

How-To Guide

SAP NetWeaver

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Pack Warehouse Stock





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1 Business Scenario

This app helps to improve customer satisfaction in the following ways:

- Improves packing efficiency
- Reduces human errors
- Reduces the cost of warehouse operations

Pack Warehouse Stock app is typical transactional Fiori app. It has the similar UI like Pack Outbound Deliveries app. It shares some configurations with Pack Outbound Deliveries app at the EWM backend.

This how-to guide is for the release of SAP S/4HANA 1909 SPO0.

2 Prerequisites

- Software
 - UI exists in Software Component:
 - Backend logic exists in Software Component:
- Hardware
- Relevant SAP Notes
 - For more information about restrictions, see SAP Note [2788837](#).
- Application help document:
- SAP pre-delivered content, e.g. exception codes and internal process codes are imported.
- You have used the warehouse operative role in Pack Warehouse Stock app by performing the following settings:
 - Open transaction "PFCG" in Fiori frontend server, copy SAP_EWM_BCR_WOP_T PFCG role to a temporary role for example, Z_SAP_EWM_BCR_WOP_T.
 - Open transaction "SU01" in Fiori frontend server, assign Z_SAP_EWM_BCR_WOP_T temporary role to your user.
 - Open SAP Fiori Launchpad, add Pack Warehouse Stock tile to your home page.

3 Step-by-Step Procedure

In this section, you learn a step by step procedure to perform the following configurations:

- Activate Soft State Mode for OData Service
- Activate Asynchronous UI Interaction
- Configure Printing
- Enable Damaged Products
- Connect to the Scale to Weigh
- Configure Sound Notification
- Configure Product Image URL
- Configure Exception Code
- Define Number Range for HU Identification
- Configure Access Codes
- Configure Favorite Packaging Materials

3.1 Activate Soft State Mode for OData Service

To improve packing performance, you can activate soft state mode for OData service *PACK_OUTBDLV_SRV*.
Prerequisites

Set Service Data

1. Open the transaction SICF.
2. Choose the node of your Gateway service e.g. under *sap/opu/odata/scwm/pack_outbdlv_srv*.
3. Select the tab Service Data.

Make sure that the inactivity session time-out for your service is greater than 00:00:00.

However, too large session time-out is not expected. During development and testing, we set this value to 00:00:30.

Activate Soft State Mode

1. Open the transaction */IWFND/MAINT_SERVICE*,
The soft state status of the service is displayed with one of the following values: Active, Inactive, Not Supported or empty.
2. To activate soft state, choose button Soft State button. For more information, see SAP note [1986626](#).

3.2 Activate Asynchronous UI Interaction

In this application, you can achieve better UI interaction by activating asynchronous UI interaction, without being blocked by waiting backend response. For some business cases, like e-commerce or supermarket, the performance of packing is critical, a packer doesn't have time to waste on waiting system response, but requires continuous packing.

The asynchronous packing is implemented on the UI side while packing items and closing handling unit (HU). The trade-off is to block other actions as below. These actions are blocked until packing item actions and closing HU action is executed successfully or exception is handled. Those actions include:

- Switch to another HU or storage bin
- Change packaging material
- Unpack all
- Delete HU
- Switch HU
- Create HU

You need to execute transaction code */SCWM/PACK_ODLV_ASYNC* to activate this setting shown as the screenshot below. Each entry indicates whether asynchronous UI interaction is active or not, under specified warehouse number, work center and user. If a user is not specified, it means this entry applies to all users in system.

Warehouse No.:

Activate Asynchronous Packing Processing

	Wrk Center	User	Activate
<input type="checkbox"/>	WC01		<input checked="" type="checkbox"/>
<input type="checkbox"/>			<input type="checkbox"/>
<input type="checkbox"/>			<input type="checkbox"/>
<input type="checkbox"/>			<input type="checkbox"/>
<input type="checkbox"/>			<input type="checkbox"/>
<input type="checkbox"/>			<input type="checkbox"/>
<input type="checkbox"/>			<input type="checkbox"/>
<input type="checkbox"/>			<input type="checkbox"/>
<input type="checkbox"/>			<input type="checkbox"/>

3.3 Configure Printing

3.4.1 PPF Printing

You are running EWM on premise version. You want to print documents after HU creation or HU closing. Please note that automatic printing after HU closing is only supported when you already set the *External Storage Process Step* for the work center.

3.4.2 Print HU with Predefined PPF Action

If you want to know more about the details of SAP PPF technology, see *PPF_in_SAP_EWM* how-to guide on the SAP EWM how-to guides [wiki page](#).

3.4.3 Define Condition Type

Create a new condition type in Customizing for Extended Warehouse Management under **Cross-Process Settings > Handling Units > Basics > Print > Define Condition Types**. For example, condition of HU label printing.

Assign an access sequence to the condition type according to your business needs.

Condition Type

Condition Types	
Description	<input type="text" value="Condition of HU labe"/>
Access Seq.	<input type="text" value="0002"/> <input type="button" value="Q"/>
Change Doc.	<input type="checkbox"/> Yes/no
Prop. valid-to	<input type="text" value="The date 12/31/9999 is proposed"/>
Prop.valid-from	<input type="text" value="Current date"/>
Access Date	<input type="text" value="DET_DEFAULT_TIMESTAMP"/>
Source system	<input type="text" value="B Source: Local"/>

3.4.4 Define Determination Procedure

Create a new determination procedure in Customizing for Extended Warehouse Management under **Cross-Process Settings > Handling Units > Basics > Print > Define Determination Procedure**. For example, determination procedure of packing.

You can assign multiple condition types to this procedure if multiple documents will be printed during packing.

Table View Edit Goto Selection Utilities System Help

Display View "Elements of Determination Procedure": Overview

Dialog Structure

- Det. Procedure
 - Elements of Determination Procedure

Application: PHU
Usage: PH
Procedure: PWSPK

Elements of Determination Procedure

LvNo	Ctr	Condition Type
1	1	OHUA
1	2	OHUB
1	3	OHUC

3.4.5 Assign Determination Procedure

You can assign the determination procedure to the packaging material type in Customizing for Extended Warehouse Management under **► Cross-Process Settings ► Handling Units ► Basics ► Print ► Assign Determination Procedure ►**.

Or you can assign the determination procedure to the worker center of packing in Customizing for Extended Warehouse Management under **► Master Data ► Work Center ► Define Work Center**. Here, we take work center approach as an example.

Table View Edit Goto Selection Utilities System Help

Change View "Define Work Center": Details

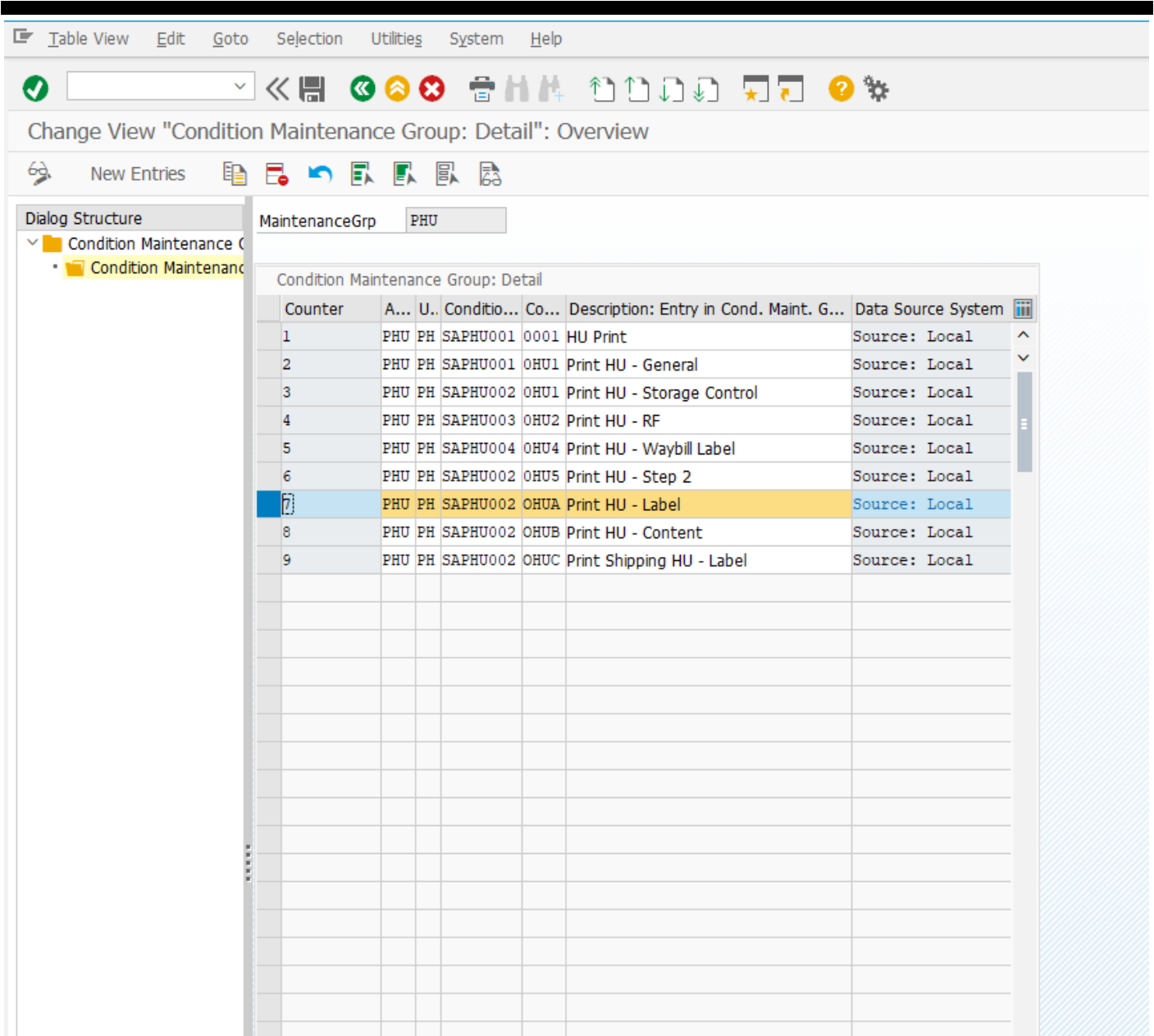
New Entries BC Set: Change Field Values

Warehouse No. EW01
Work Center WPWS

Define Work Center	
Description	Work Center - Pack Warehouse Stock
External Step	OPK1
Storage Type	T830
Inbound Section	
Outbnd Section	
Repack WPT	P340
Work Center Layout	VE01
RF:HU Ready f. Input	<input type="checkbox"/>
PrintDetermProc	PWSPK
Ret. Process	
Return St. Ty.	
Ret. Stor. Sec.	
WPT HU from PP	
Activity	PACK
Plan Act.Area	
Save Action	<input checked="" type="checkbox"/>
Exclusive Lock	<input type="checkbox"/>
Check Consol. Grp	No Check
Check Stop on Route	No Check
Repack Activ. WTs	Repacking Active WT Allowed
Meas. CW Qty Poss.	<input type="checkbox"/>

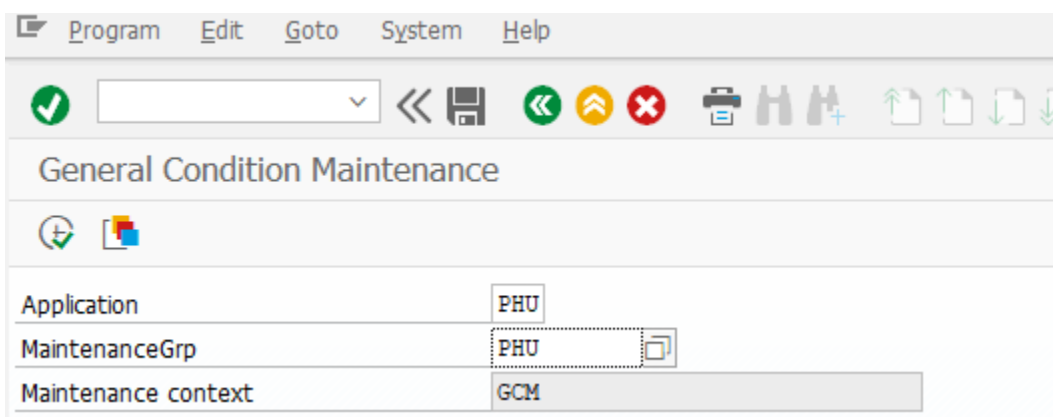
3.4.6 Create Condition Maintenance Group

You assign the condition type to condition maintenance group in Customizing for Extended Warehouse Management under **► Cross-Process Settings ► Handling Units ► Basics ► Print ► Create Condition Maintenance Group ►**. The condition maintenance group will be used during condition records creation. We use condition maintenance group *PHU* as an example.



3.4.7 Create Condition Records for Printing

You can create condition records for printing using transaction code `/SCWM/PRHU6`.



Select *PHU* as the application and maintenance group.

Example 1

Item Area	Status	Sca	CctC	Completed	HU Type	WhN	HU Step	Pack.Mat.	Work Cntr.	Form	Printer	PPool	Spool Data	Action Definition	No
	Green		OHUA		ZW1		I		WP02	/SCWM/HU_LABEL	LP01		01	HU_LABEL	
	Blue		OHUA												
	Green		OHUB		ZW1		P		WP02	/SCWM/HU_CONTENT	LP01		01	HU_CONTENT	
	Blue		OHUB												
	Green		OHUC	X	ZW1		U		WP02	/SCWM/HU_SHPLABEL	LP01		01	HU_SHPLABEL	
	Blue		OHUC												
	Blue		OHUC												

You can create additional condition types based on your business needs. Here we created 3 condition records for different condition types. The first record will be triggered after HU creation. The second will be triggered after clicking *Print* button manually. The third will be triggered after HU closing.

Here is some detailed explanation of the setting:

- **Completed:**
Set it to *X* if you want to print document after HU closing. For pack warehouse stock, HU is not closed after user click “Close” button, just removed from UI. So, this setting doesn’t apply to pack warehouse stock app.
- **HU Step:**
Value ‘I’ means print after HU creation. Value ‘P’ means manually printing HU documents. Value ‘U’ means printing after HU updating. Value ‘D’ means printing after HU deletion.
- **Form:**
You can use predefined form or you can create your own form that is compatible with the corresponding PPF action.
- **Spool Data:**
You can create additional printing control parameter using transaction code */SCWM/60000431*.
- **Action Definition:**
PPF action which is compatible with the form. You can also create your own PPF action.

The Customizing above enables the printing as follows:

- Print HU label after HU creation.
- Print HU content after clicking *Print* button.

Example 2

Status	Sca	CctC	Completed	HU Type	WhN	HU Step	Pack.Mat.	Work Cntr.	Form	Printer	PPool	Spool Data	Action Definition
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	OHUA			ZW1	I		WP02	/SCWM/HU_LABEL	LP01		01	HU_LABEL
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	OHUA			ZW1	P		WP02	/SCWM/HU_LABEL	LP01		01	HU_LABEL_GENERAL_AND_RF
<input type="checkbox"/>	<input type="checkbox"/>	OHUA											
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	OHUB			ZW1	P		WP02	/SCWM/HU_CONTENT	LP01		01	HU_CONTENT_GENERAL_AND_RF
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	OHUB	X		ZW1	U		WP02	/SCWM/HU_CONTENT	LP01		01	HU_CONTENT
<input type="checkbox"/>	<input type="checkbox"/>	OHUB											
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	OHUC	X		ZW1	U		WP02	/SCWM/HU_SHPLABEL	LP01		01	HU_SHPLABEL
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	OHUC			ZW1	P		WP02	/SCWM/HU_SHPLABEL	LP01		01	HU_SHPLABEL_GENERAL_AND_RF
<input type="checkbox"/>	<input type="checkbox"/>	OHUC											
<input type="checkbox"/>	<input type="checkbox"/>	OHUC											

The settings above are complex.

The Customizing above enables the printing as follows:

- Print HU label after HU creation.
- Reprint all documents if the print button is clicked.

Please note that the PPF action of reprinting is different from auto-triggered PPF action.

3.4 Enable Damaged Products

On the user interface of Pack Warehouse Stock app, you can see a Damaged Products button that enables you to report any damaged products during your packing.

To enable this feature, you specify for your warehouse *HU Allowed but not a Requirement for HU Requirement* field in Customizing for *Extended Warehouse Management* under **Master Data** > *Define Storage Type*.


Warehouse No.	W001	W001 - preconfi.WH (PL01)	
Storage Type			
General			
Storage Type Role	<input type="text" value="E"/>	Storage Behavior	<input type="checkbox"/>
Level of Avail. Qty	<input type="checkbox"/>	Avail. Qty: Batches	<input type="checkbox"/>
HU Requirement	<input type="checkbox"/>	Hazard.Sub.Mgmt	<input type="checkbox"/>
Max. No. Bins	<input type="text" value=""/>	Qty Classific.	<input type="checkbox"/>
Check Max.No.Bins	<input type="checkbox"/>	External Step	<input type="text" value=""/>
Use Fixed Bins	<input type="checkbox"/>	Do Not Explode Prod.	<input checked="" type="checkbox"/>
Fixed Bins Mode	<input type="checkbox"/>	Default Distance	<input type="text" value=""/> M
Do Not Assign Fixed Bin Automatically	<input type="checkbox"/>	Storage Type Level	<input type="checkbox"/>
No Capacity Update	<input type="checkbox"/>	Multi-Depth	<input type="checkbox"/>
		ACS Control	<input type="checkbox"/>
Putaway Control			

3.5 Connect to the Scale to Weigh

You want to connect to a scale to weigh HUs. In this case, you follow three steps below to set up connection between a scale and a work center:

1. Define a RFC Destination of a Scale
As the scale is defined as a remote RFC destination in SAP EWM. You need to use transaction code sm59 to define your own RFC destination.

RFC Destination TMSGLM100

Remote Logon Connection Test Unicode Test Fast Serialization Test 

RFC Destination

Connection Type ABAP Connection Description

Description

Description 1

Description 2

Description 3

Administration **Technical Settings** Logon & Security Unicode Special Options

Target System Settings

Load Balancing Status

Load Balancing Yes No

Target Host Instance No.


Save to Database As

Save As Host IP address

Gateway Options

Gateway Host

Gateway Service

2. Define Scale
 You can define a scale. You define a scale based on the created destination in the step above. On the launchpad, choose SAP Menu ► Logistics ► SCM Extended Warehouse Management ► Master Data ► Work Center ► Define Scales .

If you want to return generic audio URI for message type, like I for information, E for errors and W for warnings, you can fill MSGTY field.

This app only supports such generic audio URI. However, the BAdI method also supports specified audio URI. If you want to return specified audio URI according to message ID and message No., you need to fill MSGID and MSGNO fields.

Note:

When configuring the sound notification for this app, you need to pay special attention to the audio types that can be supported by the browsers as the screenshot shown below:

Definition and Usage

The <audio> tag defines sound, such as music or other audio streams.

Currently, there are 3 supported file formats for the <audio> element: MP3, Wav, and Ogg:

Browser	MP3	Wav	Ogg
Internet Explorer	YES	NO	NO
Chrome	YES	YES	YES
Firefox	YES	YES	YES
Safari	YES	YES	NO
Opera	YES	YES	YES

For more information about implementing *BAdI: Notification Sounds for Messages*, see SAP Note [2679988](#).

3.7 Configure Product Image URL

This application reuses BAdI */SCWM/EX_PBC_MAT_PIC* to set up product image URL. You can find this BAdI in Customizing for ► *SCM Extended Warehouse Management* ► *Extended Warehouse Management* ► *Business Add-Ins (BAdIs) for Extended Warehouse Management* ► *Master Data* ► *Product* ► *BAdI: Retrieve for Product Picture URLs*.

3.8 Configure Exception Code

This app only supports internal processing code *EXPA* and *DIFF* in the business context PIM step 17. Please refer to document: [Exc Code Packing.pdf](#)

3.9 Define Number Range for HU Identification

This application supports both internal NR and external NR.

If only Internal NR configured in the backend, there is no need to provide HU ID manually.

If both available, user can either manually provide an ID (using External NR logic) or leave it empty (using Internal NR logic).

If only External NR available, user needs to provide an ID (using External NR logic) by mandatory.

To enable this feature, you can specify for your Number Range for HU Identification and assign it to the packaging material type in Customizing.

In Customizing for ► *SCM Extended Warehouse Management* ► *Extended Warehouse Management* ► *Cross-Process Settings* ► *Handling Units* ► *External Identification* ► *Define Number Range for HU Identification*.

In Customizing for ► *SCM Extended Warehouse Management* ► *Extended Warehouse Management* ► *Cross-Process Settings* ► *Handling Units* ► *External Identification* ► *Assign Number Range Intervals to Packaging Material Types*.

3.10 Configure Access Codes

This application supports to scan access codes to achieve direct interaction with the system and to quickly execute certain actions without a need of a keyboard or a mouse.

This application supports the following four kinds of access codes as follows:

- Create HU
- Close HU
- Pack single HU Items
- Pack all HU Items

To use the function of access codes, you need to do the following configurations:

1. Define external access codes for this application in Customizing for ► *SCM Extended Warehouse Management* ► *Extended Warehouse Management* ► *Cross-Process Settings* ► *Access Codes* ► *Define External Access Codes*.
2. You choose an application for a warehouse from the *Create External Access Codes* folder.
3. You choose *Define External Access Codes* folder and choose *New Entries*.

You can define any external access codes, but the corresponding internal access codes are predefined as follows:

Internal Access Code	Description
CLOSE_HU	Close HU
CREATE_HU	Create HU
PACK_ITEM	Pack single HU Items
PACK_ALL	Pack all HU Items

You can see the details as the screenshot shown as follows:

New Entries: Overview of Added Entries

Warehouse No. Q13R
App Code CURE

Define External Access Codes

External Access C...	Step	Internal Access Code	Semantic Field	Bus. Cont.	Description
CLOSE_HU	P1	CLOSE_HU	ACCCODE	PK	
CREATE_HU	P1	CREATE_HU	ACCCODE	PK	
PACK_ALL	P1	PACK_ALL	ACCCODE	PK	
PACK_ITEM	P2	PACK_ITEM	ACCCODE	PK	

Screenshot1. External Access Codes Configuration

3.11 Configure Favorite Packaging Materials

To pack products in the warehouse, the workers should choose frequently packaging materials for the handling units. You can configure your most frequently used packaging materials for the work center.

To do this, on the launchpad, you choose *Define Favorite Packaging Materials* under SCM Extended Warehouse Management ► Extended Warehouse Management ► Master Data ► Work Center.

Display View "Define Favorite Packaging Materials": Overview

Warehouse No. W001

Define Favorite Packaging Materials

Wrk Center	Product	Default	Dis. Order	Dis. Code
WP01	CARTON_L	<input checked="" type="checkbox"/>	1	CTN_L
WP01	CARTON_M	<input type="checkbox"/>	2	CTN_M
WP01	CARTON_S	<input type="checkbox"/>	3	CTN_S
WP01	CARTON_XS	<input type="checkbox"/>	4	CNT_X
WP01	EUROPALLET	<input type="checkbox"/>	5	EUROP
WP02	CARTON_L	<input checked="" type="checkbox"/>	1	CTN_L
WP02	CARTON_M	<input type="checkbox"/>	2	CTN_M
WP02	CARTON_S	<input type="checkbox"/>	3	CTN_S
WP02	CARTON_XS	<input type="checkbox"/>	4	CNT_X
WP02	EUROPALLET	<input type="checkbox"/>	5	EUROP
WP02	WIREBASKET	<input type="checkbox"/>	6	WIREB
WP0P	CARTON_L	<input type="checkbox"/>	1	CTN_L
WP0P	CARTON_M	<input type="checkbox"/>	2	CTN_M
WP0P	CARTON_S	<input type="checkbox"/>	3	CTN_S
WP0P	CARTON_XS	<input type="checkbox"/>	4	CTNXS
WP0P	CARTON_XXS	<input type="checkbox"/>	6	CTXXS
WP0P	EUROPALLET	<input type="checkbox"/>	5	EUPA

Note

- You can choose to configure your favorite packaging materials. You can configure at most 6 packaging materials for your work center. Too many favorite packaging materials won't be shown properly on the UI.
- In standard functions of EWM, you can define a default packaging material for your work center. However, this function is ignored by this app.

On the UI of this app, after you enter a product, you will be asked to create a handling unit to contain this product. The favorite packaging materials that you configured at the back end will be displayed on the UI as the screenshot shown below:

The screenshot shows a 'Create Handling Unit' dialog box. It has a title bar 'Create Handling Unit'. Below the title bar, there is a section 'Favorite Packaging Materials:' with four buttons: 'S', 'M', 'L', and 'XS'. The 'L' button is highlighted in blue and has a white checkmark. Below this is a section 'Other Packaging Materials:' with a dropdown menu. At the bottom is a 'Handling Unit:' text input field. At the bottom right are 'Create' and 'Cancel' buttons.

Favorite Packing Material UI

3.12 See Also

For more information about Pack Warehouse Stock features and how-to videos, see the <https://help.sap.com/s4hana>, choose 1909 version and then *Product Assistance > Enterprise*



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