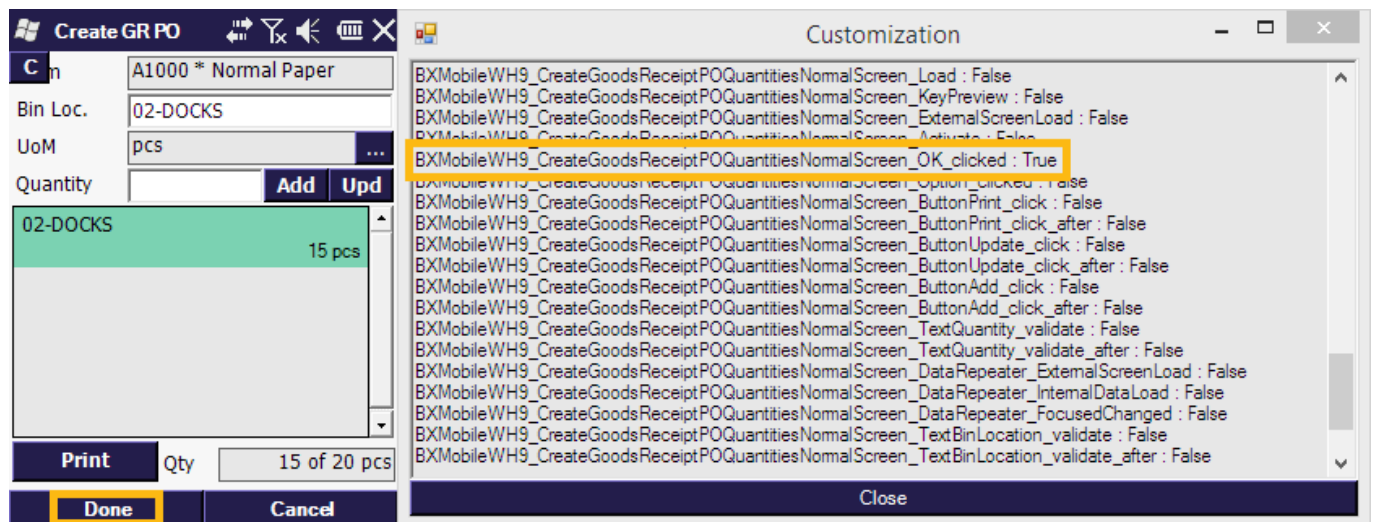
- Item code and name
- On hand quantity
- Batch number
- Serial number

Adjust the example query.

- Replace the *PrintLayout\$* value with the Report ID (in the example the report ID is RCRI0012).
- Replace the *PrintPrinter\$* value with your printer name (in the example the printer name is PDFCreator).

The label will be printed with the printer set in the user query regardless of the default printer of the employee.

By default only one label is printed. Adjust the value of the labels with the *PrintCopies\$* parameter. The label is printed after the 'Done' button is pressed on the Create GR PO Quantities screen.



Example 2: Print label for the delivery selected on the Delivery field after the report ID is added on the Packing screen

Add a new custom 'Label' field. Insert the following record to the [Customization Fields user table](#):

Field Name	Labels	Screen
RPTCode	Label	PackingScreen

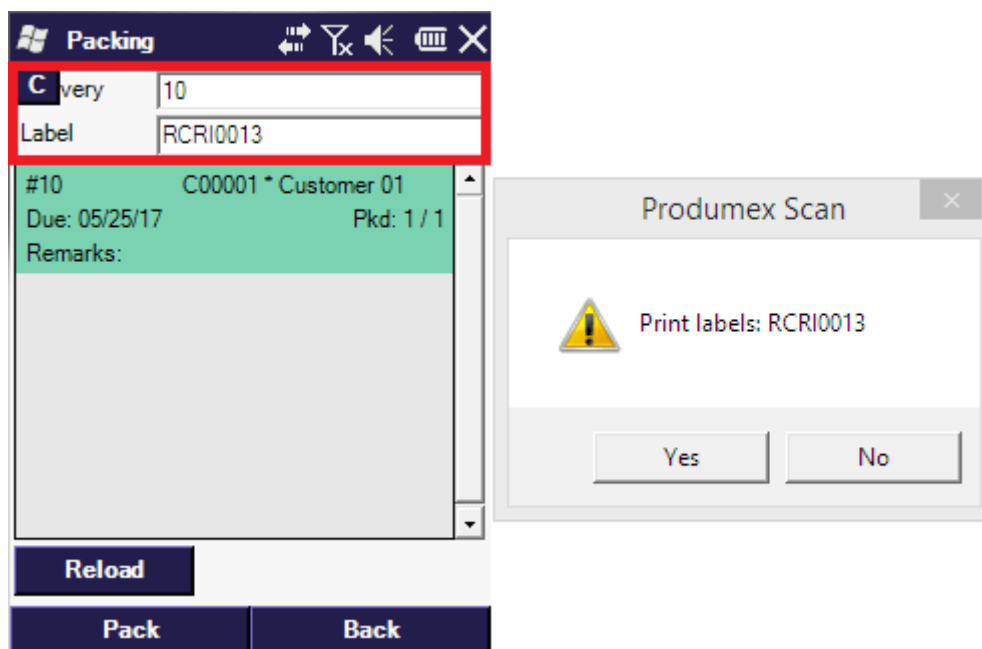
Create two new user queries in the Query Manager.

The first query will trigger the printing if the Label field is not empty. Link this user query to the RPTCode field validation event.

After the report ID is added to the field, a confirmation message will pop up. Press the Yes button to print the label.

Query name: *BXMobileWH9_PackingScreen_RPTCode_validate*

```
IF $[RPTCode]<>' ' AND $[TextDeliveryDocNum]<>' '
SELECT
  'Print labels: ' + $[RPTCode] AS 'Message$',
  'YM' AS 'MessageType'
```



The second query will define the printer and the report parameter values.

Link this user query to the *validation_after* event of the custom Label field. The query will run if the user presses the 'Yes' button on the confirmation message screen.

Query name: *BXMobileWH9_PackingScreen_RPTCode_validate_after*

```
IF $[RPTCode]<>' ' AND $[TextDeliveryDocNum]<>' '
SELECT $[RPTCode] AS PrintLayout$,
  (SELECT DocEntry FROM ODLN WHERE DocNum=$[TextDeliveryDocNum]) AS
  [Print_DocKey@],
  'PDFCreator' AS PrintPrinter$,
  'Report print: ' + $[RPTCode] AS 'Message$', 'I' AS 'MessageType'
```

Replace the *PrintPrinter\$* value with your printer name (in the example the printer name is PDFCreator).

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7.2. Advanced printing configurations for Produmex Scan

With the advanced printing configurations printing issues caused by incorrect server/database connection settings in Crystal Reports can be solved.

To add the advanced printing configurations, run the following query on the database:

SQL

```
INSERT INTO "VALI002"."@BXPCONFIG" ("Code", "Name", "U_BXPDescr",  
"U_BXPValue", "U_BXPVType", "U_BXPRowVr")  
VALUES('BXMPRA0', 'BXMPRA0', 'Crystal Reports connection parameters', '54',  
1, NULL)
```

A new record will be inserted to the BXPCONFIG table. With this record the following parameters can be set:

- PRINTERADVANCEDOPTIONS_SETTABLELOGON = 1;
- PRINTERADVANCEDOPTIONS_SETTABLECONNECTION = 2;
- PRINTERADVANCEDOPTIONS_SETSUBREPORTS = 4;
- PRINTERADVANCEDOPTIONS_DISSOCIATESIZE = 8;
- PRINTERADVANCEDOPTIONS_USEPRINTERSETTINGS = 16;
- PRINTERADVANCEDOPTIONS_USECONNECTIONCLONE = 32;
- PRINTERADVANCEDOPTIONS_USESETTINGWITHNAME = 64;

The value of **BXMPRA0** is the sum of the value of the enabled parameters.

The default and recommended value is 54. It means that the Settable connection (2), the Set sub reports (4), the Use printer settings (16) and the Use connection clone (32) parameters are enabled (2+4+16+32=54) by default.

Do not change the default value. If the issue persists, please contact Produmex support.

Enabled settings:

- *Settable connection* (2): Creates a new connection structure with the actual parameters.
- *Set sub reports* (4): Applies the (1) and (2) setting to the sub reports as well.
- *Use printer settings* (16): Uses a non-standard access to printer settings.
- *Use connection clone* (32): Uses a clone of the connection structure.

Other settings that can be enabled:

- *Settable log on* (1): Resets the server/database connection to the actual in the tables of the existing structure. This setting is not taken into account if the Settable connection (2) setting is also enabled.
- *Dissociate size* (8): Enables the 'Dissociate Formatting Page Size and Printer Paper Size' option.
- *Use setting with name* (64): Uses both the standard and non-standard access to the printer

settings.

Known cases:

* The error message 'Not supported within subreports'

Set the value to 1

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