Wave Management

Wave management is the process by which you can combine items or split items from warehouse requests for outbound deliveries into waves, to improve picking for multiple deliveries in the warehouse. Warehouse requests generated for outbound delivery orders can be combined into waves based on **customer**, **route**, **activity area**, and so on, and you can plan the creation of warehouse picking tasks for these warehouse requests simultaneously. These tasks are then grouped into warehouse orders that are assigned to resources, which helps optimize the picking process.

Waves can be created manually or automatically depending on Customizing settings. You can create waves manually using **Transaction /N/SCWM/WAVE** or by navigating to **SAP Easy Access** path:

Logistics→SCM Extended Warehouse Management→Extended Warehouse Management→Work Scheduling→Wave Management →Maintain Wave→Create.

Figure:1 Shows how various warehouse request items belonging to different warehouse requests are grouped together in wave 1 and wave 2 differentiate because of Activity Area.

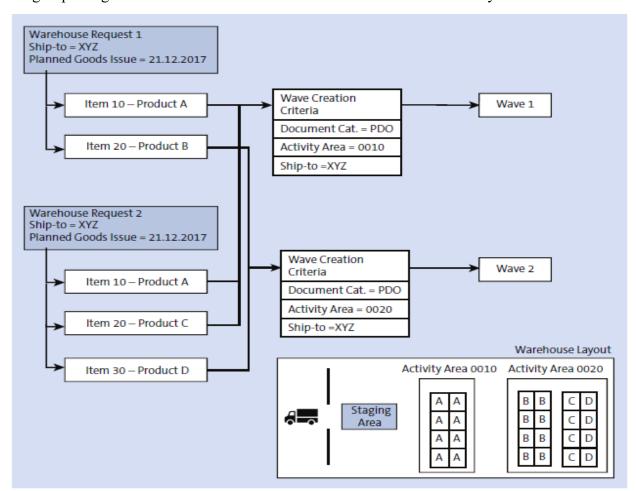


Figure 1: Grouping of Warehouse Requests in Waves

Steps to Configure Wave Management:

- Maintain Wave Type
- Maintain Wave Categories
- Set Automatic Wave Generation for Warehouse Process Type (WPT)
- Maintain Wave Capacity Profile
- Wave Template Determination
- Define Access Sequence
- Define Condition Tabel
- Define Condition Type
- Define Procedure
- Maintain Wave Template in Master Data
- Maintain Conditions for Determining the Wave Template

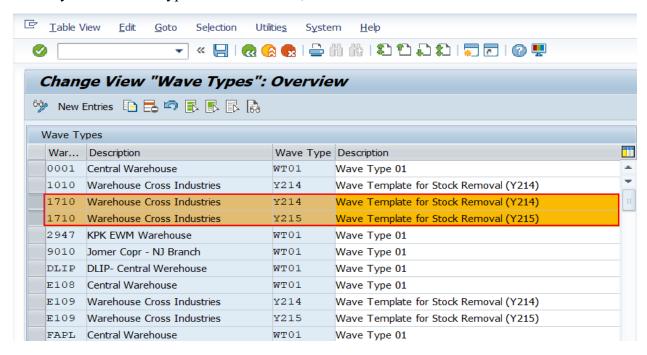
Maintain Wave Type:

Wave type helps to identify waves created with special characteristics and behavior. Wave types are primarily used for accessing and filtering waves in the warehouse monitor. Go through,

SPRO → SAP Ref IMG → Extended Warehouse Management → Goods Issue Process → Wave Management → General Settings → Maintain Wave Type.

▼ SCM Extended Warehouse Management
▼ Extended Warehouse Management
• 🗟 🤛 Enable Decentralized EWM
Master Data
Goods Receipt Process
▼ Goods Issue Process
▶ Strategies
Cartonization Planning
▼ Wave Management
▼ General Settings
• 🗟 🚱 Set Up Two-Step Picking
• 🗟 🚱 Edit Parallel Processing for Waves
• 🗟 🚱 Maintain Wave Types
• 🗟 🚱 Maintain Wave Categories
• 🗟 🚱 Set Automatic Wave Generation for Warehouse Process Type
• 🗟 🚱 Maintain Wave Capacity Profiles
• 🗟 🚱 Define Wave Simulation Settings

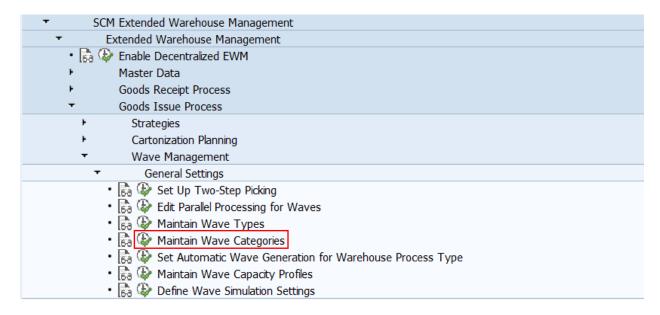
Define your new wave types Y214 and Y215, under the warehouse 1710.



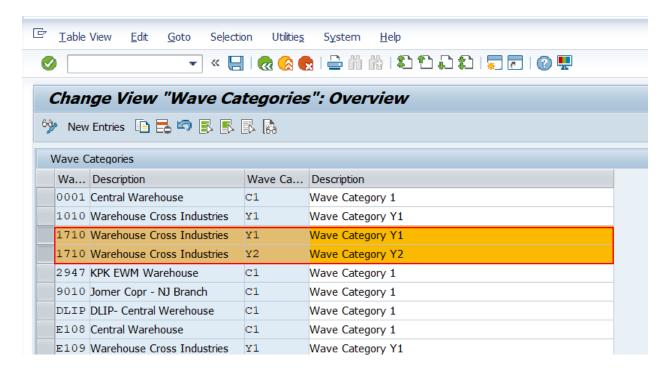
Maintain Wave Categories:

Wave categories are primarily used as filters for determination and application of warehouse order creation rules. Go through,

SPRO → SAP Ref IMG → Extended Warehouse Management → Goods Issue Process → Wave Management → General Settings → Maintain Wave Categories.



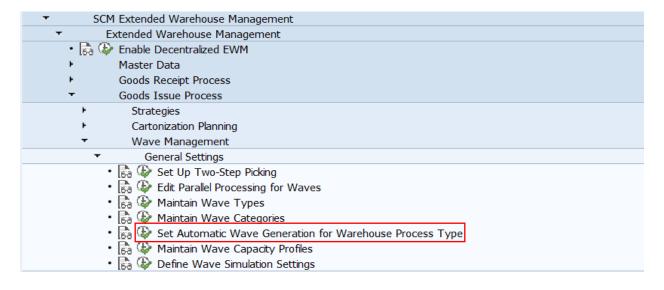
Go to New Entries and define your new wave categories.



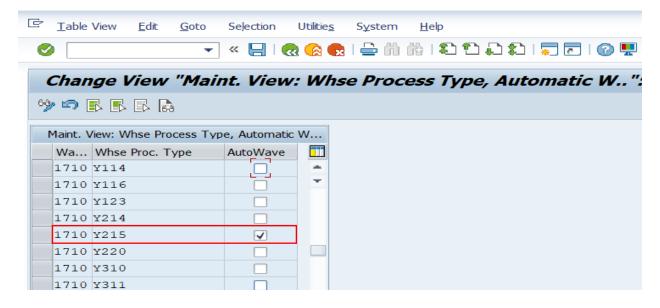
Set Automatic Wave Generation for Warehouse Process Type:

Automatic wave generation enables either the creation of a new wave or assignment of a warehouse request item to an existing wave. Automatic wave generation can be activated via the Autowave indicator for a warehouse process type. Go through

SPRO → SAP Ref IMG → Extended Warehouse Management → Goods Issue Process → Wave Management → General Settings → Set Automatic Wave Generation for Warehouse Process Type.



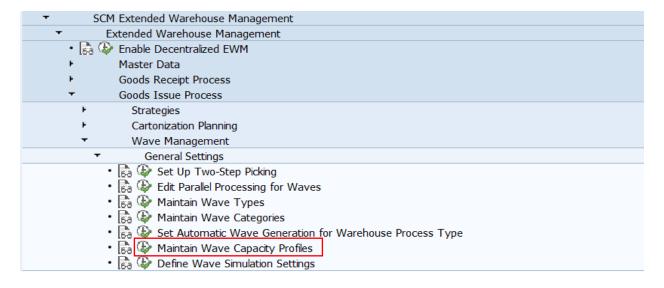
Enable the Automatic wave creation to check for the warehouse process type Y215.

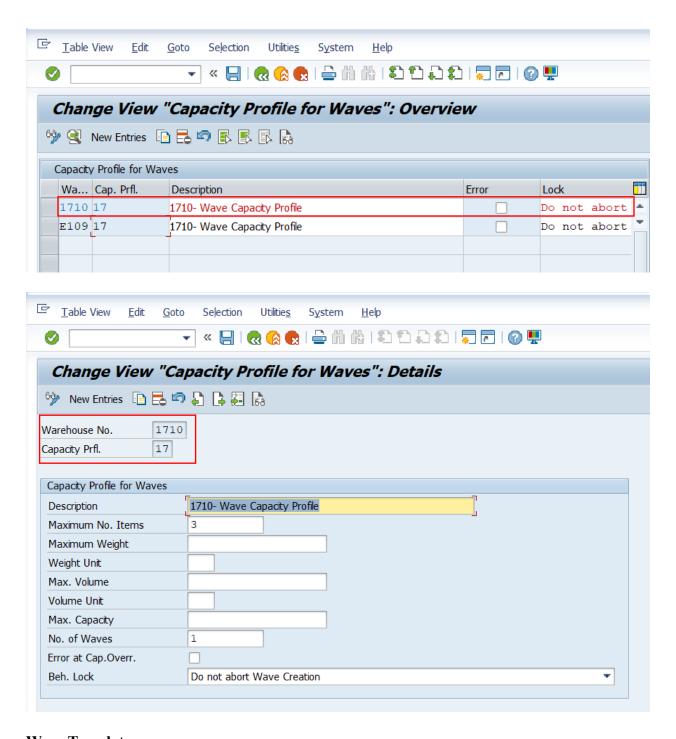


Maintain Wave Capacity Profile:

The wave capacity profile is set up to limit the maximum number of warehouse request items that can be assigned to a wave template option. The number of warehouse requests that can be assigned to the wave template options can be limited by the following elements: **Maximum No. Items, Maximum Weight, Max. Volume, Max. Capacity, No. of Waves.** To maintain the wave capacity profile, go through

SPRO → SAP Ref IMG → Extended Warehouse Management → Goods Issue Process → Wave Management → General Settings → Maintain wave capacity profiles

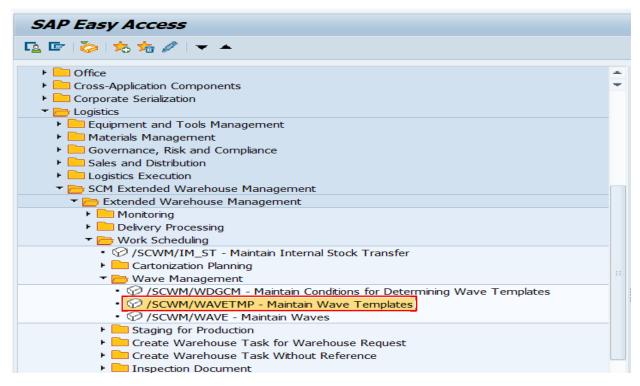




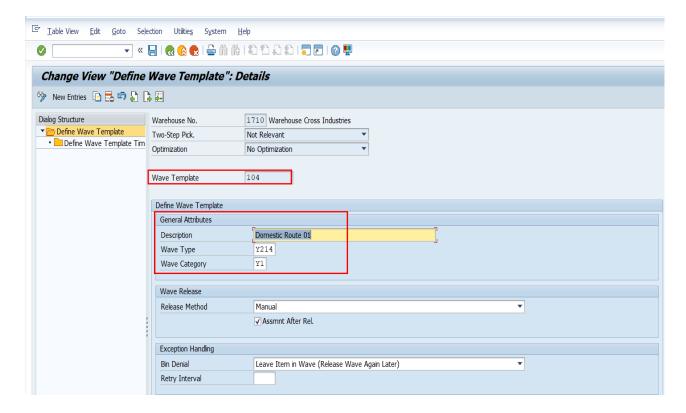
Wave Template:

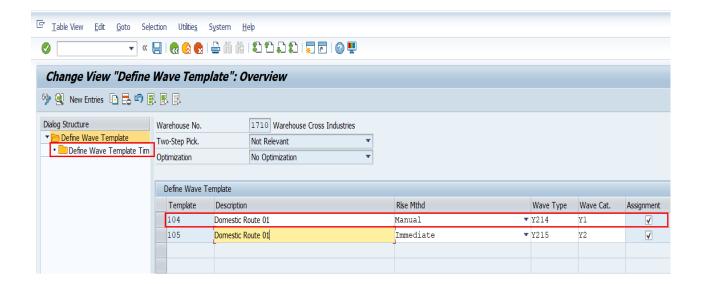
Wave templates are containers for control parameters used to create waves for a warehouse request. Various control parameters shape the features of the wave created for a warehouse request based on the wave template determined using the condition technique. You can create waves template manually using **Transaction /N/SCWM/WAVETMP** or by navigating to **SAP Easy Access** path:

Logistics→SCM Extended Warehouse Management→Extended Warehouse Management→Work Scheduling→Wave Management →Maintain Wave Templates.

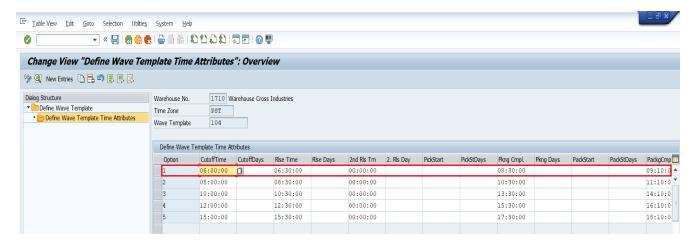


To generate your new wave templates, enter your warehouse number and execute it and go to new entries define your new wave template with the combination of WPT, Wave category and the Release method.





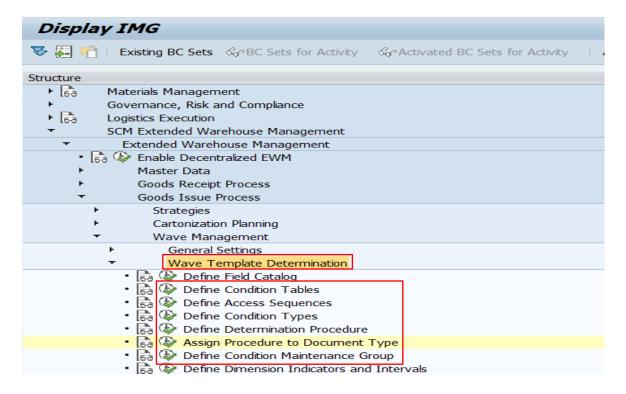
Select the line item of Template 104 and go for "Define wave template time attributes". Enter the cutoff time, Release time, picking start & end time and Packaging completion time details. Each wave template is assigned to wave template options. Wave template options are time-dependent attributes assigned to a wave template. A wave template can have more than one option. The system compares the requirements in warehouse requests based on the time attributes in each option and selects one to determine wave-dependent attributes such as release time for automatic release and so on.



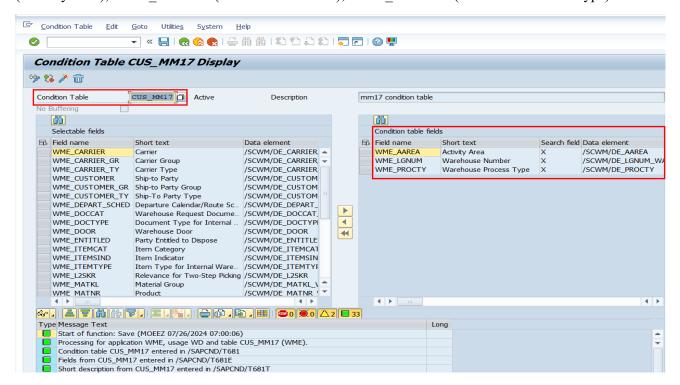
Wave Template Determination:

Wave template determination is performed in embedded EWM using the Post Processing Framework (PPF). When the warehouse request is created, the system checks to see if the warehouse process type is set for automatic wave creation. **Condition tables** are used for creating condition records, based on which the system determines wave templates. Wave template determination can be configured via IMG path,

SPRO → SAP Ref IMG → Extended Warehouse Management → Goods Issue Process → Wave Management → General Settings → Wave Template Determination → Define Condition Tables

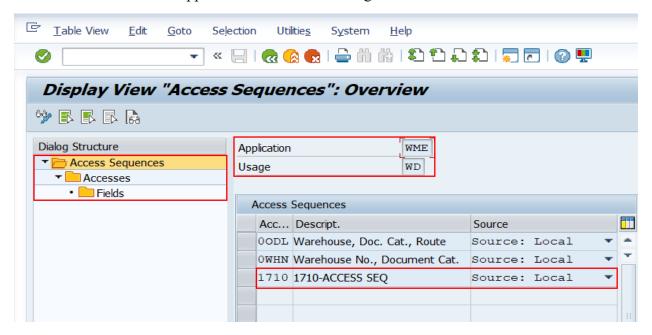


Define the new condition table CUS_MM17 and add the Condition table fields WME_AAREA (Activity Area), WME LGNUM (Warehouse Number), WME PROCTY (Warehouse Process Type).

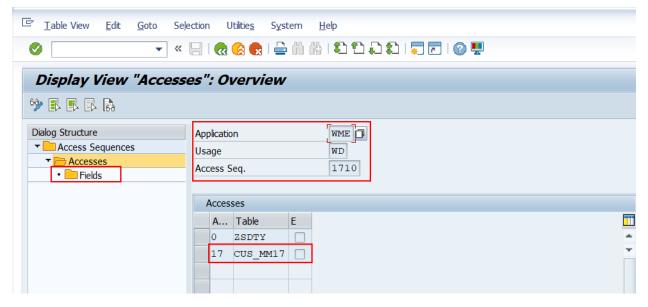


Define Access Sequence:

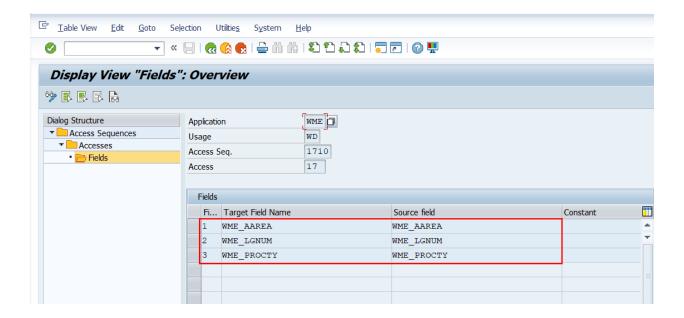
Condition tables are assigned to an access sequence to let the system know the sequence in which it will look at condition tables until it finds a valid condition record. Define new Access sequence 1710 and must select the Application "WME" and Usage "WD"



Select the line item of access sequence 1710 and go to **Accesses** add new assess no 17, enter the condition table **CUS MM17** and through which condition tables are linked with access sequence.

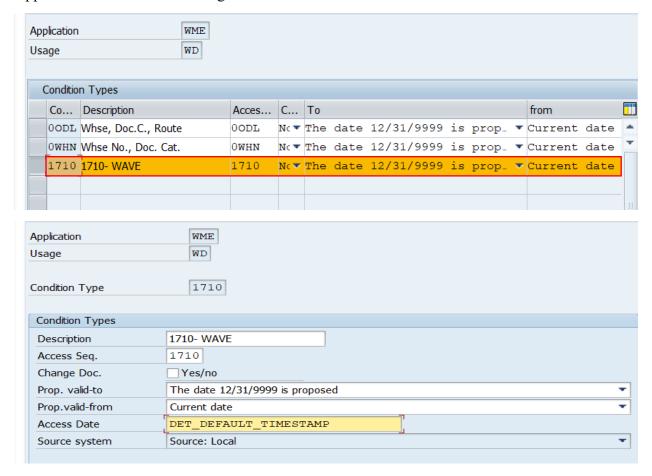


Select the access sequence 17 and go to Fields tab, system fetch the Source and Target field from the Condition tables.



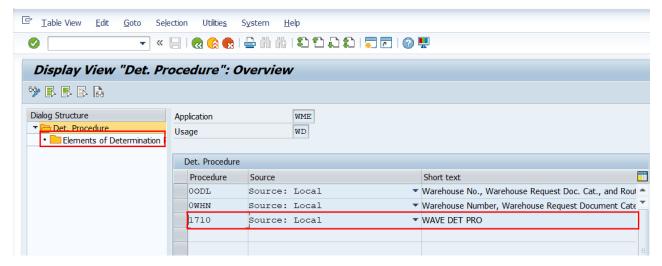
Define Condition Types:

Go for new entries and define new condition type 1710 and linked it with Assess sequence 1710, Application is "WME" and Usage is "WD".

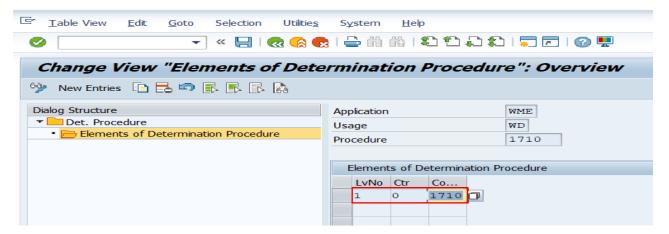


Define Determination Procedure:

The condition type defined earlier is assigned to a condition determination procedure. Define the new determination procedure 1710.

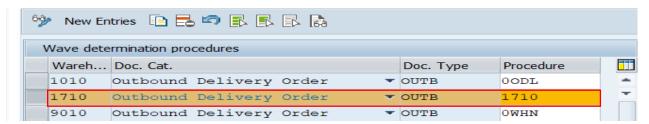


Select the line item of Procedure 1710 and go the "Elements of Determination Procedure" enter the condition type 1710, through which Determination procedure are linked with Condition type.



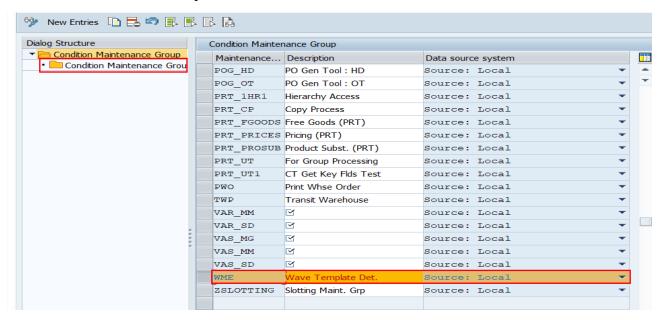
Assign Procedure to Document Type:

To assign the determination procedure to the document type go for new entries and enter the determination procedure 1710 and save. The system uses the assigned condition determination procedure for the document type after the warehouse request is created in embedded EWM.

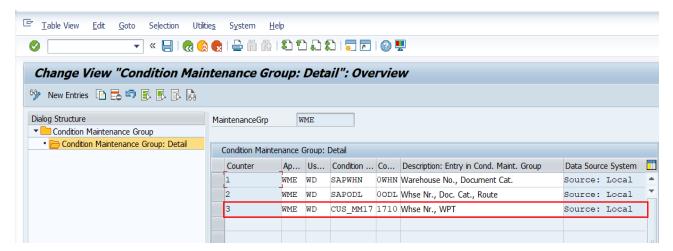


Define Condition Maintenance Group:

To define the condition maintenance group, select the maintenance group "WME" and go for Condition Maintenance Group Details.



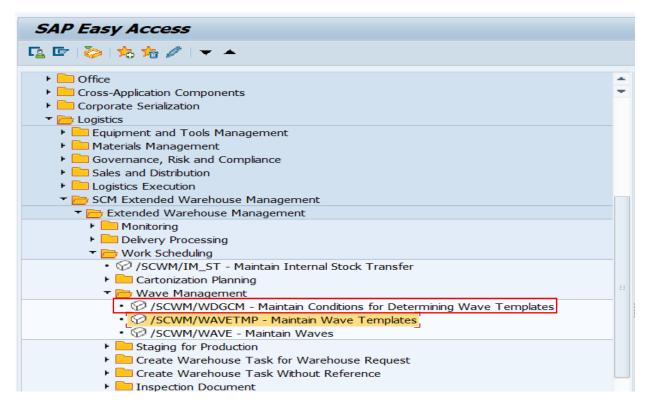
Go for new entries and enter your Condition table CUS_MM17, Condition type 1710, Application is WME, and the Usage is WD.



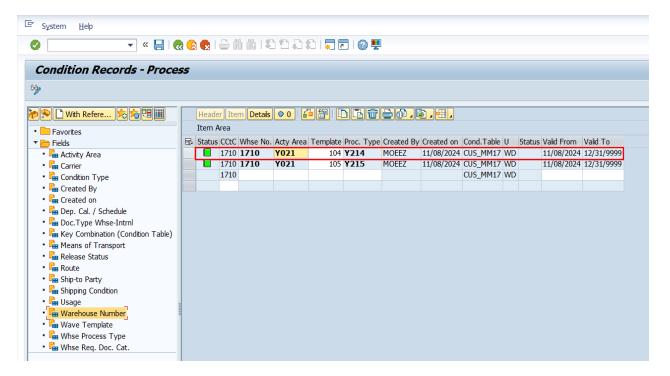
Maintain Conditions for Determining the Wave Template:

You can maintain conditions for determining the wave template manually using **Transaction** /N/SCWM/WDGCM or by navigating to SAP Easy Access path:

Logistics→SCM Extended Warehouse Management→Extended Warehouse Management→Work Scheduling→Wave Management → Maintain Conditions for Determining the Wave Template.

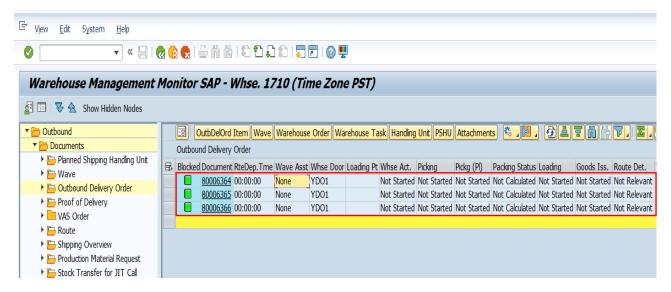


To maintain your new condition record with the combination of Condition type, Warehouse number, Activity area, Template, Warehouse Process Type and Condition Tables and execute it.



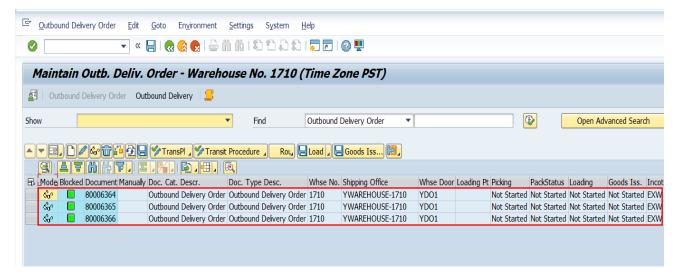
Testing:

We have three different outbound deliveries 80006364, 80006365, 80006366 whose Picking and warehouse activity are not started, we want to process these outbound deliveries through Wave Management.

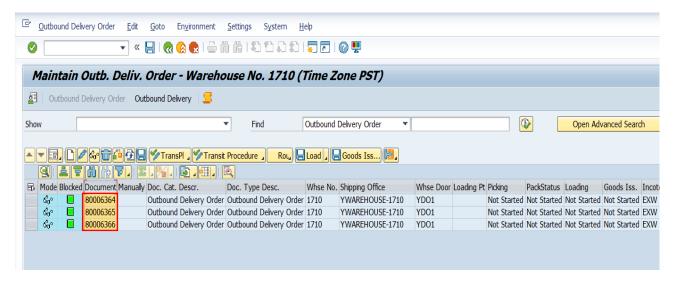


Maintain the Outbound Delivery:

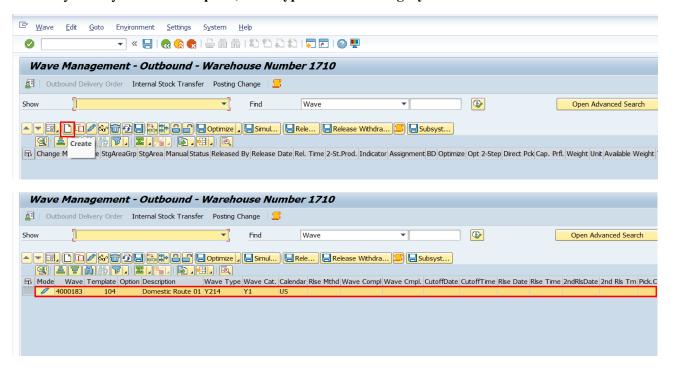
To maintain the outbound Delivery, go to **T-code:** /N/SCWM/PRDO, enter your outbound deliveries number 80006364, 80006365, 80006366 and execute it, details of delivery will be open below where Picking, Packing and Goods Issue are not started.



Outbound deliveries number 80006364, 80006365, 80006366 have multiple line items and for each line item a warehouse request will be generated, and we will process through it by wave. To process these outbound deliveries, copy the outbound deliveries number and go to T-code /N/SCWM/WAVE.

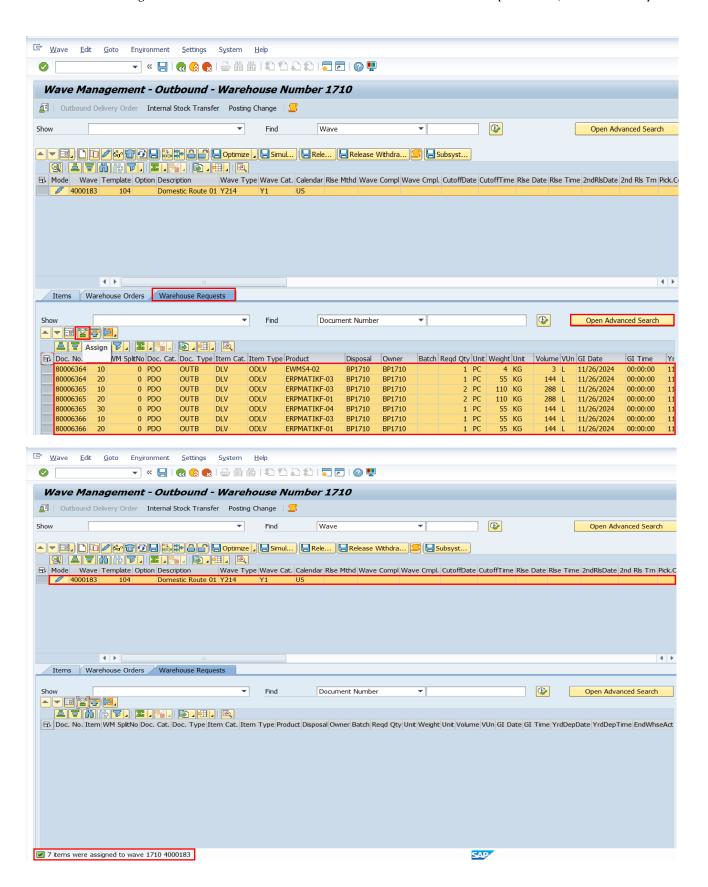


To process the multiple outbound deliveries together through wave first go to the "Create" tab and click on it. Wave 4000183 is generated. You can select the line item and go to edit to create wave manually enter your wave template, wave type and wave category details.

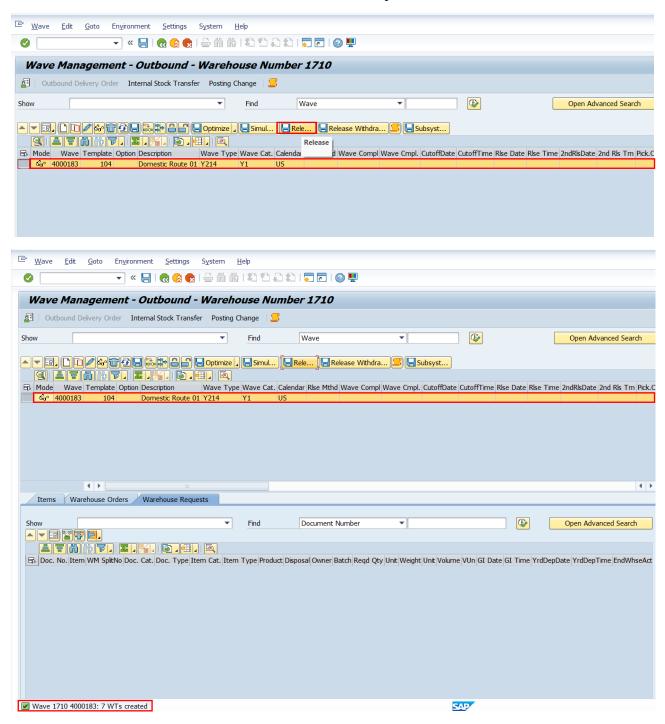


Go to the Warehouse requests tab \rightarrow Open Advance Search and paste the outbound deliveries numbers and execute it, system fetch the data of outbound deliveries, select the warehouse requests and click on Assign tab to assign the warehouse requests to a wave.

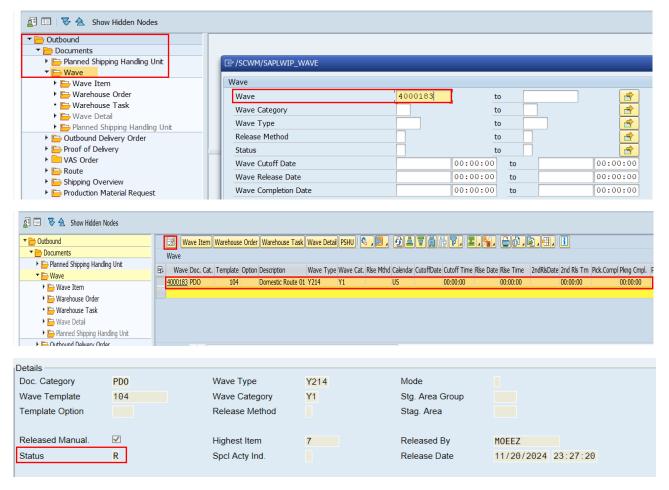
After assigning the warehouse requests to wave the warehouse requests disappear from the warehouse requests tab and they are assigned to wave 4000183.



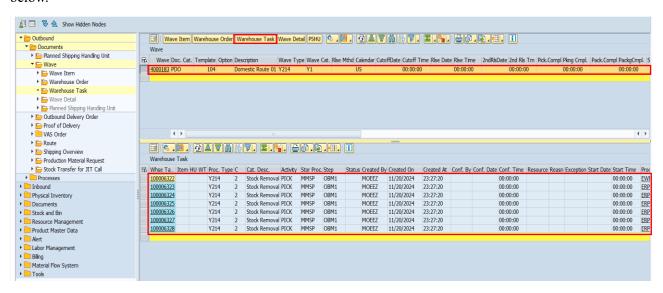
To execute the wave 4000183, select the line item and click on "Release" tab. When the wave is released warehouse tasks are created for the warehouse requests.



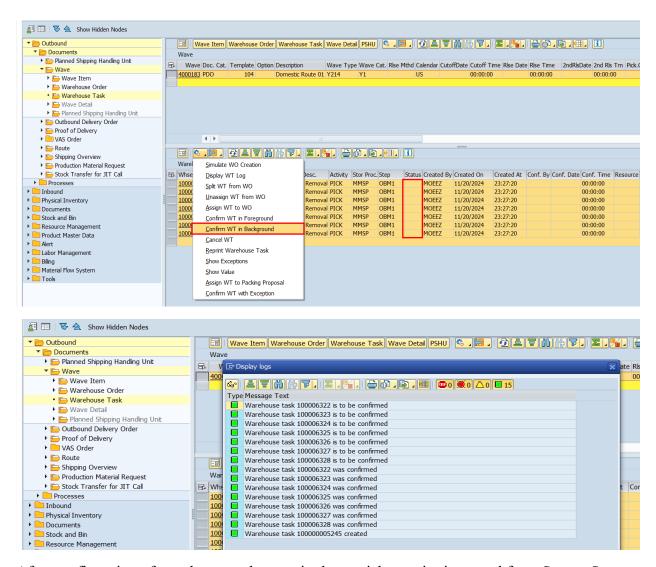
To check the warehouse tasks, go to T-code /N/SCWM/MON, fallow the path Outbound → Document → Wave. Double click on Wave and enter your Wave number 4000183 and execute it. Select the line item and click on "Form view" to check the details of wave, you can find the status of wave is "R" (Release).



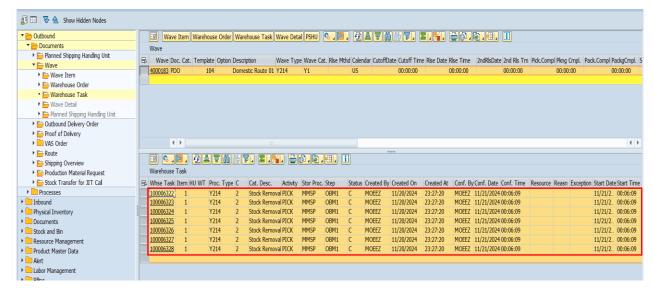
Select the line item and click on "warehouse task" tab all the warehouse tasks assigned to wave appear below.



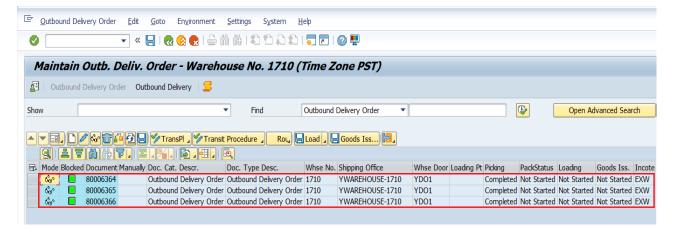
Select all the line items of warehouse task and go to **More Methods > Confirm WT in Background**, upon confirmation of warehouse tasks, status of warehouse tasks changes from "blank" (Open) to "C" (Confirm).



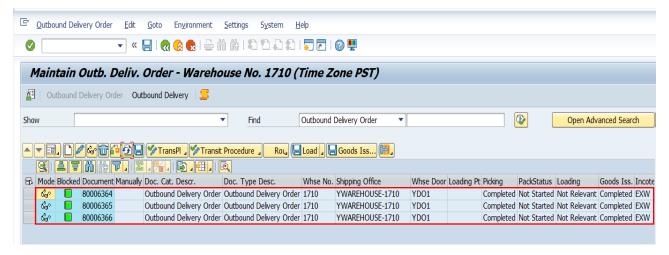
After confirmation of warehouse tasks, required material quantity is moved from Source Storage type to Destination Storage type and all the warehouse tasks are confirmed and has **Status C.**



After executing all the steps above, go to T-code /N/SCWM/PRDO and enter your Outbound delivery numbers 80006364, 80006365 and 80006366 and execute it. Picking Status is completed when the warehouse tasks are confirmed.



Next is to select the outbound deliveries line item and click on Goods Issue tab for the Goods issuance of material.



After the goods issuance Picking and Goods Issue Status are completed.