

SAP EWM wave picking

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Process overview

Overview

In SAP EWM, wave management is a process that allows you to group or split warehouse request items—such as outbound deliveries—into waves. This helps streamline operations by enabling the simultaneous picking of multiple deliveries, thereby optimizing warehouse efficiency.

Typically, The timing of the waves is determined by the outgoing vehicle schedule, so that orders are released to allow enough time to meet this schedule.

Waves are typically created based on common criteria like “Ship-To” party, route, or delivery priority, ensuring that related tasks are processed together.

Warehouse Requests Eligible for Waves:

A warehouse request can be:

- Outbound Delivery Order
- Posting Change
- Stock Transfer (for internal warehouse movements)

Purpose of Wave Management:

- Optimize Picking Processes: Grouping similar tasks reduces travel time and increases efficiency.
- Align with Shipping Deadlines: Ensure timely deliveries by managing wave release schedules.
- Balance Workload: Distribute tasks evenly across resources based on capacity limits.

Automatic Wave Assignment

Steps

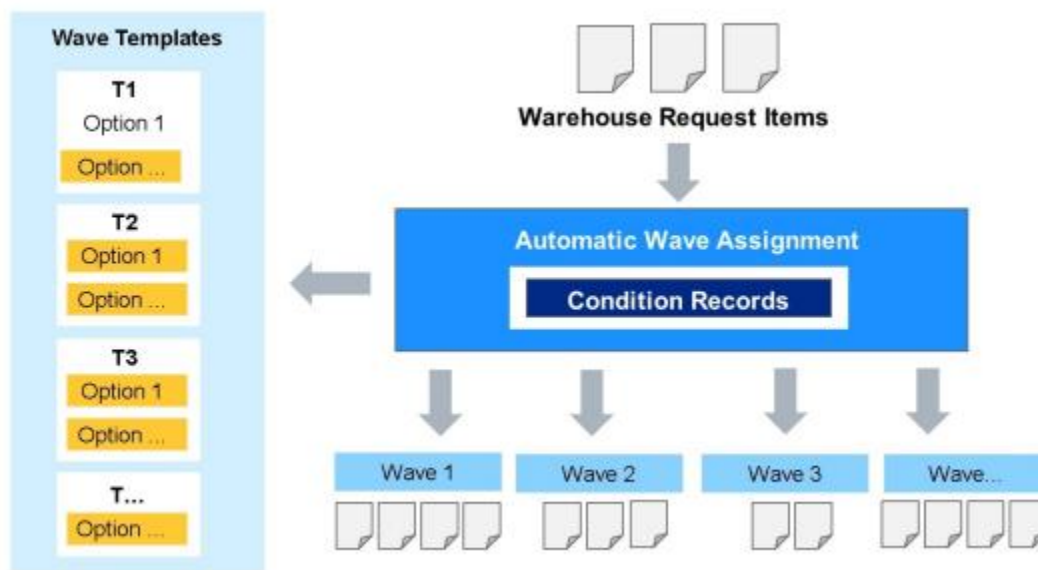
1. warehouse request (outbound delivery order) get assigned to wave automatically if process type is activated for automatic wave creation otherwise wave can be assigned manually or via program.
2. SAP EWM tries to determine a valid wave template for each item or split item in the warehouse request.
3. SAP EWM determines planned completion, wave completion, and lock time.

Planned completion time (of the warehouse request item): For stock removal, SAP EWM uses the planned date and the planned time for departure from yard. If these dates are not available, SAP EWM uses the dates for the goods issue start

for outbound deliveries. In the case of internal stock transfers or posting change deliveries, SAP EWM uses the dates from the Warehouse Activities End Date/Time date/time category.

Key Process Flow

- Maintain wave template
- Condition records Created to create wave
- Sales Order created
- Delivery Created
- Wave created and deliveries assigned
- Wave simulation or automatic or manual release



Process steps:

1. Wave template is created
2. Condition records are created to determine wave template using ship to, route etc.
3. If warehouse request satisfy conditions then wave is created automatically.
4. Wave is released one day before planned completion date based on cut-off date maintained in wave template.
5. Warehouse order and warehouse task is created and assigned to Outbound Queue
6. Warehouse work complete wave picking and confirm Warehouse order

Alternate way to assign wave without condition records

This program can be scheduled as background job to create waves and assign warehouse request items to wave:

Program: /SCWM/R_WAVE_PLAN_BACKGROUND

No condition records needs to be maintained if this program is used.

Background Wave Generation



Parameter for Creating Wave

Warehouse Number

Whse Req. Doc. Cat.

Wave Template

Wave Template Option

Wave Completion Date

☐ Delete Planned Shipping HUs

Parameter for Selecting Warehouse Request Items

| | | | | |
|--------------------------|----------------------|----|----------------------|--|
| Document | <input type="text"/> | to | <input type="text"/> | |
| Item Number | <input type="text"/> | to | <input type="text"/> | |
| Document Type | <input type="text"/> | to | <input type="text"/> | |
| Product | <input type="text"/> | to | <input type="text"/> | |
| Batch | <input type="text"/> | to | <input type="text"/> | |
| Goods Issue Date | <input type="text"/> | to | <input type="text"/> | |
| Departure Date from Yard | <input type="text"/> | to | <input type="text"/> | |
| End Date Whse Act. | <input type="text"/> | to | <input type="text"/> | |
| Activity Area | <input type="text"/> | to | <input type="text"/> | |

Wave tables in sap

/SCWM/WAVEHDR & /SCWM/WAVEITM

End user steps:

Wave picking with common route via simulation functionality

Maintain wave template

Tcode: /SCWM/WAVETMP

Wave template: 9001

Here you define whether – what is release method, how to handle exceptions and start time of wave release and pick time etc.

Change View "Define Wave Template": Details

New Entries

Dialog Structure

- Define Wave Template
 - Define Wave Template

Warehouse No. E100 Central Warehouse 00

Two-Step Pick. Not Relevant

Optimization No Optimization

Wave Template 9001

Define Wave Template

General Attributes

Description Standard Wave 01

Wave Type WT01

Wave Category C1

Wave Release

Release Method A Automatic (One Batch Job)

☐ Assmnt After Rel.

Exception Handling

Bin Denial Leave Item in Wave (Release Wa

Retry Interval

Two-Step Picking

Two-Step Picking Inherit Default Warehouse Settir

Optimize 2-St. Pick. Inherit Default Warehouse Settir

☐ Early DirectPck

Change View "Define Wave Template Time Attributes": Overview

New Entries

Dialog Structure

- Define Wave Template
 - Define Wave Template

Warehouse No. E100 Central Warehouse 00

Time Zone CET

Wave Template 9001

Define Wave Template Time Attributes

| | Option | CutoffTime | CutoffDays | Rlse Time | Rlse Days | 2nd Rls Tm | 2. Rls Day | PickStart |
|---|--------|------------|------------|-----------|-----------|------------|------------|-----------|
| 1 | | 05:55:00 | | 05:58:00 | | 05:59:00 | | 06:00:00 |
| 2 | | 07:55:00 | | 07:58:00 | | 00:00:00 | | 08:00:00 |
| 3 | | 09:55:00 | | 09:58:00 | | 00:00:00 | | 10:00:00 |
| 4 | | 12:55:00 | | 12:58:00 | | 00:00:00 | | 13:00:00 |
| 5 | | 14:55:00 | | 14:58:00 | | 00:00:00 | | 15:00:00 |

Condition records Created to create wave

Tcode: /scwm/wdgcw

| Stat... | CCTC | Whse N... | Route | Wave Template | Created ... | Creat... | Table | U | St |
|---------|------|-----------|-------|---------------|-------------|----------|---------|----|----|
| | ZEWM | E100 | REZO | 9001 | | | CUS_100 | WD | |

ZEWM has only two fields: warehouse and route but other fields can be added and new condition table can be created and wave template can be determined as condition techniques.

Sales Order created

Sales order : **15070** created with route : REZ001

Create Standard Order: Item Data

Sales Document Item: 10
Material: T-EW10-01

Sales A | Sales B | **Shipping** | Billing Document

Ship-To Party: T-EW03A-01 | Universe Exports

Shipping

Unloading Point:
Department:
Plant: SPCW | Werk Hamburg
Shipping Point: EZ00 | Ship.Point Hamburg E...
Route: **REZ001** | Hamburg - Frankfur... M

Another two sales orders created with same route: REZ001

with same material and different customer but same route

Delivery Created

vl10a for creating deliveries:

| Activities Due for Shipping "Sales orders, EWM Profile" | | | | | | | | | |
|---|-------------|-------|---------------|--------|--------------|-------|-----|---------|-----|
| Dialog Background | | | | | | | | | |
| Light | Goods Issue | DP... | Ship-To Party | Route | OriginD... | Gr... | WUn | Volu... | VUn |
| | 20.02.2025 | 1 | T-EW03A-01 | REZ001 | <u>15070</u> | 2 | KG | 2 | L |
| | | | T-EW03A-02 | REZ001 | <u>15071</u> | 3 | KG | 3 | L |
| | | | T-EW03A-01 | REZ001 | <u>15072</u> | 10 | KG | 10 | L |

Three deliveries posted and distributed to EWM.

Wave created and deliveries assigned

Monitor tcode: /SCWM/MON

We go to Outbound-> Documents-> Wave and find wave document created: 4000 shown below:

| Warehouse Management Monitor SAP - Whse. E100 (Time Zone CET) | | | |
|---|------|-----------|-------------------|
| Show Hidden Nodes | | | |
| Outbound | | | |
| Documents | | | |
| Planned Shipping Handling Unit | | | |
| Wave | | | |
| Outbound Delivery Order | | | |
| Proof of Delivery | | | |
| Wave Item Warehouse Order Warehouse | | | |
| Wave | | | |
| | Wave | Doc. C... | Templa... Opti... |
| | 4000 | PDO | 9001 5 |

3 delivery item got selected as shown below and assigned to wave :4000

Wave Item Warehouse Order Warehouse Task W

Wave

| Wa... | Doc. C... | Templa... | Opti... | Description | Wave Ty |
|-------|-----------|-----------|---------|------------------|---------|
| 40... | PDO | 9001 | 5 | Standard Wave 01 | WT01 |

Warehouse Order Warehouse Task

Wave Item

| Wa... | Sales Order | It... | Product | Batch N... | Quanti... | U... |
|-------|-------------|-------|-----------|------------|-----------|------|
| 40... | 15070 | 2 | T-EW10-01 | | 2 | KG |
| 40... | 15071 | 3 | T-EW10-01 | | 3 | KG |
| 40... | 15072 | 4 | T-EW10-01 | | 10 | KG |

Wave template created earlier is picked up as shown below:

Wave Item Warehouse Order Warehouse Task Wave Detail PSHU

Wave 4000 Description Standard Wave 01

Details

| | | | |
|------------------|--------------------------|----------------|------|
| Doc. Category | PDO | Wave Type | WT01 |
| Wave Template | 9001 | Wave Category | C1 |
| Template Option | 5 | Release Method | A |
| Released Manual. | <input type="checkbox"/> | Highest Item | 4 |
| Status | I | Spcl Acty Ind. | |

Wave release means – ware house task and warehouse order would be created.

Cut-off time has come from wave template. Cut off time is 2:55 pm. That means- people who start their shift at 3pm – will have ware house task ready for them based on their queue assignments.

So this wave picking is kind of automation – where instead of picking individual items for each order – we can do picking for a wave and be more efficient. Warehouse manager can balance workload based on this.

| | | | | | |
|-----------------|------------|----------|-----------------|------------|----------|
| Times | | | | | |
| Cutoff Date | 20.02.2025 | 14:55:00 | Pack.Completion | 20.02.2025 | 17:30:00 |
| Release Date | 20.02.2025 | 14:58:00 | Stag.Completion | 20.02.2025 | 18:00:00 |
| 2ndRlsDate | | 00:00:00 | WaveCompletion | 20.02.2025 | 18:00:00 |
| Pick.Completion | 20.02.2025 | 17:00:00 | Wave Calendar | 01 | |

Wave simulation & release

There is a report where we can simulate wave release: /SCWM/R_WAVE_SIMULATE (only in 2020 version and up)

Or in /SCWM/MON

< **SAP** Warehouse Management Monitor SAP - Whse. E100 (Time... ▾

Menu ▾ Default Values Fullscreen On/Off Expand All Collapse All Show Hidden Nodes

✓ Outbound

▾ Documents

> Planned Shipping Handling U

> Wave

> Outbound Delivery Order

> Proof of Delivery

> VAS Order

> Route

> Shipping Overview

> Production Material Request

> Stock Transfer for JIT Call

> Processes

> Inbound

> Physical Inventory

> Documents

> Stock and Bin

> Resource Management

Wave

Wave Item Warehouse Order Warehouse Task Wave Detail PSHU

4000

Doc. Cat.

PDO

Template

9001

Option

5

Description

Standard Wave 01

Wave

WT01

Lock Wave Release

Unlock Wave Release

Delete Wave

Merge Wave

Transfer Wave to S

Display Release Lo

Release Wave

Release Wave Lock

Release Single Wa

Release Single Wa

Simulate Waves

System is proposing 1 warehouse order and 3 warehouse task for 3 delivery items

SAP

Wave Simulation: Results ▾

Menu ▾ Display Log Release Release all

| Wave Simulation - Results | |
|---------------------------|------------------------------------|
| ▾ 📁 | Wave Simulation Results 20.02.2020 |
| 📄 | 1 Waves |
| 📄 | 3 Wave Items |
| 📄 | 1 Warehouse Orders |
| 📄 | 3 Warehouse Tasks |
| 📄 | 1 Pick-HUs |
| 📄 | 0 Workload Records |
| 📄 | 0 Missing Products |
| 📄 | 0 Failed Delivery Items/With |

| 3 Warehouse Tasks | | | | | |
|-------------------|----|-----|-----|------------|---------------|
| Warehouse Task | HU | Sub | All | Cat. | Document |
| 200108 | | | | PDO | 310009 |
| 200109 | | | | PDO | 310010 |
| 200110 | | | | PDO | 310008 |
| | | | | | |

We can click release all to create it.

Display logs

| Type | Message Text |
|------|--|
| ■ | One wave read |
| ■ | ***** Start wave release for wave E100 4000 |
| ■ | Wave E100 4000: 3 WTs created |
| ■ | ***** End of wave release for wave E100 4000 |
| ■ | Start Batch Job update |
| ■ | End Batch Job update |

We can use: BAdI: /SCWM/EX WAVE SIMULATE to add custom messages and logs.

Wo created and assigned to outbound queue. WO: 500109

Menu ▾ Default Values Message Log

Show: ▾

* Find: Wa

^ ▾  ▾      ▾ Confirm + Save Confirm Confirm in For

Warehouse Order

Warehouse Order: **500109** Cre

WO Status: Open Creati

Activity Area: 0015 Pr

WO Creatn Rule: W015 St

Resource: Confir




Queue: **OUTBOUND** Plnd Exe

Wave: 4000 Confir

It is picked up in PICK-HU

Product WT HU WT **Pick-HU**

^ ▾    Create

     ▾  ▾  ▾  

| <input type="checkbox"/> | HU ID | Handling Unit | Storage Bin | Resource | Packaging Material | Pkging Matl Ty. | Description of |
|-------------------------------------|-------|---------------|----------------|----------|--------------------|-----------------|----------------|
| <input checked="" type="checkbox"/> | 1 | 12000 | PALLET-STORAGE | | PKE-100 | E010 | Cartons |

This comes from wocr rule : W015 determined packing profile :

| | |
|--------------------------------------|--------------|
| Warehouse No. | E100 |
| WO Creatn Rule | W015 |
| Warehouse Order Creation Rule | |
| Description | Picking from |
| WO Creation Cat | B Pick Path |
| Item Filter | WAVE |
| Subtotal Filter | |
| Limit | |
| Inbound Sorting | PIPA |
| WO Sorting | PIPA |
| Packing Profile | 095 |

Packspec has maintained packaging material: carton as shown below for packing profile: 095

Display Packaging Specification 3000000 Pick-HU Level 1

Change/Display
 Delete
 HU Check
 Create 2nd Version
 Preview

| Packspec/Level/Elements | Product | Qty | Unit | D. |
|-------------------------|---------|-----|------|------|
| 3000000 | | | | |
| Content | | | | |
| Pick HU | | | | Pick |
| Packaging Material | PKE-100 | 1 | PC | |

Packaging Specification

| | |
|-------------|-----------------|
| Pack. Spec. | 3000000 |
| Description | Pick-HU Level 1 |

Determination

Org. Data

Header

Item

Details

0

Detail Area

| Attribute Name | Attribute V |
|-------------------|-------------|
| Condition Type | OBDL |
| Supply Chain Unit | E100 |
| Route | |
| Packing Profile | 095 |
| Packaging Spec. | 3000000 |

Warehouse task confirmation

Now we'll use Fiori rf transactions and confirm the warehouse task:

← → ↻ 🏠 wdfbmt7342.wdf.sap.corp



Whse No.

Resource

Dflt Dvc.

← → ↻ 🏠 wdfbmt7342.wdf.sap.corp:50081/sap/cz1TSUQIM2FBTk9OJTNh



| |
|-----------------------|
| 01 System-Guided |
| 02 Manual Selection |
| 03 Inbound Processes |
| 04 Outbound Processes |
| 05 Internal Processes |

Menu

F1 Logoff

Click on outbound

← → ↻ 🏠 wdfbmt7342.wdf.sap.corp:5008

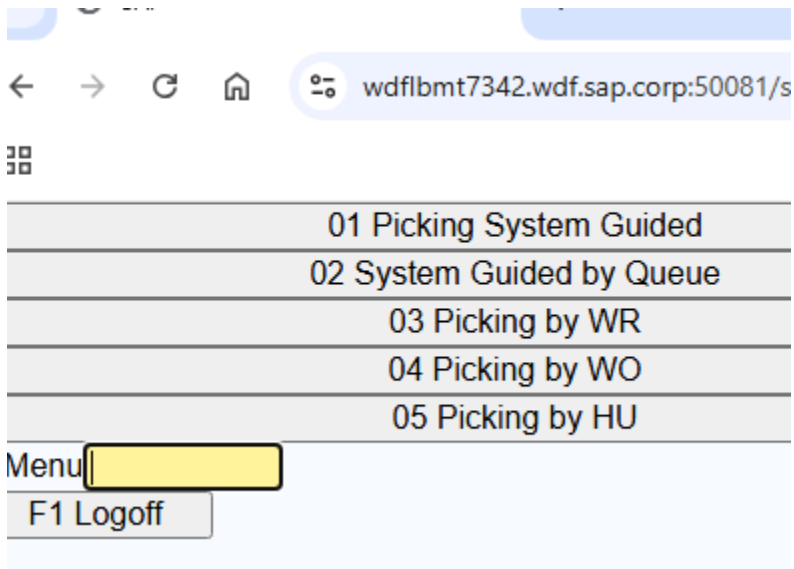


| |
|---------------------------|
| 01 Picking |
| 02 Packing |
| 03 Loading |
| 04 Pick Point |
| 05 Consumption |
| 06 Distribution Equipment |

Menu

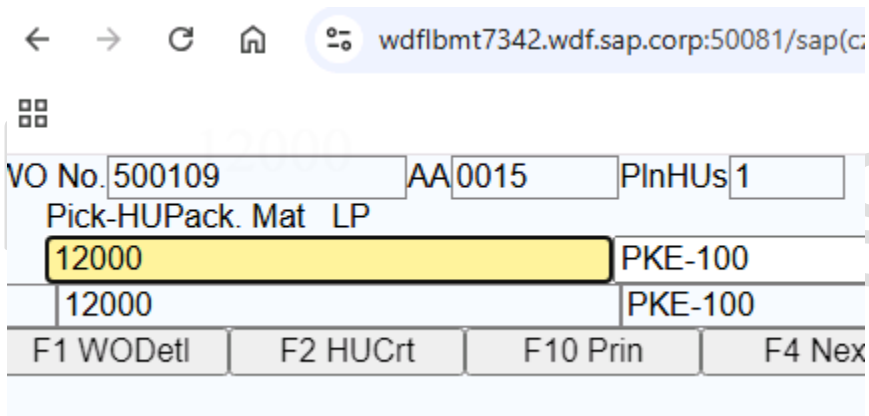
F1 Logoff

Click on picking



Click on picking system guided

It opened our WO:



After wo confirmation , we come back to monitor and see wave

<

Wave Management - Outbound - Warehouse Number E100

Outbound Delivery Order Internal Stock Transfer Posting Change

Show Find WAVE Wave

Optimize Simulate Release Release Withdrawal

| Mo... | Wa... | 2ndRlsDa... | 2nd Rls ... | Pick.Compl | Pkng Cmpl. | Pack.Compl | PackgCmpl. | Stag.Compl | Stgg Cmpl. | Pick.Start Date | Pic |
|-------|-------|-------------|-------------|------------|------------|------------|------------|------------|------------|-----------------|-----|
| 40... | | | | 20.02.2025 | 17:00:00 | 20.02.2025 | 17:30:00 | 20.02.2025 | 18:00:00 | 20.02.2025 | 15 |

Items Warehouse Orders Warehouse Requests

| Wa... | It... | Doc. N... | It... | WM Split... | Doc. C... | Doc. Ty... | Item C... | Item Ty... | Product | Disposal | Owner | Bat... | Reqd Q... | U... | Weig... |
|-------|-------|-----------|-------|-------------|-----------|------------|-----------|------------|-----------|----------|-------|--------|-----------|------|---------|
| 40... | 2 | 310008 | 10 | 0 | PDO | OUTB | DLV | ODLV | T-EW10-01 | SPCW | SPCW | | 2 | KG | 2 |
| 40... | 3 | 310009 | 10 | 0 | PDO | OUTB | DLV | ODLV | T-EW10-01 | SPCW | SPCW | | 3 | KG | 3 |
| 40... | 4 | 310010 | 10 | 0 | PDO | OUTB | DLV | ODLV | T-EW10-01 | SPCW | SPCW | | 10 | KG | 10 |

Wave picking is complete now.

Goods Issue

Route was common among all deliveries which we created. Route was maintained wave condition record to create wave assignment. So we can find outbound delivery order via route

Warehouse Management Monitor SAP - Whse. E100 (

Show Hidden Nodes

- Outbound
 - Documents
 - Planned Shipping Handling Unit
 - Wave
 - Outbound Delivery Order
 - Proof of Delivery
 - VAS Order
 - Route
 - Shipping Overview
 - Production Material Request
 - Stock Transfer for JIT Call

/SCWM/SAPLWIP_DELIVERY_OUT

Header Data

| | | |
|------------------------|--------|----|
| Outb. Delivery Order | | to |
| Document Type | | to |
| TCD Process Number | | to |
| Ext. Consignment Order | | to |
| Bill of Lading | | to |
| Freight Document | | to |
| Generated Manually | | to |
| Handling Unit | | to |
| Wave | | to |
| Route | REZ001 | to |

| Outbound Delivery Order | | | | | | | | | | |
|-------------------------------------|----------|-------------|-----------|------------|------------|---------------------|-----------|------------|-------------|--|
| Block... | Document | RteDep.T... | Wave Asst | Whse Do... | Loading... | Warehouse Activity | Picking | Pickg (Pl) | Packing St | |
| <input checked="" type="checkbox"/> | 310008 | 20:00:00 | Complete | | | Partially Completed | Completed | Completed | Not Calcula | |
| <input checked="" type="checkbox"/> | 310009 | 20:00:00 | Complete | | | Partially Completed | Completed | Completed | Not Calcula | |
| <input checked="" type="checkbox"/> | 310010 | 20:00:00 | Complete | | | Partially Completed | Completed | Completed | Not Calcula | |

Goods issue posted when stock is despatched.

OutbDelOrd Item Wave Warehouse Order Warehouse Task Handling Unit PSHU Attachments

Outbound Delivery Order

| Block... | Document | Doc. Ty... | Doc. Type Desc. | Manu... | Vehicle Tl | Carri... | Ship. ... | Ship-To |
|----------|----------|------------|-------------------------|---------|------------|----------|-----------|------------|
| | 310008 | OUTB | Outbound Delivery Order | | | | E100 | T-EW03A-01 |
| | 310009 | OUTB | Outbound Delivery Order | | | | E100 | T-EW03A-02 |
| | 310010 | OUTB | Outbound Delivery Order | | | | E100 | T-EW03A-01 |

Display Item Hierarchy
 Reprint ODO
 Create WT in Background
 Update Stop Sequence
 Display Change Document
 Assign Carrier
 Upload Attachments
 Add URL as Attachment
 Set to Ready for Shipping
 Reverse Ready for Shipping
 Edit Document Address
 Goods Issue

Before GI posting:

Selection

Material T-EW10-01 Landeep material

Material Type HAWA Trading goods

Unit of Measure KG Base Unit of Measure KG

Stock Overview

Client/Company Code/Plant/Storage Location/Batch/Special Stock Unrestricted use Qu

| | |
|----------------------|---------|
| Full | 190,000 |
| 1000 IDES AG | 190,000 |
| SPCW Werk Hamburg | 190,000 |
| AF00 Avail. For Sale | 110,000 |
| 2234567890 | 30,000 |

After GI posting:

Stock Overview: Basic List

Selection

Material: T-EW10-01 Mandeep material

Material Type: HAWA Trading goods

Unit of Measure: KG Base Unit of Measure: K

Stock Overview

Client/Company Code/Plant/Storage Location/Batch/Special Stock Unrestricted use

| | |
|----------------------|---------|
| Full | 175,000 |
| 1000 IDES AG | 175,000 |
| SPCW Werk Hamburg | 175,000 |
| AF00 Avail. For Sale | 95,000 |
| • 2234567890 | 15,000 |

Mandeep@gmail.com

Wave picking via periodic release based on stores or ship to party

Maintain wave template

Tcode: /SCWM/WAVETMP

Wave template: 9001

Here you define whether – what is release method, how to handle exceptions and start time of wave release and pick time etc.

Change View "Define Wave Template": Details

New Entries

Dialog Structure

- Define Wave Template
 - Define Wave Template

Warehouse No. E100 Central Warehouse 00

Two-Step Pick. Not Relevant

Optimization No Optimization

Wave Template 9001

Define Wave Template

General Attributes

Description Standard Wave 01

Wave Type WT01

Wave Category C1

Wave Release

Release Method A Automatic (One Batch Job)

☐ Assmnt After Rel.

Exception Handling

Bin Denial Leave Item in Wave (Release Wa

Retry Interval

Two-Step Picking

Two-Step Picking Inherit Default Warehouse Sett

Optimize 2-St. Pick. Inherit Default Warehouse Sett

☐ Early DirectPck

Change View "Define Wave Template Time Attributes": Overview

New Entries

Dialog Structure

- Define Wave Template
 - Define Wave Template

Warehouse No. E100 Central Warehouse 00

Time Zone CET

Wave Template 9001

Define Wave Template Time Attributes

| | Option | CutoffTime | CutoffDays | Rlse Time | Rlse Days | 2nd Rls Tm | 2. Rls Day | PickStart |
|---|--------|------------|------------|-----------|-----------|------------|------------|-----------|
| 1 | | 05:55:00 | | 05:58:00 | | 05:59:00 | | 06:00:00 |
| 2 | | 07:55:00 | | 07:58:00 | | 00:00:00 | | 08:00:00 |
| 3 | | 09:55:00 | | 09:58:00 | | 00:00:00 | | 10:00:00 |
| 4 | | 12:55:00 | | 12:58:00 | | 00:00:00 | | 13:00:00 |
| 5 | | 14:55:00 | | 14:58:00 | | 00:00:00 | | 15:00:00 |

Condition records Created to create wave

Tcode: /scwm/wdgc

In retail industry: we call ship to as stores.

System Help

Condition Records - Process

68

With Reference

Header Item Details 0

Detail Area

| Attribute Name | Attribute Value | Description |
|----------------------------|-------------------------------------|-----------------------------|
| Status of condition record | <input checked="" type="checkbox"/> | No Errors |
| Condition Type | ZEW2 | MANDEEP COND TYPE |
| Ship-to Party | T-EW03A-01 | T-EW03A-01 |
| Warehouse Number | E100 | |
| Wave Template | 9001 | Standard Wave 01 |
| Created By | EWM100-01 | EWM100-01 |
| Created on | 28.02.2025 | |
| Valid From | 01.02.2025 | |
| Valid To | 31.12.9999 | |
| Condition Table | CUS_1000 | EWM100 Warehouse Nbr, Route |
| Usage | WD | Wave Template Determination |
| Release Status | | Released |

Favorites

Fields

- Carrier
- Condition Type
- Created By
- Created on
- Dep. Cal. / Schedule
- Doc.Type Whse-Intrnl
- Key Combination (Condition Table)
- Means of Transport
- Product
- Release Status
- Route
- Ship-to Party
- Shipping Condition

Mandeepps@gmail.com

Sales Order created

SO created 15073 & 15074 for this store or same ship to

Display Standard Order 15073: Overview

Orders

Standard Order Net value
Sold-To Party Universe Exports 01 / Poststrasse 12 / 69115
Ship-To Party Universe Exports 01 / Poststrasse 12 / 69115
Purch. Order No. PO Date

Sales Item overview Item detail Ordering party Procurement

Req. deliv.date Deliver.Plant
☐ Complete div. Total Weight
Delivery block Volume
Billing block Pricing Date
Payment terms 14 Days 3%, 30/2%, 45 net
Incoterms
Order reason
Sales area / / Germany Frankfurt, Final customer sale

All items

| Item | Material | Order Quantity | Un | Description |
|-----------|-----------|----------------|----|------------------|
| <u>10</u> | T-EW10-01 | 180 | KG | Mandeep material |

Display Standard Order 15074: Overview

Standard Order: 15074 Net value: 0.00

Sold-To Party: T-EW03A-01 Universe Exports 0.00

Ship-To Party: T-EW03A-01 Universe Exports 0.00

Purch. Order No.: wave periodic mandeep2 PO Date: 04.03.2025

Sales Item overview Item detail Order

Req. deliv.date: D 04.03.2025 Deliverable: 0.00

☐ Complete div. Total: 0.00

Delivery block: Volume: 0.00

Billing block: Pricing: 0.00

Payment terms: ZB01 14 Days 3%, 30/2%, 45 n

Incoterms: CIF Heidelberg

Order reason:

Sales area: 1000 / 10 / 00 Germany France

All items

| Item | Material | Order Quantity | Unit |
|------|-----------|----------------|------|
| 10 | T-EW10-01 | 2 | KG |

Delivery Created

vl10a for creating deliveries:

Delivery created for two sales orders

80120259

| Document | Quantity | Unit | Ret. |
|--------------------------------|----------|------|------|
| Standard Order 0000015074 / 10 | 2 | KG | |
| Delivery 0080120259 / 10 | 2 | KG | |

80120257

80120258

| Business partner T-EW03A-01 Universe Exports 01 Material T-EW10-01 Mandeep material | | |
|--|----------|------|
| | | |
| Document | Quantity | Unit |
| Standard Order 0000015073 / 10 | 180 | KG |
| <ul style="list-style-type: none"> Delivery 0080120257 / 10 Delivery 0080120258 / 10 | 20 | KG |
| | 10 | KG |

Wave created and deliveries assigned

Monitor tcode: /SCWM/MON

We go to Outbound-> Documents-> Wave and find wave document created: 4001 shown below:

Wave created automatically in SAP ewm

Wave assignment is done via ppf action for warehouse request which is outbound delivery created in EWM.

Mandeep@gmail.com

Wave Management - Outbound - Warehouse Number E100

Outbound Delivery Order Internal Stock Transfer Posting Change

Show Find WAVE Wave 4001



| Mo... | Wa... | Templa... | Opti... | Description | Wave Ty... | Wave C... | Calen... | Rlse Mt... | Wave Compl | Wave Cmpl. | Cuto |
|-------|-------|-----------|---------|------------------|------------|-----------|----------|------------|------------|------------|------|
| | 40... | 9001 | 5 | Standard Wave 01 | WT01 | C1 | 01 | A | 28.02.2025 | 18:00:00 | 28.0 |

Items Warehouse Orders Warehouse Requests



| Wa... | It... | Doc. N... | It... | Sls Ord... | Reqd Q... | WM Split... | Doc. C... | Doc. Ty... | Item C... | Item Ty... | Product | Disposal |
|-------|-------|-----------|-------|------------|-----------|-------------|-----------|------------|-----------|------------|-----------|----------|
| 40... | 1 | 310030 | 10 | 15073 | 20 | 0 | PDO | OUTB | DLV | ODLV | T-EW10-01 | SPCW |
| 40... | 2 | 310031 | 10 | 15073 | 10 | 0 | PDO | OUTB | DLV | ODLV | T-EW10-01 | SPCW |
| 40... | 3 | 310032 | 10 | 15074 | 2 | 0 | PDO | OUTB | DLV | ODLV | T-EW10-01 | SPCW |

Ty... Message Text

- Date: 28.02.2025 Time: 07:29:14
- Processing /SCWM/WHR_WAVE_ASSIGN_NEW is started
- Delivery 310030 item 10 is being processed
- Waves found for delivery 310030 item 10
- **** Start wave assignment for warehouse number E100
- Wave creation for wave template 9001, option 5, date 28.02.2025
- Wave creation successful
- Item 310030 10 assigned to wave 4001
- End wave assignment for delivery item 310030 10
- **** End wave assignment for warehouse number E100
- Start Batch Job update
- End Batch Job update
- Action executed

Wave automatic release via background job

Cut off date is determined from template:

Wave automatic release via background job

Show [dropdown] Find WAVE Wave

[Icons: Up, Down, Print, Copy, Paste, Edit, Delete, Undo, Redo, Save, Open, Lock, Unlock, Optimize, Save As]

Header Data

| | | | | |
|-----------------|--------------------------|-----------------|------------------|----------|
| Wave | 4001 | Description | Standard Wave 01 | |
| Doc. Category | PDO | Weight | 32 | KG |
| Wave Template | 9001 | Volume | 0,032 | M3 |
| Template Option | 5 | Capacity Usage | 0,000 | |
| Wave Category | C1 | Number of Items | 3 | |
| Wave Type | WT01 | Capacity Prfl. | | |
| Mode | <input type="checkbox"/> | Wave Calendar | 01 | |
| Spcl Acty Ind. | <input type="checkbox"/> | Cutoff Date | 28.02.2025 | 14:55:00 |
| Stg. Area Group | | Release Date | 28.02.2025 | 14:58:00 |
| Stag. Area | | Second Release | | |
| Bin Denial | <input type="checkbox"/> | Pick.Completion | 28.02.2025 | 17:00:00 |
| Two-Step Pick. | <input type="checkbox"/> | Pack.Completion | 28.02.2025 | 17:30:00 |
| 2-St.Prod.-Dep. | <input type="checkbox"/> | Stag.Completion | 28.02.2025 | 18:00:00 |
| Optimization | <input type="checkbox"/> | WaveCompletion | 28.02.2025 | 18:00:00 |

14:55 on 28th feb it will be released.

Usage data

| | | | | |
|---|-----------|----------------|------------|----------|
| Client | 800 | Previous logon | 21.02.2025 | 05:32:19 |
| User | EWM100-01 | Logon | 27.02.2025 | 19:53:17 |
| Language | EN | System time | 28.02.2025 | 08:03:48 |
| Number of Failed Password Logon Attempts: | | 0 | | |

So we'll change cut off time manually for testing: so as to test automatic period release process

| | | |
|-----------------|------------|----------|
| Times | | |
| Cutoff Date | 28.02.2025 | 08:10:00 |
| Release Date | 28.02.2025 | 10:00:00 |
| 2ndRlsDate | | 00:00:00 |
| Pick.Completion | 28.02.2025 | 17:00:00 |

This job triggered creation of warehouse order and task

Display Job WAVE RELEASEE1000000004001

Start condition
 Step
 Job details
 Job log
 Predecessor Job
 Spool List

General Data

| | |
|-----------|----------------------------|
| Job Name | WAVE RELEASEE1000000004001 |
| Job Class | C |
| Status | Finished |
| Target | |

E-Mail Notification
 Spool List Recipient

Ware house task created because this job released wave

Times

| | | | | | |
|-----------------|------------|----------|-----------------|------------|----------|
| Cutoff Date | 28.02.2025 | 08:10:00 | Pack.Completion | 28.02.2025 | 17:30:00 |
| Release Date | 28.02.2025 | 10:00:00 | Stag.Completion | 28.02.2025 | 18:00:00 |
| 2ndRlsDate | | 00:00:00 | WaveCompletion | 28.02.2025 | 18:00:00 |
| Pick.Completion | 28.02.2025 | 17:00:00 | Wave Calendar | 01 | |

Capacity Data

| | | | | |
|-----------------|-------|----|-----------------|---|
| Weight | 32 | KG | Avail. Weight | 0 |
| Volume | 0,032 | M3 | Avail. Volume | 0 |
| Capacity Usage | 0,000 | | Avail. Capacity | 0 |
| Number of Items | 3 | | Avail. No. Itms | 0 |
| Capacity Prfl. | | | Bin Denial | |
| TrLght for Wght | | | | |

Warehouse Task

| WT | It... | HU ... | Proc. Type | C | Cat. Desc. | Batch | Activity | ±SrceTgtQ... | Stor Pro... | Step | Stat... |
|--------|-------|--------|------------|---|---------------|------------|----------|--------------|-------------|------|---------|
| 200114 | | | 2010 | 2 | Stock Removal | 2234567890 | PICK | 2 | | PICK | |
| 200115 | | | 2010 | 2 | Stock Removal | 2234567890 | PICK | 13 | | PICK | |
| 200116 | | | 2010 | 2 | Stock Removal | 2234567890 | PICK | 10 | | PICK | |
| 200117 | | | 2010 | 2 | Stock Removal | L001R | PICK | 7 | | PICK | |
| | | | | | | | | 32 | | | |

Warehouse Order

| Whse Or... | WO Cr. ... | WO Creation Rule | Cat | Total W... | Hdr Whse... | Queue | Wave | Stat... | WO ActA |
|------------|------------|------------------|-----|------------|-------------|----------|------|---------|---------|
| 500110 | DEF | | | 7 | 2010 | OUTBOUND | 4001 | | |
| 500111 | W015 | B | | 25 | 2010 | OUTBOUND | 4001 | | 0015 |

If there is a error in release and you want system to retry release then consultant can use this badi: /SCWM/EX_WAVE_RELEASE_RETRY and add custom logic of retrying.

Warehouse task confirmation

As wave picking is completed and products move to outbound door, we confirm the warehouse orders: 500110 500111.

Two warehouse order created because stock was not available in one place and different activity area were chosen.

| | | | | | | | |
|------|-----|------|---|------------------|------|----|---|
| 4001 | PDO | 9001 | 5 | Standard Wave 01 | WT01 | C1 | A |
|------|-----|------|---|------------------|------|----|---|

Warehouse Task

Pack Proposal

Warehouse Order

| Whse Or... | WO Cr. ... | Creat. C... | Hdr Whse... | Queue | Wa... | WO Status | V |
|------------|------------|-------------|-------------|----------|-------|-----------|---|
| 500110 | DEF | | 2010 | OUTBOUND | 40... | C | |
| 500111 | W015 | B | 2010 | OUTBOUND | 40... | C | |

SCWM/SAPLWIP_DELIVERY_OUT

Header Data

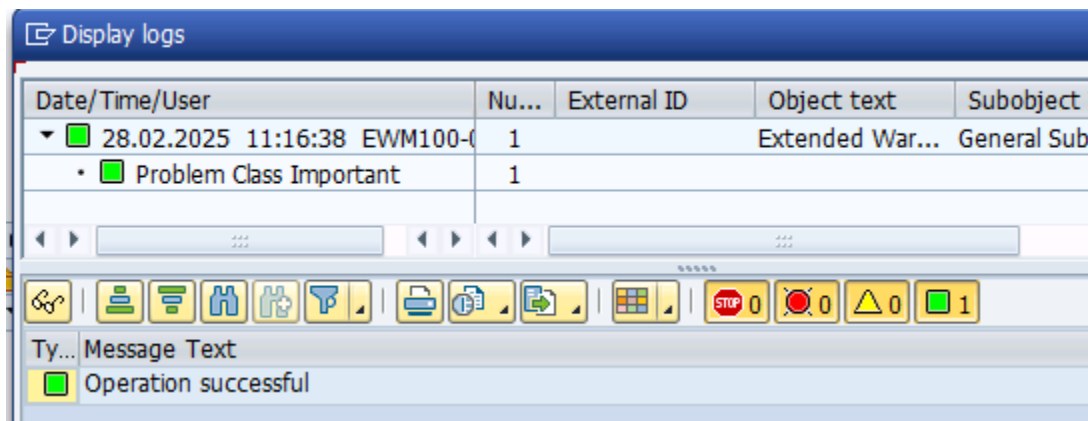
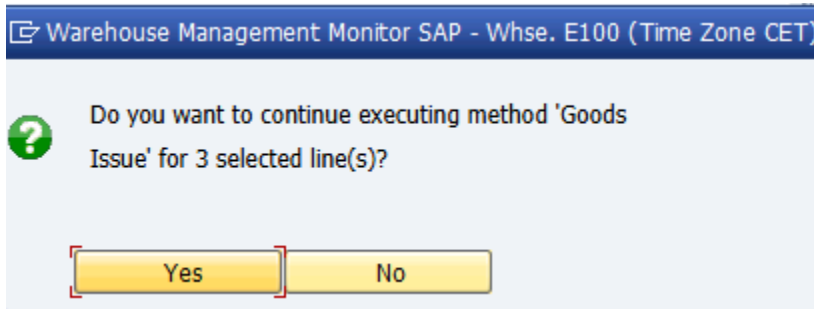
| | | | | |
|-----------------------------|--------------------------|----|--------------------------|--|
| Outb. Delivery Order | | to | | |
| Document Type | | to | | |
| TCD Process Number | | to | | |
| Ext. Consignment Order | | to | | |
| Bill of Lading | | to | | |
| Freight Document | | to | | |
| Generated Manually | <input type="checkbox"/> | to | <input type="checkbox"/> | |
| Handling Unit | | to | | |
| Wave | 4001 | to | | |
| Route | | to | | |
| Dep. Cal. / Schedule | | to | | |
| Origin of Route Master Data | <input type="checkbox"/> | to | <input type="checkbox"/> | |
| Vehicle | | to | | |
| Transportation Unit | | to | | |
| Selection Period TU | | to | | |
| Ship-To | | to | | |
| Final Ship-To Party | | to | | |
| Ship-To Location | | to | | |
| Loading Point | | to | | |
| PSST Group | | to | | |

Check

Mandeep@gmail.com

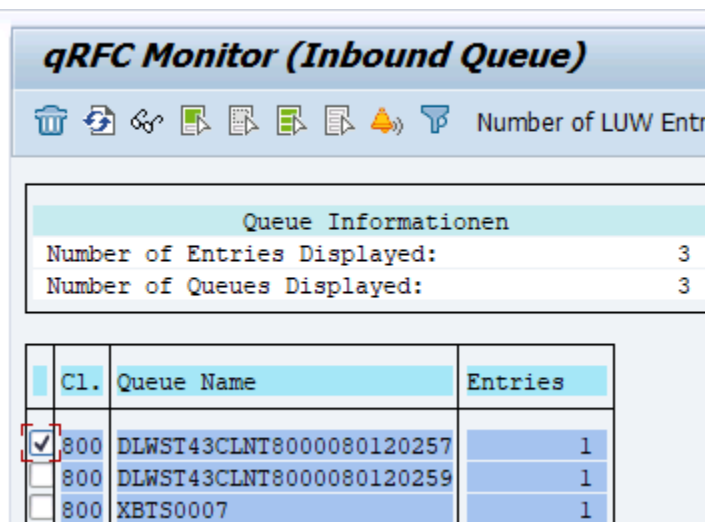
| Block... | Docume... | Doc. Ty... | Doc. Type Desc. | Manu... | Vehi... | TU Carri... | Ship. O... | Ship-To | Ship-T |
|----------|-----------|------------|-------------------------|---------|---------|-------------|------------|------------|--------|
| | 310030 | OUTB | Outbound Delivery Order | | | | E100 | T-EW03A-01 | |
| | 310031 | OUTB | Outbound Delivery Order | | | | E100 | T-EW03A-01 | |
| | 310032 | OUTB | Outbound Delivery Order | | | | E100 | T-EW03A-01 | |

- Display Item Hierarchy
- Reprint ODO
- Create WT in Background
- Update Stop Sequence
- Display Change Documents
- Assign Carrier
- Upload Attachments
- Add URL as Attachment
- Set to Ready for Shipping
- Reverse Ready for Shipping
- Edit Document Address
- Goods Issue**
- Recheck GTS Lock



Good issue completed in SAP EWM but not completed. So where we can see.

Go tcode: smq2 – inbound queue data coming from SAP ewm to sap ERP. Sometimes queue gets stuck because of various reasons. It can be fixed.



| qRFC Monitor (Inbound Queue) | | | | | | |
|------------------------------|--------------------------|---------|---------|------------|----------|-------|
| | | | | | | |
| Cl. | Queue Name | Entries | Status | Date 1 | Time 1 | NxtDa |
| 800 | DLWST43CLNT8000080120259 | 1 | SYSFAIL | 28.02.2025 | 11:16:26 | 28.02 |

DLWST43CLNT8000080120259 | 1 | SYSFAIL | 28.02.2025 11:16:26

Unlock Queue

Queue Name

| Cl. | Queue Name | Entries | Status | Date 1 | Time 1 | NxtDa |
|-----|--------------------------|---------|---------|------------|----------|-------|
| 800 | DLWST43CLNT8000080120259 | 1 | RUNNING | 28.02.2025 | 11:16:26 | 28.02 |

You can unlock the queue and refresh

Now all good

| Business partner T-EW03A-01 Universe Exports 01 | | | |
|---|------------|----------|------------|
| | | | |
| Document | On | Time | Status |
| Standard Order 0000015074 | 28.02.2025 | 07:27:36 | Completed |
| Delivery 0080120259 | 28.02.2025 | 07:29:16 | Being proc |
| • Handling unit 0000002937 | 28.02.2025 | 11:22:16 | |
| • GD goods issue:delvy 4900000069 | 28.02.2025 | 11:22:16 | complete |

Prepared by

Mandeep Pal Singh

HCL Tech