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.

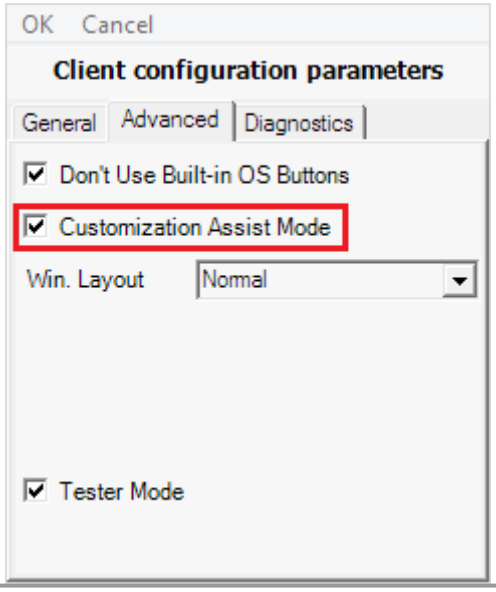
Supported customization types:

- 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

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

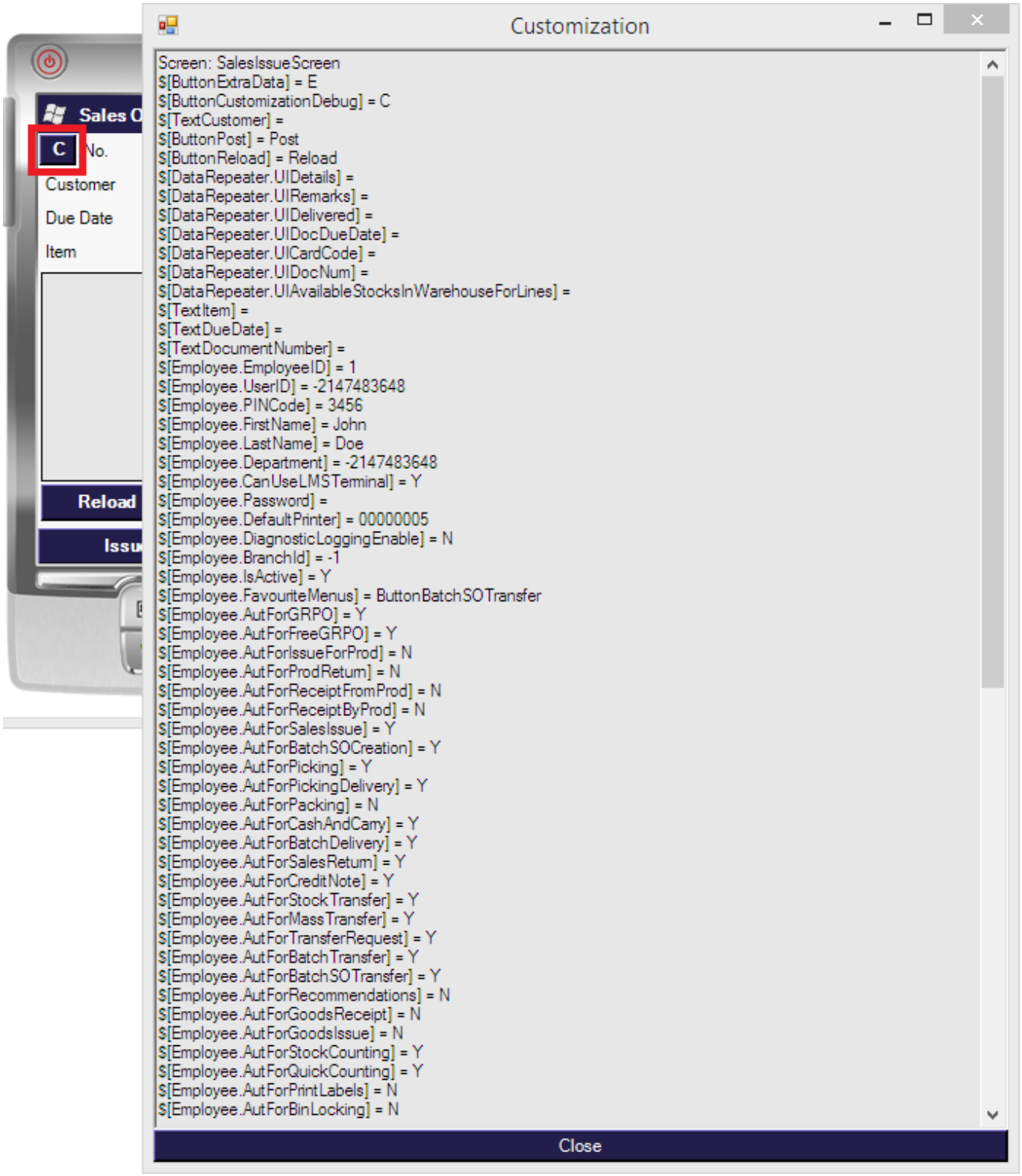
To see information regarding the customization possibilities enable the Customization Assist mode. Start the Produmex Scan Configuration application. On the ‘Advanced’ tab tick the ‘Customization Assist Mode’ checkbox to enable the Customization Assist mode.



The Customization Assist mode is only needed to see customization possibilities. It is not required to be enabled during normal operations.

After the Customization Assist Mode has been activated, run Produmex Scan. Go to the screen to be customized.

Press the **C** button on the top of the screen. The 'Customization' screen will open up.
On the Customization screen the possible parameters for customization with their current value and the customizable events are listed.



1.2. Create custom fields

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

1.2.1. Field Name

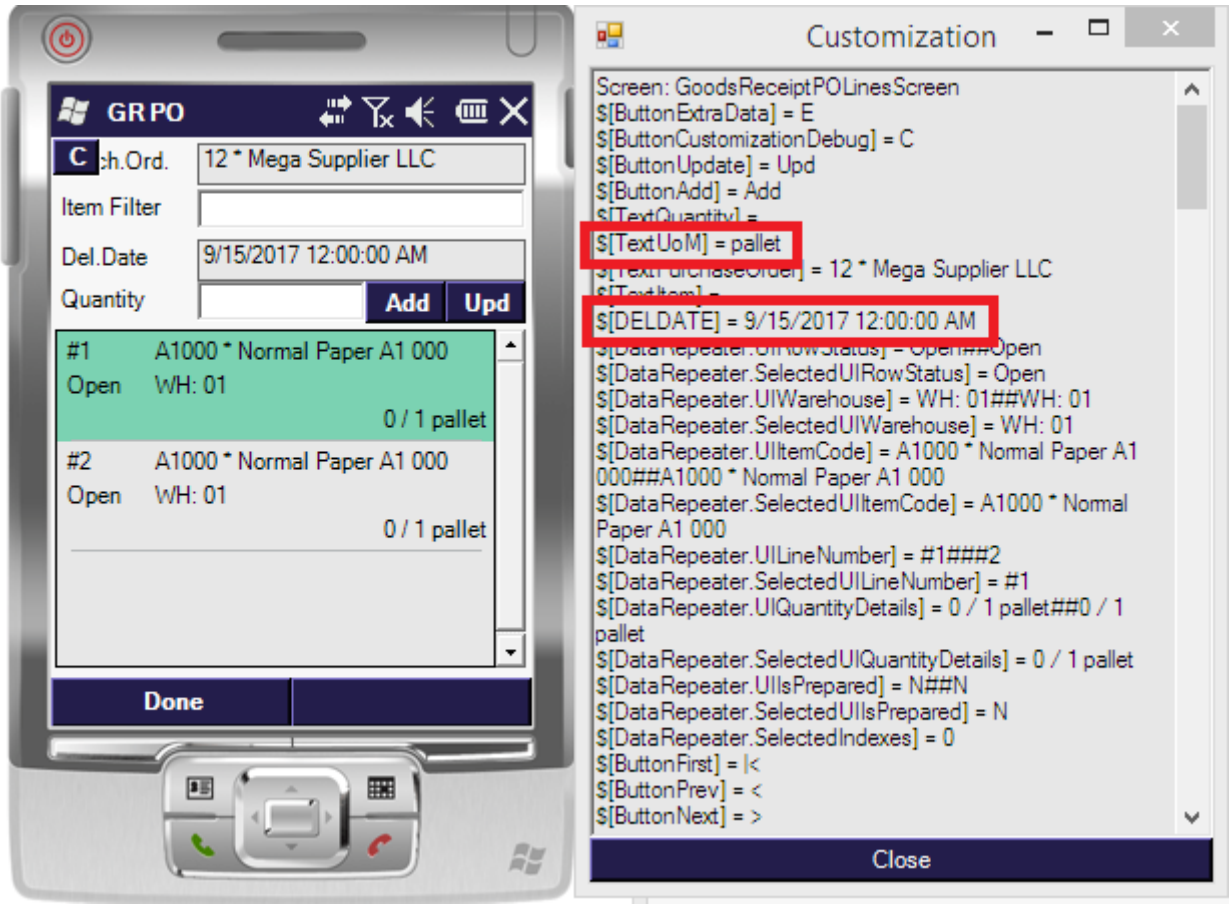
The field name will be used to identify the field on the Customization widow and in user queries. It is

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

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.

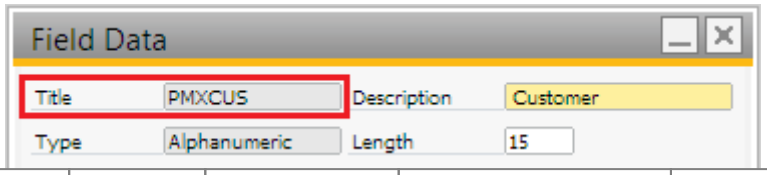
Field Name	Field Type	Label	Module	Screen	Read Only
BO_Description	String	Description	BXMobileWH9	BinAttributesScreen	No

1.2.1.2. Add SBO User Defined Field for document header

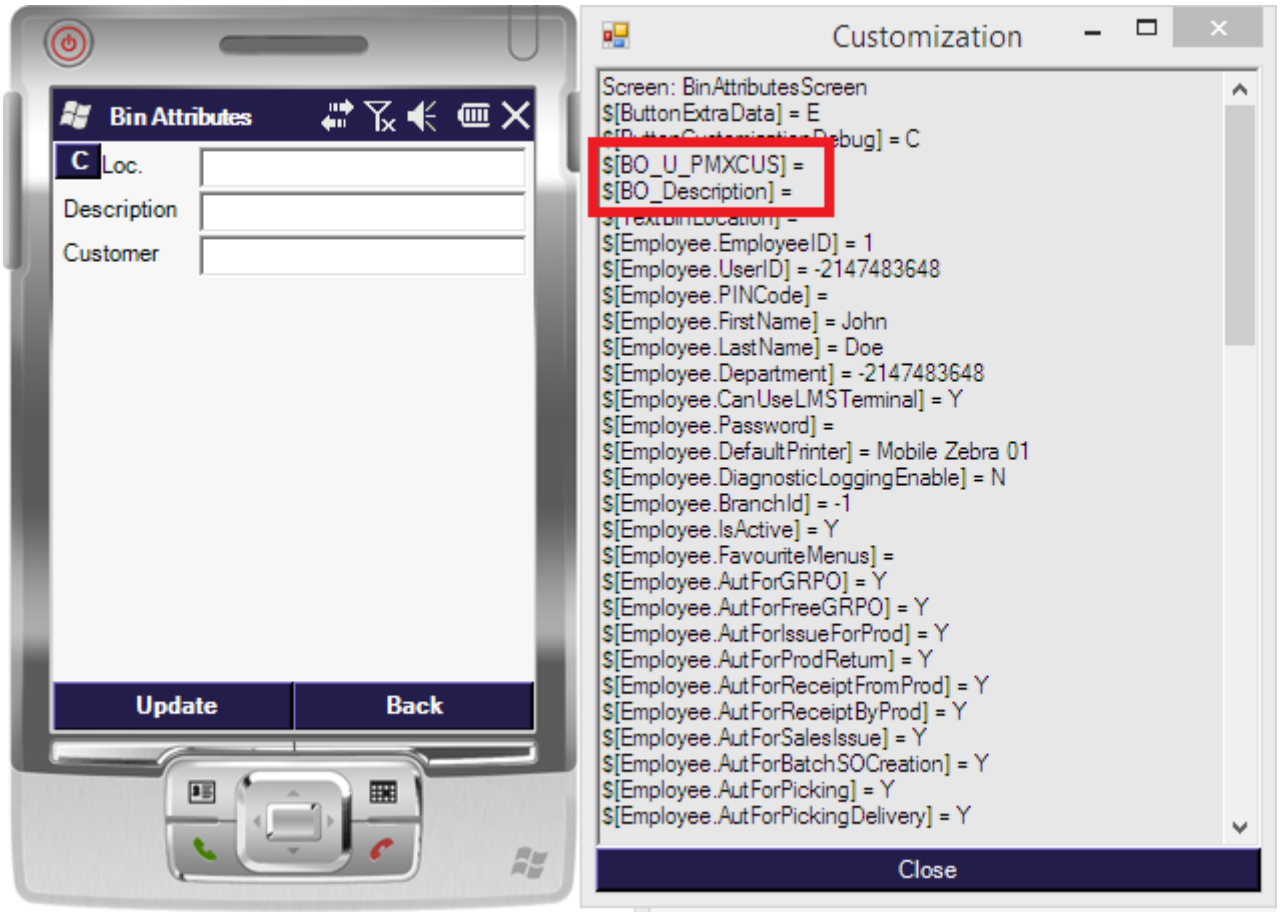
In order to add an SBO user defined field, add the field title with the BO_U_ prefix as the field name on the Customization Fields user table.

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

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 the 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 a new screen or not. If yes, a new button will appear to open the external screen.

1.2.6. Position Data

Object placement 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

1.2.7. Protected

If set to yes, the field will be displayed on the proceeding screen as well. The entered value in read-only mode.

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.

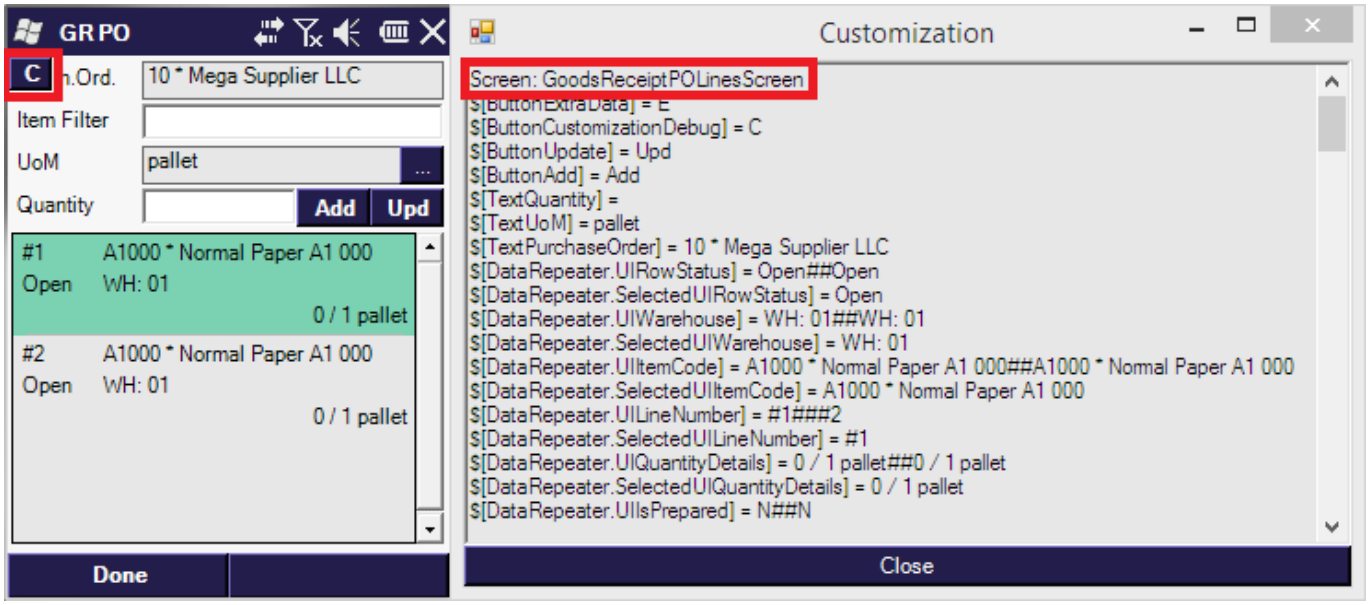
2. Customization Examples

2.1. Goods Receipt PO

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.

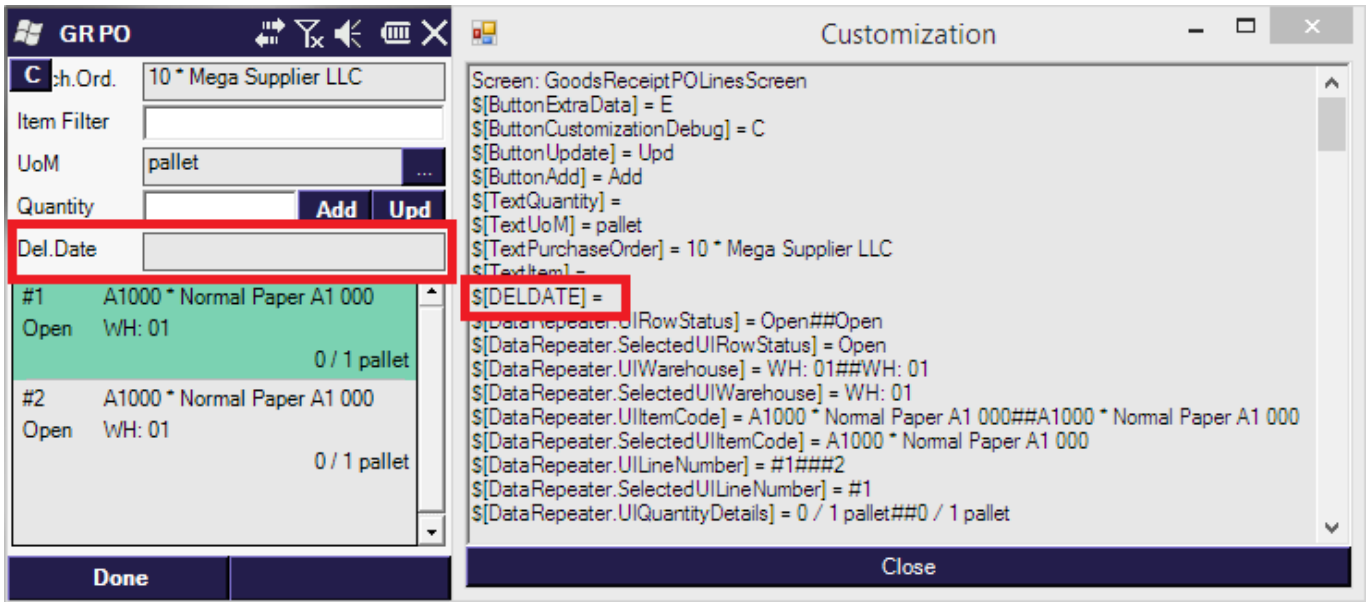
Go to GR PO Lines screen, and open Customization window. Here you can see the name of this screen: *GoodsReceiptPOLinesScreen*



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

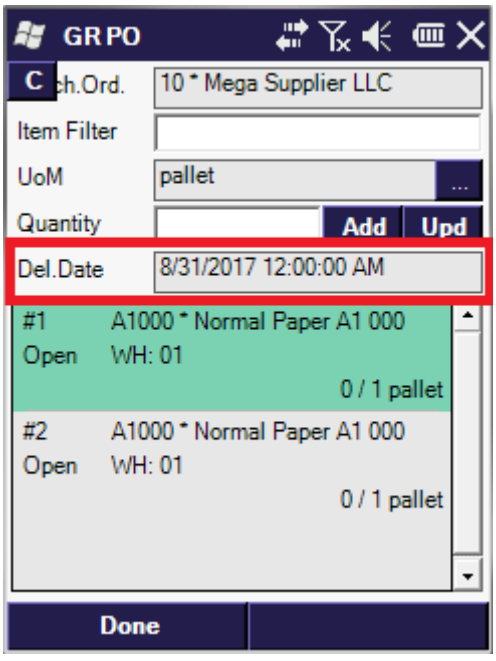
Now you are able to load data into this new field. To do it, you have to use the *BXMobileWH9_GoodsReceiptPOLinesScreen_Load* user query.



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

If 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

In the Goods Receipt PO process, the system can automatically generate batch numbers when entering the received quantities and bin locations. The batch number generation logic needs to 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

Example:
The following query will generate 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: bx_mobile_wh9_get_new_serialnumber (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 serial numbers (multiple rows possible) in a column called BXSERNUM

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

2.2. 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 [%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)

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_BXPHdCd = [%3] AND U_BXPBsDcT = 17 AND U_BXPDocTy = 15
-- 15-delivery, 17-sales order
```

```
IF @salesOrderDocEntry > 0
BEGIN
SELECT
    ExpnsCode as BO_ExpenseCode,
    LineTotal as BO_LineTotal,
    17 as BO_BaseDocType,
    @salesOrderDocEntry as BO_BaseDocEntry,
    LineNum as BO_BaseDocLine
FROM RDR3
WHERE DocEntry = @salesOrderDocEntry AND Status <> 'C'
END
declare @purchaseOrderDocEntry int
SELECT @purchaseOrderDocEntry = U_BXPBsDcE
FROM [@BXPLMSMOBTLN]
WHERE U_BXPHdCd = [%3] AND U_BXPBsDcT = 22 AND U_BXPDocTy = 20
-- 22-Purchase order, 20-Goods Receipt PO
IF @purchaseOrderDocEntry > 0
BEGIN
SELECT
    ExpnsCode as BO_ExpenseCode,
    LineTotal as BO_LineTotal,
    22 as BO_BaseDocType,
    @purchaseOrderDocEntry as BO_BaseDocEntry,
    LineNum as BO_BaseDocLine
FROM POR3
WHERE DocEntry = @purchaseOrderDocEntry AND Status <> 'C'
END
```

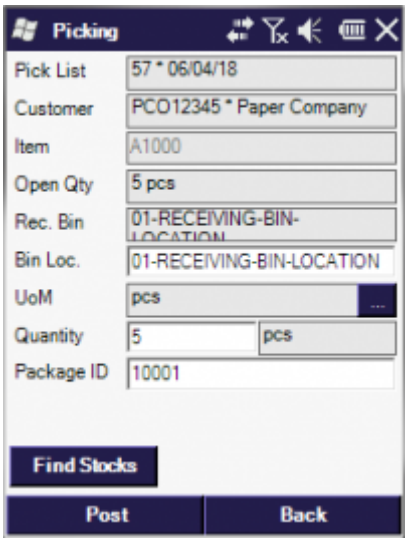
This example user query looks at the Mobile Transaction (lines) table, filters for Base Document Type = Sales Order, finds the base Sales Order Document DocEntry. It then retrieves the freight expense records related to the Sales Order (from table RDR3), and extracts Expense Code and Line Total, so it 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.

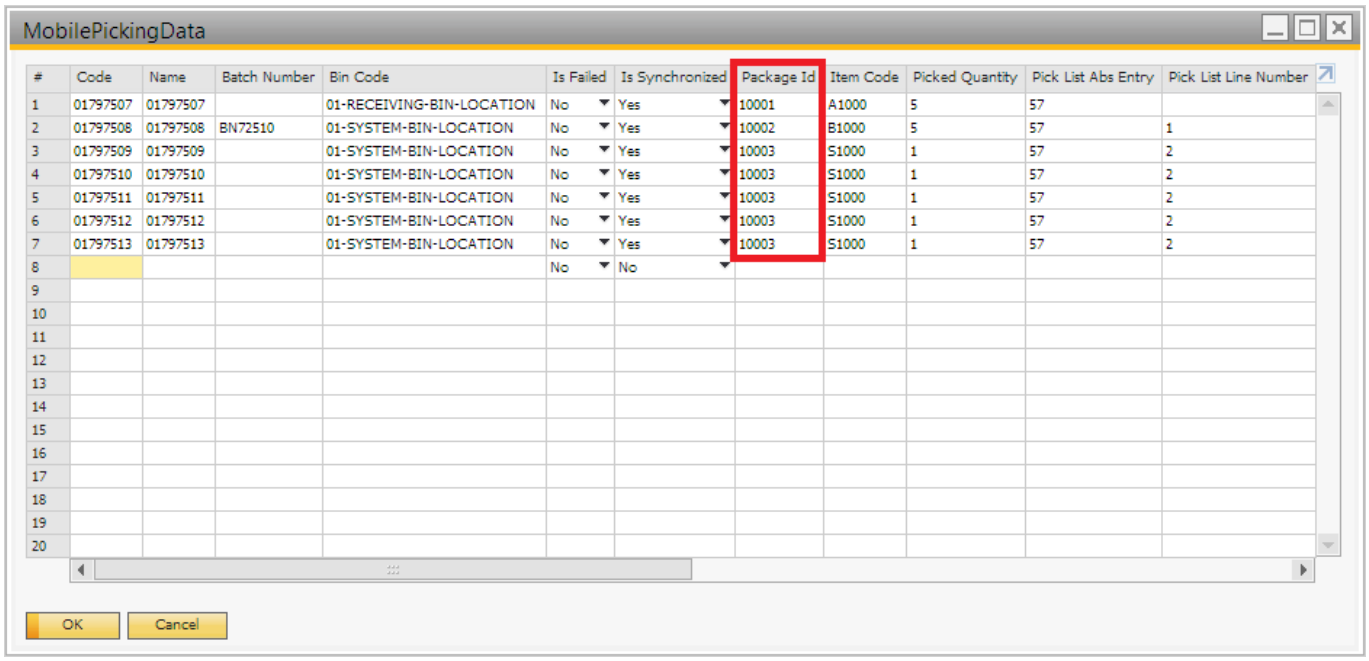
Example:

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



The 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.



#	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											
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16											
17											
18											
19											
20											

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

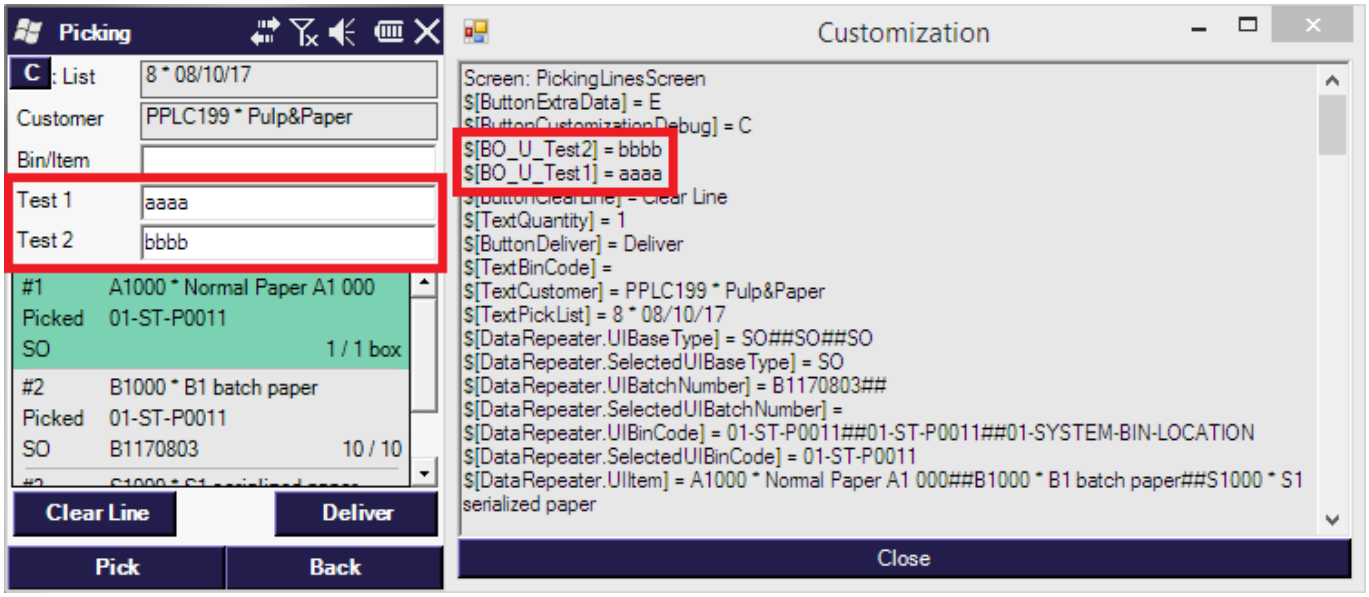
Pick List screen.
To set a field, you have to add a customization field to the Pick List Lines screen. The customization field name must be:

- **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



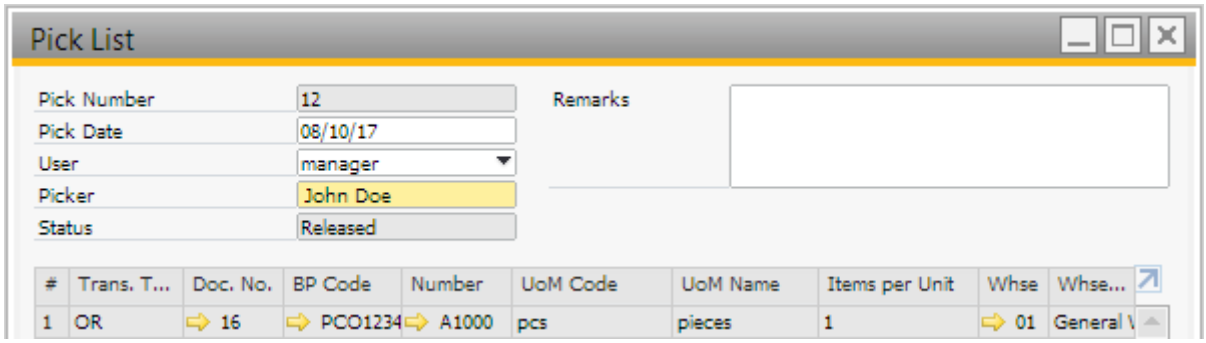
When pressing the Delivery button on the Pick List lines screen, these field values will be used in the newly created Delivery Document.

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]
```

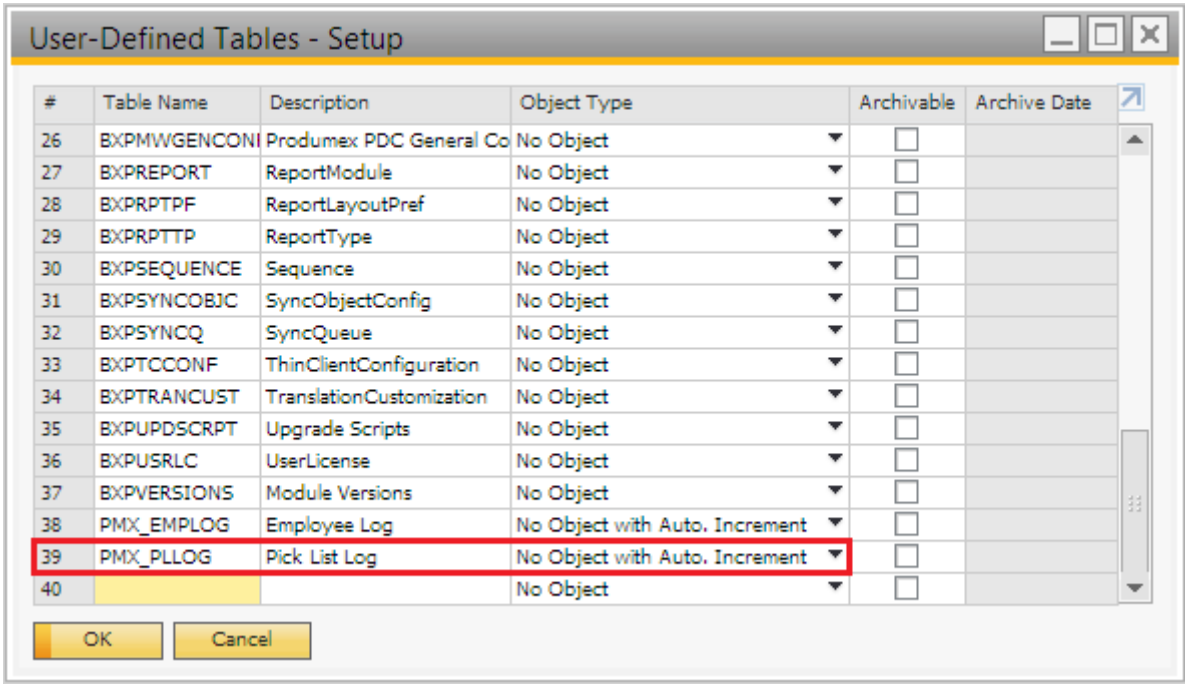
2.3.5. Capture pick list selection events into a separate table

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

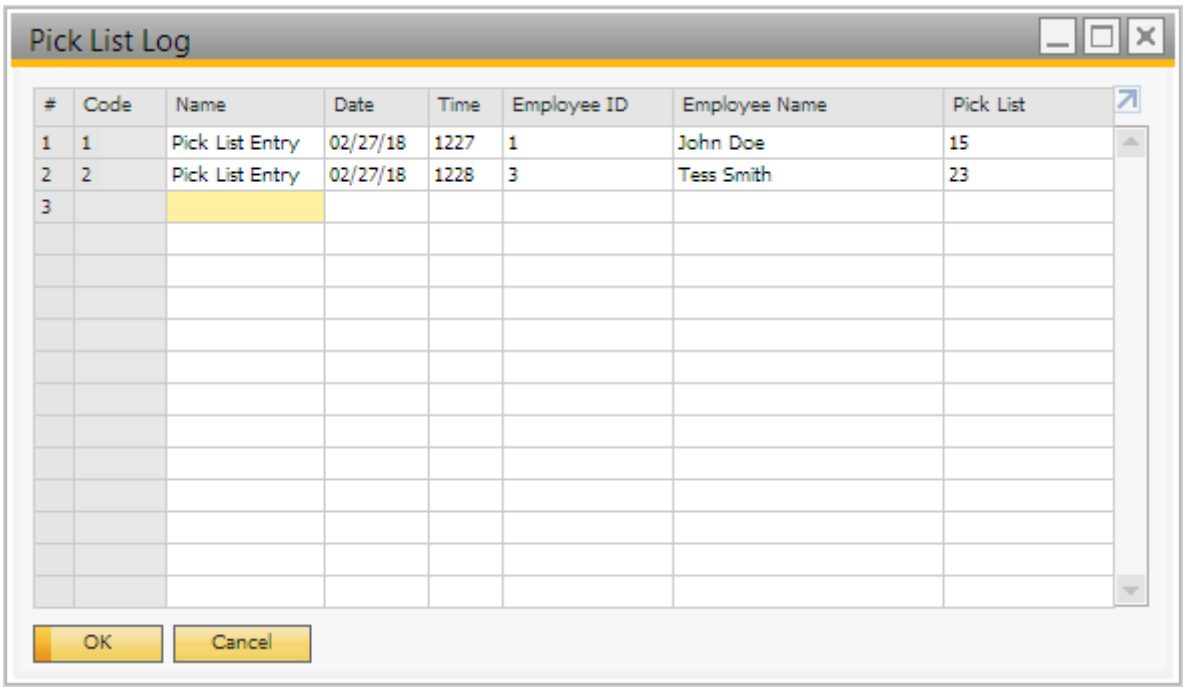
```
INSERT INTO "@PMX_PLLOG" ("Name", "U_Date", "U_Time", "U_EmpID",
```

```
"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, OBIN.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 OBIN ON (OBIN.AbsEntry = OIBQ.BinAbs)
JOIN OITM ON (OITM.ItemCode = OIBQ.ItemCode)
WHERE (OIBQ.ItemCode = $[ItemCode] OR $[ItemCode] = '')
    AND (OIBQ.WhsCode = $[Warehouse] OR $[Warehouse] = '')
    AND (OBIN.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 *BN Create SO* function)	17
Goods Receipt PO	20

The controlling logic must be defined with a user query.

UserQuery: bx_mobile_wh9_document_creation_type (Category: BXMobileWH9)	
Parameters [%1]: employee ID (int) [%2]: terminal ID (nvarchar) [%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:

```
SELECT CASE T0.[U_BXPDocTy]
WHEN 20 THEN 1
ELSE 0 END as 'BXDOCTYP'
FROM [dbo].[@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

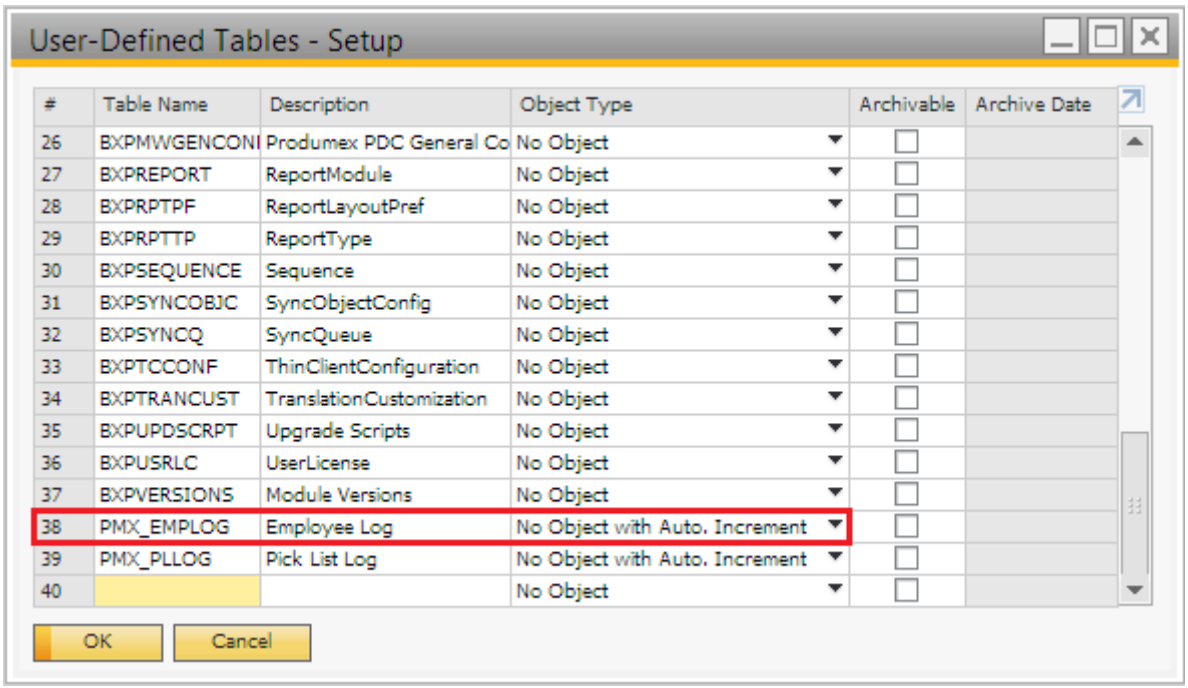
2.5.3.Capture login events into a separate table

In 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

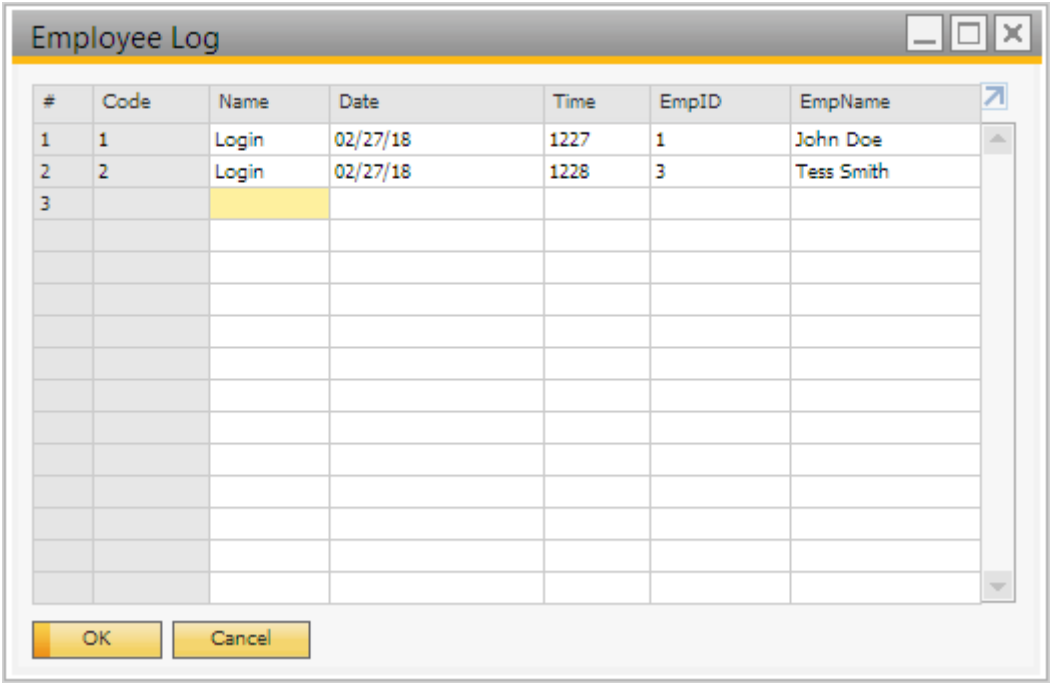
```
INSERT INTO "@PMX_EMPLOG" ("Name", "U_Date", "U_Time", "U_EmpID",
"U_EmpName")
values ('Login', cast(getdate() as date),
cast(substring(CONVERT(VARCHAR,GETDATE(),108),1,2) * 100 +
```

```
substring(CONVERT(VARCHAR,GETDATE(),108),4,2) as int), $[TextUser],
$[TextUserName])
```

HANA

```
INSERT INTO "@PMX_EMPLOG" ("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.



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, OBIN.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 OBIN ON (OBIN.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 $[DocEntry]	**Query fields** LineNum, BinCode

2.6.1.4. Sales issue

User query: bx_mobile_wh9_salesissue_query_custom	
Parameters $[DocNum], $[CardCode], $[DueDate], $[ItemCode], $[EmployeeNo]	**Query fields** DocEntry, ObjType

2.6.1.5. Goods Receipt PO

User query: bx_mobile_wh9_goodsreceiptpo_query_custom	
Parameters $[DocNum], $[CardCode], $[DueDate], $[ItemCode], $[EmployeeNo]	**Query fields** DocEntry, ObjType (optional, Orders: 17 (default))

2.6.1.6. Stock Transfer Request

User query: bx_mobile_wh9_stocktransferrequest_query_custom	
Parameters $[DocNum] $[WarehouseFrom] $[WarehouseTo]	**Query fields** DocEntry

2.6.1.7. Stock Transfer Request Lines

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

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.

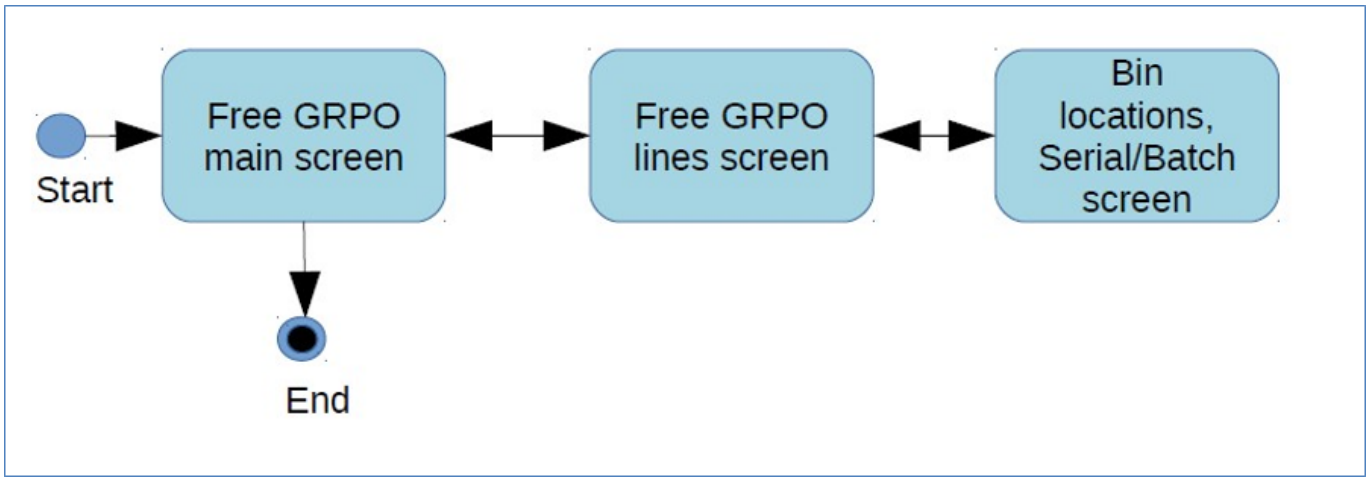
```
SELECT 'Information' as 'Message$', 'I' as 'MessageType$'
```

See the supported message types here: Supported message types

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.

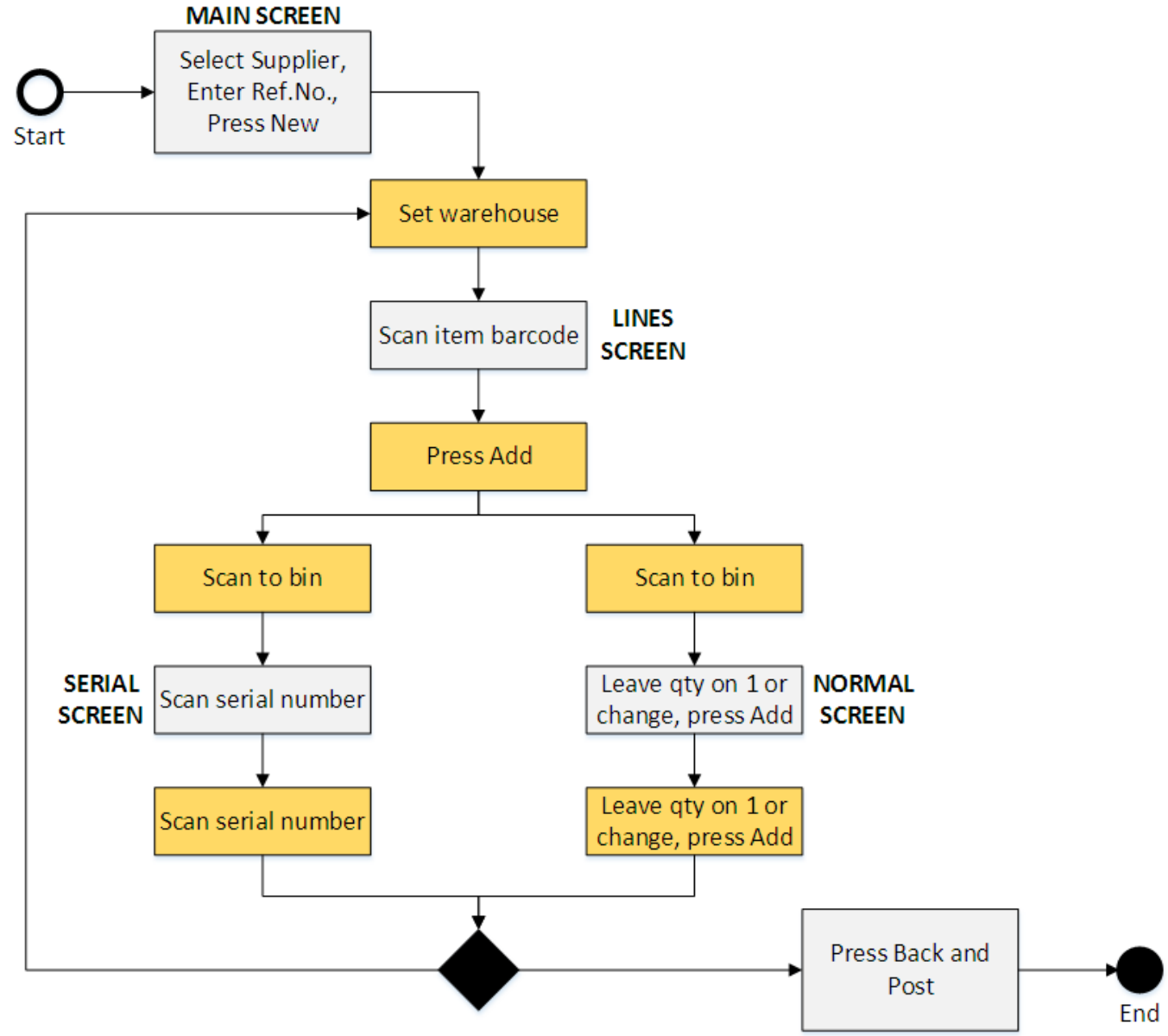
In standard Produmex Scan, these screens are optimized for receiving items sequentially, that is, start receiving ITEM1, enter to location, quantities or serial numbers, then start receiving ITEM2, enter location, quantities or serial numbers. This is a good solution in many cases when there are a couple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

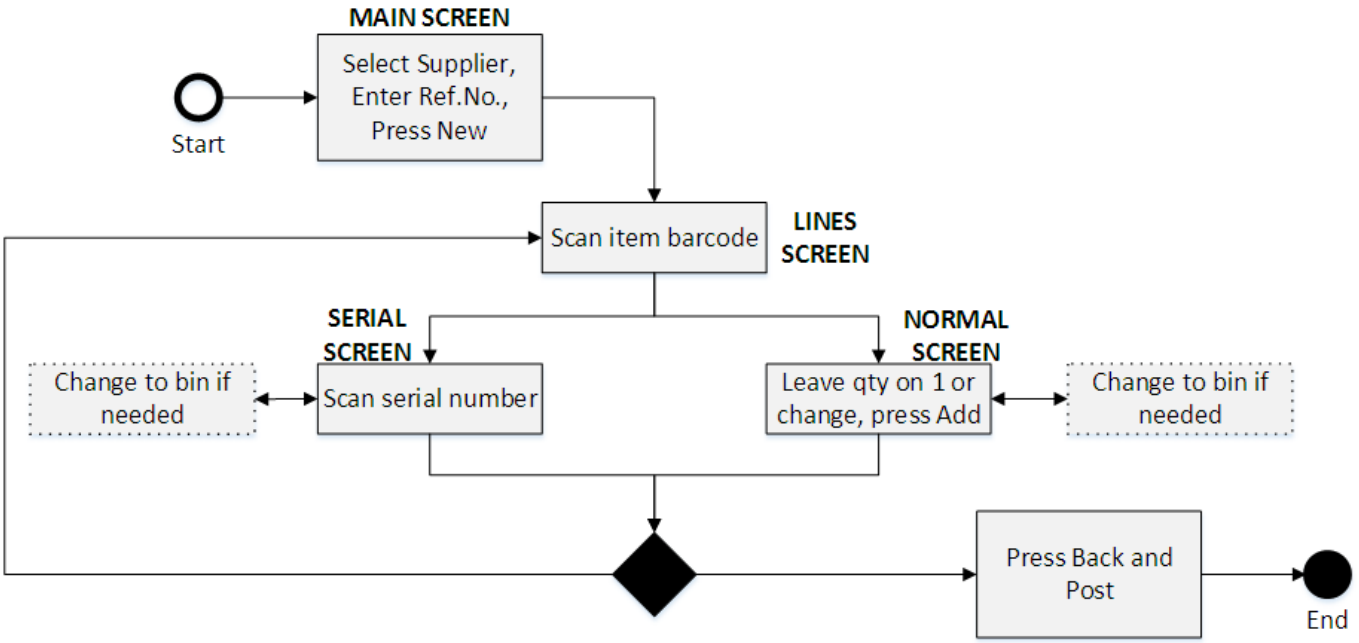
During receipt, the items are moved to a temporary bin location, which is an empty pallet labelled with a bin code. When a pallet is full the warehouse worker can change the bin location to the next temporary bin location, the next pallet's location. In a later step, these pallets are moved to shelves 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

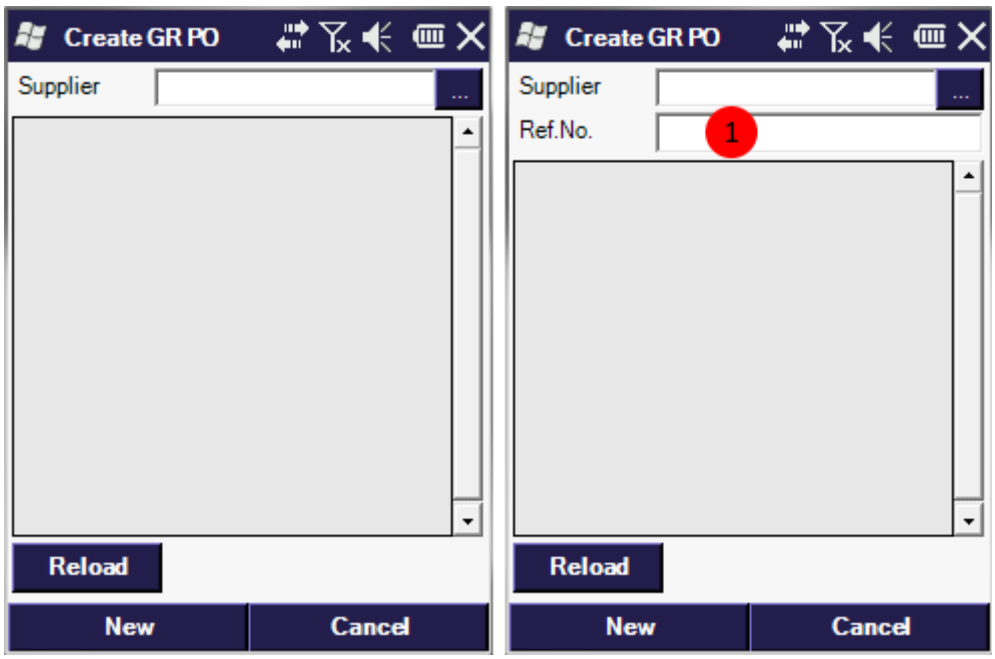
Below you can see the original process for receiving.
The extra steps that this micro-vertical solution eliminates have been colored.
If we look at just the main action (from Set warehouse to just before Finish), receiving 10 serial items takes 10 x 5 = 50 actions this way. It needs 3 bar code scans (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 x 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

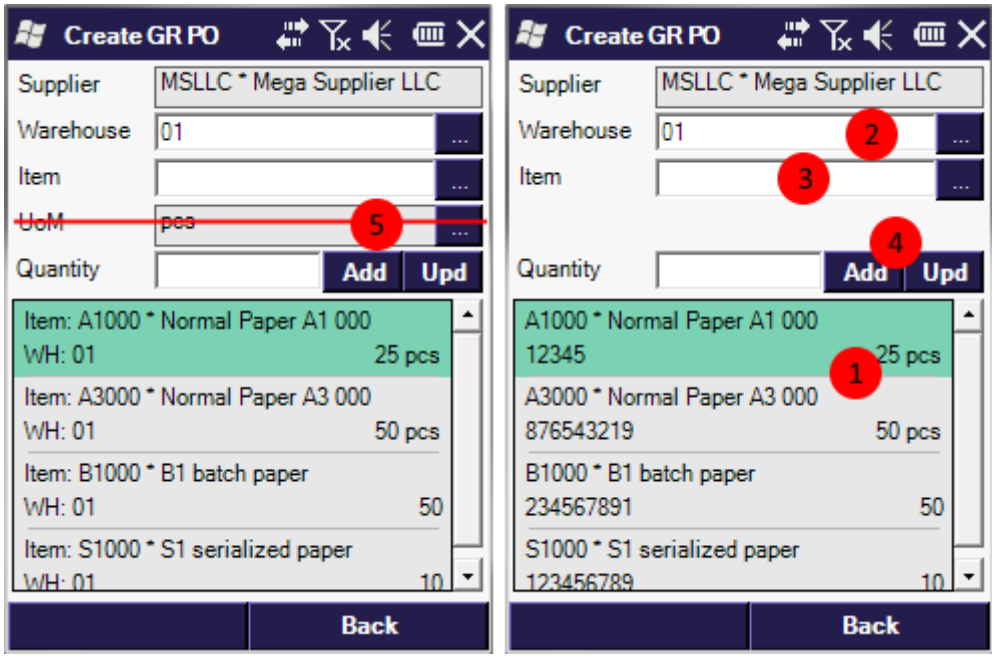


Changes:

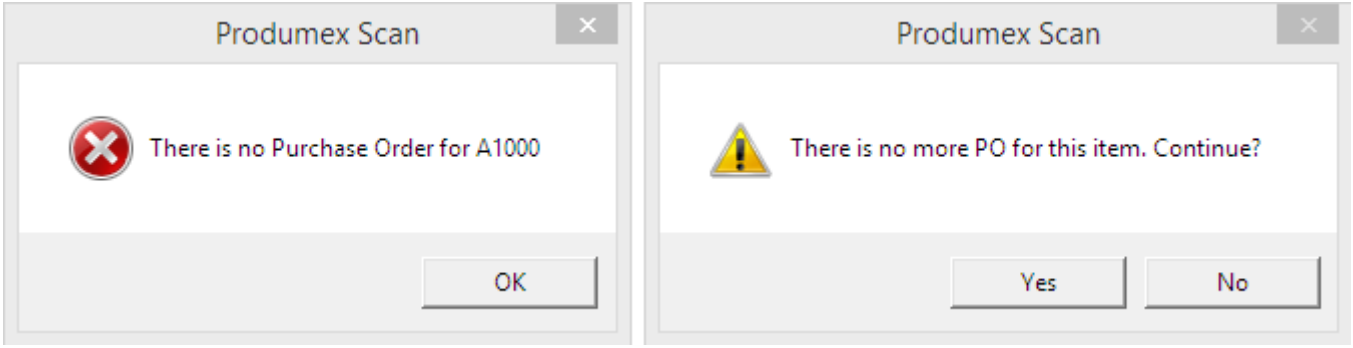
1. Added Ref. No. field which will be copied to the new Delivery document. The user queries and custom fields for the above custom logic:

Field Name	Label	Screen
BO_NumAtCard	Ref.No.	CreateGoodsReceiptPOScreen

3.1.3. Item Lines Screen



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 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*

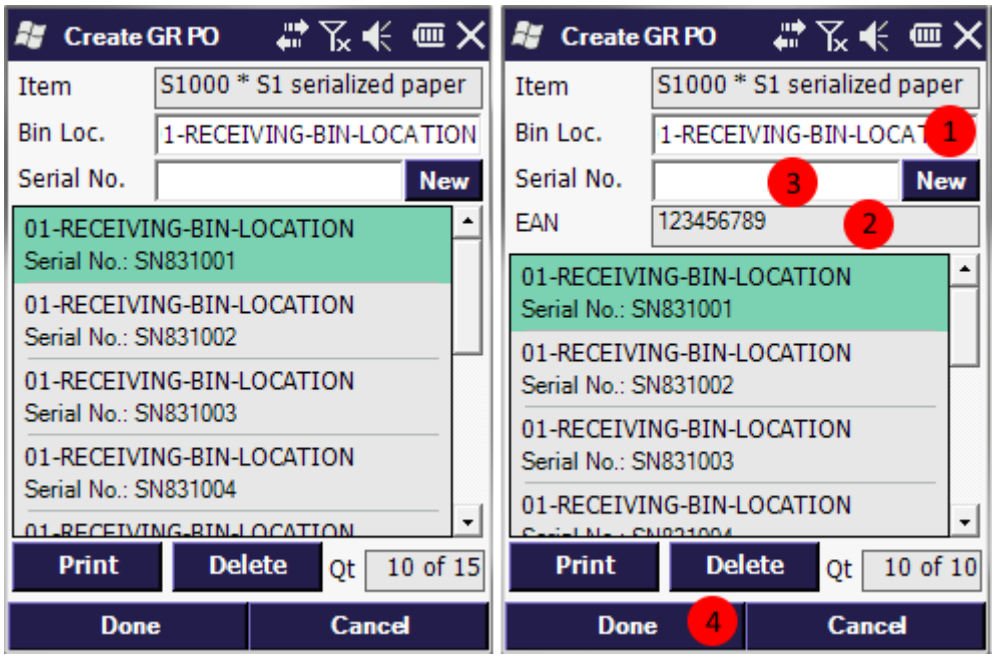
```
-- When add button is pressed check if there is open quantity
-- for that item in Purchase Orders
DECLARE @itemcode nvarchar(MAX)
SET @itemcode = $[TextItem]
```

```
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.
UIQuantity]) 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'
```

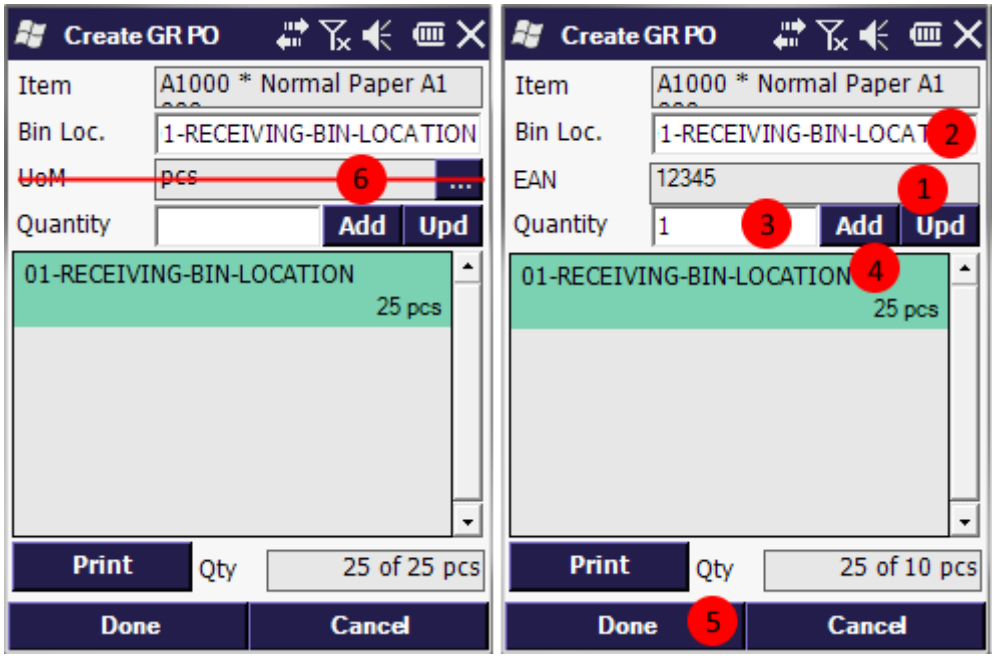
2.
To show the new EAN field on the screen, add a record to the Customization Fields(BXPCUSTFD) user table:

FieldName	Label	ReadOnly	Screen
EanCode	EAN	YES	CreateGoodsReceiptPOQuantitiesSerialScreen

3., 4.
User query: *BXMoblieWH9_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



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
```

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: BXMobileWH9_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: BXMobileWH9_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: BXMobileWH9_GoodsReceiptPOLinesScreen_Activate

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

Change contents of the list, show bar code instead of WH text
Query name: BXMobileWH9_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: BXMobileWH9_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: BXMobileWH9_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: BXMobileWH9_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: BXMobileWH9_GoodsReceiptPOQuantitiesSerialScreen_TextSerial_validate_after

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

4.1.1.3. Goods Receipt PO Quantities Normal Screen

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 Bin Location (ToBL)

Save the Bin Location value for next time
Query name: BXMobileWH9_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: BXMobileWH9_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: BXMobileWH9_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: BXMobileWH9_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: BXMobileWH9_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: BXMobileWH9_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. TransferStocksQuantitiesSerialScreen

Add 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: BXMobileWH9_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: BXMobileWH9_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: BXMobileWH9_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: BXMobileWH9_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: BXMobileWH9_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: BXMobileWH9_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: BXMobileWH9_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: BXMobileWH9_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:

BXMobileWH9_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: BXMobileWH9_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: BXMobileWH9_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: BXMobileWH9_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: BXMobileWH9_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: BXMobileWH9_PickingLinesScreen_DataRepeater_InternalDataLoad

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

Focus on bin code field
Query name: BXMobileWH9_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: BXMobileWH9_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: BXMobileWH9_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: BXMobileWH9_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: BXMobileWH9_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
```

5. Strategies in Produmex Scan

Produmex Scan supports automatic strategies, which are recommendations for select warehouse workers to do stock movements. In practice this can mean that when new goods arrive, the truck is unloaded into a loading area, bin location, and after that, the automatic recommendations instruct the warehouse workers where to move the unloaded stocks.

Replenishment or refilling recommendations can be used to make sure that the frequently used, easily reachable bin locations always have adequate and enough stock, and if not, then stock movements are recommended.

Produmex Scan (server) creates the recommendations as Stock Transfer Draft documents, which can be processed on the mobile device and the result is a created *Stock Transfer* document.

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 will create *Stock Transfer - Draft* documents if moving stock is needed.

5.1.1. Configuration

Settings

Configure the following setting on the Produmex Scan Strategies tab.

Incoming strategies UQ name (default: bxmobilewh9_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:

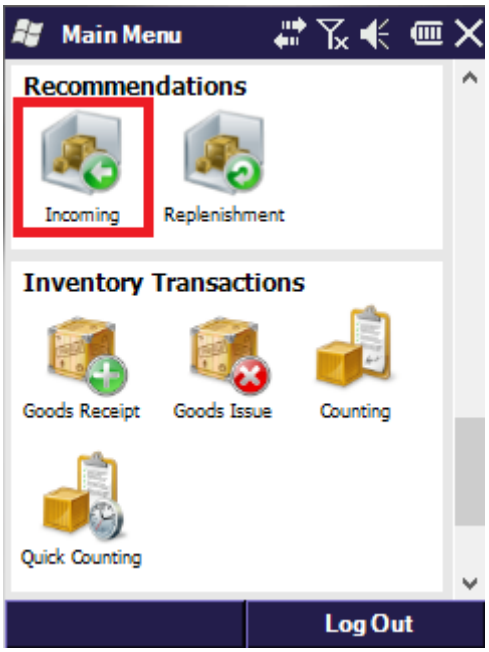
- ItemCode
- BatchNumber (only applicable for batch items, otherwise leave empty)
- SerialNumber (only applicable for serial items, otherwise leave empty)
- Quantity (in inventory UoM)
- SourceBin (where to move from)
- DestinationBin (where to move to)
- GroupID
- Remarks

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.

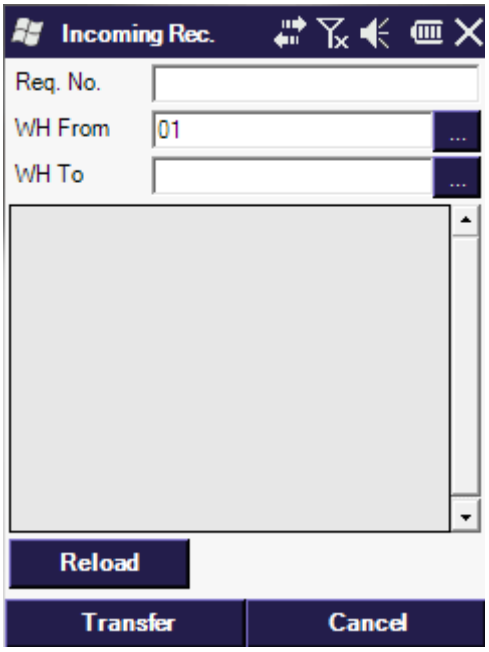
5.1.2. Logging, monitoring

Mobile interface

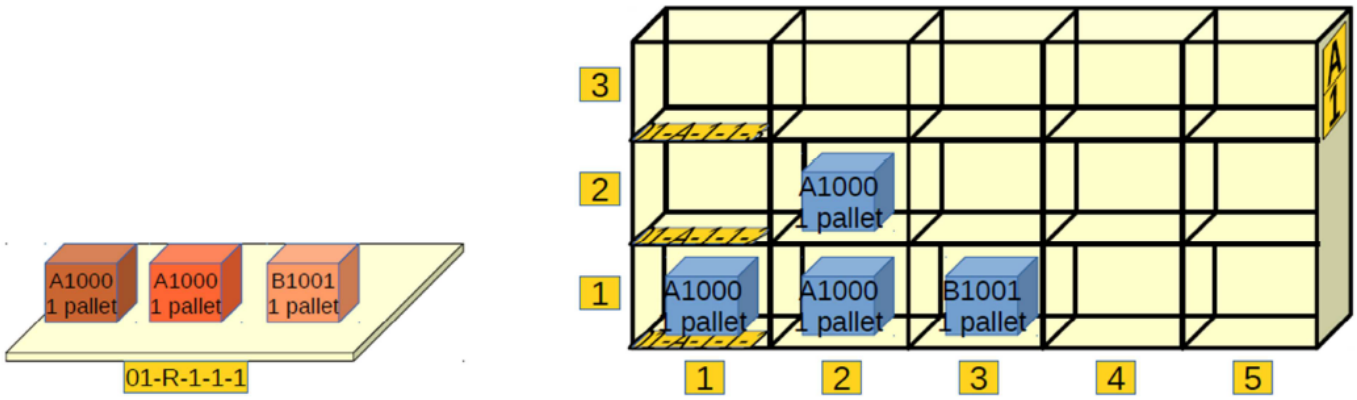
Incoming strategy recommendation results transfers can be accessed from the Produmex Scan main menu, with the 'Incoming Recommendations' icon.



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.

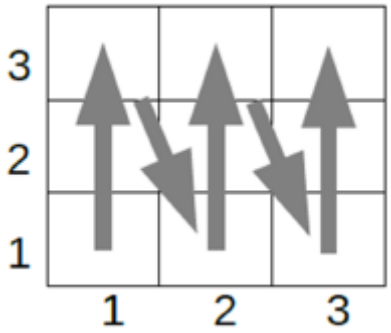


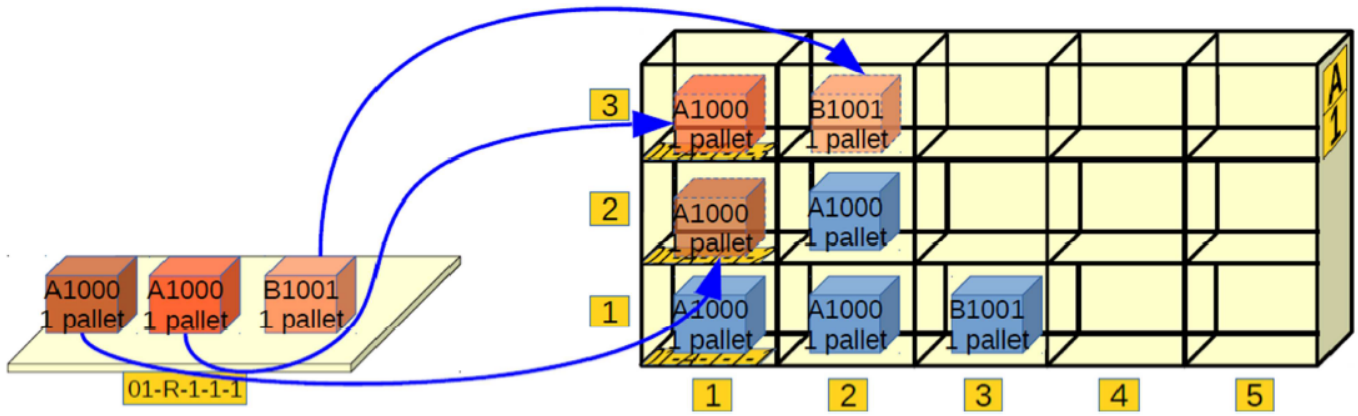
Example incoming strategy



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)*

Item	Batch	From bin	To bin	Quantity
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 Startegy

5.2.1. Configuration

Settings

Configure the following setting on the Produmex Scan Strategies tab.

Replenishment strategies UQ name (default: bxmobilewh9_strategy_replenishment)
Replenishment strategies frequency (default: 300 seconds = 5 minutes)

Query input, output

By default, the user query must be named 'bxmobilewh9_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)
- SourceBin (where to move from)
- DestinationBin (where to move to)
- GroupID
- Remarks

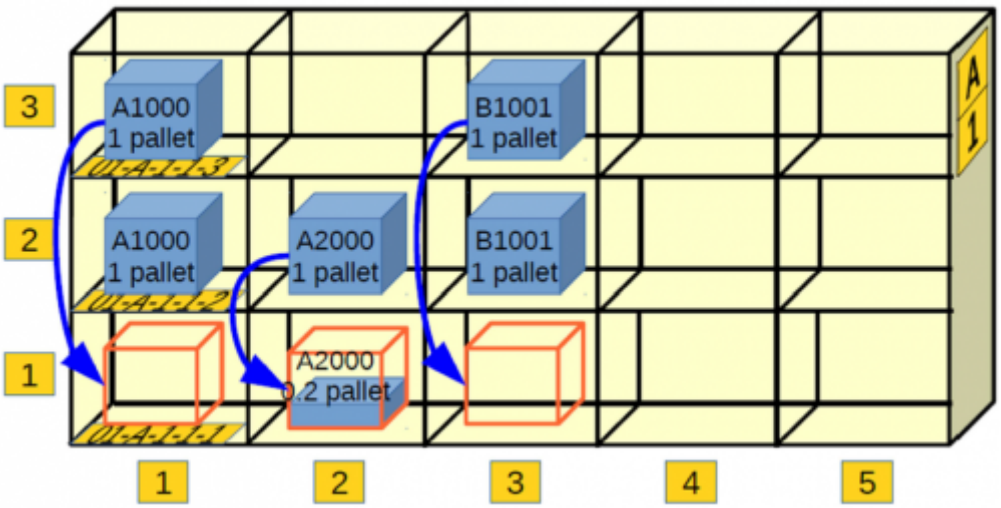
The GroupID result column can be used to group created output documents: for each different groupID, a different Stock Transfer Draft document will be created.

5.2.2. Logging, monitoring

Mobile interface

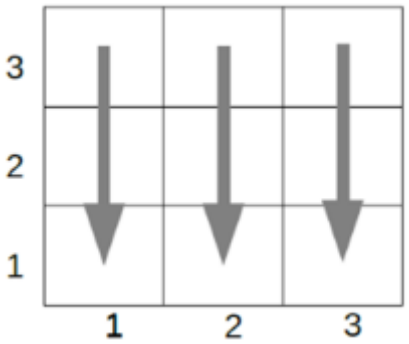
See the section 'Incoming Strategy – Mobile interface'. The work flow is the same, but you have to select the 'Replenishment recommendations' icon on the main screen.

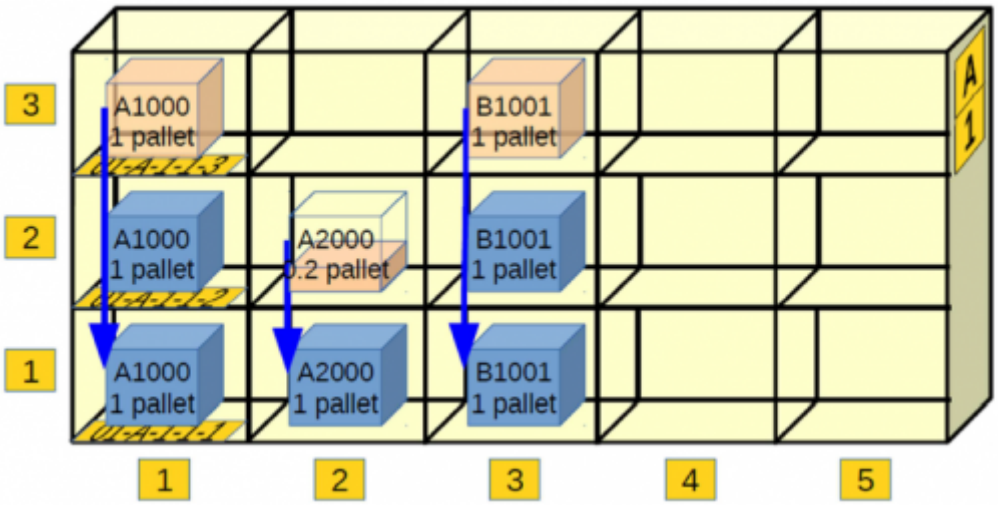
Example replenishment strategy



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. 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.

5.1.1. Example Incoming Strategy SQL

```
DECLARE @RecBinLocation nvarchar(MAX)
DECLARE @OutLocationFilter nvarchar(MAX)
DECLARE @ItemCode nvarchar(MAX)
DECLARE @Quantity DECIMAL
DECLARE @SourceBin nvarchar(MAX)
DECLARE @DestinationBin nvarchar(MAX)
DECLARE @PurchaseUomQuantity nvarchar(MAX)
DECLARE @QuantityPartial DECIMAL
DECLARE @ExcludeBinList nvarchar(MAX)
DECLARE @QuantityAlready nvarchar(MAX)
SET @RecBinLocation = '01-Q'
SET @OutLocationFilter = '01-F-%'
SET @ExcludeBinList = ''
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 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'
OPEN curs
FETCH NEXT FROM curs INTO @ItemCode, @Quantity, @SourceBin
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
SET @QuantityAlready = NULL
SELECT @QuantityAlready = SUM(FromQuantity)
FROM XXX_INVTRANSFER_DRAFT_LINESBIN
WHERE ItemCode = @ItemCode AND FromBin = @SourceBin
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
SET @DestinationBin = NULL
SELECT TOP 1 @DestinationBin = BinCode
FROM OBIN LEFT OUTER JOIN OIBQ ON (OBIN.AbsEntry = OIBQ.AbsEntry)
WHERE OBIN.BinCode LIKE @OutLocationFilter
AND charindex(OBIN.BinCode, @ExcludeBinList) <= 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

-- if no more places, DestinationBin will be empty
INSERT INTO @RESULT (ItemCode, Quantity, SourceBin, DestinationBin)
VALUES (@ItemCode, @QuantityPartial, @SourceBin, @DestinationBin)
SET @Quantity = @Quantity - @QuantityPartial
SET @ExcludeBinList = @ExcludeBinList + ' ' + @DestinationBin
END
FETCH NEXT FROM curs INTO @ItemCode, @Quantity, @SourceBin
END
CLOSE curs
DEALLOCATE curs
```

```
SELECT * FROM @RESULT
```

5.3.1.2. Example Incoming Strategy HANA

```
DROP PROCEDURE BXINCOMINGSTRATEGY;

CREATE PROCEDURE BXINCOMINGSTRATEGY (
)
LANGUAGE SQLSCRIPT
AS
BEGIN
    DECLARE RecBinLocation NVARCHAR(200);
    DECLARE OutLocationFilter NVARCHAR(200);
    DECLARE ItemCode NVARCHAR(200);
    DECLARE Quantity DECIMAL(21,6);
    DECLARE SourceBin NVARCHAR(200);
    DECLARE DestinationBin 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";
        SourceBin := 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" = SourceBin;

        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;

            DestinationBin := NULL;

            SELECT TOP 1 "BinCode" into DestinationBin
                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, SourceBin, DestinationBin, '', '');

            Quantity := Quantity - QuantityPartial;
```

```
            ExcludeBinList := ExcludeBinList || ' ' || DestinationBin;
        END WHILE;
    END FOR;

    SELECT * FROM #result;
    DROP TABLE #result;
END;


call "BXINCOMINGSTRATEGY"()
```

5.3.2. Helper view

```
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
```

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 ⇐ 50% of pallet quantity, look for upper locations. Also consider Inventory Transfer Draft documents aleady recorded. Recommend moving quantities from upper locations until floor quantity reaches 100% of pallet quantity if possible.

5.3.2.1. Example Replenishment Strategy 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, SourceBin, DestinationBin)
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
```

6. Manipulating DataRepeater (List)

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"
```

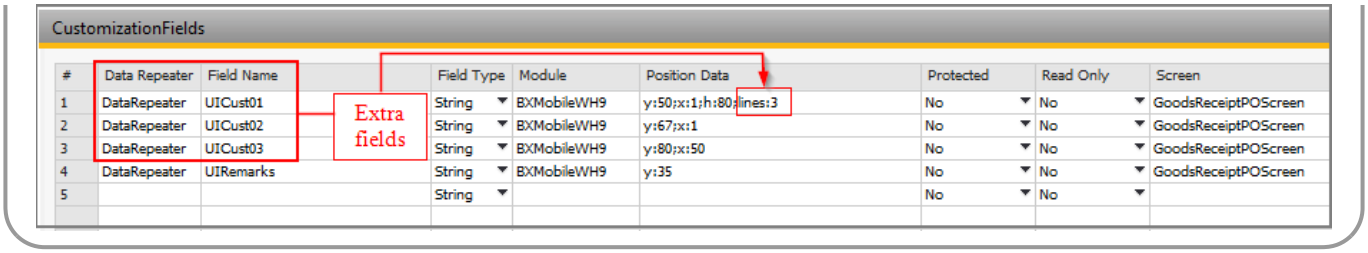
6.3. Adding extra lines to screens

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.



#	Data Repeater	Field Name	Field Type	Module	Position Data	Protected	Read Only	Screen
1	DataRepeater	UICust01	String	BXMobileWH9	y:50;x:1;h:80;lines:3	No	No	GoodsReceiptPOScreen
2	DataRepeater	UICust02	String	BXMobileWH9	y:67;x:1	No	No	GoodsReceiptPOScreen
3	DataRepeater	UICust03	String	BXMobileWH9	y:80;x:50	No	No	GoodsReceiptPOScreen
4	DataRepeater	UIRemarks	String	BXMobileWH9	y:35	No	No	GoodsReceiptPOScreen
5			String			No	No	

2. We run the necessary query.

Query name: *BXMobileWH9_GoodsReceiptPOScreen_DataRepeater_InternalDataLoad*

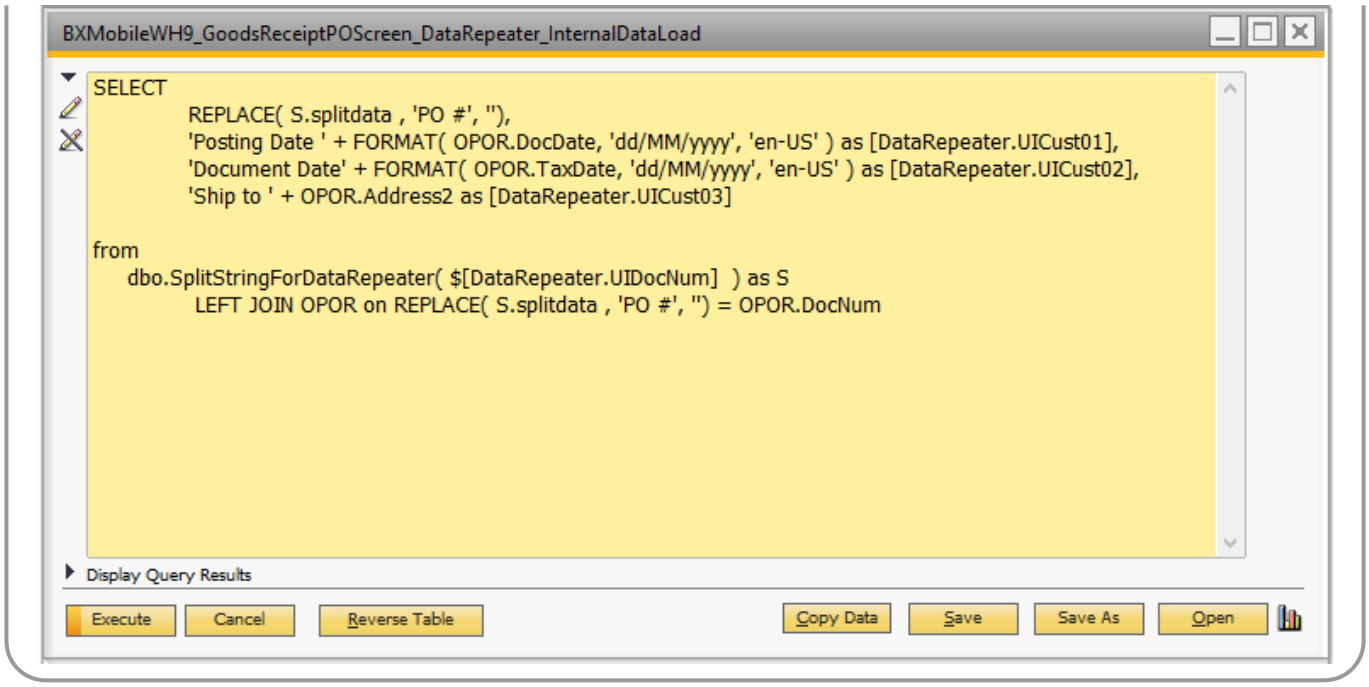
SQL

```
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
```

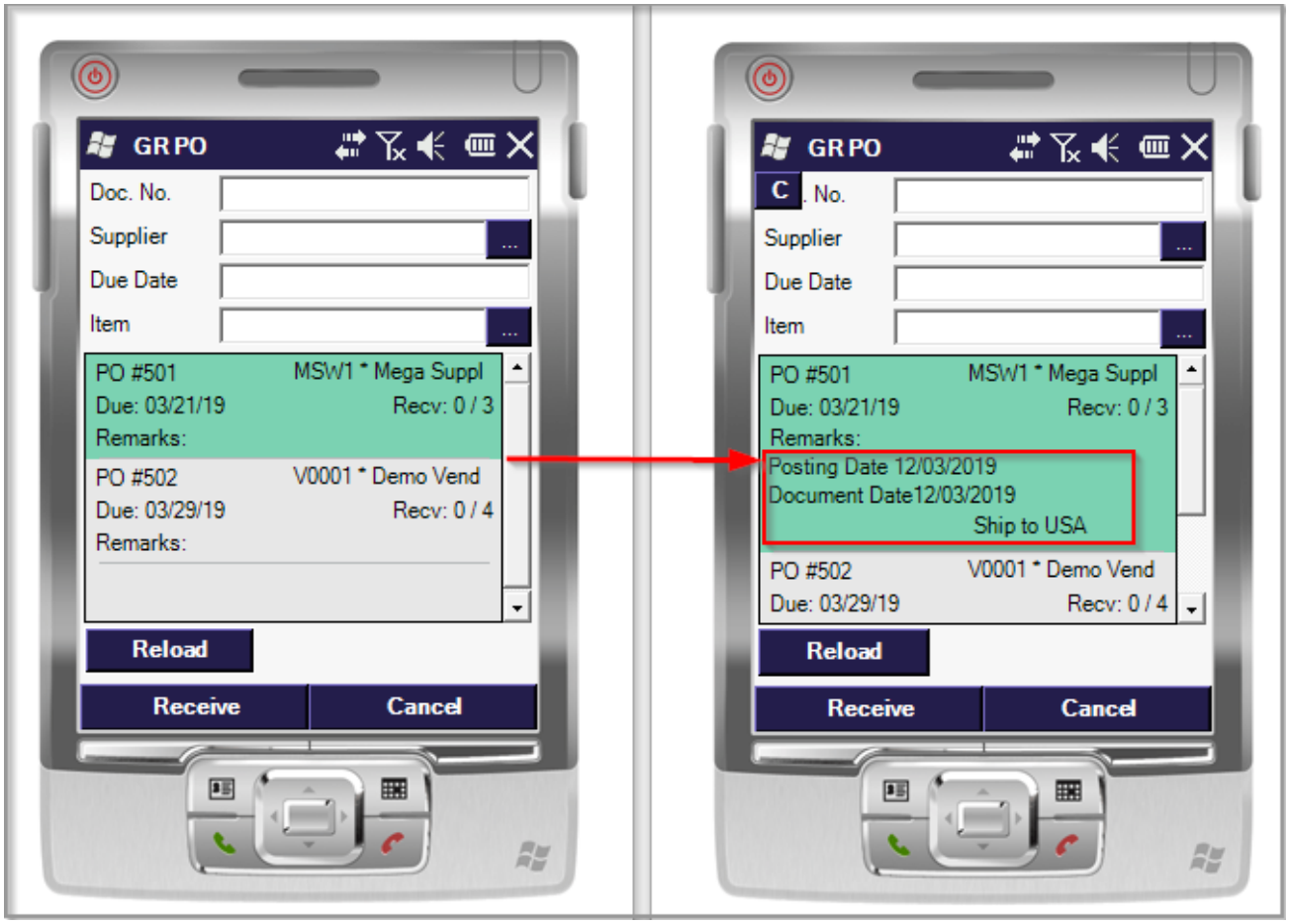
HANA

```
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:



7. Custom printing

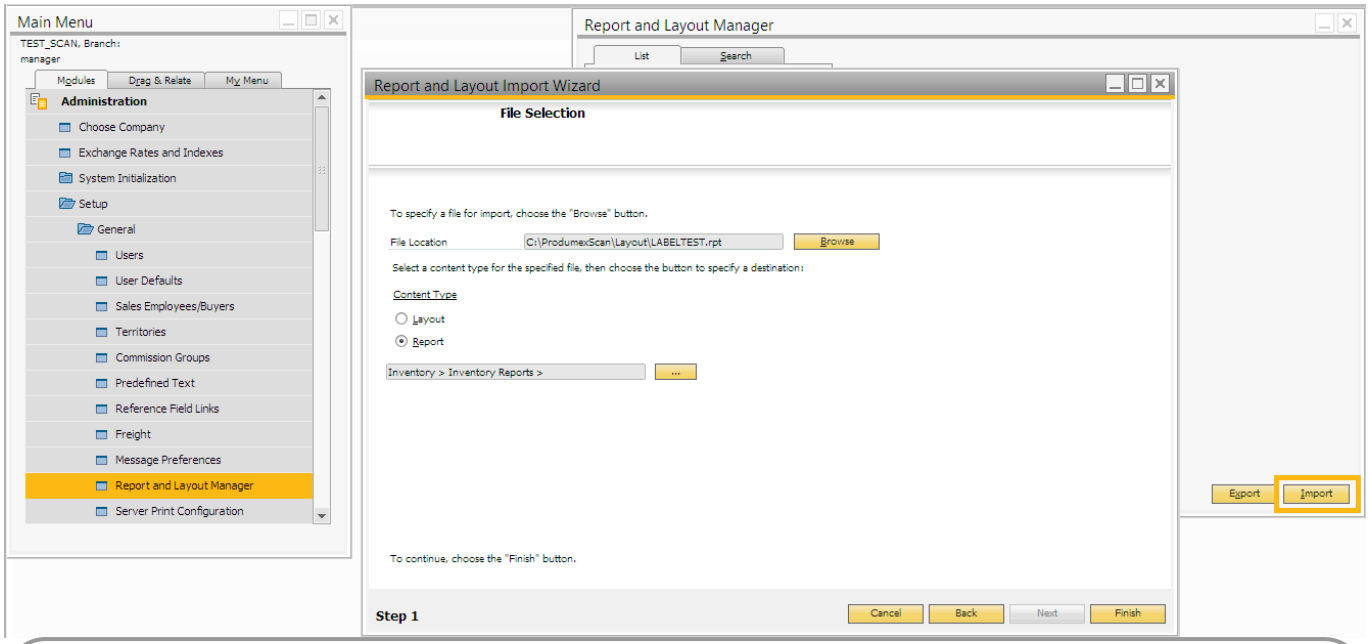
7.1. Custom Layout Printing

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:

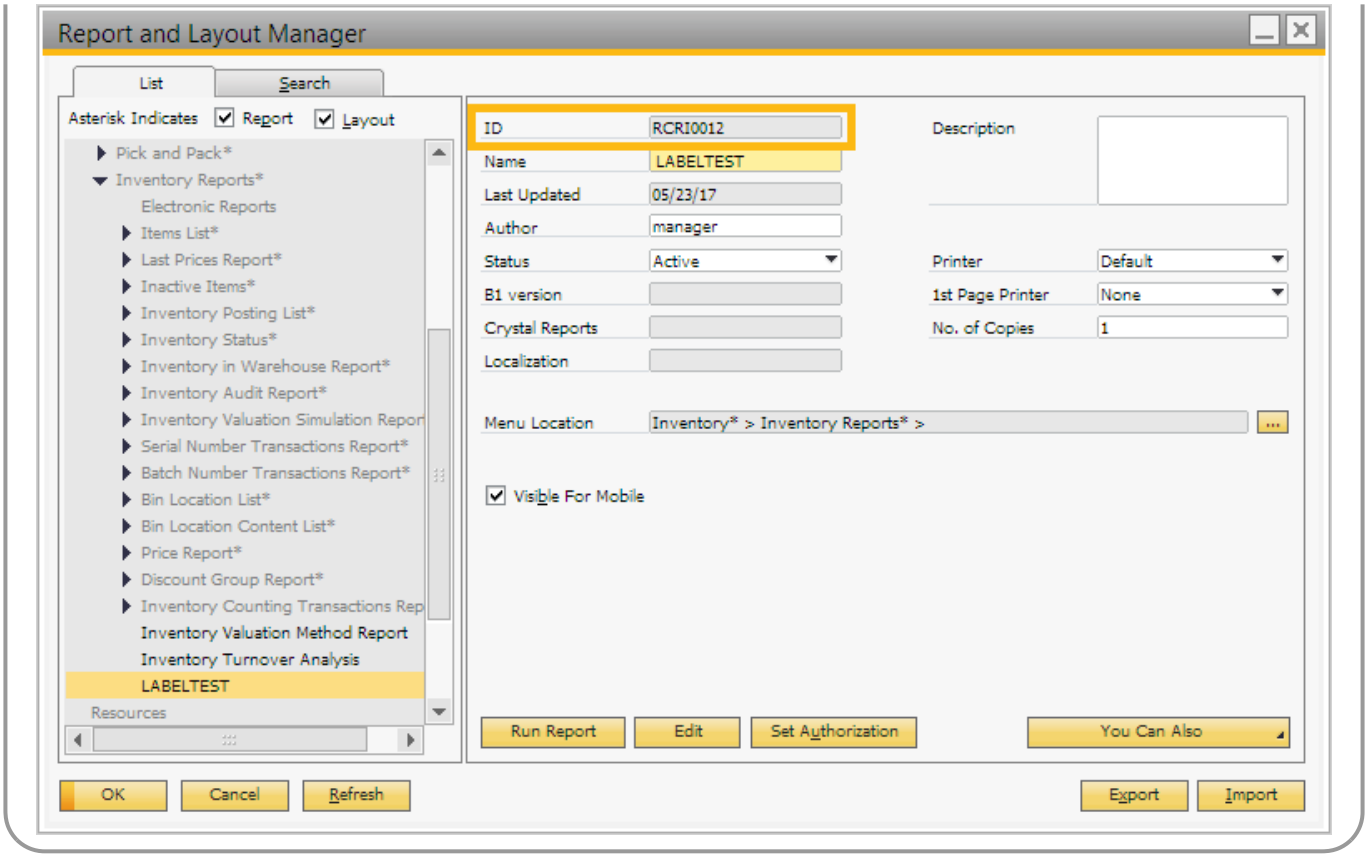
- The report is defined in SAP Business One, or
- The report is located in a folder Produmex Service Broker can access.

7.1.1. Import the report

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.

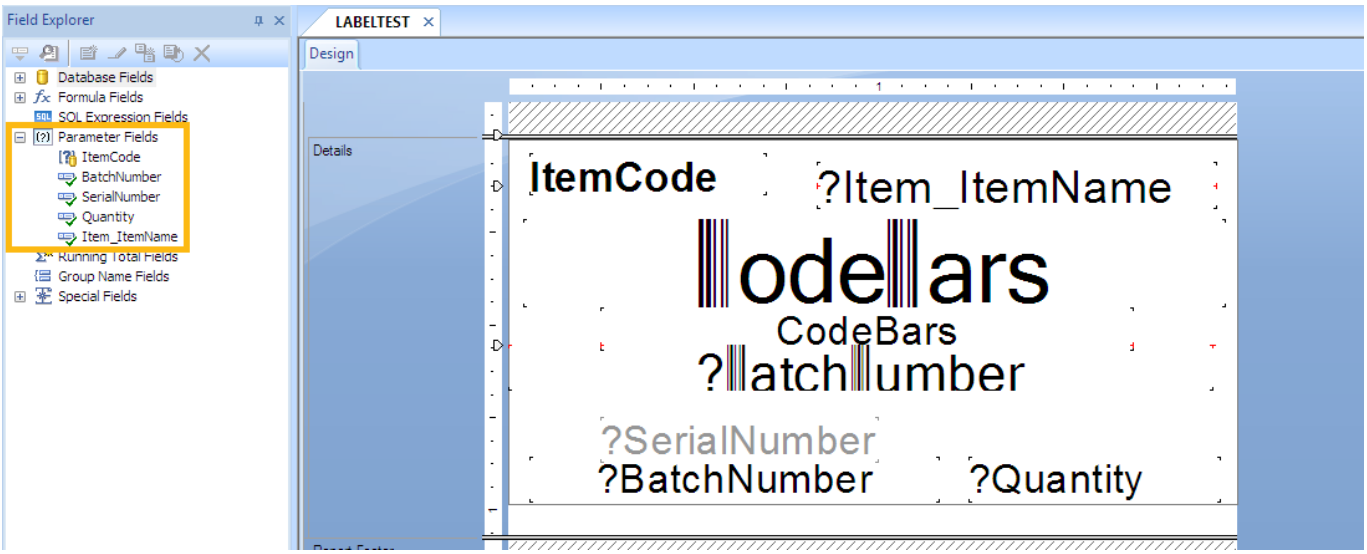


7.1.2. Examples

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

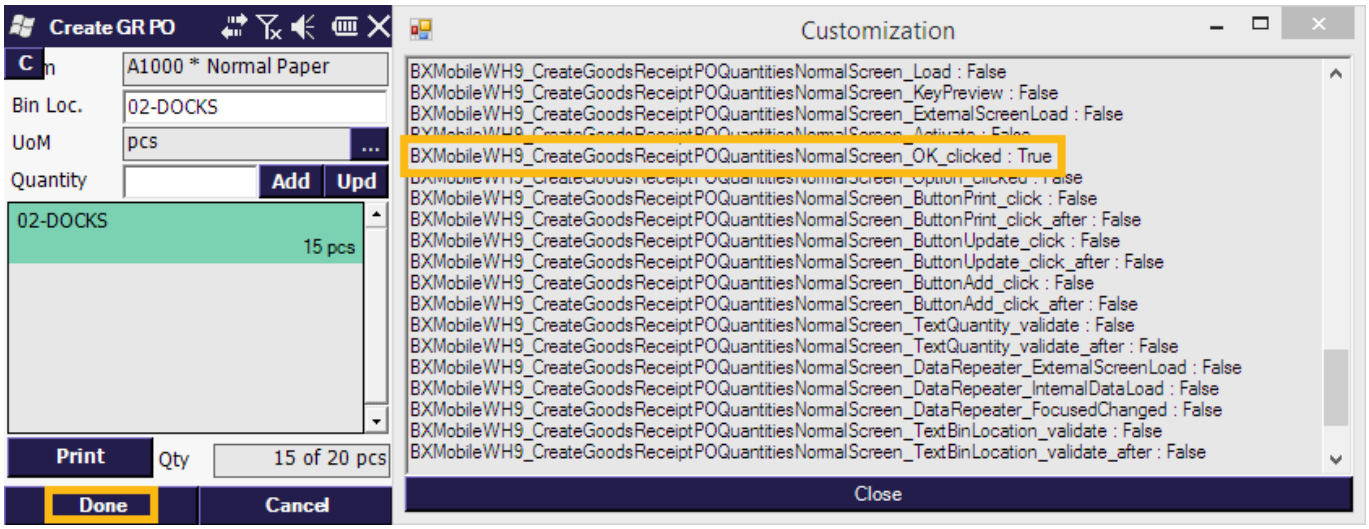
Adjust the example query.

- 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:

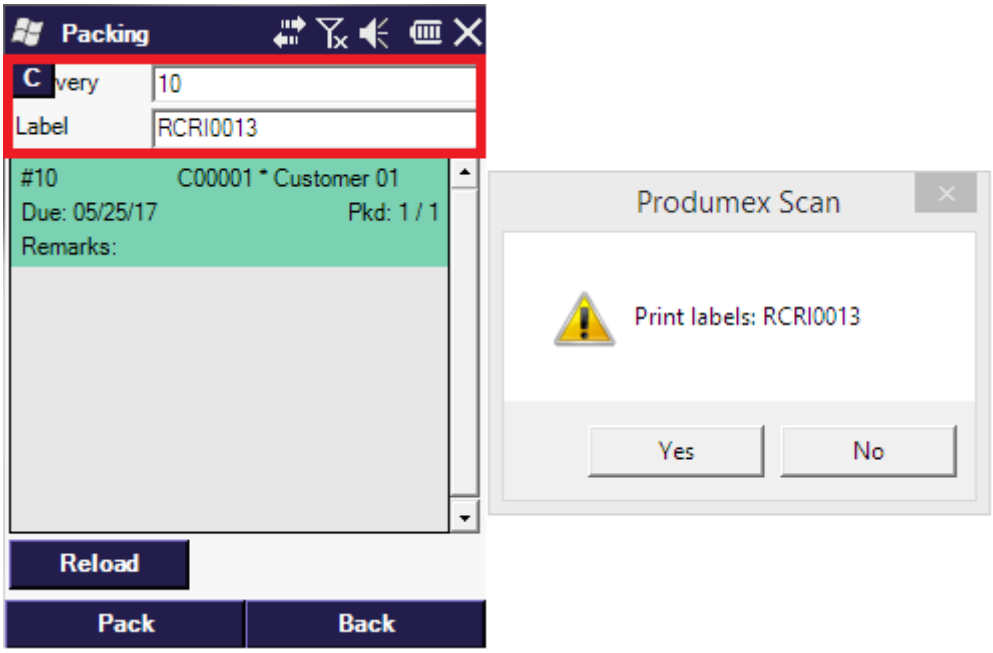
Field Name	Labels	Screen
RPTCode	Label	PackingScreen

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).

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 [@BXPCONFIG] (Code, Name, U_BXPDescr, U_BXPValue, U_BXPVType,
U_BXPRowVr)
VALUES('BXMPRAO', 'BXMPRAO', '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 **BXMPRAO** 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.

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